

9. Water Supplies

The Site land is currently serviced by reticulated water. An existing internal ring mains system is provided and will be replaced by a new ring mains. Hydrant spacing, sizing and pressures will comply with AS2419-2005. The development is located within 70 m of these hydrants. Existing single head hydrants will be replaced with dual head hydrants. The fire hydrant system (incorporating internal and external hydrant connections) will be designed to ensure coverage in accordance with AS 2419.1:2005 and NCC Clause E1.3. This complies with PBP.

10. Gas and electrical supplies

The existing electricity supply for the site will be utilised and will comply with PBP. Gas services are to be installed and maintained in accordance with *Australian Standard AS/NZS 1596 'The storage and handling of LP Gas'* (Standards Australia 2008). This complies with PBP.

11. Access

The design of public access roads and property access (within a site) should enable safe access, egress and defensible space for fire fighters and emergency services. Eton Road is a public Road and provides a two-way road to the site boundary. From Abingdon Road, the existing urban infrastructure and development provides suitable access arrangements and depth for evacuation. From the site boundary to the north, a private road exists that provides access into and around the site. Shout Ridge Road, Dunstan Grove Road and Tubbs View all service new, high density residential developments and comply with PBP 2006.

The precinct bound by the junction of Abingdon Rd to the north of the site has existing medium density development throughout. The combination of a range of developments (including the school) will result in an increased demand on existing services and may result in an increased risk to occupants and the existing community. It is likely that the road system will become bottle-necked at the junction of Eton, Shout Ridge and Tubbs View in the event of a bushfire emergency.

Schools are particularly prone to traffic-generated congestion on roads at start and finish times. This is heightened when parents believe that their children are likely to be exposed to bushfire and in seeking to reach the school, cause road congestion and hamper the firefighting effort. A detailed Bushfire Evacuation Plan has been drafted that will provide for a range of scenarios including potential closure of the school during periods of Extreme and Catastrophic FDI, or when there is bushfire activity within the vicinity of the school. The Evacuation Plan will cater for access provisions including potential

use of busses within the site and options to walk the school community to Lindfield Public School if required.

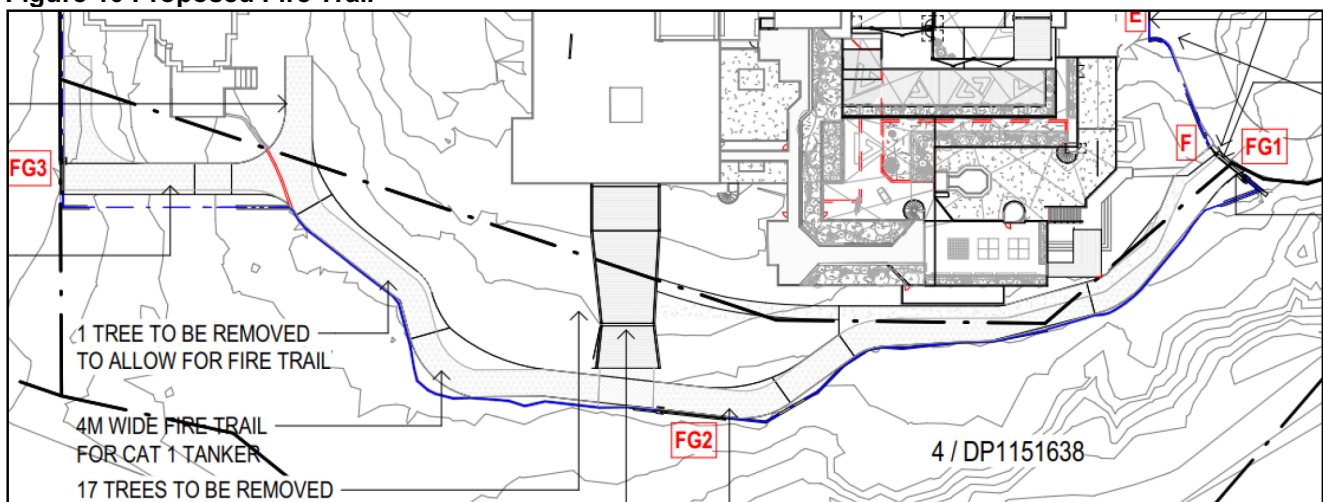
As the proposal seeks adaptive reuse the existing facilities including the road infrastructure, a full perimeter road is not provided. In recognition of the need to provide access to bushfire hazard areas for fire fighters, a fire trail is proposed for the south and the west of the site (see Figure 10). The fire trail will provide passing and turning areas for RFS Category 1 fire appliances and fill points at hydrants for firefighting purposes. The new fire trail will comply with Section 4.1.3 (3) of PBP 2006 and gates will be provided in the proposed fence to permit access for emergency service vehicles to the southern and western APZs.

