

**UPDATED
BUSHFIRE PROTECTION ASSESSMENT**

**FOR THE STAGE 3 MEDIUM DENSITY RESIDENTIAL
DEVELOPMENT**

ON PART LOT 701 in DP 1291622 and LOT 1 in DP 834963

No. 136 – 148 FOX VALLEY ROAD,

WAHROONGA

Australian Bushfire Protection Planners Pty Limited

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FOR
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LOT 1 in DP 834963
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Report Number	Document	Preparation Date	Issue Date	Directors Approval
B213724 - 3	Final	04.09.2023	06.06.2025	<i>G.L. Swain</i>

EXECUTIVE SUMMARY

Australian Bushfire Protection Planners Pty Limited has been commissioned by *Capital Corporation Pty Limited* to prepare a Bushfire Protection Assessment Report for the Development Application to Ku-ring-gai Council for the construction of the Stage 3 Medium Density Residential Development on Part Lot 701 in DP 1291622 and Lot 1 in DP 834963 No. 136 – 144 Fox Valley Road, Wahroonga.

The Medium Density Residential Complex replaces the existing Warehouse on Lot 201 in DP 1234588 – No. 148 Fox Valley Road and the existing dwellings on Lot 201 in DP 1234588 – No. 138 – 144 Fox Valley Road. The development will replace the existing dwelling on Lot 1 in DP 834963, No. 136 Fox Valley Road Wahroonga.

The existing buildings will be demolished as part of the development proposal.

The complex consists of two tower blocks, Building A and Building B, providing a total of 71 units constructed above a podium level and basement carpark. The Lower Ground Floor contains part Car Park and a Community Room, Cinema and six (6) residential units

Vehicular access to the basement carpark is off Fox Valley Road, via an existing internal driveway that also provides access to the rear of the Church Administration Buildings. Pedestrian access to the towers is off Fox Valley Road via pathways.

The land upon which it is proposed to construct the complex is shown on the Ku-ring-gai Bushfire Prone Land Map to contain the buffer zone to the Category 1 Bushfire Prone Vegetation within the eastern portion of the Estate.

ABPP undertook the bushfire consultancy for the rezoning of the land within the Wahroonga Estate and established the extent of the Asset Protection Zone to future development within the Estate. This was surveyed and recorded as the boundary between the E2 zoned land and the R4 zoned land and has been used to determine the location of the proposed buildings.

As the development site is shown to contain the buffer zone to bushfire prone vegetation the development, being the construction of a multi-unit medium density residential flat building within a bushfire prone area, is required to comply with the provisions of Section 4.14 of the *Environmental Planning & Assessment Act 2017*.

In addition, the building will be subdivided into Strata Title Units once completed and for the purpose of this report is deemed to be Integrated Development as defined by Section 4.47 of the *Environmental Planning & Assessment Act 2017*.

The provisions of Section 100B of the *Rural Fires Act 1997* apply to Integrated Development and the development is required to comply with the deemed-to-satisfy provisions of *Planning for Bushfire Protection 2019*.

This report therefore examines the proposed development against these requirements and provides advice on the suitability of the development in addressing the availability of complying Asset Protection Zones/Defendable Spaces, access and water supplies for fire-fighting operations and the requisite level of construction to the building in order to address the potential levels of radiant heat exposure on the building.



Graham Swain
Managing Director

Australian Bushfire Protection Planners Pty Limited

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SECTION 1

INTRODUCTION

1.1 Aim of this Assessment.

The aim of this Bushfire Protection Assessment is to review the proposed Development Application to determine compliance with the intent of *Planning for Bushfire Protection 2019* and in particular:

- Determine compliance with the Asset Protection Zone setbacks in accordance with the Estate Master Plan;
- Review the adequacy of access requirements for fire-fighting operations;
- Review the adequacy of fire-fighting water supplies;
- Determine the bushfire construction standards to the buildings, pursuant to A.S. 3959 – 2018; and
- Review emergency management provisions.

1.2 Development Proposal.

A Development Application is to be lodged with Ku-ring-gai Council for the construction of a proposed multi-storey medium density Residential Flat complex on Part Lot 701 in DP 1291622 and Lot 1 in DP 834963, No. 136 – 148 Fox Valley Road, Wahroonga.

The complex consists of Buildings A and Building B providing a total of 71 units constructed above a podium and basement carpark.

Refer to Figure 1 – Location Plan of the proposed Stage 3 on Page 7.

Refer to Figure 2 – Site Plan of proposed Stage 3 on Page 8

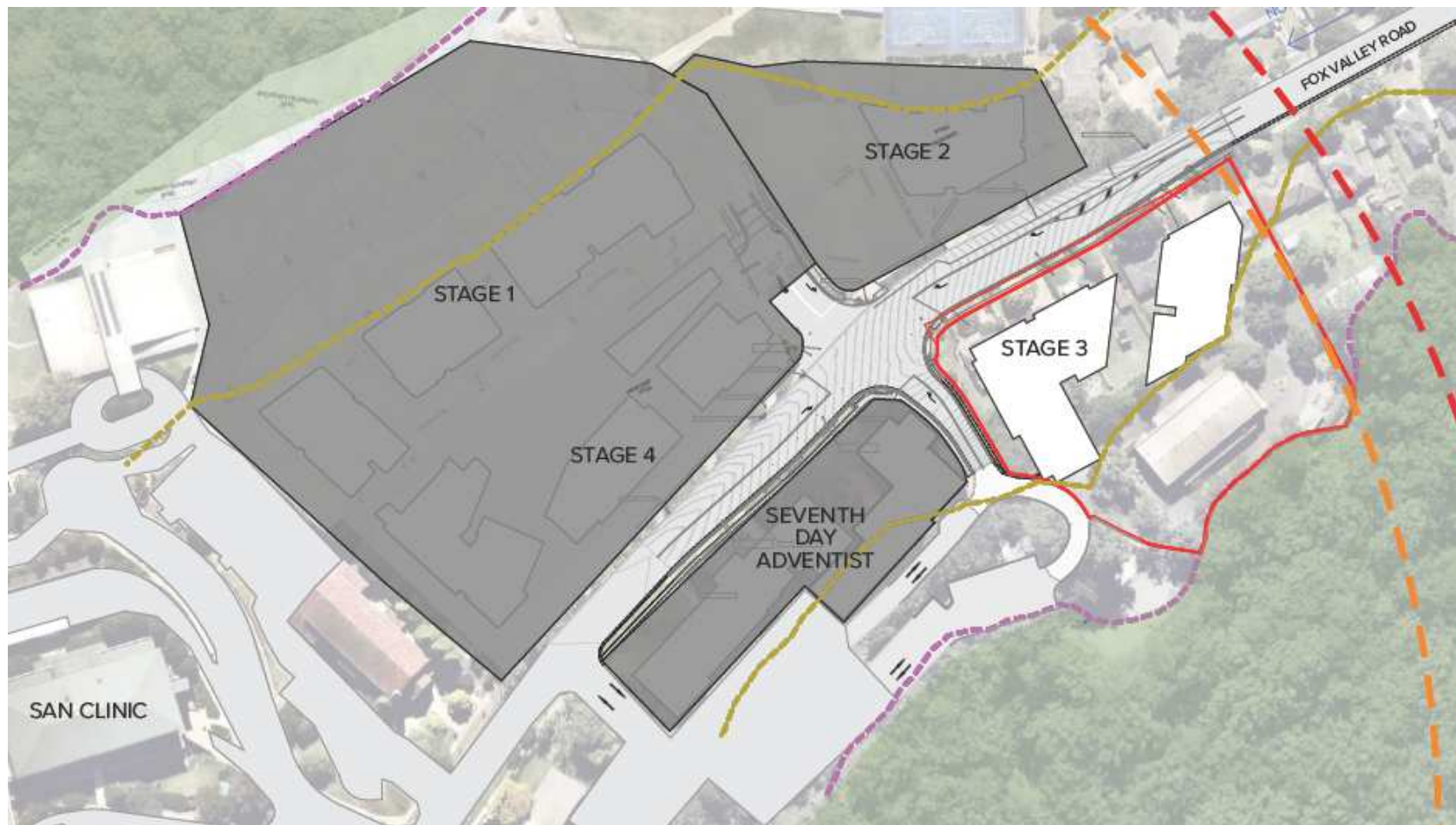
Refer to Figure 3 – Basement Floor Plan on Page 9.

