BUSHFIRE THREAT ASSESSMENT

FOR
A PROPOSED
CHILDCARE CENTRE
AT

41 RYANS ROAD, GILLIESTON HEIGHTS NSW 2321

Prepared by:

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Site Details:	41 Ryans Road, Gillieston Heights NSW 2321 For Lots 76,77,79,80, and 81 (currently unregistered as part of SWC)
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Disclaimer

Notwithstanding the precautions adopted within this report, it should always be remembered that bushfires burn under a wide range of conditions. An element of risk, no matter how small always remains, and although the standard is designed to improve the performance of such buildings, there can be no guarantee, because of the variable nature of bushfires, that any one building will withstand bushfire attack on every occasion.

Executive Summary

A Bushfire Threat Assessment Report (BTA) has been prepared by Firebird ecoSultants Pty Ltd at the request of EXP Capital for a proposed Childcare Centre at 41 Ryans Road, Gillieston Heights NSW 2321 for Lots 76,77,79,80, and 81 (currently unregistered as part of SWC). The report forms part of the supporting documentation for a Development Application to be submitted to Maitland City Council (MCC).

The proposal is for a childcare centre and, as such, must meet the requirements of a Special Fire Protection Purposes (SFPP) development in accordance with Planning for Bushfire Protection 2019 (PBP 2019) (NSW RFS, 2019). Under RF Act s.100B, a BFSA from the NSW RFS is required for SFPP development. As such, an Integrated Development approval may be required under of the EP&A Act s.4.46. The report demonstrates compliance with PBP 2019 and AS3959-2018 Construction of Buildings in Bush Fire Prone Areas as well as Appendix B of PBP Addendum November 2022.

This assessment aims to consider and assess the bushfire hazard and associated potential threats relevant to the proposal. Recommendations are provided with regard to fuel management, access, provision of emergency services, building protection and construction standards to facilitate an acceptable level of bushfire protection.

In summary, the following is recommended to enable the proposal to meet the relevant legislative requirements for the proposed childcare centre:

1. Asset Protection Zones (APZ)

An APZ of 34m (a 19m APZ is required in accordance with PBP 2019) occurs to the West between the proposed childcare centre and vegetation of freshwater wetlands, and an APZ of 42m occurs to the West between the proposed childcare centre and vegetation of grassland at the site in order to get a radiant heat of <10kw/ $m^{2.}$ This is based on Table A1.12.1 in Appendix 1 of Planning for Bushfire Protection 2019. The landscape plans provided by Terras Landscape Architects details the planting schedule for the land to the West. Refer to Appendix C.

2. Bushfire Attack Level (BAL)

The BAL relates to a set of construction specifications listed within Australian Standard AS 3959-2018 Constructions of buildings in bushfire-prone areas (AS 3959) and the NSW variation to AS 3959 listed at Section 7.5.2 of PBP.

The BAL for the childcare centre has been determined as BAL-12.5 in accordance with Table A1.12.1 of PBP 2019. However, in accordance with Appendix B of PBP Addendum November 2022, the constructions requirements must comply with BAL-19 as the acceptable solution.

3. Access

PBP 2019 requires an access design that enables safe evacuation whilst facilitating adequate emergency and operational response. The Performance based criteria in accordance with Appendix B of PBP Addendum November 2022 states

Firefighting vehicles are provided with safe, all-weather access to structures and hazardous vegetation

The surrounding public roads provide satisfactory access for evacuation and emergency response. A non-perimeter road is constructed to the North of the site that provides direct access / egress to and from the childcare centres and Ryans Road to the East and Kiah Road to the South provides direct access for firefighters to the building.

4. Water Supply and Utilities

The site will be connected to the reticulated water and a hydrant is to be within 70m of the proposed childcare centre in accordance with the Acceptable Solution of PBP 2019 and Appendix B of PBP Addendum November 2022.

5. Emergency Management and Evacuation

An emergency evacuation plan is to be prepared in accordance with RFS, 2014, 'Development Planning – A Guide to developing a Bush Fire Emergency Management and Evacuation Plan'.

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Ecologist / Bushfire Planner

Terms & Abbreviations

Abbreviation	Meaning
APZ	Asset Protection Zone
AS2419-2017	Australian Standard – Fire Hydrant Installations
AS3959-2018	Australian Standard – Construction of Buildings in Bush Fire Prone Areas
BCA	Building Code of Australia
BPA	Bush Fire Prone Area (Also Bushfire Prone Land)
BFPL Map	Bush Fire Prone Land Map
BPMs	Bush Fire Protection Measures
BFSA	Bush Fire Safety Authority
CC	Construction Certificate
EPA Act	*NSW Environmental Planning and Assessment Act 1979*
FFDI	Forest Fire Danger Index
FMP	Fuel Management Plan
ha	hectare
IPA	Inner Protection Area
LGA	Local Government Area
MCC	Maitland City Council
OPA	Outer Protection Area
PBP	Planning for Bushfire Protection 2019
PoM	Plan of Management
RF Act	Rural Fires Act 1997
RF Regulation	Rural Fires Regulation

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TABLES

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1 INTRODUCTION

A Bushfire Threat Assessment Report (BTA) has been prepared by Firebird ecoSultants Pty Ltd at the request of EXP Capital for proposed Childcare at 41 Ryans Road, Gillieston Heights NSW 2321 for Lots 76,77,79,80, and 81 (currently unregistered as part of SWC), hereafter referred to as the "site" (refer to Figure 1-1 for site locality). Refer to Appendix A for proposed site plans.

This BTA is suitable for submission with a DA and provides information on measures that will enable the development to comply with 'Planning for Bushfire Protection' (NSW RFS, 2019), hereafter referred to as PBP (RFS, 2019).

This assessment aims to consider and assess the bushfire hazard and associated potential threats relevant to such a proposal, and to outline the minimum mitigative measures which would be required in accordance with the provisions of the Environmental Planning and Assessment Amendment (Planning for Bushfire Protection) Regulation 2007 and the Rural Fires Amendment Regulation 2007 (RF Amendment Regulation 2007).

1.1 Site Particulars

Locality:	41 Ryans Road, Gillieston Heights NSW 2321 for Lots 76,77,79,80, and 81 (currently unregistered as part of SWC)
LGA:	Maitland City Council
Current Land Use:	R1: General Residential
Forest Danger Index:	100 FFDI

Note:
Boundaries are not survey accurate.
Although all reasonable care has been taken to ensure the information shown on this map is up to date and accurate, no guarantee is given that the information portrayed is free from error or omission. Please verify the accuracy of all information prior to use.

FIGURE 3-1: VEGETATION MAP

Ref No 3426

CLIENT	Client
SITE DETAILS	Ryans Road Gillieston Heights
DATE	20 February 2025

NORTH

0 25 50 100

SCALE 2000 @ A3

PIXELDRAFTING

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firebird

1.2 Description of the Proposal

This Section DA relates to the proposal for a childcare centre. Refer to Appendix A for proposed plans.

1.3 Legislative Requirements

This report forms part of the supporting documentation for a DA to be submitted to MCC.

The site has been mapped as Bushfire Prone Land by MCC. Refer to Figure 1-2.

This BTA has been prepared using current legislative requirements and associated guidelines for assessment of bushfire protection, these being:

- PBP (RFS, 2019); and
- AS3959-2018 Construction of Buildings in Bushfire Prone Area.

1.4 Objectives of Assessment

This report has been prepared to address the requirements of Clause 44 of the Rural Fires Regulation. This BTA also addresses the six key Bush Fire Protection Measures (BFRMs) in a development assessment context being:

- The provision of clear separation of buildings and bush fire hazards, in the form of fuel-reduced APZ (and their components being Inner Protection Areas (IPA's) and Outer Protection Areas (OPA's);
- Sitting and design of the proposal;
- Construction standards;
- Appropriate access standards for residents, fire-fighters, emergency workers and those involved in evacuation;
- Adequate water supply and pressure, and utility services; and
- Suitable landscaping, to limit fire spreading to a building.

Legend

- Building Outline
- Subject Land

Assessment Area

- 100m
- 140m
- Cadastre

Bushfire Prone Land

- Vegetation Category 3
- Vegetation Buffer

Scale 1: 2,000

0 20 40 60 Metres

firebird

Client: EXP Capital

Project: 77-76, 79-81 Ryans Road, Gillieston Heights NSW 2321

Figure 1-2: Bushfire Prone Land

2 METHODOLOGY

2.1 Vegetation Assessment

Vegetation surveys and vegetation mapping carried out on the site has been undertaken as follows:

- Aerial Photograph Interpretation to map vegetation cover and extent
- Confirmation of the vegetation assemblage typology present.

2.2 Slope Assessment

Slope assessment has been undertaken as follows:

- Aerial Photograph Interpretation in conjunction with analysis of electronic contour maps with a contour interval of 2m.

3 SITE ASSESSMENT

The following assessment has been undertaken in accordance with the requirements of PBP (RFS, 2019).

3.1 Vegetation & Slope Assessment

In accordance with PBP (RFS 2019), an assessment of the vegetation over a distance of 140m in all directions from the site was undertaken. Vegetation that may be considered a bushfire hazard was identified in all directions from the site. This assessment is depicted in Table 3-1 and Figure 3-1 that shows the vegetation post development.

Table 3-1: Vegetation Classification

Proposed Childcare Centre		
Direction	**Vegetation Type**	**Slope**
North	Managed Land – Future Residential Development	N/A
East	Managed Land – Existing Residential Development	N/A
South	Low Threat Vegetation in accordance with sA1.10 in PBP 2019 being areas of <1ha in size and >100m from areas of Category 1 or 2. In any case Kiah Road separates this vegetation and the proposed childcare centre.	N/A
West	Freshwater wetlands vegetation	Flat ground
Further West	Grassland	Upslope

Legend

- Line Distance
- Building Outline
- Subject Land

Assessment Area

- 100m
- 140m

Classified Vegetation

- Freshwater Wetlands
- Grassland
- Modified to non vegetated and low threat
- Elevation Contours
- Cadastre

Scale 1: 2,000

0 20 40 60 Metres

firebird

Client: EXP Capital

Project: 77-76, 79-81 Ryans Road, Gillieston Heights NSW 2321

Figure 3-1: Vegetation Map

4 BUSHFIRE PROTECTION MEASURES

PBP requires the assessment of a suite of bushfire protection measures that in total provide an adequate level of protection for SFPP development. The measures required to be assessed are listed in Table 4-1 below

Table 4-1 Bushfire Protection Measures

Bushfire Protection Measures	Performance Criteria	Acceptable Solution	Compliance
Asset Protection Zones (APZ)	The proposed building can withstand bush fire attack in the form of wind, embers, radiant heat and flame contact.	APZs are established in accordance with the Acceptable solution APZs within Table A1.12.1 in PBP 2019.	Meets the acceptable solution
Construction Standards (BALs)	The proposed building can withstand bush fire attack in the form of wind, embers, radiant heat and flame contact. Compliance with Appendix B of PBP Addendum November 2022.	A construction level of BAL-19 or greater under AS 3959 and section 7.5 of PBP is applied. Compliance with Appendix B of PBP Addendum November 2022.	Meets the acceptable solution – The proposed child care will be built to BAL-19
Access	Firefighting vehicles are provided with safe, all-weather access to structures and hazardous vegetation.	〉 Vehicular access must be capable of providing continuous access for emergency vehicles to enable travel in a forward direction from a public road around the entire building; and 〉 Must have a minimum unobstructed width of 6m with no part of its furthest boundary more than 18m from the building and in no part of the 6m width be built upon or used for any purpose other than	〉 The public road providing continuous access for emergency vehicles to enable travel in a forward direction from a public road around the entire building from Kiah and Ryans Road, The proposed carpark will

Bushfire Protection Measures	Performance Criteria	Acceptable Solution	Compliance
		vehicular or pedestrian movement; and 〉 Must provide reasonable pedestrian access from the vehicular access to the building; and 〉 Must have a load bearing capacity and unobstructed height to permit the operation and passage of fire fighting vehicles; and 〉 Must be wholly within the allotment except that a public road complying with above may serve as the vehicular access or part thereof. Compliance with Appendix B of PBP Addendum November 2022.	provide direct access along the western elevation of the building. Pedestrian access is achieved around the entire building.

Bushfire Protection Measures	Performance Criteria	Acceptable Solution	Compliance
Water supply and other utilities	An adequate water supply for firefighting purposes is installed and maintained. Compliance with Appendix B of PBP Addendum November 2022	Reticulated water is to be provided to the development, where available; and Water for firefighting purposes must be made available and consist of – 〉 A fire hydrant system installed in accordance with AS2419.1; or 〉 Where no reticulated water is available, a static water supply consisting of tanks, swimming pools, dams or the like, or a combination of these, together with suitable pumps, hoses and fittings, determined in consultation with NSW RFS that – 〉 is capable of providing the required flow rate for a period of not less than 4 hours or 〉 has a volume of 10,000 litres for each occupied building. Compliance with Appendix B of PBP Addendum November 2022.	Meets the acceptable solution – A fire hydrant system installed in accordance with AS2419.1
Emergency and evacuation management		Preparation of 'Bushfire Emergency Management & Evacuation Plan'.	Meets the acceptable solution - A 'Bushfire

Bushfire Protection Measures	Performance Criteria	Acceptable Solution	Compliance
			Emergency Management & Evacuation Plan', will be prepared for the childcare.

