# Statement of Environmental Effects

11 Dwelling Houses2 Bullecourt AvenueMilperra

#### Client

Mirvac Residential (NSW) Developments Pty Ltd

**Issued** 11/12/2024

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Client:	Mirvac Residential (NSW) Developments Pty Ltd	Surveying
lass of all	11 (10 (000 )	Asset Recording
Issued:	11/12/2024	Civil Engineering
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		Traffic & Transport Engineering
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## **Revision Table**

REV	DESCRIPTION	DATE	AUTHORISED
А	Draft for Client Review	9/12/2024	IC
В	Final for DA Lodgement	11/12/2024	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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Figure 1: Aerial Photograph

#### 1 INTRODUCTION

#### 1.1 Overview

Beveridge Williams has been engaged by Mirvac Residential (NSW) Developments Pty Ltd (Mirvac) to prepare the Statement of Environmental Effects (SEE) for the construction of 11 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. C, dated 11 November 2024 (Stage 2A and 2B)
- **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
- Appendix D: Heritage Impact Assessment by Extent Heritage, dated September 2024, Final 0.2
- Appendix E: Estimated Development Cost by Mirvac, dated 2 December 2024
- Appendix F: Waste Management Plan by Mirvac, dated 23 October 2024
- Appendix G: BASIX Certificate No. 1775990M, prepared by Efficient Living, dated 4 December 2024 and BASIX Certificate No. 1772592M, prepared by Efficient Living, dated 12 November 2024
- Appendix H: Landscape Plans by Green Trees, Rev A, Dated 11 December 2024
- Appendix I: Architectural Plans by Mirvac, dated 29 November 2024, Rev. B

### 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.



#### 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 a 12 lot subdivision (Refer to Appendix A). This application is currently under consideration by Council and proposes to create Lot 1999 and Lot 2001 to 2011. Specifically, this DA only relates to Lots 2001 to 2011 proposed under this DA. No works are proposed on the residue Lot 1999 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 Consent 1512/2023 was issued 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 (DA-1118/2024) has been lodged and is currently under assessment. This DA seeks consent for an 18-lot subdivision, with two residue lots proposed and 16 lots fronting Ashford Avenue.



- A Development Application (DA-1119/2024) has been lodged and is currently under consideration. This DA seeks consent for the construction of 16 dwelling houses on the Stage 1 residential lots.
- A Development Application (PAN-476751) has been lodged and is currently under consideration. This DA seeks consent for a 12 lot subdivision, with a residue lot proposed and 11 lots fronting Ashford Avenue.

The 11 residential lots proposed will accommodate the 11 dwellings proposed under this Development Application.

#### **3 THE PROPOSAL**

The proposal seeks consent for the construction of 11 dwelling houses on 11 individual lots, being Lots 2001 to 2011. 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 in the rear yards to provide shade and temperature control in these outdoor areas.

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 (Stage 2). 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/2024/1301 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 f	or Consideration
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Sec	ction 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 detailed 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 <b>Section 4.4</b> , 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 <b>4,5</b> 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 <b>Section 4.6</b> , 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 notification 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.

#### Provisions of Environmental Planning Instruments (EPIs) 4.3

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 rainwater tanks which will allow for reuse on site, with the overflow connected 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 2001 to 2011 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 11 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 7: Height of Building



Figure 9: Land Reservation Acquisition

Figure 6: Floor Space Ratio



Figure 8: Heritage Items







Figure 10: Terrestrial Biodiversity



Figure 12: Acid Sulfate Soils

#### Table 2: LEP Summary of Provisions

CLAUSE	REQUIREMENT	COMMENT
1.3	Land to which Plan applies	The site is located within the area subject
	This Plan applies to the land identified on	to the Canterbury-Bankstown Local
	the Land Application Map.	Environmental Plan 2023.
1.6	Consent Authority	The consent authority for this application
	The consent authority for the purposes of this	will be Canterbury-Bankstown Council,
	Plan is (subject to the Act) the Council.	unless it is triggered(10 or more
		submissions) to be determined by the
		Local Planning Panel.



2.3	Zone Objectives and Land Use Table	The proposal satisfies the relevant zone
	Dwelling houses are a permissible land use in	objectives as it is providing for residential
	the R1 General Residential zone, with the	dwelling in a manner and context that
	applicable objectives beina;	compliments the surrounding greas, with
	<ul> <li>To provide for the housing needs of the</li> </ul>	no adverse impacts arisina from the
	community.	development.
	<ul> <li>To provide for a variety of housing types and</li> </ul>	•
	densities.	The development is permissible as at
	<ul> <li>To enable other land uses that provide</li> </ul>	completion of the development, there will
	facilities or services to meet the day to day	be a dwelling house per lot, therefore the
	needs of residents.	land use is a dwelling house, which is
	<ul> <li>To allow development that is of a scale and</li> </ul>	permitted in the R1 General Residential
	nature that provides an appropriate transition	Zone
	to adioining land uses.	
4.1B	Minimum lot sizes and special provisions for	The proposal is for dwelling houses
	certain dwellinas	adioining Ashford Avenue, within Area 8.
	(2) Development consent must not be granted	Any dwelling house adjoining Ashford
	to development on land specified in Column 1	Avenue is to have a lot size of 300m <sup>2</sup> . All
	of the table to this subclause for a purpose	lots exceed 300m <sup>2</sup> and therefore satisfy this
	specified in Column 2 unless—	clause.
	(a) the lot is at least the size specified in	
	Column 3. and	
	(b) the width of the lot at the front building line	
	is at least the width specified in Column 4.	
4.3	Height of Buildings	The Height of Building for this portion of the
	(2) The height of a building on any land is not	site subject to this application is 9m. This
	to exceed the maximum height shown for the	9m height limit is not exceeded, with
	land on the Height of Buildings Map.	individual lot heights provided below;
		Lot 2001: 7.6m
		Lot 2002: 6.8m
		Lot 2003: 7.6m
		Lot 2003: 7.6m Lot 2004: 7m
		Lot 2003: 7.6m Lot 2004: 7m Lot 2005: 6.8m
		Lot 2003: 7.6m Lot 2004: 7m Lot 2005: 6.8m Lot 2006: 7m
		Lot 2003: 7.6m Lot 2004: 7m Lot 2005: 6.8m Lot 2006: 7m Lot 2007: 6.7m Lot 2008: 7.6m
		Lot 2003: 7.6m Lot 2004: 7m Lot 2005: 6.8m Lot 2006: 7m Lot 2007: 6.7m Lot 2008: 7.6m Lot 2009: 6.7m
		Lot 2003: 7.6m Lot 2004: 7m Lot 2005: 6.8m Lot 2006: 7m Lot 2007: 6.7m Lot 2008: 7.6m Lot 2009: 6.7m Lot 2010: 6.9m
		Lot 2003: 7.6m Lot 2004: 7m Lot 2005: 6.8m Lot 2006: 7m Lot 2007: 6.7m Lot 2008: 7.6m Lot 2009: 6.7m Lot 2010: 6.9m Lot 2011: 6.9m
4.4	Floor Space Ratio	Lot 2003: 7.6m Lot 2004: 7m Lot 2005: 6.8m Lot 2006: 7m Lot 2007: 6.7m Lot 2008: 7.6m Lot 2009: 6.7m Lot 2010: 6.9m Lot 2011: 6.9m The Floor Space Ratio for the portion of the
4.4	<b>Floor Space Ratio</b> The maximum floor space ratio for a building on	Lot 2003: 7.6m Lot 2004: 7m Lot 2005: 6.8m Lot 2006: 7m Lot 2007: 6.7m Lot 2008: 7.6m Lot 2009: 6.7m Lot 2010: 6.9m Lot 2011: 6.9m The Floor Space Ratio for the portion of the site subject to this application is 0.5:1. This
4.4	Floor Space Ratio The maximum floor space ratio for a building on any land is not to exceed the floor space ratio	Lot 2003: 7.6m Lot 2004: 7m Lot 2005: 6.8m Lot 2006: 7m Lot 2007: 6.7m Lot 2009: 6.7m Lot 2009: 6.7m Lot 2010: 6.9m Lot 2011: 6.9m 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
4.4	<b>Floor Space Ratio</b> 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	Lot 2003: 7.6m Lot 2004: 7m Lot 2005: 6.8m Lot 2006: 7m Lot 2007: 6.7m Lot 2008: 7.6m Lot 2009: 6.7m Lot 2010: 6.9m Lot 2011: 6.9m 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;
4.4	<b>Floor Space Ratio</b> 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.	Lot 2003: 7.6m Lot 2004: 7m Lot 2005: 6.8m Lot 2006: 7m Lot 2007: 6.7m Lot 2009: 6.7m Lot 2009: 6.7m Lot 2010: 6.9m Lot 2011: 6.9m 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; Lot 2001: 0.475:1
4.4	<b>Floor Space Ratio</b> 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.	Lot 2003: 7.6m Lot 2004: 7m Lot 2005: 6.8m Lot 2006: 7m Lot 2007: 6.7m Lot 2008: 7.6m Lot 2009: 6.7m Lot 2010: 6.9m Lot 2011: 6.9m 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; Lot 2001: 0.475:1 Lot 2002: 0.479:1
4.4	<b>Floor Space Ratio</b> 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.	Lot 2003: 7.6m Lot 2004: 7m Lot 2005: 6.8m Lot 2006: 7m Lot 2007: 6.7m Lot 2008: 7.6m Lot 2009: 6.7m Lot 2010: 6.9m Lot 2011: 6.9m 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; Lot 2001: 0.475:1 Lot 2002: 0.475:1 Lot 2003: 0.475:1
4.4	<b>Floor Space Ratio</b> 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.	Lot 2003: 7.6m Lot 2004: 7m Lot 2005: 6.8m Lot 2006: 7m Lot 2007: 6.7m Lot 2009: 6.7m Lot 2010: 6.9m Lot 2011: 6.9m 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; Lot 2001: 0.475:1 Lot 2002: 0.479:1 Lot 2003: 0.475:1 Lot 2004: 0.463:1 Lot 2005: 0.4(41)
4.4	<b>Floor Space Ratio</b> 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.	Lot 2003: 7.6m Lot 2004: 7m Lot 2005: 6.8m Lot 2006: 7m Lot 2007: 6.7m Lot 2008: 7.6m Lot 2009: 6.7m Lot 2010: 6.9m Lot 2011: 6.9m 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; Lot 2001: 0.475:1 Lot 2002: 0.479:1 Lot 2003: 0.475:1 Lot 2004: 0.463:1 Lot 2005: 0.464:1 Lot 2005: 0.464:1
4.4	<b>Floor Space Ratio</b> 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.	Lot 2003: 7.6m Lot 2004: 7m Lot 2005: 6.8m Lot 2006: 7m Lot 2007: 6.7m Lot 2008: 7.6m Lot 2009: 6.7m Lot 2010: 6.9m Lot 2011: 6.9m 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; Lot 2001: 0.475:1 Lot 2002: 0.479:1 Lot 2003: 0.475:1 Lot 2004: 0.463:1 Lot 2005: 0.464:1 Lot 2006: 0.463:1 Lot 2007: 0.495:1
4.4	<b>Floor Space Ratio</b> 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.	Lot 2003: 7.6m Lot 2004: 7m Lot 2005: 6.8m Lot 2006: 7m Lot 2007: 6.7m Lot 2009: 6.7m Lot 2010: 6.9m Lot 2011: 6.9m 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; Lot 2001: 0.475:1 Lot 2002: 0.479:1 Lot 2003: 0.475:1 Lot 2004: 0.463:1 Lot 2005: 0.464:1 Lot 2006: 0.463:1 Lot 2007: 0.495:1 Lot 2007: 0.495:1 Lot 2008: 0.476:1



		Lat 2000: 0 402:1
		Lof 2010: 0.459:1
		Lof 2011: 0.461:1
4.5	Calculation of Floor Space Ration and Site Area	As the dwellings are located on proposed
	This clause clarifies/provides guidance on the	lots and are reliant upon the preceding
	classification of the site area in relation to	subdivision, the proposed lot areas have
	determining Floor Space Ratio.	been considered for the determination of
		FSR. I.e. Lot 2001 has a site area of $384.9m^2$ ,
		it has a GEA of $183m^2$ , therefore the ESR is
		0 475.1
5.10	Heritage Conservation	The site is not heritage listed or contain an
•••••	is required to be considered due to the	item of beritage significance; however, the
	provimity of pearby beritage listed items	site is bounded by a locally listed beritage
	proximity of neuroy neuroge isred herrs.	item: Milporra Soldiar Sottlement (formar)
		item: Milperra Solaler Settlement (tormer)
	Subclause (5) states that the consent authority	Item No.218 which relates to the street
	may require a heritage assessment before	alignment of the former Milperra Soldiers
	granting consent to any development on land	Settlement.
	that is in the vicinity of land where a heritage	
	item is located or on land within a heritage	The development does not intend any
	conservation area.	works within the Ashford Avenue frontage,
		as all facilitating works are proposed as
		part of the preceding subdivision.
5.21	Flood Planning	Council can be satisfied that Development
	is required to be considered as the site is	consent can be aranted to the proposed
	partially located within the Flood Planning Area	subdivision as:
		(2)(a) the development is compatible with
	Subclause (2) states that Development consent	the flood function and behaviour of the
	must not be granted to development on land	land noting that the site is flood affected
	the consent authority considers to be within the	by way of flood storage, magning the
	flood planning grog uplays the consent	minor earthworks required would not
	nood planning died onless me consern	import up on the fleed behaviour
	authority is satisfied the development—	Impact upon the flood benaviour,
	(a) is compatible with the flood function and	especially as compensatory storage has
	behaviour on the land, and	been provided as part of the preceding
	(b) will not adversely affect flood behaviour in	sudivision. Further, the pads of the
	a way that results in detrimental increases in the	dwellings are located above the 1% AEP
	potential flood affectation of other	plus freeboard.
	development or properties, and	(2)(b) as compensatory storage is being
	(c) will not adversely affect the safe	provided on site, with the site being
	occupation and efficient evacuation of people	affected by flood storage, there will be no
	or exceed the capacity of existing evacuation	impacts upon adjoining properties, by way
	routes for the surrounding area in the event of a	of increased flooding or additional risk
	flood and	(2)(c) all lots are located above the 1%
	(d) incorporates appropriate measures to	AEP, with all dwellings providing a 500mm
	manage risk to life in the event of a flood, and	freeboard to the dwellings which will
	(a) will not advargely affect the environment of	neebourd to the dwellings, which will
	e, will not daversely direct the environment or	provide a suitable evacuation route or
	cause avoiaable erosion, siltation, destruction	sneiter in place if required.
	ot riparian vegetation or a reduction in the	(2)(d) All tuture lots have sufficient
	stability of river banks or watercourses.	alternate access from the proposed lots to
		a public road system which is capable of
		safe and efficient evacuation if required.



6.1	<b>Acid Sulphate Soil</b> This clause sets out requirements for sites that are mapped as being subject to Acid Sulphate Soils.	<ul> <li>(2) (e) Appropriate measures will be installed and maintained throughout the construction phase to ensure there is no erosion, siltation or destruction of riparian vegetation. Further, operationally these works will be stabilised through landscaping, drain to detention basins and would have no downstream impacts.</li> <li>All the dwellings are mapped as being subject to Class 5 Acid Sulphate Soil. No earthworks are proposed which will lower the water table to below 1m AHD is</li> </ul>
6.2	<i>Earthworks</i> This clause sets out requirements associated with earthworks, to ensure no detrimental impact arises from earthworks.	proposed. 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, minimal earthworks are required through this application.
6.3	Stormwater Management and Water Sensitive Urban Design This clause sets out requirements associated with minimising the impact of urban stormwater on the environment.	The proposal is reliant upon the preceding subdivision which will provide a basin for water quality and quantity control.
6.9	<ul> <li>Essential Services</li> <li>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— <ul> <li>(a) the supply of water,</li> <li>(b) the supply of electricity,</li> <li>(c) the disposal and management of sewage,</li> <li>(d) stormwater drainage or on-site conservation,</li> <li>(e) waste management,</li> <li>(f) suitable vehicular access.</li> </ul> </li> </ul>	Development consent can be granted to the development as suitable arrangements have been made for all services as; a) potable water connections will be provided to each lot via the preceding subdivision. b) electricity connections will be provided to each lot via the preceding subdivision. c) sewer connections will be provided to each lot via the preceding subdivision d) a drainage easement and associated pit will be provided for each lot via the preceding subdivision e)suitable bin storage areas are provided behind the building line, with Councils domestic waste service to serve the site f) suitable vehicular access to the dwellings are provided from Ashford Avenue via a sealed all weather access driveway, which meets Australian Standards.



6.34 or	Development at 2 and 2A Bullecourt Avenue,	This application only proposes 11 dwelling
Addition	Milperra	houses, which results in the total for the
al Use	(2) Development consent must not be granted	entire site being 27 dwellings.
Clause	to development for the purposes of residential	Stage 1 Dwellings: 16 Dwellings
	accommodation on land to which this clause	Stage 2 Dwellings: 11 Dwellings
	applies that will result in more than 430	
	dwellings on the land.	This is below the upper limit of 430
		dwellings for the site.

#### 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			
<ul> <li>1.1 The design of development must:</li> <li>(a) respond to the setting, setbacks, form, scale and style of nearby places of heritage significance;</li> <li>(b) maintain significant views to and from the place of heritage significance;</li> </ul>	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.	Yes		
<ul><li>(c) ensure adequate setbacks from the site of the place of heritage significance to retain its visual setting;</li><li>(d) retain original or significant landscape features that are associated with the place of</li></ul>	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.			



Section 1 – Development in t	he Vicinity of Places of heritage Significance	
Control	Proposal	Compliance
	Subdivision	
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.		



#### 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 <b>Table 5.</b>	The controls in Table 5 of the DCP have been assessed below, please refer to the Table 5 – Compliance Assessment below.	Yes
<ul><li>C2 0m side setback controls for attached dwellings are as follows:</li><li>a. Permitted for a maximum length of 21 metres on the ground floor.</li><li>b. Permitted for a maximum length of 16 metres for the 2nd and 3rd storey.</li><li>c. All eaves and gutters will be contained within the lot boundary of the associated dwelling.</li></ul>	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. All dwellings have a pedestrian access from the primary road, which is visible.	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. 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.	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 2010 & 2011) only have a single frontage, being Ashford Avenue, which is appropriately addressed through the building design. Lot 2010 & 2011 address the stub associated with Road No. 1 through windows, different colours, materials, articulation and building elements facing the road.	Yes			
C7. Garage doors must comply with Chapter 3.2 Residential Lots, 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 2004, 2005 & 2006 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 2004, 20055 & 2006 have a single garage have a crossover width of 2.6m.	Yes			
<ul> <li>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:</li> <li>a. 35% tree canopy coverage to the street is provided, including all lots with primary frontage to the street.</li> <li>b. Landscaping should consist of a mix of high canopy trees, and low under-storey planting.</li> <li>Note: The average applies to the lots that form part of a single DA that proposes construction for the dwellings.</li> </ul>	Despite this application proposing multiple dwellings under the one application, 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.	Lot 2010 and 2011, which are the corner lots have 50% of the secondary street frontage as 1.8m high fencing, noting the fencing has a length of 15.5m, while the lots are 31m deep.	Yes			
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. The exception is Lot 2001 and 2003, despite this those houses present an attractive façade to the street and the garages are not dominant features, noting they have a large setback, recessive materials and articulating elements elsewhere in the façade which are the visually interesting architectural elements.	Yes , on merit
<ul> <li>C17. Dwellings can provide an articulation zone as follows:</li> <li>a. 1.5 metres beyond front building line and a maximum of 25% of lot width.</li> <li>b. This zone permits additional building elements within this zone such as entry features and porticos, balconies, decks, verandas, blade walls and bay windows</li> <li>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.</li> </ul>	A majority of the dwellings articulation elements comply with the front setback control. Only a few architectural elements which are articulating such as porch post or gables encroach into the articulation zone by 200mm.	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	24m <sup>2</sup> (min dimension	25%		
				Upper Floor: 6m	of 3m)			
Lot 2001	7.5m	N/A	1.06m	Ground Floor: 7.47m	125.7m <sup>2</sup>	179.8m <sup>2</sup> or 46.7%		
			0.92m	Upper Floor: 10.47m				
Lot 2002	7.25m	N/A	1.06m	Ground Floor: 7.72m	128.7m <sup>2</sup>	180.4m <sup>2</sup> or 46.9%		
			9.2m	Upper Floor: 10.72				
Lot 2003	6.85m	N/A	1.06m	Ground Floor: 8.12m	133.5m <sup>2</sup>	182.9m <sup>2</sup> or 47.5%		
			0.92m	Upper Floor: 11.12m				
Lot 2004	5.5m	N/A	1.4m	Ground Floor: 8.1m	111m <sup>2</sup>	175.9m <sup>2</sup> or 54.9%		

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)		
			0.92m	Upper Floor: 11.1m				
Lot 2005	5.5m	N/A	1.4m 0.92m	Ground Floor: 8.1m Upper Floor: 11.1m	111m <sup>2</sup>	175.2m <sup>2</sup> or 54.6%		
Lot 2006	5.5m	N/A	1m 1.32m	Ground Floor: 8.1m Upper Floor: 11.1m	111m <sup>2</sup>	175.9m <sup>2</sup> or 54.9%		
Lot 2007	6.5m	N/A	0.92m 0.97m	Ground Floor: 8.47m Upper Floor: 11.47m	137m <sup>2</sup>	185m <sup>2</sup> or 48%		
Lot 2008	6.85m	N/A	1.06m 0.92m	Ground Floor: 8.12m Upper Floor: 11.12m	133.5m <sup>2</sup>	183.5m <sup>2</sup> or 47.7%		
Lot 2009	6.7m	N/A	1.06m 0.92m	Ground Floor: 8.27m Upper Floor: 11.27m	135.4m <sup>2</sup>	183.7m <sup>2</sup> or 47.7%		
Lot 2010	6.95m	2.4m	0.92m	Ground Floor: 6.73m Upper Floor: 9.73m	138.7m <sup>2</sup>	234.36m <sup>2</sup> or 52.5%		
Lot 2011	6.45m	2.3m	0.92m	Ground Floor: 7.23m Upper Floor: 10.23m	145.8m <sup>2</sup>	237m <sup>2</sup> or 52.77%		

4.3 Landscape and Private Open Space						
Control	Proposal	Compliance				
C1. Provide landscaped area and private open space as required by <b>Table 5.</b>	The controls in Table 5 of the DCP have been assessed above, please refer to the Table 5 – Compliance Assessment above.	Yes				
	All proposed dwellings meet and exceed the minimum requirements for landscaping and Private Open Space.					
<ul> <li>C2. Landscaped Area located behind the rear of the principal dwelling is to have a minimum width dimension of 1.5m, noting:</li> <li>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.</li> <li>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.</li> </ul>	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	
C3. The principal private open space is to be provided behind the front building line.	All ti	he Princi	pal private	Open Spaces are	located within th	e rear yards.	Yes	
C4. A minimum of one (1) locally indigenous tree must be provided within the front setback and one (I) 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 <b>Table 4.</b>	Landsc one i	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.						
C5. Despite <b>C2</b> 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		
<ul> <li>C6. Landscaping for attached dwellings is as follows:</li> <li>a. For lots less than 200m<sup>2</sup>, minimum allocation of site area for landscaping is 15% of the total site area.</li> <li>b. For lots equal to or greater than 200m<sup>2</sup>-250m<sup>2</sup>, minimum 20% of total site area.</li> <li>c. For lots greater than 250m<sup>2</sup>, minimum 25% of total site area.</li> </ul>	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:	All lots have a front landscaped area that exceeds 40%.					40%.	Yes	
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.		Lot Number 2001 2002 2003 2004 2005 2006 Lot Number 2007 2008 2009 2010 2011	Frontyard Area 87.87 m <sup>2</sup> 84.02 m <sup>2</sup> 87.77 m <sup>2</sup> 59.20 m <sup>2</sup> 57.31 m <sup>2</sup> 59.20 m <sup>2</sup> Frontyard Area 84.21 m <sup>2</sup> 87.87 m <sup>2</sup> 84.86 m <sup>2</sup> 97.23 m <sup>2</sup> 91.72 m <sup>2</sup>	Landscaped Frontyard Area 47.06 m <sup>2</sup> 44.89 m <sup>2</sup> 42.25 m <sup>2</sup> 37.37 m <sup>2</sup> 36.70 m <sup>2</sup> 37.77 m <sup>2</sup> RONT LANDSCAPED AREA S Landscaped Frontyard Area 40.52 m <sup>2</sup> 42.95 m <sup>2</sup> 40.37 m <sup>2</sup> 52.98 m <sup>2</sup> 49.93 m <sup>2</sup>	Landscaped Frontyard (min 40%) 53.55% 53.42% 48.14% 63.13% 64.04% 63.81% SCHEDULE Landscaped Frontyard (min 40%) 48.11% 48.88% 47.57% 54.48% 54.43%	Complies (min 40%) Yes Yes Yes Yes Yes Complies (min 40%) Yes Yes Yes Yes Yes		
C8. Exceptions to landscaped area in front setback:				Not applicable	e.		N/A	

4.3 Landscape and Private Open Space					
Control	Proposal	Compliance			
<ul> <li>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.</li> <li>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.</li> <li>Landscaping should consist of a mix of high canopy trees, and low under-storey planting.</li> </ul>					
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 <b>Appendix A</b> : <b>Matters to be addressed in Cumberland Plain Woodland</b> <b>Management (CI Environmental Conservation zoned</b> <b>land)</b> are imposed as conditions of any consent that may be issued. <b>Note:</b> See <b>Appendix B - Glossary of Terms</b> for definition of "Landscaped Area" and "Private Open space"	Not applicable	N/A			

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.	Yes			
	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.				
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 2006 and Lot 2011 may impact/be impacted upon future/previous 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			

4.4 Solar Access						
Control	Proposal	Compliance				
C3. Where the lot width is 6m or less, the minimum period of solar access on the 21 <sup>st</sup> 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 ACCORD WITH THE DCP POS FROM 8:00AM - 4:00	OF SOLAR COVERAGE IN MIN 3 HRS OF 50% OF THE PM	
0_Lot No	0_House Type	8am	9am	10am	11am	12pm	1pm	2pm	3pm	4pm	Solar Compliance*	
2001	WS-28b-220AR-F2-870	75.0 m <sup>2</sup>	102.1 m <sup>2</sup>	107.3 m <sup>2</sup>	106.9 m <sup>2</sup>	95.7 m <sup>2</sup>	81.01 m <sup>2</sup>	63.9 m <sup>2</sup>	42.8 m²	34.6 m <sup>2</sup>	Yes	
2002	WS-28b-220AR-F7-870	71.4 m <sup>2</sup>	103.4 m <sup>2</sup>	104.4 m <sup>2</sup>	96.5 m <sup>2</sup>	82.4 m <sup>2</sup>	63.44 m²	34.6 m <sup>2</sup>	0.0 m²	0.0 m <sup>2</sup>	Yes	
2003	WS-28b-220AR-F3-870	85.0 m <sup>2</sup>	111.3 m <sup>2</sup>	109.8 m <sup>2</sup>	101.1 m <sup>2</sup>	86.7 m <sup>2</sup>	67.70 m <sup>2</sup>	36.8 m <sup>2</sup>	0.0 m <sup>2</sup>	0.0 m <sup>2</sup>	Yes	
2004	WS-24-217G-F1-870	72.4 m <sup>2</sup>	92.7 m <sup>2</sup>	92.8 m <sup>2</sup>	83.8 m <sup>2</sup>	73.3 m <sup>2</sup>	58.12 m <sup>2</sup>	34.2 m <sup>2</sup>	0.0 m <sup>2</sup>	0.0 m <sup>2</sup>	Yes	
2005	WS-08-217H-F11-870	77.7 m <sup>2</sup>	94.6 m <sup>2</sup>	94.0 m <sup>2</sup>	89.1 m²	73.6 m <sup>2</sup>	58.71 m <sup>2</sup>	34.8 m <sup>2</sup>	0.0 m <sup>2</sup>	0.0 m <sup>2</sup>	Yes	
2006	WS-24-217G-F1-870	84.1 m <sup>2</sup>	96.8 m²	94.4 m²	83.8 m²	73.4 m <sup>2</sup>	58.37 m²	33.3 m <sup>2</sup>	0.0 m <sup>2</sup>	0.0 m <sup>2</sup>	Yes	

		SOLAR COVERAGE IN POS							*NOTE : CALCULATIONS OF COVERAGE IN ACCORD WI DCP MIN 3 HRS OF 50% OF POS FROM 8:00AM - 4:00PM	F SOLAR ITH THE F THE M		
0_Lot No	0_House Type	8am	9am	10am	11am	12noon	1pm	2pm	3pm	4pm	Solar Compliance*	]
2007	WS-29b-221O-F6-870	132.4 m <sup>2</sup>	132.3 m <sup>2</sup>	127.8 m <sup>2</sup>	118.6 m <sup>2</sup>	108.2 m <sup>2</sup>	92.2 m²	74.5 m²	49.9 m²	38.6 m <sup>2</sup>	Yes	
2008	WS-28b-220AR-F2-870	128.4 m <sup>2</sup>	127.4 m <sup>2</sup>	120.6 m <sup>2</sup>	106.6 m <sup>2</sup>	89.2 m²	70.0 m <sup>2</sup>	41.1 m²	0.0 m <sup>2</sup>	0.0 m <sup>2</sup>	Yes	
2009	WS-29b-221O-F5-870	129.5 m <sup>2</sup>	129.1 m <sup>2</sup>	120.1 m <sup>2</sup>	103.3 m <sup>2</sup>	89.0 m²	69.4 m²	38.8 m²	0.0 m <sup>2</sup>	0.0 m <sup>2</sup>	Yes	
2010	WS-33b-223AF-F2-870	138.5 m²	137.0 m <sup>2</sup>	129.7 m <sup>2</sup>	113.6 m <sup>2</sup>	90.3 m²	66.5 m²	25.2 m²	0.0 m²	0.0 m <sup>2</sup>	Yes	
2011	WS-33-223AE-F1-870	146.0 m <sup>2</sup>	146.1 m <sup>2</sup>	141.6 m <sup>2</sup>	132.9 m²	121.4 m <sup>2</sup>	102.8 m <sup>2</sup>	81.4 m²	58.7 m²	51.3 m <sup>2</sup>	Yes	

Figure 13: Solar Coverage extract from Architectural Plans

4.5 Parking							
Control	Proposal	Compliance					
C1. Vehicle circulation across the subject site is to comply with <b>AS2890.1.</b>	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-streetcar parking space.	All dwellings provide a minimum of one parking space behind the building line, being within the garage, which is covered.	Yes					

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4.5 Parking							
Control	Proposal	Compliance					
C3. Garage doors are to have the following minimum setbacks as stipulated in <b>Table 6.</b>	All the dwellings have a garage setback of 6.5m or greater. 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.	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.	Lot 2010 and Lot 2011 are corner lots. It has no frontage to a rear laneway. In this instance, the parking has been nominated on the Ashford Avenue frontage for consistency with the facades along Ashford Avenue and also due to the DCP requirement that three parking spaces be provided on Road No.1, which aligns with the intent for this entry road to be a tree lined Avenue with no driveways.	Yes					
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					
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 2.6m, 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 Base Building National Australian Built Environment Rating System (NABERS) Energy	All the dwellings are proposed on the R1 zoned portion of the site.	N/A



4.6 Energy						
Control	Proposal	Compliance				
Commitment Agreement of 5.5 stars with the NSW Office of						
C2. This NARERS Energy Commitment Agreement must be	No NABERS Commitment is required for this application	N/A				
formalised prior to the issue of any construction certificate being		N/ A				
issued for the approved development.						
C3. The use, location and placement of photovoltaic solar panels is	All the dwellings are proposed to have solar panels, which are all orientated	Yes				
to consider the potential permissible buildings on adjacent	to the north and will receive optimal sunlight.					
properties.						
C4. Proposals for new buildings, alterations and additions and	Solar access to the Solar Panels will not be impacted upon by tree plantings	Yes				
major tree plantings should aim to maintain the solar access of	with access maintained.					
existing photovoltaic solar panels having regard to the						
performance of, efficiency, economic viability and reasonableness						
of their location.						

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)	The dwellings encourage natural cooling systems as cross ventilation is facilitated.	Yes						



4.7 Sustainability							
Control	Proposal	Compliance					
b. Natural cooling sources, or c. Hybrid cooling systems.							
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 between Canterbury-Bankstown Council, Western Sydney University and Mirvac has been executed. This document administers commitments 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 11 dwellings are provided below.

- Local Roads (Item 2): No Local Roads are being dedicated under these dwellings, these dwellings will utilise an existing public road for access.
- Local Roads (Item 5): No Local Roads are being dedicated under these dwellings, these dwellings will utilise an existing public road for access.
- Shared Cycleway (Item 6): A portion of the shared cycleway will be constructed and dedicated under the preceding subdivision, it will be located within the road reserve of Road No. 1. Only the section of cycleway that has direct frontage to the proposed lots will be constructed and dedicated under the previous application.
- Local Roads Footpath (Item 11): 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.
- 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 placed underground prior to the Final OC of the dwelling along Ashford Avenue. These 11 dwelling houses do not release/deliver all the dwelling houses along Ashford Avenue, therefore it does not need to be completed at this point in time.
- Ashford Avenue Footpath (Item 13): Same as Item 11 above
- Affordable Housing Contribution (Item 15): This amount is payable under the 12-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 2001 to 2011 being created pursuant to the Stage 2 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 to each dwelling house.

#### 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 the dwelling houses, 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 11 residential dwellings on Proposed Lot 2001 to 2011 created pursuant to the Stage 2 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



#### **PROPOSED PLAN OF SUBDIVISION (STAGE 2) APPENDIX A:**





## **STAGE 2A**

ALL DIMENSIONS AND AREAS ARE SUBJECT TO FINAL DESIGN AND SURVEY

	SCALE ON ORIGIN	AL DRAWING AT 1:2500
	1	
EYOR:	BC	PROJECT No.
N:	DH	2301879
KED:	BC	
EY DATE:	N/A	
EFERENCE:	2301879(2A)-PS	23018/9(2)-PS
SHEET 1 (	OF 2	





(ZEE2) EASEMENT FOR ELECTRICITY AND OTHER PURPOSES (DP1144378) TO BE EXTINGUISHED





MGA SCIMS



1999

VER	BY	AMENDMENTS	DATE		CLIENT:	DETAILS:		SURVEY
A	BC	ORIGINAL ISSUE	28-08-2024				SCALE	DRAWN
В	SG	AMENDMENT TO EASEMENT	14-10-2024	Beveridge Williams		PLAN OF SURVEY OF LOT	1:500	CHECKE
				Development and Infrastructure Consultants		2000 IN DP(UNREG.)		SURVEY
					miniar	CURRENTLY LOT 2 IN DP1291984	SHEET SIZE	CAD RE
$\vdash$				(02) 46255055 www.beveridgewilliams.com.au		( )	$\int A^3$	

## **STAGE 2B**

NOTE: IT IS PROPOSED TO DEDICATE ROADS TO COUNCIL AS PUBLIC ROAD

## (W) AREA BENEFITED BY EASEMENT TO DRAIN WATER DP(UNREG.)(ZA1) EASEMENT TO DRAIN WATER 1.5 WIDE DP(UNREG.)


#### **VOLUNTARY PLANNING AGREEMENT APPENDIX B:**



Canterbury-Bankstown Council

Mirvac Residential (NSW) Developments Pty Ltd

Western Sydney University

# Voluntary Planning Agreement

2 and 2a Bullecourt Avenue, Milperra WSU Bankstown Campus

3448-597-843222

Ref. LKC/MN/9177280 © Corrs Chambers Westgarth

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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 Environmental Planning and Assessment Act 1979 (NSW).

