

13 August 2021

Ms. Megan Fu  
Acting Team Leader Social Infrastructure  
Department of Planning Industry and Environment

Dear Ms. Fu,

**Re: St John of God Richmond Hospital Redevelopment (SSD-10394) Response to Submissions**

I refer to the letter from Ms Megan Fu, Acting Team Leader Social Infrastructure Team from the NSW Department of Planning Industry and Environment (DPIE) dated 16 July 2021 regarding the response to agency submissions for the State Significant Development of the existing St John of God Richmond Hospital at 177 Grose Vale Road, North Richmond, 2754 (Lot/Section/Plan no: 11/-/DP1134453) in Hawkesbury.

This request for additional bushfire information includes:

*Bushfire*

1. *Provide a complete assessment of the facility as a whole and how the proposal achieves a 'better bushfire outcome' for the existing facility, taking into account the intensification in use and access/evacuation arrangements. Belmont House should be included within this assessment.*
2. *Demonstrate compliance with specific objectives for existing SFPP development, including addressing:*
  - 2.1. *The need to ensure "appropriate separation from the hazard to minimise material ignition" (PBP 2019).*
  - 2.2. *The need to ensure "new buildings should be located as far from the hazard as possible and should not be extended towards or situated closer to the hazard than the existing buildings" (PBP 2019).*
3. *Provide an explanation for the use of 1090 Kelvin in the bushfire modelling for the Wellness Centre, as the facility is a SFPP development which ordinarily uses 1200 Kelvin.*
4. *Address the appropriateness of the proposed Wellness Centre and two of the proposed Residential Pavilions located within BAL-FZ – the proposed construction requirements are not commensurate with their location.*

These matters were discussed in an online meeting with DPIE and the St John of God team on Wednesday, 4 August 2021.

The project team have previously responded to a request for additional information from the RFS on 6 April 2021. In this request, the RFS did not raise concern with Residential Pavilions, Garden Pavilions as the RFS accepted a lower bushfire risk and the nature of the redevelopment being redevelopment of the existing

facilities which makes the application infill Special Fire Protection Purpose (SFPP). The RFS acceptance of the site as low risk is reiterated in the letter of 28 July 2021 which states:

*The site is exposed to low risk in terms of bush fires and the proposed works can be considered as SFPP infill development.*

As the redevelopment within the site is agreed by the RFS as being 'exposed to low risk in terms of bushfires', we have taken a conservative risk-based approach in accordance with *Planning for Bushfire Protection 2019* to provide a better bushfire risk outcome with the redevelopment than currently exists on site.

The Bushfire Assessment Report for St John of God Hospital redevelopment, North Richmond by Blackash Bushfire Consulting dated 20 February 2020 (and as modified 4 May 2021 to address RFS issues) (Bushfire Report) identifies that the hospital is existing and is infill SFPP development and should be used as the basis of assessment by DPIE.

The following is provided in response to the request for additional information.

## 1. Issue Raised

***Provide a complete assessment of the facility as a whole and how the proposal achieves a 'better bushfire outcome' for the existing facility, taking into account the intensification in use and access/evacuation arrangements. Belmont House should be included within this assessment.***

## Response

The NSW Rural Fire Service (RFS) document *Planning for Bushfire Protection 2019* (PBP) provides the framework for the consideration of infill Special Fire Protection Purpose (SFPP) development stating that (p. 52):

*The intention for any building work occurring within an existing SFPP development is to achieve a better bush fire outcome than if the development did not proceed. Achieving this may require a combination of measures including improved construction standards, APZs and evacuation management. This may result in a level of retrofitting of existing buildings and managing other portions of the site (i.e. APZs) to ensure an improved level of bush fire protection.*

The determination of what constitutes a "better bushfire outcome" is not specified in criteria within PBP and is a somewhat subjective requirement relying on the approach of the Level 3 BPAD practitioner working in collaboration with the design team to come up with a reasonable and balanced outcome that reflects the risk for the site and which provides for a better bushfire outcome than currently exists on site. The deliberation and design associated with the proposed development has been worked through since late 2019 to provide the best outcome for the site in relation to bushfire issues.

Following the discussion with DPIE on the 4 August 2021, St John of God have repositioned Pavilion 4 (see Attachment 1) so that it is within the existing building footprint and the Wellness Centre (see Attachment 2) to be at BAL 29. Attachment 1 shows the existing buildings and the proposed redevelopment with commensurate Bushfire Attack Levels (BAL) across the site shown at Attachment 5 and 6.

To assist with the determination of the application, the objectives outlined within PBP (p. 52) have been used that apply to existing SFPP development:

### **1.1. provide an appropriate defensible space**

Defendable space as defined within PBP (p. 111) as:

*An area adjoining a building that is managed to reduce combustible elements free from constructed impediments. It is a safe working environment in which efforts can be undertaken to defend the structure, before and after the passage of a bush fire.*

The width of the defendable space is not defined within PBP, and the defendable space is part of the asset protection zone afforded to buildings and within the site. The existing and proposed buildings are set back from the boundaries of the property and access is available to all sides of the buildings and the external parts of the site.

