

Bush Fire Assessment Report

Currawong State Park, Currawong Beach, Pittwater NSW

Project Ref: 20191936



Prepared for:

Northern Beaches Council
Currawong State Park, Currawong Beach, Pittwater NSW

Bush Fire Assessment Report

Currawong State Park, Currawong Beach, Pittwater NSW

Kleinfelder Job No. 20191936

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Please note:

This report is prepared in accordance with current accepted practice as described in the NSW Rural Fire Service Guide Planning for Bushfire Protection, 2006 – a Guide for Councils, Planners, Fire Authorities, Developers and Home Owners, AS 3959–2009 Construction of buildings in bushfire-prone areas, and the National Construction Code (NCC).

This report is not an insurance policy. Owing to the unpredictable nature of bushfires and of weather conditions at the time of a bushfire, this report cannot be taken as a warranty that the recommended bushfire mitigation measures will protect the property from damage in every possible bushfire event. Ultimately, the onus is on the land owner to accept the risks associated with development on the site in light of the identified bushfire threat.

Document Control:

Version	Date	Author	Technical Review	Peer Review
NCA18R85040	3 October 2018	Brad Deane	Dan Pedersen  BPAD Bushfire Planning & Design Accredited Practitioner Level 3	Dan Pedersen  BPAD Bushfire Planning & Design Accredited Practitioner Level 3

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EXECUTIVE SUMMARY

Report Type	Bush Fire Assessment Report
Applicant's Name	Northern Beaches Council
Applicant Contact Details	PO Box 82 Manly, NSW 1655
Site Address	Currawong State Park, Currawong Beach, Pittwater NSW
Lot No.	10
Deposited Plan No.	1092275
Local Government Area	Northern Beaches Council
Zoning	SP1 Ecotourist Facility, Camping Ground and Function Facility
Fire Danger Index Area Name	Greater Sydney
Fire Danger Index No.	100
Bushfire Prone Land	Yes
Source methodology/s	<p>NSW Rural Fire Service (2006). <i>Planning for Bushfire Protection guidelines</i>.</p> <p>Australian Standard 3959–2009: <i>Construction of Buildings in Bushfire-Prone Areas</i>.</p> <p>NSW RFS Ecotourism Community Resilience Factsheet 1/14</p>
Site visit date	28 September 2018
Document date	3 October 2018
Job number	20191936
Site plan/s attached	Yes
Conclusion	<p><i>This Bush Fire Assessment Report provides the proponent with information regarding the BAL ratings to the 6 proposed cabin upgrades, assessed as alterations and additions. Alterations and additions to the pre-existing structures will be assessed under the NSW RFS fast fact for ecotourism, and therefore a refuge building is required.</i></p> <p><i>Construction standards for buildings are proposed to be BAL29, with the approved refuge building to be built to BAL 12.5, with less than 10 kW/m² radiant heat exposure.</i></p>

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1. SCOPE OF ASSESSMENT

Under the *Environmental Planning and Assessment Act 1979* (EP&A Act) local councils are required to ensure that all developments in bushfire prone lands conform to documented bushfire protection specifications.

This report assesses the performance of the proposed development at Currawong State Park, Currawong Beach, Pittwater NSW, against the criteria as detailed in the NSW Rural Fire Service (RFS) *Planning for Bushfire Protection 2006* (PBP) guidelines and recommends mitigation measures to meet compliance criteria, and protect human life and property assets.

The subject site encompasses 4 lots: Lot 10 DP1092275 Lot 1 DP166328 Lot 1 DP337208 and Lot 4 DP978424. The proposed development is located on Lot 10 DP1092275. The location is shown in **Figure 1**.

1.1 PROJECT DESCRIPTION

1.1.1 Background

Northern Beaches Council (the proponent) have previously engaged Kleinfelder Australia Pty Ltd (Kleinfelder) to conduct a Bushfire Threat Assessment (BTA) pursuant to section 100B of the *Rural Fires Act 1997* (RF Act) in support of a Development Application (N0281/17) for the for alterations and additions to the following structures at the Currawong Cottages tourist accommodation:

- Cottage 1 'Kookaburra'.
- Cottage 2 'Goanna'.
- Cottage 8 'Blue Tongue'.
- Refuge Building (Games room).

A bush fire safety authority (BFSA) was issued by the NSW RFS (see **Appendix 2**), with conditions listed in **Table 1** applying to the consent. Development Consent for N0281/17 was endorsed on 6 February 2018.

Table 1: BFSA conditions for Development Consent of N0281/17

Parameter	Requirement
Asset Protection Zones	
General	<ul style="list-style-type: none"> All APZ's to be installed and maintained in accordance with Section 4.1.3 and Appendix 5 of <i>Planning for Bush Fire Protection 2006</i> and <i>Standards for Asset Protection Zones</i> (NSW RFS, n.d.).
Primary Refuge (games room) and Overflow Refuge (caretakers dwelling)	<ul style="list-style-type: none"> 60 m Inner Protection Area (IPA) to the north, east and south. 55 m IPA to the west.
Accommodation Cabins	<ul style="list-style-type: none"> 25 m Inner Protection Area (IPA) to the north, east and south. 17 m IPA to the west.
Water and Utilities	
Utility installation and / or replacement	<ul style="list-style-type: none"> Changes to electricity or gas services shall comply with Section 4.2.7 of <i>Bush Fire Protection 2006</i>.
Evacuation and Emergency Management	
Emergency Management and Evacuation Plan	<ul style="list-style-type: none"> A Bush Fire Emergency Management and Evacuation Plan shall be prepared consistent with <i>Development Planning – A Guide to Developing a Bush Fire Emergency Management and Evacuation Plan December 2014</i>. This shall provide for the closure of the facility on days of extreme or catastrophic fire danger rating or where directed by the NSW RFS District Office.
Design and Construction	
Primary Refuge (games room)	<ul style="list-style-type: none"> Construction shall comply with Sections 3 and 5 (BAL12.5) Australian Standard AS3959-2009 <i>Construction of buildings in bush fire-prone areas</i> or NASH Standard (1.7.14 updated) <i>National Standard Steel Framed Construction in Bushfire Areas – 2014</i> as appropriate and section A3.7 Addendum Appendix 3 of <i>Planning for Bush Fire Protection 2006</i>.
Overflow Refuge (caretakers dwelling)	<ul style="list-style-type: none"> The caretakers dwelling shall be upgraded to improve ember protection. This is to be achieved by: <ul style="list-style-type: none"> enclosing all openings (excluding roof tile spaces) or covering openings with a non-corrosive metal screen mesh with a maximum aperture of 2mm. Where applicable, this includes any sub floor areas, openable windows, vents, weepholes and eaves. External doors are to be fitted with draft excluders
Accommodation Cabins	<ul style="list-style-type: none"> New construction to cabins shall comply with section 3 and section 7 (BAL 29) Australian Standard AS3959-2009 <i>Construction of buildings in bush fire-prone areas</i> or NASH Standard (1.7.14 updated) <i>National Standard Steel Framed Construction in Bushfire Areas – 2014</i> as appropriate and section A3.7 Addendum Appendix 3 of <i>Planning for Bush Fire Protection 2006</i>.

1.1.2 Current Proposal

Following approval of N0281/17, the proponent has engaged Kleinfelder to conduct a BTA for the proposed alterations and additions to six (6) further accommodation cabins. These include the following:

- Cottage 3 'Platypus'.
- Cottage 4 'Magpie'.
- Cottage 5 'Lorikeet'.
- Cottage 6 'Wallaby'.
- Cottage 7 'Possum'.
- Cottage 9 'Echidna'.

These buildings are constructed from fibro (asbestos) sheets buildings with no current bushfire construction standards or specified APZ.

See **Figure 2** for an illustration of the proposed development.

1.1.3 N0281/17 – Effect on Current Proposal

Following the provisions of the approved development, N0281/17, bushfire protection measures (BPM) are to be installed Currawong Cottages Tourist Accommodation in accordance with **Table 1**.

It is considered appropriate, therefore, for all BPM addressed under the consent conditions for N0281/17 will be applied for the proposed development. These management measures will be provided in addition to BPM developed as part of this assessment.

One notable condition involves the retrofitting / construction of the site Primary Refuge (games room) and Overflow Refuge (caretakers dwelling), including the establishment of an APZ. Completion of this consent condition will provide a refuge(s) built to BAL 12.5 construction standards with a sufficient APZ to not experience a radiant heat level greater than 10kW/m² in the event of a bushfire, meeting requirements for an ecotourism under the NSW RFS *Ecotourism Community Resilience Factsheet 1/14*.

This report will detail bushfire constraints and compliance requirements as outlined under PBP 2006 and NSW RFS *Ecotourism Community Resilience Factsheet 1/14*.

