

8 April 2024

Our ref: 22SYD4126

Health Infrastructure
c/- TSA Management
Level 15, 207 Kent Street
Sydney NSW 2000

Attention: Marcus Haines

Dear Marcus,

Ryde Hospital Redevelopment – Bushfire Assessment of Temporary Structures

I am a co-author of the Eco Logical Australia (ELA) report *Bushfire Protection Assessment of Ryde Hospital Redevelopment (Stage 2)* version 2 dated 18 July 2023. I am a Bushfire Protection and Design (BPAD) Certified Practitioner, accredited by the Fire Protection Association Australia and recognised by the NSW Rural Fire Service as a suitably qualified bushfire consultant.

The bushfire report was lodged with the Development Application for Stage 2 after extensive consultation and negotiation with the NSW Rural Fire Service (RFS) concerning the development of a 'fit for purpose' bushfire protection approach for the development using a Performance Solution. The RFS reviewed the report and provided the following feedback in their response to the Department of Planning and Environment dated 19 December 2023 (Attachment 1).

"The assessment and recommendations of the Ryde Hospital Redevelopment (Stage 2) Bushfire Protection Assessment report v2 prepared by Eco Logical Australia dated 18 July 2023 are generally supported. The report has proposed performance solutions to achieve compliance based on the unique characteristics of the site."

The RFS also provided their recommended conditions for the development, which are based on the negotiations as well as the findings and recommendations of the ELA bushfire report.

The proposal for the construction of Temporary Structures at the site is to aid in the continuance of some services during the demolition of the old hospital and construction of the new hospital, as well as to provide ancillary facilities for the demolition and construction activities. The location and type of Temporary Structures is presented on the Site Plan (Figure 1, Attachment 2) and includes: TS-TB Offices; TS-TC ICU/CCU; TSTD Linkways/Ramp; TS-TF Food Services (Graythwaite Level 3) and Stores (Graythwaite Carpark).

The proposed construction of the Temporary Structures was not included in the previous negotiated outcomes with the RFS or assessed in the ELA bushfire report for the Stage 2 Development Application. It is understood that planning approval for the construction of the Temporary Structures is proposed to be via a Review of Environmental Factors (REF).

In order to inform the REF ELA has assessed the type of Temporary Structures proposed, the applicable bushfire assessment framework within the RFS guideline *Planning for Bushfire Protection* (PBP), the bushfire risk of the structures and their exposure, and the RFS agreed bushfire protection measures for the new hospital, which is a Special Fire Protection Purpose (SFPP) development type.

Given the history of negotiating the bushfire protection measures for the Stage 1 and 2 Development Applications and the Performance Solutions required to achieve fit-for-purpose outcomes and PBP compliance, an approach consistent with the previous Bushfire Protection Measures (BPM) agreed to by RFS is foundational to this assessment. The bushfire assessment is detailed for each Temporary Structure in Attachment 3.

The bushfire assessment concludes that subject to the recommendations made in Attachment 3, the proposed Temporary Structures can comply with PBP and are consistent with the bushfire protection approach supported by the RFS for the new Hospital development. One inconsistency was identified in current plans, that of the narrow site access road to the temporary ICU/CCU structure. It is recommended that this matter is resolved prior to approval as per Attachment 3. A number of other matters require further assessment by suitably a qualified person (e.g. water supply) or require actions to be undertaken post approval (e.g. development of a Bushfire Response Plan(s)) as detailed in Attachment 3.

Regards,



Nathan Kearnes
Principal Bushfire Consultant
FPAA BPAD Accredited Practitioner: BPAD23575-L3



Attachment 1: RFS Recommended Conditions for RHR Stage 2 SSDA

Provided on following pages.



NSW RURAL FIRE SERVICE

Department of Planning and Environment (Parramatta)
Locked Bag 5022,
PARRAMATTA NSW 2124
Australia

Your reference: SSD-58210458
Our reference: DA20230929004348-Original-1

ATTENTION: Megan Fu

Date: Tuesday 19 December 2023

Dear Sir/Madam,

Development Application

Other - Other Assessment - Hospital, medical centre and health research facilities
Pre-EIS Consultation - 1 Denistone Road Denistone NSW 2114, 11//DP1183279

I refer to your correspondence regarding the above proposal which was received by the NSW Rural Fire Service on 26/09/2023.