4.1 Asset Protection Zones

Using the vegetation and slope information presented in Section 3-1 and mapped on Figure 3-1, it has been determined that specific APZs are required to comply with PBP 2019.

Table 4-2: Determination of APZs for the Proposed Childcare Centre

Vegetation Type & Direction	Slope	APZ required based on Table A1.12.1	APZ provided
Managed Land to the North	N/A	N/A	>100m
Managed Land to the East	N/A	N/A	>100m
Low threat vegetation to the South	N/A	N/A	>100m
Freshwater wetlands to the West	Flat ground	19m	34m
Grassland further to the West	Upslope	36m	42m

4.2 Bushfire Attack Assessment

Building design and the materials used for construction of future dwellings should be chosen based on the information contained within AS3959-2018, and accordingly the designer / architect should be made aware of this recommendation. It may be necessary to have dwelling plans checked by the architect involved to ensure that the proposed dwellings meet the relevant Bushfire Attack Level (BAL) as detailed in AS3959-2018.

The determinations of the appropriate BAL are based upon parameters such as weather modelling, fire-line intensity, flame length calculations, as well as vegetation and fuel load analysis. The determination of the construction level is derived by assessing the:

- Relevant FFDI = 100
- Flame temperature
- Slope
- Vegetation classification; and
- Building location.

The following BAL, based on heat flux exposure thresholds, are used in the standard:

(a) **BAL – LOW** The risk is considered to be **VERY LOW**
There is insufficient risk to warrant any specific construction requirements but there are still some risks.

(b) **BAL – 12.5** The risk is considered to be **LOW**
There is a risk of ember attack.
The construction elements are expected to be exposed to a heat flux not greater than 12.5 k/m2.

(c) **BAL – 19** The risk is considered to be **MODERATE**
There is a risk of ember attack and burning debris ignited by wind borne embers and a likelihood of exposure to radiant heat.
The construction elements are expected to be exposed to a heat flux not greater than 19 kW/m2.

(d) **BAL-29** The risk is considered to be **HIGH**
There is an increased risk of ember attack and burning debris ignited by windborne embers and a likelihood of exposure to an increased level of radiant heat.
The construction elements are expected to be exposed to a heat flux no greater than 29 kW/m2.

(e) **BAL-40** The risk is considered to be **VERY HIGH**
There is much increased risk of ember attack and burning debris ignited by windborne embers, a likelihood of exposure to a high level of radiant heat and some likelihood of direct exposure to flames from the fire front.

The construction elements are expected to be exposed to a heat flux no greater than 40 kW/m^2.

(f) **BAL-FZ** The risk is considered to be **EXTREME**
There is an extremely high risk of ember attack and burning debris ignited by windborne embers, a likelihood of exposure to an extreme level of radiant heat and direct exposure to flames from the fire front.
The construction elements are expected to be exposed to a heat flux greater than 40 kW/m^2.

4.3 Determination of Bushfire Attack Levels

Using a FFDI of 100, the information relating to vegetation, slope and according to Table A1.12.1 of PBP 2019 that determined the appropriate BAL. The results from this bush fire risk assessment are detailed below in Table 4-1–Bush Fire Attack Assessment.

Table 4-3: Determination of BALs for the Proposed Childcare Centre

Vegetation Type & Direction	APZ Provided (OPA)	Bushfire Attack Level (BAL)
Managed land to the North	>100m	BAL-12.5
Managed land to the East	>100m	BAL-12.5
Low threat vegetation to the South	>100m	BAL-12.5
Freshwater wetlands to the West	34m	BAL-12.5*
Grassland further to the West	42m	BAL-12.5*

*The above BAL rating is based on Table A1.12.1 of PBP 2019 showing compliance with minimum APZ distances for SFPP developments to achieve <10kW/m^2 and calculated at 1200K. All other elevations are to adopt the BAL-12.5 rating.

In accordance with Appendix B of PBP Addendum November 2022, childcare centres must meet a construction level of BAL-19 or greater under AS3959 and Section 7.5 of PBP is applied as the acceptable solution.

5 COMPLIANCE

The proposal is for a childcare centre and therefore development standards apply. Table 5-1 details the compliance with Development Standards for Special Fire Protection Purpose Developments and Compliance with Appendix B of PBP Addendum November 2022.

Table 5-1: Proposed Childcare Centre Compliance with Special Fire Protection Purpose Development Standards

Acceptable Solutions	Performance Criteria	Compliance
ASSET PROTECTION ZONES		
〉 the building is provided with an APZ in accordance with PBP 2019 (Table A1.12.1 in Appendix 1).	〉 radiant heat levels of greater than 10kW/m² (calculated at 1200K) will not be experienced on any part of the building.	**Complies with Acceptable Solution –** The proposed childcare centre has been provided an APZ in accordance with Table A1.12.1 in Appendix 1 of PBP 2019.
〉 APZs are located on lands with a slope less than 18 degrees.	〉 APZ maintenance is practical, soil stability is not compromised and the potential for crown fires is minimised.	**Complies with Acceptable Solution –** APZs do not occur on steep land.
〉 the APZ is managed in accordance with the requirements of Appendix 4 of this document, and is wholly within the boundaries of the development site; 〉 APZ are wholly within the boundaries of the development site; and 〉 other structures located within the APZ need to be located further than 6m from the refuge building.	〉 APZs are managed and maintained to prevent the spread of fire to the building. 〉 the APZ is provided in perpetuity	**Complies with Acceptable Solution –** An APZ of 34m occurs to the West between the proposed childcare and freshwater wetlands vegetation, and an APZ of 42m occurs to the West between the proposed childcare and grassland vegetation. The APZ is established by managed land that occurs to the West between the subject site and vegetation.

SPECIFICATION 43 NCC 2022 – CERTAIN CLASS 9 BUILDINGS		
C3 Separation between buildings	1) The building must not be located not less than 12m from any other building. 2) The separation distance required by (1) need not be complied with if the building is constructed – A) with external walls that have an FRL of not less than 60/60/60 when tested from the outside, including any openings protected in accordance with AS3959 for BAL-19 or greater; or B) for external walls and roof, using a material or system that satisfies the test criteria of AS1530.8.1 for a radiant heat flux of 10kW/m2 or greater.	**Complies –** No other buildings occur within 12m and the childcare will be constructed to BAL-19.
C4 Separation from allotment to boundaries and carparking areas	1) the building must be located not less than 10m from any allotment boundary or open carparking area/spots. 2) The separation distance required by (1) need not be complied with if the building is constructed – A) With external walls that have an FRL of not less than 60/60/60 when tested from the outside, including any openings protected in accordance with AS3959 for BAL-19 or greater; or B) For external walls and roof, using a material or system that satisfies the test criteria of AS1530.8.1 for a radiant heat flux of 10kW/m2 or greater.	**Complies –** Building will be constructed to BAL-19.
C5 Separation from hazards	The external walls and roof of the building must be protected from potential hazards on the site, such as liquefied petroleum gas bottles, fuel	**Complies –** Building will be constructed to BAL-19.

	storage, storage of combustible materials, waste bins, vehicles, machinery and the like by: a) a separation distance of not less than 10m; or b) where within the 10m separation distance described in (a), constructed with external walls that have an FRL of not less than 60/60/60 when tested from the outside, including any openings protected in accordance with AS3959 for BAL-19 or greater; or c) for external walls and roof, using a material or system that satisfies the test criteria of AS1530.8.1 for radiant heat flux of 10kW/m2 of greater.	
C6 Non-combustible path around building	A non-combustible pathway directly adjacent to the building and not less than 1.5m wide must be provided around the perimeter of the building.	Complies
C7 Access pathways	1) access pathways that lead to a road or open space must – a) be readily identifiable; and b) have an even surface; and c) have minimum clear width of not less than 1m. 2) if the access is an accessway that is required to comply with Part D4, the requirements of Part D4 override (1) to the extent of any inconsistency.	Complies
C8 Exposed external areas	An external area designed to hold people unable to be safely accommodated within the building, that may be exposed to radiant heat flux from a fire front during a bushfire event, must not be exposed to an incident radiant heat	Complies

	flux from the fire front exceeding 1kW/m2 above background solar radiant heat flux.	
C9 Internal tenability	To maintain internal tenability throughout the duration of occupancy during a bushfire event, the building must comply with the following: a) an air handling system must be provided that is capable of – I. being adjusted for full recycling of internal air for a period of not less than 4 hours to avoid the introduction of smoke into the building; and II. maintaining an internal air temperature of not more than 25 degrees Celsius. b) The building envelope must be designed such that if an air handling system required by (a) fails, then – i) Internal air temperatures can be maintained below 39 degrees Celsius; and ii) Internal surface temperatures can be maintained below 60 degrees Celsius. c) If the building is divided into separate compartments, then, for the purposes of (a), each compartment must have a separate air handling system. d) Each air handling system required by (a) must be designed to account for the activation of smoke detectors from low concentrations of smoke from external sources, so as to ensure that air-conditioning and other essential systems remain operational.	Able to comply

C10 Building envelope	The building envelope must be constructed in accordance with AS3959-BAL-19 or greater, except that where the use of combustible materials is permitted by AS3959, they are not to be used unless permitted by C2D10(4), (5) or (6).	Complies
C11 Supply of water for firefighting purposes	Water for firefighting purposes must be available and consist of – a) A fire hydrant system complying E1D2, or b) A static water supply consisting of tanks, swimming pools, dams or the like, or a combination of these, together with suitable pumps, hoses and fittings, capable of providing the required flow rate for a period of not less than 4 hours, determined in consultation with the relevant fire brigade.	Able to comply
C12 Emergency power supply	1) Emergency power must be provided to support, for not less than 4 hours before and 2 hours after the passing of the fire front during a bushfire event, the ongoing operation of – a) air handling systems to maintain internal tenability; and b) any pumps for firefighting; and c) any emergency lighting and exit signs; and d) any other emergency equipment listed in C3D14(6) and required to be provided. Manual control for emergency back-up power supply must be provided to facilitate manual	Able to comply

	intervention where the power supply fails or runs out.	
C14 Vehicular access	Vehicular access to the building must be provided in accordance with C3D5(2), as if the building were a large isolated building for the purposes of C3D4. **See below for C3D5(2)**	**Complies –** Pedestrian access is provided around the building, **Performance Criteria –** Regards to vehicle access, Kiah Road occurs to the South, Ryans Road occurs to the East and a non-perimeter road is under construction to the North. These public roads are within 18m of the building and have acceptable widths for firefighting purposes.
LANDSCAPING		
〉 landscaping is in accordance with Appendix 4; and 〉 fencing is constructed in accordance with section 7.6.	〉 landscaping is designed and managed to minimise flame contact and radiant heat to buildings, and the potential for wind-driven embers to cause ignitions	**Complies with Acceptable Solution –** the site is to be managed to the requirements of PBP Appendix 4 (summarised in Appendix B here).
CONSTRUCTION STANDARDS		
〉 a construction level of BAL-19 or greater under AS 3959 or NASH Standard and section 7.5 of PBP is applied.	〉 the proposed building can withstand bush fire attack in the form of wind, embers, radiant heat and flame contact.	**Complies with Acceptable Solution –** The proposed childcare centre has been assessed as BAL-12.5 in accordance with Appendix 1 of PBP 2019 however in accordance with Appendix B of PBP 2019 Addendum 2022, a construction level of BAL-19 or greater is applied.
ACCESS		
〉 vehicular access must be capable of providing continuous access for emergency vehicles to enable travel in a forward direction from a public road around the entire	〉 firefighting vehicles are provided with safe, all-weather access to structures and hazard vegetation.	**Complies with Performance Criteria –** All roads surrounding the site provide safe, all-weather access to structures and hazard vegetation.

building; and 〉 must have a minimum unobstructed width of 6m with no part of its furthest boundary more than 18m from the building and in no part of the 6m width be built upon or used for any purpose other vehicular or pedestrian movement; and 〉 must provide reasonable pedestrian access from the vehicular access to the building; and 〉 must have a load bearing capacity and unobstructed height to permit the operation and passage of fire fighting vehicles; and 〉 must be wholly within the allotment except that a public road complying with the above may serve as the vehicular access or part thereof.		An existing public road provides access from the eastern and southern elevations and a non-perimeter provides access / egress from the Norther elevation. The APZ is established to the Western elevation and can be access directly from the North and South.
PERIMETER ROADS		
〉 there are two-way sealed roads; 〉 minimum 8m carriageway width kerb to kerb; 〉 parking is provided outside of the carriageway width; 〉 hydrants are to be located clear of parking areas; 〉 there are through roads, and these are linked to the internal road system at an interval of no greater than 500m; 〉 curves of roads have a minimum inner radius of 6m; 〉 the maximum grade road is 15 degrees and average grade of not more than 10 degrees; 〉 the road crossfall does not exceed 3 degrees; and	〉 perimeter access roads are designed to allow safe access and egress for firefighting vehicles while occupants are evacuating as well as providing a safe operational environment for emergency service personnel during firefighting and emergency management on the interface.	**N/A** – Perimeter roads are not proposed. The public road system is already existing.