The existing road and proposed fire trail will form part of the APZ and is required to provide a separation between the SFPP and the boundary of the bushfire hazard. The private road provides sufficient width to allow firefighting vehicle crews to work with firefighting equipment about the vehicle and to provide passing areas for fire appliances if required.

Roll-top kerbing is not provided, but kerbs are of a low design that would not inhibit fire-fighting vehicles mounting the kerb if required.

A new fence (1800mm) is proposed around the perimeter for security and safety on the site. All fencing will be coated tubular security fencing to allow for suppression activities through the fence if required. Gates will be provided around the perimeter to ensure access to all roads, pedestrian walkways and to provide access into the APZ for management and fire suppression activities.

Figure 10 Proposed Fire Trail



A summary of access provisions is at Table 4.

Table 4 Access - Internal Roads

Intent of Measures	To provide safe operational access for emergency services personnel in suppressing a bush fire, while residents are accessing or egressing an area (PBP p 34).	
Performance Criteria	Acceptable Solutions	Compliance
The intent may be achieved where:		
Internal road widths and design enable safe access for emergency services and allow crews to work with equipment about the vehicle.	internal roads are two-wheel drive, sealed, all-weather roads;	Achieved
	internal perimeter roads are provided with at least two traffic lane widths (carriageway 8 metres minimum kerb to kerb) and shoulders on each side, allowing traffic to pass in opposite directions;	Achieved The existing roads are not perimeter roads or 8m kerb to kerb. PBP 2006 requires that this element be tested against the performance criteria. The existing internal road widths enable safe access for emergency services and allow crews to work with equipment about the vehicles.
	roads are through roads. Dead end roads are not more than 100 metres in length from a through road, incorporate a minimum 12 metres outer radius turning circle, and are clearly sign posted as a dead end;	Achieved. 12 metres outer radius turning circle provided at key turning locations. Dead end roads will be clearly sign posted.
	traffic management devices are constructed to facilitate access by emergency services vehicles.	Achieved. No traffic management devices installed
	a minimum vertical clearance of four metres to any overhanging obstructions, including tree branches, is provided.	Achieved
	curves have a minimum inner radius of six metres and are minimal in number to allow for rapid access and egress.	Achieved
	the minimum distance between inner and outer curves is six metres.	Achieved
	maximum grades do not exceed 15 degrees and average grades are not more than 10 degrees.	Achieved
	Cross fall of the pavement is not more than 10 degrees.	Achieved
	roads do not traverse through a wetland or other land potentially subject to periodic inundation (other than flood or storm surge).	Achieved
	roads are clearly sign-posted and bridges clearly indicate load ratings.	Achieved
	the internal road surfaces and bridges have a capacity to carry fully-loaded firefighting vehicles (15 tonnes).	Achieved

12. Construction Standards

The design team has made every effort to locate the new development as far as practical from the bushfire prone land and has sought to use the existing buildings to provide shielding for the new development. The following was provided by the Senior Architect from DesignInc regarding the fire resistance of the buildings:

The fabric of the existing buildings is bushfire resistant with 2 hours fire rated concrete floors and roof. The walls are cavity brickwork with 2-hour fire rating. All existing windows and doors will be replaced with aluminium frames and 6.38mm thick glass to be bushfire resistant. A 2-hour fire rated wall will be constructed internally on levels four, five and six aligned to the 100m APZ as measured from the southern boundary to provide bushfire protection for the partial school. The partial school will be protected from fire with sprinklers throughout and drenchers around the perimeter glazing of the internal courtyard. Smoke doors will be provided throughout Phase 1 school. The internal and external fire hydrant system will be upgraded to comply with current codes.