The assessment and recommendations of the *Ryde Hospital Redevelopment (Stage 2) Bushfire Protection Assessment report v2* prepared by Eco Logical Australia dated 18 July 2023 are generally supported. The report has proposed performance solutions to achieve compliance based on the unique characteristics of the site. Importantly, the following conditions based on the recommendations of the report will be required for the development to achieve compliance with *Planning for bushfire protection 2019*:

Asset Protection Zones

The intent of measure is to provide suitable building design, construction and sufficient space to ensure that radiant heat levels do not exceed critical limits for firefighters and other emergency services personnel undertaking operations, including supporting or evacuating occupants.

1. The outer protection area and inner protection area zones shown in Figure 4: Vegetation Management Zones of the *Ryde Hospital Vegetation Management Plan v6* prepared by Eco Logical Australia dated 5 September 2023 must be managed to meet the Alternate Solution proposed in Table 6 of the *Ryde Hospital Redevelopment (Stage 2) Bushfire Protection Assessment report v2* prepared by Eco Logical Australia dated 18 July 2023 in perpetuity. The management of these zones must be detailed in a vegetation management plan that must be updated every five years and certified by an accredited bushfire consultant.

2. A landscape plan must be developed and certified by an accredited bushfire consultant to ensure landscaping within the entire development must be designed and managed to minimise flame contact, radiant heat to buildings, and the potential for wind driven embers to cause ignitions.

1

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NSW Rural Fire Service
Locked Bag 17
GRANVILLE NSW 2142

Street address

NSW Rural Fire Service
4 Murray Rose Ave
SYDNEY OLYMPIC PARK NSW 2127

T (02) 8741 5555
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Construction

The intent of measure is to provide suitable building design, construction and sufficient space to ensure that radiant heat levels do not exceed critical limits for firefighters and other emergency services personnel undertaking operations, including supporting or evacuating occupants.

3. New construction must comply with section 3 and section 7 (BAL 29) Australian Standard AS3959-2018 *Construction of buildings in bushfire-prone areas* or the relevant requirements of the *NASH Standard - Steel Framed Construction in Bushfire Areas* (incorporating amendment A - 2015). New construction must also comply with the construction requirements in Section 7.5 of *'Planning for Bush Fire Protection 2019*.

Access

The intent of measure is to provide safe operational access for emergency services personnel in suppressing a bush fire while residents are accessing or egressing an area.

4. Access roads must comply with Table 8 of the *Ryde Hospital Redevelopment (Stage 2) Bushfire Protection Assessment report v2* prepared by Eco Logical Australia dated 18 July 2023.

Services

The intent of measure 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.

5. The provision of water, electricity and gas must comply with the following in accordance with Table 6.8c of *Planning for Bush Fire Protection 2019*:

- fire hydrant, spacing, design and sizing complies with the relevant clauses of Australian Standard AS 2419;
- hydrants are and not located within any road carriageway;
- reticulated water supply to urban subdivisions uses a ring main system for areas with perimeter roads;
- fire hydrant flows and pressures comply with the relevant clauses of AS 2419;
- all above-ground water service pipes are metal, including and up to any taps;
- where practicable, electrical transmission lines are underground;
- where overhead, electrical transmission lines are proposed as follows:
 - 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 *ISSC3 Guideline for Managing Vegetation Near Power Lines*.
- 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;
- reticulated or bottled gas is installed and maintained in accordance with AS/NZS 1596:2014 - *The storage and handling of LP Gas*, 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; polymer-sheathed flexible gas supply lines are not used; and
- above-ground gas service pipes are metal, including and up to any outlets.

Emergency Management

The intent of measure is to provide suitable emergency and evacuation arrangements for occupants of SFPP developments.

6. A Bush Fire Emergency Management and Evacuation Plan must be prepared in accordance with Table 6.8d of *Planning for Bush Fire Protection 2019* and be consistent with the NSW RFS document: *A Guide to Developing a Bush Fire Emergency Management and Evacuation Plan*. The plan must also include the following:

- procedures for security patrols around the perimeter of the remnant vegetation on total fire ban days.