Affordable Housing Contribution	means the payment of a Monetary Contribution to Council for affordable housing purposes, as described in <b>Part C</b> of <b>Schedule 2</b> .
Agreed Contribution Value	means the estimated value for each Development Contribution as identified in <b>Column 3</b> of <b>Schedule 2</b> , and to be indexed quarterly as follows:
	<ul> <li>(a) in respect of a Development Contribution comprising the Dedication Land, the Milperra Community</li> <li>Contribution and the Affordable Housing Contribution – indexed in accordance with the Consumer Price Index</li> <li>(All Groups Sydney) published by the Australian Bureau</li> <li>of Statistics on and from the date of this Agreement,</li> </ul>
	(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.
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.

page 2

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Bank Guarantee	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:		
	(a)	one	of the following trading banks:
		(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
	(b)	any o in its	other financial institution approved by Council absolute discretion.
Busîness Day	a da <u>y</u> in Sy or pu 27, 2	y on w dney, Iblic h 8, 29,	which banks are open for business generally and which is not a Saturday, Sunday or bank oliday in Sydney and specifically excluding 30 and 31 December.
Certificate of Final Completion	mear Deve Cour relate acco	ns a o eloper ncil, th es hav rdance	ertificate in writing issued by Council to the to effect that, in the reasonable opinion of e Works in Kind to which the certificate ve been completed by the Developer in e with this Agreement.
Certificate of Practical Completion	mean Deve of Co exce	ns a c eloper ouncil, pt for	ertificate in writing issued by Council to the to the effect that, in the reasonable opinion construction of a Works in Kind is complete, minor omissions and defects:
	(a)	whic bein inter	h do not prevent the Works in Kind from g reasonably capable of being used for their nded purpose; and
	(b)	the r conv	ectification of which will not prejudice the renient use of the Works in Kind.
Claim	inclu Ioss,	des a cost,	claim, demand, remedy, suit, injury, damage, liability, action, proceeding or right of action.
CLM Act	mea (NS\	ns the N).	Contaminated Land Management Act 1997
Contamination	hast	the sa	me meaning as in the CLM Act.

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. <b>Dedicate</b> 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	with respect to:		
<b>Period</b>	(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		
	<ul> <li>(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 401<sup>st</sup> 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.</li> </ul>		
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 <b>7.9(a)</b> .		
Deferred Works Security	has the meaning given to that expression in <b>clause 14.4(a)</b> .		

Development	the de Land permi which involv dwell neigh	evelopment (within the meaning of the Act) of the authorised by a Development Consent and itted as a consequence of the Instrument Change, a, at the date of this Agreement, is proposed to ve the construction of up to 430 residential ings and provision of local open space, a bourhood centre and drainage facilities.
Development Consent	has ti Act a Coun	ne same meaning given to that expression in the nd includes any development consents granted by cil in respect of the Development.
Development Contributions	the co Deve Sche	ontributions to be provided by the Landowner and loper in accordance with clause 5 and dule 2.
Dwelling	has ti	ne same meaning as in the LEP.
Explanatory Note	The e	explanatory note prepared pursuant to section 205 Regulation and attached at Annexure D.
General Security	mear equal Deve accor Sydn Statis	as Security in the amount of \$581,968.53, which is I to 2.5% of the Agreed Contributions Value of the Iopment Contributions, indexed quarterly in rdance with the Consumer Price Index (All Groups ey) published by the Australian Bureau of stics on and from the date of this Agreement.
Instrument Change	mear the P public Gaze	ns an amendment to the LEP as a consequence of lanning Proposal, which is given effect by the cation of a new LEP in the NSW Government ette.
Insurance Bond	mear	ns an irrevocable and unconditional undertaking:
	(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,
	to pa amoi dema	y the face value of that undertaking (being such unt as is required under this Agreement) on and.
Land	mear situa curre Bank resul	ns Lot 105 DP1268911 and Lot 1 DP101147, ted at 2 and 2a Bullecourt Avenue, Milperra and ently known as the Western Sydney University astown Campus, including any land created as a t of the subdivision or consolidation of that land.

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 <b>Annexure A</b> .		
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	<ul> <li>(a) in relation to a Works in Kind not referred to in</li> <li>(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 401<sup>st</sup> 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</li> </ul>		
	(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.		
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 <b>Part C</b> of <b>Schedule 2</b> .		
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 <b>Annexure A</b> .		
Part 6 Certificate	means a certificate under Part 6 of the Act.		

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</i> <i>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 Environmental Planning and Assessment Regulation 2021 (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 Standard Instrument—Principal Local Environmental Plan.	
Residential Lot	mear regis plan used Servi	ns a lot that forms part of the Land to be created by tration of a plan of subdivision, strata plan or strata of subdivision, and is intended to be developed or for Residential Accommodation, excluding any ice Lots or Super Lots.
Security	mear	าร
	(a)	a Bank Guarantee; or
	(b)	a bond agreed to by Council, including an Insurance Bond.

Service Lot	mean follov	ns a Lot that is created for one or more of the wing purposes:	
	(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 o	loes 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 <b>Annexure C</b> .		
Strata Certificate	has the same meaning given to that expression in the Strata Schemes Development Act 2015.		
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	mea of s (incl Res Ser	ans a Lot which, following the registration of a plan ubdivision, is intended for further subdivision luding strata and community title subdivision) for idential Accommodation, but does not include a vice Lot.	
Works in Kind	eac Col	h of the works to be carried out as specified in umn 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, reenactments 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;

- (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;
- 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;
- 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.

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## 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.

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;
  - 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:
  - 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

(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:
      - 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

- (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.

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## 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.

- (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

- (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:
  - 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
  - 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.
- (I) 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.

- (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:
  - the Works in Kind do not conform to the location, design, specifications, materials or finishes approved by Council under this Agreement; or
  - 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

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).

- (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.

## 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 fieu 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

**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:
  - 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

- (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:
  - 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;
  - the specific details of the work Council requires the Developer to carry out in order to rectify the Defect, omission or incomplete work; and

(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:
  - 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
  - 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:
  - 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;

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 a 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.

## 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:
  - rectify the breach if it reasonably considers it is capable of rectification, or
  - 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:
  - 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,

- (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:
  - 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.

## 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:

- (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:
  - 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:

- (i) signing any documents or forms,
- 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:
  - 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
  - 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 iand 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:
  - 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.

## 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.

## 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:
  - 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;
  - 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:
  - 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.

## 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.
- (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@cbcity.nsw.gov.au

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

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

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.

## 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.

## 21.15 Electronic execution

- (a) Each Party:
  - consents to this Agreement being signed by electronic signature by the methods set out in clause 21.15(c);
  - 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.

## 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

Requ	uirement under the Act	This	Agreement		
Plan appl	ning instrument and/or development ication – (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 of c Agr	scope, timing and manner of delivery ontributions required by this eement – (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.			
App (sec	blicability of section 7.24 of the Act – otion 7.4(3)(d))	The application of section 7.24 of the Act is not excluded in respect of the Development.			
2 - 1 - E - 2 A	· · · · · · · · · · · · · · · · · · ·				

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.

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## Schedule 2

## Development Contributions

# Part A -- Dedication of the Dedication Land

Contribution Offset	IN			\$1,635,287.54 Open space and recreational facilities
Column A Tuning L		Prior to the release of any Subdivision Certificate or Strata Certificate for a plan	that when registered would create the 301 <sup>st</sup> Residential Lot.	Prior to the release of any Subdivision Certificate or Strata Certificate for a plan that when registered would create the 201 <sup>st</sup>
Column3 Agreed ContributionWalue	\$3,700,000			\$4,570,000
Column'2 Development Contribution	RE1 Public Recreation Zoned Land	Dedication of approximately 14,441m <sup>2</sup> of the Land to Council for public open space, specifically:	i. circa 4,643m² of land marked 'Northem Open Space' on the plan at Annexure A;	ii. circa 5,076m² of land marked 'Central Open Space' on the plan at Annexure A; and
Column 1 Item No. (Shown on Anexure A)	÷			

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Contribution Offset	ĨZ	Nil	
	Residential Lot. Prior to the release of a Subdivision Certificate or Strata Certificate for a plan that when registered would create the 401 <sup>st</sup> Residential Lot, or if less than 401 Residential Lot, or if less than 401 Residential Lot, are approved in the Development, prior to the release of the Subdivision Certificate for the plan that when registered would create the last Residential Lot in the Development.		Prior to the release of a Subdivision Certificate or Strata Certificate for a plan that when registered
Column3 Agreed Contribution/Value	\$3,300,000	Not applicable	
Column 2 Development Contribution	iii. circa 4,722m² of land marked 'Southern Open Space' on the plan at Annexure A.	Local Roads	<ul> <li>Dedication of approximately 14,088m<sup>2</sup> of the Land to Council, being an area with a length of approximately 770m and width of 18m, as</li> </ul>
Column 1 Itam No (shown son		2.	

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Column 5 Contribution Oriset		n Z	Ž
coltimus Trimito	would create a Residential Lot that directly fronts that road.	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.	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
Columna Agreed Commburion/Value		Not applicable	\$230,000
Column2 Development Contribution	shown on the plan and noted as "Local Road" at Annexure A.	ii. Dedication of approximately 33,110m <sup>2</sup> 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.	SP2 Infrastructure (Drainage) Dedication of approximately 668m <sup>2</sup> of SP2 Infrastructure (Drainage) land to Council
Column 1 tem No. (Shown on Annexure			<i></i>

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Contribution Offset	
Column 4	Subdivision Certificate or Strata Certificate for the plan that when registered would create the last Residential Lot in the Development.
Column3 Agreed Contribution/Value	
Iumn 2 nt Contribution	
e Co	
Column Item No (shown on Annexu	

S.C. Manual S.C.		Column 3	Column'4	Column5
ItemiNo.	Development Contribution	Agreed		Contribution Offset
showns 00		Values		
Annexure				
4.	Open Space	\$1,542,495	Practical Completion of	Nil
	Embellishment		embellishment of the part of the ped bublic pectagion	
	Embellishment of the RE1		Zoned Land shown as	
	Public Recreation Zoned		'Northern Open Space' and	
	Land, comprising the		'Southern Open Space' in	
	following works:		Annexure A must be reached	
	(a) pathways (in all);		prior to the Dedication of the	
			relevant portion of the	
	(b) children's playground		Dedication Land and issue of	
	equipment, in the		the first Occupation Certificate	

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Column	for the first dwelling fronting the relevant part of the RE1 Public Recreation Zoned Land.	Practical Completion of embellishment of the part of the RE1 Public Recreation	Central Open Space' in	Annexure A must be reached prior to the earlier of the issue of an Occupation Certificate for the:	a) 50 <sup>th</sup> Dwelling in the	b) the first Dwelling fronting the Central	Open Space Land. 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).
Column 3 Agreed Contribution Value								
Column2 Development Contribution	Central Open Space only;	(c) outdoor fitness equipment, in the Central Open Space	or soumern Open Space only;	<ul> <li>(d) sheltered picnic tables, in the Central Open Space only;</li> </ul>	(e) seating (in all);	<ul><li>(f) landscaping and furf</li><li>(in all); and</li></ul>	<ul> <li>kick around play, in the Southern Open Space only.</li> </ul>	Where applicable, works shall be designed generally in accordance with the indicative bioretention and basin plans provided in
Column 1 (tem.No (shown on Annexure								

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Contribution Offset		be Nii	he Ny	ofa	an		nat		be \$235,350	e of Roads and traffic for	02	\$1,041,921	Open space and recreational	an facilities	la		ved
Columna		Practical Completion must	reached prior to the Dedica of the relevant portion of the Dedication Land and in ar	event prior to the release o	Strata Certificate for a pla	that when registered wou	create a Residential Lot the directly fronts that made		Practical Completion must	reached prior to the release an Occupation Certificate	any dwelling fronting the cycleway.	Prior to the release of a	Subdivision Certificate o	that when registered wou	create the 401 <sup>st</sup> Resident	Lot. or if less than 401	Residential Lots are appro
Column3 Agreed Contribution Value		\$1,963,100							\$235,350			\$1,041,921					
Development Contribution	Annexure C.	Local Roads	Construction of all proposed "Local Roads" (collector	at Annexure A, in	accordance wim all relevant Council and road	engineering standards	(unless otherwise agreed between Council and the	Developer).	Shared Cycleway	Construction of a shared	marked "Local Roads" on the plan at Annexure A.	Milperra Reserve	Embellishment	Upgrades to Milperra	Reserve (being 121-121A	Ashtord Avenue, Milperra	(Lots 1 – 3 UP91953) of a
Column 1 ItemiNo. (shown (shown annexure Annexure		5.							ġ			7.					

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Column5 Contribution Offset				
ColumnA	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.			
Column 3 Agreed Contribution				
Column 2 Development Contribution	with the 'Neighbourhood Sportsground' category as outlined in Council's <i>Generic</i> <i>Plan of Management for</i> <i>Community Land and Crown</i> <i>Land</i> , specifically consisting of the following: (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);	<ul> <li>(b) basic seating around the periphery of the playing area;</li> </ul>	(c) rubbish bins;	<ul> <li>(u) ngrung,</li> <li>(e) shaded seating (under trees);</li> </ul>
Column 1 Item No. (shown on Annexure				

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Columnt Item No (shown (shown fon 4 Annexure Annexure	Column2 Development@omnibution	Column3 Agreed Contribution Value		Contribution Offset
	(f) upgrade to amenities (toilets etc);			
	(g) drinking fountains;			
	<ul> <li>(h) some areas of shade trees on the periphery of the playing fields; and</li> </ul>		đ	
	<ul> <li>(i) landscaping treatments, including paths to better</li> </ul>			
	integrate Milperra Reserve with the			
	Land.			
ŵ	Remnant Vegetation Works	N/A	Prior to the release of a Subdivision Certificate or	Zi
	Works as required under the		Strata Ceruncate for a plan that when registered would	
	undertaken by or on behalf		Lot, or if less than 401	
	of the Developer in respect		Residential Lots are approved	
	of that part of the Land		in the Development, prior to	
	zoned C2 Environmental		The release of the subulivision	

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ColumnS Contribution[Offset		N/A	Ĩ
Column4	Certificate or Strata Certificate for the plan that when registered would create the last Residential Lot in the Development.	N/A	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 <sup>st</sup> Residential Lot for the Development, or if less than 401 Residential Lot for the Development, prior to the release of the Subdivision Certificate or
Column 3 Agreed Contribution Value	-	N/A	\$154,000
Column2 DevelopmentContribution	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.	Not used	SP2 Infrastructure (Drainage) Embellishment of the SP2 Infrastructure (Drainage) Land and carrying out of the works and maintenance specified in clauses 7.1(j) and 7.1(k).
Column 1 Item No. (shown on Annexure A)		.6	10.

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Column 6 Contribution Offset			Nil	÷		Z	
Column4	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 $7.1(j)(iii)$ , $7.1(j)(iv)$ and $7.1(k)$ .	Practical Completion must be	reached prior to the release of an Occupation Certificate for any Dwelling fronting the relevant footpath.		Practical Completion must be reached prior to the release of	an Occupation Certificate for the final Dwelling along Ashford Avenue.
Column3 Agreed Contribution Value			\$94,140			\$597,655	
Column2 DevelopmentContribution			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.	Undergrounding of Powerlines	Undergrounding of approximately 545 metres of powerlines along Ashford Avenue subject to obtaining
Column1 ItemiNo (Shown On		C	11.			12.	

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Contribution) Offsett		\$98,100			\$59,400	Roads and transport
Columna Milming Antimug Anti-Anti-Anti-Anti-Anti-Anti-Anti-Anti-		Practical Completion must be reached prior to the release of	any Dwelling fronting the footpath.		Practical Completion must be	the Subdivision Certificate or Strata Certificate for a plan that when registered would create the 201 <sup>st</sup> Residential Lot for the Development.
Column 3 Agreed Contribution Value		\$98,100			\$59,400	
Development Contribution	Refer to Undergrounding of Powerlines, as indicatively shown on the plan at Annexure A.	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.	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.
Column 1 Item No. (shown on Annexure A)		13.			14.	

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## Part C – Monetary Contributions

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Contribution Offset	ĪZ	\$392,400
<b>Column4</b> Tuming	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.	Prior to the release of any Subdivision Certificate or Strata Certificate for a plan
Column 3 Agreed Contribution	\$5,300,180	\$392,400
Column2 Development/Contribution	Affordable Housing Contribution Payment of a monetary contribution for the provision of affordable housing in appropriate locations within the Canterbury-Bankstown Local Government Area.	Milperra Community Contribution
Column 1 ItemiNo	5	16.

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Column2         Column3         Column4         Column5           Iopment Contribution         Agreed         Timing         Contribution (offset)           Contribution         Agreed         Timing         Contribution (offset)           Value         Value         Value         Value	tent of a monetary tent when registered would buttion for repair and attion to the Milperra munity Centre (128 nrd Ave, Milperra) or community facilities in ilperra region.	
Column 1 Item No. Dev	Pay Con Ast the	

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## Execution

Executed as an agreement.

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

MU Witness

P RICK FA Name of Witness (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)

Office Name of Officer (print)

DocuSigned by:

)

)

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Marina Rok

-301FDBB14CEE405... Director

Marina Rofe

Name of Director (print)

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Executed pursu Western Sydne as a delegate o University ABN lawfully under of the presence of	Western Sydney 53 014 069 881 acting elegated authority and in	PocuSigned by: Poll Parasiris	
Witness Katherine Stantor	A965107£05EE466	Delegate Bill Parasiris	
Name of Witne Building R1, Yarr	ss (print) amundi Road, Richmond NSW 2753	Name of Delegate (print) Vice-President Infrastructure and Office held	Commercial

.

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## Annexure A

Dedication Land and locations of Works in Kind



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## Annexure B

## Road Reserve Design Requirements



## Local Road Cross-section





## Minor Local Road Cross-section





Laneway Cross-section

## Annexure C

**Bioretention and Drainage Basins Plans** 

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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;

- 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:
  - o dedication of the Dedication Land;
  - o carrying out, completion and maintenance of Works in Kind; and
  - o 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

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.

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## APPENDIX C: ACOUSTIC ASSESSMENT




Acoustics Vibration Structural Dynamics

# 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	Issued	Prepared	Instructed	Authorised
	· · · · · · · · · · · · · · · · · · ·	revision	revision	-		
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.

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)	Section 4 and 5
	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)	
Childcare centre	Association of Australasian Acoustical Consultants (AAAC) Guideline for Child Care Centre Acoustic Assessment (AAAC Guideline)	Section 6
<ul> <li>Playground and sports ground</li> <li>Mount St Joseph School Playground</li> <li>Milperra Reserve</li> </ul>	NSW EPA Noise Guideline for Local Government (NGLG)	Section 7

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.

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.

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.

#### Table 1: Noise monitoring locations



#### 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 <sub>A90</sub> backgrou	nd noise levels	L <sub>Aeq</sub> ambient no	L <sub>Aeq</sub> ambient noise levels	
	Day <sup>1</sup>	Evening <sup>1</sup>	Night <sup>1</sup>	Day <sup>2</sup>	Night <sup>2</sup>
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<sub>Aeq</sub>. 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<sub>Aeq(15hr)</sub>
- Night-time 10pm 7am L<sub>Aeq(9hr)</sub>

L<sub>Aeq</sub> 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.

|--|

Internal space	Time period	Noise metric	Internal criteria^
Bedrooms	7am - 10pm	LAeq(15hrs)	40*
	10pm - 7am	L <sub>Aeq(9hrs)</sub>	35
Other Habitable Rooms	Any Time	LAeq(15hrs) and LAeq(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 10dBA, 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 <sub>Aeq, 15hr</sub> Day 7am - 10pm	L <sub>Aeq 9hr</sub> 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 <sub>Aeq, 15hr</sub> Day 7am - 10pm	L <sub>Aeq 9hr</sub> 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<sub>Aeq(9hrs)</sub> sound power levels were used, which were validated to both logger locations in the noise modelling.

Naisa sauras	Overall	Octave band centre frequency - Hz								
Noise source	dB(A)	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

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

#### 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 1<sup>st</sup> 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 results 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 <sub>Aeq</sub> )
Houses and apartments in suburban	Sleeping Areas	35
areas	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<sub>Aeq</sub> noise levels is presented in below Table 7 and Table 8 for specified locations shown in Figure 4.

To assist, the L<sub>Aeq</sub> 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



Measurement Location number	Measurement Location description	Date/time	Industrial noise levels (L <sub>Aeq</sub> )	Traffic noise levels at Night (L <sub>Aeq</sub> )	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 <sub>Aeq</sub> 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 <sub>Aeq</sub> 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 <sub>Aeq</sub> 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 <sub>Amax</sub> ) and truck moving(53L <sub>Amax</sub> ) 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 <sub>Aeq</sub> 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 <sub>Amax</sub> ) and truck moving(53L <sub>Amax</sub> ) 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 <sub>Aeq</sub> 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 <sub>Aeq</sub> 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 7: Industrial noise levels (LAeq) compared to traffic noise levels (LAeq)

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 <sub>Aeq</sub> 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 <sub>Aeq</sub>	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 <sub>Aeq</sub> 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<sub>Aeq</sub>), S4(i.e., 48L<sub>Aeq</sub>) and S5(i.e., 47L<sub>Aeq</sub>), demonstrates noise levels that are well below the measured traffic noise level (i.e., 65L<sub>Aeq</sub>). 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<sub>Amax</sub>) and truck moving(53L<sub>Amax</sub>) 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	n playing (dB re 10 <sup>-12</sup> watts)
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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 fo	or groups of 10	children in activ	e pla	v (dB re 10 <sup>-12</sup>	watts)
			3 1				

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:

- 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<sup>-12</sup> 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 1<sup>st</sup> 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 <sub>Aeq, 15min</sub> noise	levels, dB(A)
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Receiver locations	Predicted LAeq, 15min noise level dB(A)	Noise criteria (dBA)
R1 - Western lots		
Ground Floor	47	54

Receiver locations	Predicted L <sub>Aeq, 15min</sub> 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<sub>Aeq</sub> 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:

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

The allowable L<sub>Aeq 15minute</sub> 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.

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

Table 13: Sound power level of typical activity at playground and sports ground (dB re 10<sup>-12</sup> watts)

#### 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 1<sup>st</sup> 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.

Receiver Locations	Predicted L <sub>Aeq, 15min</sub> 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

Table 14: Predicted	LAeq, 15min Noise	Levels,	dB(A)
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Predicted L <sub>Aeq, 15min</sub> noise level dB(A)	Noise criteria (dBA)
60	48
ground	
51	45
52	45
ound	
48	45
54	45
	Predicted L <sub>Aeq, 15min</sub> noise level dB(A) 60 ground 51 52 ound 48 54

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:
  - o 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.).

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	

#### Table 15: Room parameters

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	Bedrooms and adjoining	Windows/glazed doors*	Less than $4m^2 = R_W 24$	No specific glass thickness required		
(Alternative ventilation not required)	ensuites		$4m^2 - 8m^2 = R_W 27$	6mm float glass with acoustic seals		
		Walls/roof/ceiling	Standard constructions			
	Lounge/living rooms	Windows/glazed doors*	Less than $8m^2 = R_W 29$	6mm float glass with acoustic seals		
			$8m^2 - 16m^2 = R_W 32$	6.38mm laminated glass with acoustic seals		
		Timber doors	35mm solid core timber - ad	coustic seals		
		Walls/roof/ceiling	Standard constructions			
Category 2	Bedrooms and adjoining	Windows/glazed doors*	Less than $2m^2 = R_W 24$	No specific glass thickness required		
(Alternative ventilation required)	ensuites		$2m^2 - 4m^2 = R_W 27$	6mm float glass with acoustic seals		
			$4m^2 - 8m^2 = R_W 30$	6.38mm laminated glass with acoustic seals		
		Walls/roof/ceiling	Standard constructions			
	Lounge/living rooms	Windows/glazed doors*	Less than $4m^2 = R_W 29$	6mm float glass with acoustic seals		
			$4m^2 - 8m^2 = R_W 32$	6.38mm laminated glass with acoustic seals		
			$8m^2 - 16m^2 = R_W 35$	10.38mm laminated glass with acoustic seals		
		Timber doors	40mm solid core timber - ad	40mm solid core timber - acoustic seals		
		Walls/roof/ceiling	Standard constructions			
Category 3	Bedrooms and adjoining	Windows/glazed doors*	Less than $2m^2 = R_W 27$	6mm float glass with acoustic seals		
(Alternative ventilation required)	ensuites		$2m^2 - 4m^2 = R_W 30$	6.38mm laminated glass with acoustic seals		
			$4m^2 - 8m^2 = R_W 33$	10.38mm laminated glass with acoustic seals		
		Roof/ceiling	Standard constructions			
		Walls	Rw 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 $4m^2 = R_W 32$	6.38mm laminated glass with acoustic seals		
			$4m^2 - 8m^2 = R_W 35$	10.38mm laminated glass with acoustic seals		
			$8m^2 - 16m^2 = R_W 38$	Heavy laminated glass or double glazing with acoustic seals		
		Timber doors	45mm solid core timber - ad	coustic seals		

Category	Room	Construction element	Indicative treatment		
		Roof/ceiling	Standard constructions		
		Walls	Rw 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	Bedrooms and adjoining	Windows/glazed doors*	Less than $2m^2 = R_W 30$	6.38mm laminated glass with acoustic seals	
(Alternative ventilation required)	ensuites		$2m^2 - 4m^2 = R_W 33$	10.38mm laminated glass with acoustic seals	
			$4m^2 - 8m^2 = R_W 36$	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 <sub>w</sub> 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 $4m^2 = R_W 35$	10.38mm laminated glass with acoustic seals	
		J	$4m^2 - 8m^2 = R_W 38$	Heavy laminated glass or double glazing with acoustic seals	
			$8m^2 - 16m^2 = R_W 41$	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 <sub>w</sub> 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.

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The acoustic requirements for windows and doors have been provided on an R<sub>w</sub> basis to allow flexibility with the developer and variations in design due to other design requirements such as thermal performance. The R<sub>w</sub> 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/m<sup>2</sup>) 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 s 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 t nights in winter).	ite he
Ambient noiseThe 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 aminoise, 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 sample period. This is represented as the L90 noise level (see below).	bient el of a
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	
115dBLimit of sound permitted in industry	
dB(A)       A-weighted decibels. The A- weighting noise filter simulates the response of the human ear arrelatively 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 he as loud as high frequency sounds. The sound level meter replicates the human response of th by using an electronic filter which is called the "A" filter. A sound level measured with this filte switched on is denoted as dB(A). Practically all noise is measured using the A filter.	t aard e ear r
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.	
FrequencyFrequency 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 ba drum has a low pitch. Frequency or pitch can be measured on a scale in units of Hertz or Hz.	ass
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 ambi is one second or more.	ient
L <sub>Max</sub> The maximum sound pressure level measured over a given period.	
L <sub>Min</sub> The minimum sound pressure level measured over a given period.	

L1	The sound pressure level that is exceeded for 1% of the time for which the given sound is measured.
L <sub>10</sub>	The sound pressure level that is exceeded for 10% of the time for which the given sound is measured.
L <sub>90</sub>	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 <sub>eq</sub>	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 Leq 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	Туре	Octave band data	Logger location
RTA06 & RTA07 (NTi Audio XL2, with low noise microphone)	Туре 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



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#### WSU Oval South, Milperra

Background & Ambient Noise Monitoring Results - NSW 'Noise Policy for Industry', 2017							
	L <sub>A90</sub> Back	L <sub>A90</sub> Background Noise Levels <sup>4</sup>			L <sub>Aeq</sub> Ambient Noise Levels		
Date	Day <sup>1</sup>	Evening <sup>2</sup>	Night <sup>3</sup>	Day <sup>1</sup>	Evening <sup>2</sup>	Night <sup>3</sup>	
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 Weekday <sup>5</sup>	53	51	43	58	56	54	
Representative Weekend <sup>5</sup>	51	49	41	57	54	53	
Representative Week <sup>5</sup>	52	50	43	58	56	54	
Note:							

 1. Day is 8:00am to 6:00pm on Sunday and 7:00am to 6:00pm to 10:00pm
 3. Night is the remaining periods

 4. Assessment Background Level (ABL) for individual days
 5. Rating Background Level (RBL) for LA90 and logarithmic average for LAe
 6. Leq is calculated in the free field. 2.5dB is subtracted from results if logger is placed at table
 7. 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.
 8. Evening is 6:00pm to 10:00pm
 8. Night is the remaining periods

#### WSU Oval South, Milperra

Road / Rail Noise Monitoring Results (at one metre from façade)							
	L <sub>Aeq</sub> Nois	e Levels	L <sub>Aeq 1hr</sub> Nois	L <sub>Aeq 1hr</sub> Noise Levels			
Date	Day <sup>1</sup>	Night <sup>2</sup>	Day - Up <sup>4</sup>	Day - Low⁵	Night - Up <sup>4</sup>	Night - Low⁵	
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 Weekday <sup>3</sup>	61	57	61	58	61	53	
Representative Weekend <sup>3</sup>	59	55	60	56	58	51	
Representative Week <sup>3</sup>	60	57	61	58	60	53	
Notes:							

<sup>1.</sup> Day is 7:00am to 10:00pm

Night is 10:00pm to 7:00am
 Lower 10th percentile L<sub>Aeq 1hr</sub>

3. Median of daily  $L_{Aeq}$ 

6. Values are calculated at the facade. 2.5dB is added to results if logger is placed in the free field

<sup>4.</sup> Upper 10th percentile L<sub>Aeq 1hr</sub>

#### Location: WSU Oval South, Milperra



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#### Horsley Road, Milperra

Background & Ambient Noise M	onitoring Kesu		se Policy to	maustry , 2	2017		
	L <sub>A90</sub> Back	L <sub>A90</sub> Background Noise Levels <sup>4</sup>			L <sub>Aeq</sub> Ambient Noise Levels		
Date	Day <sup>1</sup>	Evening <sup>2</sup>	Night <sup>3</sup>	Day <sup>1</sup>	Evening <sup>2</sup>	Night <sup>3</sup>	
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 Weekday <sup>5</sup>	49	46	42	62	61	57	
Representative Weekend <sup>5</sup>	46	41	37	61	59	56	
Representative Week <sup>5</sup>	49	45	41	62	60	57	
Notes:							
1. Day is 8:00am to 6:00pm on Sunday and 7:00am	to 6:00pm at other tim	nes 2. Eve	ening is 6:00pm to	10:00pm	3. Night is the	remaining periods	

 4. Assessment Background Level (ABL) for individual days
 5. Rating Background Level (RBL) for LA90 and logarithmic average for LAeq
 6. Leq is calculated in the

 free field. 2.5dB is subtracted from results if logger is placed at façade
 7. 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)							
	L <sub>Aeq</sub> Noise	e Levels	L <sub>Aeq 1hr</sub> Nois	L <sub>Aeq 1hr</sub> Noise Levels			
Date	Day <sup>1</sup>	Night <sup>2</sup>	Day - $Up^4$	Day - Low⁵	Night - Up <sup>4</sup>	Night - Low⁵	
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 Weekday <sup>3</sup>	64	59	66	62	62	54	
Representative Weekend <sup>3</sup>	63	59	65	60	62	52	
Representative Week <sup>3</sup>	64	59	66	62	62	54	
Notes:							

1. Day is 7:00am to 10:00pm

Night is 10:00pm to 7:00am
 Lower 10th percentile L<sub>Aeq 1hr</sub>

3. Median of daily  $L_{Aeq}$ 

4. Upper 10th percentile  $L_{Aeq 1hr}$ 

6. Values are calculated at the facade. 2.5dB is added to results if logger is placed in the free field

#### Location: Horsley Road, Milperra



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Bullecourt Avenue, Milperra	a					
Background & Ambient Noise Mo	onitoring Resu	lts - NSW 'Noi	ise Policy for	· Industry', 2	2017	
	L <sub>A90</sub> Back	ground Noise L	evels <sup>4</sup>	L <sub>Aeq</sub> Ambient Noise Levels		
Date	Day <sup>1</sup>	Evening <sup>2</sup>	Night <sup>3</sup>	Day <sup>1</sup>	Evening <sup>2</sup>	Night <sup>3</sup>
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 Weekday <sup>5</sup>	53	47	39	68	66	62
Representative Weekend <sup>5</sup>	46	40	36	66	63	61
Representative Week <sup>5</sup>	53	47	39	67	65	62
Notes:						
1. Day is 8:00am to 6:00pm on Sunday and 7:00am	to 6:00pm at other tin	nes 2. Ev	ening is 6:00pm to	10:00pm	3. Night is the	remaining periods
4. Assessment Background Level (ABL) for individual	l days 5. Rating	Background Level (RE	BL) for LA90 and log	garithmic average	for LAeq 6.	Leq is calculated in the

free field. 2.5dB is subtracted from results if logger is placed at façade 7. 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)							
	L <sub>Aeq</sub> Nois	e Levels	L <sub>Aeq 1hr</sub> Noise Levels				
Date	Day <sup>1</sup>	Night <sup>2</sup>	Day - Up <sup>4</sup>	Day - Low⁵	Night - Up <sup>4</sup>	Night - Low⁵	
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 Weekday <sup>3</sup>	70	65	71	68	70	59	
Representative Weekend <sup>3</sup>	67	63	69	65	66	57	
Representative Week <sup>3</sup>	70	65	71	67	69	59	
Notes:							

1. Day is 7:00am to 10:00pm

2. Night is 10:00pm to 7:00am

5. Lower 10th percentile LAeq 1hr

3. Median of daily  $L_{Aeq}$ 

4. Upper 10th percentile L<sub>Aeq 1hr</sub>

6. Values are calculated at the facade. 2.5dB is added to results if logger is placed in the free field



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#### Location: Bullecourt Avenue, Milperra



Template: QTE-26 Logger Graphs Program (r31)



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#### Mount St Joseph Sports Field, Milperra

	L <sub>A90</sub> Back	ground Noise Le	evels <sup>4</sup>	L <sub>Aeq</sub> Amb	ient Noise Level	s
Date	Day <sup>1</sup>	Evening <sup>2</sup>	Night <sup>3</sup>	Day <sup>1</sup>	Evening <sup>2</sup>	Night <sup>3</sup>
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 Weekday <sup>5</sup>	47	44	40	55	52	48
Representative Weekend <sup>5</sup>	43	44	39	53	51	47
Representative Week <sup>5</sup>	45	44	39	54	52	48
Notes: 1. Day is 8:00am to 6:00pm on Sunday and 7:00am t	to 6:00pm at other tim	nes 2. Eve	ning is 6:00pm to	10:00pm	3. Night is the r	emaining periods

free field. 2.5dB is subtracted from results if logger is placed at façade 7. 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)							
	L <sub>Aeq</sub> Noise Le	evels	L <sub>Aeq 1hr</sub> Noise	Levels			
Date	Day <sup>1</sup>	Night <sup>2</sup>	Day - Up <sup>4</sup>	Day - Low⁵	Night - Up <sup>4</sup>	Night - Low <sup>5</sup>	
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 Weekday <sup>3</sup>	57	50	59	53	53	45	
Representative Weekend <sup>3</sup>	55	50	57	51	53	44	
Representative Week <sup>3</sup>	57	50	59	53	53	45	

Notes:

1. Day is 7:00am to 10:00pm

2. Night is 10:00pm to 7:00am 5. Lower 10th percentile LAeq 1hr 3. Median of daily  $L_{Aeq}$ 

4. Upper 10th percentile LAeq 1hr

6. Values are calculated at the facade. 2.5dB is added to results if logger is placed in the free field



Template: QTE-26 Logger Graphs Program (r31)



sydney@renzotonin.com.au www.renzotonin.com.au

#### Ashford Avenue, Milperra

	L <sub>A90</sub> Back	ground Noise Le	evels <sup>4</sup>	L <sub>Aeq</sub> Amb	ient Noise Level	s
Date	Day <sup>1</sup>	Evening <sup>2</sup>	Night <sup>3</sup>	Day <sup>1</sup>	Evening <sup>2</sup>	Night <sup>3</sup>
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 Weekday <sup>3</sup>	52	49	44	57	58	55
Representative Weekend <sup>5</sup>	53	50	41	57	56	52
Representative Week <sup>5</sup>	52	50	43	57	57	54
Notes:						
1. Day is 8:00am to 6:00pm on Sunday and 7:00am	to 6:00pm at other tim	nes 2. Eve	ning is 6:00pm to	10:00pm	3. Night is the r	remaining periods

 4. Assessment Background Level (ABL) for individual days
 5. Rating Background Level (RBL) for LA90 and logarithmic average for LAeq
 6. Leq is calculated

 free field. 2.5dB is subtracted from results if logger is placed at façade
 7. 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)							
	L <sub>Aeq</sub> Nois	e Levels	L <sub>Aeq 1hr</sub> Noise Levels				
Date	Day <sup>1</sup>	Night <sup>2</sup>	Day - Up <sup>4</sup>	Day - Low⁵	Night - Up <sup>4</sup>	Night - Low⁵	
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 Weekday <sup>3</sup>	59	57	60	57	60	52	
Representative Weekend <sup>3</sup>	59	54	61	57	56	50	
Representative Week <sup>3</sup>	59	57	60	57	60	52	
Notes:							