The existing buildings utilised within the Phase 1 school will be upgraded, where relevant, as described in the RFS Building Best Practice Guideline – Upgrading Existing Buildings, or as per the RFS recommendations. All external vents and weepholes shall be screened with metal mesh screening with an aperture no greater than 2mm. External timber doors shall be repaired or replaced to comply with AS3959-2009 BAL-29. Roller doors and external doors shall be provided with brush seals or draught excluders to ensure no openings greater than 3mm.

The proposed Phase 2 and 3 portions of the building will remain unused and will not be upgraded at this time.

13. Evacuation and Emergency Management

The draft bushfire evacuation procedures have been completed in accordance with RFS *Guide to Developing A Bushfire Emergency Management Plan* and meet the requirements of Australian Standard AS 3745-2010 – Planning for Emergencies in facilities. On-site and off-site evacuation procedures are included and will be worked through with key stakeholders (emergency services and staff) prior to occupation. The draft *Bushfire Emergency Management and Evacuation Plan* is a separate document.

Emergency Management arrangements and the Bushfire Evacuation Plan will cater for a wide range of scenarios including large campaign fires and fast run fires impacting the site within a short time frame.

Pre-emptive evacuation and emergency management procedures have also been considered, including the closure of the Phase 1 school under certain conditions – including fire weather within the Extreme or Catastrophic FDI ranges. The school may also be closed upon bushfire activity being present within the vicinity of the school grounds or key travel routes supporting the school community.

The Bushfire Evacuation Plan will clearly state that the safest option is to be out of bushfire prone areas in the event of a fire. However, if the buildings will also provide sheltering options within the school buildings as a 'last resort' option when it is no longer safe to move to an area not prone to bushfire risk.

14. Fire Spread Control and NCC fire compliance

Internal construction and management requirements will be undertaken prior to occupation to achieve an acceptable level of life safety within the building to satisfy the performance requirements of the NCC.

These requirements will provide a place of shelter in the event of a fire in the adjoining reserve.

The following internal works will be undertaken to meet NCC and Australian Standard requirements:

- The building is of type B construction and will be divided into a number of fire compartments based on the requirements of NCC, which include 240 minute fire rating between compartments.
- A smoke detection system will be installed in accordance with NCC and AS1670.1: 2004.
- The building will be equipped with portable fire extinguishers in accordance with Clause E1.6 of the NCC and AS2444: 2001.
- Exit signage in accordance with AS 2293.1:2005.
- A sound system and intercom system for emergency purposes shall be installed in accordance with AS 1670.1:2004 and AS 1670.4:2004. This warning system will be connected to the smoke detection and sprinkler systems throughout the buildings, and will sound throughout upon activation of these systems.
- Emergency lighting in accordance with AS 2293.1:2005 will be installed throughout the buildings to assist the evacuation of occupants in low light conditions.
- The fire hydrant system incorporating internal and external hydrant connections as required to ensure coverage in accordance with AS 2419.1:2005.

15. Significant Environmental Features

Separate ecological assessment.

16. Threatened Species

Separate ecological assessment.

17. Aboriginal Objects or Places

There are no known Aboriginal objects or Aboriginal places (within the meaning of the National Parks and Wildlife Act 1974) that is known to the applicant to be situated on the property.

18. Assessment Against the Aim and Objective of PBP

The RF Reg requires an assessment of the extent to which the proposed development conforms with or deviates from the standards, specific objectives and performance criteria set out in Chapter 4 (Performance Based Controls) of PBP. All development in Bushfire Prone Areas needs to comply with the aim and objectives of PBP. Table 5 shows the compliance with PBP.