〉 a minimum vertical clearance of 4m to any overhanging obstructions, including tree branches, is provided.		
NON-PERIMETER ROADS		
〉 minimum 5.5m carriageway width kerb to kerb; 〉 parking is provided outside of the carriageway width; 〉 hydrants are located clear of parking areas; 〉 there are through roads, and these are linked to the internal road system at an interval of no greater than 500m; 〉 curves of roads have a minimum inner radius of 6m; 〉 the maximum grade road is 15 degrees and average grade of not more than 10 degrees; 〉 the road crossfall does not exceed 3 degrees; and 〉 a minimum vertical clearance of 4m to any overhanging obstructions, including tree branches, is provided.	〉 non-perimeter access roads are designed to allow safe access and egress for firefighting vehicles while occupants are evacuating.	**N/A –** Non-perimeter roads are not proposed. The public road system is already existing.
WATER SUPPLY		
〉 reticulated water is to be provided to the development, where available; or 〉 a 10,000 litres minimum static water supply for firefighting purposes is provided for each occupied building where no reticulated water is available.	〉 an adequate water supply for firefighting purposes is installed and maintained.	**Complies with Acceptable Solution –** The site will be connected to reticulated water.

〉 fire hydrant spacing, design and sizing comply with the relevant clauses of AS 2419.1:2017; 〉 hydrants are not located within any road carriageway; and 〉 reticulated water supply to urban subdivisions uses a ring main system for areas with perimeter roads.	〉 water supplies are located at regular intervals; and 〉 the water supply is accessible and reliable for firefighting operations.	**Complies with Acceptable Solution** – a hydrant will be located within 70m of the proposed childcare centre.
〉 fire hydrant flows and pressures comply with the relevant clauses of AS 2419.1:2017.	flows and pressure are appropriate.	**Complies with Acceptable Solution –** Flow and pressure compliant with AS 2419.1:2017
〉 all above-ground water service pipes external to the building are metal, including and up to any taps.	the integrity of the water supply is maintained.	**Complies with Acceptable Solution –** All above ground pipes will comply with requirements
〉 where no reticulated water supply is available, water for firefighting purposes is provided in accordance with Table 5.3d.	a static water supply is provided for firefighting purposes in areas where reticulated water is not available.	**Complies with Acceptable Solution** – The site is connected to reticulated water
ELECTRICTY SERVICES		
e practicable, electrical transmission lines are ground; 〉 where overhead, electrical transmission lines are proposed as follow: ○ lines are installed with short pole spacing (30m), unless crossing gullies, gorges or riparian areas; and ○ no part of a tree is closer to a power line than the distance set out in accordance with the specifications in	〉 location of electricity services limits the possibility of ignition of surrounding bush land or the fabric of buildings.	**Complies with Acceptable Solution –** Electrical transmission lines are to comply with the acceptable solution.

ISSC3 Guideline for Managing Vegetation Near Power Lines.		
GAS SERVICES		
〉 reticulated or bottled gas is installed and maintained in accordance with AS/NZS 1596:2014 and the requirements of relevant authorities, and metal piping is used; 〉 all fixed gas cylinders are kept clear of all flammable materials to a distance of 10m and shielded on the hazard side; 〉 connections to and from gas cylinders are metal; 〉 if gas cylinders need to be kept close to the building, safety valves are directed away from the building and at least 2m away from any combustible material, so they do not act as a catalyst to combustion; 〉 polymer-sheathed flexible gas supply lines to gas meters adjacent to buildings are not to be used; and 〉 above-ground gas service pipes external to the building are metal, including and up to any outlets.	〉 location and design of gas services will not lead to ignition of surrounding bushland or the fabric of buildings.	**Complies with Acceptable Solution –** Gas services are to comply with the acceptable solution.
EMERGENCY MANAGEMENT		
〉 Bush Fire Emergency Management and Evacuation Plan is prepared consistent with the: ○ The NSW RFS document: A Guide to Developing a Bush Fire Emergency Management and Evacuation Plan; ○ NSW RFS Schools Program Guide;	〉 a Bush Fire Emergency Management and Evacuation Plan is prepared.	**Complies with Acceptable Solution –** An emergency evacuation plan shall be prepared for the childcare centre.

○ Australian Standard AS 3745:2010 Planning for emergencies in facilities; and ○ Australian Standard AS 4083:2010 Planning for emergencies – Health care facilities (where applicable). ○ the Bush Fire Emergency Management and Evacuation Plan should include planning for the early relocation of occupants Note: A copy of the Bush Fire Emergency Management and Evacuation Plan should be provided to the Local Emergency Management Committee for its information prior to occupation of the development.		

C3D5(2)

Vehicular access *required* by this Part—

a. must be capable of providing continuous access for emergency vehicles to enable travel in a forward direction from a public road around the entire building; and

b. must have a minimum unobstructed width of 6 m with no part of its furthest boundary more than 18 m from the building and in no part of the 6 m width be built upon or used for any purpose other than vehicular or pedestrian movement; and

c. must provide reasonable pedestrian access from the vehicular access to the building; and

d. must have a load bearing capacity and unobstructed height to permit the operation and passage of *fire brigade* vehicles; and

e. must be wholly within the allotment except that a public road complying with (a), (b), (c) and (d) may serve as the vehicular access or part thereof.

6 CONCLUSION & RECOMMENDATIONS

In summary, a Bushfire Risk Assessment has been undertaken for a proposed childcare centre at 41 Ryans Road, Gillieston Heights NSW 2321 for Lots 76,77,79,80, and 81 (currently unregistered as part of SWC). The report forms part of the supporting documentation for a to DA to be submitted to MCC.

If the recommendations contained within this report are duly considered and incorporated, it is considered that the fire hazard present is containable to a level necessary to provide an adequate level of protection to life and property on the site. In summary, the following is recommended to enable the proposal to meet the relevant legislative requirements for the proposed childcare centre:

1. Asset Protection Zones (APZ)

An APZ of 34m (a 19m APZ is only required in accordance with PBP) occurs to the West between the proposed childcare centre and vegetation of freshwater wetlands, and an APZ of 42m occurs to the West between the proposed childcare centre and vegetation of grassland at the site in order to get a radiant heat of <10kw/m$^{2.}$ This is based on Table A1.12.1 in Appendix 1 of Planning for Bushfire Protection 2019. The landscape plans provided by Terras Landscape Architects details the planting schedule for the land to the West. Refer to Appendix C.

2. Bushfire Attack Level (BAL)

The BAL relates to a set of construction specifications listed within Australian Standard AS 3959-2018 Constructions of buildings in bushfire-prone areas (AS 3959) and the NSW variation to AS 3959 listed at Section 7.5.2 of PBP.

The BAL for the childcare centre has been determined as BAL-12.5 in accordance with Table A1.12.1 of PBP 2019. However, in accordance with Appendix B of PBP Addendum November 2022, the constructions requirements must comply with BAL-19 as the acceptable solution.

3. Access

PBP 2019 requires an access design that enables safe evacuation whilst facilitating adequate emergency and operational response. The Performance based criteria in accordance with Appendix B of PBP Addendum November 2022 states

Firefighting vehicles are provided with safe, all-weather access to structures and hazardous vegetation

The surrounding public roads provide satisfactory access for evacuation and emergency response. A non-perimeter road is constructed to the North of the site that provides direct access / egress to and from the childcare centres and Ryans Road to the East and Kiah Road to the South provides direct access for firefighters to the building.

4. Water Supply and Utilities

The site will be connected to the reticulated water and a hydrant is to be within 70m of the proposed childcare centre in accordance with the Acceptable Solution of PBP 2019 and Appendix B of PBP Addendum November 2022.

5. Emergency Management and Evacuation

An emergency evacuation plan is to be prepared in accordance with RFS, 2014, 'Development Planning – A Guide to developing a Bush Fire Emergency Management and Evacuation Plan'.

7 BIBLIOGRAPHY

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Ramsay, GC and Dawkins, D (1993). *Building in Bushfire-prone Areas – Information and Advice.* CSIRO and Standards Australia.

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APPENDIX A PROPOSED SITE PLANS

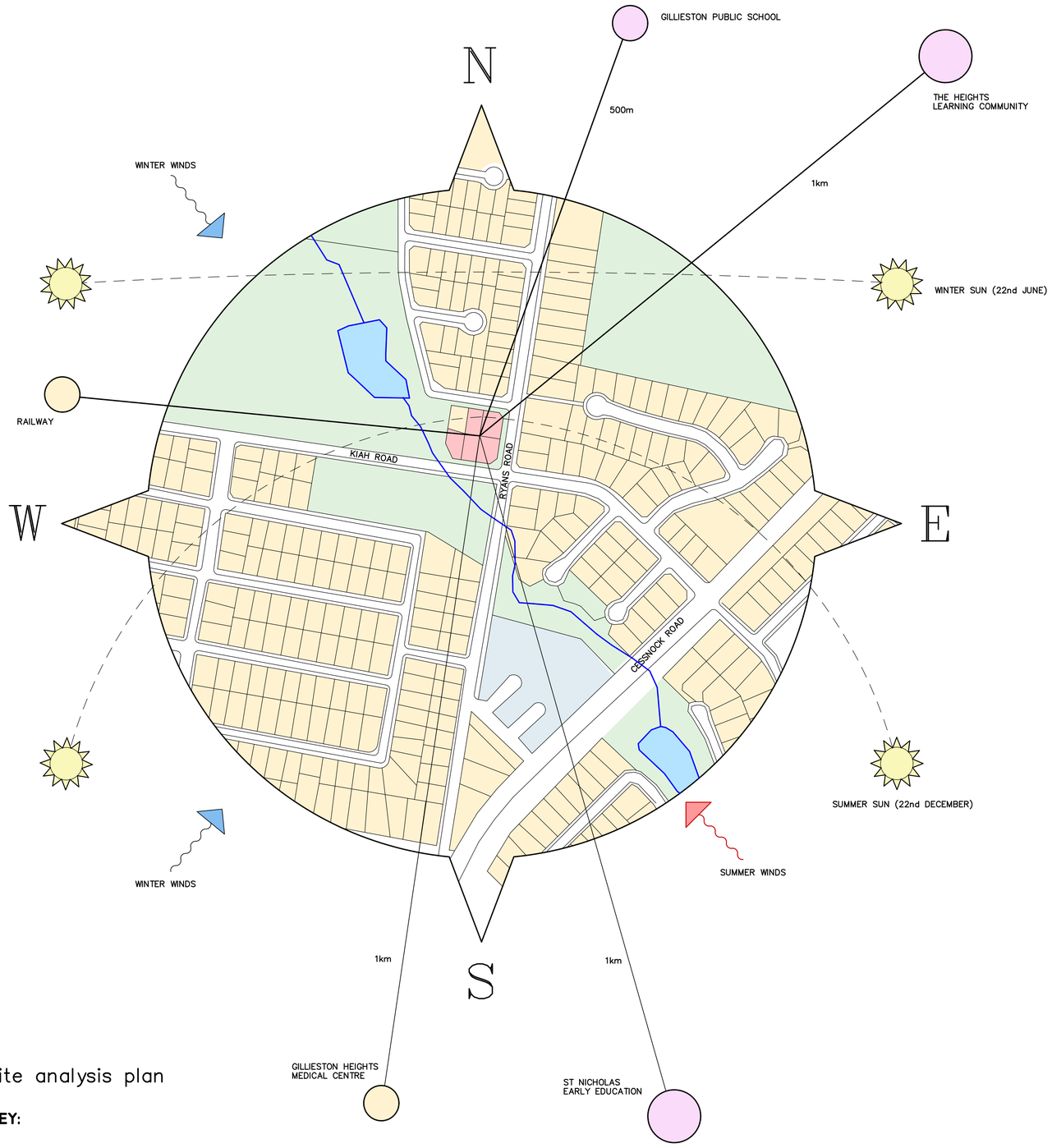
CHILDCARE FACILITY

LOTS 77-76 & 79-81
RYANS ROAD
GILLIESTON HEIGHTS NSW 2321

DRAWING SCHEDULE:

PRELIMINARY DA

ARCHITECTURAL SET:



site analysis plan

KEY:

- RESIDENTIAL
- OTHER
- EDUCATION
- SITE

All dimensions are in millimeters unless otherwise shown. All levels are in metes to AHD unless otherwise noted. Work to figured dimensions. Do not scale from drawings. Check all dimensions on site and report any discrepancies to Shaddock Architects prior to construction or fabrication of any item. This drawing is to be read nonfunctional with the total documentation package.