1.2 THE FACILITY

1.2.1 Existing Tourism Facility

The Currawong Cottages tourist accommodation is located at Currawong State Park, Currawong Beach, Pittwater NSW. The facility has nine (9) existing ecotourism style cottages, administration and associated work sheds, games room and leisure facilities, a large conference centre, Midholme and the caretaker's residence. The facility has capacity to provide recreational accommodation for up to 70 people. Due to the location and isolation of the facility, and the accessibility standards of the facility, the evacuation planning assumes that all persons at the site are mobile and able bodied.

The proponent is planning alterations and additions (upgrades) to six (6) existing cottages (Cottage 3 'Platypus', Cottage 4 'Magpie', Cottage 5 'Lorikeet', Cottage 6 'Wallaby', and Cottage 7 'Possum') (**Figure 2**).

The existing eco-tourism cottages are classified as a Class 1b building under the *National Construction Code 2016* (NCC), and have been built into the remote, relatively undisturbed bushland environment. This environmental feature will be maintained throughout the existing building upgrades and associated bushfire mitigation actions (APZ management).

1.2.2 Refuge Building

The games room building is positioned well to be the preferred refuge building for an emergency situation. This building can accommodate all occupants of the facility (70), if required, during a bushfire emergency situation, and can provide suitable walkway access to the Currawong Beach Wharf for the purpose of evacuation.

1.3 ACCESS

Access is a significant element to consider for this location, as it is landlocked, accessible only by boat, ferry or water-taxi to the terminal on the site. This poses an issue for attending

firefighting services, and places greater emphasis on increased building resilience against bushfire attack.

The site has a central vehicle access track (ATV vehicle) linking all cottages to the open grassland fields on the Currawong Beach basin.

1.4 EMERGENCY MANAGEMENT AND EVACUATION

The location is likely to attract a number of visitors for various tourism and leisure purposes. The major issue in this situation is determining whether staff and temporary occupants have the capacity for firefighting response and/or whether adequate emergency and evacuation planning is in place.

Due to the environmental constraints inherent in ecotourism developments, special emphasis needs to be given to emergency planning and management, and the provision of onsite sheltering as a last resort.

Emergency management plans addressing evacuation planning and closure during extreme and catastrophic fire danger rating days need to be provided.

Refuge buildings must be provided for occupants of the eco-tourist facility during a bush fire event and must be able to cater for all potential persons on the site. Adherence to the consent conditions of N0281/17 will satisfy this require in accordance with the NSW RFS *Ecotourism Community Resilience Factsheet 1/14*.

1.5 SITE ASSESSMENT METHODOLOGY

The NSW RFS considers an eco-tourist facility to be Tourist Accommodation (classified as a Special Fire Protection Purpose - hotel, motel or other tourist accommodation), and is therefore required to obtain a BFSa from the NSW RFS under Section 100B of the RF Act.

The site assessment methodology used to determine the level of bushfire attack for this development has been sourced from guidelines stipulated under Appendix 2 of PBP 2006.

The bushfire modelling assessment procedure used to determine the category of bushfire attack is in accordance with Method 2 of AS3959-2009.

1.5.1 Integrated Development

This assessment follows the prescribed methodology and assessment principles published by the PBP 2006, for determining the bushfire protection and construction requirements for building in bush fire prone areas.

This development is an integrated development pursuant to Section 4.46 of the EP&A Act. Integrated and Special Fire Protection Purpose (SFPP) developments require a formal approval from the NSW Rural Fire Service under Section 100B of the RF Act. Section 100B of the RF Act states that the NSW RFS can issue an approval (BFSA) provided the development meets certain standards.

A BFSA authorises development to the extent that it complies with standards regarding setbacks, provision of water supply and other matters considered by the Commissioner to be necessary to protect persons, property or the environment from danger that may arise from a bushfire. A BFSA would require a bushfire assessment to be prepared in accordance with Clause 44 (1) of the *Rural Fires Regulation 2013* (RF Regulations). Clause 44 (1) specifies the information requirements for consideration of a BFSA under Section 100B of the RF Act.

1.5.2 SFPP Objectives

The specific objectives for SFPP developments are to:

- Provide for special characteristics and needs of occupants (assumes that SFPP occupants may not be able to assist in property protection and are more likely to be affected by smoke or heat in the event of evacuation); and
- Provide for safe emergency evacuation procedures. SFPP developments are highly dependent on suitable emergency evacuation arrangements, and consequently require greater separation from bushfire threats.

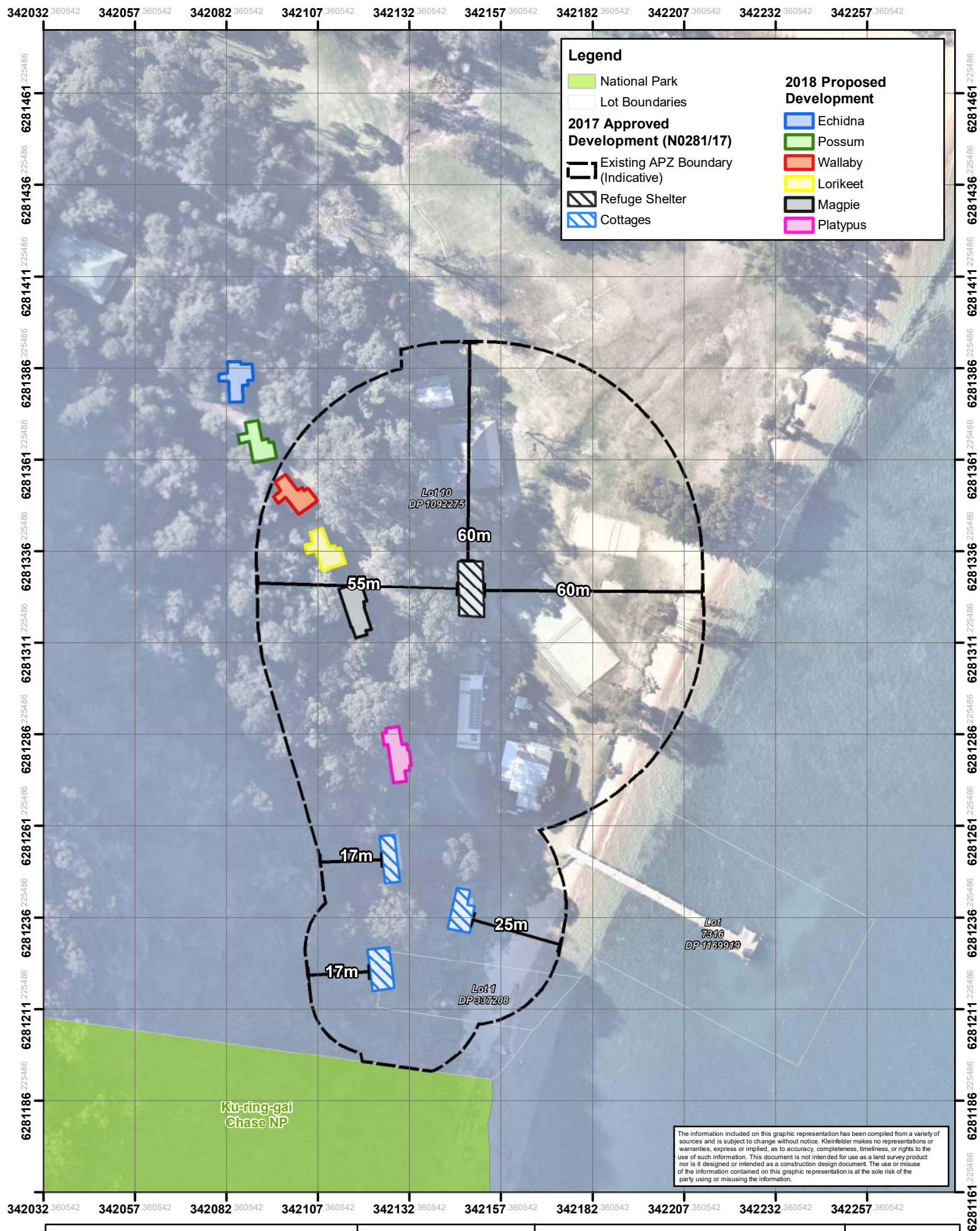
1.5.3 NSW RFS Ecotourism Community Resilience Factsheet 1/14

A development that adequately addresses the following parameters can be considered to meet the performance criteria for ecotourism development in PBP 2006 (*NSW RFS Ecotourism Community Resilience Factsheet 1/14*):

- Emergency management planning shall be provided which complies with Section 4.2.7 of PBP 2006 and shall address the use/closure of the facility on extreme and catastrophic fire rating days;
- The identified refuge building/s are designed to accommodate all occupants of the facility;
- Any refuge building must comply with the occupancy levels permissible for that structure under the BCA (NCC);
- To ensure radiant heat levels of greater than 10 kw/m² are not experienced at any external point of the building, refuge buildings are provided with APZs in accordance with Table A2.6 of PBP 2006;
- The refuge building(s) are designed and sited in accordance with the principles listed in PBP 2006 and constructed to a minimum BAL 12.5 of AS3959-2009;
- Vehicular access (internal access) is to be provided from a public road to the nominated refuge building and comply with the requirements of Section 4.2.7 of PBP 2006;
- Pedestrian paths from cabins to the refuge building/s are to be provided and clearly signposted;
- APZs are provided wholly within the boundaries of the proposed development site (exceptional circumstances for the provision of APZ on adjoining land may apply as per Section 3.3b of PBP 2206).
- For proposals in isolated or remote areas which involve large travel distances through bush fire vegetation, the following matters should be addressed:
 - The travel level likely to be generated during an emergency evacuation;
 - The capacity of the broader road network to facilitate safe emergency evacuation;
 - Limitations / constraints inherent in the road system.