Refer to Figure 4 – Lower Ground Floor Plan on Page 10

Refer to Figure 5 – Ground Floor Plan on Page 11 and Figure 6 – Level 1 Floor Plan on Page 12. Refer to Figure 7 – Floor Plan of Levels 2 – 4 on Page 13.

Refer to Figures 8 & 9 - Elevations on Page 14 & 15.

Figure 1 – Location Plan of the proposed Stage 3 Development.



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Figure 3 – Basement Floor Plan.

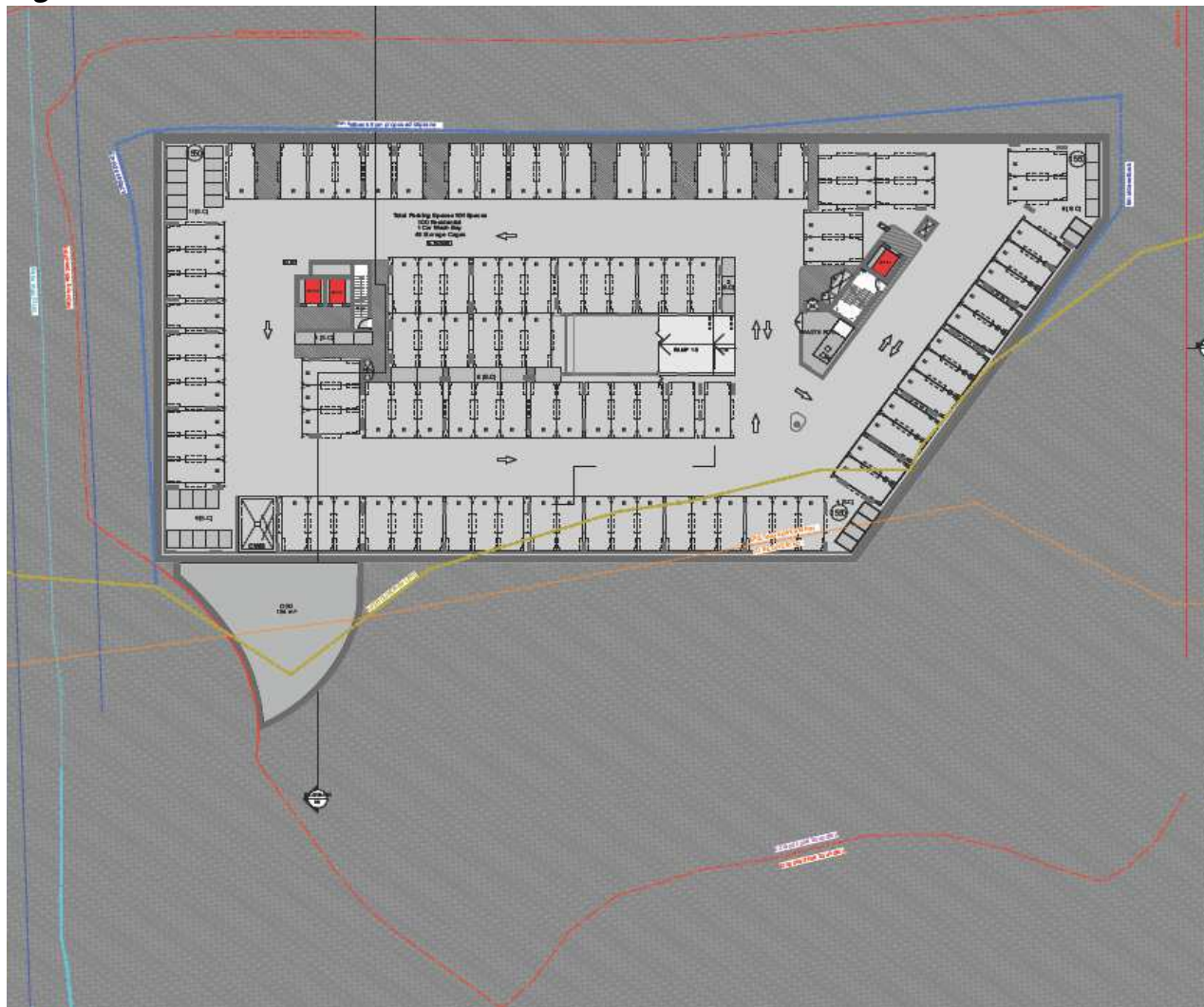


Figure 4 – Lower Ground Floor Plan.



Figure 6 – Level 1 Floor Plan.



Figure 8 – North & South Elevations.



North Elevation



South Elevation

Figure 9 –East & West Elevations.



East Elevation



West Elevation

1.3 Statutory Requirements.

This report has been prepared having regard to the following legislative and planning requirements:

1.3.1 Legislation.

(a) Environmental Planning and Assessment Act (EPA Act)

Planning and development within NSW is regulated by the *Environmental Planning & Assessment Act, 2017* (EPA Act).

In relation to bushfire planning for new residential, rural residential and special fire protection developments in bushfire prone areas in NSW, the following sections of the Act apply:

(i) Section 4.14:

Section 4.14 requires a consent authority to determine if a proposed development that is located within a designated Bushfire Prone Area, or the buffer zone to the Bushfire Prone Land, complies with *Planning for Bushfire Protection 2019*.

(ii) Section 4.15(1) states:

“In determining a development application, a consent authority is to take into consideration such of the following matters as are of relevance to the development the subject of the development application:

(b) The likely impacts of the development, including environmental impacts on both the natural and built environments, and social and economic impacts in the locality (e.g. natural hazards such as bushfire threat);

(c) The suitability of a site for development (e.g. bushfires)

(ii) Section 4.46:

Identifies that the subdivision of bushfire prone land that could lawfully be used for residential rural and residential purposes and the construction of special protection purpose development, as integrated development which requires authorization under Section 100B of the *Rural Fires Act 1997*.

(b) Rural Fires Act 1997

The objectives of the *Rural Fires Act* are to provide:

- The prevention, mitigation and suppression of fires;
- Coordination of bushfire fighting and prevention
- Protection of people and property from fires; and
- Protection of the environment.

In relation to bushfire planning for residential and rural residential subdivision and special fire protection purpose developments in bushfire prone areas in NSW, Section 100B of the Act applies. Section 100B provides for the issue, by the Commissioner of the NSW Rural Fire Service, of a Bushfire Safety Authority for development which creates the subdivision of bushfire prone land for residential and rural residential development and construction of special fire protection purpose developments located within a Bushfire Prone Area.

An application for a Bushfire Safety Authority must be lodged as part of the development application process and must demonstrate compliance with *Planning for Bushfire Protection 2019* and other matters which are considered necessary, by the Commissioner, to protect persons, property and the environment from the impact of bushfire.

In relation to the management of bushfire fuels on public and private lands within NSW, Sections 63(1) and 63(2) require public authorities and owners / occupiers of land to take all practicable steps to prevent the occurrence of bushfires on, and to minimize the danger of, the spread of bushfires.

(c) Rural Fires Regulation 2013.

Section 44 of the *Rural Fires Regulation 2013* relates to planning for new residential, rural residential and special fire protection purpose developments in bushfire prone areas in NSW and provides details of the matters that are required to be addressed for the issue of a *Bushfire Safety Authority* under Section 100B of the *Rural Fires Act*.