NO.	REVISION	DATE
10	PRELIMINARY DA	13.02.2025
9	PRELIMINARY DA	03.02.2025
8	PRELIMINARY DA	24.01.2025

PROJECT: CHILD CARE FACILITY

LOCATION: 77–76, 79–81 RYANS ROAD GILLIESTON HEIGHTS, NSW, 2321

CLIENT: EXP GILLIESTON HEIGHTS PTY. LTD.

DRAWING TITLE: SCHEDULE & SITE ANALYSIS

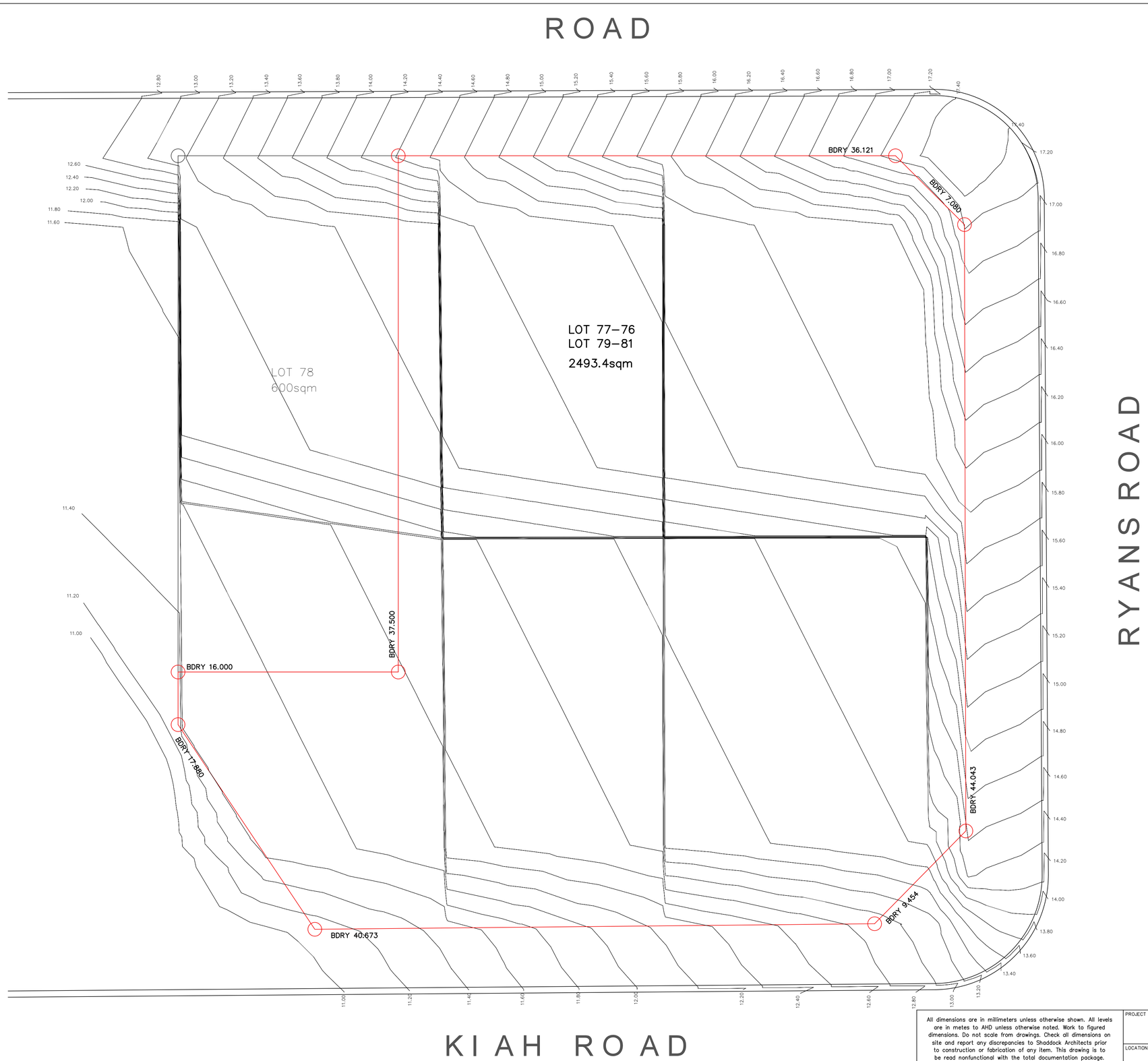
SCALE: 1:100 @ A1

No. IN SET: 1 of 20

PROJECT No.: 1302

DWG No.: A01

SHADDOCK ARCHITECTS



EXISTING SITE PLAN

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NO.	REVISION	DATE
10	PRELIMINARY DA	13.02.2025
9	PRELIMINARY DA	03.02.2025
8	PRELIMINARY DA	24.01.2025

PROJECT: CHILD CARE FACILITY

LOCATION: 77–76, 79–81 RYANS ROAD
GILLIESTON HEIGHTS, NSW, 2321

CLIENT: EXP GILLIESTON HEIGHTS PTY. LTD.

DRAWING TITLE: EXISTING SITE PLAN

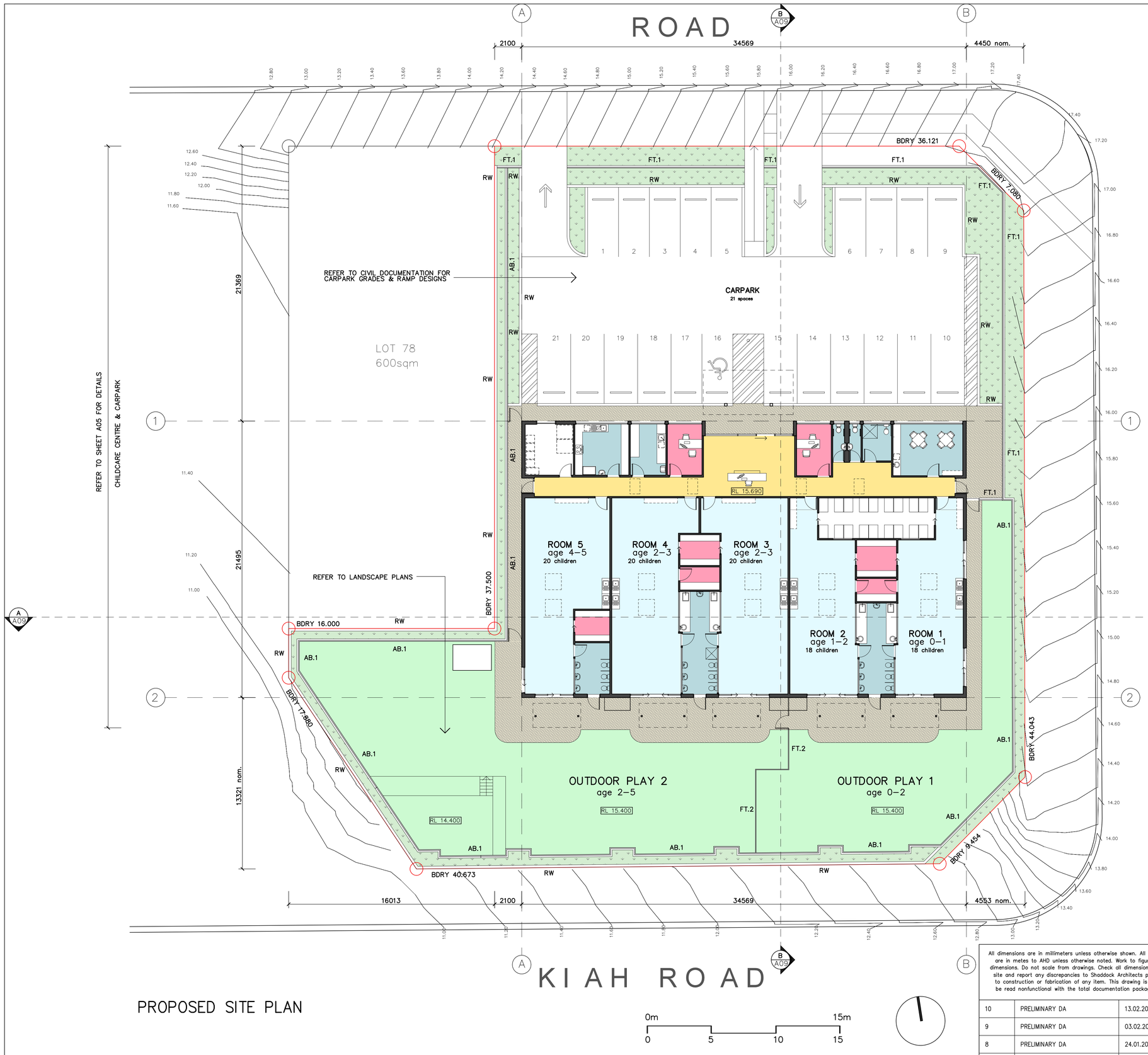
SCALE: 1:150 @ A1

No. IN SET: 2 of 20

PROJECT No.: 1302

DWG No.: A02

SHADDOCK ARCHITECTS

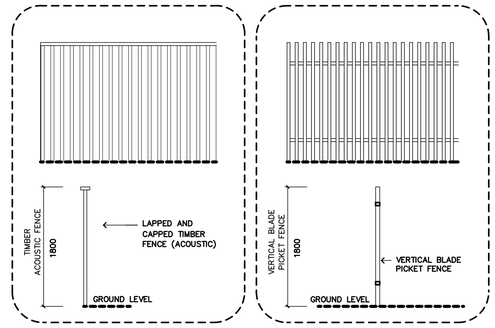


LEGEND:

AB ... ACOUSTIC BARRIER TYPE ...
FT ... FENCE TYPE ...
RW RETAINING WALL

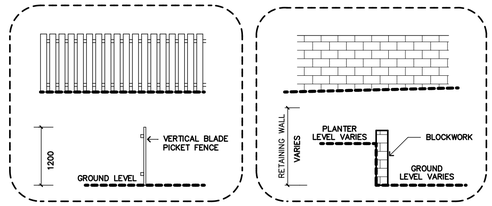
KEY:

PAVED AREA
DENSE LANDSCAPING
SOFT LANDSCAPING



(AB1) ACOUSTIC BARRIER TYPE 1

(FT1) FENCE TYPE 1



(FT2) FENCE TYPE 2

(RW) RETAINING WALL

NOTES:

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SITE BOUNDARIES & LEVELS HAVE BEEN ESTABLISHED UTILIZING PROPOSED SUBDIVISION PLAN PRODUCED BY ADW JOHNSON DATED 20/09/2024 REF: 190682 (DA/2020/1347)

PROPOSED SITE PLAN

0m 15m
0 5 10 15

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NO.	REVISION	DATE
10	PRELIMINARY DA	13.02.2025
9	PRELIMINARY DA	03.02.2025
8	PRELIMINARY DA	24.01.2025