- Management of potential traffic conflicts (i.e. emergency vehicles vs evacuating members of the public).
- Water, electricity and gas supply to the nominated refuge building/s is to comply with the requirements of Section 4.2.7 of PBP 2006.
- A bush fire report of how the proposed development addresses the performance criteria outlined in section 4.2.7 of PBP 2006 must be provided. This is to include documentation that the bush fire engineering brief process was undertaken.





<p>0 5 10 20 30 40 50 Metres</p> <p>KLEINFELDER Bright People. Right Solutions. www.kleinfelder.com</p>	<p>PROJECT REFERENCE: 20191936</p> <p>DATE DRAWN: 3/10/2018 10:06 Version 1</p> <p>DRAWN BY: BDeane</p> <p>DATA SOURCE: Nearmap - 2018 Northern Beaches Council - 2018</p>	<p>Proposed Development</p> <p>Northern Beaches Council Bush Fire Assessment Report Pittwater State Park, Currawong NSW</p>	<p>FIGURE:</p> <p>2</p>
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2. BUSHFIRE THREAT ASSESSMENT

2.1 LOCATION AND SURROUNDING LAND USE

The subject site is located at Currawong Beach in the Pittwater State Park, NSW. The property is surrounded by vegetated cliffs on Sydney Sandstone landscape (Ku-ring-gai Chase National Park), and utilises a flat drainage basin for the eco-tourism facility's development area.

In 2018, a prescribed burn was conducted by the NSW RFS in the vegetation to the west of the ecotourism facility. This involved significant preparation including lantana and weed control, skirting trees of vines. The burn has removed a majority of the fine fuels, and the preparation works extent is visible from the cottages. These works have extended further than the required 17m APZ, and should be managed in perpetuity if possible.

2.2 FIRE WEATHER

The Pittwater local government area (LGA) is within the Greater Sydney fire region and has an (Forest) Fire Danger Index (FDI) value of 100 (Table 2.1, AS3959-2009).

2.3 BUSHFIRE HAZARD (VEGETATION CLASSIFICATION)

The mapped vegetation surrounding the site (north, west and south) is Category 1 bushfire prone vegetation.

The vegetation is mapped as Wet Sclerophyll Forests (shrubby). During the site inspection on 28 September 2018 the principle bushfire hazard observed for the proposed development is the forested vegetation on steep slopes (**Figure 2**) on Hawkesbury sandstone (there were large rocky outcrops, restricting fire run and fuel loads), and dominated by *Angophora costata* (Sydney Apple), *Allocasuarina torulosa* (Forest Oak), *Corymbia gummifera* (Bloodwood), some Cabbage Palm (*Livistona australis*) and *Glochidion ferdinandi* (Cheese Tree) in the mid stratum, and over a ground cover dominated by Grass Tree (*Xanthorrhoea*), *Lomandra* (*Lomandra longifolia*), Bracken Fern (*Pteridium esculentum*) and Bladey Grass (*Imperata cylindrica*).

The presence of semi-mesic species indicates a transition toward the rainforest dominated vegetation, as the open forest graded into a rainforest structure at the foot of the steep slope. The rainforest vegetation was predominantly managed in this area.

Table 2 details the vegetation classification in each direction.

2.4 EFFECTIVE SLOPE ASSESSMENT

Vegetation was rising steeply upward west and southwest of the proposed cottage upgrades. A contour assessment indicates a 75 m rise over a 100 m length, which equates to 35° upslope. The effective slope under the classified vegetation (forest) to the southwest was confirmed on site as >35° upslope, with some exposed sandstone benching. The fire behaviour at this location will either have fire pushing up the slope in a westerly direction away from the site, or fire slowly moving/creeping down the slope toward the site.

The cross slope to the south is considered to have an insignificant effect on fire behaviour due to reduced fire run length and the topography of the foot slope (requiring fire to ‘round the bend’). Slopes from the south are assumed to direct a westerly (upslope) fire passage, and subsequent flanking fire impact to Kookaburra Cottage.

Cross slopes to the north have managed areas for existing Cottages and the conference centre. Previous burn has removed fine fuels surrounding the cabins (west and north).

2.1 ENVIRONMENTAL FEATURES

The subject site is situated within a SP1 Ecotourist Facility, Camping Ground and Function Facility land use zone under the *Pittwater Local Environmental Plan 2014* (Pittwater LEP).

The property has extensive native vegetation, and the Ku-ring-gai Chase National Park located at close vicinity to the south (**Figure 2**).

The location considers *State Environmental Planning Policy (Coastal Management) 2018*.

Of significance was the vegetation on steep slopes, effectively controlling land slip and erosion. Any proposed land management for APZ and bushfire mitigation works will need to retain the vegetation in such a way that it continues to hold the soils in place on the steep slopes.

2.2 THREATENED SPECIES

There were no known threatened species that would be significantly impacted due to the development proposal, within the proposed APZ (Kleinfelder Flora and Fauna Report 2018).

2.3 CULTURAL HERITAGE

The Currawong tourism facility and some trees within the facility are listed as of NSW Heritage value.

A basic search of the NSW Office of Environment and Heritage (OEH) *Aboriginal Heritage Information System* on 21 September 2018 found eight (8) Aboriginal sites recorded in or near the subject site. The subject site is further located within a sensitive landscape as defined under the *Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales*, indicating high potential for Aboriginal items or places in the locality (OEH, 2010).

Two recorded 'rock engravings' are noted to occur within the subject site, as stated under the Conditions of Consent for N0281/17. The exact location of these engravings are unknown.

The proposed APZ will avoid ground disturbance, and manage fuels in a sensitive manner that retains ground structure.

2.4 BUSHFIRE MODELLING

2.4.1 Distance to Classified Vegetation (Asset Protection Zones)

The vegetation classification is identified in all directions from the development out to a distance of 140 m (**Section 2.3**), and slopes out to 100 m (**Section 2.4**).

2.4.1.1 Proposed Cottage Upgrades

Using the approved setbacks attained in the Stage 1 approvals, the setbacks from vegetation to the cottages have demonstrated that a 17 m APZ to the west from classified vegetation (**Section 1.1.2**) would achieve BAL 29.

It is recommended that the facility manage the APZ in accordance with the NSW RFS *Standards for Asset Protection Zones*:

- APZ should retain all trees (mature trees greater than 100mm diameter at breast height), but provide management to separate canopy connections and lift canopy to greater than 4m from ground layer (pruning)
- APZ can retain up to 10% shrub cover in isolated parcels, ensure no link between unmanaged bushland and building (i.e. retain some Cabbage Palms and Chees Trees, but maintain fuels by cleaning away fronds and pruning lower limbs to >4m)
- APZ can retain up to 10% shrub cover in isolated parcels, ensure no link between unmanaged bushland and building (i.e. strategically retain shrub parcels in highest risk erosion areas, retain the native grasses (Bladey Grass, Kangaroo Grass) and sedges (such as Lomandra and Gahnia) to avoid erosion and surface land slips.
- Manage the remaining ground stratum to 100 mm height on an as-needs basis and remove excess leaf litter and fine fuels. The steep site requires the managed ground cover to be kept live and healthy, to avoid erosion and surface land slips.

The distance between the proposed development and the hazards is provided through proposed setbacks as shown in **Figure 3**.

Table 1 details the distance between the site and the classified vegetation.

Table 2: Vegetation classification and BAL rating from proposed development.

Aspect	Vegetation Classification	Slope	Minimum Required Distance (APZ)	BAL
North	Forest	Across slope/flat -	25 m	BAL 29
East	Managed land		-	-
South	Forest	Across slope/flat	25 m	BAL 29
West	Forest	>10 degrees upslope	17 m	BAL 29

2.4.2 Water Supply

The site is not connected to the town reticulated water supply. Where reticulated water supply is not available, a 10,000 L water supply reserve dedicated to firefighting purposes shall be

installed and maintained. Additionally, all above-ground, exposed water pipes are required to be metal as stated in Section 5.8 of AS3959-2009.

The facility has ample water exceeding the minimum requirement, and hose reels are located throughout the facility. No additional water supplies are required; however, above ground water piping and fittings for the new proposed building alterations and additions will be metal.