1.3.2 Planning Policies.

Planning for Bushfire Protection – 2019 (Rural Fire Service).

This document provides guidance on the planning and development control processes in relation to bushfire protection measures for development in bushfire prone areas.

In addition to the provisions of the *Planning for Bushfire Protection 2019* document, the Commissioner may determine, under Section 100B of the *Rural Fires Act*, additional measures for rural residential and residential subdivisions and 'Special Fire Protection Purpose' development that are considered necessary to protect the development against the impact of bushfire.

1.4 Documentation reviewed in this Assessment.

The following documents were reviewed in the preparation of this report:

- Architectural Plans and Elevations of the proposed medium density residential flat building prepared by Turner– Project No. 21016 dated 02.05.2025;
- Landscape Plans and Elevations of the proposed medium density residential flat building prepared by Arcadia – Project No. 22-907 dated 08.05.2025;
- Aerial Photograph of the development site and adjoining land;
- *Planning for Bushfire Protection 2019* prepared by the NSW Rural Fire Service;
- Australian Standard AS3959 – 2018 - “Construction of Buildings in Bushfire Prone Areas”;
- *Rural Fires Act 1997*;
- *Rural Fires Regulation 2021*;
- Wahroonga Estate Master Plan;
- Wahroonga Estate Zoning Plan;
- Ku-ring-gai Council Certified Bushfire Prone Land Map.

1.5 Site Inspection.

Graham Swain of *Australian Bushfire Protection Planners Pty Limited* inspected the site on the 18th January 2018 to confirm the topography, slopes and vegetation classification within and adjoining the development site.

The inspection also examined the management of the vegetation on the adjoining properties to determine the actual extent of any vegetation within 100 metres of the development site which could lawfully be mapped as being bushfire prone vegetation.

A desk-top review was undertaken prior to the preparation of this report.

SECTION 2

DESCRIPTION OF DEVELOPMENT SITE

2.1 Location & Description.

The land within the development site consists of Part Lot 701 in DP 1291622 and Lot 1 in DP 834963, No. 136 – 144 Fox Valley Road, Wahroonga.

Figure 10 – Aerial Photograph showing the location of the development site.



The development site contains five residential dwellings and a warehouse that will be demolished as part of the proposed development.

2.2 Adjoining Land Use.

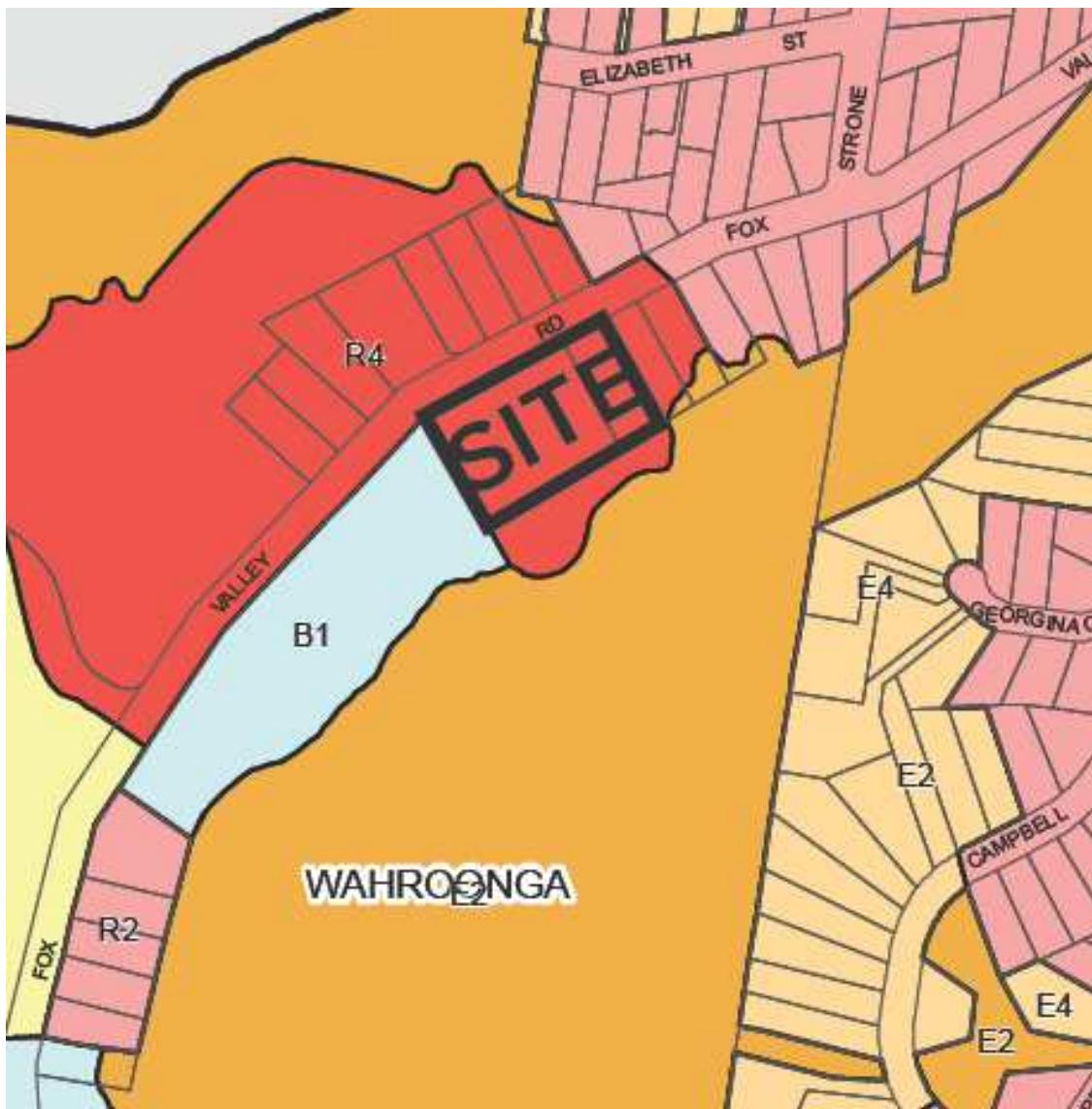
The landuse to the northwest of the development site comprises Fox Valley Road and the Adventist School.

The land to the northeast of the development site contains residential landuse.

The land to the southeast of the development site contains vacant E2 zoned land beyond which is residential development.

The land to the southwest contains the Administration Building for the Church.

Figure 11 – Landuse Zoning Map.



2.3 Topography.

Appendix 1.5 of *Planning for Bushfire Protection 2019* defines the parameters for determining the effective slope of the land under the bushfire prone vegetation.

a) Within the Development Site.

The land within the development site falls gently to the southeast from Fox Valley Road.