PROJECT: CHILD CARE FACILITY

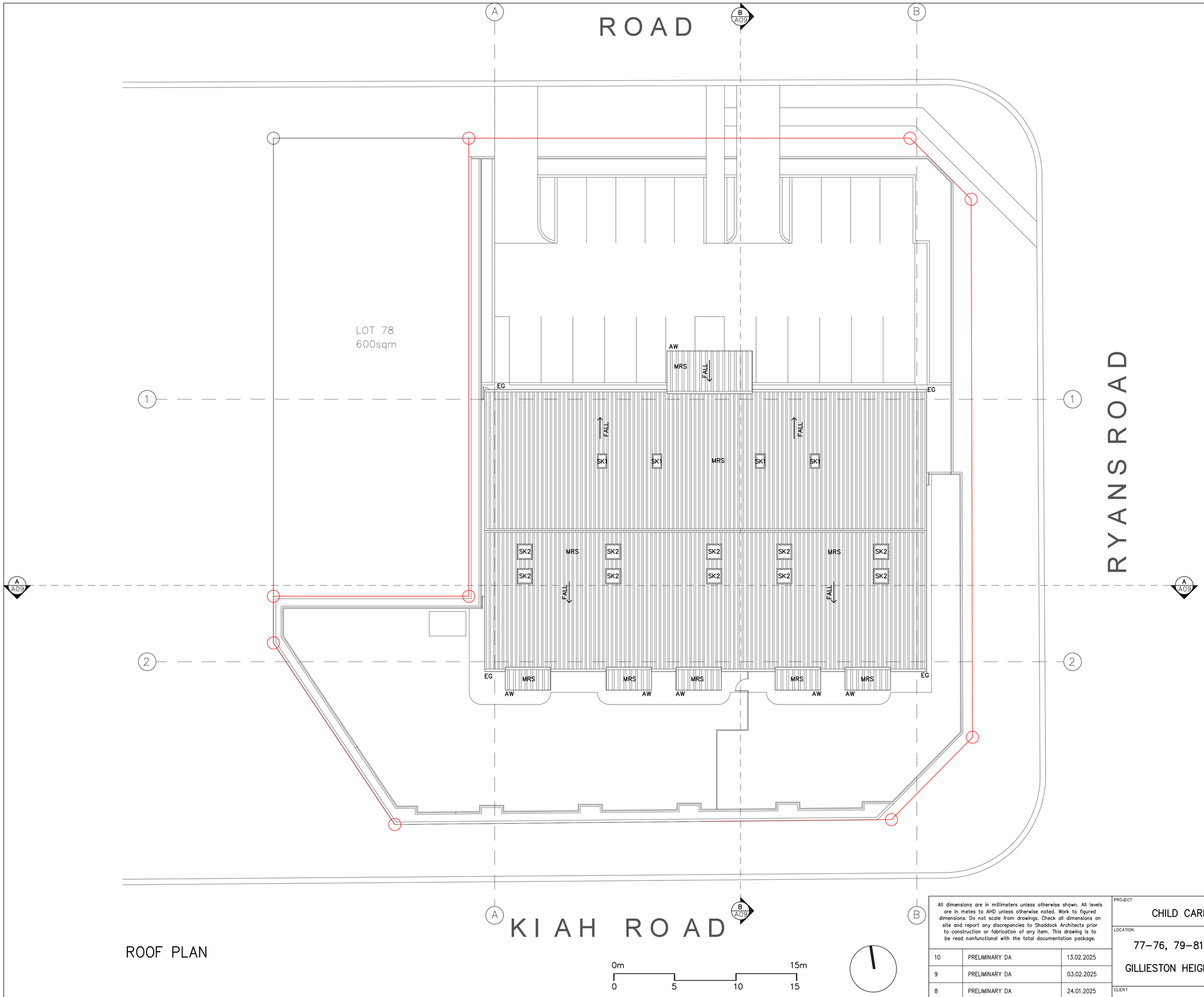
LOCATION: 77–76, 79–81 RYANS ROAD
GILLIESTON HEIGHTS, NSW, 2321

CLIENT: EXP GILLIESTON HEIGHTS PTY. LTD.

DRAWING TITLE: PROPOSED SITE PLAN

SCALE: 1:150 @ A1
No. IN SET: 3 of 20
PROJECT No.: 1302
DWG No.: A03

SHADDOCK ARCHITECTS



ROOF PLAN

LEGEND:

AW	AWNING
EG	EAVES GUTTER
MRS	METAL ROOF SHEETING
SK1	SKYLIGHT TYPE 1
SK2	SKYLIGHT TYPE 2

NOTES:

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NO.	REVISION	DATE
10	PRELIMINARY DA	13.02.2025
9	PRELIMINARY DA	03.02.2025
8	PRELIMINARY DA	24.01.2025

PROJECT: CHILD CARE FACILITY

LOCATION: 77–76, 79–81 RYANS ROAD
GILLIESTON HEIGHTS, NSW, 2321

CLIENT: EXP GILLIESTON HEIGHTS PTY. LTD.

DRAWING TITLE: PROPOSED ROOF PLAN

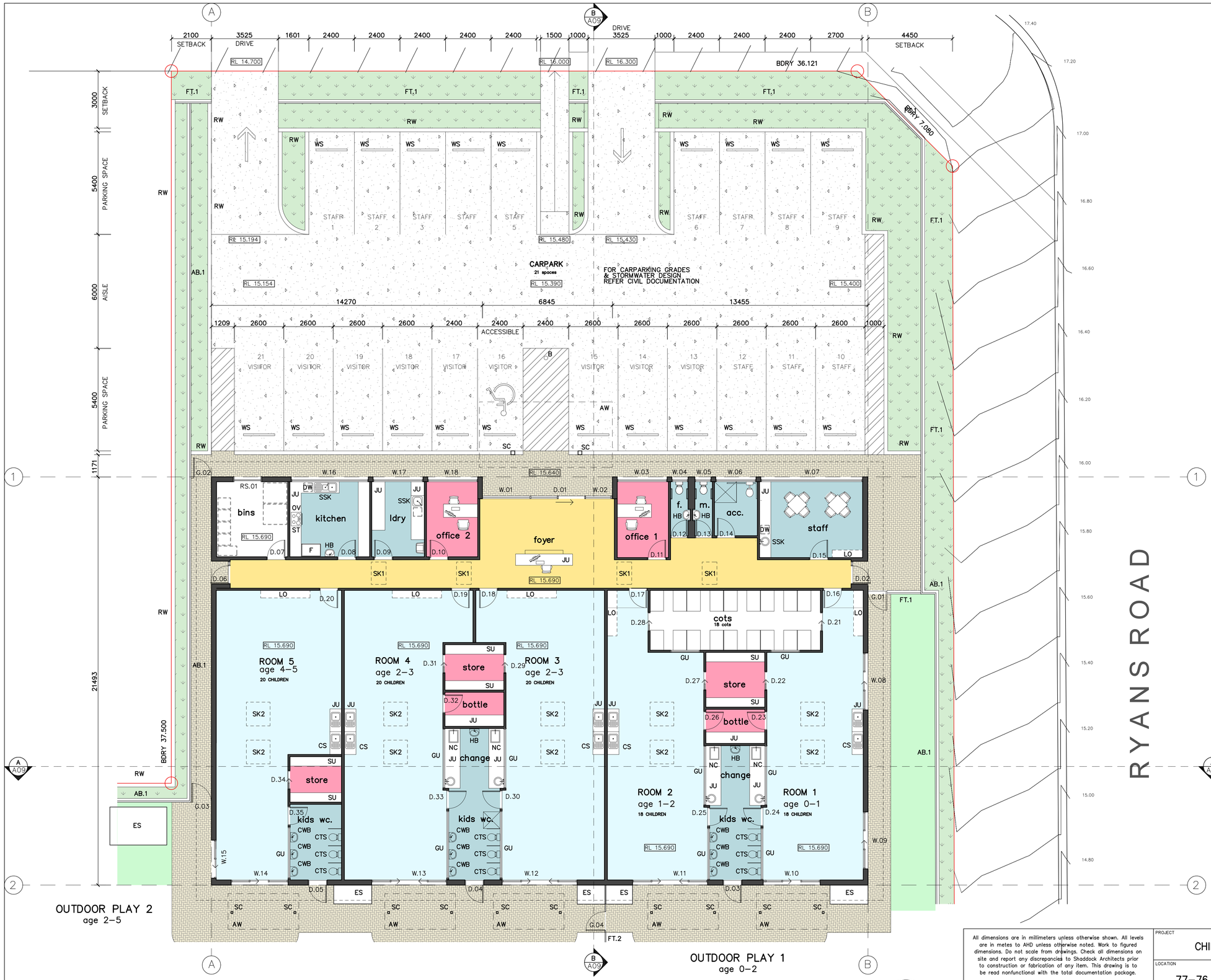
SCALE: 1:150 @ A1

No. IN SET: 4 of 20

PROJECT No.: 1302

DWG No.: A04

SHADDOCK ARCHITECTS



LEGEND:

AB ...	ACOUSTIC BARRIER TYPE ...
AW	AWNING
B	BOLLARD
CS	CRAFT SINK
CTS	CHILD TOILET SUITE
CWB	CHILD WASH BASIN
D ...	DOOR NUMBER ...
DW	DISHWASHER
ES	EQUIPMENT STORAGE
F	FRIDGE
FT ...	FENCE TYPE ...
G ...	GATE NUMBER ...
GU	GLAZING UNIT
HB	HAND BASIN
JU	JOINERY UNIT
LO	LOCKER
NC	NAPPY CHANGE
OV	OVEN
RW	RETAINING WALL
SC	STEEL COLUMN
SK1	SKYLIGHT TYPE 1
SK2	SKYLIGHT TYPE 2
SSK	SINK
ST	STOVE
SU	STORAGE UNIT
W ...	WINDOW NUMBER ...
WS	WHEEL STOP

KEY:

PAVED AREA

DENSE LANDSCAPING

SOFT LANDSCAPING

NOTES:

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NO.	REVISION	DATE
10	PRELIMINARY DA	13.02.2025
9	PRELIMINARY DA	03.02.2025
8	PRELIMINARY DA	24.01.2025

PROJECT: CHILD CARE FACILITY

LOCATION: 77–76, 79–81 RYANS ROAD GILLIESTON HEIGHTS, NSW, 2321

CLIENT: EXP GILLIESTON HEIGHTS PTY. LTD.

DRAWING TITLE: PROPOSED FLOOR PLAN

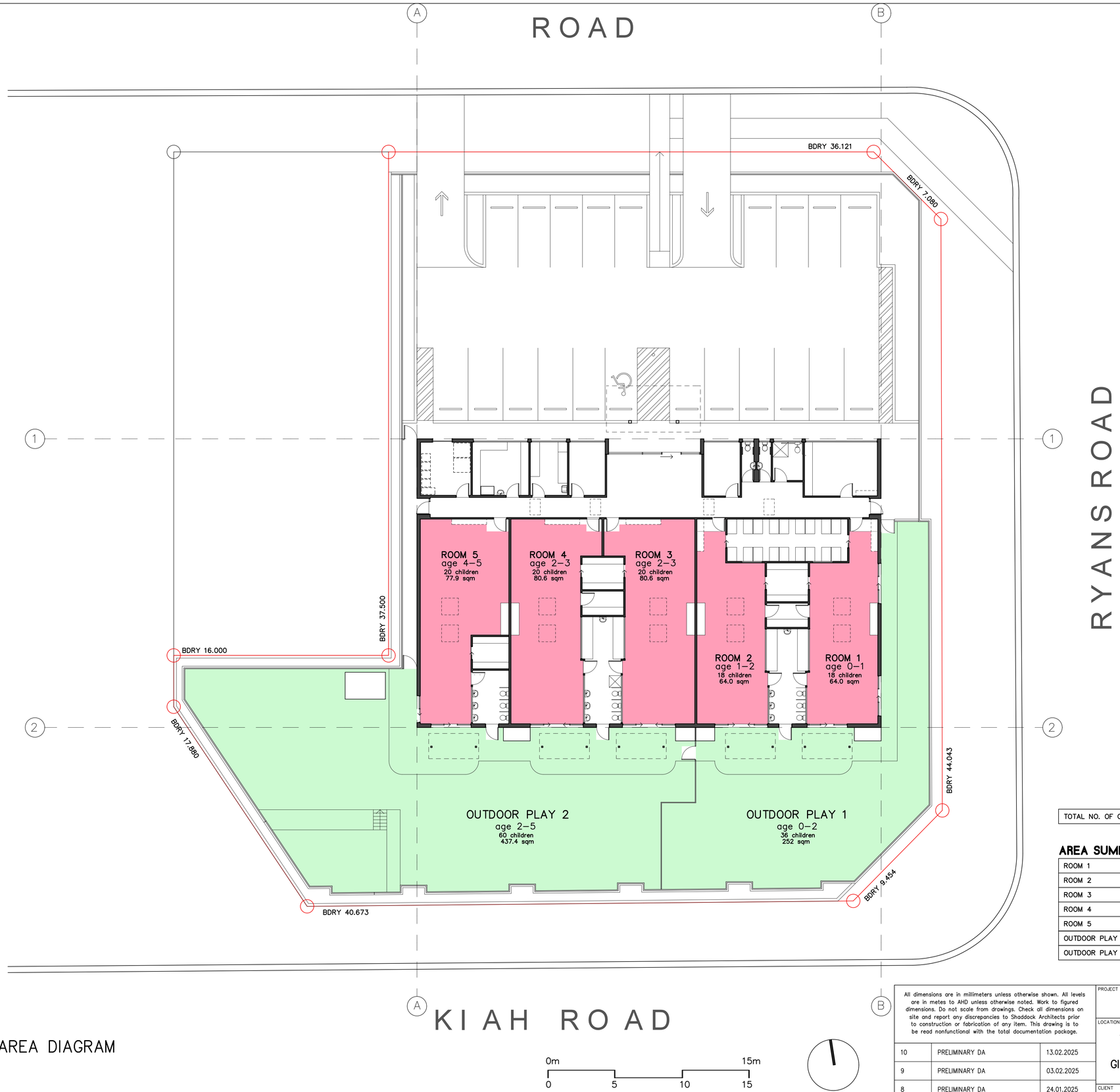
SCALE: 1:100 @ A1

No. IN SET: 5 of 20

PROJECT No.: 1302

DWG No.: A05

SHADDOCK ARCHITECTS



NOTES:

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TOTAL NO. OF CHILDREN	96

AREA SUMMARY

	AGES	NO. OF CHILDREN	REQUIRED		ACHIEVED
ROOM 1	0 – 1	18	58.5 sqm	(3.25sqm PER CHILD)	64 sqm
ROOM 2	1 – 2	18	58.5 sqm	(3.25sqm PER CHILD)	63 sqm
ROOM 3	2 – 3	20	65 sqm	(3.25sqm PER CHILD)	80 sqm
ROOM 4	2 – 3	20	65 sqm	(3.25sqm PER CHILD)	80 sqm
ROOM 5	4 – 5	20	65 sqm	(3.25sqm PER CHILD)	77.9 sqm
OUTDOOR PLAY AREA 1	0 – 2	36	252 sqm	(7sqm PER CHILD)	252 sqm
OUTDOOR PLAY AREA 2	2 – 5	60	420 sqm	(7sqm PER CHILD)	437.4 sqm

AREA DIAGRAM

0m 15m
0 5 10 15

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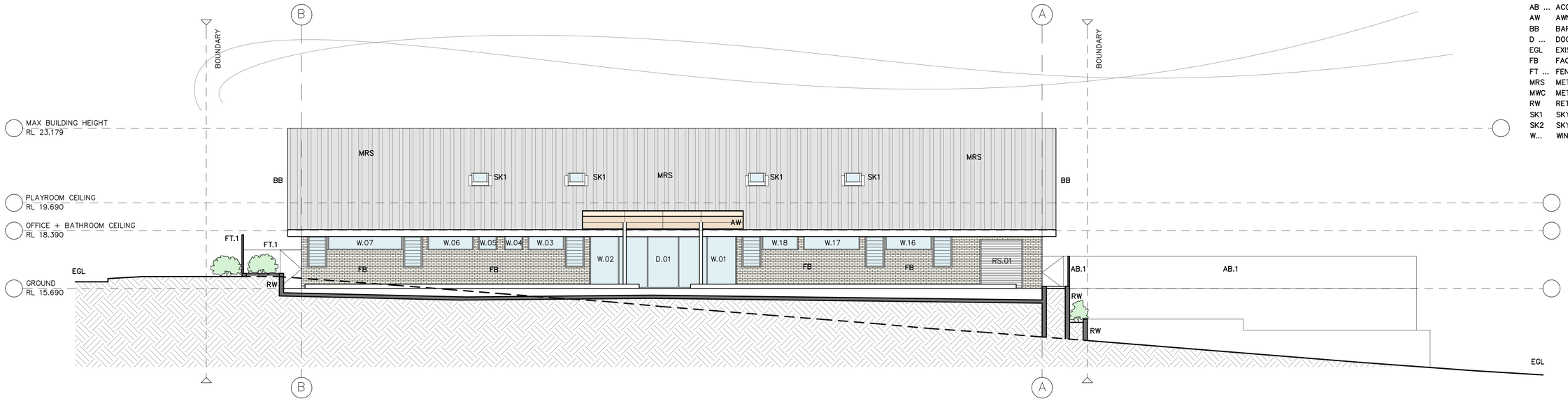
NO.	REVISION	DATE
10	PRELIMINARY DA	13.02.2025
9	PRELIMINARY DA	03.02.2025
8	PRELIMINARY DA	24.01.2025

PROJECT: CHILD CARE FACILITY
LOCATION: 77–76, 79–81 RYANS ROAD GILLIESTON HEIGHTS, NSW, 2321
CLIENT: EXP GILLIESTON HEIGHTS PTY. LTD.
DRAWING TITLE: AREA DIAGRAM
SCALE: 1:150 @ A1
No. IN SET: 6 of 20
PROJECT No.: 1302
DWG No.: A06

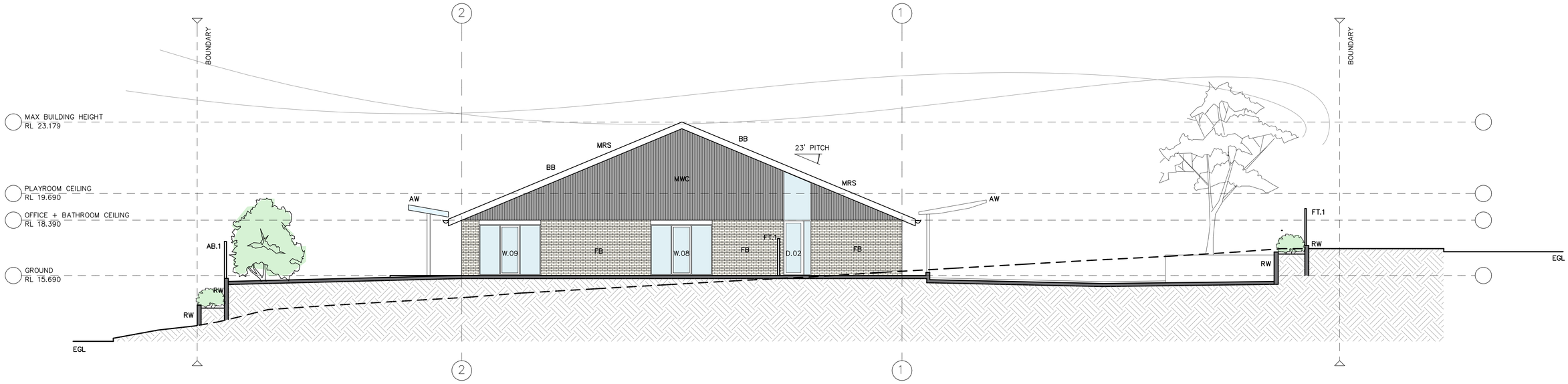
SHADDOCK ARCHITECTS

LEGEND:

AB ...	ACOUSTIC BARRIER TYPE ...
AW	AWNING
BB	BARGE BOARD
D ...	DOOR NUMBER ...
EGL	EXISTING GROUND LINE
FB	FACE BRICK
FT ...	FENCE TYPE ...
MRS	METAL ROOF SHEETING
MWC	METAL WALL CLADDING
RW	RETAINING WALL
SK1	SKYLIGHT 1
SK2	SKYLIGHT 2
W...	WINDOW NUMBER ...



NORTHERN ELEVATION



EASTERN ELEVATION

NOTES:

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NO.	REVISION	DATE
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8	PRELIMINARY DA	24.01.2025

PROJECT: CHILD CARE FACILITY

LOCATION: 77-76, 79-81 RYANS ROAD GILLIESTON HEIGHTS, NSW, 2321

CLIENT: EXP GILLIESTON HEIGHTS PTY. LTD.

DRAWING TITLE: ELEVATIONS 1

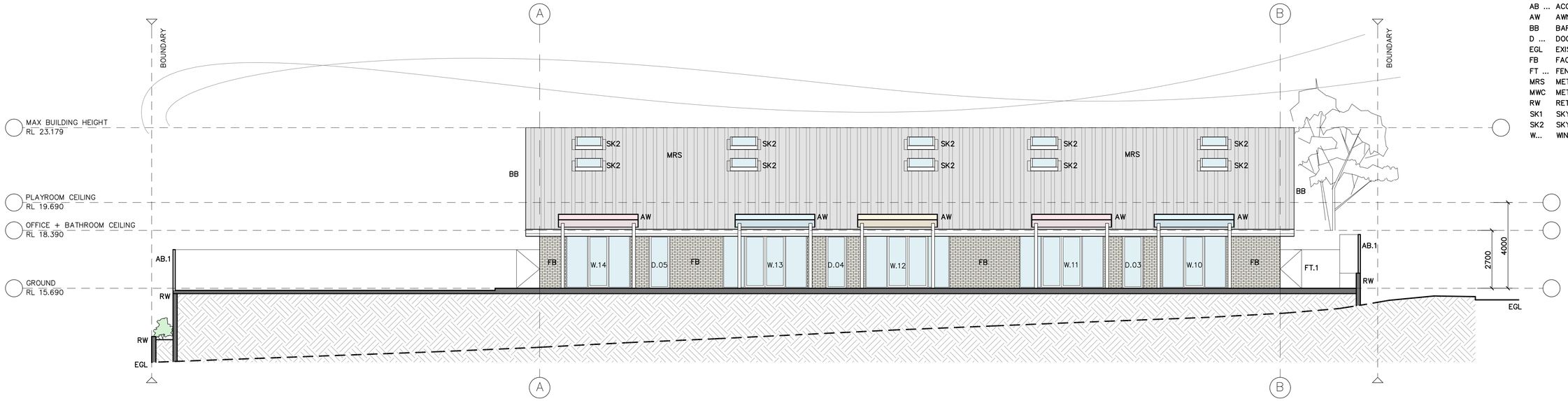
SCALE: 1:100 @ A1

No. IN SET: 7 of 20

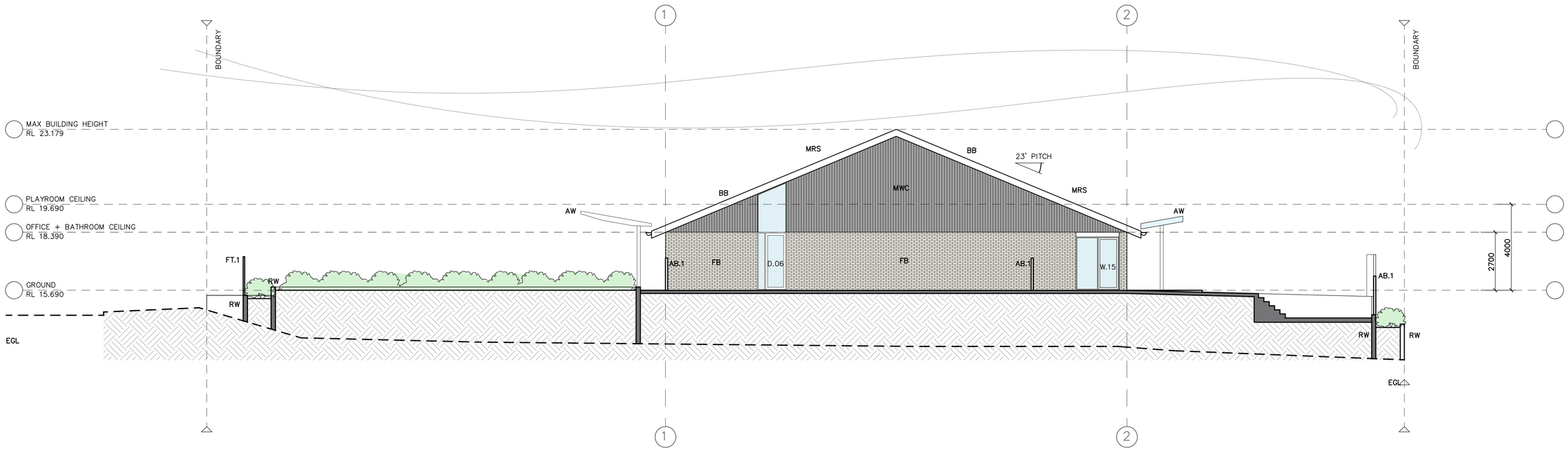
PROJECT No.: 1302

DWG No.: A07

SHADDOCK ARCHITECTS



SOUTHERN ELEVATION



WESTERN ELEVATION

LEGEND:

AB ...	ACOUSTIC BARRIER TYPE ...
AW	AWNING
BB	BARGE BOARD
D ...	DOOR NUMBER ...
EGL	EXISTING GROUND LINE
FB	FACE BRICK
FT ...	FENCE TYPE ...
MRS	METAL ROOF SHEETING
MWC	METAL WALL CLADDING
RW	RETAINING WALL
SK1	SKYLIGHT 1
SK2	SKYLIGHT 2
W...	WINDOW NUMBER ...

NOTES:

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9	PRELIMINARY DA	03.02.2025
8	PRELIMINARY DA	24.01.2025

PROJECT: CHILD CARE FACILITY

LOCATION: 77–76, 79–81 RYANS ROAD GILLIESTON HEIGHTS, NSW, 2321

CLIENT: EXP GILLIESTON HEIGHTS PTY. LTD.