2.4.3 Access and Egress

There is no vehicular access to or on the property. The only access to consider is the waterway access provisions, and these have been detailed in the site emergency evacuation plan.

2.4.3.1 Public Road

Not applicable.

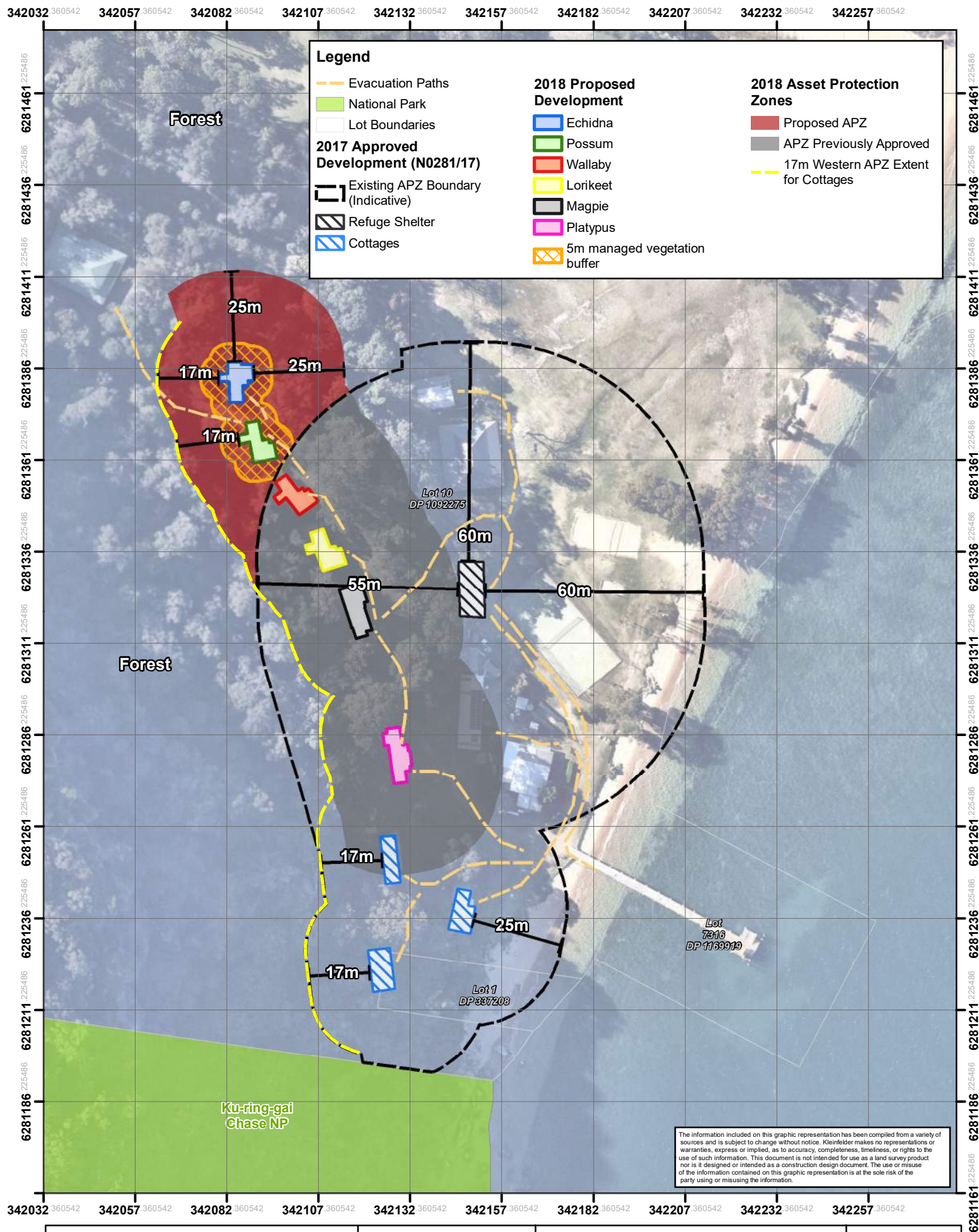
2.4.3.2 Property Access

No property access for vehicles is provided. Egress will be on foot and via the Currawong Beach Wharf.

2.4.4 Adequacy of Bushfire Maintenance Plan and Fire Emergency Procedures

This assessment is supported by a bushfire maintenance plan and fire emergency procedure.

Provision of a Primary Refuge (games room) and Overflow Refuge (caretakers dwelling), built or retrofitted to BAL 12.5 construction standards will provide a safe haven to guests at the facility during an emergency. None of the cottages to be upgraded as part of this proposal are located more than 100 m from a refuge site, a requirement for ecotourism developments under the *Planning for Bush Fire Protection 2018* (Pre-release) (NSW RFS).



3. COMPLIANCE SUMMARY

3.1 APZ	
Intent:	Complies with PBP (2006): YES
This section is to provide for sufficient space for firefighting and other emergency services personnel, ensuring radiant heat levels permit operations under critical conditions of radiant heat, smoke and embers, while supporting or evacuating occupants.	The subject site has potential to provide adequate setbacks from the nearest classified bushfire prone vegetation (17 m) to achieve the desirable BAL rating (BAL 29).
3.2 Access	
Intent	Complies with PBP (2006): YES – N/A
This section is to provide for safe operational access for emergency services personnel in suppressing a bush fire, while residents are accessing or egressing an area.	Access is unique, via water ways, and there is no vehicular access direct to the site. Property access meets the minimum performance requirements of PBP 2006 (Chapter 4.1.3(2) Property Access).
3.3 Services	
Intent	Complies with PBP (2006): YES
This section is to provide adequate water services for the protection of buildings during and after the passage of a bushfire, and to locate gas and electricity so as not to contribute to the risk of fire to buildings.	Water supplies comply with Chapter 4 of PBP 2006. Gas and electricity services to be installed will comply with Section 4.2.7 of PBP 2006.
3.3 Emergency Management	
Intent	Complies with PBP (2006): YES
The intent of emergency and evacuation planning should provide suitable arrangements for occupants of SFPP or similar developments.	This assessment is supported by a bushfire emergency and evacuation plan.

3.1 CONSIDERATION OF SFPP OBJECTIVES

Provide for special characteristics and needs of occupants (assumes that occupants may not be able to assist in property protection and are more likely to be affected by smoke or heat in the event of evacuation).

- The proposed development will provide emergency management planning through preparation and implementation of a Bushfire Emergency and Evacuation Plan (**Section 4.6**). Further, the site location and layout would allow for safe evacuation of occupants with special needs.

Provide for safe emergency evacuation procedures. SFPP developments are highly dependent on suitable emergency evacuation arrangements, and consequently require greater separation from bushfire threats.

- The proposed development location and layout will ensure adequate separation of the proposed buildings from the surrounding bushfire prone vegetation (i.e. existing and sufficient separation/APZ for the proposed developments).
- In lieu of fast egress from the site during an emergency, the provision of a Primary Refuge (games room) and Overflow Refuge (caretakers dwelling), built to BAL 12.5 construction standards will provide a safe haven to guests at the facility during an emergency. None of the cottages to be upgraded as part of this proposal are located more than 100 m from a refuge site, a requirement for ecotourism developments under *Planning for Bush Fire Protection 2018* (Pre-release) (NSW RFS).

3.2 COMPLIANCE WITH ECOTOURISM FAST FACT 1/14

The following section provides evidence to ensure the development proposal adequately addresses the parameters to meet the performance criteria for ecotourism development.

Performance Criteria	Compliance
Emergency management planning shall be provided which complies with Section 4.2.7 of PBP and shall address the use/closure of the facility on extreme and catastrophic fire rating days.	Complies: YES A bushfire emergency and evacuation plan has been drafted for the Currawong Cottages and tourist facility
The identified refuge building/s are designed to accommodate all occupants of the facility.	Complies: YES The games room building can accommodate all occupants (<70 people).
Any refuge building must comply with the occupancy levels permissible for that structure under the BCA.	Complies: YES Refuge buildings built to BAL 12.5 standards
To ensure radiant heat levels of greater than 10kw/m ² are not experienced at any external point of the building, refuge buildings are provided with APZs in accordance with Table A2.6 of PBP.	Complies: YES The refuge buildings apply an APZ of 55 -60 m radiant heat levels of greater than 10 kw/m ² are not experienced at any external point of the refuge building (deviates from Table A2.6 of PBP).
The refuge building/s are designed and sited in accordance with the principles listed in PBP and constructed to a minimum BAL 12.5 of AS 3959.	Complies: YES Refuge buildings apply suitable APZ and building exits are located away from hazard side of the building.
Vehicular access (internal access) is to be provided from a public road to the nominated refuge building and comply with the requirements of Section 4.2.7 of PBP.	Complies: N/A There is no vehicular access at this site.