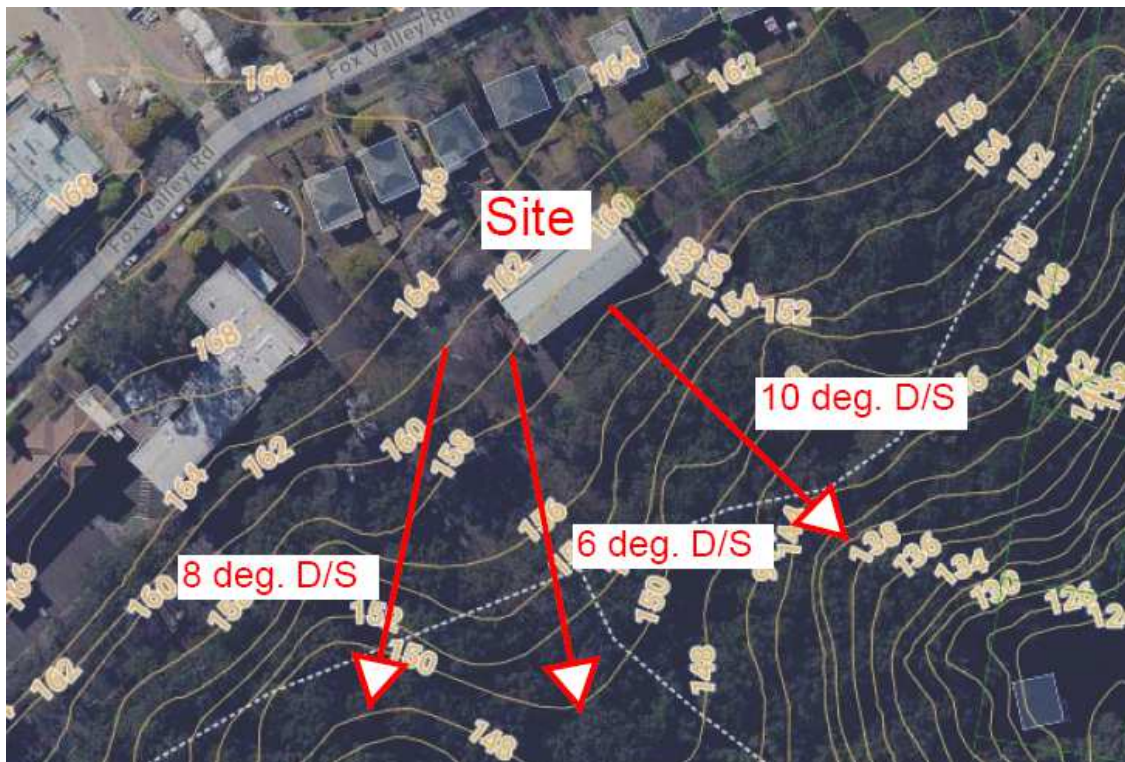
b) Within 100 metres of the Development Site.

The land that contains the bushfire hazard forms the E2 zoned land within the eastern and south-eastern portion of the Estate.

A slope assessment was undertaken on site using a hand-held inclinometer, recording the effective slope of the land under the bushfire prone vegetation within the E2 zoned land.

Figure 12 records the results of the field assessment.

Figure 12 – Slope Map.



2.4 Vegetation.

Vegetation is classified using Figure A1.2 of *Planning for Bushfire Protection 2019*, which classifies vegetation types into the following groups:

- (a) *Rainforest*;
- (b) *Wet Sclerophyll Forest*;
- (c) *Dry Sclerophyll forest*;
- (d) *Woodland*;
- (e) *Tall Heath*;
- (f) *Short Heath*; and
- (g) *Grassland*.

2.4.1 Vegetation within the Development Site.

The development site has been cleared of native vegetation and contains managed landscaped gardens.

2.4.2 Vegetation within 140 metres of the Development Site.

The vegetation on the E2 zoned land to the east and southeast of the development site was assessed by Conacher Travers in 2004 and Cumberland Ecology as part of the Master Plan study for the Planning Proposal – refer to Figure 13 on Page 23.

The predominant vegetation within 140 metres of the proposed buildings consists of Open Forest – *Eucalyptus saligna*/Syncarpia Forest and *Eucalyptus pilularis*/Syncarpia glomulifera/Angophora costata Wet Understorey Form and Turpentine Ironbark Forest.

Figure 13 - Vegetation Communities on and around the Development Site – extract from the Cumberland Ecology Report.



Vegetation Communities

	1	Open Forest- <i>Eucalyptus saligna</i> / <i>Syncarpia glomulifera</i> (CEEC Blue Gum High Forest)
	2a	Open Forest- <i>Eucalyptus pilularis</i> / <i>Syncarpia glomulifera</i> / <i>Angophora costata</i> Wet Understorey Form
	2b	Open Forest- <i>Eucalyptus pilularis</i> / <i>Syncarpia glomulifera</i> / <i>Angophora costata</i> Dry Understorey Form
	3	Open Forest - <i>Eucalyptus piperita</i> / <i>Corymbia gummifera</i>
	4	Open Forest- <i>Syncarpia glomulifera</i> / <i>Eucalyptus paniculata</i> (CEEC Sydney Turpentine Ironbark Forest)
	5	Riparian Vegetation
	Community	
	Scattered trees	

2.6 Significant Environmental Features within the Development Site.

The land within the development site does not contain significant environmental features such as SEPP 14 Wetlands, Koala Habitat, SEPP 26 Littoral Rainforests; land slip areas or National Parks Estate; areas of geological interest; steep lands [>18 degrees] or riparian corridors.

2.7 Known Threatened Species, population or ecological community within the Development Site.

The development site does not contain any known threatened species, population or ecological communities.

The E2 zoned land adjacent to the development site contains an area of Blue Gum High Forest [CEEC] and will not be impacted by the proposed development, including the provision of Asset Protection Zones.

2.8 Details and location of Aboriginal relics or Aboriginal place.

There are no known sites of Aboriginal heritage significance within the development precinct.

SECTION 3

PRECINCT LEVEL ASSESSMENT

3.1 Introduction.

The Ku-ring-gai Bushfire Prone Land Map records that the development site contains the buffer zone to the Category 1 Bushfire Prone Vegetation on the E2 zoned land, within the eastern portion of the Estate.

Figure 14 below is an extract from the Bushfire Prone Land Map showing the accurate extent of the Category 1 and Category 2 Bushfire Prone Vegetation and Buffer Zone.

Figure 14 – Extract of the Ku-ring-gai Bushfire Prone Land Map.



SECTION 4

BUSH FIRE PROTECTION ASSESSMENT

4.1 Introduction.

Section 45(2) of the *Rural Fires Regulation 2022* requires that an application for a *Bushfire Safety Authority* must include a bushfire assessment for the proposed development (including the methodology used in the assessment) that addresses the extent to which the development provides:

- *Extent to which the development provides setbacks, including asset protection zones;*
- *the siting and adequacy of water supplies for firefighting operations;*
- *capacity of public roads to handle increased volumes of traffic during a bushfire emergency;*
- *whether or not public roads link with the fire trail network and have two-way access;*
- *the adequacy of access and egress for the purposes of emergency response;*
- *the adequacy of bushfire maintenance plans and fire emergency procedures and;*
- *the construction standards to be used for building elements;*
- *the adequacy of sprinkler systems and other fire protection measures to be incorporated into the development;*
- *registered fire trails on the property.*

These matters are examined in the following sections of this report.

4.2 Determination of Asset Protection Zones – Proposed Medium Density Residential Flat Building.

Appendix 1 of *Planning for Bushfire Protection 2019* provides the following procedure for determining setback distances (Asset Protection Zones):

- (a) Determine vegetation formation;*
- (b) Determine the slope of the land under the bushfire hazard;*

(c) Determine the 'effective slope' of the land;

(d) Determine the Fire Danger Index for the area;

(e) Determine the width of the Asset Protection Zone from Table A1.12.5.

The Planning Proposal for the Estate established the need to provide a 39 metre wide Asset Protection Zone for the residential development, measured from the E2 zone boundary, based on Table A2.4 of *Planning for Bushfire Protection 2006*.

The release of the updated *Planning for Bushfire 2019* has modified the widths of Asset Protection Zones.

From Table 1.12.5 of *Planning for Bushfire Protection 2019* the Asset Protection Zone for forest vegetation on a downslope gradient of less than 10 degrees is 36 metres.

The minimum width of Asset Protection Zone provided to the leading edge of the, balconies is 36 metres – refer to Figures 15 – 17 Plans of Asset Protection Zone referenced from TURNER Architects on Page 28 - 30 of this report.

Figure 15 – Plan of Asset Protection Zone – Lower Ground Floor.