1. Day is 7:00am to 10:00pm

2. Night is 10:00pm to 7:00am 5. Lower 10th percentile L<sub>Aeq 1hr</sub> 3. Median of daily  $L_{Aeq}$ 

4. Upper 10th percentile L<sub>Aeq 1hr</sub>

6. Values are calculated at the facade. 2.5dB is added to results if logger is placed in the free field

#### Location: Ashford Avenue, Milperra



Template: QTE-26 Logger Graphs Program (r31)

#### Location: Ashford Avenue, Milperra



Template: QTE-26 Logger Graphs Program (r31)

# APPENDIX D Noise modelling results - Road Traffic Noise



52 <= < 55 55 <= < 58 58 <= < 61 61 <= < 64 64 <= < 67 67 <=				=//=
Building Existing Road Barrier	Client:	Project: WESTERN SYDNEY UNIVERSITY MILPERRA SUBDIVISION	Description: GROUND FLOOR FACADE TREATM	IENT
	Consultant:	-		
XP 1	RENZO TONIN	Noise levels are approximate due to interpolation	Project No.:	Produced by:
	& ASSOCIATES	of contours and should be used for reference	IL12/-01 Figure Ref:	MSK Grid:
	inspired to achieve	For information only and not for construction.	TL127-02 (r0)	TL127-02 NC01
	1/418A Elizabeth Street, SURRY HILLS NSW 2010 P: 02 8218 0500 F: 02 8218 0501	This information is protected by copyright.	Date: 13.09.2022	Scale: 1: 2100 A3



52 <= < 55 55 <= < 58 58 <= < 61 61 <= < 64 64 <= < 67 67 <=				
legend:	Client:	Project:		т
Existing Road		MILPERRA SUBDIVISION		
A	DEV1IM	-		
1	IIIRERZO TORIIR	Noise levels are approximate due to interpolation	Project No.:	Produced by:
	& ASSOCIATES	of contours and should be used for reference	ILIZ/-UI Figure Ref:	MSK Grid:
	inspired to achieve	For information only and not for construction.	TL127-02 (r0)	TL127-01NC01
	1/418A Elizabeth Street, SURRY HILLS NSW 2010 P: 02 8218 0500 F: 02 8218 0501	This information is protected by copyright.	Date: 13.09.2022	Scale: 1: 2100 A3

## APPENDIX E

# Noise modelling results - Playground and Sports Field Noise



52 <= < 55 55 <= < 58 58 <= < 61 61 <= < 64 64 <= < 67 67 <=				
Iegend: Building Existing Road Barrier	Client:	Project: WESTERN SYDNEY UNIVERSITY MILPERRA SUBDIVISION	Description: GROUND FLOOR FACADE TREAT	MENT FOR PLAYGROUND N
$\wedge$		-		
Xt	RENZO TONIN	Noise levels are approximate due to interpolation	Project No.:	Produced by:
	<b>ASSOCIATES</b>	of contours and should be used for reference only.	Figure Ref:	Grid:
	inspired to achieve	For information only and not for construction.	TL127-01P03 (r0)	TL127-01NC01
	1/418A Elizabeth Street, SURRY HILLS NSW 2010 P: 02 8218 0500 F: 02 8218 0501	This information is protected by copyright.	Date: 13.09.2022	Scale: 1: 2100 A3



$52 <= \dots < 55$ $55 <= \dots < 58$ $58 <= \dots < 61$ $61 <= \dots < 64$ $64 <= \dots < 67$ $67 <= \dots$				
Building → Existing Road	Client:	Project: WESTERN SYDNEY UNIVERSITY MILPERRA SUBDIVISION	Description: FIRST FLOOR FACADE TREATMEN	NT FOR PLAYGROUND NOIS
- Barrier	MICVAC			
$\wedge$	Consultant:	-		
X			Project No.:	Produced by:
		Noise levels are approximate due to interpolation of contours and should be used for reference	TL127-01	MSK
	inspired to achieve	only. For information only and not for construction	Figure Ref: TL127-01P03 (r0)	Grid: TL127-01NC01
	1/418A Elizabeth Street, SURRY HILLS NSW 2010 P: 02 8218 0500 F: 02 8218 0501	This information is protected by copyright.	Date: 13.09.2022	Scale: 1: 2100 A3

# APPENDIX F Acoustic treatment categories



		11.5%         110           11.5%         112           Sviisbury         410           7,5 attached 9m semi detached         218           10,0m         77           9m         217           10m         222           1.4m         222           1.4m         222           1.6.5m         Ki           1.9-22.8m         218           Total Los         7	B         1         Single         1         0.2%         30r           0         1         Single         2         0.5%         3br           1         3         Output         47.%         4br           A         2         Double         1.1         2.0%         To           A         2         Double         1.1         2.0%         To           A         2         Double         5.1         14.5%         4br           A         2         Double         105         2.4.8%         4br           1         2         Double         5.1         3.1.1%         4br           2         Double         3n         0.20%         4br           2         Double         3n         0.20%         4br           2         Double         1         0.23%         4br           2         Double         1         0.23%         4br           4         2         Double         1         0.02%         4br <th>55.8% 100.0076</th>	55.8% 100.0076
legend:	Client:	Project: WESTERN SYDNEY UNIVERSITY	Description: GROUND FLOOR FACADE TREATM	ENT CATAGORIES
Existing Road		MILPERRA SUBDIVISION		
			Project No.:	Produced by:
7 1		Noise levels are approximate due to interpolation of contours and should be used for reference	TL127-01	MSK
	a ASSUCIATES	only.	Figure Ref:	
	inspired to achieve	For information only and not for construction.		
	1/418A Elizabeth Street, SURRY HILLS NSW 2010 P: 02 8218 0500 F: 02 8218 0501	This information is protected by copyright.	13.09.2022	1: 2100 A3



		11.5%         110           11.5%         112           Sviisbury         410           7,5 attached 9m semi octushed         218           10,0m         71           9m         217           10m         222           1.4m         222           1.4m         222           1.6m         Ki           1.9-22.8m         Ki           1.9-22.8m         218           Total Lots         7	B         1         Single         1         0.2%         30r           0         1         Single         2         0.5%         3br           1         3         Output         47.6%         4br           A         2         Double         1.1         2.0%         707           A         2         Double         1.1         2.0%         707           A         2         Single         5         1.4%         4br           A         2         Double         1.5.1         31.1%         4br           2         Double         5.1         31.1%         4br           2         Double         3n         0.20%         4br           2         Double         3n         0.2%         4br           2         Double         1         0.2%         4br           2         Double         1         0.2%         4br           4         2         Double         1         0.02%         4br	55.8% 100.0076
legend:	Client:	Project: WESTERN SYDNEY UNIVERSITY	Description: FIRST FLOOR FACADE TREATMEN	T CATAGORIES
Existing Road		MILPERRA SUBDIVISION		
A	mirvac			
$ $ $\langle \rangle$			Project No.:	Produced by:
/ \		Noise levels are approximate due to interpolation of contours and should be used for reference	TL127-01	MSK
		only.	Figure Ref:	
	inspired to achieve	For information only and not for construction.		
	1/418A Elizabeth Street, SURRY HILLS NSW 2010 P: 02 8218 0500 F: 02 8218 0501	This information is protected by copyright.	13.09.2022	1: 2100 A3

#### APPENDIX D: HERITAGE IMPACT ASSESSMENT





# 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



SYDNEY MELBOURNE BRISBANE HOBART

# PEOPLE CENTRED HERITAGE





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# **Document information**

Extent Heritage project no.:	0224014
Client:	Beveridge Williams on behalf of Mirvac
Project:	Western Sydney University – Milperra campus redevelopment Statement of Heritage Impact
Site Location:	WSU Milperra Campus, Horsley Road and Bullecourt Avenue, Milperra NSW 2214
Author(s):	Reuel Balmadres

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Final Draft 0.2	K. Watson	11/03/2024	Client comments
Final 0.1	K. Watson	30/05/2024	Minor comments
Final 0.2	K. Watson	16/09/2024	Updated staging plan

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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.

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Figure 3. Undated Parish of Bankstown maps showing early land grants. The general location of the site is indicated in red within land granted to Johnston Junior. *Source*: NSW Planning Portal.

### 1.2.3. Soldier Settlement Scheme

In 1917, the Bankstown Soldier Settlement was established in the location of present-day Milperra. It was the first of the group soldier settlements in the Greater Sydney Metropolitan Area established as part of the Soldier Settlement Scheme. The Soldier Settlement Scheme was one of the rehabilitation projects undertaken by the Commonwealth and State governments after World War I, to help repatriate servicemen who had served overseas. NSW was the first state to introduce legislation for this with *The Returned Soldiers Settlement Act 1916* (Allison 2009).

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.



Georgiled, Drunn and Printed at the Department of Lands, Sydney, H.S.W 1918

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.

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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 aerials 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 1218)

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 Syndey 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

#### **Objectives**

O1. To ensure that adjacent development does not detrimentally impact upon the heritage significance of places of heritage significance or their settings.

O2. To ensure that new development is compatible with the heritage values of adjacent places of heritage significance.

#### **Development controls**

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.

#### Extent Heritage assessment

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, *Milperra Soldier Settlement (former)*, 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.

#### **Draft WSU Milperra Site Specific**

#### 3.9 Heritage

#### **Objectives**

O1. To preserve the significant historical form of road corridors contributing to the character of the precinct, specifically along Bullecourt and Ashford Avenue.

#### <u>Controls</u>

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.

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.

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.



#### **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**

Allison, Glenys. "From Bullets to Pullets': Bankstown Soldier Settlement". In in *The Royal Australian Historical Society*, vol. 95, Part 2, (n.d.): 144-157

Allison, Glenys. "Bankstown Soldier Resettlement Milperra". In The Dictionary of Sydney, 2010

Australia ICOMOS. 2013. *The Burra Charter: The Australia ICOMOS Charter for Places of Cultural Significance*. Burwood, Vic.: Australia ICOMOS.

Beckett, L, "Milperra Memories", unpublished paper, 1984

Department of Planning and Environment. 2023a. *Assessing heritage significance*. Sydney: Department of Planning and Environment. <u>https://www.environment.nsw.gov.au/-/media/OEH/Corporate-Site/Documents/Heritage/assessing-heritage-significance-guidelines-assessing-places-objects-against-criteria-230167.pdf</u>

Department of Planning and Environment. 2023b. *Guidelines for preparing a statement of heritage impact*. Sydney: Department of Planning and Environment. <u>https://www.environment.nsw.gov.au/-/media/OEH/Corporate-Site/Documents/Heritage/guidelines-for-preparing-a-statement-of-heritage-impact-230201.pdf</u>

State Records Authority of New South Wales, Milperra College of Advanced Education (1974 -1983) / Macarthur Institute of Higher Education (1983 - 1989), viewed on October 17, 2017, https://researchdata.ands.org.au/milperra-college-advanced-1983-1989/166047

Western Sydney University, *Bankstown*, Last updated September 04, 2017. https://www.westernsydney.edu.au/uws25/25\_year\_history/places/bankstown

Western Sydney University, Western Growth, Last updated September 04, 2017. https://www.westernsydney.edu.au/finance\_and\_resources/division\_of\_finance\_and\_resources/co mmercial\_and\_estate\_planning/western\_growth

Worley, P, 2014. Doltone House Deepwater, Milperra


# 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.
National construction code	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
СМР	Conservation Management Plan
DA	Development application
DCP	Development Control Plan
DP&E	Department of Planning and Environment
EP&A Act	Environmental Planning and Assessment Act 1979
НСА	Heritage Conservation Area
Heritage Act	Heritage Act 1977 (NSW)
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**



# CANTERBURY BANKSTOWN

# Development Cost Summary Report > \$500,000 Section 7.12 Environmental Planning & Assessment Regulation 2000

SECTION	Α.	Deta	ils of th	e Appl	ican	it					
Mr 🔳	Ms	M	rs 🗌	Miss	5						
First Name	First Name Mirvac Homes (NSW)Pty Ltd Family Name										
Unit No.		Street No.	200	Street	Geo	orge Stree	t				
Suburb	Sydney						State	NSW		Postcode	2000
Daytime Tel	ephone					Mobile	045109	94532			
Email	arron.ta	noai@mirvac.	com			<u></u>					
SECTION	B.	Loc	ation ar	nd Title	De	scriptio	n of the	e Propert	ty		
Unit No.		Street No.	2 & 2A	Street	Bull	ecourt Av	enue				
Suburb	Milperra			4			State	NSW		Postcode	2214
Lot No.	Lot 1 &	Lot 2			Sec	tion No.				<u> </u>	
Deposited P	lan/Strat	a Plan No. Lo	ot 1 DP 10	1147 & L	.ot 2	DP129198	34				
SECTION	C.	Deve	elopmer	nt Cost							
	_		ltem	_		_	_			Cost	
DEVELOPMENT DETAILS											
Gross Floor	Gross Floor Area - Commercial m <sup>2</sup>										
Gross Floor Area - Residential m <sup>2</sup> 1464											
Gross Floor	Gross Floor Area - Retail m <sup>2</sup>										
Gross Floor	Area - Ca	r Parking						m²			
Gross Floor	Gross Floor Area - Other m <sup>2</sup>										
Total Gross	Floor Are	a						m²		1464	
Total Site Ar	еа							m²		2053	
Total Car Pa	rking Spa	ices									
Total Devel	Total Development Cost\$2,940,553.00										
Total Construction Cost\$2,882,896.00				6.00							
Total GST \$ 262,081.00			.00								
ESTIMATE DETAILS											
Excavation \$											
Cost per square metre of site area \$/ m <sup>2</sup>											
Demolition and Site Preparation \$											
Cost per squ	Cost per square metre of site area \$/ m <sup>2</sup>										
Constructio	Construction - Commercial \$										

Cost per square metre of commercial area \$/ m <sup>2</sup>				
Construction - Residential	\$	2,882,896.00		
Cost per square metre of residential area	\$/ m <sup>2</sup>	1,968.65		
Construction - Retail	\$			
Cost per square metre of retail area	\$/ m <sup>2</sup>			
Carpark	\$			
Cost per square metre of site area	\$/ m <sup>2</sup>			
Cost per space	\$/space			
Fitout - Commercial	\$			
Cost per square metre of commercial area	\$/ m <sup>2</sup>			
Fitout - Residential	\$			
Cost per square metre of residential area \$/m2	\$			
Fitout - Retail	\$			
Cost per square metre of retail area	\$/ m²			
Professional Fees	\$	57,658.00		
% of Development Cost	%	2		
% of Construction Cost	%	2		
SECTION D. Applicant's Declaration				
I certify that I have: 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				

t	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					
Positio	n & Qualifications:	MAIQS	Membership No.	MAIQS (11634)	
Date	02-Dec-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 CAMPSIE 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. cbcity.nsw.gov.au

# CANTERBURY Bankstown

# Development Cost Summary Report > \$500,000 Section 7.12 Environmental Planning & Assessment Regulation 2000

SECTION A.	Details of the	e Appli	icant	:			
Mr Ms	Mrs	Miss	;				
First Name			Fami	ily Name			
Unit No.	Street No.	Street					
Suburb					State		Postcode
Daytime Telephone	Daytime Telephone Mobile						
Email			1				
SECTION B.	Location an	d Title	Des	cription	of the l	Property	
Unit No.	Street No.	Street					
Suburb	<u> </u>				State		Postcode
Lot No.			Secti	ion No.	1		
Deposited Plan/Strata	Plan No.	I					
SECTION C.	Developmen	t Cost					
	ltem						Cost
DEVELOPMENT DETAILS							
Gross Floor Area - Commercial				m²			
Gross Floor Area - Residential				m²			
Gross Floor Area - Retail						m²	
Gross Floor Area - Car Parking					m²		
Gross Floor Area - Other				m²			
Total Gross Floor Area						m²	
Total Site Area						m²	
Total Car Parking Space	es						
Total Development Co	ost					\$	
Total Construction Cos	st					\$	
Total GST			\$				
ESTIMATE DETAILS							
Excavation			\$				
Cost per square metre of site area				\$/ m²			
Demolition and Site Preparation				\$			
Cost per square metre of site area					\$/ m²		
Construction - Commercial \$							

Cost per square metre of commercial area \$/ m <sup>2</sup>			
Construction - Residential	\$		
Cost per square metre of residential area	\$/ m <sup>2</sup>		
Construction - Retail	\$		
Cost per square metre of retail area	\$/ m <sup>2</sup>		
Carpark	\$		
Cost per square metre of site area	\$/ m <sup>2</sup>		
Cost per space	\$/space		
Fitout - Commercial	\$		
Cost per square metre of commercial area	\$/ m <sup>2</sup>		
Fitout - Residential	\$		
Cost per square metre of residential area \$/m2	\$		
Fitout - Retail	\$		
Cost per square metre of retail area \$/ m <sup>2</sup>			
Professional Fees	\$		
% of Development Cost	%		
% of Construction Cost	%		
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.			

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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	
Signature	
Must be signed by a Registered Quantity Surveyor	
Position & Qualifications:	Membership No.
Date	

PRIVACY NOTICE

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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.

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## APPENDIX F: WASTE MANAGEMENT PLAN





# Waste Management Plan – Demolition and Constuction Waste



# The applicable sections of this Waste Management Plan (WMP) must be completed and submitted with your Development Application.

Completing this Plan will assist you in identifying the type(s) of demolition and construction waste that will be generated and will inform Council how you intend to reuse, recycle or dispose of this waste. The more detail you provide with your application will assist Council in reviewing your application. The amount of detail you provide with your application impacts the number of revisions and time taken with processing the DA.

The information you provide will be assessed against the objectives of the Development Control Plan 2021.

If you require assistance completing your WMP, please contact Council's Waste Assessment Officers in the Resource Recovery Team on **9707 9000**.

If there is insufficient space within this template, please provide attachments.

Site address:	2 & 2A Bullecourt Avenue	
Suburb:	Milperra	Postcode: 2214

Applicant's name:	Nibraas Ahmad		
Company name:	Mirvac Residential (NSW) Developments Pty Limited		
Applicant's address:	Level 28, 200 George Street		
Suburb: Sydney		Postcode: 2000	
Phone: N/A		Mobile: 0406 006 792	
Email: nibraas.ahmad	@mirvac.com		

Are there	buildings or structures currently on the site?
No	Yes – provide description
	Yes - there are approximately 43 buildings/structures on site. These are being demolished under DA1512/ 2023 and are not part of this DA application. The proposed development does <u>not</u> request approval to demolish any structures.
If the appl Applicatio	ication involves the demolition of a residential property, has a Vacant Land Charge n been submitted? <u>https://www.cbcity.nsw.gov.au/council/forms/waste-recycling</u>
No N/A	Yes

Applicant's Signature:	
Date:	02/10/04
	23/10/24
If proposal has been discussed with Council's Waste Assessment Officers provide details.	



#### **DEMOLITION WASTE** (Complete if there are existing structures on site that require removal)

Do the works involve asbestos removal?	Yes – less than 10m²		Yes – more than 10m²	Х	No	
Work Cover License numbe	r: To be provided by th	e succe	essful contractor following the	e approva	l of the Stage	e 2 DA

#### **GENERAL DEMOLITION WASTE**

Has a demolition contractor been appointed?	Yes	No	Х
If yes, demolition contractor deta	ils:		

If no and if DA is approved, a condition of consent may be placed on the DA requiring the above details prior to works commencing on-site. Yes this is understood

	Estimated	Destination										
	Amount	Reuse and re	cycling	Disposal								
Type of material	m <sup>2</sup> or m <sup>3</sup>	ON-SITE Specify proposed reuse	OFF-SITE Specify contractor and recycling facility	Specify contractor and landfill site								
Excavation (e.g. soil, rock)	0m <sup>3</sup>	Excess Fill created under Stage 1 and stockpiled on site will be used in this stage for fill requirements.		Contaminated materials will exporte offsite to Elizabeth Drive Landfill Kemps Creek - 1725 Elizabeth Drive Kemps Creek, NSW, 2178								
Bricks/Pavers	N/A											
Concrete	10.5m <sup>3</sup>		Concrete from kerb cut outs will be taken to Benedict Recycling Chipping Norton - 33-39 Riverside Rd, Chipping Norton NSW 2170									
Tiles	N/A											
Timber (clean)	N/A											
Timber (treated)	N/A											
Asphalt	N/A											
Metals	0.5m <sup>3</sup>		steel & cable service adjustments will be taken to Benedict Recycling Chipping Norton - 33-39 Riverside Rd, Chipping Norton NSW 2170									
Plasterboard	N/A											
Green waste	86m <sup>3</sup>	Timber from tree removal will be chipped and mulched on site.										
Glass	N/A											
Furniture/Fittings/Carpet	N/A											
Other - specify	10m <sup>3</sup>		plastic pipe/conduits to be taken to Benedict Recycling Chipping Norton - 33-39 Riverside Rd, Chipping Norton NSW 2170									
Percentage of material div	erted from land	fill: 98%										

If this figure is below 80%, you must explain why. \*

The Final percentage is subject to final amount of asbestos contaminated material that must leave the site. Where hen picking is practical and supported by the Site Auditor hen picking will occur to reduce the amount of material going to landfill.



#### **CONSTRUCTION WASTE**

	Estimated		Destination	
	amount	Reuse and	recycling	Disposal
Type of material	m² or m³	ON-SITE Specify proposed reuse	OFF-SITE Specify contractor and recycling facility	Specify contractor and landfill site
Excavation (e.g. soil, rock)	N/A	Addressed under d	 emolition above 	
Bricks/Pavers	N/A			
Concrete	2 m <sup>3</sup>		Excess Concrete during construction will be taken to Benedict Recycling Chipping Norton - 33-39 Riverside Rd. Chipping Norton NSW 2170	
Tiles	N/A			
Timber (clean)	0.5 m <sup>3</sup>		Offcuts from formwork will be taken to Benedict Recycling Chipping Norton - 33-39 Riverside Rd, Chipping Norton NSW 2170	
Timber (treated)	N/A			
Asphalt	N/A			
Metals	0.3 m <sup>3</sup>		Offcuts during services installation will be taken to Benedict Recycling Chipping Norton - 33-39 Riverside Rd, Chipping Norton NSW 2170	
Plasterboard	N/A			
Green waste	N/A			
Glass	N/A			
Furniture/Fittings/Carpet	N/A			
Other - specify	0.3 m <sup>3</sup>		plastic pipe offcuts & packaging during construction will be taken to Benedict Recycling Chipping Norton - 33-39 Riverside Rd, Chipping	
Percentage of material div	/erted from land	fill: 100%	Norton NSW 2170	
If this figure is below 80%	, you must expla <mark>N/A</mark>	ain why.*		

\* Council has a target of diverting 80% of waste from landfill. To contribute to this target, all developments are required to achieve best practise in the design, construction and maintenance of waste management facilities and infrastructure.

I certify that:

- (a) Any material moved off-site will be transported in accordance with the requirements of the *Protection of the Environment Operations Act 1997*;
- (b) Waste will only be 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) will be 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 will be retained and kept readily accessible for inspection by regulatory authorities such as Council, NSW EPA or WorkCover NSW.

Signature

23/10/24

Date



## APPENDIX G: BASIX CERTIFICATES



# NatHERS and BASIX Assessment



# Mirvac Proposed Residential Development

#### To be built at Site 2.2, 2 Bullecourt Avenue, Milperra NSW 2214

Issue	File Ref	Description	Author	Date
А	#2401234	NatHERS Thermal Comfort and BASIX Assessment	KB/CB/DR	04/12/2024

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.





Sustainable Building Consultants p. 02 9970 6181 e. admin@efficientliving.com.au www.efficientliving.com.au



Mirvac WSU - Milperra

#### 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 where open below

#### External Walls

75mm Hebel panel 35mm air gap sarking, R2.7 insulation (insulation only value) and plasterboard lined 50mm Hebel panel 35mm air gap sarking, R2.7 insulation (insulation only value) and plasterboard lined Brick Veneer, R2.7 insulation (insulation only value) and plasterboard lined Lightweight cladding 20mm air gap sarking, R2.7 insulation (insulation only value) and plasterboard lined Note: No insulation is required to external garage walls

#### External Colour:

2001 and 2005 Light (SA < 0.475)/ Dark (SA>0.7) 2002 Dark (SA>0.7) 2003, 2004 and 2006 Medium (SA >0.475<0.7)

#### Walls within dwellings

Plasterboard on studs, no insulation required.

R2.7 insulation between unconditioned and conditioned areas (around Laundry, Bathrooms, and Garage)

#### Glazing Doors/Windows

Window upgrade 3: Generic double-glazed, single 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 Casement (Entry Door): U 3.0 and SHGC 0.48 Fixed (Entry Sidelight): U 3.0 and SHGC 0.56

#### Window frame colour

Dark (SA > 0.7)

#### Roof Windows/Skylights

2001, 2002, 2003 and 2005: Solar tube

#### **Roof and Ceilings**

Metal roof with anticon blanket (R<sub>u</sub>1.3 and R<sub>d</sub>1.3)

R6.0 ceiling insulation (R4.0 perimeter batts where required, pitched roof only) and plasterboard lining, where metal roof above

Garage ceiling with R6.0 insulation and plasterboard lining, where conditioned area above

### Sustainable Building Consultants

**p.** 02 9970 6181 **e.** admin@efficientliving.com.au www.efficientliving.com.au



Mirvac WSU - Milperra

No insulation to garage ceiling where roof above.

#### External Colour

2001, 2003, 2004 and 2006 Dark (SA>0.7) 2002 and 2005 Medium (SA >0.475<0.7)

#### **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
2001	1x 1200mm ceiling fans to bedrooms and living (sitting only) Upper floor windows W25R and W25L to be 1200mm height
2002	1x 1300mm ceiling fans to bedrooms and living (Sitting, Living and Family) Upper floor windows W25R and W25L to be 1200mm height
2003	Upper floor windows W25R and W25L to be 1200mm height
2005	1x 1200mm ceiling fans to bedrooms and living (Media and Family)
2006	1x 1200mm ceiling fans to bedrooms only

# Nationwide House Energy Rating Scheme<sup>®</sup> Class 1 Summary NatHERS<sup>®</sup> Certificate No. #HR-6RN3FS-01

Generated on 02 Dec 2024 using Hero 4.1

### Property

Address Lot/DP NatHERS climate zone 2 Bullecourt Avenue, Milperra, NSW, 2214

56 - Mascot AMO

Haylea Edwards

+61 9970 6181

10213

HERA

haylea@efficientliving.com.au

havlea@efficientliving.com.au



# Accredited assessor

Name Business name Email Phone Accreditation No. Assessor Accrediting Organisation

# Verification

To verify this certificate, scan the QR code or visit <u>http://www.hero-software.com.au</u> /pdf/HR-6RN3FS-01.

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 <u>www.abcb.gov.au</u>.

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

# Summary of all dwellings





**Minimum Rating** 

(R)

Thermal performance

Star rating



The rating above is the minimum of all dwellings in this summary.

For more information on your dwelling's rating see: www.nathers.gov.au

### Whole of Home performance rating

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

Certificate number and link	Unit Number	Heating load (load limit) (MJ/m².yr)	Cooling load (load limit) (MJ/m <sup>2</sup> .yr)	Total load (MJ/m².yr)	Star Rating	Whole of Home Rating
HR-B4ZEZJ-01	Lot 2001	13.4 (25)	14.9 (18)	28.3	7.2	n/a
HR-IHLGDC-01	Lot 2002	12.4 (25)	17.5 (18)	29.8	7.0	n/a
HR-OGTC81-01	Lot 2003	12.5 (25)	16.3 (18)	28.8	7.1	n/a
HR-XWCAKF-01	Lot 2004	13.1 (25)	14.5 (18)	27.6	7.2	n/a
HR-02RKW1-01	Lot 2005	10.9 (25)	17.5 (18)	28.4	7.2	n/a

Nationwide House Energy Rating Scheme (NatHERS) is an initiative of the Australian, state and territory governments. For more details see www.nathers.gov.au Generated on 02 Dec 2024 using Hero 4.1 for 2 Bullecourt Avenue, Milperra, NSW, 2214

Page 1 of 2



## 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-722YQ3-01	Lot 2006	15.3 (25)	13.7 (18)	29.0	7.1	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 homes 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**<sup>°</sup>Certificate

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

# Multi Dwelling

Certificate number: 1775990M

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: Wednesday, 04 December 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	2 Bullecourt Avenue, Milperra NSW	2214_Site 2.2						
Street address	2 BULLECOURT AVENUE MILPER	RA 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	6							
Project score								
Water	47	Target 40						
Thermal Performance	V Pass	Target Pass						
Energy	<b>V</b> 100	Target 72						
Materials	-100	Target n/a						

## **Certificate Prepared by**

Name / Company Name: Efficient Living Pty Ltd

#### ABN (if applicable): 82116346082

BASIX Department of Planning, Housing and Infrastructure

www.basix.nsw.gov.au Version: 4.03 / EUC

Version: 4.03 / EUCALYPTUS\_03\_01\_0 Certificate No.: 1775990M Wednesday, 04 December 2024

# **Description of project**

Project address	
Project name	2 Bullecourt Avenue, Milperra NSW 2214_Site 2.2
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	6
Site details	
Site area (m <sup>2</sup> )	2116.8
Roof area (m <sup>2</sup> )	927.9
Non-residential floor area (m <sup>2</sup> )	0
Residential car spaces	0
Non-residential car spaces	0

Common area landscape										
Common area lawn (m²)	0									
Common area garden (m <sup>2</sup> )	0									
Area of indigenous or low water use species (m <sup>2</sup> )	genous or low water use 0									
Assessor details and thermal loads										
Assessor number	HERA10213									
Certificate number	HR-6RN3FS-01									
Climate zone	nate zone 56									
Project score										
Water	✓ 47	Target 40								
Thermal Performance	V Pass	Target Pass								
Energy	<b>V</b> 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 (m²)	Unconditioned floor area (m²)	Area of garden & Iawn (m²)	Indigenous species (min area m²)	Dwelling no.	No. of bedrooms	Conditioned floor area (m²)	Unconditioned floor area (m²)	Area of garden & Iawn (m²)	Indigenous species (min area m²)	:	Dwelling no.	No. of bedrooms	Conditioned floor area (m²)	Unconditioned floor area (m²)	Area of garden & Iawn (m²)	Indigenous species (min area m²)	Dwelling no.	No. of bedrooms	Conditioned floor area (m²)	Unconditioned floor area (m²)	Area of garden & Iawn (m²)	Indigenous species (min area m²)
2001	4+	164.4	12.9	226.84	0	2002	4+	166.6	13	225.28	0	2	2003	4+	165.1	12.9	225.18	0	2004	4+	129.2	14.9	213.28	0
2005	4+	133.5	14.4	211.94	0	2006	4+	129.2	14.9	213.68	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 carriedout. 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:			
(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		✓	<ul> <li>Image: A second s</li></ul>
(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.		<ul> <li>✓</li> </ul>	~
(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.	1	1	1

(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		V	
(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.		<b>~</b>	
(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;		<b>~</b>	
(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.		<b>v</b>	>
(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		<b>~</b>	<b>~</b>
(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.		✓	<b>~</b>
(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).		<b>&gt;</b>	
(g) The pool or spa must be located as specified in the table.	>	<b>~</b>	
(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.	>	~	~

			Fixture	es		Applia	ances		Indivi	dual pool			ndividual spa	a
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	-	-	-	-	-	-	-	-	-	-

BASIX Department of Planning, Housing and Infrastructure

			Altornativo water col					
Dwelling no.	Alternative water Size supply systems		Configuration	Landscape	Landscape Toilet connection connection (s)		Pool top- up	Spa top-up
2001	Individual water tank (No. 1)	Tank size (min) 2000 liters	To collect run-off from at least: 125.21 square metres of roof area; 55.95 square metres of impervious area; 226.84 square metres of garden and lawn area; and 0 square metres of planter box area.	yes	yes	yes	no	no
2002	Individual water tank (No. 1)	Tank size (min) 2000 liters	To collect run-off from at least: 109.94 square metres of roof area; 76.93 square metres of impervious area; 225.18 square metres of garden and lawn area; and 0 square metres of planter box area.	yes	yes	yes	no	no
2003	Individual water tank (No. 1)	Tank size (min) 2000 liters	To collect run-off from at least: 126.21 square metres of roof area; 80.16 square metres of impervious area; 225.18 square metres of garden and lawn area; and 0 square metres of planter box area.	yes	yes	yes	no	no
2004	Individual water tank (No. 1)	Tank size (min) 2000 liters	To collect run-off from at least: 99.12 square metres of roof area; 41.79 square metres of impervious area; 213.28 square metres of garden and lawn area; and 0 square metres of planter box area.	yes	yes	yes	no	no
2005	Individual water tank (No. 1)	Tank size (min) 2000 liters	To collect run-off from at least: 85.49 square metres of roof area; 42.45 square metres of impervious area; 211.94 square metres of garden and lawn area; and 0 square metres of planter box area.	yes	yes	yes	no	no
All other dwellings	Individual water tank (No. 1)	Tank size (min) 2000 liters	To collect run-off from at least: 99.12 square metres of roof area; 41.64 square metres of impervious area; 213.68 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.	>	>	<b>~</b>
(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.		<b>~</b>	<b>~</b>
(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		<b>~</b>	
(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.		<b>~</b>	
(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;		<b>~</b>	
(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		<b>~</b>	<b>~</b>
(cc) any clothes drying line specified for the dwelling in the "Appliances & other efficiency measures" column of the table.		<b>~</b>	
(i) If specified in the table, the applicant must carry out the development so that each refrigerator space in the dwelling is "well ventilated".		<b>~</b>	

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(ii) Energy	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(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.	>	<b>v</b>	~

	Hot water	Bathroom ventilation system		ot water Bathroom ventilation system Kitchen ventilation system		lation system	Laundry ventilation system		
Dwelling Hot water system Each bathroom no.		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		

	Coc	bling	Hea	ting	Natural lighting		
Dwelling no. living areas		bedroom areas	living areas	bedroom areas	No. of bathrooms or toilets	Main kitchen	
2005	3-phase airconditioning / EER 3.0 - 3.5	3	no				
2004, 2006	3-phase airconditioning / EER 3.0 - 3.5	3	yes				
All other dwellings	3-phase airconditioning / EER 3.0 - 3.5	2	yes				

	Individual pool			Individual sp	Da	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

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	Alternative energy										
Dwelling no.	Photovoltaic system (min rated electrical output in peak kW)	Photovoltaic collector installation	Orientation inputs								
2002, 2005	5.0	N									
All other dwellings	between >10° to <=25° degree to the horizontal	5.0	N								
(iii) Thermal Performance and I	Show on DA plans	Show on CC/CDC plans & specs	Certifier check								
(a) The applicant must attach the "Assessor Certificate") to the the applicant is applying for a must also attach the Assesso	certificate referred to under "Assessor details" on the development application and construction certificate a complying development certificate for the proposed or r Certificate to the application for a final occupation certificate	e front page of this BASIX certificate (the application for the proposed development (or, if development, to that application). The applicant ertificate for the proposed development.									
(b) The Assessor Certificate mus	t have been issued by an Accredited Assessor in acc	ordance with the Thermal Comfort Protocol.									
(c) The details of the proposed de Certificate, including the deta	evelopment on the Assessor Certificate must be cons ils shown in the "Thermal Loads" table below.	istent with the details shown in this BASIX									
(d) The applicant must show on t the Thermal Comfort Protoco Accredited Assessor, to certif	~										
(e) The applicant must show on t certificate, if applicable), all th development which were use	he plans accompanying the application for a construc ermal performance specifications set out in the Asses d to calculate those specifications.	tion certificate (or complying development ssor Certificate, and all aspects of the proposed		>							
(f) The applicant must construct t Certificate, and in accordance certificate which were used to	he development in accordance with all thermal perfor with those aspects of the development application o calculate those specifications.	mance specifications set out in the Assessor r application for a complying development		~	~						
(g) Where there is an in-slab hea	ting or cooling system, the applicant must:		~	~	~						
(aa) Install insulation with	an R-value of not less than 1.0 around the vertical ed	lges of the perimeter of the slab; or									
(bb) On a suspended floor edges of the perime	r, install insulation with an R-value of not less than 1.0 ter of the slab.	0 underneath the slab and around the vertical									
(h) The applicant must construct	e with the specifications listed in the table below.	~	~	~							
(i) The applicant must show on T ceiling fans set out in The As	he plans accompanying The development application sessor Certificate.	for The proposed development, The locations of	~								
			i	1	1						

	Thermal loads									
Dwelling no.	Area adjusted heating load (in MJ/m²/yr)	Area adjusted cooling load (in MJ/m²/yr)	Area adjusted total load (in MJ/m²/yr)							
2001	13.4	14.9	28.300							
2002	12.4	17.5	29.900							
2003	12.5	16.3	28.800							
2004	13.1	14.5	27.600							
2005	10.9	17.5	28.400							
All other dwellings	15.3	13.7	29.000							