Performance Criteria	Compliance
Pedestrian paths from cabins to the refuge building/s are to be provided and clearly signposted.	Complies: YES This will be actioned.
APZs are provided wholly within the boundaries of the proposed development site (exceptional circumstances for the provision of APZs on adjoining land may apply as per Section 3.3b PBP).	Complies: YES APZ are wholly within the boundaries of the proposed development site.
For proposals in isolated or remote areas which involve large travel distances through bush fire prone vegetation, the following matters should be addressed: <ul style="list-style-type: none"> ○ The travel level likely to be generated during an emergency evacuation ○ The capacity of the broader road network to facilitate safe emergency evacuation 	Complies: N/A The site is remote but does not involve travel through bushfire prone areas.
Limitations/constraints inherent in the road system	Complies: N/A There is no road access at this site.
Management of potential traffic conflicts (i.e. emergency vehicles vs evacuating members of the public).	Complies: N/A There is no vehicular access at this site.
Water, electricity and gas supply to the nominated refuge building/s is to comply with the requirements of Section 4.2.7 of PBP.	Complies: YES These will comply with the requirements of Section 4.2.7 of PBP.
A bush fire report of how the proposed development addresses the performance criteria outlined in section 4.2.7 of <i>Planning for Bush Fire Protection</i> must be provided. This is to include documentation that the bush fire engineering brief process was undertaken.	Complies: YES This report and assessment provides detail of how the proposed development addresses the performance criteria. The document follows a bushfire engineering process.

4. RECOMMENDATIONS AND CONCLUSIONS

The following measures are recommended to mitigate the risk of bushfire for the proposed development. Provided the following recommendations are implemented in full, it is our opinion that the proposed development complies with the requirements of the PBP 2006.

4.1 APZ SETBACKS

Development of the proposed cottages must provide for a minimum 17 m APZ to the west and 25 m APZ to the north, east and south.

The APZ required for the 'Platypus', 'Magpie' cottages, along with portions of the APZ for the 'Lorikeet' and 'Wallaby' cottages are situated within the approved Refuge Building APZ boundary approved under N0281/17 (see **Figure 3**).

All APZ onsite are to be maintained in perpetuity.

4.2 APZ MANAGEMENT

The APZ management considers the steep slopes and potential for erosion and land slip. The following recommendations have been made to ensure APZ meet the performance criteria set out in the PBP 2006, and the NSW RFS *Standards for Asset Protection Zones*:

- APZ should retain all trees (mature trees greater than 100mm diameter at breast height), but provide management to separate canopy connections and lift canopy to greater than 4m from ground layer (pruning).
- APZ can retain up to 10% shrub cover in isolated parcels, ensure no link between unmanaged bushland and building (i.e. retain some Cabbage Palms and Chees Trees, but maintain fuels by cleaning away fronds and pruning lower limbs to >4m).
- APZ can retain up to 10% shrub cover in isolated parcels, ensure no link between unmanaged bushland and building (i.e. strategically retain shrub parcels in highest risk erosion areas, retain the native grasses (Bladey Grass, Kangaroo Grass) and sedges (such as Lomandra and Gahnia) to avoid erosion and surface land slips).

- Manage the remaining ground stratum to 100 mm height on an as-needs basis. The steep site requires the managed ground cover to be kept live and healthy, to avoid erosion and surface land slips.

4.3 BUILDING AND CONSTRUCTION STANDARDS

Minimum BAL 29 construction standards as per AS 3959-2009 will apply to 6 cottages.

4.4 ACCESS

The site will continue to have no vehicular access. The access via water ways will be maintained as the only access for emergency services, and egress for evacuation purposes.

Access will be directed away from the bushfire hazard, and clearly detailed on the emergency planning maps.

4.5 SERVICES

All services will meet the performance requirements of PBP 2006 (Chapter 4.2.7):

- The site has a dedicated reticulated water supply.
- Hydrant/hose reel spacing and pressures will need to comply with AS2419.1-2005.
- It is recommended that a fire hose reel be located between 'Echidna' and 'Possum' Cottages, capable of reaching the most external perimeter of each building.
- All above ground services will be metal, or alternatively buried.

4.6 EMERGENCY AND EVACUATION PLANNING

An emergency and evacuation plan has been prepared for the proposed development in accordance with the *RFS Guidelines for the Preparation of Emergency/Evacuation Plan*. This plan includes procedures specifically relating to bushfire emergencies, including the provision of detailed plans showing emergency assembly areas as per Section 4.2.7 of PBP (2006).

5. SITE PHOTOGRAPHS



Plate 1: NSW RFS resource kit located at front office.



Plate 2: Managed area where proposed APZ will be implemented – managed through recent bush regeneration and prescribed burn (looking west toward the conference centre)



Plate 3: Example of APZ management on steep terrain adjacent to cottages.



Plate 4: Example of existing APZ management.

6. REFERENCES

Environmental Planning and Assessment Act 1979 (NSW).

Northern Beaches Council 2018. *Consent No: N0281/17, Environmental Planning and Assessment Act 1979 (As Amended) – Notice to Applicant of Determination of a Development Application*, Northern Beaches Council, Mona Vale NSW

Northern Beaches Council 2018. *Pittwater State Park, Currawong Beach, Pittwater NSW, Refurbishment of Platypus, Magpie, Lorikeet, Wallaby, Possum and Echidna Cabins* (Draft for Information), Northern Beaches Council, Mona Vale NSW

NSW Rural Fire Service 2006, *Planning for bush fire protection*. NSW Rural Fire Service, Lidcombe NSW 2141, ISBN 0 9751033 2 6.

NSW Rural Fire Service 2017. *Integrated Development for 1a Currawong Beach NSW 2108*, letter from NSW RFS to Pittwater Council, dated 8 November 2017

NSW Rural Fire Service 2018, *Planning for bush fire protection (pre-release August 2018)*. State of NSW through the Rural Fire Service, Granville NSW 2142

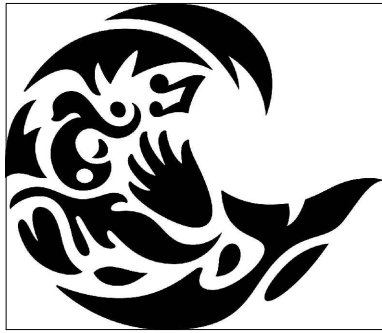
Pittwater Local Environmental Plan 2014 (NSW)

Rural Fires Act 1997 (NSW)

Standards Australia 2009, *Construction of buildings in bushfire-prone areas (AS3959 – 2009)*, Committee FP-020, ISBN 0 7337 9051 8

APPENDIX 1: SITE PLAN – DRAFT FOR INFORMATION (NORTHERN BEACHES COUNCIL, 2018)

key		
the Cabins		
1.	Kookaburra	
2.	Goanna	
3.	Platypus	
4.	Magpie	
5.	Lorikeet	
6.	Wallaby	
7.	Possum	
8.	Blue Tongue	
9.	Echidna	
Other buildings		
A.	manager's office	
B.	maintenance work shed	
C.	maintenance work shed	
D.	Games room	
E.	Midholme	
F.	Caretaker's residence	
G.	Conference Centre	
Rev	Description	Date
A	to landscpae architect for information	Sept'18