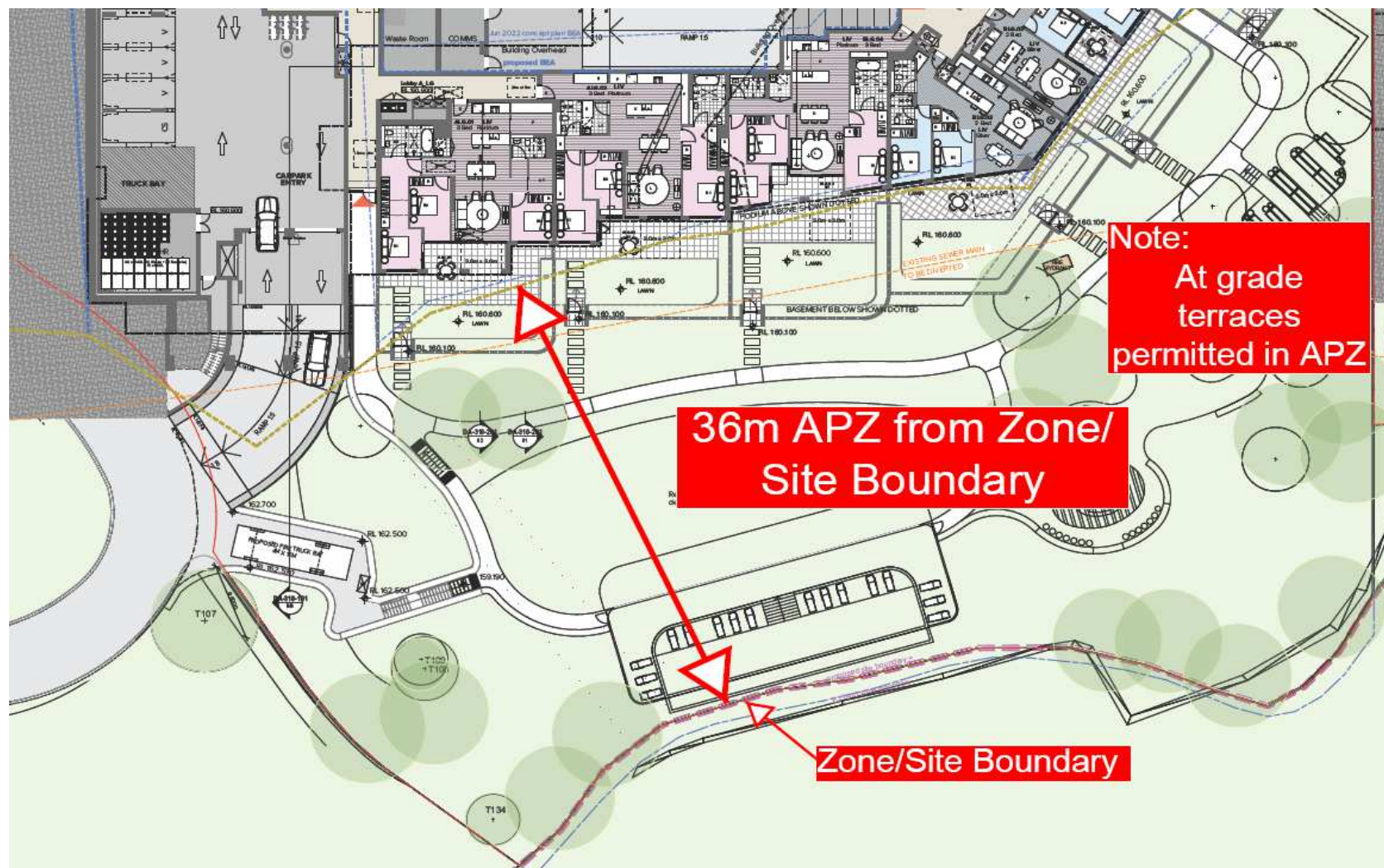
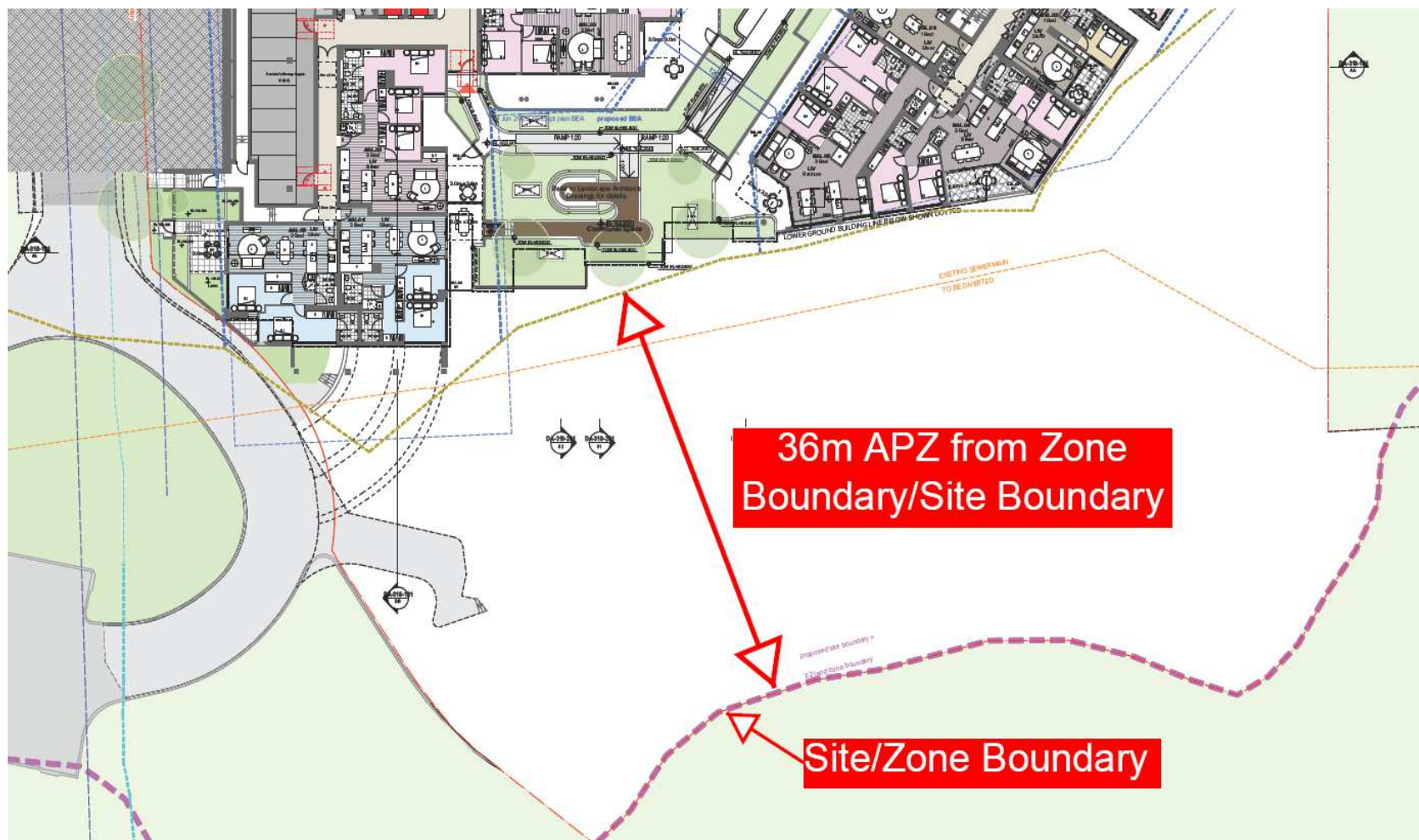


Figure 16 – Plan of Asset Protection Zone – Ground Floor.