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 the occupation of the development.

General Advice

The bushfire report states that the Specification 43 bushfire requirements of the *National Construction Code 2022* (NCC 2022) do not apply due to the invitation to tender for the Ryde Hospital redevelopment being issued to market prior to the adoption of NCC 2022 on 1 May 2023. Compliance with NCC 2022 will be at the discretion of the consent authority.

For any queries regarding this correspondence, please contact Alastair Patton on 1300 NSW RFS.

Yours sincerely,

Nika Fomin
Manager Planning & Environment Services
Built & Natural Environment



Attachment 2: Proposed Temporary Structures Site Layout



Figure 1: Temporary Structures - Proposed Site Plan

Attachment 3: Bushfire Protection Assessment

Each temporary structure has a different bushfire assessment requirement and are therefore discussed separately below. The assessment is reliant on:

- The ELA bushfire report for RHR Stage 2 SSDA (dated 18 July 2023);
- The RFS response and recommended conditions for the RHR Stage 2 SSDA (dated 19 December 2023 (Attachment 1));
- *Planning for Bushfire Protection* (PBP);
- Site Plan (dated 7 March 2024);
- Drawings (dated 16 February 2024);
- Information provided by TSA Management

TS-TB Offices

The proposed temporary office structure is assessed as follows and as detailed in Table 1.

- **Building classification:** Class 5
- **Bushfire assessment framework:** This building is classified as 'Other development' and assessed under Chapter 8 of PBP
- **Appropriate BPM¹:** In accordance with PBP, BPM are to be determined using merit-based assessment derived from the BPM for residential development. Also requires consideration of the risk analysis and BPM detailed in the RHR Bushfire report (ELA 2023) and RFS recommended conditions (Attachment 1).

Table 1: Bushfire Protection Assessment – TS-TB Offices

BPM	Requirements and Recommendations	Consistency Assessment*
Asset Protection Zones	Provision of an APZ in accordance with the Residential Infill requirements of PBP. APZ to be provided prior to construction and maintained for the life of the development.	<p>Yes</p> <p>The Temporary Structure is not closer to the hazard than the buildings proposed in the RHR Stage 2 SSDA and therefore utilises their compliant APZ.</p>
Landscaping	Landscaping (if any) is constructed and maintained for the duration of use of the Temporary Structure in accordance with the specifications detailed within the RHR Bushfire report (ELA 2023).	<p>Can be</p>
Construction standard	Construction and maintenance of the building in accordance with its Bushfire Attack Level (BAL) and the requirements of AS3959-2018 'Construction of Buildings in Bushfire Prone Areas' (or the NASH standard). Further, construction must also comply with the requirements in Section 7.5 of PBP. Construction standard to be maintained for the life of the development.	<p>Yes</p> <p>The building is located greater than 100 m from the closest bushfire hazard, within BAL-Low. No bushfire construction standards are formally applied to buildings in BAL-Low. However, to align to the RFS recommended conditions for the RHR and general bushfire risk</p>

¹ BPM = Bushfire Protection Measure

BPM	Requirements and Recommendations	Consistency Assessment*
		management recommendations of the RFS for the site generally, ember protection measures are recommended to be afforded to this building (i.e. vents, weepholes, screens, seals, weather strips, sarking etc.) in accordance with AS3959.
Access	Provision of access to the building in accordance with PBP non-perimeter road specifications (i.e. minimum 5.5m carriageway width kerb to kerb).	Yes The building is accessed by a 6m wide site access road.
Water supply	Construction and maintenance of fire fighting water supply in accordance with the specifications detailed within PBP and the RFS recommended conditions for RHR Stage 2 SSDA.	Can be It is assumed that a compliant reticulated water supply, including hydrants, will be provided. Water supply design to be assessed by a suitably qualified person.
Electricity services	Construction and maintenance of electricity services in accordance with the specifications detailed within PBP and the RFS recommended conditions for RHR Stage 2 SSDA.	Can be Subject to electricity services being underground or provided in accordance with the requirements of PBP.
Gas services	Construction and maintenance of gas services in accordance with the specifications detailed within PBP and the RFS recommended conditions for RHR Stage 2 SSDA.	Can be Subject to gas services being provided in accordance with the requirements of PBP.
Emergency management	Preparation of a Bushfire Emergency Management and Evacuation Plan in accordance with PBP requirements. Plan to be provided to Local Emergency Management Committee prior to occupation. Provision of security patrols around the perimeter of the bushland on total fire ban days.	Can be A compliant Bushfire Response Plan must be prepared and implemented prior to occupation and provided to LEMC.