DRAWING TITLE: ELEVATIONS 2

SCALE: 1:100 @ A1

No. IN SET: 8 of 20

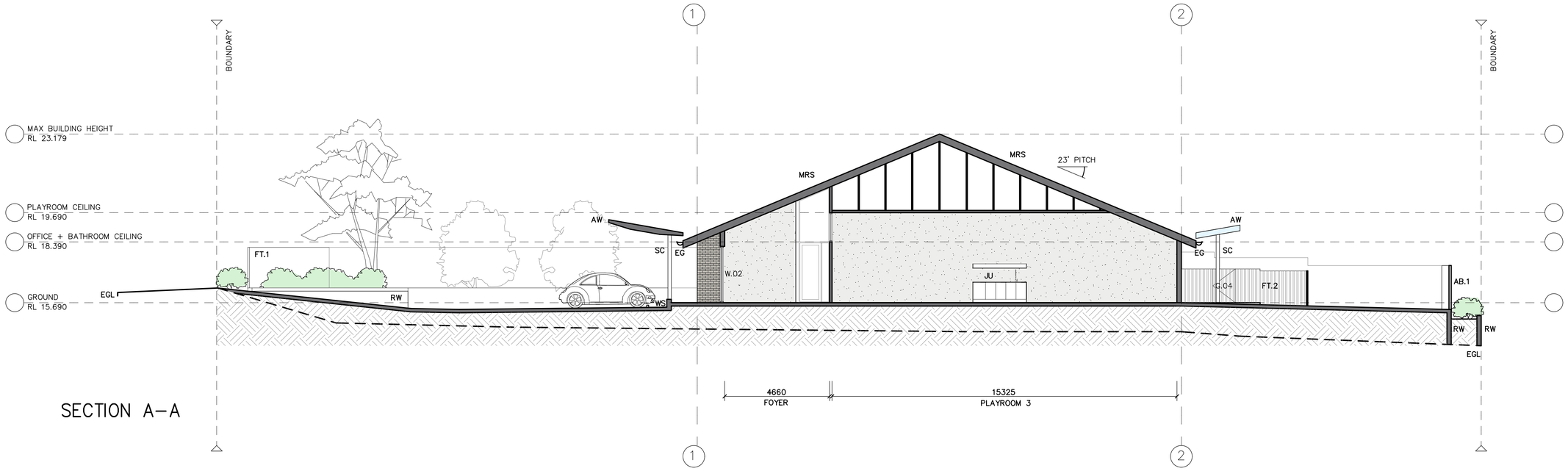
PROJECT No.: 1302

DWG No.: A08

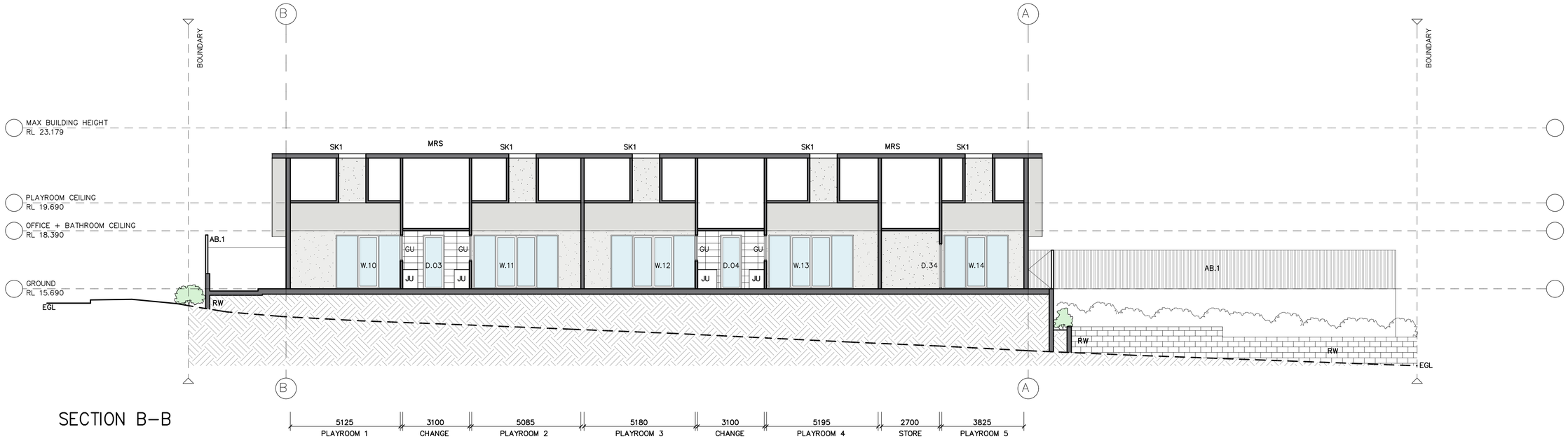
SHADDOCK ARCHITECTS

LEGEND:

AB ...	ACOUSTING BARRIER TYPE ...
AW	AWNING
D ...	DOOR NUMBER ...
EG	EAVES GUTTER
EGL	EXISTING GROUND LINE
FT ...	FENCE TYPE ...
GU	GLAZING UNIT
JU	JOINERY UNIT
RW	RETAINING WALL
SC	STEEL COLUMN
SK ...	SKYLIGHT TYPE ...
W ...	WINDOW NUMBER ...
WS	WHEEL STOP



SECTION A–A



SECTION B–B

NOTES:

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NO.	REVISION	DATE
10	PRELIMINARY DA	13.02.2025
9	PRELIMINARY DA	03.02.2025
8	PRELIMINARY DA	24.01.2025

PROJECT
CHILD CARE FACILITY

LOCATION
77–76, 79–81 RYANS ROAD
GILLIESTON HEIGHTS, NSW, 2321

CLIENT
EXP GILLIESTON HEIGHTS PTY. LTD.

DRAWING TITLE
SECTIONS

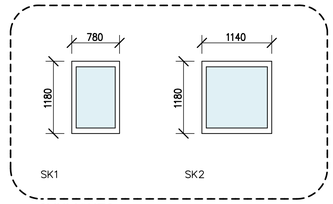
SCALE 1:100 @ A1

No. IN SET 9 of 20

PROJECT No. 1302

DWG No. A09

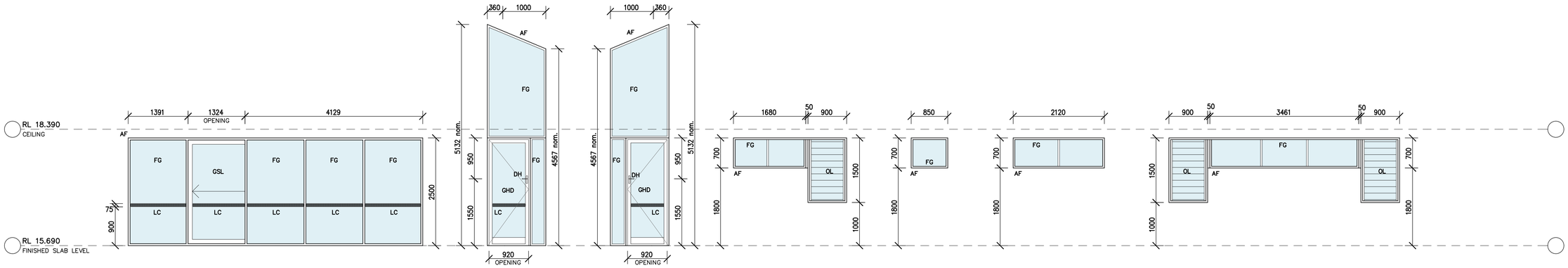
SHADDOCK ARCHITECTS

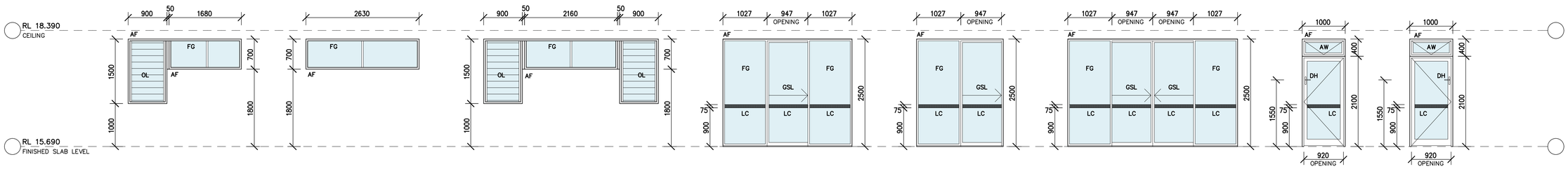


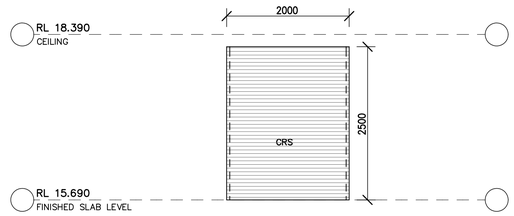
SKYLIGHTS

LEGEND:

AF	ALUMINIUM FRAME
AW	OPERABLE AWNING GLAZED WINDOW
CRS	COLORBOND ROLLER SHUTTER
D...	DOOR NUMBER ...
DH	DOOR HARDWARE
FG	FIXED GLAZING
GHD	GLAZED HINGED DOOR
GSL	GLAZED SLIDING
LC	LUMINANCE CONTRAST STRIP
OL	OPERABLE GLAZED LOUVRE
RS...	ROLLER SHUTTER NUMBER ...
SK ...	SKYLIGHT TYPE ...
W...	WINDOW NUMBER ...







RS.01

EXTERNAL GLAZING SCHEDULE

NOTES:

THESE DRAWINGS ARE TO BE READ IN CONJUNCTION WITH THE FULL SECTION 4.55 DOCUMENTATION PACKAGE. THESE DRAWINGS ARE FOR THE PURPOSE OF A SECTION 4.55 ONLY AND ARE NOT TO BE USED FOR ANY WORK ON-SITE. SITE BOUNDARIES & LEVELS HAVE BEEN ESTABLISHED UTILIZING PROPOSED SUBDIVISION PLAN PRODUCED BY ADW JOHNSON DATED 20/09/2024 REF: 190682 (DA/2020/1347)

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NO.	REVISION	DATE
10	PRELIMINARY DA	13.02.2025
9	PRELIMINARY DA	03.02.2025
8	PRELIMINARY DA	24.01.2025

PROJECT: CHILD CARE FACILITY

LOCATION: 77–76, 79–81 RYANS ROAD GILLIESTON HEIGHTS, NSW, 2321

CLIENT: EXP GILLIESTON HEIGHTS PTY. LTD.

DRAWING TITLE: EXTERNAL GLAZING SCHEDULE

SCALE: 1:50 @ A1

No. IN SET: 10 of 20

PROJECT No.: 1302

DWG No.: A10

SHADDOCK ARCHITECTS

VISUAL 1

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8	PRELIMINARY DA	24.01.2025

PROJECT
CHILD CARE FACILITY

LOCATION
77–76, 79–81 RYANS ROAD
GILLIESTON HEIGHTS, NSW, 2321

CLIENT
EXP GILLIESTON HEIGHTS PTY. LTD.

DRAWING TITLE
VISUAL 1

SCALE
NTS @ A1

No. IN SET
11 of 20

PROJECT No.
1302

DWG No.
A11

SHADDOCK
ARCHITECTS

VISUAL 2

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PROJECT
CHILD CARE FACILITY

LOCATION
77–76, 79–81 RYANS ROAD
GILLIESTON HEIGHTS, NSW, 2321

CLIENT
EXP GILLIESTON HEIGHTS PTY. LTD.

DRAWING TITLE
VISUAL 2

SCALE
NTS @ A1

No. IN SET
12 of 20

PROJECT No.
1302

DWG No.
A12

SHADDOCK
ARCHITECTS

VISUAL 3

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PROJECT
CHILD CARE FACILITY

LOCATION
77–76, 79–81 RYANS ROAD
GILLIESTON HEIGHTS, NSW, 2321

CLIENT
EXP GILLIESTON HEIGHTS PTY. LTD.

DRAWING TITLE
VISUAL 3

SCALE
NTS @ A1

No. IN SET
13 of 20

PROJECT No.
1302

DWG No.
A13

SHADDOCK
ARCHITECTS

VISUAL 4

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PROJECT
CHILD CARE FACILITY

LOCATION
77–76, 79–81 RYANS ROAD
GILLIESTON HEIGHTS, NSW, 2321

CLIENT
EXP GILLIESTON HEIGHTS PTY. LTD.

DRAWING TITLE
VISUAL 4

SCALE
NTS @ A1

No. IN SET
14 of 20

PROJECT No.
1302

DWG No.
A14

SHADDOCK
ARCHITECTS

VISUAL 5

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PROJECT
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LOCATION
77–76, 79–81 RYANS ROAD
GILLIESTON HEIGHTS, NSW, 2321

CLIENT
EXP GILLIESTON HEIGHTS PTY. LTD.

DRAWING TITLE
VISUAL 5

SCALE
NTS @ A1

No. IN SET
15 of 20

PROJECT No.
1302

DWG No.
A15

SHADDOCK
ARCHITECTS

VISUAL 6

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PROJECT
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LOCATION
77–76, 79–81 RYANS ROAD
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CLIENT
EXP GILLIESTON HEIGHTS PTY. LTD.