		Construction of floors and walls										
Dwelling no.	Concrete slab on ground (m²)	Suspended floor with open subfloor (m²)	Suspended floor with enclosed subfloor (m²)	Suspended floor above garage (m²)	Primarily rammed earth or mudbrick walls							
2001	77.1	1	-	25.4	no							
2002	77.5	3.4	-	25.3	no							
2003	77.3	1	-	25.5	no							
2005	68.3	1.8	-	8.7	no							
All other dwellings	68.3	1.8	-	8.8	no							

	Floor types											
		Concrete	slab on ground	d	Suspended flo	or above encl	osed subfloor	Suspended floor above open subfloor				
Dwelling no.	Area (m²)	rea (m²) Insulation Low Dematerialisa emissions option		Area (m <sup>2</sup> ) Insulation Low Demate emissions option		Dematerialisation	Construction type	Area (m²)	Insulation	Construction type	Area (m²)	Insulation
2001	77.1	-	-	waffle pod slab	-	-	-	particle board, frame: timber - untreated softwood	1	-		
2002	77.5	-	-	conventional slab	-	-	-	particle board, frame: timber - untreated softwood	3.4	-		
2003	77.3	-	-	waffle pod slab	-	-	-	particle board, frame: timber - untreated softwood	1	-		

	Floor types									
		Concrete	slab on ground		Suspended flo	or above encl	osed subfloor	Suspended f	loor above op	en subfloor
Dwelling no.	Area (m²)	Insulation	Low Dematerialisation emissions option		Construction type	Area (m²)	Insulation	Construction type	Area (m²)	Insulation
2006	68.3	-	-	conventional slab	-	-	-	particle board, frame: timber - untreated softwood	1.8	-
All other dwellings	68.3	-	-	waffle pod slab	-	-	-	particle board, frame: timber - untreated softwood	1.8	-

	Floor types	loor types												
	First flo roor	oitable ine	Suspende	ed floor abov	e garage	Garage floor								
Dwelling no.	Construction type	Area (m²)	Insulation	Construction type	Area (m²)	Insulation	Construction type	Area (m²)	Insulation	Low emissions option	Dematerialisation			
2001	particle board, frame: timber - untreated softwood	73.8	-	particle board, frame: timber - untreated softwood	25.4	-	concrete slab on ground	34.5	-	-	waffle pod slab			
2002	particle board, frame: timber - untreated softwood	73.4	-	particle board, frame: timber - untreated softwood	25.3	-	concrete slab on ground	34.5	-	-	waffle pod slab			
2003	particle board, frame: timber - untreated softwood	74.2	-	particle board, frame: timber - untreated softwood	25.5	-	concrete slab on ground	34.5	-	-	waffle pod slab			
2005	particle board, frame: timber - untreated softwood	66.1	-	particle board, frame: timber - untreated softwood	8.7	-	concrete slab on ground	18.8	-	-	waffle pod slab			
All other dwellings	particle board, frame: timber	65.2	-	particle board, frame: timber	8.8	-	concrete slab on ground	18.8	-	-	waffle pod slab			

	Floor types	Floor types													
	First flo roor	oor above hal ns or mezzan	bitable ine	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				
	- untreated softwood			<ul> <li>untreated</li> <li>softwood</li> </ul>											

	External walls	External walls												
		External	wall type 1		External wall type 2									
Dwelling no.	Wall type	all type Area (m²) Insulation Low emissions pption		Wall type	Area (m²)	Insulation	Low emissions option							
2001	AAC veneer, frame : timber - untreated softwood	190.2	-	-	-	-	-	-						
2002	AAC veneer, frame : timber - untreated softwood	181.1	-	none	framed (fibre cement sheet or boards), frame : timber - untreated softwood	9.6	-	none						
2003	AAC veneer, frame : timber - untreated softwood	190.5	-	-	-	-	-	-						
2004	AAC veneer, frame : timber - untreated softwood	171.4	-	-	-	-	-	-						
2005	AAC veneer, frame : timber - untreated softwood	184.1	-	-	-	-	-	-						
All other dwellings	AAC veneer, frame : timber - untreated softwood	183.6	-	-	-	-	-	-						

	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		In	nternal v	vall type	1				Internal wall type	e 2			
Dwelling no.	Wall type	Area (m²)	Insulation	Wall	l type	Area (r	n²)	Insulatio	n	Wall type		Area (m²)	Insulation			
2001	plasterboard, frame: timber - untreated softwood	71	-	plaste frame - untr softw	erboard, e: timber reated vood	98.6		-		-		-	-			
2002	plasterboard, frame: timber - untreated softwood	71.2	-	plasterb frame: ti - untrea softwoo		99.6		-		-		-	-			
2003	plasterboard, frame: timber - untreated softwood	71	-	plaste frame - untr softw	erboard, 98.8 e: timber reated vood			-		-		-	-			
2004	plasterboard, frame: timber - untreated softwood	58.4	-	plaste frame - untr softw	erboard, e: timber reated vood	88.5		-		-		-	-			
2005	plasterboard, frame: timber - untreated softwood	58.5	-	plaste frame - untr softw	erboard, e: timber reated vood	76.2		-		-		-	-			
All other dwellings	plasterboard, frame: timber - untreated softwood	66.0	-	plaste frame - untr softw	erboard, e: timber reated vood	80.8		-		-		-	-			

	Ceiling and roo	of							
	Fla	t ceiling / pitched	l roof	Raked ce	iling / pitched o	r skillion roof	Flat ceiling / flat roof		
Dwelling no.	Construction type	Area (m²)	Insulation	Construction type	Area (m²)	Insulation	Construction type	Area (m²)	Insulation
2001	framed - metal roof, frame: timber - untreated softwood	7.7	Ceiling:,Roof:	-	-	Ceiling:,Roof:	framed - metal roof, frame: timber - untreated softwood	171.17	Ceiling:,Roof:
2002	framed - metal roof, frame: timber - untreated softwood	7.7	Ceiling:,Roof:	-	-	Ceiling:,Roof:	framed - metal roof, frame: timber - untreated softwood	149.36	Ceiling:,Roof:
2003	framed - metal roof, frame: timber - untreated softwood	7.5	Ceiling:,Roof:	-	-	Ceiling:,Roof:	framed - metal roof, frame: timber - untreated softwood	172.8	Ceiling:,Roof:
2005	framed - metal roof, frame: timber - untreated softwood	9	Ceiling:,Roof:	-	-	Ceiling:,Roof:	framed - metal roof, frame: timber - untreated softwood	113.4	Ceiling:,Roof:
All other dwellings	framed - metal roof, frame: timber - untreated softwood	9	Ceiling:,Roof:	-	-	Ceiling:,Roof:	framed - metal roof, frame: timber - untreated softwood	132.6	Ceiling:,Roof:

		Glazing type		Frame types						
Dwelling no.	Single glazing (m²)	Double glazing (m²)	Triple glazing (m²)	Aluminium frames (m²)	Timber frames (m²)	uPVC frames (m²)	Steel frames (m²)	Composite frames (m²)		
2002	-	54.5	-	50.9	3.6	-	-	-		
2005	-	44.2	-	42	2.2	-	-	-		
2001, 2003	-	56.6	-	53	3.6	-	-	-		
All other dwellings	-	43.6	-	41.4	2.2	-	-	-		

BASIX Department of Planning, Housing and Infrastructure
### 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>~</b>	<b>~</b>
(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.	•	<b>&gt;</b>	
(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.		<b>~</b>	
(e) The applicant must install each fire sprinkler system listed in the table so that the system is configured as specified in the table.		<b>~</b>	~
(f) The applicant must ensure that the central cooling system for a cooling tower is configured as specified in the table.		<b>~</b>	~

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>~</b>	>
(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.	~	<b>~</b>	~

Central energy systems	Туре	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 "V" 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 fulfillment it is required to monitor in relation to the building or part, has been fulfilled).



### NatHERS and BASIX Assessment



### Mirvac Proposed Residential Development

### To be built at 2 Bullecourt Avenue, Milperra NSW 2214

Issue	File Ref	Description	Author	Date
А	23-5295R	NatHERS Thermal Comfort and BASIX Assessment	KB/CB/MF	13/11/2024

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.





Sustainable Building Consultants p. 02 9970 6181 e. admin@efficientliving.com.au www.efficientliving.com.au



Mirvac WSU - Milperra

### 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 where open below

### External Walls

75mm Hebel panel 35mm air gap sarking, R2.7 insulation (insulation only value) and plasterboard lined 50mm Hebel panel 35mm air gap sarking, R2.7 insulation (insulation only value) and plasterboard lined Brick Veneer, R2.7 insulation (insulation only value) and plasterboard lined Lightweight cladding 20mm air gap sarking, R2.7 insulation (insulation only value) and plasterboard lined Note: No insulation is required to external garage walls

### External Colour:

2007 Medium (SA >0.475<0.7) 2008 Light (SA < 0.475) 2009, 2010, 2011 Dark (SA > 0.7)

### Walls within dwellings

Plasterboard on studs, no insulation required.

R2.7 insulation between unconditioned and conditioned areas (around Laundry, Bathrooms, and Garage)

### Glazing Doors/Windows

Window upgrade 3: Generic double-glazed, single 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 Casement (Entry Door): U 3.0 and SHGC 0.48 Fixed (Entry Sidelight): U 3.0 and SHGC 0.56

### Window frame colour

Dark (SA > 0.7)

### Roof Windows/Skylights

2008 and 2010: Solar tube

### **Roof and Ceilings**

Metal roof with anticon blanket (R<sub>u</sub>1.3 and R<sub>d</sub>1.3) R6.0 ceiling insulation (R4.0 perimeter batts where required, pitched roof only) and plasterboard lining, where metal roof above

Garage ceiling with R6.0 insulation and plasterboard lining, where conditioned area above No insulation to garage ceiling where roof above.



Mirvac WSU - Milperra

### External Colour

2007, 2009, 2010, 2011 Medium (SA >0.475<0.7) 2008 Dark (SA > 0.7)

### **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
2007	1x 1300mm ceiling fans to bedrooms only
	Upper floor windows 20R and 20L to be 1200mm height
	Upper floor windows 10 and 11 to be 1370mm height
	Removed 1x W07 to ground floor
2008, 2009, 2010 and 2011	1x 1300mm ceiling fans to bedrooms only

### Nationwide House Energy Rating Scheme<sup>®</sup> Class 1 Summary NatHERS<sup>®</sup> Certificate No. #HR-06KFG1-01

Generated on 12 Nov 2024 using Hero 4.1

### Property

Address Lot/DP NatHERS climate zone 2 Bullecourt Avenue, Milperra, NSW, 2214

56 - Mascot AMO

Haylea Edwards

+61 9970 6181

10213

HERA

haylea@efficientliving.com.au

havlea@efficientliving.com.au



### Accredited assessor

Name Business name Email Phone Accreditation No. Assessor Accrediting Organisation

### Verification

To verify this certificate, scan the QR code or visit http://www.hero-software.com.au /pdf/HR-06KFG1-01.

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 <u>www.abcb.gov.au</u>.

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

### Summary of all dwellings







R

The rating above is the minimum of all dwellings in this summary.

For more information on your dwelling's rating see: www.nathers.gov.au

### Whole of Home performance rating

No Whole of Home performance rating generated for this certificate or not completed for 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-UV80Z9-01	Lot 2007	16.0 (25)	12.9 (18)	28.9	7.1	n/a
HR-FQB28S-01	Lot 2008	15.4 (25)	12.2 (18)	27.6	7.2	n/a
HR-C0DLG6-01	Lot 2009	11.5 (25)	17.1 (18)	28.7	7.1	n/a
HR-N0AX7W-01	Lot 2010	16.5 (25)	13.4 (18)	29.9	7.0	n/a
HR-DWLKDM-01	Lot 2011	12.4 (25)	15.0 (18)	27.4	7.3	n/a

Nationwide House Energy Rating Scheme (NatHERS) is an initiative of the Australian, state and territory governments. For more details see www.nathers.gov.au Generated on 12 Nov 2024 using Hero 4.1 for 2 Bullecourt Avenue, Milperra, NSW, 2214



### **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 homes societal cost. For more details about an individual dwelling's assessment, refer to the individual dwelling's NatHERS Certificate (accessible via

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**<sup>°</sup>Certificate

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

### Multi Dwelling

Certificate number: 1772592M

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: Tuesday, 12 November 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	2 BULLECOURT AVENUE, MILPERRA NSW 2214_Copy						
Street address	2 BULLECOURT AVENUE MILPE	RRA 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	5						
Project score							
Water	46	Target 40					
Thermal Performance	V Pass	Target Pass					
Energy	<b>v</b> 100	Target 72					
Materials	<ul><li>✓ -100</li></ul>	Target n/a					

### Certificate Prepared by

Name / Company Name: Efficient Living Pty Ltd

### ABN (if applicable): 82116346082

Version: 4.03 / EUCALYPTUS\_03\_01\_0 Certificate No.: 1772592M

### **Description of project**

Project address	
Project name	2 BULLECOURT AVENUE, MILPERRA NSW 2214_Copy
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	5
Site details	
Site area (m <sup>2</sup> )	2052.6
Roof area (m <sup>2</sup> )	792.2
Non-residential floor area (m <sup>2</sup> )	0
Residential car spaces	0
Non-residential car spaces	0

Common area landscape		
Common area lawn (m²)	0	
Common area garden (m <sup>2</sup> )	0	
Area of indigenous or low water use species (m <sup>2</sup> )	0	
Assessor details and therma	al loads	
Assessor number	HERA10213	
Certificate number	HR-06KFG1-01	
Climate zone	56	
Project score		
Water	46	Target 40
Thermal Performance	V Pass	Target Pass
Energy	<b>V</b> 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 (m²)	Unconditioned floor area (m²)	Area of garden & Iawn (m²)	Indigenous species (min area m²)	Dwelling no.		No. of begrooties Conditioned floor area (m <sup>2</sup> )	Unconditioned floor area (m²)	Area of garden & Iawn (m²)	Indigenous species (min area m²)	Dwelling no.	No. of bedrooms	Conditioned floor area (m²)	Unconditioned floor area (m²)	Area of garden & Iawn (m²)	Indigenous species (min area m²)	Dwelling no.	No. of bedrooms	Conditioned floor area (m²)	Unconditioned floor area (m²)	Area of garden & Iawn (m²)	Indigenous species (min area m²)
2007	4+	169.7	15.4	225.47	50	200	08 4	+ 165.1	13.0	226.43	50	2009	4+	168.8	15.4	425.27	50	2010	4+	183.8	15.2	501.78	50
2011	4+	183.9	15.5	286.94	50																		

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 carriedout. 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:			
(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		✓	<ul> <li>Image: A second s</li></ul>
(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.	~	<b>~</b>	
(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.	1	1	1

(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.		<b>~</b>	
(h) The applicant must install in the dwelling:			1
(aa) the kitchen cook-top and oven specified for that dwelling in the "Appliances & other efficiency measures" column of the table below;		<b>~</b>	
(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		<b>~</b>	<b>v</b>
(cc) any clothes drying line specified for the dwelling in the "Appliances & other efficiency measures" column of the table.		<b>~</b>	
(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.	~	<b>v</b>	~

(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

Show on DA plans	Show on CC/CDC plans & specs	Certifier check
>	>	
	<b>~</b>	<b>&gt;</b>
	>	~
	<b>~</b>	<b>~</b>
	✓	<b>~</b>
>	~	
	<b>`</b>	
>	>	
<b>~</b>	~	~
	Show on DA plans	Show on DA plansShow on CC/CDC plans & specsImage: Constraint of the systemImage: Constraint of the system<

	Fixtures		Appli	ances	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	-	-	-	-	-	-	-	-	-	-

BASIX Department of Planning, Housing and Infrastructure

			Alternative water sou	Alternative water source ration Landscape Toilet Laundry Pool top- Spa top-up									
Dwelling no.	Alternative water supply systems	Size	Configuration	Landscape connection	Toilet connection (s)	Laundry connection	Pool top- up	Spa top-up					
2007	Individual water tank (No. 1)	Tank size (min) 2000 liters	To collect run-off from at least: 101.22 square metres of roof area; 72.28 square metres of impervious area; 225.47 square metres of garden and lawn area; and 0 square metres of planter box area.	yes	yes	yes	no	no					
2008	Individual water tank (No. 1)	Tank size (min) 2000 liters	To collect run-off from at least: 132.16 square metres of roof area; 78.29 square metres of impervious area; 226.43 square metres of garden and lawn area; and 0 square metres of planter box area.	yes	yes	yes	no	no					
2009	Individual water tank (No. 1)	Tank size (min) 2000 liters	To collect run-off from at least: 103.46 square metres of roof area; 80.25 square metres of impervious area; 224.06 square metres of garden and lawn area; and 0 square metres of planter box area.	yes	yes	yes	no	no					
2010	Individual water tank (No. 1)	Tank size (min) 2000 liters	To collect run-off from at least: 108.22 square metres of roof area; 81.64 square metres of impervious area; 287.34 square metres of garden and lawn area; and 0 square metres of planter box area.	yes	yes	yes	no	no					
All other dwellings	Individual water tank (No. 1)	Tank size (min) 2000 liters	To collect run-off from at least: 109.48 square metres of roof area; 78.94 square metres of impervious area; 286.94 square metres of garden and lawn area; and 0 square metres of planter box area.	yes	yes	yes	no	no					

(ii) Energy	Show on	Show on CC/CDC	Certifier
	DA plans	plans & specs	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.		<b>~</b>	
(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;		<b>~</b>	
(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		<b>~</b>	~
(cc) any clothes drying line specified for the dwelling in the "Appliances & other efficiency measures" column of the table.		<b>~</b>	
(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.	~	<b>~</b>	~

	Hot water	Bathroom ventilation system		Kitchen ventilation system		Laundry vent	ilation 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		Неа	ting	Natural lighting		
Dwelling no.	living areas	bedroom areas	living areas	bedroom areas	No. of bathrooms or toilets	Main kitchen	
2007, 2009	3-phase airconditioning / EER 3.0 - 3.5	3	yes				
All other dwellings	3-phase airconditioning / EER 3.0 - 3.5	2	yes				

	Inc		Individual sp	Da	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					
2008	between >10° to <=25° degree to the horizontal	5.0	Ν					
All other dwellings	between >0° to <=10° degree to the horizontal	5.0	Ν					

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(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.		~	

		Thermal loads	
Dwelling no.	Area adjusted heating load (in MJ/m²/yr)	Area adjusted cooling load (in MJ/m²/yr)	Area adjusted total load (in MJ/m²/yr)
2007	16	12.9	28.900
2008	15.4	12.2	27.600
2009	11.5	17.1	28.600
2010	16.5	13.4	29.900

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		Thermal loads	
Dwelling no.	Area adjusted heating load (in MJ/m²/yr)	Area adjusted cooling load (in MJ/m²/yr)	Area adjusted total load (in MJ/m²/yr)
All other dwellings	12.4	15.0	27.400

			Construction of floors and wall	S	
Dwelling no.	Concrete slab on ground (m²)	Suspended floor with open subfloor (m²)	Suspended floor with enclosed subfloor (m²)	Suspended floor above garage (m²)	Primarily rammed earth or mudbrick walls
2007	77.6	0.9	-	32.3	no
2008	77.6	-	-	25.2	no
2009	77.6	0.3	-	32	no
2010	85.9	6.3	-	25.6	no
All other dwellings	85.5	7.2	-	25.5	no

	Floor types											
		Concrete	slab on ground		Suspended flo	or above encl	osed subfloor	Suspended	Suspended floor above open subfloor			
Dwelling no.	Area (m²)	Insulation	Low emissions option	Dematerialisation	Construction type	Area (m²)	Insulation	Construction type	Area (m²)	Insulation		
2008	77.6	-	-	conventional slab	-	-	-	-	-	-		
2010	85.9	-	-	conventional slab	-	-	-	particle board, frame: timber - untreated softwood	6.3	-		
2011	85.5	-	-	conventional slab	-	-	-	particle board, frame: timber - untreated softwood	7.2	-		
All other dwellings	77.6	-	-	conventional slab	-	-	-	particle board, frame: timber - untreated softwood	0.9	-		

	Floor types										
	First flo roor	oor above hal ns or mezzar	bitable iine	Suspended floor above garage Garage floor			or	or and the second s			
Dwelling no.	Construction type	Area (m²)	Insulation	Construction type	Area (m²)	Insulation	Construction type	Area (m²)	Insulation	Low emissions option	Dematerialisation
2007	particle board, frame: timber - untreated softwood	74.3	-	particle board, frame: timber - untreated softwood	32.3	-	concrete slab on ground	34.2	-	-	conventional slab
2008	particle board, frame: timber - untreated softwood	75.3	-	particle board, frame: timber - untreated softwood	25.2	-	concrete slab on ground	34.2	-	-	conventional slab
2009	particle board, frame: timber - untreated softwood	74.3	-	particle board, frame: timber - untreated softwood	32	-	concrete slab on ground	34.2	-	-	conventional slab
2010	particle board, frame: timber - untreated softwood	81.2	-	particle board, frame: timber - untreated softwood	25.6	-	concrete slab on ground	35.2	-	-	conventional slab
All other dwellings	particle board, frame: timber - untreated softwood	81.2	-	particle board, frame: timber - untreated softwood	25.5	-	concrete slab on ground	35.1	-	-	conventional slab

	External walls								
		External	wall type 1			External	wall type 2	Low emissions option none	
Dwelling no.	Wall type	Area (m²)	Insulation	Low emissions option	Wall type	Area (m²)	Insulation	Low emissions option	
2007	AAC veneer, frame : timber - untreated softwood	179	-	none	framed (fibre cement sheet or boards), frame : timber - untreated softwood	17.4	-	none	
2008	AAC veneer, frame : timber	190.6	-	-	-	-	-	-	

	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		
	- untreated softwood									
2009	AAC veneer, frame : timber - untreated softwood	187.4	-	none	framed (fibre cement sheet or boards), frame : timber - untreated softwood	9.0	-	none		
2010	brick veneer, frame : timber - untreated softwood	199.8	-	none	framed (fibre cement sheet or boards), frame : timber - untreated softwood	6.6	-	none		
All other dwellings	brick veneer, frame : timber - untreated softwood	206.3	-	none	framed (fibre cement sheet or boards), frame : timber - untreated softwood	1.9	-	none		

	External walls							
		External w	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	n garage		nternal wall type	1		Internal wall type 2 type Area (m²) Insulation 	
Dwelling no.	Wall type	Area (m²)	Insulation	Wall type	Area (m²)	Insulation	Wall type	Area (m²)	Insulation
2007	plasterboard, frame: timber - untreated softwood	29.2	-	plasterboard, frame: timber - untreated softwood	159.7	-	-	-	-
2008	plasterboard, frame: timber	29.2	-	plasterboard, frame: timber	140.9	-	-	-	-

	Internal walls								
	Interna	l walls shared wi	th garage		Internal wall typ	be 1		Internal wall typ	be 2
Dwelling no.	Wall type	Area (m²)	Insulation	Wall type	Area (m²)	Insulation	Wall type	Area (m²)	Insulation
	- untreated softwood			- untreated softwood					
2009	plasterboard, frame: timber - untreated softwood	29.2	-	plasterboard, frame: timber - untreated softwood	158.8	-	-	-	-
2010	plasterboard, frame: timber - untreated softwood	29.3	-	plasterboard, frame: timber - untreated softwood	184.1	-	-	-	-
All other dwellings	plasterboard, frame: timber - untreated softwood	29.2	-	plasterboard, frame: timber - untreated softwood	181.1	-	-	-	-
	Ceiling and roo	f							
	Fla	t ceiling / pitcheo	d roof	Raked ce	iling / 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
2007	framed - metal roof, frame: timber - untreated softwood	143.48	Ceiling:,Roof:	-	-	Ceiling:,Roof:	framed - metal roof, frame: timber - untreated softwood	1.12	Ceiling:,Roof:
2008	framed - metal roof, frame: timber - untreated softwood	139.51	Ceiling:,Roof:	-	-	Ceiling:,Roof:	framed - metal roof, frame: timber - untreated softwood	22.17	Ceiling:,Roof:
2009	framed - metal roof, frame: timber - untreated softwood	114.94	Ceiling:,Roof:	-	-	Ceiling:,Roof:	framed - metal roof, frame: timber - untreated softwood	32.86	Ceiling:,Roof:

	Ceiling and roo	f								
	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	
2010	framed - metal roof, frame: timber - untreated softwood	125.72	Ceiling:,Roof:	-	-	Ceiling:,Roof:	framed - metal roof, frame: timber - untreated softwood	28.88	Ceiling:,Roof:	
All other dwellings	framed - metal roof, frame: timber - untreated softwood	120.19	Ceiling:,Roof:	-	-	Ceiling:,Roof:	framed - metal roof, frame: timber - untreated softwood	36.21	Ceiling:,Roof:	

		Glazing type				Frame types		
Dwelling no.	Single glazing (m²)	Double glazing (m²)	Triple glazing (m²)	Aluminium frames (m²)	Timber frames (m²)	uPVC frames (m²)	Steel frames (m²)	Composite frames (m²)
2007	-	53.2	-	34.9	18.3	-	-	-
2008	-	57.3	-	53.7	3.6	-	-	-
2009	-	57.8	-	54.3	3.5	-	-	-
2010	-	59.5	-	54	5.5	-	-	-
All other dwellings	-	66	-	60.5	5.5	-	-	-

### 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>~</b>	<b>&gt;</b>
(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.	>	<b>~</b>	
(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.		<b>~</b>	
(e) The applicant must install each fire sprinkler system listed in the table so that the system is configured as specified in the table.		<b>~</b>	>
(f) The applicant must ensure that the central cooling system for a cooling tower is configured as specified in the table.		<b>~</b>	~

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>~</b>	>
(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.	~	<b>~</b>	~

Central energy systems	Туре	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 fulfillment it is required to monitor in relation to the building or part, has been fulfilled).

### **APPENDIX H:** LANDSCAPE PLANS



### LEGEND





### ASHFORD AVENUE

🖅 Turf - Kikuyu/Couch

----- Timber edging

CS Crushed stone

□□□⊟ Stepping stones 200 x 600mm





Dianella 'Tas Red'

Lomandra 'Savannah Blue'

## WSU - MILPERRA Stage 2 Lots 2001-2006 LANDSCAPE DESIGN



Green Tree Designs

Green Tree Design

PLANT	ING SCHEDULE						
Abbrev. TREEES	Botanical Name	Common Name	Pot Size	Spacing	Height	Width	Qty
Trist	Tristaniopsis laurina	Water Gum	75L		7-12m	5m	3
Elae	Elaecarpus reticulatus	Blueberry Ash	75L		10m	5m	3
Ef	Eucalyptus fibrosa	Red Ironbark	75L		30m	10-20m	2
Ee	Eucalyptus eugenioides	Thin Leaved Stringy Bark	75L		25-30m	10-20m	4
SHRUBS							
Syz	Syzgyium 'Backyard Bliss'	Lillypilly	45L	1m	2m	hedged	37
Vib	Viburnum odoratissimum	Viburnum	45L	1m	2m	hedged	35
Cal	Callistemon 'Scarlet Flame'	Bottlebrush	300mm	800mm	1.5m	1m	24
Ac	Acmena 'Green Screen'	Lillypilly	300mm	800mm	1.8m	hedged	23
Mur	Murraya paniculatum	Orange Jessamine	300mm	800mm	1.5m	hedged	26
Wes	Westringia 'Wynyabbie Gem'	Coastal Rosemary	300mm	500mm	1.5m	hedged	24
Euo	Euonymus 'Tom Thumb'	Dwarf Spindle Bush	300mm	500mm	600mm	hedged	27
All	Acmena 'Allyn's Magic'	Lillypilly	300mm	500mm	800mm	hedged	24
Cor	Correa glabra 'Ivory Lantern'	Rock Correa	300mm	500mm	600mm	600mm	31
GRASSES/0	GROUNDCOVERS						
Dia	Dianella 'Tas Red'	Flax Lilly	150mm	400mm	500mm	500mm	161
Lom	Lomandra 'Savannah Blue'	Perennial Tussok'	150mm	300mm	300mm	300mm	61
Er	Eremophila 'Blue Horizon'	Emu Bush	200mm	500mm	250mm	1m	41
Har	Hardenberia 'Sea of Purple'	Purple Coral Pea	150mm	500mm	500mm	1.5m	52
Chr	Chrysocephalum 'Desert Flame'	Yellow Buttons	150mm	5/m2	300mm	500mm	55
Vio	Viola hederacea	Native Violet	120mm	5/m2	100mm	600mm	80
Di	Dichondra repens	Kidney Weed	100mm	5/m2	100mm	1m	180
Aju	Ajuga australis	Austral Bugle	150mm	5/m2	200mm	200mm	60
	Mulch						332.6m2
	Turf						683.1m2
	Timber edging						185.3Lm
	Crushed stone						96m2
	Stepping stones						154

Eremophila Blue Horizon' Chrysocephalum 'Desert Flame' Hardenbergia 'Sea of Purple'



Viola hederacea

Dichondra repens



rev: date: A 11.12.24 ISSUE FOR DA

amendment:



MIRVAC



Correa glabra 'Ivory Lantern'



Lvl 28, 200 George Street SYDNEY NSW 2000

dwg no: LS001

> Sheet A1 @ 1:200 Sheet 1 of 1







### ASHFORD AVENUE











Dianella 'Tas Red'

LANDSCAPE DESIGN

Eremophila Blue Horizon' Chrysocephalum 'Desert Flame' Hardenbergia 'Sea of Purple' Lomandra 'Savannah Blue' WSU - MILPERRA Stage 2 Lots 2007-2011



Green Tree Design

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

### PLANTING SCHEDULE

Abbrev. TREEES	Botanical Name	Common Name	Pot Size	Spacing	Height	Width	Qty
Trist	Tristaniopsis laurina	Water Gum	75L		7-12m	5m	2
Elae	Elaecarpus reticulatus	Blueberry Ash	75L		10m	5m	3
Ef	Eucalyptus fibrosa	Red Ironbark	75L		30m	10-20m	2
Ee	Eucalyptus eugenioides	Thin Leaved Stringy Ba	ark 75L		25-30m	10-20m	3
SHRUBS							
Syz	Syzgyium 'Backyard Bliss'	Lillypilly	45L	1m	2m	hedged	27
Vib	Viburnum odoratissimum	Viburnum	45L	1m	2m	hedged	41
Cal	Callistemon 'Scarlet Flame'	Bottlebrush	300mm	800mm	1.5m	1m	12
Ac	Acmena 'Green Screen'	Lillypilly	300mm	800mm	1.8m	hedged	40
Mur	Murraya paniculatum	Orange Jessamine	300mm	800mm	1.5m	hedged	41
Wes	Westringia 'Wynyabbie Gem'	Coastal Rosemary	300mm	500mm	1.5m	hedged	54
Euo	Euonymus 'Tom Thumb'	Dwarf Spindle Bush	300mm	500mm	600mm	hedged	15
All	Acmena 'Allyn's Magic'	Lillypilly	300mm	500mm	800mm	hedged	54
Corr	Correa glabra 'Ivory Lantern'	Rock Correa	300mm	500mm	600mm	600mm	38
GRASSES	/GROUNDCOVERS						
Dia	Dianella 'Tas Red'	Flax Lilly	150mm	400mm	500mm	500mm	134
Lom	Lomandra 'Savannah Blue'	Perennial Tussok'	150mm	300mm	300mm	300mm	45
Er	Eremophila 'Blue Horizon'	Emu Bush	200mm	500mm	250mm	1m	19
Har	Hardenberia 'Sea of Purple'	Purple Coral Pea	150mm	500mm	500mm	1.5m	54
Chr	Chrysocephalum 'Desert Flame	'Yellow Buttons	150mm	5/m2	300mm	500mm	58
Vio	Viola hederacea	Native Violet	120mm	5/m2	100mm	600mm	60
Di	Dichondra repens	Kidney Weed	100mm	5/m2	100mm	1m	100
Aju	Ajuga australis	Austral Bugle	150mm	5/m2	200mm	200mm	48
	Mulch						318.9m
	Turf						643.3m







Viola hederacea



Ajuga australis

date: rev: A 11.12.24 ISSUE FOR DA

amendment:

client: MIRVAC 257.4Lm 40.8m2 92

LvI 28, 200 George Street SYDNEY NSW 2000

dwg no: LS001 Sheet A1 @ 1:200

Sheet 1 of 1



### APPENDIX I: ARCHITECTURAL PLANS





Proposed indicative artist impression of housing streetscape. All landsacpe features are indicative only. Refer to landscape consultants documentation package for landscape design & plant species selection.



SHEET NO.	DRAWIN
S2-02-DA000	COVERS
S2-02-DA001	THERMA
S2-02-DA050	LOCATIC
S2-02-DA051	LOT LAY
S2-02-DA100	EROSIO
S2-02-DA140	HYDRAU
S2-02-DA210	GROUNE
S2-02-DA220	FIRST FL
S2-02-DA230	ROOF PL
S2-02-DA250	NEIGHBO
S2-02-DA251	NEIGHBO
S2-02-DA320	COLOUR
S2-02-DA330	SECTION
S2-02-DA400	SHADOW
S2-02-DA401	SHADOW
S2-02-DA410	SUN EYE
S2-02-DA420	AREA PL
S2-02-DA421	GFA ARE

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Accreditation No.	HERA 10213	52
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NATIONWIDE HOUSE	R code or follow website link fo	r rating deta
Assessor name	Haylea Edwards	ीवा अप्रे
Accreditation No.	HERA 10213	
Property Address	Lot 2004, 2 Bullecourt Avenue, Milperra, NSW, 2214	
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- ESTATE PLAN



MIRVAC DESIGN evel 28 200 George Sydney NSW 2000 02 9080 8000 ban design terior design aphic design Mirvac Design Pty.Ltd. ABN 78 003 359 153 Mirvac Design Nominated / Responsible Architects Anita Verma Michael Wiener David Hirst Paromvong Sinbandhit Andrew La https://www.mirvacdesign.com/nominated-architects



project: WSU - MILPERRA 2 Bullecourt Avenue, Milperra NSW 2214 Lot: 2001-2006 Stage: 2 Site: 2.2

# WESTERN SYDNEY UNIVERSITY - WSU

SHEET NO.	DRAWING TITLE	REV
S2-02-DA000	COVER SHEET	В
S2-02-DA001	THERMAL PERFORMANCE & SUSTAINABILITY SPECIFICATIONS	В
S2-02-DA050	LOCATION & SITE ANALYSIS PLAN	В
S2-02-DA051	LOT LAYOUT & SITING PLAN	В
S2-02-DA100	EROSION, BENCHING & SEDIMENT CONTROL PLAN	В
S2-02-DA140	HYDRAULIC CONCEPT PLAN	В
S2-02-DA210	GROUND FLOOR PLANS	В
S2-02-DA220	FIRST FLOOR PLANS	В
S2-02-DA230	ROOF PLANS	В
S2-02-DA250	NEIGHBOURING NOTIFICATION PLAN - LOT 2001-2004	В
S2-02-DA251	NEIGHBOURING NOTIFICATION PLAN - LOT 2005-2006	В
S2-02-DA320	COLOURED STREETSCAPES - FRONT	В
S2-02-DA330	SECTIONS	В
S2-02-DA400	SHADOW ANALYSIS & DIAGRAM - 21 JUNE - 9AM/12PM	В
S2-02-DA401	SHADOW ANALYSIS & DIAGRAM - 21 JUNE - 3PM	В
S2-02-DA410	SUN EYE VIEWS - 21 JUNE 8AM/9AM/10AM/11AM	В
S2-02-DA420	AREA PLAN - PRIVATE OPEN SPACE AND PERMEABLE AREA	В
S2-02-DA421	GFA AREA PLAN - GROUND & FIRST FLOOR PLAN	В
S2-02-DA800	GENERAL CONSTRUCTION DETAILS	В

HOUSE HOUSE	QR code or follow website link fo	or rating details.	NATIONWIDE HOUSE IMAGE ACTUAL SCHEME @	R code or follow website link fo	or rating de
Assessor name	Haylea Edwards		Assessor name	Haylea Edwards	∕∎ż
Accreditation No.	HERA 10213	공수학생품	Accreditation No.	HERA 10213	
Property Address	Lot 2002, 2 Bullecourt Avenue,	525-7651	Property Address	Lot 2003, 2 Bullecourt Avenue,	`7 <b>5</b> 5
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COVER	SHEET

job no:	MB-10197			
drawing no:	S2-02-DA0	00		
scale @ A1 :	1 : 5000			
date:	29.11.24	rev:	В	

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Glazing (Doors & windows) Window upgrade 3: Generic double-glazed, single low-e Awning: U-value 2.9 and SHGC 0.35 Fixed: U-value 2.0 and SHGC 0.44 Sliding door: U-value 2.8 and SHGC 0.39 Casement (Entry Door): U-value 3.0 and SHGC 0.48 Fixed (Entry Sidelight): U-value 3.0 and SHGC 0.56

Plasterboard on studs, no insulation required.