Defendable space is readily available for fire fighter access for defensive and offensive firefighting if required.

The site is well maintained with manicured gardens presenting a fuel reduced area.

If necessary, firefighting operations will be carried out by experienced and trained fire fighters. If required, firefighters will work actively in and about the buildings and if necessary, will modify the operational response depending on fire severity. It is recognised that the proposed buildings to the southeast of the site are within BAL Flame Zone. Fire fighters will respond to radiant heat and other forms of bushfire attack by offensive and defensive tactics. Fire fighters will be able to move closer and further from the site boundaries and buildings depending on radiant heat and will utilise the defendable space within the APZ.

Appropriate defendable space has been provided with the proposed development.

### **1.2. site the building in a location which ensures appropriate separation from the hazard to minimise potential for material ignition**

The existing buildings were constructed prior to modern bushfire buildings requirements and planning considerations. The St John of God was approved and built prior to introduction of the *Rural Fires and Environmental Assessment Legislation Amendment Act 2002 No 67*, the *Australian Standard for Construction of Buildings in Bushfire Prone Areas (AS3959)* and PBP. As infill development (which has been recognised by the RFS), PBP recognises the site constraints associated with infill development within the existing site and provides flexibility to provide for a better bushfire risk outcome than currently exists on site.

The redevelopment of the residential pavilions to the southeast of the site was chosen within the existing building footprints for several reasons. From a bushfire perspective, this part of the site provides a reduced risk as it is at the furthest point from a fire being driven by a westerly or north westerly wind. Westerly and north westerly winds are the most dangerous winds associated with bushfire as they are generally hot (coming from central Australia) with reduced relative humidity and high winds.

As infill development, PBP provides latitude for redevelopment within the existing building footprint (see 4 below). The existing buildings are required to be removed as they do not comply with modern standards of care or modern bushfire construction requirements. Other areas within the site were explored but were not able to be utilised by St John of God.

The new buildings will be built in accordance with the Building Code of Australia (BCA) which will provide internal fire protection above the requirements of AS3959 and PBP. The internal fire detection, suppression and fire safety provisions will complement the external construction which will be completed in accordance with AS3959.

The BCA internal fire services include:

- Internal fire detection and sprinkler systems for a Class 9A hospital. The automatic suppression system is to be installed in accordance with BCA 2019 and AS 2118.1 – 2017 with fast response heads.
- A smoke detection system is to be provided in accordance with BCA 2019 and AS 1670.1 – 2018. The Xavier and Residence buildings are required to have a reduced detector spacing, with the maximum spacing being 10 x 10 m.
- A fire hydrant system is to be installed in accordance with AS2419.1-2005
- Fire Hose Reels will meet the requirements of BCA 2019 and installed in accordance with AS 2441 – 2005 with exception (as agreed by NSW Fire and Rescue) to the following:
  - Fire Hose Reels are to be omitted from the residential portions of the development.
  - Fire extinguishers are to meet the requirements of BCA 2019 and installed in accordance with AS 2444 – 2001 with exception to the following design requirements limiting the locations extinguishers are provided:
    - In locations where FHRs would otherwise be required within the Administration Building.
    - Fire extinguishers are to be provided in all staff stations.
    - Fire extinguishers are to be provided in the locations shown in the figures below. Fire extinguishers not within the staff station are permitted to be locked within a cabinet that is to be openable by all staff members.
- Fire compartments as per the BCA for a Class 9A. Residence areas being split into fire compartments bounded by 120/120/120 FRL construction and not exceeding 500m<sup>2</sup>
- Smoke compartments
- Smoke doors/ fire doors
- Emergency lighting and exit signage will be installed in accordance with AS2293.1-2005

An external ring main and boosters are also provided for firefighting purposes. This meets the PBP requirements for the provision of water for firefighting purposes.

AS3959 provides the deemed to satisfy (DTS) provisions such that a building is better able to withstand bushfire attack thus giving a measure of protection to the building occupants (until the fire front passes) as well to the building itself. A conservative approach was taken with regard to the determination of the vegetation within the Bushfire Report. The revised BAL (as required by DPIE) for the proposed buildings is shown in Attachment 5 and Attachment 6. The buildings are proposed to be built in accordance with



Figure 5 and Figure 6. The occupants of the buildings will not be present in the event of a bushfire and will either be evacuated off site or will be in a safer location within the site.

These BCA internal fire safety requirements in combination with the construction of the buildings being undertaken in accordance with AS3959 provide for an acceptable outcome and reduce the potential for material ignition and fire spread within the buildings.

Following the discussion with DPIE on the 4 August 2021, St John of God have repositioned Pavilion 4 (see Attachment 1) so that it is within the existing building footprint and the Wellness Centre (see Attachment 2) to be at BAL 29. Attachment 1 shows the existing buildings and the proposed redevelopment with commensurate Bushfire Attack Levels (BAL) across the site shown at Attachment 5 and 6. The construction is in accordance with AS3959 and reduces the potential for fire spread and material ignition of the buildings as required by the BCA and AS3959.