DRAWING TITLE
VISUAL 6

SCALE
NTS @ A1

No. IN SET
16 of 20

PROJECT No.
1302

DWG No.
A16

SHADDOCK
ARCHITECTS

VISUAL 7

All dimensions are in millimeters unless otherwise shown. All levels are in metes to AHD unless otherwise noted. Work to figured dimensions. Do not scale from drawings. Check all dimensions on site and report any discrepancies to Shaddock Architects prior to construction or fabrication of any item. This drawing is to be read nonfunctional with the total documentation package.

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8	PRELIMINARY DA	24.01.2025

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LOCATION
77–76, 79–81 RYANS ROAD
GILLIESTON HEIGHTS, NSW, 2321

CLIENT
EXP GILLIESTON HEIGHTS PTY. LTD.

DRAWING TITLE
VISUAL 7

SCALE
NTS @ A1

No. IN SET
17 of 20

PROJECT No.
1302

DWG No.
A17

SHADDOCK
ARCHITECTS

VISUAL 8

All dimensions are in millimeters unless otherwise shown. All levels are in metes to AHD unless otherwise noted. Work to figured dimensions. Do not scale from drawings. Check all dimensions on site and report any discrepancies to Shaddock Architects prior to construction or fabrication of any item. This drawing is to be read nonfunctional with the total documentation package.

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PROJECT
CHILD CARE FACILITY

LOCATION
77–76, 79–81 RYANS ROAD
GILLIESTON HEIGHTS, NSW, 2321

CLIENT
EXP GILLIESTON HEIGHTS PTY. LTD.

DRAWING TITLE
VISUAL 8

SCALE
NTS @ A1

No. IN SET
18 of 20

PROJECT No.
1302

DWG No.
A18

SHADDOCK
ARCHITECTS

SCHEDULE OF MATERIALS

METAL
AW – AWNINGS

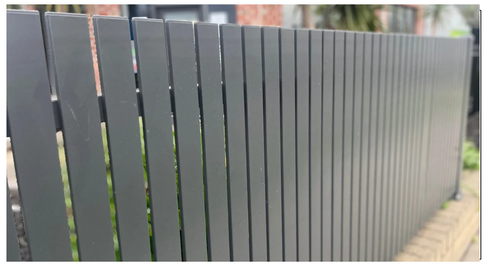
CLADDING
TIMBER–LOOK
ALUMINIUM CLADDING

BRICKWORK
FACE BRICK

BLOCKWORK
RW – RETAINING WALL

FENCE 1
FT.1 – FENCE TYPE
VERTICAL BLADE PICKETS

FENCE 2
FT.2 – FENCE TYPE
VERTICAL PICKETS



FENCE 3
AB.1 – ACOUSTIC BARRIER
LAPPED & CAPPED

WINDOWS/DOORS
BLACK POWDERCOATED
FRAME

All dimensions are in millimeters unless otherwise shown. All levels are in metes to AHD unless otherwise noted. Work to figured dimensions. Do not scale from drawings. Check all dimensions on site and report any discrepancies to Shaddock Architects prior to construction or fabrication of any item. This drawing is to be read nonfunctional with the total documentation package.

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PROJECT
CHILD CARE FACILITY

LOCATION
77–76, 79–81 RYANS ROAD
GILLIESTON HEIGHTS, NSW, 2321

CLIENT
EXP GILLIESTON HEIGHTS PTY. LTD.

DRAWING TITLE
MATERIALS SCHEDULE

SCALE
NTS @ A1

No. IN SET
19 of 20

PROJECT No.
1302

DWG No.
A19

SHADDOCK
ARCHITECTS

STORAGE SUMMARY

	REQUIRED		ACHIEVED
INDOOR	19.2m³	(0.2m³ PER CHILD)	29.14m³
OUTDOOR	28.8m³	(0.3m³ PER CHILD)	28.85m³

FLOOR SPACE RATIO (FSR) SUMMARY

TOTAL SITE AREA	2493.4sqm
GROSS FLOOR AREA	689.5sqm
FSR	0.27 : 1

STORAGE CALCULATION

0m 15m
0 5 10 15

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PROJECT
CHILD CARE FACILITY

LOCATION
77–76, 79–81 RYANS ROAD
GILLIESTON HEIGHTS, NSW, 2321

CLIENT
EXP GILLIESTON HEIGHTS PTY. LTD.

DRAWING TITLE
FSR & STORAGE SUMMARY

SCALE
1:150 @ A1

No. IN SET
20 of 20

PROJECT No.
1302

DWG No.
A20

SHADDOCK ARCHITECTS

APPENDIX B ASSET PROTECTION ZONES

APPENDIX 4

ASSET PROTECTION ZONE REQUIREMENTS

In combination with other BPMs, a bush fire hazard can be reduced by implementing simple steps to reduce vegetation levels. This can be done by designing and managing landscaping to implement an APZ around the property.

Careful attention should be paid to species selection, their location relative to their flammability, minimising continuity of vegetation (horizontally and vertically), and ongoing maintenance to remove flammable fuels (leaf litter, twigs and debris).

This Appendix sets the standards which need to be met within an APZ.

A4.1 Asset Protection Zones

An APZ is a fuel-reduced area surrounding a building or structure. It is located between the building or structure and the bush fire hazard.

For a complete guide to APZs and landscaping, download the NSW RFS document *Standards for Asset Protection Zones* at the NSW RFS Website www.rfs.nsw.gov.au.

An APZ provides:

- a buffer zone between a bush fire hazard and an asset;
- an area of reduced bush fire fuel that allows for suppression of fire;
- an area from which backburning or hazard reduction can be conducted; and
- an area which allows emergency services access and provides a relatively safe area for firefighters and home owners to defend their property.

Bush fire fuels should be minimised within an APZ. This is so that the vegetation within the zone does not provide a path for the spread of fire to the building, either from the ground level or through the tree canopy.

An APZ, if designed correctly and maintained regularly, will reduce the risk of:

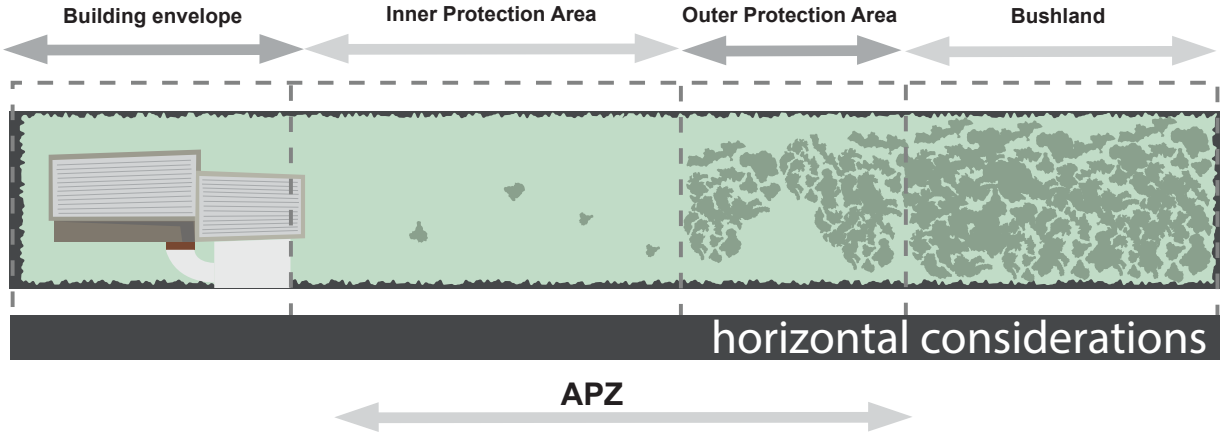
- direct flame contact on the building;
- damage to the building asset from intense radiant heat; and
- ember attack.

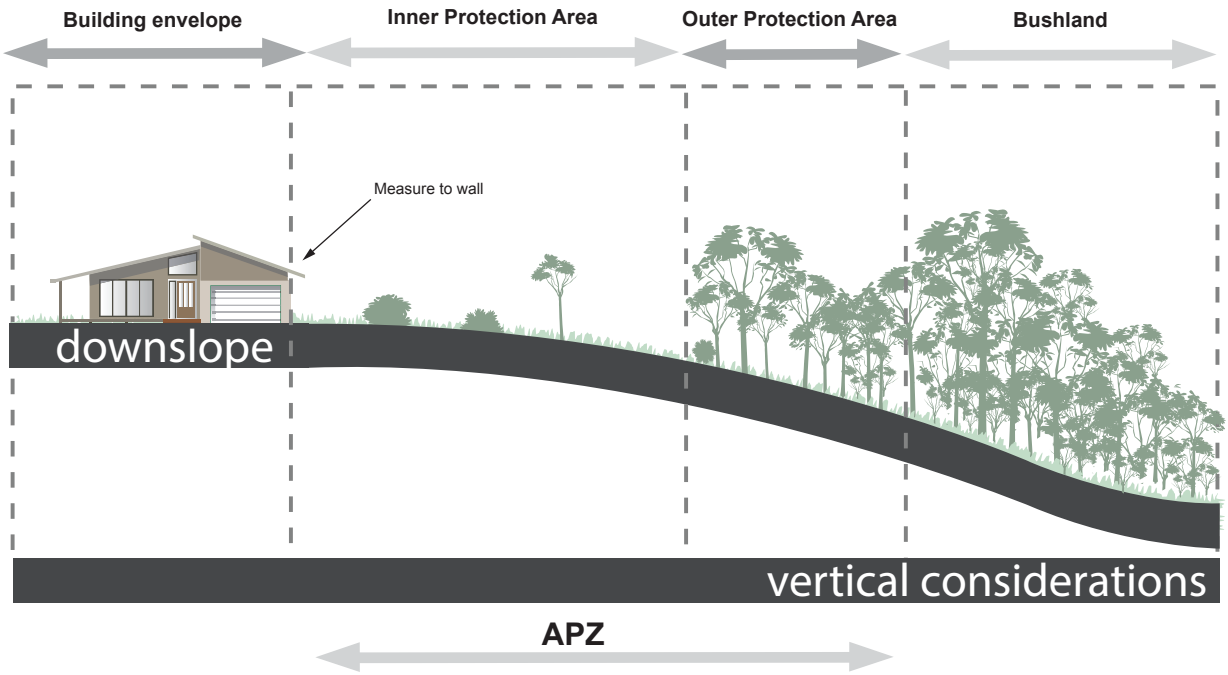
The methodology for calculating the required APZ distance is contained within Appendix 1. The width of the APZ required will depend upon the development type and bush fire threat. APZs for new development are set out within Chapters 5, 6 and 7 of this document.

In forest vegetation, the APZ can be made up of an Inner Protection Area (IPA) and an Outer Protection Area (OPA).

Figure A4.1

Typical Inner and Outer Protection Areas.





A4.1.1 Inner Protection Areas (IPAs)

The IPA is the area closest to the building and creates a fuel-managed area which can minimise the impact of direct flame contact and radiant heat on the development and act as a defendable space. Vegetation within the IPA should be kept to a minimum level. Litter fuels within the IPA should be kept below 1cm in height and be discontinuous.

In practical terms the IPA is typically the curtilage around the building, consisting of a mown lawn and well maintained gardens.

When establishing and maintaining an IPA the following requirements apply:

Trees

- tree canopy cover should be less than 15% at maturity;
- trees at maturity should not touch or overhang the building;
- lower limbs should be removed up to a height of 2m above the ground;
- tree canopies should be separated by 2 to 5m; and
- preference should be given to smooth barked and evergreen trees.

Shrubs

- create large discontinuities or gaps in the vegetation to slow down or break the progress of fire towards buildings should be provided;
- shrubs should not be located under trees;
- shrubs should not form more than 10% ground cover; and
- clumps of shrubs should be separated from exposed windows and doors by a distance of at least twice the height of the vegetation.

Grass

- grass should be kept mown (as a guide grass should be kept to no more than 100mm in height); and
- leaves and vegetation debris should be removed.

A4.1.2 Outer Protection Areas (OPAs)

An OPA is located between the IPA and the unmanaged vegetation. It is an area where there is maintenance of the understorey and some separation in the canopy. The reduction of fuel in this area aims to decrease the intensity of an approaching fire and restricts the potential for fire spread from crowns; reducing the level of direct flame, radiant heat and ember attack on the IPA.

Because of the nature of an OPA, they are only applicable in forest vegetation.

When establishing and maintaining an OPA the following requirements apply:

Trees

- tree canopy cover should be less than 30%; and
- canopies should be separated by 2 to 5m.

Shrubs

- shrubs should not form a continuous canopy; and
- shrubs should form no more than 20% of ground cover.

Grass

- grass should be kept mown to a height of less than 100mm; and
- leaf and other debris should be removed.

An APZ should be maintained in perpetuity to ensure ongoing protection from the impact of bush fires. Maintenance of the IPA and OPA as described above should be undertaken regularly, particularly in advance of the bush fire season.