The image is a detailed site plan of a residential development. It features several buildings, including 'Building A, L1' and 'Building B, L1', with internal room layouts. A road labeled 'Link Road' is on the left. A dashed line represents the 'Zone/Site Boundary'. A red arrow points from a red box containing the text '36m APZ from Zone/ Site Boundary' to this boundary line. Other labels include '36000', '30000', and '3000'. A north arrow is located in the top right corner.

4.3 Assessment of Bushfire Attack (Construction Standards).

The width of the Asset Protection Zone (minimum 36 metres) to the proposed Medium Density Residential buildings the radiant heat rating on the building being less than 29kW/m².

The approved Planning Proposal provided an Asset Protection Zone setback of 39 metres, based on the requirements of Table A2.4 of *Planning for Bushfire Protection 2006*.

The ABPP Bushfire Report prepared for the Planning Proposal included the following comment in respect to the construction of the future residential development.

- ***New Residential Buildings within the Estate***

The level of construction of the buildings within the proposed new residential precincts and modifications to the existing residential development within the Estate shall comply with the construction standards as defined by Appendix 3 of *Planning for Bushfire Protection 2009*. The maximum level of radiant heat to which the new development [excluding “infill” development] shall be exposed to shall not exceed 29 kWm² [Level 3 construction].

In order to comply with the Planning Proposal approval, the proposed buildings shall be constructed to comply with Section 3 and Section 7 [BAL 29] of A.S. 3959 – 2018 – ‘Construction of Buildings in Bushfire Prone Areas’.

4.4 Access Standards for Firefighting Operations.

4.4.1 Adequacy of Public Roads.

The proposed development will have vehicular access from the basement carpark to Fox Valley Road, via the existing driveway.

Fox Valley Road is a two-lane local road that provides alternate routes of travel from the development proposal, including to the northeast to the Pacific Highway.

Fox Valley Road will not be directly impacted by bushfire that occurs either in Coups Creek to the north or in the vegetation in the eastern portion of the Estate.

4.4.2 Fire Trail Access to two-way Public Roads.

The proposed development does not require the provision of a fire fighting access trail as a perimeter road is proposed between the hazard and the proposed buildings.

4.4.3 Emergency Response Access / Egress.

Emergency access and egress to the proposed development is provided off Fox Valley Road in a direction that leads away from the bushfire hazard.

Pedestrian access is to Fox Valley Road via pathways which are shielded from the hazard by the height and width of the new buildings.

4.5 Water Supplies for Firefighting Operations.

A reticulated water supply will be provided to the proposed development, for bushfire and structural fire-fighting operations.

A separate mains supply is provided to service the internal fire-fighting water supply requirements to satisfy A.S. 2419.1 – 2021.

Additional external hydrants shall be installed on the south-eastern side of the buildings to provide fire-fighting water supply within the Asset Protection Zone. A vehicle layby shall be provided to enable connection to the hydrant supply on the southern side of the complex.

A hydrant booster assembly is to be provided to service both hydrant water supplies.

4.6 Emergency Management for Fire Protection.

The potential bushfire risk to the proposed development will be from a fire that occurs in the forest vegetation on the land to the east and southeast of the development site.

Should a fire occur, it will spread under northeast or southeast winds. The spread of fire is limited to the vegetation within the Estate as existing residential development is located beyond the Estate's eastern boundary. (The Ku-ring-gai Bushfire Prone Land Map does not record bushfire prone vegetation on the residential development to the east of the Estate).

These wind directions are influenced by increased humidity and lower temperatures, decreasing the potential bushfire risk to the proposed buildings.

The site will not be affected by extreme/catastrophic bushfire events and the level of impact does not warrant the preparation of an emergency management plan for bushfire protection.

4.7 Adequacy of Sprinkler Systems & other Fire Protection Measures.

The new buildings will be required to have a residential sprinkler system installed which will provide internal and external sprinklers to balcony areas.

4.8 Evacuation.

The setback to the complex from the bushfire hazard, combined with the building construction standards and internal, smoke free ventilation systems, minimises the radiant heat, smoke and ember attack risk to the occupants and provides a safe place to shelter.

However, an Emergency Management [Evacuation] Plan shall be prepared for the complex which establishes a '*stay in place*' protocol during bushfire events in the local area – unless advised to relocate by the emergency services.

If evacuation of the complex is initiated by the Emergency Services evacuation of the buildings can be undertaken either by vehicle to Fox Valley Road [if the access road is deemed to be safe] or by safe pedestrian access from the buildings, in a northerly direction to Fox Valley Road.

SECTION 5

BUSHFIRE MANAGEMENT STRATEGIES

Strategies to address the aim and objectives of *Planning for Bushfire Protection 2019* are as follows:

Strategy 1 – Asset Protection Zone:

There shall be provided and maintained to the southeast of the complex a permanent Asset Protection Zone of minimum 36 metres, measured to the leading edge of the balconies.

Strategy 2 – Management of the Asset Protection Zone:

The Asset Protection Zone shall be designed, constructed and maintained as an Inner Protection Area [IPA] in accordance with Appendix 4 of *Planning for Bushfire Protection 2019* and the NSW Rural Fire Service's document '*Standards for Asset Protection Zones*'.

Strategy 3 – Bushfire Construction Standards to the proposed Buildings:

The proposed buildings shall be constructed to comply with Section 3 and Section 7 [BAL 29] of A.S.3959 – 2018 – '*Construction of Buildings in Bushfire Prone Areas*'.

Strategy 4 – Water Supplies for Firefighting Operations:

The existing Sydney Water reticulated service shall be extended into the development site with bushfire/structural hydrants installed in accordance with A.S. 2419.1 – 2021.

Additional external hydrants shall be installed on the south-eastern side of the buildings to provide fire-fighting water supply within the Asset Protection Zone. A vehicle layby shall be provided to enable connection to the hydrant supply on the southern side of the complex.

A hydrant booster assembly is to be provided to service both hydrant water supplies.

SECTION 6

CONCLUSION

This report has been prepared for a Development Application seeking consent for the construction of a 71 unit residential flat complex on Lot 201 in DP 124558 and Lot 1 in DP 834963, No. 136 – 144 Fox Valley Road, Wahroonga.

This report has reviewed the proposed Medium Density Residential development against the deemed-to-satisfy provisions of *Planning for Bushfire Protection 2019* and has found that the width of the Asset Protection Zone satisfies Table A.1.12.5 of *Planning for Bushfire Protection 2019*. This report endorses the Architectural Plans and Elevations for the proposed medium density residential flat building, prepared by Turner (Project No. 21016, dated 02.05.2025), as well as the Landscape Plans and Elevations prepared by Arcadia (Project No. 22-907, dated 08.05.2025).

The report also examines the requirements for the provision of access and water supplies for fire-fighting operations and construction standards to the proposed buildings.

Emergency management has also been examined and concludes that the fire safety measures incorporated into the proposed development provides a safe location from which it will not be necessary to relocate occupants during a bushfire event in the bushland vegetation within the Estate.

Table 8.2.2 of *Planning for Bushfire Protection 2019* lists considerations for multi-storey residential buildings in bushfire prone areas. The response to these provisions is provided below:

1. Population:
The location of the proposed development provides access onto Fox Valley Road in two locations. Whilst Fox Valley Road provides a safe means of egress, northeast to the Pacific Highway, the proposed complex provides a safe environment in which occupants can take refuge and therefore NOT relocate to a remote location away from the site.
2. Location of Building:
The building is not located on a ridge-top;
3. Design Fire:
The development site is located on the eastern side of Fox Valley Road with the bushland in the Wahroonga Estate extending to the east, to the existing residential development, east of the Estate.

The vegetation maybe impacted by the northeasterly driven fire which will present as a flank fire to the proposed Residential Unit complex.

A fire that occurs in the vegetation in the southeast corner of the Estate may present a risk to the proposed building however such fire event will only occur under a south-easterly wind pattern.

This wind pattern will have lower temperature, a higher level of humidity and lower Fire Danger Index (FDI 80).