LOT - 2001 (THERMAL PERFORMANCE)

Waffle pod slab on ground 85mm with 300mm waffle pods

Note: No insulation is required to external garage walls

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

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

50mm Hebel panel 35mm air grap sarking, R2.7 insulation (insulation only vaule) and plasterboard lined

R2.7 insulation between unconditioned and conditioned areas (around Laundry, Bathrooms and Garage)

Lightweight cladding 20mm air grap sarking, R2.7 insulation (insulation only value) and plasterboard lined

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

Construction General:

Floor coverings

External walls

External Wall Colour:

As per plans provided.

Walls within dwellings

Light (SA < 0.475)

Dark (SA > 0.7)

Walls

Floor coverings as per plans

### Window frame colour Dark (SA > 0.7)

Roof Windows/Skylights Solar Tube

### Roof and Ceilings

Metal roof with anticon blanket (Ru1.3 and Rd1.3) R6.0 ceiling insulation (R4.0 perimeter batts where required, pitched roof only) and plasterboard lining, where metal roof above Garage ceiling with R6.0 inuslation and plasterboard lining, where conditioned area above Note: No insulation to garage ceiling where roof above

### External Roof colour Dark (SA > 0.7)

**Ceiling Penetrations** Sealed and insulated LED downlights as per lighting plan Sealed and insulated exhaust fans 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 downlights proposed will have capped fittings

1200mm ceiling fans to bedrooms and Living (Sitting only)

### BASIX Inclusions

- <u>Site details</u> Lot number: 2001
- 188.8m<sup>2</sup> Measure roof area: Site area refer to Site Plan DA S1-01-DA051 Landscaping area refers to Landscaping Plan by TURF

Water Fixtures 4 stars showers mid flow (>6.0 but <= 7.5 liters/min)

### 4 stars toilets

- 5 stars 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 3.0-3.5 cooling
- Three phase AC EER 3.0-3.5 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

## Fixed (Entry Sidelight): U-value 3.0 and SHGC 0.56

Window frame colour Dark (SA > 0.7)

Fixed: U-value 2.0 and SHGC 0.44

Sliding door: U-value 2.8 and SHGC 0.39

LOT - 2002 (THERMAL PERFORMANCE)

Waffle pod slab on ground 85mm with 300mm waffle pods

Note: No insulation is required to external garage walls

<u>Glazing (Doors & windows)</u> Window upgrade 3: Generic double-glazed, single low-e Awning: U-value 2.9 and SHGC 0.35

Casement (Entry Door): U-value 3.0 and SHGC 0.48

Plasterboard on studs, no insulation required.

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

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

50mm Hebel panel 35mm air grap sarking, R2.7 insulation (insulation only vaule) and plasterboard lined

Lightweight cladding 20mm air grap sarking, R2.7 insulation (insulation only value) and plasterboard lined

R2.7 insulation between unconditioned and conditioned areas (around Laundry, Bathrooms and Garage)

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

Construction General:

Floor coverings

External walls

External Wall Colour:

As per plans provided.

Walls within dwellings

Dark (SA > 0.7)

Floor coverings as per plans

### Roof Windows/Skylights Solar Tube

Roof and Ceilings Metal roof with anticon blanket (Ru1.3 and Rd1.3) R6.0 ceiling insulation (R4.0 perimeter batts where required, pitched roof only) and plasterboard lining, where metal roof above Garage ceiling with R6.0 inuslation and plasterboard lining, where conditioned area above Note: No insulation to garage ceiling where roof above

External Roof colour

Medium (SA > 0.475 < 0.7)

Ceiling Penetrations Sealed and insulated LED downlights as per lighting plan Sealed and insulated exhaust fans 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 downlights proposed will have capped fittings

BASIX Inclusions Site details Lot number: 2002 Measure roof area: 144.1m<sup>2</sup>

1300mm ceiling fans to bedrooms and Living (Sitting, Living and Family)

Site area refer to Site Plan DA S1-01-DA051 Landscaping area refers to Landscaping Plan by TURF

### Water Fixtures

4 stars showers mid flow (>6.0 but <= 7.5 liters/min) 4 stars toilets

### 5 stars 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 3.0-3.5 cooling Three phase AC EER 3.0-3.5 heating

Lighting LED lighting throughout

### Ventilation

- Bathroom exhaust individual fan, ducted to facade or roof. Interlocked to light with timer off. Kitchen exhaust - Individual fan, ducted to facade 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

## Construction General:

Floor coverings

## External walls

75mm Hebel panel 35mm air gap sarking, R2.7 insulation (insulation only value) and plasterboard lined 50mm Hebel panel 35mm air grap sarking, R2.7 insulation (insulation only vaule) and plasterboard lined Lightweight cladding 20mm air grap sarking, R2.7 insulation (insulation only value) and plasterboard lined Note: No insulation is required to external garage walls

### As per plans provided. Medium (SA > 0.475 < 0.7)

Walls within dwellings Plasterboard on studs, no insulation required. R2.7 insulation between unconditioned and conditioned areas (around Laundry, Bathrooms and Garage)

### Window frame colour Dark (SA > 0.7) Roof Windows/Skylights Solar Tube

Roof and Ceilings where metal roof above

### Note: No insulation to garage ceiling where roof above

External Roof colour Dark (SA > 0.7) Ceiling Penetrations

## External Shading

Ventilation

BASIX Inclusions Site details

Landscaping area refers to Landscaping Plan by TURF <u>Water Fixtures</u> - 4 stars showers mid flow (>6.0 but <= 7.5 liters/min) 4 stars toilets 5 stars 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 Heating and cooling

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

LOT - 2003 (THERMAL PERFORMANCE)

Waffle pod slab on ground 85mm with 300mm waffle pods Timber frame between levels, no insulation required between conditioned areas. Suspended timber frame, with an R4.0 insulation lined where open below

Floor coverings as per plans

External Wall Colour:

Glazing (Doors & windows) Window upgrade 3: Generic double-glazed, single low-e Awning: U-value 2.9 and SHGC 0.35 Fixed: U-value 2.0 and SHGC 0.44 Sliding door: U-value 2.8 and SHGC 0.39 Casement (Entry Door): U-value 3.0 and SHGC 0.48 Fixed (Entry Sidelight): U-value 3.0 and SHGC 0.56

Metal roof with anticon blanket (Ru1.3 and Rd1.3) R6.0 ceiling insulation (R4.0 perimeter batts where required, pitched roof only) and plasterboard lining, Garage ceiling with R6.0 inuslation and plasterboard lining, where conditioned area above

Sealed and insulated LED downlights as per lighting plan Sealed and insulated exhaust fans as per plans

Shading as per stamped drawings

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

Lot number: 2003 Measure roof area: 189.8m<sup>2</sup> Site area refer to Site Plan DA S1-01-DA051

Electric heat pump – 21 to 25 STCs Three phase AC EER 3.0-3.5 cooling Three phase AC EER 3.0-3.5 heating LOT - 2004 (THERMAL PERFORMANCE) Construction General:

Waffle pod slab on ground 85mm with 300mm waffle pods Timber frame between levels, no insulation required between conditioned areas. Suspended timber frame, with an R4.0 insulation lined where open below

Floor coverings Floor coverings as per plans

External walls 75mm Hebel panel 35mm air gap sarking, R2.7 insulation (insulation only value) and plasterboard lined 50mm Hebel panel 35mm air grap sarking, R2.7 insulation (insulation only vaule) and plasterboard lined Lightweight cladding 20mm air grap sarking, R2.7 insulation (insulation only value) and plasterboard lined Note: No insulation is required to external garage walls

External Wall Colour: As per plans provided. Medium (SA > 0.475 < 0.7)

Walls within dwellings Plasterboard on studs, no insulation required. R2.7 insulation between unconditioned and conditioned areas (around Laundry, Bathrooms and Garage)

<u>Glazing (Doors & windows)</u> Window upgrade 3: Generic double-glazed, single low-e Awning: U-value 2.9 and SHGC 0.35 Fixed: U-value 2.0 and SHGC 0.44 Sliding door: U-value 2.8 and SHGC 0.39 Casement (Entry Door): U-value 3.0 and SHGC 0.48 Fixed (Entry Sidelight): U-value 3.0 and SHGC 0.56 Window frame colour

Dark (SA > 0.7)

Roof and Ceilings Metal roof with anticon blanket (Ru1.3 and Rd1.3) R6.0 ceiling insulation (R4.0 perimeter batts where required, pitched roof only) and plasterboard lining, where metal roof above Garage ceiling with R6.0 inuslation and plasterboard lining, where conditioned area above Note: No insulation to garage ceiling where roof above External Roof colour

Dark (SA > 0.7) **Ceiling Penetrations** Sealed and insulated LED downlights as per lighting plan Sealed and insulated exhaust fans as per plans

External Shading Shading as per stamped drawings

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

**BASIX Inclusions** Site details Lot number: 2004 Measure roof area: 146.7m<sup>2</sup> Site area refer to Site Plan DA S1-01-DA051

Landscaping area refers to Landscaping Plan by TURF

Water Fixtures 4 stars showers mid flow (>6.0 but <= 7.5 liters/min)

4 stars toilets 5 stars 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 3.0-3.5 cooling

Three phase AC EER 3.0-3.5 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

LOT - 2005 (THERMAL PERFORMANCE)

Construction General: Waffle pod slab on ground 85mm with 300mm waffle pods Timber frame between levels, no insulation required between conditioned areas. Suspended timber frame, with an R4.0 insulation lined where open below

Floor coverings Floor coverings as per plans

Walls External walls

75mm Hebel panel 35mm air gap sarking, R2.7 insulation (insulation only value) and plasterboard lined 50mm Hebel panel 35mm air grap sarking, R2.7 insulation (insulation only vaule) and plasterboard lined Lightweight cladding 20mm air grap sarking, R2.7 insulation (insulation only value) and plasterboard lined Note: No insulation is required to external garage walls

External Wall Colour: As per plans provided. Light (SA < 0.475) Dark (SA > 0.7)

Walls within dwellings Plasterboard on studs, no insulation required. R2.7 insulation between unconditioned and conditioned areas (around Laundry, Bathrooms and Garage)

<u>Glazing (Doors & windows)</u> Window upgrade 3: Generic double-glazed, single low-e Awning: U-value 2.9 and SHGC 0.35 Fixed: U-value 2.0 and SHGC 0.44 Sliding door: U-value 2.8 and SHGC 0.39 Casement (Entry Door): U-value 3.0 and SHGC 0.48 Fixed (Entry Sidelight): U-value 3.0 and SHGC 0.56

Window frame colour Dark (SA > 0.7)

Roof Windows/Skylights Solar Tube

Roof and Ceilings Metal roof with anticon blanket (Ru1.3 and Rd1.3) R6.0 ceiling insulation (R4.0 perimeter batts where required, pitched roof only) and plasterboard lining, where metal roof above Garage ceiling with R6.0 inuslation and plasterboard lining, where conditioned area above Note: No insulation to garage ceiling where roof above

External Roof colour Medium (SA > 0.475 < 0.7)

Ceiling Penetrations Sealed and insulated LED downlights as per lighting plan Sealed and insulated exhaust fans 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 downlights proposed will have capped fittings 1200mm ceiling fans to bedrooms and Living (Media and Family)

BASIX Inclusions <u>Site details</u>

2005 Lot number 111.8m<sup>2</sup> Measure roof area: Site area refer to Site Plan DA S1-01-DA051 Landscaping area refers to Landscaping Plan by TURF

Water Fixtures 4 stars showers mid flow (>6.0 but <= 7.5 liters/min) 4 stars toilets 5 stars 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 3.0-3.5 cooling

Three phase AC EER 3.0-3.5 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

architecture urban design interior design graphic design Mirvac Design Nominated / Responsible Architects Anita Verma Michael Wiener David Hirst Paromvong Sinbandhit Andrew La https://www.mirvacdesign.com/nominated-architects





### project: WSU - MILPERRA 2 Bullecourt Avenue, Milperra NSW 2214 Stage: 2

LOT - 2006 (THERMAL PERFORMANCE)
Construction General:
<u>Floors</u> Waffle pod slab on ground 85mm with 300mm waffle pods
Timber frame between levels, no insulation required between conditioned areas. Suspended timber frame, with an R4.0 insulation lined where open below
Floor coverings Floor coverings as per plans
Walls External walls
75mm Hebel panel 35mm air gap sarking, R2.7 insulation (insulation only value) and plasterboard lined 50mm Hebel panel 35mm air grap sarking, R2.7 insulation (insulation only value) and plasterboard lined Lightweight cladding 20mm air grap sarking, R2.7 insulation (insulation only value) and plasterboard lined Note: No insulation is required to external garage walls
External Wall Colour: As per plans provided. Medium (SA > 0.475 < 0.7)
Walls within dwellings Plasterboard on studs, no insulation required. R2.7 insulation between unconditioned and conditioned areas (around Laundry, Bathrooms and Garage
Glazing (Doors & windows) Window upgrade 3: Generic double-glazed, single low-e Awning: U-value 2.9 and SHGC 0.35 Fixed: U-value 2.0 and SHGC 0.44 Sliding door: U-value 2.8 and SHGC 0.39 Casement (Entry Door): U-value 3.0 and SHGC 0.48 Fixed (Entry Sidelight): U-value 3.0 and SHGC 0.56
Window frame colour Dark (SA > 0.7)
Roof and Ceilings Metal roof with anticon blanket (Ru1.3 and Rd1.3) R6.0 ceiling insulation (R4.0 perimeter batts where required, pitched roof only) and plasterboard lining, where metal roof above Garage ceiling with R6.0 inuslation and plasterboard lining, where conditioned area above Note: No insulation to garage ceiling where roof above
External Roof colour Dark (SA > 0.7)
Ceiling Penetrations Sealed and insulated LED downlights as per lighting plan Sealed and insulated exhaust fans 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 downlights proposed will have capped fittings
1200mm ceiling fans to bedrooms only
BASIX Inclusions
<u>Site details</u> - Lot number: 2006
<ul> <li>Measure roof area: 146.7m<sup>2</sup></li> <li>Site area refer to Site Plan DA S1-01-DA051</li> <li>Landscaping area refers to Landscaping Plan by TURF</li> </ul>
Water Fixtures
<ul> <li>4 stars showers mid flow (&gt;6.0 but &lt;= 7.5 liters/min)</li> <li>4 stars toilets</li> <li>5 stars taps</li> </ul>
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
<ul> <li>Three phase AC EER 3.0-3.5 cooling</li> <li>Three phase AC EER 3.0-3.5 heating</li> </ul>
Lighting - LED lighting throughout
Ventilation - Bathroom exhaust – individual fan, ducted to facade or roof. Interlocked to light with timer off
<ul> <li>Kitchen exhaust – Individual fan, ducted to façade or roof. Manual switch on/off</li> <li>Laundry exhaust – Individual fan, ducted to façade or roof. Manual switch on/off</li> <li>Other</li> </ul>
- Electric cooktop & electric oven
Outdoor cromes arying line     Fridge Space – not well-ventilated

Alternative energy 5.0kW peak system per house



### **THERMAL PERFORMANCE &** SUSTAINABILITY SPECIFICATIONS

MB-10197 job no: drawing no: S2-02-DA001 scale @ A1 29.11.24 date: rev: Copyright of the design and other information shown here is owned by Mirvac Design pty. Itd. Reproduction or use of the design by any party for any purpose is expressly forbidden without the written permission of Mirvac Design pty. Itd.





### Stage: 2 Site: 2.2 Lot: 2001-2006

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ASHFORD AVENUE

DA/TP - SITING PLAN - LOT 2001-2006

SITE 1 MODEL TYPES			
Lot No.	House Type		
2001	WS-28b-220AR-F2-870		
2002	WS-28b-220AR-F7-870		
2003	WS-28b-220AR-F3-870		
2004	WS-24-217G-F1-870		
2005	WS-08-217H-F11-870		
2006	WS-24-217G-F1-870		

Lot	No	

2001	
2002	
2003	
2004	
2005	
2006	

 29.11.24
 B
 ISSUE FOR DA

 15.11.24
 A
 ISSUE FOR CONSULTANTS

 date
 rev
 amendment





project: WSU - MILPERRA 2 Bullecourt Avenue, Milperra NSW 2214 Stage: 2 Site: 2.2 Lot: 2001-2006 title:

SITEWORK				
BOW	BOTTOM OF WALL LEVEL			
CL	CLOTHES LINE			
EGL	EXISTING GROUND LEVEL			
FRL	FINISHED RELATIVE LEVEL			
GM	GAS METER			
HC	HOSE COCK			
HCR	HOSE COCK RECYCLE			
HWU	HOT WATER UNIT			
IHWU	INSTANTANEOUS HOT WATER UNIT			
КО	KERB OUTLET			
LB	LETTER BOX			
MB	ELECTRICAL METERBOX			
NBN	NATIONAL BROADBAND NETWORK			
PCD	PREMISES CONNECTION DEVICE			
PWM	NON POTABLE RECYCLED WATER METER			
RL	REDUCED LEVEL			
RWT	RAINWATER TANK			
SRL	STRUCTURAL RELATIVE LEVEL			
TOW	TOP OF WALL LEVEL			
WM	WATER METER			
$\longrightarrow$	DIRECTION OF FALL			
$\rightarrow \rightarrow$	PIPELINE CONNECTION TO RWT			
$\rightarrow \rightarrow$	PIPELINE STORMWATER OVERFLOW			
$\rightarrow \rightarrow$	POTABLE WATER			
$\boxtimes$	STORMWATER DRAINAGE PIT			
	GRATED DRAIN			
	FENCE TYPES			
— AB-11 —	1100 HIGH ANGLE BLADE FENCE			
— AB-18 —	1800 HIGH VERTICAL METAL BATTENS			
— BT-18 —	1800 HIGH VERTICAL BATTENS			
— LC-15 —	1500 HIGH TIMBER LAPPED & CAPPED FENCE			
— LC-18 —	1800 HIGH TIMBER LAPPED & CAPPED FENCE			
— PF-15 —	1500 HIGH VERTICAL PICKET FENCE			
— PF-18 —	1800 HIGH VERTICAL PICKET FENCE			

SITE F	SR	
Gross floor		500
area	Lot_Area	FSR
183.0 m <sup>2</sup>	384.9 m <sup>2</sup>	47.54%
184.3 m <sup>2</sup>	384.9 m <sup>2</sup>	47.88%
183.0 m <sup>2</sup>	384.9 m <sup>2</sup>	47.54%
148.5 m²	320.7 m <sup>2</sup>	46.31%
148.8 m <sup>2</sup>	320.7 m <sup>2</sup>	46.41%
148.5 m <sup>2</sup>	320.7 m <sup>2</sup>	46.31%



rev: B

29.11.24

date:

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# LOT LAYOUT & SITING PLAN

FUTURE RESIDENTIAL \_\_\_\_\_ SF \_\_\_\_\_\_ SF \_\_\_\_\_\_ SF \_\_\_\_\_ \_\_\_\_\_\_ SF \_\_\_\_\_\_ SF \_\_\_\_\_\_ SF \_\_\_\_\_\_ SF \_\_\_\_\_\_ SF \_\_\_\_\_ SF \_\_\_\_\_\_ SF \_\_\_\_\_\_ SF 2 2 **2004** 320.7 m<sup>2</sup> WS-24-217G-F1-870 <u>2003</u> <u>2002</u> <u>2001</u> 384.9 m<sup>2</sup> WS-28b-220AR-F3-870 384.9 m<sup>2</sup> WS-28b-220AR-F2-870 384.9 m<sup>2</sup> WS-28b-220AR-F7-870 FUTURE RESIDENTIAL SRL 6.125 SRL 6.125 SRL 6.025 SRL 6.125 A STE /JSTE 7 \_\_\_\_ ~\_\_\_ HOUSE HOUSE SRL:6.285 PAD LEVEL RL:5.900 HOUSE SRL:6.285 PAD LEVEL RL:5.900 HOUSE SRL:6.285 PAD LEVEL RL:5.900 SRL:6.185 PAD LEVEL RL:5.800 2003 200Z 2004 SRL 6.245 SRL 6.245 SRL 6.245 GARAGE SRL:6.235 PAD LEVEL RL:5.850 GARAGE SRL:6.235 PAD LEVEL RL:5.850 SRL 6.085 STEP GARAGE SRL:6.235 PAD LEVEL RL:5.850 SIEP S SRL 6.145 GARAGE SRL:6.135 PAD LEVEL RL:5.750 STEP •**•**• 10% 2000 2000 10% Ô SRL 6.235 g ≞ / SRL 6.135 」<sub>38</sub>度/、「 SRL 6.235」 SRĽ 6.2 Ô

\* 8570

WM

à

ASHFORD AVENUE

4170

WM +

- <del>(</del>

6500

DA/TP - EROSION/SEDIMENT CONTROL & BENCHING PLAN - LOT 2001-2006

STOCK

WM +

S2-02-DA320

WM +

200mm







project: WSU - MILPERRA 2 Bullecourt Avenue, Milperra NSW 2214 Stage: 2 Site: 2.2 Lot: 2001-2006

SITEWORK			
BOW	BOTTOM OF WALL LEVEL		
CL	CLOTHES LINE		
EGL	EXISTING GROUND LEVEL		
FRL	FINISHED RELATIVE LEVEL		
GM	GASMETER		
HC	HOSE COCK		
HCR	HOSE COCK RECYCLE		
HWU	HOT WATER UNIT		
IHWU	INSTANTANEOUS HOT WATER UNIT		
КО	KERB OUTLET		
LB	LETTER BOX		
MB	ELECTRICAL METERBOX		
NBN	NATIONAL BROADBAND NETWORK		
PCD	PREMISES CONNECTION DEVICE		
PWM	NON POTABLE RECYCLED WATER METER		
RL	REDUCED LEVEL		
RWT	RAINWATER TANK		
SRL	STRUCTURAL RELATIVE LEVEL		
TOW	TOP OF WALL LEVEL		
WM	WATER METER		
$\longrightarrow$	DIRECTION OF FALL		
$\rightarrow \rightarrow$	PIPELINE CONNECTION TO RWT		
$\rightarrow \rightarrow \rightarrow$	PIPELINE STORMWATER OVERFLOW		
$\rightarrow \rightarrow$	POTABLE WATER		
$\square$	STORMWATER DRAINAGE PIT		
	GRATED DRAIN		
	RETAINING WALLS		
BW BW	BLOCK WORK RETAINING WALL		
BWF	BLOCK WORK FEATURE RETAINING WALL		
DEB	DROP EDGE BEAM		
IB-SL	I-BEAM CONCRETE SLEEPER WALL		
11011			

WW WET WALL



# EROSION, BENCHING & SEDIMENT CONTROL PLAN

title:

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date:

FUTURE RESIDENTIAL **5. FRL** 6.278 <sup>+</sup> F**rto** 6.**260**.<sup>†</sup> FRI 6.260 FRL 6250 1/2/ 311 **2003** 384.9 m² <u>2001</u> <u>2002</u> <u>2004</u> FRL 6.180 + 384.9 m² 384.9 m² 320.7 m² WS-28b-220AR-F2-870 WS-28b-220AR-F3-870 WS-24-217G-F1-870 WS-28b-220AR-F7-870 RESIDENTIAL FRL 6.070 FRL 6.170 +  $\longrightarrow \longrightarrow \longrightarrow \longrightarrow \longrightarrow$ FRL 6.050  $\longrightarrow \longrightarrow \longrightarrow$  $\longrightarrow \longrightarrow \longrightarrow \xrightarrow{\lambda}$ FRL 6.050  $\longrightarrow \longrightarrow \longrightarrow \longrightarrow$ FRL 5.950 SRL 6.125 SRL 6.125 SRL 6.025 SRL 6.125 FUTURE HOUSE SRL:6.285 PAD LEVEL RL:5.900 HOUSE SRL:6.285 PAD LEVEL RL:5.900 HOUSE SRL:6.285 PAD LEVEL RL:5.900 HOUSE SRL:6.185 PAD LEVEL RL:5.800 5004 2002 2003 2004 SRL 6.245 SRL 6.245 SRL 6.245 SRL 6.085 GARAGE GARAGE SRL:6.235 PAD LEVEL SRL:6.235 PAD LEVEL RL:5.850 GARAGE ╶┢╾╌┥ SRL 6.145 SRL:6.235 PAD LEVEL RL:5.850 GARAGE SRL:6.135 PAD LEVEL RL:5.750 RL:5.850 • • • • • 10% SRL 6.235 SRL 6.235 SRL 6.235 **N** WM + WM 🕴 WM 🕴 WM 🕴 × O 5.420 5.400 R C Ř S2-02-DA320 ASHFORD AVENUE

200mm

100mm

DA/TP - HYDRAULIC CONCEPT PLAN - LOT 2001-2006 1:200







project: WSU - MILPERRA 2 Bullecourt Avenue, Milperra NSW 2214 Stage: 2 Site: 2.2 Lot: 2001-2006 title:

	SITEWORK
BOW	BOTTOM OF WALL LEVEL
CL	CLOTHES LINE
EGL	EXISTING GROUND LEVEL
FRI	FINISHED RELATIVE LEVEL
GM	GAS METER
HC	HOSE COCK
HCR	HOSE COCK RECYCLE
HWU	HOT WATER UNIT
IHWU	INSTANTANEOUS HOT WATER UNIT
KO	KERB OUTLET
IB	LETTER BOX
MB	ELECTRICAL METERBOX
NBN	NATIONAL BROADBAND NETWORK
PCD	
PWM	NON POTABLE RECYCLED WATER METER
RI	REDUCED LEVEL
RWT	RAINWATER TANK
SRI	
TOW	
WM	WATER METER
	DIRECTION OF FALL
$\rightarrow \rightarrow \rightarrow$	PIPELINE CONNECTION TO PWT
$\rightarrow \rightarrow$	PIPELINE STORMWATER OVERELOW
$\rightarrow \rightarrow$	POTABLE WATER
	STORMWATER DRAINAGE DIT
	CRATED DRAIN
	RETAINING WALLS
BW BW	BLOCK WORK RETAINING WALL
BWF	BLOCK WORK FEATURE RETAINING WALL
DEB	DROP EDGE BEAM
IB-SL	I-BEAM CONCRETE SLEEPER WALL
LOG-SL	LOG SLEEPER RETAINING WALL
WW	WET WALL
	<u>.</u>
	IT DRAULIC NOTE
NOTE: THIS STO	RMWATER SCHEMATIC DRAWING BY MIRVAC
DESIGN IS ON SITE 1 WITHIN B	3 PRODUCED AS A GUIDE ONLY FOR PLUMBERS 10 INDICATE LOCATION OF LINES AND PITS 0UNDARIES. THIS DRAWING IS ONLY TO PIPE PIT AND CONFECTIONS AND LOCATIONS
THIS DRA SIZES. AN AND EQU	WING IS NOT TO INDICATE ANY PIPE OR PIT INFORMATION RELATING TO SIZES IPPENT COMPONENTS SHOULD BE CONFIRMED
WITH A PI ENGINEE	LUMBER OR SUITABLY QUALIFIED HYDRAULIC R.



# HYDRAULIC CONCEPT PLAN

 scale @ A1 : 1:200

 date:
 29.11.24
 rev: B

300mm

Window				
No.	Туре	Height	Width	Description
W/ 011	CA001(T.	2025	1570	202511
W-UIL	SPECIAL	2035	1570	SA2007T WITHIN
W-02L	SA2018T_L SPECIAL	2035	1810	2035H x 1810W SA2008T WITHIN
W-05L	SXD2116_L	2100	1570	
W-07	SA2007T	2035	730	
W-07	SA2007T	2035	730	
W-07	SA2007T	2035	730	
W-07	SA2007T	2035	730	
W-07	SA2007T	2035	730	
W-08	SXD2448	2400	4780	
W-09	SXD2132	2100	3162	
W-10	SA1326 SPECIAL	1370	2650	1200H x 2650W SA1207 WITHIN
W-14	SA1307	1370	730	
W-14	SA1307	1370	730	
W-23	SA1007 OBS	1030	730	OBSCURE
W-24R	SA1014_R OBS	1030	1450	OBSCURE
W-25R	SA1322_L	1370	2170	
W-26	SF1308	1370	850	
W-27	SAA1222	1200	2170	
W-27	SAA1222	1200	2170	

DOOR SCHEDULE - 2001					
Door No. Height Leaf Width O/A Frame Width					
-01L_8G	2400	920	1500		
-05	2100	820	900		

WINDOW SCHEDULE - 2002					
Window	Туре	Height	Width	Description	
NO.	туре	Incigin	width	Description	
W-01L	SA2016T_L SPECIAL	2035	1570	2035H x 1570W SA2007T WITHIN	
W-02L	SA2018T_L SPECIAL	2035	1810	2035H x 1810W SA2008T WITHIN	
W-05L	SXD2116_L	2100	1570		
W-07	SA2007T	2035	730		
W-07	SA2007T	2035	730		
W-07	SA2007T	2035	730		
W-07	SA2007T	2035	730		
W-07	SA2007T	2035	730		
W-08	SXD2448	2400	4780		
W-10	SA1326 SPECIAL	1370	2650	1200H x 2650W SA1207 WITHIN	
W-11	SA1238 SPECIAL	1200	3780	1200H x 3780W SA1208 WITHIN	
W-14	SA1307	1370	730		
W-14	SA1307	1370	730		
W-23	SA1007 OBS	1030	730	OBSCURE	
W-24R	SA1014_R OBS	1030	1450	OBSCURE	
W-25L	SA1322_L	1370	2170		
W-26	SF1308	1370	850		
W-27	SAA1222	1200	2170		
W-27	SAA1222	1200	2170		

DOOR SCHEDULE - 2002				
Door No. Height Leaf Width O/A Frame Wi				
D-02L_6G	2400	920	1500	
D-05	2100	820	900	

WINDOW SCHEDULE - 2003					
Window No.	Туре	Height	Width	Description	
W-01L	SA2016T_L SPECIAL	2035	1570	2035H x 1570W SA2007T WITHIN	
W-02L	SA2018T_L SPECIAL	2035	1810	2035H x 1810W SA2008T WITHIN	
W-05L	SXD2116_L	2100	1570		
W-07	SA2007T	2035	730		
W-07	SA2007T	2035	730		
W-07	SA2007T	2035	730		
W-07	SA2007T	2035	730		
W-07	SA2007T	2035	730		
W-08	SXD2448	2400	4780		
W-09	SXD2132	2100	3162		
W-10	SA1326 SPECIAL	1370	2650	1200H x 2650W SA1207 WITHIN	
W-14	SA1307	1370	730		
W-14	SA1307	1370	730		
W-23	SA1007 OBS	1030	730	OBSCURE	
W-24R	SA1014_R OBS	1030	1450	OBSCURE	
W-25L	SA1322_L	1370	2170		
W-26	SF1308	1370	850		
W-27	SAA1222	1200	2170		
W-27	SAA1222	1200	2170		

DOOR SCHEDULE - 2003					
Door No.	or No. Height Leaf Width O/A Frame Widt				
D-01L_8G	2400	920	1500		
D-05	2100	820	900		



		WINDOW SCHEDULE - 2004					
scription	Window No.	Туре	Height	Width	Descriptior		
H x 1570W 07T WITHIN	W-02L	SA2018T_L SPECIAL	2035	1810	2035H x 1810W SA2008T WITHIN		
l x 1810W	W-03	SXD2442	2400	4180			
8T WITHIN	W-04	SA2008T	2035	850			
	W-04	SA2008T	2035	850			
	W-04	SA2008T	2035	850			
	W-04	SA2008T	2035	850			
	W-05L	SXD2116_L	2100	1570			
	W-06	SA1006 OBS	1030	610	OBSCURE		
	W-12L	SA1318_L	1370	1810			
	W-13	SA1308	1370	850			
	W-13	SA1308	1370	850			
650W	W-14	SA1307	1370	730			
<b>/ITHIN</b>	W-18	SF2007	2035	730			
	W-19	SF1307	1370	730			
	W-20	SA1208 OBS	1370	850	OBSCURE		
RE	W-21R	SA1318_R	1370	1810			
RE	W-21R	SA1318_R	1370	1810			
	W-21R	SA1318_R	1370	1810			

DOOR SCHEDULE - 2004					
Door No.	Height	Leaf Width	O/A Frame Width		
D-03_6G	2400	920	1000		
D-05	2100	820	900		

	WINDOW	SCHEDU	LE - 200	C
Window	Туро	Hoight	Width	Description
NO.	туре	Ineight	width	Description
W-02R	SA2018T_R SPECIAL	2035	1810	2035H x 1810W SA2008T WITHIN
W-03	SXD2442	2400	4180	
W-04	SA2008T	2035	850	
W-04	SA2008T	2035	850	
W-04	SA2008T	2035	850	
W-04	SA2008T	2035	850	
W-05L	SXD2116_L	2100	1570	
W-06	SA1006 OBS	1030	610	OBSCURE
W-14	SA1307	1370	730	
W-15R	SA1320_R SPECIAL	1370	2080	1370H x 2080W SA1308 WITHIN
W-16	AF2006	2035	610	
W-17	SF0613 SPECIAL	600	1340	600H x 1340W
W-18	SF2007	2035	730	
W-19	SF1307	1370	730	
W-20	SA1208 OBS	1370	850	OBSCURE
W-21R	SA1318_R	1370	1810	
W-21R	SA1318_R	1370	1810	
W-21R	SA1318_R	1370	1810	
W-22	SA0607	600	730	

DOOR SCHEDULE - 2005

Door No. Height Leaf Width O/A Frame Width

1000 900

D-04\_8G2400920D-052100820

WINDOW SCHEDULE - 2006				
Window				
No.	Туре	Height	Width	Description
		0005	1010	
W-02L	SA20181_L SPECIAL	2035	1810	2035H x 1810W SA2008T WITHIN
W-03	SXD2442	2400	4180	
W-04	SA2008T	2035	850	
W-04	SA2008T	2035	850	
W-04	SA2008T	2035	850	
W-04	SA2008T	2035	850	
W-05L	SXD2116_L	2100	1570	
W-06	SA1006 OBS	1030	610	OBSCURE
W-12L	SA1318_L	1370	1810	
W-13	SA1308	1370	850	
W-13	SA1308	1370	850	
W-14	SA1307	1370	730	
W-18	SF2007	2035	730	
W-19	SF1307	1370	730	
W-20	SA1208 OBS	1370	850	OBSCURE
W-21R	SA1318_R	1370	1810	
W-21R	SA1318_R	1370	1810	
W-21R	SA1318_R	1370	1810	

DOOR SCHEDULE - 2006					
Door No.	Height	O/A Frame Width			
D-03_6G	2400	920	1000		
D-05	2100	820	900		





TOTAL GROSS BUILDING AREAS			
Lot No.	Name	Area	
2001	Ground Floor	88.2 m <sup>2</sup>	
2001	First Floor	117.0 m <sup>2</sup>	
2001	Garage	37.2 m <sup>2</sup>	
2001	Alfresco	26.1 m <sup>2</sup>	
2001	Porch	2.6 m <sup>2</sup>	
2001	Balcony	6.0 m <sup>2</sup>	
		277.1 m <sup>2</sup>	
2002	Ground Floor	88.1 m <sup>2</sup>	
2002	First Floor	118 5 m <sup>2</sup>	
2002	Garage	27.1 m <sup>2</sup>	
2002	Porch	2.6 m <sup>2</sup>	
2002	Alfresco	2.0 m <sup>2</sup>	
2002	7 111 0300	272 5 m <sup>2</sup>	
		272.011	
2003	Ground Floor	88.3 m <sup>2</sup>	
2003	First Floor	117.0 m <sup>2</sup>	
2003	Garage	37.2 m <sup>2</sup>	
2003	Porch	2.4 m <sup>2</sup>	
2003	Alfresco	26.1 m <sup>2</sup>	
2003	Balcony	6.0 m <sup>2</sup>	
		277.1 m <sup>2</sup>	
2004	Ground Floor	78.9 m <sup>2</sup>	
2004	First Floor	91.8 m <sup>2</sup>	
2004	Garage	21.4 m <sup>2</sup>	
2004	Porch	1.7 m <sup>2</sup>	
2004	Alfresco	18.2 m <sup>2</sup>	
		211.9 m <sup>2</sup>	
2005	Ground Floor	78.9 m <sup>2</sup>	
2005	First Floor	92.5 m <sup>2</sup>	
2005	Garage	21.4 m <sup>2</sup>	
2005	Porch	3.5 m <sup>2</sup>	
2005	Alfresco	18.2 m <sup>2</sup>	
		214.5 m <sup>2</sup>	
2006	Ground Floor	78.9 m <sup>2</sup>	
2006	First Floor	91.8 m <sup>2</sup>	
2006	Garage	21.4 m <sup>2</sup>	
2006	Porch	1.7 m <sup>2</sup>	
2006	Alfresco	18.2 m <sup>2</sup>	