**1.3. provide a better bush fire protection outcome for existing buildings;**

See 1.2 above.

Access is provided within the site for MR fire appliances. A swept path analysis is provided at Attachment 4 showing access throughout the site.

**1.4. new buildings should be located as far from the hazard as possible and should not be extended towards or situated closer to the hazard than the existing buildings (unless they can comply with section 6.8);**

The buildings have been located having regard to the infill provisions within PBP. Following consultation with DPIE, the Wellness Centre has been moved to 13m from the boundary and is within BAL 29. Pavilion 4 has been repositioned to be no closer to the hazard than the existing building line. See Attachment 1, 2, 5 and 6.

The buildings have been located as far from the hazard as possible and have not be extended towards or situated closer to the hazard than the existing buildings.

**1.5. ensure there is no increase in bush fire management and maintenance responsibility on adjoining landowners without their written confirmation;**

The adjoining owners were approach early in the design process to gauge their willingness to provide an APZ within their land under an easement (as required by PBP) but they were unwilling to enter into such an agreement. As a result, all APZs have been contained within the site.

The proposal has not relied on off-site APZs and does not burden adjoining land holders in any way.

**1.6. ensure building design and construction enhances the chances of occupant and building survival; and**

See 1.2 above.

St John of God will provide a Vegetation Management Plan (VMP) that outlines the management regimen for the site to be managed as an asset protection zone. This VMP can be included as a condition of consent.

**1.7. provide for safe emergency evacuation procedures including capacity of existing infrastructure (such as roads).**

*The Richmond Hospital Emergency Response Plan (August 2021 v4) incorporates the Fire Safety Management Plan. The Emergency Response Plan is compiled in accordance with Australian Standard AS 4083 – 2010 Planning for Emergencies – Health Care Facilities. AS 4083-2010 states the health care facility shall have emergency plans, appropriate documentation, staff, and training in order to cope with internal and external emergencies as they arise. It is the intention of Richmond Hospital to provide all necessary resources in order to meet the requirements of this standard and any other relevant documents. As directed by AS 4083-2010, and AS 3745-2010 Emergency Control Organisation and Procedures for Buildings, Structures and Workplaces, the focus will be on prevention, preparedness, response and recovery.*

The Emergency Response Plan is relevant for all employees of Richmond Hospital, and any other relevant settings pertaining to the Richmond Division. It covers all aspects of emergencies including bushfire, fire/smoke response, bomb threat, personal threat, environmental and medical emergencies.

The Emergency Response Plan has a section for bushfire that outlines the actions and response including evacuation off site. The Richmond Hospital Emergency Response Plan meets the requirements of the RFS document: *A Guide to Developing a Bush Fire Emergency Management and Evacuation Plan*.

**2. Issue Raised**

*Demonstrate compliance with specific objectives for existing SFPP development, including addressing:*

*The need to ensure “appropriate separation from the hazard to minimise material ignition” (PBP 2019).*

See 1.2 above.

*The need to ensure “new buildings should be located as far from the hazard as possible and should not be extended towards or situated closer to the hazard than the existing buildings” (PBP 2019).*

See 1.2 and 1.4 above.

**3. Issue Raised**

*Provide an explanation for the use of 1090 Kelvin in the bushfire modelling for the Wellness Centre, as the facility is a SFPP development which ordinarily uses 1200 Kelvin.*

The Wellness Centre is not a SFPP development. The Wellness Centre does not provide accommodation and its use can be strictly controlled limiting access in the event of fires within the vicinity. If a fire is within the vicinity, the Wellness Centre will be closed. As the building will not be occupied by vulnerable people,

there is no requirement for people to be evacuated from it. As such, the normal flame temperature within PBP of 1090K is sufficient to mitigate the impact of fire on the structure.

Further, the *BCA Design Compliance Report* (BCA Report) by MBC Group (dated 21 March 2020) notes that the Wellness Centre is a Class 9b structure being a public assembly building as shown in Table 1. As such, the Wellness Centre must comply with the aim and objective of PBP. Based on previous discussion with the RFS, the Wellness Centre was moved out of the Flame Zone and is within BAL 29 (see Figure 6).

In terms of the Objectives of PBP (p. 10), the Wellness Centre

- *affords buildings and their occupants protection from exposure to a bushfire by BAL 29 construction to the entire building. The use of the building can be controlled through the Emergency Management and Evacuation Plan including not using the building on declared Catastrophic fire weather days.*
- *provides for a defensible space to be located around buildings;*
- *provide appropriate separation between a hazard and buildings which, in combination with other measures, prevent the likely fire spread to buildings by BAL 29 construction to the entire building with an APZ of 13m to the site boundary. The construction is in accordance with the BCA and AS3959 as a deemed to satisfy requirement.*
- *ensure that appropriate operational access and egress for emergency service personnel and occupants is available;*
- *provide for ongoing management and maintenance of BPM through a VMPs; and*
- *ensure that utility services are adequate to meet the needs of firefighters.*

Following the meeting with DEPI, the Wellness Centre has been moved 13m from the boundary and is within BAL 29 (see Attachment 6). It is proposed that the entirety of the Wellness Centre is built to BAL 29 in accordance with AS3959.