*Assessment of consistency of Temporary Structure proposed development with RHR Stage 2 Bushfire Report (ELA 2023) and RFS recommended conditions for RHR Stage 2 SSDA.

TS-TC ICU/CCU

The proposed temporary ICU/CCU structure is assessed as follows and as detailed in Table 2.

- **Building classification:** Class 9a
- **Bushfire assessment framework:** This building is an SFPP development type, assessed under Chapter 6 of PBP
- **Appropriate BPM:** Consistent with those detailed in the RHR Bushfire report (ELA 2023) and RFS recommended conditions (Attachment 1).

Table 2: Bushfire Protection Assessment – TS-TC ICU/CCU

BPM	Requirements and Recommendations	Consistency Assessment*
Asset Protection Zones	Provision of a 10kW/m ² APZ in accordance with the extent and specifications detailed within the RHR Bushfire report (ELA 2023).	Yes The Temporary Structure is not closer to the hazard than the

BPM	Requirements and Recommendations	Consistency Assessment*
	APZ to be provided prior to construction commencement and maintained for the life of the development.	buildings proposed in the RHR Stage 2 SSDA and therefore utilises their compliant APZ.
Landscaping	Landscaping (if any) is constructed and maintained for the duration of use of the Temporary Structure in accordance with the specifications detailed within the RHR Bushfire report (ELA 2023).	Can be
Construction standard	Construction and maintenance of the building in accordance with the requirements of AS3959-2018 'Construction of Buildings in Bushfire Prone Areas' (or the NASH standard) and to a BAL-29 construction standard. Further, construction must also comply with the requirements in Section 7.5 of PBP. Construction standard to be maintained for the life of the development.	Yes A BAL-29 construction standard is required due to proximity to hazard and building type.
Access	Access in accordance with PBP non-perimeter road specifications (i.e. access roads have a minimum 5.5m carriageway width kerb to kerb and other requirements).	Inconsistent The building and bushfire hazard to the rear of the building is accessed off Denistone Road by a 4.5m site access road that also services the Ambulance Station and Childcare Centre. A site access road with a minimum 5.5m carriageway width kerb to kerb should be provided OR an alternative access/egress option compliant with PBP should be provided, prior to occupation.
Water supply	Construction and maintenance of fire fighting water supply in accordance with the specifications detailed within PBP and the RFS recommended conditions for RHR Stage 2 SSDA.	Can be It is assumed that a compliant reticulated water supply, including hydrants, will be provided. Water supply design to be assessed by a suitably qualified person.
Electricity services	Construction and maintenance of electricity services in accordance with the specifications detailed within PBP and the RFS recommended conditions for RHR Stage 2 SSDA.	Can be Subject to electricity services being underground or provided in accordance with the requirements of PBP.
Gas services	Construction and maintenance of gas services in accordance with the specifications detailed within PBP and the RFS recommended conditions for RHR Stage 2 SSDA.	Can be Subject to gas services being provided in accordance with the requirements of PBP.
Emergency management	Preparation of a Bushfire Emergency Management and Evacuation Plan in accordance with PBP requirements. Plan to be provided to Local Emergency Management Committee prior to occupation. Provision of security patrols around the perimeter of the bushland on total fire ban days.	Can be A compliant Bushfire Response Plan must be prepared and implemented prior to occupation and provided to LEMC.

*Assessment of consistency of Temporary Structure proposed development with RHR Stage 2 Bushfire Report (ELA 2023) and RFS recommended conditions for RHR Stage 2 SSDA.