18.2 m<sup>2</sup> 211.9 m<sup>2</sup>

	FLOOR PLAN
720	DOOR LEAF SIZE - AS SHOWN @ 2340mm HIGH UN
A/C	AIRCON CONDENSER
ACD	AIRCON DUCT
ACE	AIRCON EVAPORATOR
APG	ALUMINIUM PERGOLA TO DETAIL
BAL	BALUSTRADE
BAT	BATTERY STORAGE UNIT
BH	BULKHEAD OVER
BOW	BOTTOM OF WALLEVEL
BW	STRUCTURAL BEAM IN WALL OVER
С	CUPBOARD
CL	CLOTHES LINE
CSD	CAVITY SLIDER DOOR
CT	COOKTOP
DP	DOWNPIPE
DPS	DOWNINE DOWNPIPE & SPREADER
DS	DRYER SPACE
DW	DISHWASHER SPACE
EGL	EXISTING GROUND LEVEL
EXH/E	EXHAUST TO EAVES OR SOFFIT
EAN/W	REFRIGERATOR SPACE
FRL	FINISHED RELATIVE LEVEL
FSC	FREE STANDING COOKER
GD	GARAGE DOOR OPENING AS SPECIFIED
GM	GAS METER
HC	HOSE COCK PECYCLE
HDC	HARDWARE DISTRIBUTION CARINET
HH	HEAD OF OPENING - HEIGHT AS NOTED
HRL	HANDRAIL - 1000mm HIGH MIN.
HWU	HOT WATER UNIT
IHWU	INSTANTANEOUS HOT WATER UNIT
INS	INSULATION
INV	
LB	
LHW	LOW HEIGHT WALL - HEIGHT AS NOTED
LWO	LINE OF WALL OVER
MB	ELECTRICAL METERBOX
MH	MANHOLE/ ACCESS PANEL
MR	METAL ROOF - PITCH AS NOTED
NRN	
NCDP	NON COMBUSTIBLE DOWNPIPF (NSW ONLY)
OF	OVERFLOW
Р	PANTRY
PCD	PREMISES CONNECTION DEVICE
PWM	NON POTABLE RECYCLED WATER METER
KH DI	REDUCED LEVEL
RWH	RAINWATER HEAD
RWT	RAINWATER TANK
S	STORAGE
S/D	STEPDOWN
SA	SMOKE ALARM
SCR	SINK
3K SI	
SN	SHOWER NICHE
SP	STRUCTURAL POST TO ENGINEER'S DETAIL
SRL	STRUCTURAL RELATIVE LEVEL
SS	SERVICE STACK
ST	STORAGE
TD	
TPG	
TR	TILED ROOF - PITCH AS NOTED
UBO	UNDER BENCH OVEN
VJ	VERTICAL JOINT
W	WINDOW
WIP	
WM	WASHING WACHINE SPACE
WO	WALL OVEN
WTC	RAINWATER TANK CONTROL
XXXP	ENGAGED PIERS SPACINGS VARIES.
LIVABL THESE IN <u>SECT</u> ACCOM	<u>HOUSING</u> <u>HOUSING</u> DESIGNS MEET COUNCIL'S CONTROLS AS OUTLINES <u>ION 11.1 LIVABLE HOUSING</u> OF THE RESIDENTIAL MODATION DCP ONLY
	INDICATES WALL WITH REINFORCEMENT TO ENABLE INSTALLATION OF FUTURE GRABRAILS GREEN DIMENSIONS INDICATE MINIMUM CLEARANCES
<u>WET AR</u> WALLS /	EA WALLS: AROUND THE TOILET, SHOWER AND BATH TO



# **GROUND FLOOR PLANS**

MB-10197 A job no: drawing no: S2-02-DA210 scale @ A1 : 1:200 rev: B 29.11.24 date:

WINDOW SCHEDULE - 2001				
Window No.	Туре	Height	Width	Description
W-01L	SA2016T_L SPECIAL	2035	1570	2035H x 1570W SA2007T WITHIN
W-02L	SA2018T_L SPECIAL	2035	1810	2035H x 1810W SA2008T WITHIN
W-05L	SXD2116_L	2100	1570	
W-07	SA2007T	2035	730	
W-07	SA2007T	2035	730	
W-07	SA2007T	2035	730	
W-07	SA2007T	2035	730	
W-07	SA2007T	2035	730	
W-08	SXD2448	2400	4780	
W-09	SXD2132	2100	3162	
W-10	SA1326 SPECIAL	1370	2650	1200H x 2650W SA1207 WITHIN
W-14	SA1307	1370	730	
W-14	SA1307	1370	730	
W-23	SA1007 OBS	1030	730	OBSCURE
W-24R	SA1014_R OBS	1030	1450	OBSCURE
W-25R	SA1322_L	1370	2170	
W-26	SF1308	1370	850	
W-27	SAA1222	1200	2170	
W-27	SAA1222	1200	2170	

DOOR SCHEDULE - 2001					
Door No.	Height	Leaf Width	O/A Frame Width		
D-01L_8G	2400	920	1500		
D-05	2100	820	900		

WINDOW SCHEDULE - 2002				
Window	Tupo	Hojaht	Width	Description
NO.	туре	пеідії	width	Description
W-01L	SA2016T_L SPECIAL	2035	1570	2035H x 1570W SA2007T WITHIN
W-02L	SA2018T_L SPECIAL	2035	1810	2035H x 1810W SA2008T WITHIN
W-05L	SXD2116_L	2100	1570	
W-07	SA2007T	2035	730	
W-07	SA2007T	2035	730	
W-07	SA2007T	2035	730	
W-07	SA2007T	2035	730	
W-07	SA2007T	2035	730	
W-08	SXD2448	2400	4780	
W-10	SA1326 SPECIAL	1370	2650	1200H x 2650W SA1207 WITHIN
W-11	SA1238 SPECIAL	1200	3780	1200H x 3780W SA1208 WITHIN
W-14	SA1307	1370	730	
W-14	SA1307	1370	730	
W-23	SA1007 OBS	1030	730	OBSCURE
W-24R	SA1014_R OBS	1030	1450	OBSCURE
W-25L	SA1322_L	1370	2170	
W-26	SF1308	1370	850	
W-27	SAA1222	1200	2170	
W-27	SAA1222	1200	2170	

200mm

DOOR SCHEDULE - 2002					
oor No.	Height	Leaf Width	O/A Frame Width		
-02L_6G	2400	920	1500		
-05	2100	820	900		

WINDOW SCHEDULE - 2003				
Window No.	Туре	Height	Width	Description
W-01L	SA2016T_L SPECIAL	2035	1570	2035H x 1570W SA2007T WITHIN
W-02L	SA2018T_L SPECIAL	2035	1810	2035H x 1810W SA2008T WITHIN
W-05L	SXD2116_L	2100	1570	
W-07	SA2007T	2035	730	
W-07	SA2007T	2035	730	
W-07	SA2007T	2035	730	
W-07	SA2007T	2035	730	
W-07	SA2007T	2035	730	
W-08	SXD2448	2400	4780	
W-09	SXD2132	2100	3162	
W-10	SA1326 SPECIAL	1370	2650	1200H x 2650W SA1207 WITHIN
W-14	SA1307	1370	730	
W-14	SA1307	1370	730	
W-23	SA1007 OBS	1030	730	OBSCURE
W-24R	SA1014_R OBS	1030	1450	OBSCURE
W-25L	SA1322_L	1370	2170	
W-26	SF1308	1370	850	
W-27	SAA1222	1200	2170	
W-27	SAA1222	1200	2170	

DOOR SCHEDULE - 2003 Door No. Height Leaf Width O/A Frame Width D-01L\_8G 2400 D-05 2100 1500 900 920 820



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	WINDOW	SCHEDU	LE - 200	4
Window No.	Туре	Height	Width	Descriptio
W-02L	SA2018T_L SPECIAL	2035	1810	2035H x 1810W SA2008T WITH
W-03	SXD2442	2400	4180	
W-04	SA2008T	2035	850	
W-04	SA2008T	2035	850	
W-04	SA2008T	2035	850	
W-04	SA2008T	2035	850	
W-05L	SXD2116_L	2100	1570	
W-06	SA1006 OBS	1030	610	OBSCURE
W-12L	SA1318_L	1370	1810	
W-13	SA1308	1370	850	
W-13	SA1308	1370	850	
W-14	SA1307	1370	730	
W-18	SF2007	2035	730	
W-19	SF1307	1370	730	
W-20	SA1208 OBS	1370	850	OBSCURE
W-21R	SA1318_R	1370	1810	
W-21R	SA1318_R	1370	1810	
W-21R	SA1318_R	1370	1810	

	DOOR	SCHEDULE	- 2004
Door No.	. Height Leaf Width O/A Frame Width		
D-03_6G	2400	920	1000
D-05	2100	820	900

	WINDOW	SCHEDU	LE - 200	5
Window No.	Туре	Height	Width	Description
W-02R	SA2018T_R SPECIAL	2035	1810	2035H x 1810W SA2008T WITHIN
W-03	SXD2442	2400	4180	
W-04	SA2008T	2035	850	
W-04	SA2008T	2035	850	
W-04	SA2008T	2035	850	
W-04	SA2008T	2035	850	
W-05L	SXD2116_L	2100	1570	
W-06	SA1006 OBS	1030	610	OBSCURE
W-14	SA1307	1370	730	
W-15R	SA1320_R SPECIAL	1370	2080	1370H x 2080W SA1308 WITHIN
W-16	AF2006	2035	610	
W-17	SF0613 SPECIAL	600	1340	600H x 1340W
W-18	SF2007	2035	730	
W-19	SF1307	1370	730	
W-20	SA1208 OBS	1370	850	OBSCURE
W-21R	SA1318_R	1370	1810	
W-21R	SA1318_R	1370	1810	
W-21R	SA1318_R	1370	1810	
W-22	SA0607	600	730	

DOOR SCHEDULE - 2005

Door No. Height Leaf Width O/A Frame Width

1000 900

920 820

D-04\_8G 2400 D-05 2100

		CONEDO	200	
Window No.	Туре	Height	Width	Descriptior
	1			
W-02L	SA2018T_L SPECIAL	2035	1810	2035H x 1810W SA2008T WITHIN
W-03	SXD2442	2400	4180	
W-04	SA2008T	2035	850	
W-04	SA2008T	2035	850	
W-04	SA2008T	2035	850	
W-04	SA2008T	2035	850	
W-05L	SXD2116_L	2100	1570	
W-06	SA1006 OBS	1030	610	OBSCURE
W-12L	SA1318_L	1370	1810	
W-13	SA1308	1370	850	
W-13	SA1308	1370	850	
W-14	SA1307	1370	730	
W-18	SF2007	2035	730	
W-19	SF1307	1370	730	
W-20	SA1208 OBS	1370	850	OBSCURE
W-21R	SA1318_R	1370	1810	
W-21R	SA1318_R	1370	1810	
W-21R	SA1318_R	1370	1810	

	DOOR	SCHEDULE	- 2006
Door No.	Height	Leaf Width	O/A Frame Width
D-03_6G	2400	920	1000
D-05	2100	820	900

 29.11.24
 B
 ISSUE FOR DA

 15.11.24
 A
 ISSUE FOR CONSULTANTS

 date
 rev
 amendment





project: WSU - MILPERRA 2 Bullecourt Avenue, Milperra NSW 2214 Stage: 2 Site: 2.2 Lot: 2001-2006

Lot No	ot No. Name Area		
Lot No.	Nume	71100	
2001	Ground Floor	88.2 m <sup>2</sup>	
2001	First Floor	117.0 m <sup>2</sup>	
2001	Garage	37.2 m <sup>2</sup>	
2001	Alfresco	26.1 m <sup>2</sup>	
2001	Porch	2.6 m <sup>2</sup>	
2001	Balcony	6.0 m <sup>2</sup>	
		277.1 m <sup>2</sup>	
2002	Ground Floor	88.1 m <sup>2</sup>	
2002	First Floor	118.5 m <sup>2</sup>	
2002	Garage	37.1 m <sup>2</sup>	
2002	Porch	2.6 m <sup>2</sup>	
2002	Alfresco	26.1 m <sup>2</sup>	
	,	272.5 m <sup>2</sup>	
2003	Ground Floor	88.3 m <sup>2</sup>	
2003	First Floor	117.0 m <sup>2</sup>	
2003	Garage	37.2 m <sup>2</sup>	
2003	Porch	2.4 m <sup>2</sup>	
2003	Alfresco	26.1 m <sup>2</sup>	
2003	Balcony	6.0 m <sup>2</sup>	
		277.1 m <sup>2</sup>	
2004	Ground Floor	78.9 m <sup>2</sup>	
2004	First Floor	91.8 m <sup>2</sup>	
2004	Garage	21.4 m <sup>2</sup>	
2004	Porch	1.7 m <sup>2</sup>	
2004	Alfresco	18.2 m <sup>2</sup>	
		211.9 m <sup>2</sup>	
2005	Ground Floor	78.9 m <sup>2</sup>	
2005	First Floor	92.5 m <sup>2</sup>	
2005	Garage	21.4 m <sup>2</sup>	
2005	Porch	3.5 m <sup>2</sup>	
2005	Alfresco	18.2 m <sup>2</sup>	
		214.5 m <sup>2</sup>	
2006	Ground Floor	78.9 m <sup>2</sup>	
2006	First Floor	91.8 m <sup>2</sup>	
2006	Garage	21.4 m <sup>2</sup>	
2006	Porch	1.7 m <sup>2</sup>	
2006	Alfresco	18.2 m <sup>2</sup>	

211.9 m<sup>2</sup>

	FLOOR PLAN
720	DOOR LEAF SIZE - AS SHOWN @ 2340mm HIGH UNO
720L	DOOR LEAF SIZE - DOOR WITH LIFT-OFF HINGES
A/C	
ACE	
APG	
BAL	BALUSTRADE
BAT	BATTERY STORAGE UNIT
BH	BULKHEAD OVER
BO	STRUCTURAL BEAM OVER TO ENGINEER'S DETAIL
BOW	BOTTOM OF WALL LEVEL
BW	STRUCTURAL BEAM IN WALL OVER
C	
CSD	
CT	COOKTOP
D	DOOR
DP	DOWNPIPE
DPS	DOWNPIPE & SPREADER
DS	DRYER SPACE
DW	DISHWASHER SPACE
EGL	EXISTING GROUND LEVEL
EXH/E	EXHAUST TO POOF
EXH/M	EXHAUST TO WALL
F	REFRIGERATOR SPACE
FRL	FINISHED RELATIVE LEVEL
FSC	FREE STANDING COOKER
GD	GARAGE DOOR OPENING AS SPECIFIED
GM	GASMETER
HC	HOSE COCK
HCR	HOSE COCK RECYCLE
НDС НР	
HRI	
HWU	HOT WATER UNIT
IHWU	INSTANTANEOUS HOT WATER UNIT
INS	INSULATION
INV	INVERTER
L	LINEN
LB	LETTER BOX
LHW	LOW HEIGHT WALL - HEIGHT AS NOTED
LWO	
MH	
MR	METAL ROOF - PITCH AS NOTED
MW	MICROWAVE SPACE
NBN	NATIONAL BROADBAND NETWORK
NCDP	NON COMBUSTIBLE DOWNPIPE (NSW ONLY)
OF	OVERFLOW
Р	PANTRY
PCD	PREMISES CONNECTION DEVICE
PWW	
RI	REDUCED LEVEL
RWH	RAINWATER HEAD
RWT	RAINWATER TANK
S	STORAGE
S/D	STEPDOWN
SA	SMOKE ALARM
SCR	
лс SI	
SN	SHOWER NICHE
SP	STRUCTURAL POST TO ENGINEER'S DETAIL
SRL	STRUCTURAL RELATIVE LEVEL
SS	SERVICE STACK
ST	STORAGE
TOW	TOP OF WALL LEVEL
TPC	I IMBER POST - SIZE AS NOTED
TPG	
UBO	UNDER BENCH OVEN
VJ	VERTICAL JOINT
W	WINDOW
WIP	WALK-IN PANTRY
WMS	WASHING MACHINE SPACE
WM	WATER METER
WO	WALL OVEN
WIC	
777L	CENTRES TO ENG'S DESIGN
	HOUSING
THESE D	ESIGNS MEET COUNCIL'S CONTROLS AS OUTLINES
IN SECT	ON 11.1 LIVABLE HOUSING OF THE RESIDENTIAL
ACCOM	NUDATION DCP ONLY
	INDICATES WALL WITH REINFORCEMENT TO
	<ul> <li>ENABLE INSTALLATION OF FUTURE GRABRAILS</li> </ul>
	GREEN DIMENSIONS INDICATE MINIMUM
	CLEARANCES
WET ARE	A WALLS:
WALLS A	ROUND THE TOILET, SHOWER AND BATH TO
BE REINF	ORCED TO SUPPORT SAFE INSTALLATION OF
FUTURE	GRABRAILS BY OCCUPANTS



#### title: FIRST FLOOR PLANS

MB-10197 job no: A drawing no: S2-02-DA220 scale @ A1 : 1:200 rev: B 29.11.24 date:



1 DA/TP - ROOF PLAN - LOT 2001-2006 1:200

ASHFORD AVENUE

200mm







	ROOF PLAN
APG	ALUMINIUM PERGOLA TO DETAIL
BG	BOX GUTTER
DP	DOWNPIPE
DPS	DOWNPIPE & SPREADER
DP-100	DOWNPIPE 100mm DIA
EXH/R	EXHAUST TO ROOF
MR	METAL ROOF
OF	OVERFLOW
PV	PHOTOVOLTAIC SOLAR PANEL
RWH	RAINWATER HEAD
SHWP	SOLAR HOT WATER PANEL
SL	SKY LIGHT
TPG	TIMBER PERGOLA TO DETAIL
TR	TILED ROOF - PITCH AS NOTED
$\sim$	RAKED SOFFIT
/////	FIRE RATED EAVE/SOFFIT



rev: B

29.11.24

date:

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#### title: **ROOF PLANS**













![](_page_294_Figure_8.jpeg)

![](_page_294_Figure_9.jpeg)

![](_page_294_Figure_10.jpeg)

![](_page_294_Figure_12.jpeg)

![](_page_294_Figure_13.jpeg)

![](_page_294_Figure_14.jpeg)

![](_page_294_Figure_15.jpeg)

![](_page_294_Figure_16.jpeg)

(15) LOT 2003 - NOTIFICATION PLAN

![](_page_294_Figure_18.jpeg)

![](_page_294_Figure_19.jpeg)

![](_page_294_Figure_20.jpeg)

![](_page_294_Figure_21.jpeg)

Level 28 200 George St Sydney NSW 2000 T 02 9080 8000 MIRVAC DESIGN architecture urban design interior design graphic design Mirvac Design Pty.Ltd. ABN 78 003 359 153 Mirvac Design Nominated / Responsible Architects Anita Verma Michael Wiener David Hirst: Paromvong Sinbandhit Andrew La https://www.mirvacdesign.com/nominated-architects

![](_page_294_Picture_26.jpeg)

![](_page_294_Picture_27.jpeg)

EXTERN	AL FINISHES WALL TYPE
EXTENT OF	FINISHES INDICATED ONLY.
REFER IUI	-INISHES SCHEDULE
FBW	FACE BRICKWORK
RBW	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
MC	COLOURBOND METAL CLADDING

![](_page_294_Figure_30.jpeg)

![](_page_294_Figure_31.jpeg)

200mm

300mm

![](_page_295_Figure_3.jpeg)

![](_page_295_Figure_4.jpeg)

![](_page_295_Figure_5.jpeg)

![](_page_295_Figure_6.jpeg)

![](_page_295_Figure_7.jpeg)

![](_page_295_Figure_8.jpeg)

![](_page_295_Figure_9.jpeg)

![](_page_295_Figure_10.jpeg)

30

![](_page_295_Figure_12.jpeg)

5 LOT 2005 - NOTIFICATION PLAN 1:200

![](_page_295_Figure_14.jpeg)

(10) LOT 2006 - NOTIFICATION PLAN

 
 MIRCYAR
 Level 28 200 George St Sydney NSW 2000 102 9080 8000

 archtecture urban design graphic design
 Mirvac Design Pty.Ltd. ABN 78 003 359 153

 Mirvac Design Nominated / Responsible Architects Anita Verma Michael Wiener David Hirst Paromvong Sinbandhit Andrew La https://www.mirvacdesign.com/nominated-architects

![](_page_295_Picture_18.jpeg)

![](_page_295_Picture_19.jpeg)

EXTERNAL FINISHES WALL TYPE				
EXTENT OI REFER TO I	F FINISHES INDICATED ONLY. FINISHES SCHEDULE			
FBW	FACE BRICKWORK			
RBW	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			
MC	COLOURBOND METAL CLADDING			

![](_page_295_Picture_22.jpeg)

rev: B

scale @ A1 : 1:200

date:

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29.11.24

# NEIGHBOURING NOTIFICATION PLAN - LOT 2005-2006

![](_page_296_Picture_0.jpeg)

![](_page_296_Figure_1.jpeg)

0mm

30

200mm

![](_page_296_Picture_5.jpeg)

![](_page_296_Picture_6.jpeg)

![](_page_296_Picture_7.jpeg)

![](_page_296_Picture_9.jpeg)

#### title: COLOURED STREETSCAPES -FRONT

job no: MB-10197 drawing no: S2-02-DA320 scale @ A1 : 1:100 rev: B 29.11.24 date: Copyright of the design and other information shown here is owned by Mirvac Design pty. Itd. Reproduction or use of the design by any party for any purpose is expressly forbidden without the written permission of Mirvac Design pty. Itd.

![](_page_297_Figure_0.jpeg)

![](_page_297_Figure_3.jpeg)

RL 13.868

RL 11.690

RL 9.260

RL 8.880

RL 6.285

RL 12.970

\_ \_\_ \_\_ \_\_ \_\_ \_\_

RL 11.590

RL 9.160

RL 6.185

 $\times$ 

\_ \_ \_ \_ \_

![](_page_297_Figure_4.jpeg)

![](_page_297_Figure_5.jpeg)

28/11/2024 3:50:06 PM Autodesk Docs://Milperra WSU/WSU-AR-S2-Site 02.2-R24.rvt

![](_page_297_Figure_7.jpeg)

![](_page_297_Figure_8.jpeg)

![](_page_297_Picture_10.jpeg)

![](_page_297_Picture_13.jpeg)

![](_page_297_Picture_14.jpeg)

A/C	AIRCON CONDENSER
ACD	AIRCON DUCT
ACE	AIRCON EVAPORATOR
APG	ALUMINIUM PERGOLA TO DETAIL
BAL	BALUSTRADE
BAT	BATTERY STORAGE UNIT
BH	BULKHEAD OVER
BOW	BOTTOM OF WALL LEVEL
С	CUPBOARD
CL	CLOTHES LINE
D	DOOR
DP	DOWNPIPE
DPS	DOWNPIPE & SPREADER
EGL	EXISTING GROUND LEVEL
EXH/E	EXHAUST TO EAVES OR SOFFIT
EXH/R	EXHAUST TO ROOF
EXH/W	EXHAUST TO WALL
FCL	FINISHED CEILING LEVEL
FRL	FINISHED RELATIVE LEVEL
GD	GARAGE DOOR OPENING AS SPECIFIED
GM	GAS METER
НС	HOSE COCK
HCR	HOSE COCK RECYCLE
HDC	HARDWARE DISTRIBUTION CABINET
НН	HEAD OF OPENING - HEIGHT AS NOTED
HRL	HANDRAIL - 1000mm HIGH MIN.
HWU	HOT WATER UNIT
IHWU	INSTANTANEOUS HOT WATER UNIT
INV	INVERTER
L	LINEN
LB	LETTER BOX
LHW	LOW HEIGHT WALL - HEIGHT AS NOTED
MB	ELECTRICAL METERBOX
MR	METAL ROOF - PITCH AS NOTED
NBN	NATIONAL BROADBAND NETWORK
NCDP	NON COMBUSTIBLE DOWNPIPE (NSW ONLY)
OF	OVERFLOW
PB	PLASTERBOARD
PCD	PREMISES CONNECTION DEVICE
PWM	NON POTABLE RECYCLED WATER METER
RL	REDUCED LEVEL
RWH	RAINWATER HEAD
RWT	RAINWATER TANK
S	STORAGE
S/D	STEPDOWN
SCR	SCREEN
SL	SKYLIGHT OVER
SP	STRUCTURAL POST TO ENGINEER'S DETAIL
SRL	STRUCTURAL RELATIVE LEVEL
ST	STORAGE
TOW	TOP OF WALL LEVEL
TP	TIMBER POST - SIZE AS NOTED
TPG	TIMBER PERGOLA TO DETAIL
TR	
VI	
W	WINDOW
\0/M	WATER METER
WT	WALL TYPE
vv I	
MITC	I DAINIMATED TANIZ CONTDOL

![](_page_297_Figure_17.jpeg)

![](_page_298_Figure_0.jpeg)

2 DA/TP SHADOW PLAN 21 JUNE - 12PM - LOT 2001-2006 1:200

						SOLAR	COVERA	GE IN PO	S			*NOTE : CALCULATIONS ( ACCORD WITH THE DCP POS FROM 8:00AM - 4:00F	OF SOLAR COVERAGE IN MIN 3 HRS OF 50% OF THE PM
Certificate No. #HR-6RN3ES-01	0_Lot No	0_House Type	8am	9am	10am	11am	12pm	1pm	2pm	3pm	4pm	Solar Compliance*	
NATIONWIDE Scan QR code or follow website link for rating details.	2001	WS-28b-220AR-F2-870	75.0 m <sup>2</sup>	102.1 m <sup>2</sup>	107.3 m <sup>2</sup>	106.9 m <sup>2</sup>	95.7 m <sup>2</sup>	81.01 m <sup>2</sup>	63.9 m <sup>2</sup>	42.8 m <sup>2</sup>	34.6 m <sup>2</sup>	Yes	
HOWER SAVE 2217 - HR. CPANE	2002	WS-28b-220AR-F7-870	71.4 m <sup>2</sup>	103.4 m <sup>2</sup>	104.4 m <sup>2</sup>	96.5 m <sup>2</sup>	82.4 m <sup>2</sup>	63.44 m <sup>2</sup>	34.6 m <sup>2</sup>	0.0 m <sup>2</sup>	0.0 m <sup>2</sup>	Yes	
Accreditation No. HERA 10213	2003	WS-28b-220AR-F3-870	85.0 m <sup>2</sup>	111.3 m <sup>2</sup>	109.8 m <sup>2</sup>	101.1 m <sup>2</sup>	86.7 m <sup>2</sup>	67.70 m <sup>2</sup>	36.8 m <sup>2</sup>	0.0 m <sup>2</sup>	0.0 m <sup>2</sup>	Yes	
Property Address 2 Bullecourt Avenue, Milperra,	2004	WS-24-217G-F1-870	72.4 m <sup>2</sup>	92.7 m <sup>2</sup>	92.8 m <sup>2</sup>	83.8 m <sup>2</sup>	73.3 m <sup>2</sup>	58.12 m <sup>2</sup>	34.2 m <sup>2</sup>	0.0 m <sup>2</sup>	0.0 m <sup>2</sup>	Yes	
	2005	WS-08-217H-F11-870	77.7 m <sup>2</sup>	94.6 m <sup>2</sup>	94.0 m <sup>2</sup>	89.1 m <sup>2</sup>	73.6 m <sup>2</sup>	58.71 m <sup>2</sup>	34.8 m <sup>2</sup>	0.0 m <sup>2</sup>	0.0 m <sup>2</sup>	Yes	
ttp://www.hero-software.com.au/pdf/HR-6RN3FS-01	2006	WS-24-217G-F1-870	84.1 m <sup>2</sup>	96.8 m <sup>2</sup>	94.4 m <sup>2</sup>	83.8 m <sup>2</sup>	73.4 m <sup>2</sup>	58.37 m <sup>2</sup>	33.3 m <sup>2</sup>	0.0 m <sup>2</sup>	0.0 m <sup>2</sup>	Yes	

![](_page_298_Picture_4.jpeg)

![](_page_298_Picture_5.jpeg)

Mirvac Design Nominated / Responsible Architects Anita Verma Michael Wiener David Hirst Paromvong Sinbandhit Andrew La https://www.mirvacdesign.com/nominated-architects

![](_page_298_Picture_7.jpeg)

#### project: WSU - MILPERRA 2 Bullecourt Avenue, Milperra NSW 2214 Stage: 2 Site: 2.2 Lot: 2001-2006

title:

	SHADOWS
1	ONE STOREY BUILDING
2	TWO STOREY BUILDING
3	THREE STOREY BUILDING
PV	PHOTOVOLTAIC SOLAR PANEL
	SHADOW

# SHADOW ANALYSIS & DIAGRAM - 21 JUNE - 9AM/12PM

job no:	MB-10197		
drawing no:	S2-02-DA4	00	
scale @ A1 :	1 : 200		
date:	29.11.24	rev:	E

A
P

![](_page_299_Figure_0.jpeg)

1 DA/TP SHADOW PLAN 21 JUNE - 3PM - LOT 2001-2006

0mm ح

30

200mm

100mm

						SOLAR	COVERA	GE IN PO	S			ACCORD WITH THE DCP I POS FROM 8:00AM - 4:00F
Certificate No. #HR-6RN3ES-01	0_Lot No	0_House Type	8am	9am	10am	11am	12pm	1pm	2pm	3pm	4pm	Solar Compliance*
NATIONWIDE Scan QR code or follow website link for rating details.	2001	WS-28b-220AR-F2-870	75.0 m <sup>2</sup>	102.1 m <sup>2</sup>	107.3 m <sup>2</sup>	106.9 m <sup>2</sup>	95.7 m <sup>2</sup>	81.01 m <sup>2</sup>	63.9 m <sup>2</sup>	42.8 m <sup>2</sup>	34.6 m <sup>2</sup>	Yes
	2002	WS-28b-220AR-F7-870	71.4 m <sup>2</sup>	103.4 m <sup>2</sup>	104.4 m <sup>2</sup>	96.5 m <sup>2</sup>	82.4 m <sup>2</sup>	63.44 m <sup>2</sup>	34.6 m <sup>2</sup>	0.0 m <sup>2</sup>	0.0 m <sup>2</sup>	Yes
Assessor name Haylea Edwards	2003	WS-28b-220AR-F3-870	85.0 m <sup>2</sup>	111.3 m <sup>2</sup>	109.8 m <sup>2</sup>	101.1 m <sup>2</sup>	86.7 m <sup>2</sup>	67.70 m <sup>2</sup>	36.8 m <sup>2</sup>	0.0 m <sup>2</sup>	0.0 m <sup>2</sup>	Yes
Property Address 2 Bullecourt Avenue, Milperra,	2004	WS-24-217G-F1-870	72.4 m <sup>2</sup>	92.7 m <sup>2</sup>	92.8 m <sup>2</sup>	83.8 m <sup>2</sup>	73.3 m <sup>2</sup>	58.12 m <sup>2</sup>	34.2 m <sup>2</sup>	0.0 m <sup>2</sup>	0.0 m <sup>2</sup>	Yes
	2005	WS-08-217H-F11-870	77.7 m <sup>2</sup>	94.6 m <sup>2</sup>	94.0 m <sup>2</sup>	89.1 m <sup>2</sup>	73.6 m <sup>2</sup>	58.71 m <sup>2</sup>	34.8 m <sup>2</sup>	0.0 m <sup>2</sup>	0.0 m <sup>2</sup>	Yes
http://www.hero-software.com.au/pdf/HR-6RN3FS-01	2006	WS-24-217G-F1-870	84.1 m <sup>2</sup>	96.8 m <sup>2</sup>	94.4 m <sup>2</sup>	83.8 m <sup>2</sup>	73.4 m <sup>2</sup>	58.37 m <sup>2</sup>	33.3 m <sup>2</sup>	0.0 m <sup>2</sup>	0.0 m <sup>2</sup>	Yes

![](_page_299_Picture_5.jpeg)

![](_page_299_Picture_6.jpeg)

![](_page_299_Picture_7.jpeg)

#### project: WSU - MILPERRA 2 Bullecourt Avenue, Milperra NSW 2214 Stage: 2 Site: 2.2 Lot: 2001-2006

# SHADOW ANALYSIS & DIAGRAM - 21 JUNE - 3PM

job no: MB-10197 drawing no: S2-02-DA401 scale @ A1 : 1:200 rev: B 29.11.24 date:

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# \*NOTE : CALCULATIONS OF SOLAR COVERAGE IN P MIN 3 HRS OF 50% OF THE 0PM

![](_page_300_Figure_0.jpeg)

100mm

![](_page_300_Figure_3.jpeg)

![](_page_300_Figure_4.jpeg)

![](_page_300_Picture_5.jpeg)

![](_page_300_Picture_6.jpeg)

project: WSU - MILPERRA 2 Bullecourt Avenue, Milperra NSW 2214 
 Stage:
 2
 Site:
 2.2
 Lot:
 2001-2006

![](_page_300_Picture_8.jpeg)

![](_page_300_Picture_11.jpeg)

![](_page_300_Picture_12.jpeg)

4 SUN EYE VIEW - 21 JUN - 11\_00 AM

![](_page_300_Picture_14.jpeg)

#### title: SUN EYE VIEWS - 21 JUNE 8AM/9AM/10AM/11AM

![](_page_301_Figure_0.jpeg)

ASHFORD AVENUE

1 PRIVATE OPEN SPACE - LOT 2001-2006 1:200

30

200mm

100mm

POS AREA SCHEDULE					
Lot No POS					
2001	125.7 m <sup>2</sup>				
2002	128.7 m <sup>2</sup>				
2003	133.5 m <sup>2</sup>				
2004	111.0 m <sup>2</sup>				
2005	111.0 m <sup>2</sup>				
2006	111.0 m <sup>2</sup>				

![](_page_301_Picture_6.jpeg)

FRONT LANDSCAPED AREA SCHEDULE							
Lot Number	Frontyard Area	Landscaped Frontyard Area	Landscaped Frontyard (min 40%)	Complies (min 40%)			
2001	87.87 m <sup>2</sup>	47.06 m <sup>2</sup>	53.55%	Yes			
2002	84.02 m <sup>2</sup>	44.89 m <sup>2</sup>	53.42%	Yes			
2003	87.77 m²	42.25 m <sup>2</sup>	48.14%	Yes			
2004	59.20 m <sup>2</sup>	37.37 m <sup>2</sup>	63.13%	Yes			
2005	57.31 m²	36.70 m <sup>2</sup>	64.04%	Yes			
2006	59.20 m <sup>2</sup>	37.77 m <sup>2</sup>	63.81%	Yes			

![](_page_301_Figure_8.jpeg)

![](_page_301_Picture_10.jpeg)

![](_page_301_Picture_11.jpeg)

![](_page_301_Picture_12.jpeg)

LANDSCAPED AREA SCHEDULE							
Number	Lot_Area	Soft Landscape Area	Landscaped Area Provided (Min. 25% of Site Area)	Complies			
2001	384.90 m <sup>2</sup>	179.78 m <sup>2</sup>	46.71%	Yes			
2002	384.90 m <sup>2</sup>	180.39 m <sup>2</sup>	46.87%	Yes			
2003	384.90 m <sup>2</sup>	182.93 m <sup>2</sup>	47.53%	Yes			
2004	320.70 m <sup>2</sup>	175.91 m <sup>2</sup>	54.85%	Yes			
2005	320.70 m <sup>2</sup>	175.24 m <sup>2</sup>	54.64%	Yes			
2006	320.70 m <sup>2</sup>	175.91 m <sup>2</sup>	54.85%	Yes			

![](_page_301_Picture_15.jpeg)

# AREA PLAN - PRIVATE OPEN SPACE AND PERMEABLE AREA

title:

job no: MB-10197 P drawing no: S2-02-DA420 scale @ A1 : 1:200 rev: B 29.11.24 date: Copyright of the design and other information shown here is owned by Mirvac Design pty. Itd. Reproduction or use of the design by any party for any purpose is expressly forbidden without the written permission of Mirvac Design pty. Itd.