**Table 1 Wellness Centre Classification** (source: The BCA Design Compliance Report by MBC Group dated 21 March 2020)

Summary of BCA Parameters	Residence and Garden pavilion	Admin Building	Xavier Building	Wellness Centre
BCA Classification(s)	5 (offices) and 9a (healthcare)	5 & 9b	3 & 5	9b
Number of Storeys contained	Two (2)	One (1)	Two (2)	One (1)
Rise in Storeys	2	2	2	1
Type of Construction	Type B	Type C	Type B	Type C
Effective Height	Less than 25m	Less than 25m	Less than 25m	Less than 25m
Floor Area	3,620m <sup>2</sup>	560m <sup>2</sup>	2,913m <sup>2</sup>	809m <sup>2</sup>
Max. Fire Compartment Size	3,852m <sup>3</sup>	1,680m <sup>3</sup>	4,794m <sup>3</sup>	2,472m <sup>3</sup>
Climate Zone	6	6	6	6

**4. Address the appropriateness of the proposed Wellness Centre and two of the proposed Residential Pavilions located within BAL-FZ – the proposed construction requirements are not commensurate with their location.**

Following the meeting with DEPI, the Wellness Centre has been moved 13m from the boundary and is within BAL 29 (see Attachment 6). It is proposed that the entirety of the Wellness Centre is built to BAL 29 in accordance with AS3959.

## Conclusion

As State Significant Development (SSD), the Minister approves the application and does not require a Bushfire Safety Authority from the RFS.

As the redevelopment within the site is agreed by the RFS as being infill SFPP development which is 'exposed to low risk in terms of bushfires', Blackash and the project team have taken a conservative risk-based approach in accordance with PBP to provide a better bushfire risk outcome with the redevelopment than currently exists on site.

As required by PBP, an appropriate combination of Bushfire Protection Measures has been provided for the redevelopment which demonstrably provides for a better bushfire outcome for the site as a result of the proposed works. The application demonstrates a better outcome by a combination of measures including:

- improved construction standards in accordance with the BCA through AS3959 for the new buildings
- internal fire protection for the new buildings in accordance with the BCA for fire spread, mitigation and suppression which augments the external resilience of the buildings to the impact of bushfire (construction in accordance with AS3959)
- the site will be managed as an asset protection zone with a Vegetation Management Plan to guide the works
- an updated emergency management and evacuation plan that includes provision for bushfires
- access that is available within the site for MR fire fighting vehicles. Access is provided within the site for MR fire appliances. A swept path analysis is provided at Attachment 4 showing access throughout the site.
- water supply in accordance with PBP for firefighting purposes.

The redevelopment has considered and responded to the low bushfire risk posed to the site for occupants and firefighters with a suite of measures that meets PBP, the BCA and AS3959. PBP accepts the constraints associated with the redevelopment of existing SFPP sites, noting (p. 52) *that where practically achievable, full compliance should be provided before variations to the required BPMs are considered.*

Throughout the design of the proposal, the project team have considered and responded to bushfire risk and requirements in a sensible manner that recognises the constraints associated with the site and the requirements within PBP.

This document demonstrates that the objectives for existing SFPP facilities have been met and the DPIE should be confident of approving the application considering the information provided within the Bushfire Hazard Assessment and the additional information provided to the RFS and DPIE (including this letter).

If you require any further information or have any queries, please do not hesitate to contact me on 0419 203 853.

Yours sincerely,



Lew Short | Director  
**Blackash Bushfire Consulting**



Attachment 1 Revised Site Plan showing repositioned Pavilion 4 and Wellness Centre