The calculated perpendicular flame length will NOT impact on the eastern elevations of the proposed buildings.

The Wahroonga Estate will be affected by ember drop and smoke from a fire that occurs in the Lane Cove National Park.

4. Egress:

The pedestrian access/egress to the complex is directly off Fox Valley Road, to the north of and shielded by existing buildings.

5. Building Construction:

Compliance with BAL 29 construction standards is sufficient and appropriate to ensure that the low level of bushfire risk is reduced, and the design fire has been addressed.

The provision of the available separation widths between the bushfire hazard and the buildings, combined with the recommended bushfire construction standards to the building removes any risk of fire spread from the vegetation to inside the building.

External balconies are included in the design of the building and are located beyond the width of the Asset Protection Zone.

Due to the low level of ember attack there is no requirement for the imposition of measures that restrict the use of the balconies.

6. Carparking:

The basement carparking will not be exposed to heavy ember attack or high levels of radiant heat.

7. Other Considerations:

Access for fire-fighters will not be restricted or challenging and there is no risk of floor to floor fire spread as the buildings are designed to comply with the relevant floor to floor fire spread required by the Building Code of Australia.

Figure 18 – Landscape Masterplan



Figure 19 – Landscape Masterplan: Bushfire Constraints

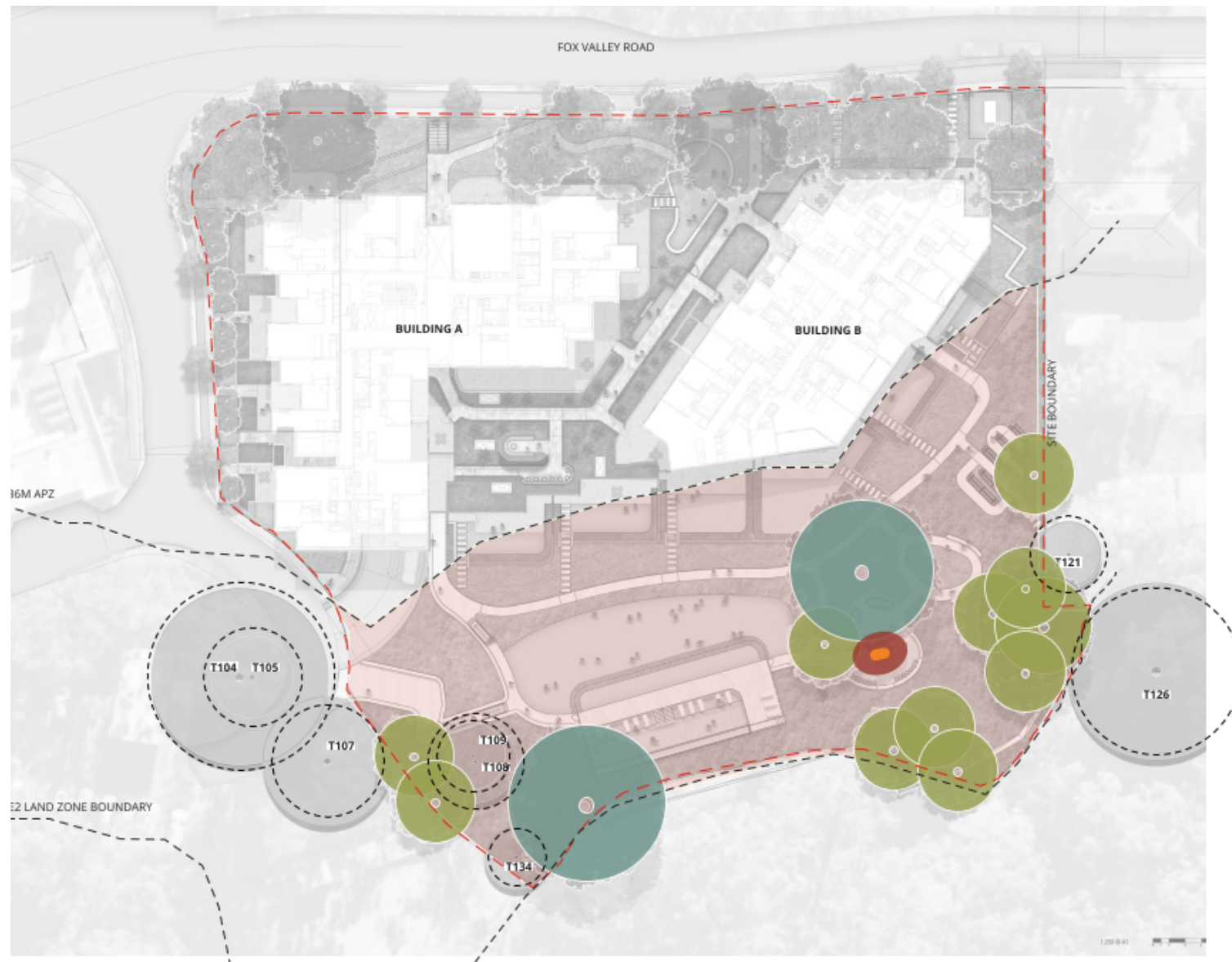


Figure 20 – Landscape Index Plan: Softworks

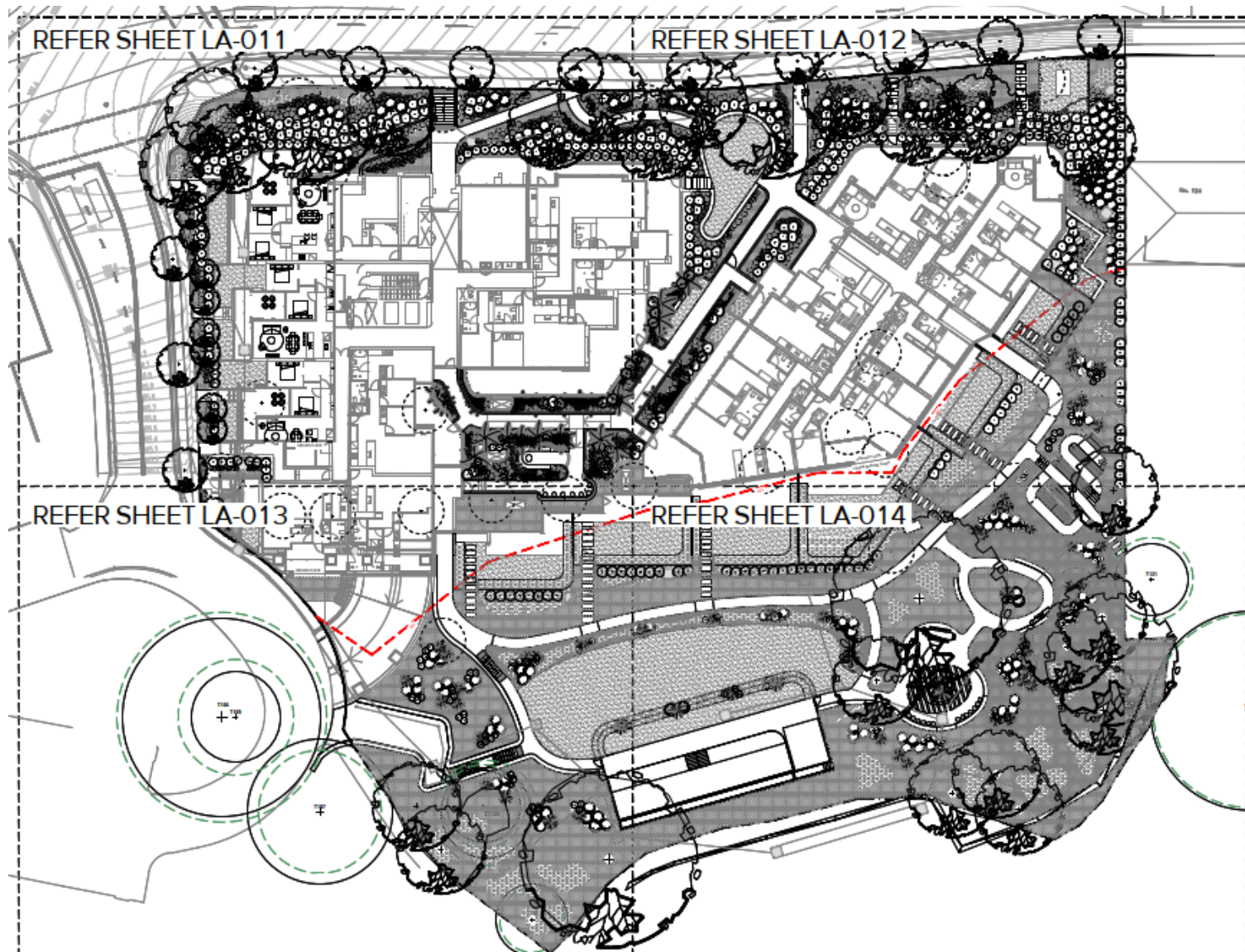


Figure 21 – Landscape Index Plan: Finishes and Grading

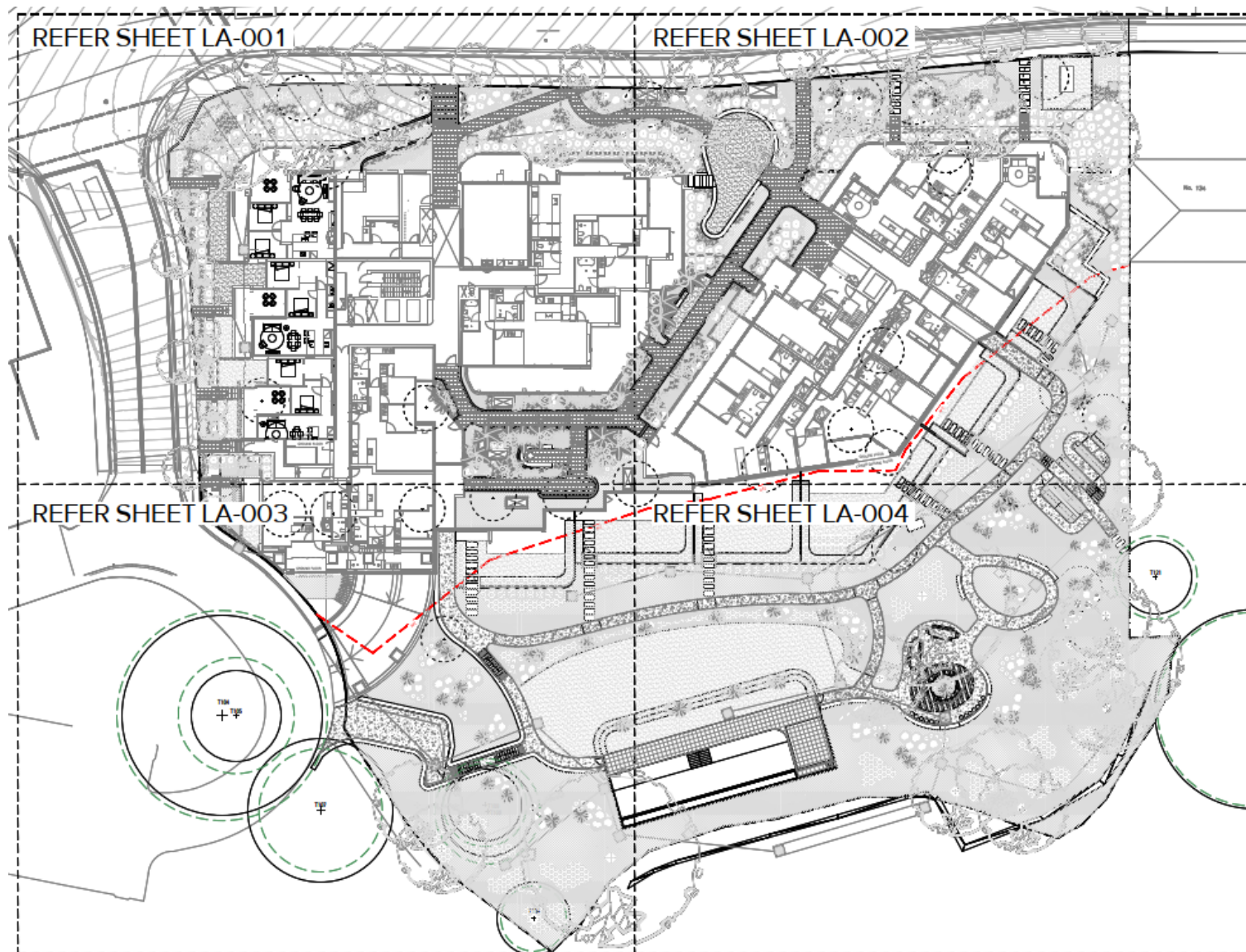


Table 1 summarises the extent to which the proposed development conforms to the deemed-to-satisfy specifications of *Planning for Bushfire Protection 2019*.

Table 1. Compliance with the deemed-to-satisfy provisions of *Planning for Bushfire Protection 2019*.

Bushfire Protection Measure	Compliance with deemed-to-satisfy provisions of <i>Planning for Bushfire Protection 2019</i>.
Asset Protection Zone setback	YES – Location of the proposed residential buildings provides a minimum Asset Protection Zone width of 36m to bushfire prone vegetation, therefore complies with Table A.1.12.5 of <i>Planning for Bushfire Protection 2019</i> .