\_\_\_\_0mm

30

200mm

300mm

![](_page_302_Figure_3.jpeg)

1 GFA AREA - GROUND FLOOR PLAN - LOT 2001-2006

ASHFORD AVENUE

![](_page_302_Figure_6.jpeg)

ASHFORD AVENUE

2 GFA AREA - FIRST FLOOR PLAN - LOT 2001-2006 1:200

![](_page_302_Picture_13.jpeg)

![](_page_302_Picture_14.jpeg)

![](_page_302_Picture_16.jpeg)

SITE FSR							
1 -+ 11-	Gross floor		FCD				
LOT INO	area	Lot_Area	FSK				
001	183.0 m <sup>2</sup>	384.9 m <sup>2</sup>	47.54%				
002	184.3 m <sup>2</sup>	384.9 m <sup>2</sup>	47.88%				
003	183.0 m <sup>2</sup>	384.9 m <sup>2</sup>	47.54%				
004	148.5 m <sup>2</sup>	320.7 m <sup>2</sup>	46.31%				
005	148.8 m <sup>2</sup>	320.7 m <sup>2</sup>	46.41%				
.006	148.5 m²	320.7 m <sup>2</sup>	46.31%				

Site -	GFA schedule for FS	SR calc.
Lot No.	Name	Area*
2001	Ground Floor	80.1 m <sup>2</sup>
2001	First Floor	102.8 m <sup>2</sup>
		183.0 m <sup>2</sup>
2002	Ground Floor	80.1 m <sup>2</sup>
2002	First Floor	104.1 m <sup>2</sup>
		184.3 m <sup>2</sup>
2003	Ground Floor	80.1 m <sup>2</sup>
2003	First Floor	102.8 m <sup>2</sup>
		183.0 m <sup>2</sup>
2004	Ground Floor	71.3 m <sup>2</sup>
2004	First Floor	77.2 m <sup>2</sup>
		148.5 m <sup>2</sup>
2005	Ground Floor	71.3 m <sup>2</sup>
2005	First Floor	77.5 m <sup>2</sup>
		148.8 m <sup>2</sup>
2006	Ground Floor	71.3 m <sup>2</sup>
2006	First Floor	77.2 m <sup>2</sup>
		148.5 m <sup>2</sup>
Grand total		996.1 m <sup>2</sup>

![](_page_302_Picture_20.jpeg)

rev: B

29.11.24

date:

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# GFA AREA PLAN - GROUND & FIRST FLOOR PLAN

200mm

300mm

![](_page_303_Figure_3.jpeg)

URTICAL TIMBER BATTEN FENCE DETAILS

0mn

30

![](_page_303_Figure_8.jpeg)

![](_page_303_Picture_10.jpeg)

![](_page_303_Picture_12.jpeg)

project: WSU - MILPERRA 2 Bullecourt Avenue, Milperra NSW 2214 Stage: 2 Site: 2.2 Lot: 2001-2006

![](_page_303_Picture_14.jpeg)

![](_page_303_Figure_15.jpeg)

![](_page_303_Picture_16.jpeg)

# GENERAL CONSTRUCTION DETAILS

job no: MB-10197 drawing no: S2-02-DA800 scale @ A1 : 1:20 rev: B 29.11.24 date:

![](_page_304_Picture_0.jpeg)

Proposed indicative artist impression of housing streetscape. All landsacpe features are indicative only. Refer to landscape consultants documentation package for landscape design & plant species selection.

![](_page_304_Picture_4.jpeg)

SHEET NO.	DRAWIN
S2-02-DA000	COVER S
S2-02-DA001	THERMA
S2-02-DA050	LOCATIO
S2-02-DA051	LOT LAY
S2-02-DA100	EROSION
S2-02-DA140	HYDRAU
S2-02-DA210	GROUND
S2-02-DA220	FIRST FL
S2-02-DA230	ROOF PL
S2-02-DA250	NEIGHBO
S2-02-DA251	NEIGHBO
S2-02-DA320	COLOUR
S2-02-DA330	SECTION
S2-02-DA400	SHADOW
S2-02-DA401	SHADOW
S2-02-DA410	SUN EYE
S2-02-DA420	AREA PL
S2-02-DA421	GFA ARE
S2-02-DA800	GENERA

![](_page_304_Picture_6.jpeg)

- ESTATE PLAN

![](_page_304_Picture_8.jpeg)

MIRVAC Mirvac Design Pty.Ltd. ABN 78 003 359 153 Mirvac Design Nominated / Responsible Architects Anita Verma Michael Wiener David Hirst Paromvong Sinbandhit Andrew La https://www.mirvacdesign.com/nominated-architects

![](_page_304_Picture_11.jpeg)

project: WSU - MILPERRA 2 Bullecourt Avenue, Milperra NSW 2214 Stage: 2 Site: 2.1 Lot: 2007-2011

# WESTERN SYDNEY UNIVERSITY - WSU

IG TITLE	RE
SHEET	С
AL PERFORMANCE & SUSTAINABILITY SPECIFICATIONS	С
ON & SITE ANALYSIS PLAN	С
OUT & SITING PLAN	С
N, BENCHING & SEDIMENT CONTROL PLAN	С
JLIC CONCEPT PLAN	С
D FLOOR PLANS	С
LOOR PLANS	С
LANS	С
OURING NOTIFICATION PLANS - LOTS 2007-2009	С
OURING NOTIFICATION PLANS - LOTS 2010-2011	С
RED STREETSCAPES - FRONT & SIDE	С
NS	С
N ANALYSIS & DIAGRAM - 21 JUNE - 9AM/12PM	С
N ANALYSIS & DIAGRAM - 21 JUNE - 3PM	С
E VIEWS - 21 JUNE 8AM/9AM/10AM/11AM	С
LAN - PRIVATE OPEN SPACE AND PERMEABLE AREA	С
EA PLANS - GROUND & FIRST FLOOR	С
AL CONSTRUCTION DETAILS	С

job no:	MB-10197			
drawing no:	S2-02-I	000AC		
scale @ A1 :	1 : 5000			
date:	08.11.24	rev:	С	

200mr

Note: No insulation is required to external garage walls External Colour: As per plans provided.

Walls within dwellings Plasterboard on studs, R2.7 internal wall insulation between unconditioned and conditioned areas

LOT - 2007 (THERMAL PERFORMANCE)

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

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

50mm Hebel on framed walls with R2.7 insulation (insulation only value)

R2.7 insulation (insulation only value) and plasterboard lined.

Construction General:

Window frame colour

Dark (SA > 0.85)

<u>Walls</u> External walls

Glazing ( Doors & windows)

Awning U-value: 2.9 and SHGC 0.35 Fixed: U-value: 2.0 and SHGC 0.44

Sliding door: U-value: 2.8 and SHGC 0.39

Roof and Ceilings Metal roof with anticon blanket (Ru1.3 and Rd1.3) Plasterboard lining to ground floor. R6.0 ceiling insulation with R4.0 perimeter batts

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 on ground 85mm with 300mm waffle pods Timber frame between levels, no insulation required between conditioned areas R6.0 suspended floor insulation between conditioned and unconditioned spaces (Floor above Garage)

Floor coverings Floor coverings ss per plans

External Shading Shading as per stamped drawings

Ventilation All external doors have weather seals, all exhaust fans and chimneys have dampers. 1385mm ceiling fans to bedrooms and living

### BASIX Inclusions

<u>Site details</u> 2007 Lot number: Measure roof area: 144.6m<sup>2</sup> Site area refer to Site Plan DA S1-01-DA052 Landscaping area refers to Landscaping Plan by TURF

<u>Water Fixtures</u> - 4 star showers mid flow (>6.0 but <= 7.5 liters/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

11/11/2024 4:38:13 PM Autodesk Docs://Milperra WSU/WSU-AR-S2-Site 02.1-R24.rvt

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

LOT - 2008 (THERMAL PERFORMANCE) Construction General: Glazing ( Doors & windows) Window upgrade 3 - SEM double-glazed, double low-e Awning U-value: 2.9 and SHGC 0.35 Fixed: U-value: 2.0 and SHGC 0.44 Sliding door: U-value: 2.8 and SHGC 0.39 Window frame colour Dark (SA > 0.85)

<u>Walls</u> External walls 75mm Hebel panel 35mm air gap sarking, R2.7 insulation (insulation only value) 50mm Hebel on framed walls with R2.7 insulation (insulation only value) 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, R2.7 internal wall insulation between unconditioned and conditioned areas

Roof and Ceilings Metal roof with anticon blanket (Ru1.3 and Rd1.3)

Plasterboard lining to ground floor. R6.0 ceiling insulation with R4.0 perimeter batts

External Colour Light (SA<0.475)

Ceiling Penetrations Sealed and insulated LED downlights as per lighting plan Sealed and insulated exhaust fans as per plans

Floors Waffle pod slab on ground 85mm with 300mm waffle pods Timber frame between levels, no insulation required between conditioned areas R6.0 suspended floor insulation between conditioned and unconditioned spaces (Floor above Garage)

Floor coverings Floor coverings ss per plans

External Shading Shading as per stamped drawings

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

1385mm ceiling fans to bedrooms and living

BASIX Inclusions <u>Site details</u>

2008 Lot number: Measure roof area: 188.8m<sup>2</sup> Site area refer 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 liters/min)</td>

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

#### LOT - 2009 (THERMAL PERFORMANCE)

Construction General: Glazing (Doors & windows) Window upgrade 3 - SEM double-glazed, double low-e Awning U-value: 2.9 and SHGC 0.35 Fixed: U-value: 2.0 and SHGC 0.44 Sliding door: U-value: 2.8 and SHGC 0.39 Window frame colour Dark (SA > 0.85)

<u>Walls</u> External walls 75mm Hebel panel 35mm air gap sarking, R2.7 insulation (insulation only value) 50mm Hebel on framed walls with R2.7 insulation (insulation only value) 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, R2.7 internal wall insulation between unconditioned and conditioned areas

## Roof and Ceilings Metal roof with anticon blanket (Ru1.3 and Rd1.3)

Plasterboard lining to ground floor. R6.0 ceiling insulation with R4.0 perimeter batts

External Colour Dark (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 on ground 85mm with 300mm waffle pods Timber frame between levels, no insulation required between conditioned areas R6.0 suspended floor insulation between conditioned and unconditioned spaces (Floor above Garage)

Floor coverings Floor coverings ss per plans

External Shading Shading as per stamped drawings

All external doors have weather seals, all exhaust fans and chimneys have dampers. 1385mm ceiling fans to bedrooms and living

**BASIX Inclusions** 

<u>Site details</u> 2009 Lot number: Measure roof area: 147.8m<sup>2</sup> Site area refer 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 liters/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 facade 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

LOT - 2010 (THERMAL PERFORMANCE) Construction General: Glazing ( Doors & windows) Window upgrade 3 - SEM double-glazed, double low-e Awning U-value: 2.9 and SHGC 0.35 Fixed: U-value: 2.0 and SHGC 0.44 Sliding door: U-value: 2.8 and SHGC 0.39 Window frame colour Dark (SA > 0.85)

#### <u>Walls</u> 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, R2.7 internal wall insulation between unconditioned and conditioned areas

Roof and Ceilings Metal roof with anticon blanket (Ru1.3 and Rd1.3) Plasterboard lining to ground floor. R6.0 ceiling insulation with R4.0 perimeter batts

External Colour Dark (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 on ground 85mm with 300mm waffle pods Timber frame between levels, no insulation required between conditioned areas R6.0 suspended floor insulation between conditioned and unconditioned spaces (Floor above Garage)

Floor coverings Floor coverings ss per plans

External Shading Shading as per stamped drawings

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

1385mm ceiling fans to bedrooms and living **BASIX Inclusions** <u>Site details</u> 2010 Lot number: Measure roof area: 154.6m<sup>2</sup> Site area refer to Site Plan DA S1-01-DA052

Landscaping area refers to Landscaping Plan by TURF <u>Water Fixtures</u> - 4 star showers mid flow (>6.0 but <= 7.5 liters/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

(Floor above Garage)

BASIX Inclusions <u>Site details</u> 2011 Lot number: Measure roof area: 156.4m<sup>2</sup> Site area refer to Site Plan DA S1-01-DA052 Landscaping area refers to Landscaping Plan by TURF

Rain tank

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

Other

![](_page_305_Picture_120.jpeg)

Mirvac Design Pty.Ltd. ABN 78 003 359 153 Mirvac Design Nominated / Responsible Architects Anita Verma Michael Wiener David Hirst Paromvong Sinbandhit Andrew La https://www.mirvacdesign.com/nominated-architects

![](_page_305_Picture_122.jpeg)

#### project: WSU - MILPERRA 2 Bullecourt Avenue, Milperra NSW 2214 Lot: 2007-2011 Site: 2.1 Stage: 2

25.10.24 B ISSUE TO CONSULTANTS A ISSUE FOR REVIEW amendment

15.10.24

date

LOT - 2011 (THERMAL PERFORMANCE)

Construction General:

- Glazing (Doors & windows) Window upgrade 3 - SEM double-glazed, double low-e Awning U-value: 2.9 and SHGC 0.35 Fixed: U-value: 2.0 and SHGC 0.44 Sliding door: U-value: 2.8 and SHGC 0.39
- Window frame colour Dark (SA > 0.85)

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. R2.7 internal wall insulation between unconditioned and conditioned areas

Roof and Ceilings

Metal roof with anticon blanket (Ru1.3 and Rd1.3) Plasterboard lining to ground floor. R6.0 ceiling insulation with R4.0 perimeter batts

External Colour Dark (SA>0.7)

Ceiling Penetrations Sealed and insulated LED downlights as per lighting plan Sealed and insulated exhaust fans as per plans

Waffle pod slab on ground 85mm with 300mm waffle pods Timber frame between levels, no insulation required between conditioned areas R6.0 suspended floor insulation between conditioned and unconditioned spaces

Floor coverings Floor coverings ss per plans

External Shading Shading as per stamped drawings

All external doors have weather seals, all exhaust fans and chimneys have dampers. 1385mm ceiling fans to bedrooms and living

<u>Water Fixtures</u> - 4 star showers mid flow (>6.0 but <= 7.5 liters/min) 4 star toilets 5 star taps Harvested roof areas 70% Rainwater tank size 2000L connected to garden, toilets, and laundry

> Bathroom exhaust – individual fan, ducted to facade 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

Electric cooktop & electric oven Outdoor clothes drying line Fridge Space - not well-ventilated Alternative energy 5.0kW peak system per house

# **THERMAL PERFORMANCE &** SUSTAINABILITY SPECIFICATIONS

MB-10197 job no: drawing no: S2-02-DA001

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scale @ A1 08.11.24 date:

rev:

![](_page_306_Figure_0.jpeg)

100mm

300mm

1 LOCATION PLAN 1:2000

- Mount St Joseph Catholic College
- Bankstown Golf Club
- Panania Train Station
- Bankstown Aerodrome
- Liverpool Hospital
- Parramatta City CBD
- Sydney City CBD

- Approx 5 min walk - Approx 5 min walk

- Approx 6 min drive
- Approx 10 min drive
- Approx 15 min drive
- Approx 40 min drive
- Approx 30 min drive

![](_page_306_Figure_17.jpeg)

MIRVAC DESIGN Level 28 200 George St Sydney NSW 2000 T 02 9080 8000 architecture urban design intestor design graphic design Mirvac Design Pty.Ltd. ABN 78 003 359 153 Mirvac Design Nominated / Responsible Architects Anita Verma Michael Wiener David Hirst Paromvong Sinbandhit Andrew La <u>https://www.mirvacdesign.com/nominated-architects</u>

![](_page_306_Picture_20.jpeg)

project: WSU - MILPERRA 2 Bullecourt Avenue, Milperra NSW 2214 Stage: 2 Site: 2.1 Lot: 2007-2011

# LOCATION & SITE ANALYSIS PLAN

MB-10197 job no: drawing no: S2-02-DA050 scale @ A1 : As indicated 08.11.24 rev: C date:

![](_page_306_Picture_24.jpeg)

200mm

300mm

![](_page_307_Figure_3.jpeg)

DA/TP - SITING PLAN - LOT 2007-2011 1:200

SITE 2.1 MODEL TYPES				
Lot No. House Type				
2007	WS-29b-221O-F6-870			
2008	WS-28b-220AR-F2-870			
2009	WS-29b-221O-F5-870			
2010	WS-33b-223AF-F2-870			
2011	WS-33-223AE-F1-870			

 
 08.11.24
 C
 ISSUE FOR DA

 25.10.24
 B
 ISSUE TO CONSULTANTS

 15.10.24
 A
 ISSUE FOR REVIEW

 date
 rev
 amendmender
 amendment

![](_page_307_Picture_8.jpeg)

MIRVAC DESIGN Level 28 200 George St Sydney NSW 2000 T 02 9080 8000 architectuse Mirvac Design Pty.Ltd. Intender design graphic design ABN 78 003 359 153 Mirvac Design Nominated / Responsible Architects Anita Verma Michael Wiener David Hirst Paromvong Sinbandhit Andrew La https://www.mirvacdesign.com/nominated-architects

![](_page_307_Picture_10.jpeg)

project: WSU - MILPERRA 2 Bullecourt Avenue, Milperra NSW 2214 Stage: 2 Site: 2.1 Lot: 2007-2011

![](_page_307_Picture_12.jpeg)

SITEWORK						
BOW	BOW BOTTOM OF WALLEVEL					
CL	CLOTHES LINE					
EGL	EXISTING GROUND LEVEL					
FRL	FINISHED RELATIVE LEVEL					
GM	GASMETER					
HC	HOSE COCK					
HCR	HOSE COCK RECYCLE					
HWU	HOT WATER UNIT					
IHWU	INSTANTANEOUS HOT WATER UNIT					
КО	KERB OUTLET					
LB	LETTER BOX					
MB	ELECTRICAL METERBOX					
NBN	NATIONAL BROADBAND NETWORK					
PCD	PREMISES CONNECTION DEVICE					
PWM	NON POTABLE RECYCLED WATER METER					
RL	REDUCED LEVEL					
RWT	RAINWATER TANK					
SRL	STRUCTURAL RELATIVE LEVEL					
TOW	TOP OF WALL LEVEL					
WM	WATER METER					
$\longrightarrow$	DIRECTION OF FALL					
$\rightarrow \rightarrow$	PIPELINE CONNECTION TO RWT					
$\rightarrow\rightarrow$	PIPELINE STORMWATER OVERFLOW					
$\rightarrow \rightarrow$	POTABLE WATER					
$\square$	STORMWATER DRAINAGE PIT					
	GRATED DRAIN					
	FENCE TYPES					
— AB-11 —	1100 HIGH ANGLE BLADE FENCE					
— AB-18 —	1800 HIGH VERTICAL METAL BATTENS					
— BT-18 —	1800 HIGH VERTICAL BATTENS					
— LC-15 —	1500 HIGH TIMBER LAPPED & CAPPED FENCE					
— LC-18 —	1800 HIGH TIMBER LAPPED & CAPPED FENCE					

PF-15 - 1500 HIGH VERTICAL PICKET FENCE
 PF-18 - 1800 HIGH VERTICAL PICKET FENCE

SITE FSR				
Lot No	Gross floor area	Lot_Area		
2007	190.6 m <sup>2</sup>	384.9 m <sup>2</sup>		
2008	183.2 m <sup>2</sup>	384.9 m <sup>2</sup>		
2009	189.6 m <sup>2</sup>	384.9 m <sup>2</sup>		
2010	206.0 m <sup>2</sup>	448.8 m <sup>2</sup>		
2011	207.1 m <sup>2</sup>	449.1 m <sup>2</sup>		

Lot\_Area

FSR

49.51%

47.60%

49.27%

45.90%

46.12%

LOT LAYOUT & SITING PLAN

MB-10197 job no: drawing no: S2-02-DA051 scale @ A1 : 1:200 rev: C 08.11.24 date:

![](_page_307_Picture_17.jpeg)

FUTURE RESIDENTIAL 5 \$S2-02-33 SS2-02-3 SS2-02-33 2008 384.9 m² WS-28b-220AR-F2-870 **2009** 384.9 m² WS-29b-2210-F5-870 <u>2007</u> 384.9 m<sup>2</sup> WS-29b-221O-F6-870 SRL 12.144 SRL 12.205 SRL 12.205 SRL 12.205 HOUSE SRL 12.316 HOUSE HOUSE HOUSE SRL 12.365 SRL 12.365 SRL 12.365 STEP SRL 12.325 50 STEP SRL 12.325 SRL 12.325 GARAGE SRL 12.230 GARAGE GARAGE GARAGE SRL 12.315 SRL 12.315 SRL 12.315 STEP 50 SRL 12 STOCK *і*бтоскі \PILE/

200mm

100mm

![](_page_308_Figure_1.jpeg)

![](_page_308_Figure_2.jpeg)

FUTURE RESIDENTIAL

![](_page_308_Figure_6.jpeg)

![](_page_308_Picture_8.jpeg)

![](_page_308_Picture_9.jpeg)

project: WSU - MILPERRA 2 Bullecourt Avenue, Milperra NSW 2214 Stage: 2 Site: 2.1 Lot: 2007-2011

![](_page_308_Picture_11.jpeg)

title:

SITEWORK				
BOW	BOTTOM OF WALL LEVEL			
CL	CLOTHES LINE			
EGL	EXISTING GROUND LEVEL			
FRL	FINISHED RELATIVE LEVEL			
GM	GAS METER			
HC	HOSE COCK			
HCR	HOSE COCK RECYCLE			
HWU	HOT WATER UNIT			
IHWU	INSTANTANEOUS HOT WATER UNIT			
КО	KERB OUTLET			
LB	LETTER BOX			
MB	ELECTRICAL METERBOX			
NBN	NATIONAL BROADBAND NETWORK			
PCD	PREMISES CONNECTION DEVICE			
PWM	NON POTABLE RECYCLED WATER METER			
RL REDUCED LEVEL				
RWT	RAINWATER TANK			
SRL	STRUCTURAL RELATIVE LEVEL			
TOW	TOP OF WALL LEVEL			
WM	WATER METER			
$\longrightarrow$	DIRECTION OF FALL			
$\rightarrow \rightarrow$	PIPELINE CONNECTION TO RWT			
$\rightarrow \rightarrow$	PIPELINE STORMWATER OVERFLOW			
$\rightarrow \rightarrow$	POTABLE WATER			
$\boxtimes$	STORMWATER DRAINAGE PIT			
	GRATED DRAIN			
	RETAINING WALLS			
BW BW	BLOCK WORK RETAINING WALL			
BWF	BLOCK WORK FEATURE RETAINING WALL			
DEB	DROP EDGE BEAM			
IB-SL	I-BEAM CONCRETE SLEEPER WALL			
LOG-SL	LOG SLEEPER RETAINING WALL			

WW WET WALL

# EROSION, BENCHING & SEDIMENT CONTROL PLAN

MB-10197 job no: drawing no: S2-02-DA100 scale @ A1 : 1:200 rev: C 08.11.24 date:

![](_page_308_Picture_15.jpeg)

![](_page_309_Figure_0.jpeg)

200mm

100mm

1 DA/TP - HYDRAULIC CONCEPT PLAN - LOT 2007-2011

![](_page_309_Figure_3.jpeg)

![](_page_309_Picture_4.jpeg)

![](_page_309_Picture_5.jpeg)

![](_page_309_Picture_6.jpeg)

project: WSU - MILPERRA 2 Bullecourt Avenue, Milperra NSW 2214 Stage: 2 Site: 2.1 Lot: 2007-2011

SITEWORK						
OW BOTTOM OF WALL LEVEL						
CL	CLOTHES LINE					
EGL	EXISTING GROUND LEVEL					
RL	FINISHED RELATIVE LEVEL					
GM	GASMETER					
HC	HOSE COCK					
HCR	HOSE COCK RECYCLE					
HWU	HOT WATER UNIT					
HWU	INSTANTANEOUS HOT WATER UNIT					
(0	KERB OUTLET					
В	LETTER BOX					
ИB	ELECTRICAL METERBOX					
NBN	NATIONAL BROADBAND NETWORK					
PCD	PREMISES CONNECTION DEVICE					
PWM	NON POTABLE RECYCLED WATER METER					
٦L	REDUCED LEVEL					
RWT	RAINWATER TANK					
SRL	STRUCTURAL RELATIVE LEVEL					
ГОW	TOP OF WALL LEVEL					
NM	WATER METER					
$\longrightarrow$	DIRECTION OF FALL					
$\rightarrow \rightarrow$	PIPELINE CONNECTION TO RWT					
$\rightarrow \rightarrow$	PIPELINE STORMWATER OVERFLOW					
$\rightarrow \rightarrow$	POTABLE WATER					
$\boxtimes$	STORMWATER DRAINAGE PIT					
	GRATED DRAIN					
	RETAINING WALLS					
0.00						

 BW
 BUCK WORK RETAINING WALL

 BWF
 BLOCK WORK FEATURE RETAINING WALL

 DEB
 DROP EDGE BEAM

 IB-SL
 I-BEAM CONCRETE SLEEPER WALL

 LOG-SL
 LOG SLEEPER RETAINING WALL

 WW
 WET WALL

HYDRAULIC NOTE

NOTE:
THIS STORMWATER SCHEMATIC DRAWING BY MIRVAC
DESIGN IS PRODUCED AS A GUIDE ONLY FOR PLUMBERS
ON SITE TO INDICATE LOCATION OF LINES AND PITS
WITHIN BOUNDARIES. THIS DRAWING IS ONLY TO
INDICATE PIPE, PIT AND CONNECTIONS AND LOCATIONS.
THIS DRAWING IS NOT TO INDICATE ANY PIPE OR PIT
SIZES. ANY FURTHER INFORMATION RELATING TO SIZES
AND EQUIPMENT COMPONENTS SHOULD BE CONFIRMED
WITH A PLUMBER OR SUITABLY QUALIFIED HYDRAULIC
ENGINEER.

# HYDRAULIC CONCEPT PLAN

MB-10197 job no: drawing no: S2-02-DA140 scale @ A1 : 1:200 rev: C 08.11.24 date:

![](_page_309_Picture_15.jpeg)

SA2018T\_L SXD2448

SA2007T SA2007T

SA2007T

SA2007T

 D-01L\_6G
 2400
 920

 D-05
 2100
 820

Windo

W-01L

W-04L W-05 W-07 W-07

W-07 W-07

W-08L W-09

W-10

WINDOW SCHEDULE - LOT 2007

w No. Type Height Width Description

 2035
 1810

 2400
 4780

 2035
 730

 2035
 730

 2035
 730

 2035
 730

 SA20071
 2000
 100

 SXD2116\_L
 2100
 1570

 SA1236 SPECIAL
 1200
 3680
 1200H x 3680W

 SA1208 WITHIN
 SA1208 WITHIN
 SA1208 WITHIN

SA1324 SPECIAL 1370 2410 1370H x 2410W SA1307 WITHIN

 1370
 730

 1370
 730

 1370
 730

 1370
 730

 1370
 730

 1370
 730

 007 OBS
 1030

 5A1007 OBS
 1030

 5A1322\_R
 1370

 26L
 SA1014\_L OBS

 W-27
 SF1308

 1370
 850

 W-28L
 SA1222\_L

 1200
 2170

 W-28R
 SA1222\_R

DOOR SCHEDULE - LOT 2007

Door No. Height Leaf Width O/A Frame Width

1450 900

SA2016T\_SPECIAL 2035 1570

2035H x 1570W SA2007T WITHIN

SA1208 WITHIN

200mm

Window

W-01L

W-04L W-05 W-07 W-07

W-07 W-07

W-07 W-08L W-11

W-11

W-12

W-13

W-18 W-19R W-20L

 W 202
 SA1322\_R

 W-20R
 SA1322\_R

 W-20R
 SA1322\_R

 W-27
 SF1308

No. Type Height Width Description

300mr

	WINDOW SCH	HEDULE	- LOT 2	800		WINDOW SCH	HEDULE	- LOT 20	09
ndow No.	Туре	Height	Width	Description	Window No.	Туре	Height	Width	Description
L	SA2016T_SPECIAL	2035	1570	2035H x 1570W SA2007T WITHIN	W-01L	SA2016T_SPECIAL	2035	1570	2035H x 1570W SA2007T WITHIN
L	SA2018T_L	2035	1810		W-04L	SA2018T_L	2035	1810	
	SXD2448	2400	4780		W-05	SXD2448	2400	4780	
	SA2007T	2035	730		W-07	SA2007T	2035	730	
	SA2007T	2035	730		W-07	SA2007T	2035	730	
	SA2007T	2035	730		W-07	SA2007T	2035	730	
	SA2007T	2035	730		W-07	SA2007T	2035	730	
	SA2007T	2035	730		W-07	SA2007T	2035	730	
L	SXD2116_L	2100	1570		W-08L	SXD2116_L	2100	1570	
	SA1307	1370	730		W-09	SA1236 SPECIAL	1200	3680	1200H x 3680W
	SA1307	1370	730						SA1208 WITHIN
	SXD2132	2100	3162		W-11	SA1307	1370	730	
	SA1326 SPECIAL	1370	2650	1200H x 2650W	W-11	SA1307	1370	730	
				SA1207 WITHIN	W-14	SXD2127	2100	2712	
	SA1007 OBS	1030	730	OBSCURE	W-18	SA1007 OBS	1030	730	OBSCURE
R	SA1014_R OBS	1030	1450	OBSCURE	W-18	SA1007 OBS	1030	730	OBSCURE
L	SA1322_L	1370	2170		W-20L	SA1322_L	1370	2170	
R	SA1322_R	1370	2170		W-20L	SA1322_L	1370	2170	
R	SA1322_R	1370	2170		W-20R	SA1322_R	1370	2170	
	SF1308	1370	850		W-26L	SA1014_L OBS	1030	1450	OBSCURE
					W-27	SF1308	1370	850	

DOOR SCHEDULE - LOT 2008					DOO			
Door No.	Door No. Height Leaf Width O/A Frame Width				Door No.	Heig		
D-021 8G	2400	920	1500	]	D-011 6G	2400		
D-022_00	2100	820	900		D-05	2100		

![](_page_310_Figure_5.jpeg)

 DA/TP - GROUND FLOOR PLAN - LOT 2007-2011

 1:200

11/11/2024 4:38:37 PM Autodesk Docs://Milperra WSU/WSU-AR-S2-Site 02.1-R24.rvt

m		

Window				
No.	Туре	Height	Width	Description
W-02R	SA2024T_R SPECIAL	2035	2410	2035H x 2410W SA2008T WITHIN
W-03	SA2008T	2035	850	
W-03	SA2008T	2035	850	
W-03	SA2008T	2035	850	
W-03	SA2008T	2035	850	
W-04R	SA2018T_R	2035	1810	
W-05	SXD2448	2400	4780	
W-06	SA0612	600	1210	
W-07	SA2007T	2035	730	
W-07	SA2007T	2035	730	
W-11	SA1307	1370	730	
W-11	SA1307	1370	730	
W-12	SXD2132	2100	3162	
W-15	SA1326	1370	2650	
W-17	SA1007	1030	730	
W-18	SA1007 OBS	1030	730	OBSCURE
W-19R	SA1014_R OBS	1030	1450	OBSCURE
W-20L	SA1322_L	1370	2170	
W-22	SA1308	1370	850	
W-22	SA1308	1370	850	
W-24R	SA1314_R	1370	1450	
W-25R	SA1318_R SPECIAL	1370	1810	

WINDOW SCHEDULE - LOT 2011					
Window No.	Туре	Height	Width	Description	
W-02R	SA2024T_R SPECIAL	2035	2410	2035H x 2410W SA2008T WITHIN	
W-03	SA2008T	2035	850		
W-03	SA2008T	2035	850		
W-03	SA2008T	2035	850		
W-03	SA2008T	2035	850		
W-03	SA2008T	2035	850		
W-03	SA2008T	2035	850		
W-04R	SA2018T_R	2035	1810		
W-05	SXD2448	2400	4780		
W-06	SA0612	600	1210		
W-11	SA1307	1370	730		
W-11	SA1307	1370	730		
W-15	SA1326	1370	2650		
W-16R	SA1827T_R SPECIAL	1800	2760	1800H x 2760W SA1808T WITHIN	
W-17	SA1007	1030	730		
W-18	SA1007 OBS	1030	730	OBSCURE	
W-19R	SA1014_R OBS	1030	1450	OBSCURE	
W-20L	SA1322_L	1370	2170		
W-21R	SXD2118_R	2100	1810		
W-22	SA1308	1370	850		
W-22	SA1308	1370	850		
W-23	SA1808T	1800	850		
W-29	SA1807T	1800	730		

	DOOR SCHEDULE - LOT 2009					
Height Leaf Width O/A Frame Widtl						
	2400	920	1450			
	2100	820	900			

DOOR SCHEDULE - LOT 2010					
Door No.	Door No. Height Leaf Width O/A Frame Width				
D-03R_6G	2400	920	1450		
D-03	2100	820	900		
D-06	2400	820	900		

DOOR SCHEDULE - LOT 2011						
Door No.	Door No. Height Leaf Width O/A Frame Width					
D-03R_6G	D-03R_6G 2400 920 1450					
D-03	2100	00 820 900				
D-06	D-06 2400 820 900					

![](_page_310_Picture_16.jpeg)

![](_page_310_Picture_17.jpeg)

![](_page_310_Picture_18.jpeg)

TOTAL GROSS BUILDING AREAS			
Lot No. Name Area			
2007	Ground Floor	88.1 m <sup>2</sup>	
2007	First Floor	127.4 m <sup>2</sup>	
2007	Garage	37.1 m <sup>2</sup>	
2007	Porch	2.5 m <sup>2</sup>	
2007	Alfresco	26.1 m <sup>2</sup>	
		281.4 m <sup>2</sup>	
2008	Ground Floor	88.2 m <sup>2</sup>	
2008	First Floor	117.0 m <sup>2</sup>	
2008	Garage	37.3 m <sup>2</sup>	
2008	Porch	2.6 m <sup>2</sup>	
2008	Alfresco	26.1 m <sup>2</sup>	
2008	Balcony	6.0 m <sup>2</sup>	
		277.2 m <sup>2</sup>	
2009	Ground Floor	88.1 m <sup>2</sup>	
2009	First Floor	125.4 m <sup>2</sup>	
2009	Garage	37.1 m <sup>2</sup>	
2009	Porch	2.5 m <sup>2</sup>	
2009	Alfresco	26.1 m <sup>2</sup>	
2009	Balcony	7.4 m <sup>2</sup>	

2010	Ground Floor	100.5 m <sup>2</sup>
2010	First Floor	132.5 m <sup>2</sup>
2010	Garage	38.5 m <sup>2</sup>
2010	Porch	2.8 m <sup>2</sup>
2010	Alfresco	26.2 m <sup>2</sup>
2010	Balcony	8.5 m <sup>2</sup>
		309.1 m <sup>2</sup>

286.7 m<sup>2</sup>

2011	Ground Floor	100.8 m <sup>2</sup>	
2011	First Floor	133.9 m <sup>2</sup>	
2011	Garage	38.5 m <sup>2</sup>	
2011	Porch	2.7 m <sup>2</sup>	
2011	Alfresco	26.2 m <sup>2</sup>	
2011	Balcony	8.3 m <sup>2</sup>	
		310.4 m <sup>2</sup>	

720	DOOR LEAF SIZE - AS SHOWN @ 2340mm HIGH UNO
720L	DOOR LEAF SIZE - DOOR WITH LIFT-OFF HINGES
A/C	AIRCON CONDENSER
RAI	BALUSTRADE
RAT	BATTERY STOPAGE LINIT
	STRUCTURAL REAM OVER TO ENCINEED'S DETAIL
BOW	BOTTOM OF WALL LEVEL
СТ	COOKTOP
D	DOOR
DP	DOWNPIPE
DPS	DOWNPIPE & SPREADER
DS	DRYER SPACE
DW	DISHWASHER SPACE
EGL	EXISTING GROUND LEVEL
EXH/E	EXHAUST TO EAVES OR SOFFIT
EXH/R	EXHAUST TO ROOF
EXH/W	EXHAUST TO WALL
F	REFRIGERATOR SPACE
FRL	FINISHED RELATIVE LEVEL
FSC	FREE STANDING COOKER
GD	GARAGE DOOR OPENING AS SPECIFIED
GM	GAS METER
НС	HOSE COCK
HCR	HOSE COCK RECYCLE
HDC	HARDWARE DISTRIBUTION CABINET
НН	HEAD OF OPENING - HEIGHT AS NOTED
HRL	HANDRAIL - 1000mm HIGH MIN.
HWU	HOT WATER UNIT
IHWU	INSTANTANEOUS HOT WATER UNIT
INS	INSULATION
INV	INVERTER
L	LINEN
LB	LETTER BOX
LHW	LOW HEIGHT WALL - HEIGHT AS NOTED
LWO	LINE OF WALL OVER
MB	ELECTRICAL METERBOX
MH	MANHOLE/ ACCESS PANEL
MR	METAL ROOF - PITCH AS NOTED
MW	MICROWAVE SPACE
NBN	NATIONAL BROADBAND NETWORK
NCDP	NON COMBUSTIBLE DOWNPIPE (NSW ONLY)
OF	OVERFLOW
P	PANTRY
PCD	PREMISES CONNECTION DEVICE
PWM	NON POTABLE RECYCLED WATER METER
RH	RANGEHOOD
RWI C	
5 S/D	STERDOWN
5/0	SMOKE ALADM
SCR	SCREEN
SK	SINK
SI	SKYLIGHT OVER
SN	SHOWER NICHE
SP	STRUCTURAL POST TO ENGINEER'S DETAIL
SRI	STRUCTURAL RELATIVE LEVEL
SS	SERVICE STACK
ST	STORAGE
TOW	TOP OF WALL LEVEL
TP	TIMBER POST - SIZE AS NOTED
TPG	TIMBER PERGOLA TO DETAIL
TR	TILED ROOF - PITCH AS NOTED
UBO	UNDER BENCH OVEN
VJ	VERTICAL JOINT
W	WINDOW
WIP	WALK-IN PANTRY
WMS	WASHING MACHINE SPACE
WM	WATER METER
WO	WALL OVEN
WTC	RAINWATER TANK CONTROL
XXXP	ENGAGED PIERS SPACINGS VARIES.
	CENTRES TO ENG'S DESIGN
LIVABL THESE IN <u>SECT</u> ACCOM	<u>EHOUSING</u> DESIGNS MEET COUNCIL'S CONTROLS AS OUTLINES ION 11.1 LIVABLE HOUSING OF THE RESIDENTIAL MODATION DCP ONLY
	INDICATES WALL WITH REINFORCEMENT TO ENABLE INSTALLATION OF FUTURE GRABRAILS GREEN DIMENSIONIC INDICATE AMMINATION
	GREEN DIVIENSIONS INDICATE MINIMUM

	ום םר	ΛΝΟ
JKOUNL		SUA.