**SKETCH - RESIDENCE 4 - ROTATION OPTION**

ST JOHN OF GOD RICHMOND HOSPITAL REDEVELOPMENT

Project Number: 15444

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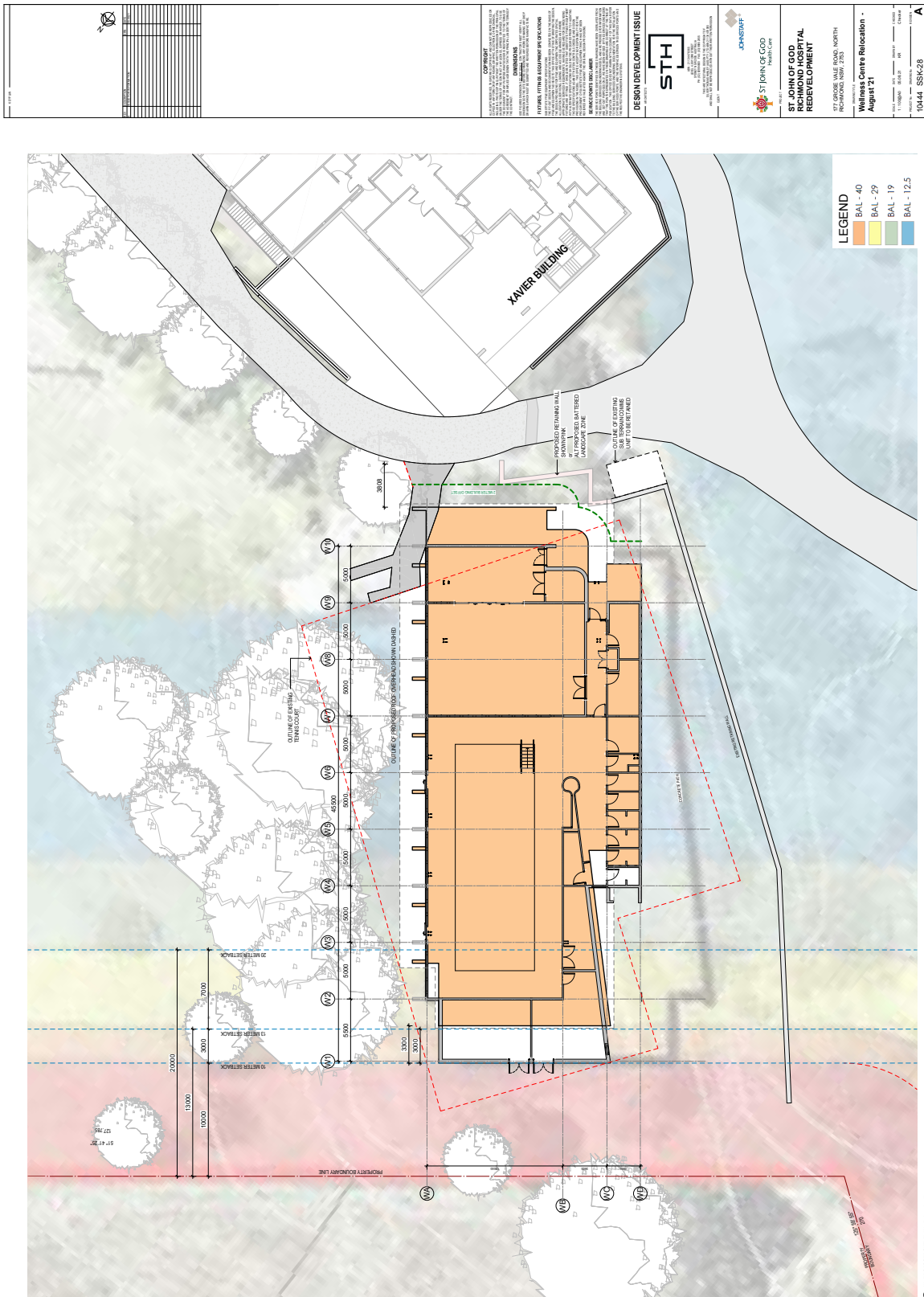
Date: 08/05/21