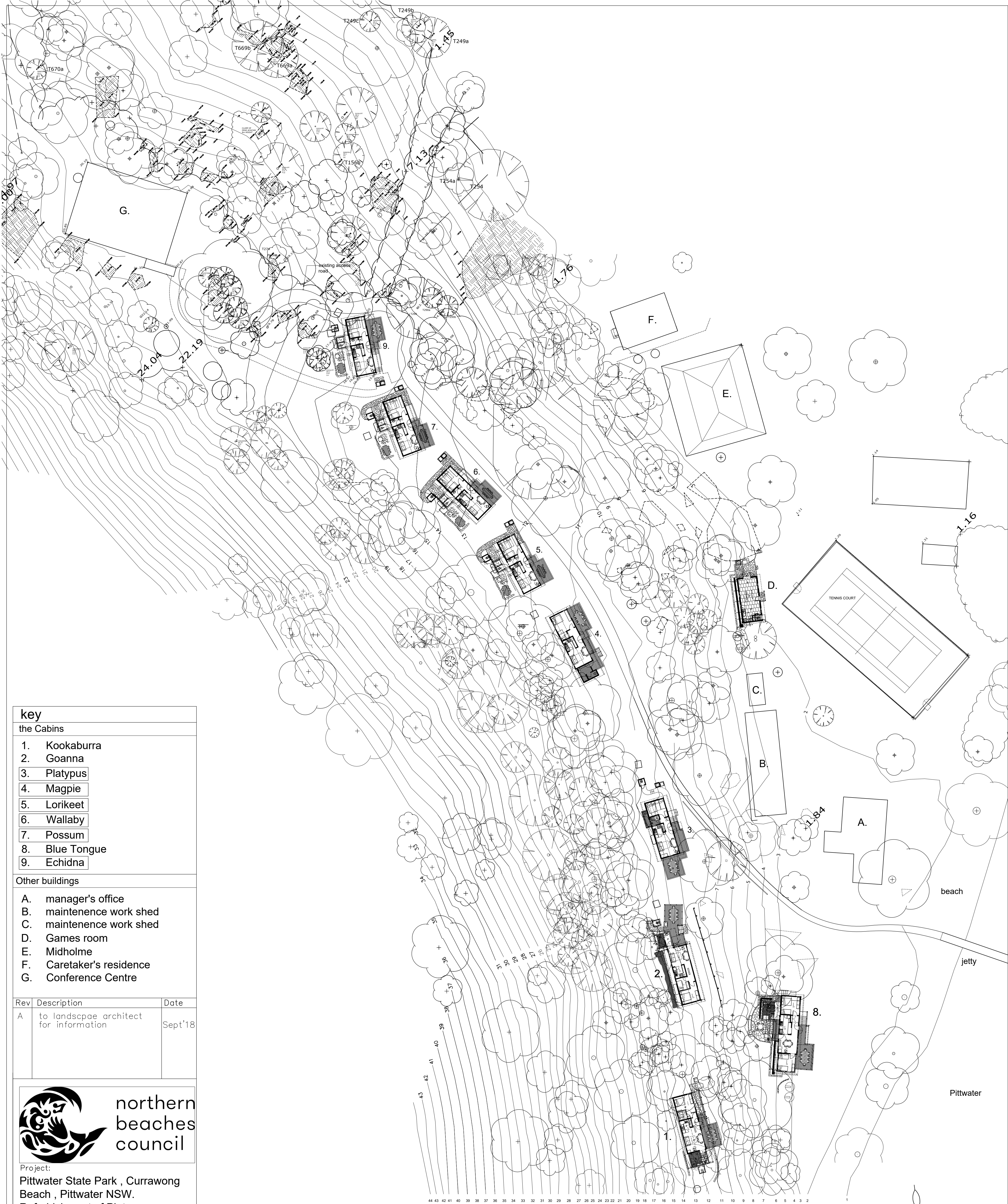


northern
beaches
council

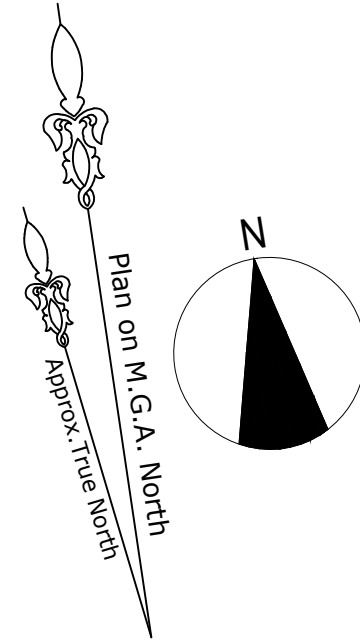
Project:
Pittwater State Park , Currawong
Beach , Pittwater NSW.
Refurbishment of Platypus,
Magpie,Lorikeet,Wallaby,Possum
and Echidna cabins

Prepared by:
Building Assets - Planning,
Design and Delivery
Drawing title:
Site plan

Scale: AS
Date: Aug 2018
Drawn by: MB
Drawing no: Issue no:
DA02 A

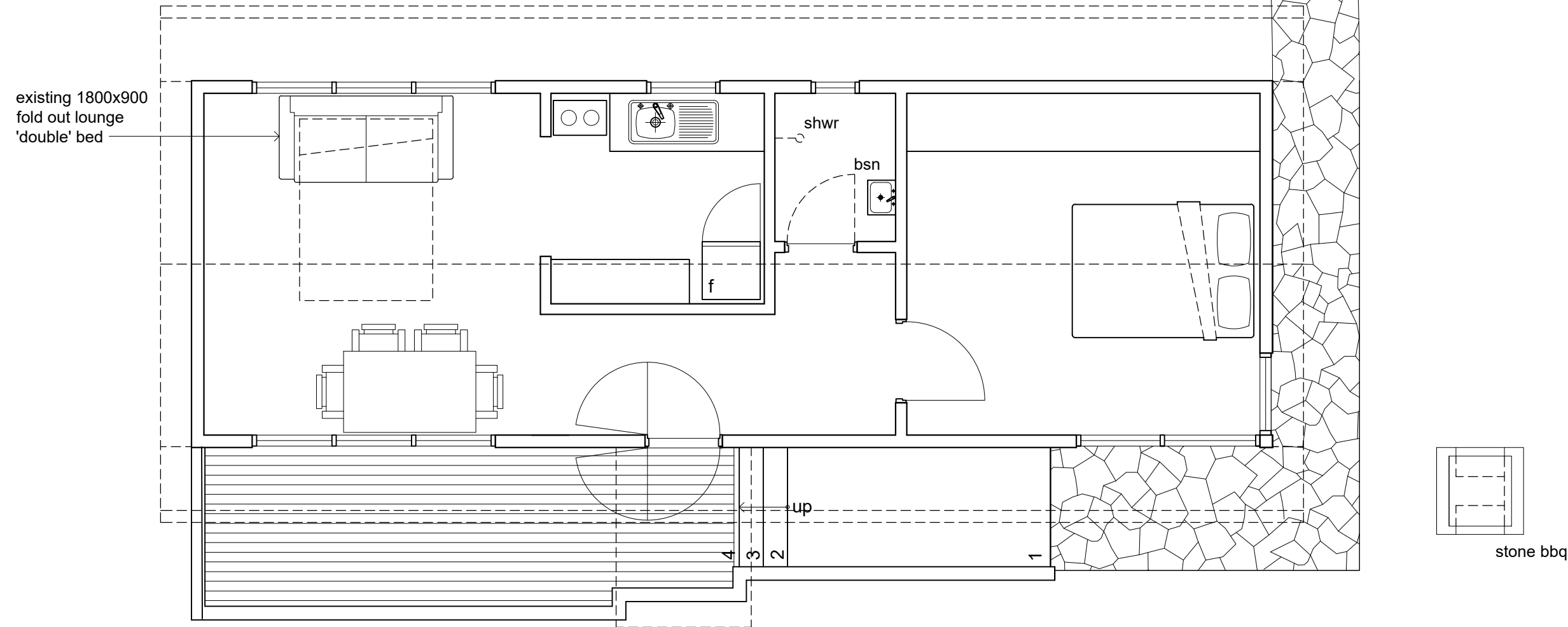


1 FLOOR PLANS ON SITE PLAN
NTS



draft

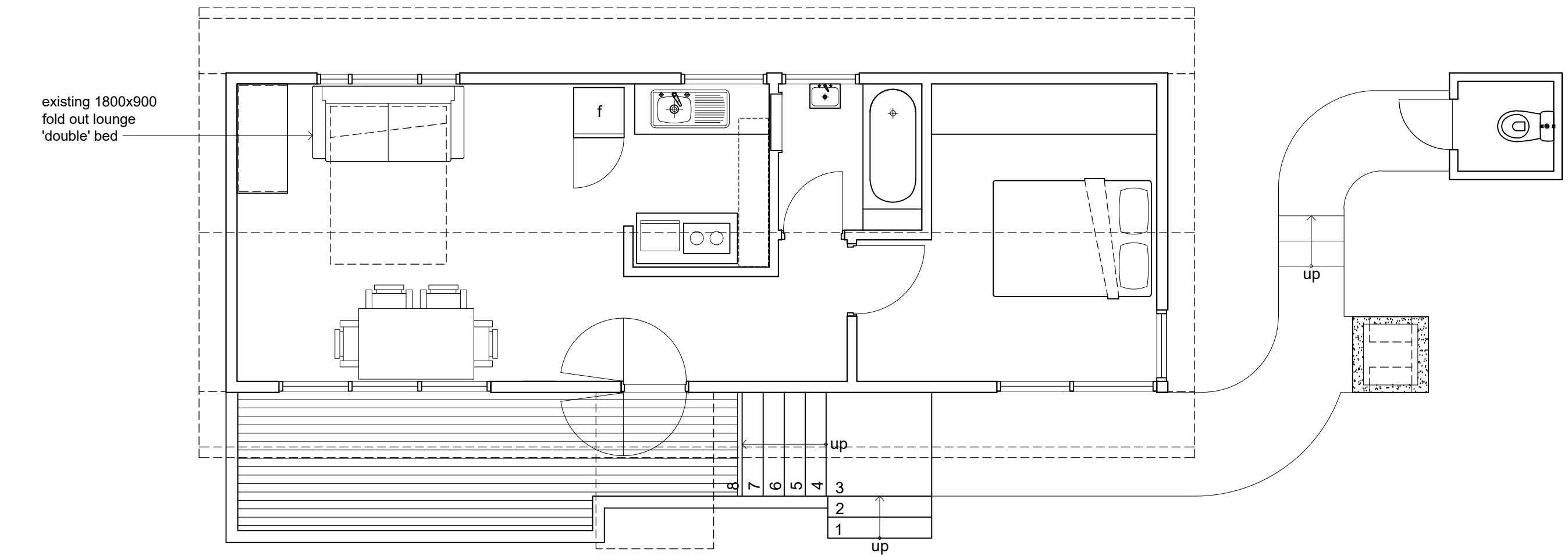
existing floor plan



NOTE:
same layout for cabins:-
Cabin 5. LORIKEET (this dwg)
Cabin 9. ECHIDNA
Cabin 7. POSSUM
Cabin 6. WALLABY
Cabin 4. MAGPIE