TS-TD Linkways / Ramp

The temporary linkways / ramp structures are not habitable buildings, rather they are attachments to or structures within 6 m of existing buildings and therefore require an appropriate bushfire construction standard only, with no other BPM required. The structures are located greater than 100 m from the closest bushfire hazard, within BAL-Low. No bushfire construction standards are formally applied to structures in BAL-Low. However, to align to the general bushfire risk management recommendations of the RFS for the site generally and to mitigate the risk to existing buildings, it is recommended that non-combustible materials are used where possible.

TS-TF Food Services (Graythwaite Level 3)

The proposed temporary food services structure is assessed as follows and as detailed in Table 3.

- **Building classification:** Class 9a
- **Bushfire assessment framework:** This building is ancillary to SFPP development, as well as being located on the roof of another SFPP building. It is therefore assessed under Chapter 6 of PBP.
- **Appropriate BPM:** Consistent with those detailed in the RHR Bushfire report (ELA 2023) and RFS recommended conditions (Attachment 1), with the exception that BAL-12.5 construction is applied rather than BAL-29, due to the significantly greater distance from the hazard of this building compared to RHR.

Table 3: Bushfire Protection Assessment – TS-TF Food Services (Graythwaite Level 3)

BPM	Requirements and Recommendations	Consistency Assessment*
Asset Protection Zones	Provision of an APZ in accordance with the Residential Infill requirements of PBP. APZ to be provided prior to construction commencement and maintained for the life of the development.	<p>Yes</p> <p>The Temporary Structure is not closer to the hazard than the buildings proposed in the RHR Stage 2 SSDA and therefore utilises their compliant APZ.</p>
Landscaping	Landscaping (if any) is constructed and maintained for the duration of use of the Temporary Structure in accordance with the specifications detailed within the RHR Bushfire report (ELA 2023).	<p>Can be</p>
Construction standard	Construction and maintenance of the building in accordance with its BAL and the requirements of AS3959-2018 'Construction of Buildings in Bushfire Prone Areas' (or the NASH standard). Further, construction must also comply with the requirements in Section 7.5 of PBP. Construction standard to be maintained for the life of the development.	<p>Yes</p> <p>The building is located greater than 100 m from the closest bushfire hazard, within BAL-Low. No bushfire construction standards are formally applied to buildings in BAL-Low. However, to align to the RFS recommended conditions for the RHR and general bushfire risk management recommendations of the RFS for the site generally, ember protection measures are recommended to be afforded to this building (i.e. vents, weepholes, screens, seals, weather strips,</p>

BPM	Requirements and Recommendations	Consistency Assessment*
		sarking etc.) in accordance with AS3959.
Access	Provision of access to the building in accordance with PBP non-perimeter road specifications (i.e. minimum 5.5m carriageway width kerb to kerb).	Yes The building is accessed by a 6m site access road.
Water supply	Construction and maintenance of fire fighting water supply in accordance with the specifications detailed within PBP and the RFS recommended conditions for RHR Stage 2 SSDA.	Can be It is assumed that a compliant reticulated water supply, including hydrants, will be provided. Water supply design to be assessed by a suitably qualified person.
Electricity services	Construction and maintenance of electricity services in accordance with the specifications detailed within PBP and the RFS recommended conditions for RHR Stage 2 SSDA.	Can be Subject to electricity services being underground or provided in accordance with the requirements of PBP.
Gas services	Construction and maintenance of gas services in accordance with the specifications detailed within PBP and the RFS recommended conditions for RHR Stage 2 SSDA.	Can be Subject to gas services being provided in accordance with the requirements of PBP.
Emergency management	Preparation of a Bushfire Emergency Management and Evacuation Plan in accordance with PBP requirements. Plan to be provided to Local Emergency Management Committee prior to occupation. Provision of security patrols around the perimeter of the bushland on total fire ban days.	Can be A compliant Bushfire Response Plan must be prepared and implemented prior to occupation and provided to LEMC.

*Assessment of consistency of Temporary Structure proposed development with RHR Stage 2 Bushfire Report (ELA 2023) and RFS recommended conditions for RHR Stage 2 SSDA.

TS-TF Stores (Graythwaite Carpark)

The temporary structures involve a carpark and storage within the basement of the existing Graythwaite building. As they are underground, no bushfire requirements apply. Standard fire safety requirements of the National Construction Code and any applicable material handling and storage requirements should be afforded.