Revision: A

Drawing Number: **SSK46**



## Attachment 2 Repositioned Wellness Centre



Attachment 3 Residence 4 Reposition and Internal Layout



**SKETCH - RESIDENCE 4 - ROTATION OPTION - FITOUT**  
ST JOHN OF GOD RICHMOND HOSPITAL REDEVELOPMENT

**ST JOHN OF GOD**  
Health Care

**JOHNSTAFF**

**STH**  
ST JOHN OF GOD RICHMOND HOSPITAL REDEVELOPMENT

1 REFERENCE - AS SHOWN FLOOR PLAN FITOUT - Current Possibilities

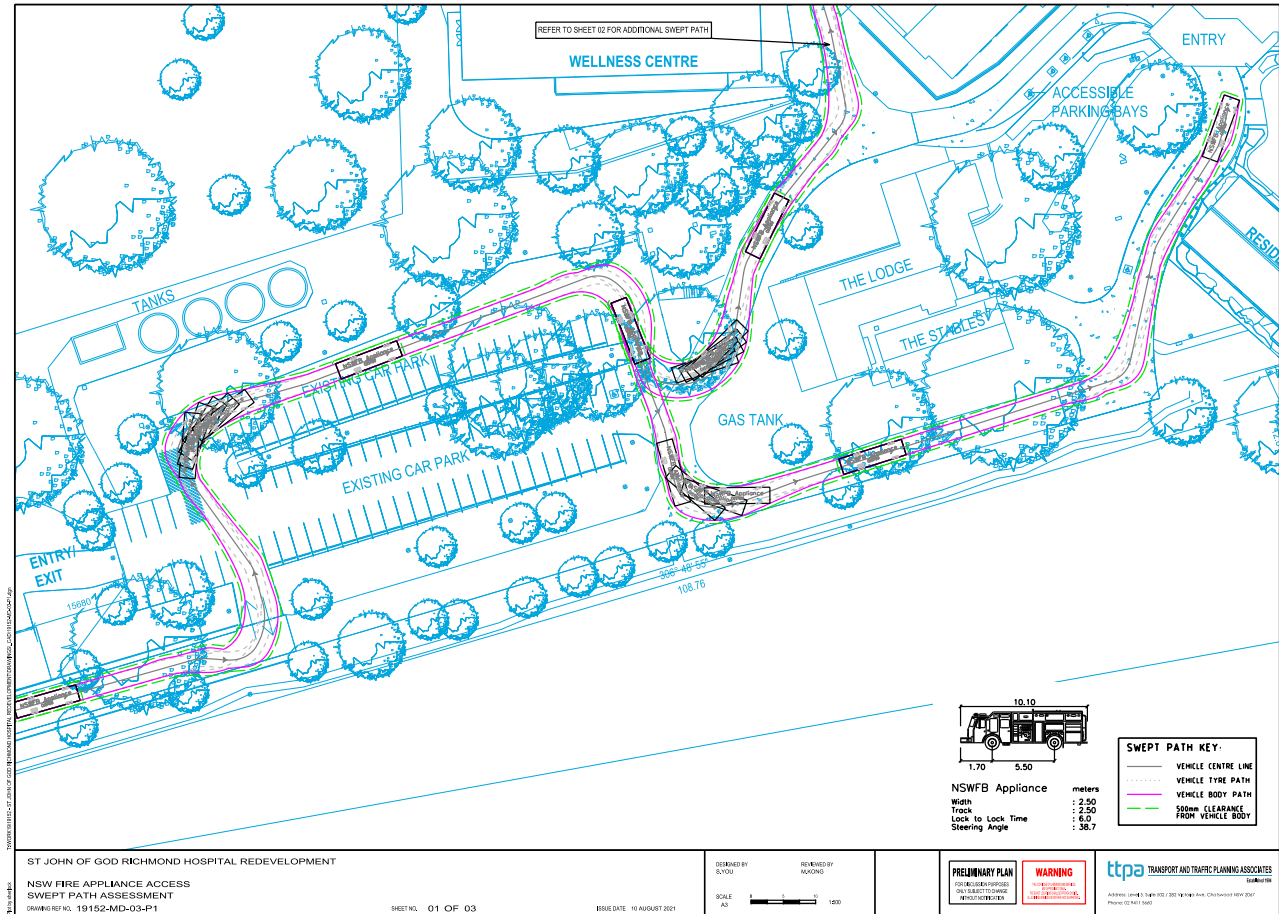
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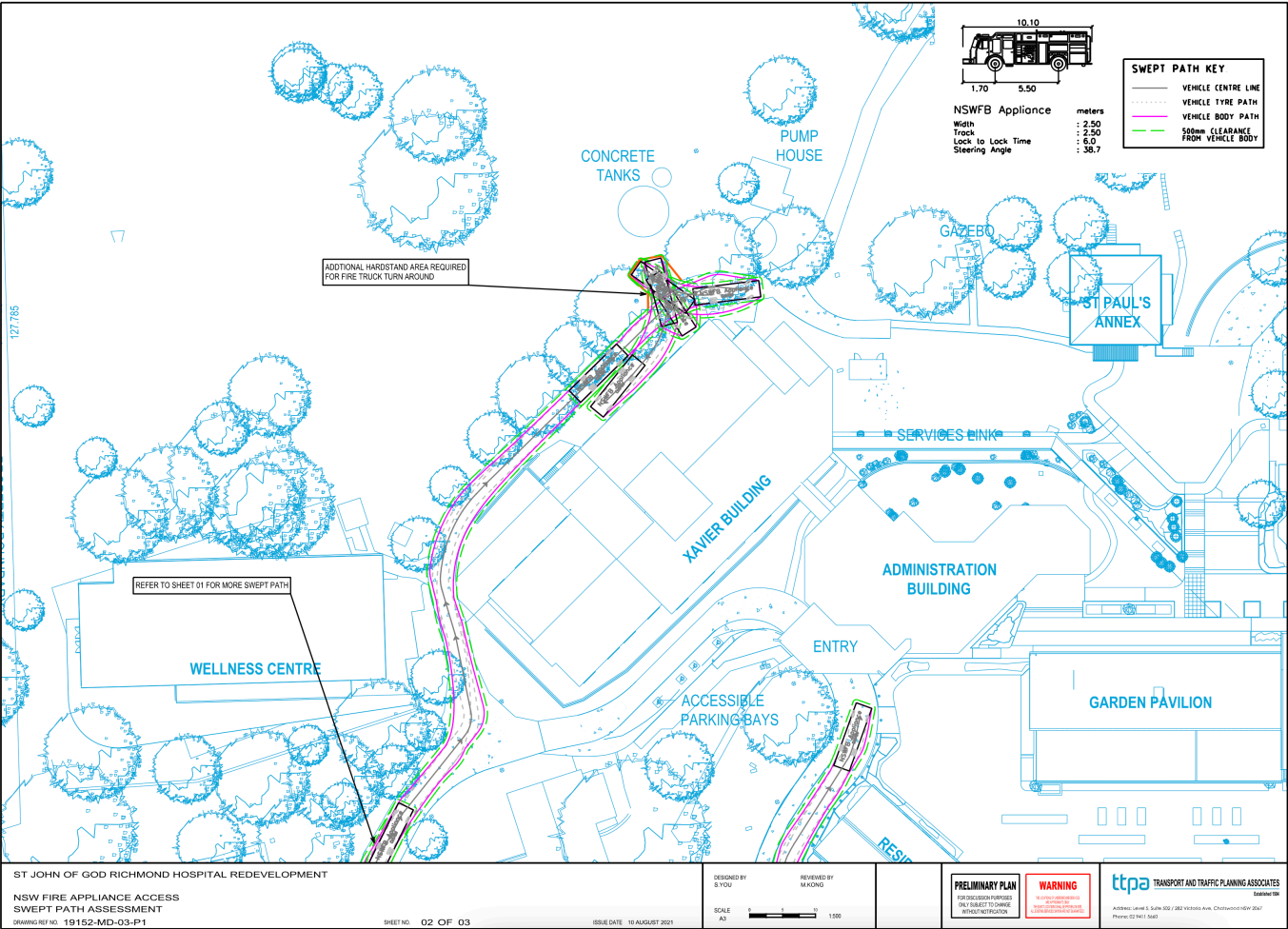
Date 08/02/21