The siting and adequacy of water supplies for fire fighting	YES – Bushfire and separate structural fire-fighting Hydrant supply to be installed in accordance with AS 2419.1 – 2021.
Design of Public Roads	YES – Proposed internal access road complies with the specifications of Appendix 3 of <i>Planning for Bushfire Protection 2019</i> and provides satisfactory emergency access for fire-fighting appliances.
Design of Fire Trail network	No Fire network required.
Adequacy of emergency response access and egress	YES – Existing public and proposed road network provides safe, two-way access/egress for emergency service vehicles.
Adequacy of bushfire maintenance plans and fire emergency procedures	A Fire Management Plan and bushfire emergency procedures are not required for the development due to the low/moderate level of bushfire risk and the location of the Asset Protection Zones contained wholly within the site.
Building construction standards	BAL 29 Bushfire construction standards recommended to the buildings.
Adequacy of sprinkler systems and other fire protection measures to be incorporated into the development	Bushfire Sprinkler Systems not applicable. BCA fire protection measures to be implemented including internal/external hydrant supplies and hydrant booster system for building and bushfire emergencies.
Emergency Management	Evacuation Plan to be prepared incorporating protocols for defined emergencies, including bushfire occurrences where a 'stay in place' protocol shall be adopted.

I confirm that the proposed development complies with the deemed-to-satisfy provisions of *Planning for Bushfire Protection 2019*.



Graham Swain
Managing Director,
Australian Bushfire Protection Planners Pty Limited.

REFERENCES:

- N.S.W Rural Fire Service – *Planning for Bushfire Protection 2019*;
- N.S.W Rural Fire Service – Threatened Species Hazard Reduction List for the Bushfire Environmental Code (2021);
- *Environmental Planning & Assessment Act – 2017*;
- *Rural Fires Act – 1997*;
- *Rural Fires Regulation 2022*;
- NSW Rural Fire Service – *Guideline for Bushfire Prone Land Mapping 2015*;
- *Bushfire Environmental Assessment Code 2021*;
- Building Code of Australia;
- Australian Standard A.S. 3959-2018 “*Construction of Buildings in Bushfire Prone Areas*”;
- *Ku-ring-gai Bushfire Prone Land Map*.