MB-10197 job no: drawing no: S2-02-DA210 scale @ A1 : 1:200 08.11.24 rev: C date:

![](_page_310_Picture_26.jpeg)

200mm	
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Door No.

D-02L\_8G 24 D-05 21 300mm

WINDOW SCHEDULE - LOT 2007				
Windo w No.	Туре	Height	Width	Description
W-01L	SA2016T_SPECIAL	2035	1570	2035H x 1570W SA2007T WITHIN
W-04L	SA2018T_L	2035	1810	
W-05	SXD2448	2400	4780	
W-07	SA2007T	2035	730	
W-07	SA2007T	2035	730	
W-07	SA2007T	2035	730	
W-07	SA2007T	2035	730	
W-08L	SXD2116_L	2100	1570	
W-09	SA1236 SPECIAL	1200	3680	1200H x 3680W SA1208 WITHIN
W-10	SA1324 SPECIAL	1370	2410	1370H x 2410W SA1307 WITHIN
W-11	SA1307	1370	730	
W-11	SA1307	1370	730	
W-18	SA1007 OBS	1030	730	OBSCURE
W-18	SA1007 OBS	1030	730	OBSCURE
W-20R	SA1322_R	1370	2170	
W-26L	SA1014_L OBS	1030	1450	OBSCURE
W-27	SF1308	1370	850	
W-28L	SA1222_L	1200	2170	
W-28R	SA1222_R	1200	2170	

DOOR SCHEDULE - LOT 2007

Door No. Height Leaf Width O/A Frame Width

1450 900

D-01L\_6G 2400 D-05 2100

WINDOW SCHEDULE - LOT 2008					
Window No.	Туре	Height	Width	Description	
		0005	4570		
W-01L	SA20161_SPECIAL	2035	1570	2035H x 1570W SA2007T WITHIN	
W-04L	SA2018T_L	2035	1810		
W-05	SXD2448	2400	4780		
W-07	SA2007T	2035	730		
W-07	SA2007T	2035	730		
W-07	SA2007T	2035	730		
W-07	SA2007T	2035	730		
W-07	SA2007T	2035	730		
W-08L	SXD2116_L	2100	1570		
W-11	SA1307	1370	730		
W-11	SA1307	1370	730		
W-12	SXD2132	2100	3162		
W-13	SA1326 SPECIAL	1370	2650	1200H x 2650W SA1207 WITHIN	
W-18	SA1007 OBS	1030	730	OBSCURE	
W-19R	SA1014_R OBS	1030	1450	OBSCURE	
W-20L	SA1322_L	1370	2170		
W-20R	SA1322_R	1370	2170		
W-20R	SA1322_R	1370	2170		
W-27	SF1308	1370	850		

WINDOW SCHEDULE - LOT 2009				WINDOW SCHEDULE - LOT 2010					
Window No.	Туре	Height	Width	Description	Window No.	Туре	Height	Width	Descriptio
W-01L	SA2016T_SPECIAL	2035	1570	2035H x 1570W SA2007T WITHIN	W-02R	SA2024T_R SPECIAL	2035	2410	2035H x 2410W SA2008T WITHIN
N-04L	SA2018T_L	2035	1810		W-03	SA2008T	2035	850	
N-05	SXD2448	2400	4780		W-03	SA2008T	2035	850	
N-07	SA2007T	2035	730		W-03	SA2008T	2035	850	
N-07	SA2007T	2035	730		W-03	SA2008T	2035	850	
N-07	SA2007T	2035	730		W-04R	SA2018T_R	2035	1810	
N-07	SA2007T	2035	730		W-05	SXD2448	2400	4780	
N-07	SA2007T	2035	730		W-06	SA0612	600	1210	
N-08L	SXD2116_L	2100	1570		W-07	SA2007T	2035	730	
N-09	SA1236 SPECIAL	1200	3680	1200H x 3680W	W-07	SA2007T	2035	730	
				SA1208 WITHIN	W-11	SA1307	1370	730	
N-11	SA1307	1370	730		W-11	SA1307	1370	730	
N-11	SA1307	1370	730		W-12	SXD2132	2100	3162	
N-14	SXD2127	2100	2712		W-15	SA1326	1370	2650	
N-18	SA1007 OBS	1030	730	OBSCURE	W-17	SA1007	1030	730	
N-18	SA1007 OBS	1030	730	OBSCURE	W-18	SA1007 OBS	1030	730	OBSCURE
N-20L	SA1322_L	1370	2170		W-19R	SA1014_R OBS	1030	1450	OBSCURE
N-20L	SA1322_L	1370	2170		W-20L	SA1322_L	1370	2170	
<i>N</i> -20R	SA1322_R	1370	2170		W-22	SA1308	1370	850	
N-26L	SA1014_L OBS	1030	1450	OBSCURE	W-22	SA1308	1370	850	
N-27	SF1308	1370	850		W-24R	SA1314_R	1370	1450	
					W-25R	SA1318_R	1370	1810	

DOOR S	CHEDULE - L		
Height	eight Leaf Width O/A Frame Width		Door No
100	920	1500	D-01L_6G
00	820	900	D-05

![](_page_311_Figure_7.jpeg)

![](_page_311_Figure_8.jpeg)

**2008** 384.9 m² WS-28b-220AR-F2-870 <u>2009</u> **2010** 448.8 m² WS-33b-223AF-F2-870 **384.9 m<sup>2</sup>** WS-29b-221O-F5-870 W-20L MR-5.0° W-20R BED 4 3.2 x 3.0 BED ; BED 4 BED 3 ī⊃wb′ SITTING 3.3 x 4.1 <sup>†</sup>BATH SITTING 3.4 x 3.3 ∖wil ⊠ J ENS - WIR BED 1 ROBE BED 1 3.9x 3.7/4.9 ₿€D 1 4.2 x 33Z BED 2 3.9 x 3.1 BED 2 BALCONY W-09 C MR-3,0° W-14 W-11 BALCPNY W-09 W-12 \_\_\_\_ \_\_\_\_ \_ \_ \_ \_\_\_\_ ASHFORD AVENUE S2-02-DA320 S2-02-DA320 1 DA/TP - FIRST FLOOR PLAN - LOT 2007-2011

WINDOW SCHEDULE - LOT 2011					
Window No.	Туре	Height	Width	Description	
W-02R	SA2024T_R SPECIAL	2035	2410	2035H x 2410W SA2008T WITHIN	
W-03	SA2008T	2035	850		
W-03	SA2008T	2035	850		
W-03	SA2008T	2035	850		
W-03	SA2008T	2035	850		
W-03	SA2008T	2035	850		
W-03	SA2008T	2035	850		
W-04R	SA2018T_R	2035	1810		
W-05	SXD2448	2400	4780		
W-06	SA0612	600	1210		
W-11	SA1307	1370	730		
W-11	SA1307	1370	730		
W-15	SA1326	1370	2650		
W-16R	SA1827T_R SPECIAL	1800	2760	1800H x 2760W SA1808T WITHIN	
W-17	SA1007	1030	730		
W-18	SA1007 OBS	1030	730	OBSCURE	
W-19R	SA1014_R OBS	1030	1450	OBSCURE	
W-20L	SA1322_L	1370	2170		
W-21R	SXD2118_R	2100	1810		
W-22	SA1308	1370	850		
W-22	SA1308	1370	850		
W-23	SA1808T	1800	850		
W-29	SA1807T	1800	730		

SCHEDULE - LOT 2009						
t	Leaf Width O/A Frame Width					
	· ·					
	920	1450				
	820 900					

DOOR SCHEDULE - LOT 2010					
Door No.	Door No. Height Leaf Width O/A Frame Width				
D-03R_6G	2400	920	1450		
D-03	2100	820	900		
D-06	2400	820	900		

DOOR SCHEDULE - LOT 2011						
Door No.	Door No. Height Leaf Width O/A Frame Width					
D-03R_6G	2400	920	1450			
D-03	2100	820	900			
D-06	2400	820	900			

![](_page_311_Figure_15.jpeg)

![](_page_311_Figure_16.jpeg)

![](_page_311_Picture_17.jpeg)

![](_page_311_Picture_18.jpeg)

![](_page_311_Picture_19.jpeg)

project: WSU - MILPERRA 2 Bullecourt Avenue, Milperra NSW 2214 Stage: 2 Site: 2.1 Lot: 2007-2011

	TOTAL GROSS BL	IILDING AREAS
Lot No.	Name	Area
		I
2007	Ground Floor	88.1 m <sup>2</sup>
2007	First Floor	127.4 m <sup>2</sup>
2007	Garage	37.1 m <sup>2</sup>
2007	Porch	2.5 m <sup>2</sup>
2007	Alfresco	26.1 m <sup>2</sup>
		281.4 m <sup>2</sup>
2008	Ground Floor	88.2 m <sup>2</sup>
2008	First Floor	117.0 m <sup>2</sup>
2008	Garage	37.3 m <sup>2</sup>
2008	Porch	2.6 m <sup>2</sup>
2008	Alfresco	26.1 m <sup>2</sup>
2008	Balcony	6.0 m <sup>2</sup>
		277.2 m <sup>2</sup>
	1	
2009	Ground Floor	88.1 m <sup>2</sup>
2009	First Floor	125.4 m <sup>2</sup>
2009	Garage	37.1 m <sup>2</sup>
2009	Porch	2.5 m <sup>2</sup>
2009	Alfresco	26.1 m <sup>2</sup>
2009	Balcony	7.4 m <sup>2</sup>
		286.7 m <sup>2</sup>
2010	Cround Floor	100 E m <sup>2</sup>
2010	Ground Floor	122 E m <sup>2</sup>
2010	FIISt FIUUI	132.3 III <sup>2</sup>
2010	Garage	38.5 III <sup>2</sup>
2010	POICH	2.8 III <sup>2</sup>
2010	Allfesco	20.2 m²
2010	Balcony	8.5 M <sup>2</sup>
		309. I M²
2011	Ground Floor	100.8 m <sup>2</sup>
2011	First Floor	133.9 m <sup>2</sup>

201	I	GIOUIIU FIOOI	100.611-
2011	1	First Floor	133.9 m <sup>2</sup>
2011	1	Garage	38.5 m <sup>2</sup>
2011	1	Porch	2.7 m <sup>2</sup>
2011	1	Alfresco	26.2 m <sup>2</sup>
2011	1	Balcony	8.3 m <sup>2</sup>
			310.4 m <sup>2</sup>

720	
720	DOOR LEAF SIZE - AS SHOWN @ 2340mm HIGH UN
A/C	AIRCON CONDENSER
ACD	AIRCON DUCT
ACE	AIRCON EVAPORATOR
APG	ALUMINIUM PERGOLA TO DETAIL
BAL	BALUSTRADE
BAT	BATTERY STORAGE UNIT
BH	BULKHEAD OVER
BO	STRUCTURAL BEAM OVER TO ENGINEER'S DETAIL
BOW	BOTTOM OF WALL LEVEL
BW	STRUCTURAL BEAM IN WALL OVER
С	CUPBOARD
CL	CLOTHES LINE
CSD	CAVITY SLIDER DOOR
	COOKTOP
	DOWNDE
DF3 DS	
	DISHWASHER SPACE
FGI	EXISTING GROUND LEVEL
FXH/F	EXISTING GROOND LEVEL
EXH/R	EXHAUST TO ROOF
EXH/W	EXHAUST TO WALL
F	REFRIGERATOR SPACE
FRL	FINISHED RELATIVE LEVEL
FSC	FREE STANDING COOKER
GD	GARAGE DOOR OPENING AS SPECIFIED
GM	GAS METER
НС	HOSE COCK
HCR	HOSE COCK RECYCLE
HDC	HARDWARE DISTRIBUTION CABINET
HH	HEAD OF OPENING - HEIGHT AS NOTED
HRL	HANDRAIL - 1000mm HIGH MIN.
HWU	HOT WATER UNIT
IHWU	INSTANTANEOUS HOT WATER UNIT
INS	INSULATION
INV	INVERTER
	LINEN
	LOW HEIGHT WALL - HEIGHT AS NOTED
MB	
MH	MANHOLE/ACCESS PANEL
MP	
	MICROWAVE SPACE
NBN	
OF	OVERELOW
P	PANTRY
PCD	PREMISES CONNECTION DEVICE
PWM	NON POTABLE RECYCLED WATER METER
RH	RANGEHOOD
RL	REDUCED LEVEL
RWH	RAINWATER HEAD
RWT	RAINWATER TANK
S	STORAGE
S/D	STEPDOWN
SA	SMOKE ALARM
SCR	SCREEN
SK	SINK
SL	SKYLIGHT OVER
SN	SHOWER NICHE
SP	STRUCTURAL POST TO ENGINEER'S DETAIL
SRL	STRUCTURAL RELATIVE LEVEL
SS	SERVICE STACK
ST	STORAGE
TOW	TOP OF WALL LEVEL
TP	TIMBER POST - SIZE AS NOTED
TPG	TIMBER PERGOLA TO DETAIL
TR	TILED ROOF - PITCH AS NOTED
UBO	UNDER BENCH OVEN
VJ	VERTICAL JOINT
W	WINDOW
WIP	WALK-IN PANTRY
WMS	WASHING MACHINE SPACE
WM	WAIER MEIER
WO	WALL OVEN
WIC	
XXXP	ENGAGED PIERS SPACINGS VARIES.
LIVABLI THESE I IN <u>SECT</u> ACCOM	<u>HOUSING</u> DESIGNS MEET COUNCIL'S CONTROLS AS OUTLINES ION 11.1 LIVABLE HOUSING OF THE RESIDENTIAL MODATION DCP ONLY INDICATES WALL WITH REINFORCEMENT TO ENABLE INSTALLATION OF FUTURE
	GRABRAILS GREEN DIMENSIONS INDICATE MINIMUM

#### title: FIRST FLOOR PLANS

 job no:
 MB-10197

 drawing no:
 S2-02-DA220

 scale @ A1 :
 1: 200

 date:
 08.11.24
 rev:
 C

![](_page_311_Picture_27.jpeg)

![](_page_312_Figure_0.jpeg)

200mm

100mm

DA/TP - ROOF PLAN - LOT 2007-2011 1:200

30

![](_page_312_Picture_4.jpeg)

![](_page_312_Picture_5.jpeg)

![](_page_312_Picture_6.jpeg)

![](_page_312_Picture_7.jpeg)

title:

ROOF PLAN			
APG	ALUMINIUM PERGOLA TO DETAIL		
BG	BOX GUTTER		
DP	DOWNPIPE		
DPS	DOWNPIPE & SPREADER		
DP-100	DOWNPIPE 100mm DIA		
EXH/R	EXHAUST TO ROOF		
MR	METAL ROOF		
OF	OVERFLOW		
PV	PHOTOVOLTAIC SOLAR PANEL		
RWH	RAINWATER HEAD		
SHWP	SOLAR HOT WATER PANEL		
SL	SKY LIGHT		
TPG	TIMBER PERGOLA TO DETAIL		
TR	TILED ROOF - PITCH AS NOTED		
$\sim \sim$	RAKED SOFFIT		
/////	FIRE RATED FAVE/SOFFIT		

job no:	MB-10197		
drawing no:	S2-02-DA	4230	
scale @ A1 :	1 : 200		
date:	08.11.24	rev:	С

![](_page_312_Picture_12.jpeg)

![](_page_313_Figure_0.jpeg)

30

![](_page_313_Figure_1.jpeg)

![](_page_313_Figure_2.jpeg)

![](_page_313_Figure_3.jpeg)

![](_page_313_Figure_4.jpeg)

![](_page_313_Figure_5.jpeg)

![](_page_313_Figure_6.jpeg)

100mm

![](_page_313_Figure_7.jpeg)

![](_page_313_Figure_8.jpeg)

![](_page_313_Figure_9.jpeg)

![](_page_313_Figure_10.jpeg)

![](_page_313_Figure_13.jpeg)

5 LOT 2007 - NOTIFICATION PLAN

![](_page_313_Figure_15.jpeg)

![](_page_313_Figure_16.jpeg)

![](_page_313_Figure_17.jpeg)

![](_page_313_Figure_18.jpeg)

![](_page_313_Figure_19.jpeg)

(15) LOT 2009 - NOTIFICATION PLAN

![](_page_313_Figure_21.jpeg)

![](_page_313_Picture_22.jpeg)

![](_page_313_Picture_23.jpeg)

![](_page_313_Picture_24.jpeg)

project: WSU - MILPERRA 2 Bullecourt Avenue, Milperra NSW 2214 Site: 2.1 Stage: 2 Lot: 2007-2011

EXTERNAL FINISHES WALL TYPE				
EXTENT OI REFER TO I	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 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			
MC	COLOURBOND METAL CLADDING			

![](_page_313_Figure_28.jpeg)

#### title: NEIGHBOURING NOTIFICATION PLANS - LOTS 2007-2009

MB-10197 job no: drawing no: S2-02-DA250 scale @ A1 : 1:200 08.11.24 し date: rev:

![](_page_313_Picture_31.jpeg)

![](_page_314_Figure_3.jpeg)

![](_page_314_Figure_4.jpeg)

![](_page_314_Figure_5.jpeg)

![](_page_314_Figure_6.jpeg)

![](_page_314_Figure_7.jpeg)

![](_page_314_Figure_8.jpeg)

![](_page_314_Figure_9.jpeg)

30

![](_page_314_Figure_11.jpeg)

![](_page_314_Figure_12.jpeg)

![](_page_314_Figure_13.jpeg)

![](_page_314_Picture_14.jpeg)

![](_page_314_Picture_15.jpeg)

![](_page_314_Picture_16.jpeg)

![](_page_314_Picture_17.jpeg)

![](_page_314_Picture_18.jpeg)

![](_page_314_Picture_19.jpeg)

title:

EXTERNAL FINISHES WALL TYPE				
EXTENT OF FINISHES INDICATED ONLY.				
KEFEK IUI				
FBW	FACE BRICKWORK			
RBW	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			
MC	COLOURBOND METAL CLADDING			

# NEIGHBOURING NOTIFICATION PLANS - LOTS 2010-2011

MB-10197 job no: drawing no: S2-02-DA251 scale @ A1 : 1:200 rev: C 08.11.24 date:

![](_page_314_Picture_24.jpeg)

![](_page_315_Picture_3.jpeg)

2 FRONT ELEVATION - LOT 2007-2009 1:100

![](_page_315_Picture_5.jpeg)

3 FRONT ELEVATION - LOT 2010-2011 1:100

![](_page_315_Figure_7.jpeg)

4 SIDE ELEVATION - LOT 2010

![](_page_315_Picture_10.jpeg)

5 SIDE 1 ELEVATION - LOT 2011 1:100

![](_page_315_Picture_12.jpeg)

 
 MIRVAC DESIGN
 Level 28 200 George SI Sydney NSW 2000 To 2 9080 8000

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 Mirvac Design Pty Ltd. ABN 78 003 359 153
 Mirvac Design Nominated / Responsible Architects Anita Verma Michael Wiener David Hirst Paromvong Sinbandhit Andrew La https://www.mirvacdesign.com/nominated-architects

![](_page_315_Picture_15.jpeg)

project: WSU - MILPERRA 2 Bullecourt Avenue, Milperra NSW 2214 Stage: 2 Site: 2.1 Lot: 2007-2011

#### title: COLOURED STREETSCAPES -FRONT & SIDE

MB-10197 job no: drawing no: S2-02-DA320 scale @ A1 : 1:100 rev: C 08.11.24 date:

30

![](_page_316_Figure_1.jpeg)

![](_page_316_Figure_2.jpeg)

![](_page_316_Figure_3.jpeg)

![](_page_316_Figure_4.jpeg)

![](_page_316_Figure_8.jpeg)

RL 15.340

RL 14.960

RL 12.365

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\_ \_ \_ \_ \_

\_ \_ \_ \_ \_

![](_page_316_Picture_9.jpeg)

![](_page_316_Picture_10.jpeg)

![](_page_316_Picture_11.jpeg)

BED 4

DINING

4 2010 - SECTION 1:100

KITCHEI

MR-5.0°

ALFRESCO

![](_page_316_Picture_12.jpeg)

GARAGE

EXISTING GROUND LINE (SHOWN RED DASHED)

E	LEVATION / SECTION
A/C	AIRCON CONDENSER
ACD	AIRCON DUCT
ACE	AIRCON EVAPORATOR
APG	ALUMINIUM PERGOLA TO DETAIL
BAL	BALUSTRADE
BAT	BATTERY STORAGE UNIT
BH	BULKHEAD OVER
BOW	BOTTOM OF WALL LEVEL
С	CUPBOARD
CL	CLOTHES LINE
D	DOOR
DP	DOWNPIPE
DPS	DOWNPIPE & SPREADER
EGL	EXISTING GROUND LEVEL
EXH/E	EXHAUST TO EAVES OR SOFFIT
EXH/R	EXHAUST TO ROOF
EXH/W	EXHAUST TO WALL
FCL	FINISHED CEILING LEVEL
FRL	FINISHED RELATIVE LEVEL
GD	GARAGE DOOR OPENING AS SPECIFIED
GM	GAS METER
HC	HOSE COCK
HCR	HOSE COCK RECYCLE
HDC	HARDWARE DISTRIBUTION CABINET
HH	HEAD OF OPENING - HEIGHT AS NOTED
HRI	HANDRAIL - 1000mm HIGH MIN
HWU	HOT WATER LINIT
IHWU	INSTANTANEOUS HOT WATER LINIT
INIV	
1	LINEN
IR	
MB	
MP	
NRN	
NCDP	
OE OE	
PD	
DWM	
RL DW/H	
RWH	
RWI	
5	STORAGE
S/D	STEPDOWN
SCR	SCREEN
SL	SKYLIGHT OVER
SP	STRUCTURAL POST TO ENGINEER'S 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	DAINWATED TANK CONTROL

![](_page_316_Figure_15.jpeg)

itte: SECTIONS	job no: drawing no:	MB-10197 S2-02-DA3	30	
	scale @ A1 :	1 : 100		
	date:	08.11.24	rev:	С
Copyright of the design and other information shown here is owned by Mirvac Design pty. Itd. Reproduction or	use of the design by any pa	rty for any purpose is expressly fo	rbidden without	the written permission of Mirvac Design pty. Itd

![](_page_317_Figure_0.jpeg)

2 DA/TP SHADOW PLAN 21 JUNE - 12PM 1:200

0mm E

E

			SOLAR COVERAGE IN POS					*NOTE : CALCULATIONS OF COVERAGE IN ACCORD WIT DCP MIN 3 HRS OF 50% OF POS FROM 8:00AM - 4:00PM	Solar Th the The			
0_Lot No	0_House Type	8am	9am	10am	11am	12noon	1pm	2pm	3pm	4pm	Solar Compliance*	
2007	WS-29b-221O-F6-870	132.4 m <sup>2</sup>	132.3 m <sup>2</sup>	127.8 m <sup>2</sup>	118.6 m <sup>2</sup>	108.2 m <sup>2</sup>	92.2 m <sup>2</sup>	74.5 m <sup>2</sup>	49.9 m <sup>2</sup>	38.6 m <sup>2</sup>	Yes	
2008	WS-28b-220AR-F2-870	128.4 m <sup>2</sup>	127.4 m <sup>2</sup>	120.6 m <sup>2</sup>	106.6 m <sup>2</sup>	89.2 m <sup>2</sup>	70.0 m <sup>2</sup>	41.1 m <sup>2</sup>	0.0 m <sup>2</sup>	0.0 m <sup>2</sup>	Yes	
2009	WS-29b-221O-F5-870	129.5 m <sup>2</sup>	129.1 m <sup>2</sup>	120.1 m <sup>2</sup>	103.3 m <sup>2</sup>	89.0 m <sup>2</sup>	69.4 m <sup>2</sup>	38.8 m <sup>2</sup>	0.0 m <sup>2</sup>	0.0 m <sup>2</sup>	Yes	
2010	WS-33b-223AF-F2-870	138.5 m <sup>2</sup>	137.0 m <sup>2</sup>	129.7 m <sup>2</sup>	113.6 m <sup>2</sup>	90.3 m <sup>2</sup>	66.5 m²	25.2 m <sup>2</sup>	0.0 m <sup>2</sup>	0.0 m <sup>2</sup>	Yes	
2011	WS-33-223AE-F1-870	146.0 m <sup>2</sup>	146.1 m <sup>2</sup>	141.6 m <sup>2</sup>	132.9 m <sup>2</sup>	121.4 m <sup>2</sup>	102.8 m <sup>2</sup>	81.4 m <sup>2</sup>	58.7 m <sup>2</sup>	51.3 m <sup>2</sup>	Yes	

08.11.24	С	ISSUE FOR DA
25.10.24	В	ISSUE TO CONSULTANTS
15.10.24	A	ISSUE FOR REVIEW
date	rev	amendment

TS

![](_page_317_Picture_6.jpeg)

![](_page_317_Picture_7.jpeg)

## project: WSU - MILPERRA 2 Bullecourt Avenue, Milperra NSW 2214 Stage: 2 Site: 2.1 Lot: 2007-2011

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	SHADOWS
1	ONE STOREY BUILDING
2	TWO STOREY BUILDING
3	THREE STOREY BUILDING
PV	PHOTOVOLTAIC SOLAR PANEL
	SHADOW

uue:
SHADOW ANALYSIS & DIAGRAM -
21 JUNE - 9AM/12PM

 job no:
 MB-10197

 drawing no:
 S2-02-DA400

 scale @ A1 :
 1 : 200

 date:
 08.11.24
 rev:
 C

![](_page_317_Picture_13.jpeg)

![](_page_318_Picture_0.jpeg)

![](_page_318_Picture_5.jpeg)

rev: U

(min 40%)

Yes

Yes

Yes

Yes

Yes

Landscaped Frontyard Complies (min 40%) (min 40%)

48.11%

48.88%

47.57%

54.48%

54.43%

Lot Number | Frontyard Area | Landscaped Frontyard Area |

84.21 m²

87.87 m<sup>2</sup>

84.86 m<sup>2</sup>

97.23 m<sup>2</sup>

91.72 m<sup>2</sup>

2007

2008

2009

2010

2011

FRONT LANDSCAPED AREA SCHEDULE

40.52 m<sup>2</sup>

42.95 m<sup>2</sup>

40.37 m<sup>2</sup>

52.98 m<sup>2</sup>

49.93 m<sup>2</sup>

LANDSCAPED Lot Number Lot\_Area Soft Landscape 2007 384.90 m<sup>2</sup> 184.95 m<sup>2</sup> 2008 384.90 m<sup>2</sup> 183.48 m<sup>2</sup> 384.90 m<sup>2</sup> 183.69 m<sup>2</sup> 2009 448.80 m<sup>2</sup> 234.36 m<sup>2</sup> 2010

2011 449.10 m<sup>2</sup>

![](_page_319_Figure_4.jpeg)

1 DA/TP - PRIVATE OPEN SPACE

11/11/2024 4:39:49 PM Autodesk Docs://Milperra WSU/WSU-AR-S2-Site 02.1-R24.rvt

30

ANDSCAPED AREA SCHEDULE			
ft Landscape Area	Landscaped Area Provided (Min. 25% of Site Area)	Complies	
184.95 m <sup>2</sup>	48.05%	Yes	
183.48 m <sup>2</sup>	47.67%	Yes	
183.69 m <sup>2</sup>	47.72%	Yes	
234.36 m <sup>2</sup>	52.22%	Yes	
237.01 m <sup>2</sup>	52.77%	Yes	

POS AREA SCHEDULE				
Lot No	POS			
2007	137.7 m <sup>2</sup>			
2008	133.5 m <sup>2</sup>			
2009	135.4 m <sup>2</sup>			
2010	138.7 m <sup>2</sup>			
2011	145.8 m <sup>2</sup>			

![](_page_319_Picture_9.jpeg)

amendment

![](_page_319_Picture_11.jpeg)

![](_page_319_Picture_12.jpeg)

project: WSU - MILPERRA 2 Bullecourt Avenue, Milperra NSW 2214 Stage: 2 Site: 2.1 Lot: 2007-2011

![](_page_319_Picture_14.jpeg)

# AREA PLAN - PRIVATE OPEN SPACE AND PERMEABLE AREA

job no: MB-10197 drawing no: S2-02-DA420 scale @ A1 : 1:200 rev: C 08.11.24 date:

![](_page_319_Picture_17.jpeg)

0mm

200mm

![](_page_320_Figure_3.jpeg)

1 GFA AREAS - GROUND FLOOR

![](_page_320_Figure_5.jpeg)

11/11/2024 4:39:56 PM Autodesk Docs://Milperra WSU/WSU-AR-S2-Site 02.1-R24.rvt

![](_page_320_Picture_8.jpeg)

amendment

![](_page_320_Picture_10.jpeg)

![](_page_320_Picture_11.jpeg)

project: WSU - MILPERRA 2 Bullecourt Avenue, Milperra NSW 2214 Stage: 2 Site: 2.1 Lot: 2007-2011

![](_page_320_Picture_13.jpeg)

SITE FSR					
Lot No	Gross floor area	Lot_Area	FSR		
007	190.6 m <sup>2</sup>	384.9 m <sup>2</sup>	49.51%		
800	183.2 m <sup>2</sup>	384.9 m <sup>2</sup>	47.60%		
009	189.6 m <sup>2</sup>	384.9 m <sup>2</sup>	49.27%		
010	206.0 m <sup>2</sup>	448.8 m <sup>2</sup>	45.90%		
011	207.1 m <sup>2</sup>	449.1 m <sup>2</sup>	46.12%		

SITE -	GFA SCHEDULE (I	FSR CALC.)
Lot No.	Name	Area*
2007	Ground Floor	80.1 m <sup>2</sup>
2007	First Floor	110.4 m <sup>2</sup>
		190.6 m <sup>2</sup>
2008	Ground Floor	80.1 m <sup>2</sup>
2008	First Floor	103.1 m <sup>2</sup>
		183.2 m <sup>2</sup>
2009	Ground Floor	80.1 m <sup>2</sup>
2009	First Floor	109.5 m <sup>2</sup>
		189.6 m <sup>2</sup>
2010	Ground Floor	89.8 m <sup>2</sup>
2010	First Floor	116.2 m <sup>2</sup>
		206.0 m <sup>2</sup>
2011	Ground Floor	89.8 m <sup>2</sup>
2011	First Floor	117.3 m <sup>2</sup>
		207.1 m <sup>2</sup>
Grand total		976.5 m <sup>2</sup>

#### title: GFA AREA PLANS - GROUND & FIRST FLOOR

MB-10197 job no: drawing no: S2-02-DA421 scale @ A1 : 1:200 rev: C 08.11.24 date:

![](_page_320_Picture_19.jpeg)

200mm

300mm

![](_page_321_Figure_3.jpeg)

URTICAL TIMBER BATTEN FENCE DETAILS

0mn

30

![](_page_321_Figure_8.jpeg)

![](_page_321_Picture_10.jpeg)

![](_page_321_Picture_11.jpeg)

Mirvac Design Nominated / Responsible Architects Anita Verma Michael Wiener David Hirst Paromvong Sinbandhit Andrew La https://www.mirvacdesign.com/nominated-architects

![](_page_321_Picture_13.jpeg)

project: WSU - MILPERRA 2 Bullecourt Avenue, Milperra NSW 2214 Stage: 2 Site: 2.1 Lot: 2007-2011

![](_page_321_Figure_16.jpeg)

# GENERAL CONSTRUCTION DETAILS

job no: MB-10197 drawing no: S2-02-DA800 scale @ A1 : 1:20 rev: C 08.11.24 date:

![](_page_322_Picture_0.jpeg)

DA/TP SHADOW PLAN 21 JUNE - 3PM

			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	12noon	1pm	2pm	3pm	4pm	Solar Compliance*		
2007	WS-29b-221O-F6-870	132.4 m <sup>2</sup>	132.3 m <sup>2</sup>	127.8 m <sup>2</sup>	118.6 m <sup>2</sup>	108.2 m <sup>2</sup>	92.2 m <sup>2</sup>	74.5 m <sup>2</sup>	49.9 m <sup>2</sup>	38.6 m <sup>2</sup>	Yes	-	
2008	WS-28b-220AR-F2-870	128.4 m <sup>2</sup>	127.4 m <sup>2</sup>	120.6 m <sup>2</sup>	106.6 m <sup>2</sup>	89.2 m <sup>2</sup>	70.0 m <sup>2</sup>	41.1 m <sup>2</sup>	0.0 m <sup>2</sup>	0.0 m <sup>2</sup>	Yes	-	
2009	WS-29b-221O-F5-870	129.5 m <sup>2</sup>	129.1 m <sup>2</sup>	120.1 m <sup>2</sup>	103.3 m <sup>2</sup>	89.0 m <sup>2</sup>	69.4 m <sup>2</sup>	38.8 m <sup>2</sup>	0.0 m <sup>2</sup>	0.0 m <sup>2</sup>	Yes		
2010	WS-33b-223AF-F2-870	138.5 m <sup>2</sup>	137.0 m <sup>2</sup>	129.7 m <sup>2</sup>	113.6 m <sup>2</sup>	90.3 m <sup>2</sup>	66.5 m <sup>2</sup>	25.2 m <sup>2</sup>	0.0 m <sup>2</sup>	0.0 m <sup>2</sup>	Yes		
2011	WS-33-223AE-F1-870	146.0 m <sup>2</sup>	146.1 m <sup>2</sup>	141.6 m <sup>2</sup>	132.9 m <sup>2</sup>	121.4 m <sup>2</sup>	102.8 m <sup>2</sup>	81.4 m <sup>2</sup>	58.7 m <sup>2</sup>	51.3 m <sup>2</sup>	Yes		

amendment

![](_page_322_Picture_6.jpeg)

![](_page_322_Picture_7.jpeg)

project: WSU - MILPERRA 2 Bullecourt Avenue, Milperra NSW 2214 Stage: 2 Site: 2.1 Lot: 2007-2011

![](_page_322_Picture_9.jpeg)

SHADOWS									
1	ONE STOREY BUILDING								
2	TWO STOREY BUILDING								
3	THREE STOREY BUILDING								
PV	PHOTOVOLTAIC SOLAR PANEL								
	SHADOW								

# 

# SHADOW ANALYSIS & DIAGRAM -21 JUNE - 3PM

job no: MB-10197 drawing no: S2-02-DA401 scale @ A1 : 1 : 200 rev: C 08.11.24 date:

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Y