Revision: A

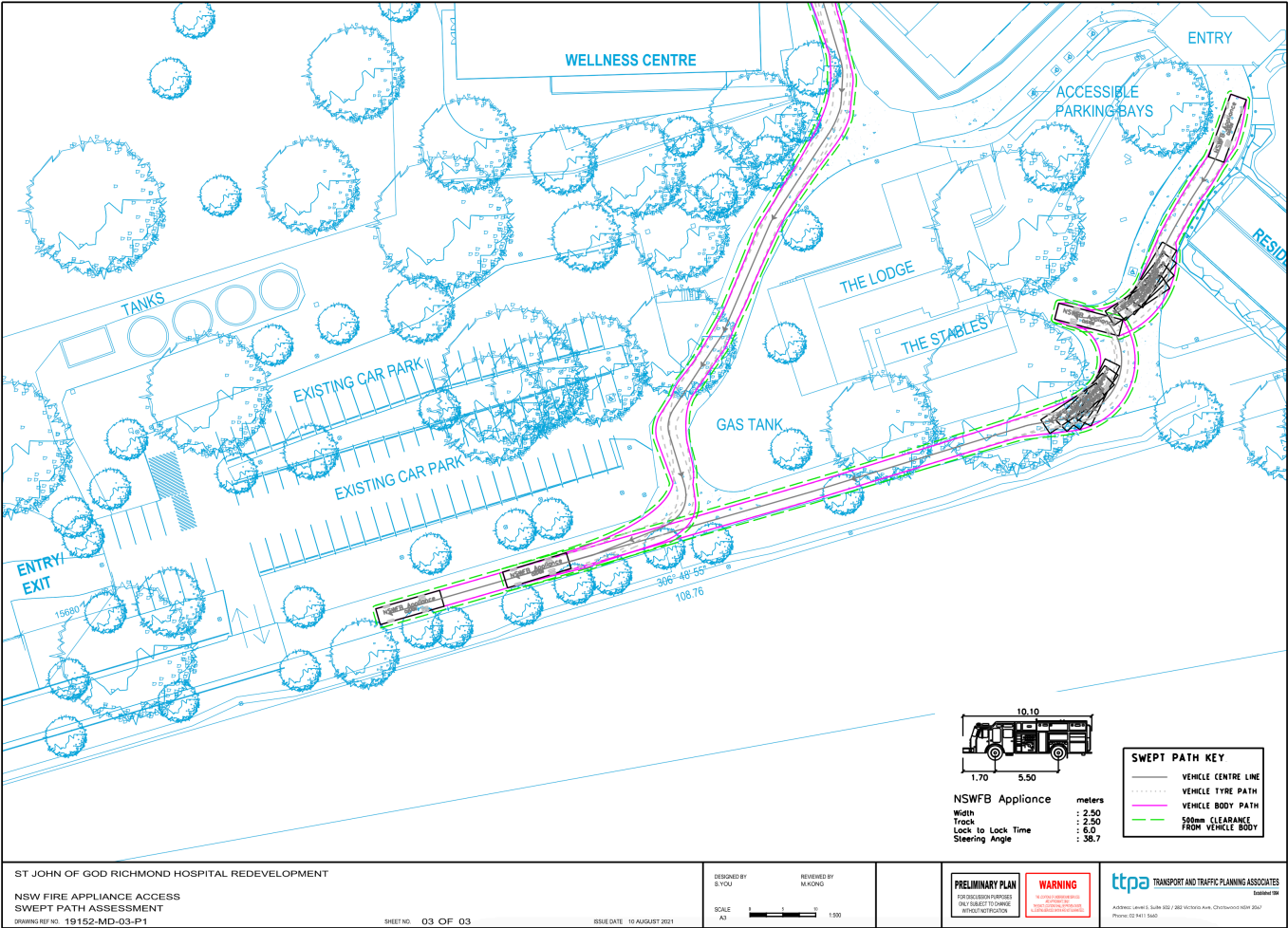
Drawing Number SSK47

Attachment 4 Fire Brigade Access for MR Vehicle within the site



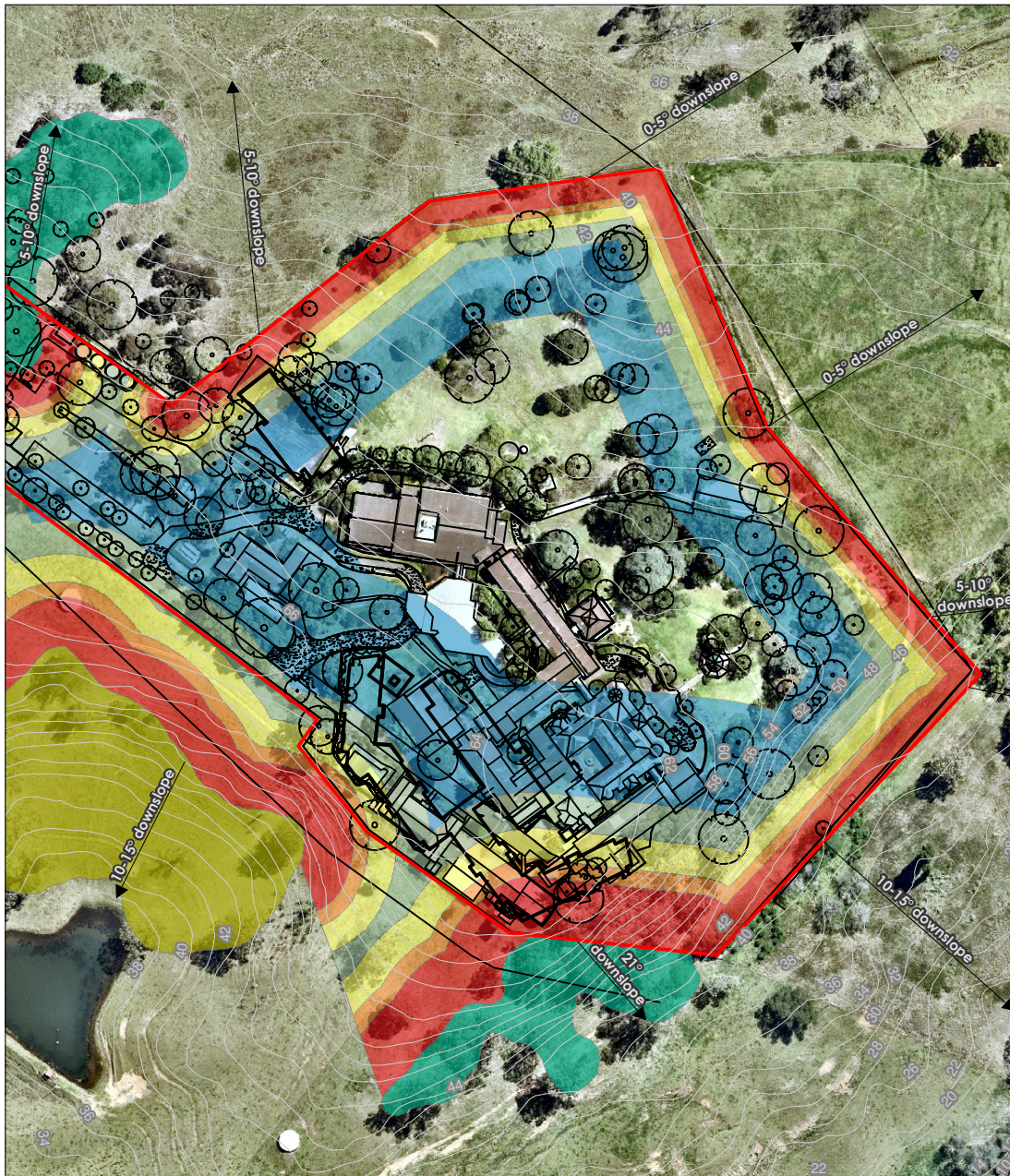








## Attachment 5 Revised Bushfire Attack Levels



### Legend

Contour - 2m	Remnant Forest - Low Hazard	BAL - 40
Building Footprint	Woodland	BAL - 29
Subject Land	<b>Bushfire Attack Level (BAL)</b>	BAL - 19
<b>Vegetation Formations</b>	Forest	BAL - 12.5
	BAL - Flame Zone	

DKGIS  
 Date: 12/08/2021  
 0 25 50  
 Metres  
 Coordinate System: GDA 1994 MGA Zone 56  
 Imagery: © Nearmap



Attachment 6 Revised Bushfire Attack Level for Wellness Centre