Rev	Description	Date	Project:	Prepared by:	Scale:	Dwg No:
A	PRESENTED FOR ENDORSEMENT FOR DA PREPARATION	Feb'18	Pittwater State Park Currawong, Pittwater, NSW cabins refurbishment project	NORTHERN BEACHES COUNCIL	AS	EX01
B	PRESENTED FOR ENDORSEMENT FOR DA PREPARATION	May'18			Date: Jan 2018 Drawn: MB	
				Drawing Title: existing floor plan		Issue No: B

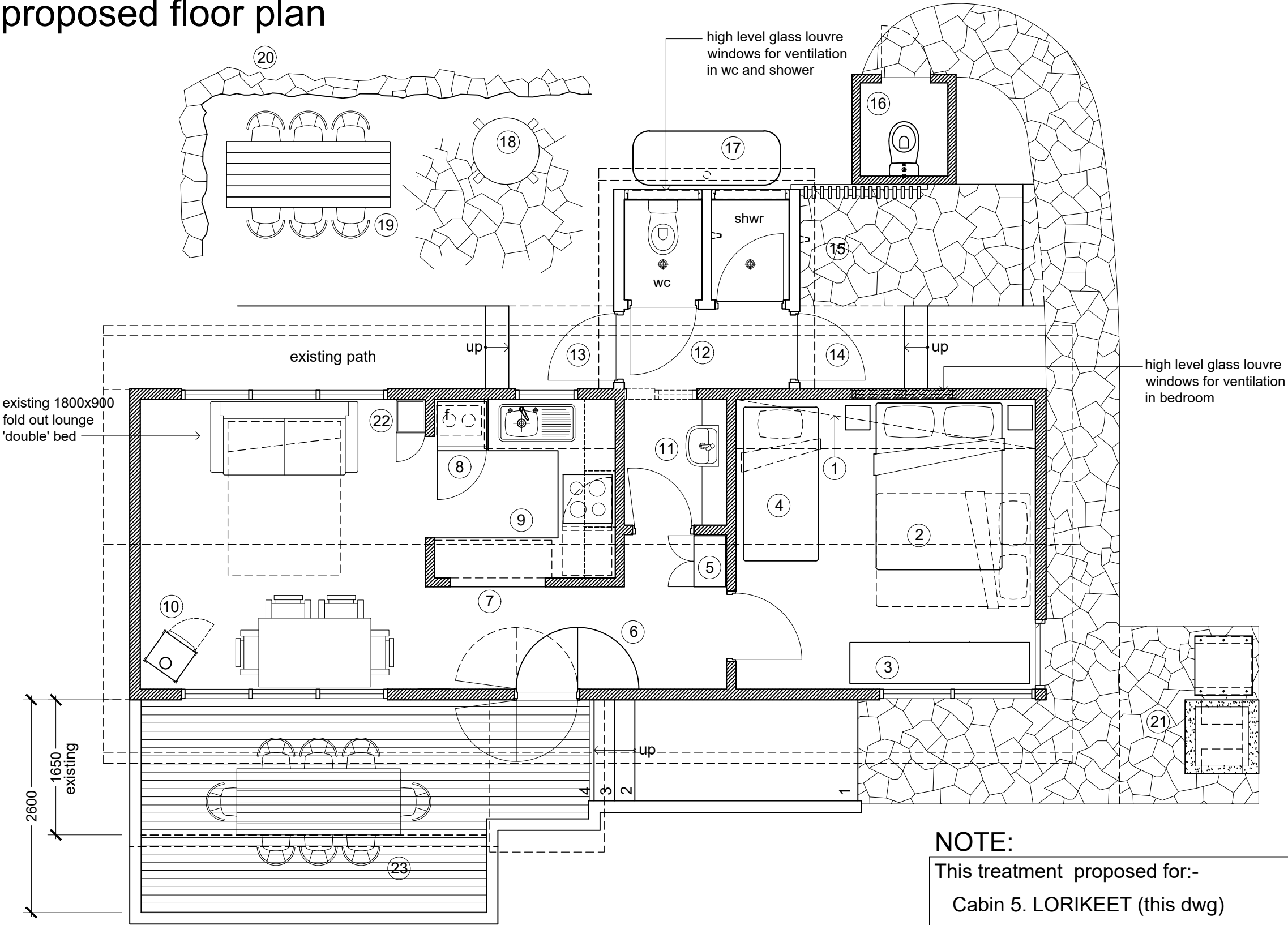
existing floor plan



1 FLOOR PLAN 1:50 @ A3

Rev	Description	Date	Project:	Prepared by:	Scale:	Dwg No:
A	PRESENTED FOR ENDORSEMENT FOR DA PREPARATION	Feb'18	Pittwater State Park Currawong, Pittwater, NSW cabins refurbishment project	NORTHERN BEACHES COUNCIL	AS	EX02
B	PRESENTED FOR ENDORSEMENT FOR DA PREPARATION	Aug'18			Drawing Title: existing floor plan Cabin 3 'Platypus'	

proposed floor plan



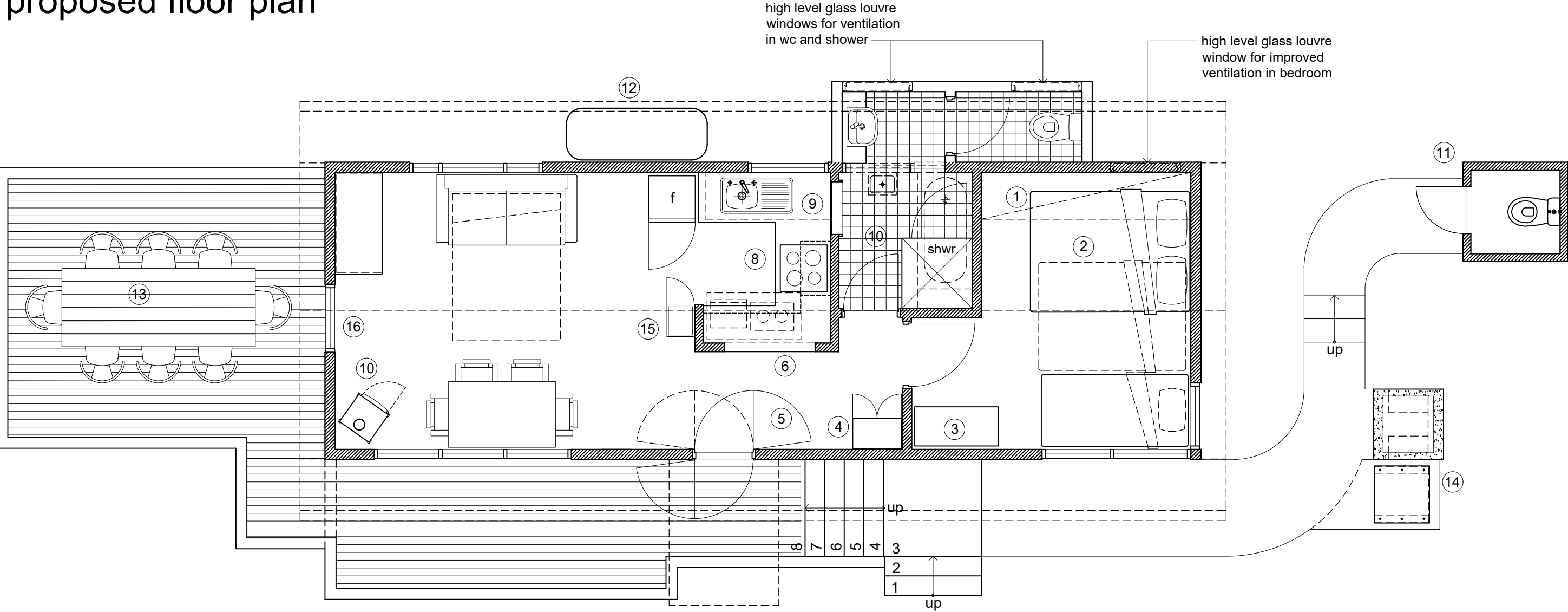
1 FLOOR PLAN 1:50 @ A3

NOTE:
This treatment proposed for:-
Cabin 5. LORIKEET (this dwg)
Cabin 9. ECHIDNA
Cabin 7. POSSUM
Cabin 6. WALLABY
Cabin 4. MAGPIE

- initiatives**
- 1 remove built-in cupboards at back of room ..frees up wall to make high level window (improve nat ventilation)
 - 2 swap double bed to queen sized bed and rotate to locate where shown
 - 3 provide a 700mm high bench with open shelf under (travel bags can be put on here..blankets doonas on shelf under)
 - 4 provide a single bed that could be made to look like a 'day bed' and increases sleeping numbers
 - 5 freestanding linen cupboard
 - 6 change door swing to open toward living area and kitchen
 - 7 cut opening in existing wall to create view through to kitchen ..and access to bench at entry
 - 8 remove outmoded cooktop grill (and relocate fridge here) and relocate cooktop/grill in upgraded version to location shown
 - 9 install new laminex bench top to three sides in kitchen (shelves under to detail)
 - 10 install new slow combustion freestanding small pot belly type fire for winter heating
 - 11 gut existing shower room and rebuild with sink new wall floor and ceiling lining
 - 12 build and enclosed link between existing cabin and new toilet/shower wing
 - 13 door here allows access from rear of cabin to outdoor area
 - 14 door here allows access from rear of cabin outdoor shower (use back from beach prior to enter cabin at rear)
 - 15 new outdoor shower area
 - 16 retain and rejuvenate existing outdoor toilet
 - 17 new rainwater tank
 - 18 outdoor fire box (outdoor warmth in winter)
 - 19 create flat paved area for outdoor eating (easy access to cabin via new back door)
 - 20 create cut (or fill) sandstone retaining wall (depending on lay of land at particular cabin) to create a flat outdoor area
 - 21 repoint and repair existing stone bbq and bring flagstone paving up around it from adjacent path.Provide a folded plate thick plate stainless steel wood store chamber beside fire place
 - 22 provide new 2m high pantry cupboard
 - 23 deepen deck to accommodate table with 8 seats as shown
 - 24 retain existing outdoor toilet

Rev	Description	Date	Project:	Prepared by:	Scale:	Dwg No:
A	PRESENTED FOR ENDORSEMENT FOR DA PREPARATION	Feb'18	Pittwater State Park Currawong,Pittwater,NSW cabins refurbishment project	NORTHERN BEACHES COUNCIL Drawing Title: proposed works	AS Date: Jan 2018 Drawn: MB	SK01 Issue No: B
B	PRESENTED FOR ENDORSEMENT FOR DA PREPARATION	May'18				

proposed floor plan



1 FLOOR PLAN 1:50 @ A3

initiatives

- 1 remove built-in cupboards at back of room ..frees up wall to make high level window (improve natural ventilation) and allows space for low boy and single bed / day bed
- 2 swap double bed to queen sized bed and rotate to locate where shown
- 3 provide a 700mm high bench with open shelf under (travel bags can be put on here..blankets doonas on shelf under)
- 4 provide freestanding linen cupboard
- 5 change door swing to open toward living area and kitchen
- 6 cut opening in existing wall to create view through to kitchen ..and access to bench at entry
- 7 remove outmoded cooktop grill upgrade fridge and relocate cooktop/grill in upgraded version to location shown
- 8 install new laminex bench top to three sides in kitchen (shelves under to detail)
- 9 install new slow combustion freestanding small pot belly type fire for winter heating
- 10 gut existing bathroom and rebuild with shower and connected toilet/basin and new wall floor and ceiling lining
- 11 retain and rejuvenate existing outdoor toilet
- 12 provide new rainwater tank
- 13 provide new deck able to accommodate 8 seat table
- 14 repoint and repair existing stone bbq and bring flagstone paving up around it from adjacent path.Provide a folded plate thick plate stainless steel wood store chamber beside fire place
- 15 provide new 2m high pantry cupboard
- 16 new window to provide visual connectivity between living room and deck

Rev	Description	Date	Project:	Prepared by:	Scale:	Dwg No:
A	PRESENTED FOR ENDORSEMENT FOR DA PREPARATION	Feb'18	Pittwater State Park Currawong,Pittwater,NSW cabins refurbishment project	NORTHERN BEACHES COUNCIL	AS	SK02
B	PRESENTED FOR ENDORSEMENT FOR DA PREPARATION	Aug'18			Drawing Title: proposed works Cabin 3. 'Platypus'	
					Drawn: MB	

APPENDIX 2: BFSA N0281/17 CONDITIONS (NSW RFS, 2017)

All communications to be addressed to:

Headquarters
15 Carter Street
Lidcombe NSW 2141

Telephone: 1300 NSW RFS
e-mail: pes@rfs.nsw.gov.au

Headquarters
Locked Bag 17
Granville NSW 2142

Facsimile: 8741 5433



The General Manager
Pittwater Council
PO Box 882
MONA VALE NSW 1660

Your Ref: N0281/17
Our Ref: D17/2313
DA17071408268 JM

ATTENTION: Angela Manahan

8 November 2017

Dear Sir/Madam

Integrated Development for 1a Currawong Beach Currawong Beach NSW 2108

I refer to your letter dated 12 July 2017 seeking general terms of approval for the above Integrated Development in accordance with Section 91 of the 'Environmental Planning and Assessment Act 1979'.

This response is to be deemed a bush fire safety authority as required under section 100B of the 'Rural Fires Act 1997' and is issued subject to the following numbered conditions:

Asset Protection Zones

The intent of measures is to provide sufficient space and maintain reduced fuel loads so as to ensure radiant heat levels of buildings are below critical limits and to prevent direct flame contact with a building. To achieve this, the following conditions shall apply:

1. At the commencement of building works, and in perpetuity, the area around the primary refuge (games room) and caretakers dwelling (overflow refuge) shall be managed as outlined within section 4.1.3 and Appendix 5 of 'Planning for Bush Fire Protection 2006' and the NSW Rural Fire Service's document 'Standards for asset protection zones' as follows:
 - North, east and south: Inner Protection Area (IPA) for a distance of 60 metres; and,
 - West: IPA for a distance of 55 metres.

2. At the commencement of building works, and in perpetuity, the area around each accommodation cabin shall be managed as outlined within section 4.1.3 and Appendix 5 of 'Planning for Bush Fire Protection 2006' and the NSW Rural Fire Service's document 'Standards for asset protection zones' as follows:
 - North, east and south: Inner Protection Area (IPA) for a distance of 25 metres; and,
 - West: IPA for a distance of 17 metres.

Water and Utilities

The intent of measures is to provide adequate services of water for the protection of buildings during and after the passage of a bush fire, and to locate gas and electricity so as not to contribute to the risk of fire to a building. To achieve this, the following conditions shall apply:

3. Changes to electricity or gas services shall comply with Section 4.2.7 of 'Planning for Bush Fire Protection 2006'.

Evacuation and Emergency Management

The intent of measures is to provide suitable emergency and evacuation (and relocation) arrangements for occupants of special fire protection purpose developments. To achieve this, the following conditions shall apply:

4. A Bush Fire Emergency Management and Evacuation Plan shall be prepared consistent with 'Development Planning- A Guide to Developing a Bush Fire Emergency Management and Evacuation Plan December 2014'. This shall provide for the closure of the facility on days of extreme or catastrophic fire danger rating or where directed by the NSW RFS District Office.

Design and Construction

The intent of measures is that buildings are designed and constructed to withstand the potential impacts of bush fire attack. To achieve this, the following conditions shall apply:


5. The proposed refuge (games room) shall comply with Sections 3 and 5 (BAL 12.5) Australian Standard AS3959-2009 'Construction of buildings in bush fire-prone areas' or NASH Standard (1.7.14 updated) 'National Standard Steel Framed Construction in Bushfire Areas – 2014' as appropriate and section A3.7 Addendum Appendix 3 of 'Planning for Bush Fire Protection 2006'.
6. New construction to cabins shall comply with section 3 and section 7 (BAL 29) Australian Standard AS3959-2009 'Construction of buildings in bush fire-prone areas' or NASH Standard (1.7.14 updated) 'National Standard Steel Framed Construction in Bushfire Areas – 2014' as appropriate and section A3.7 Addendum Appendix 3 of 'Planning for Bush Fire Protection' 2006'.
7. The caretakers dwelling shall be upgraded to improve ember protection. This is to be achieved by enclosing all openings (excluding roof tile spaces) or covering openings with a non-corrosive metal screen mesh with a maximum aperture of 2mm. Where applicable, this includes any sub floor areas, openable windows, vents, weepholes and eaves. External doors are to be fitted with draft excluders.

General Advice – consent authority to note

- Larger Asset Protection Zones have been required than those set out in the submitted bush fire report as the findings of that report were not able to be verified by the NSW RFS. The NSW RFS has therefore undertaken an independent assessment to verify the overall outcome for the proposal.

For any queries regarding this correspondence please contact Jason Maslen on 1300 NSW RFS.

Yours sincerely



Nika Fomin

Manager, Planning and Environment Services (East)

The RFS has made getting information easier. For general information on 'Planning for Bush Fire Protection, 2006' , visit the RFS web page at www.rfs.nsw.gov.au and search under 'Planning for Bush Fire Protection, 2006'.