Table 5 Compliance with Aim & Objectives of PBP

Aim	Meets Criteria	Comment
The aim of PBP is to use the NSW development assessment system to provide for the protection of human life (including fire fighters) and to minimise impacts on property from the threat of bushfire, while having due regard to development potential, onsite amenity and the protection of the environment.	Yes	Landscaping, defensible space, access and egress, emergency risk management and construction standards are in accordance with the requirements of PBP and the aims of PBP have been achieved. APZs of 100m have been provided to the school parts of the existing buildings and no students will be within 100m of bushfire hazard vegetation for the Phase 1 School.
Objectives	Meets Criteria	Comment
Afford occupants of any building adequate protection from exposure to a bushfire.	Yes	The maximum exposure to a bushfire for the area where the development is proposed is 10KwM of radiant heat.
Provide for defensible space to be located around buildings.	Yes	Defensible space and APZs are provided on all sides of the proposed development.
Provide appropriate separation between a hazard and	Yes	An asset protection zone of 100m has been provided to the Phase 1 School.

Phase 1 School - Lindfield Learning Village, Eton Road, Lindfield

buildings, which, in combination with other measures, prevent direct flame contact and material ignition.		
Ensure that safe operational access and egress for emergency service personnel and occupants is available.	Yes	The site has direct access to public roads, and access and egress for emergency vehicles and evacuation is adequate. A detailed evacuation plan will be completed prior to occupation.
Provide for ongoing management and maintenance of bushfire protection measures, including fuel loads, in the asset protection zone.	Yes	A landscape and bush management plan for the compound and area surrounding the compound is included with the development application.
Ensure that utility services are adequate to meet the needs of firefighters (and others assisting in bushfire fighting).	Yes	Fire services are being updated throughout the site. Existing ring mains supply a hydrant system.

19. Response to Submissions

The Department of Education has provided a detailed Response to Submissions (RTS) to the Department of Planning and Environment (DPE). Appendix 2 is a summary of issues raised by Ku-ring-gai Council of 9 August 2017. It is noted that Council is generally in support of the proposed adaptive re-use of the former college as an educational establishment. This Bushfire Assessment Report and consultation with the RFS has been completed having regard to the matters raised by the RFS, in their letter of 4 July 2017, specifically RFS rejection of infill provisions, safe access to and from the site and the provision of APZs and in accordance with the framework provided by PBP 2006.

Further RTS were provided to DPE in response to additional queries raised in relation to the Phase 1 School development. This report has been updated to reflect the issues raised by the DPE and RFS and a summary is also provided within Appendix 3.

20. Recommendations

The DoE primarily seeks full approval to the amended SSD 16_8114 to provide for the opening of the Phase 1 School in Term 1, 2019.

The following recommendations are made for the bushfire protection measures for the site.

1. Consent is issued to utilise those buildings in Phase 1 as shaded orange and marked "Phase 1" on the plan attached Appendix 1 which represents portions of the buildings and site greater than 100 metres from unmanaged vegetation.
2. Prior to the issue of a Construction Certificate for the Phase 1 School, the Department of Education shall deliver a Bushfire Management Plan, including Vegetation Management Plan setting out how it will comply with the provision and ongoing management of Asset Protection Zones in accordance with *Planning for Bush Fire Protection, 2006*.
3. Prior to the issue of a Construction Certificate for the Phase 1 School, the Department of Education shall deliver a Bushfire Emergency Management and Evacuation Plan that is locally relevant and tailored with key stakeholders to a range of scenarios.
4. Prior to occupation and in perpetuity, an Asset Protection Zone shall be established and maintained to the site boundaries. The APZ shall be established and maintained as an inner protection area as outlined within PBP and the NSW RFS document 'Standards for Asset Protection Zones'. The areas adjacent to buildings and between the private access road will be managed as open space above APZ Standards to provide an outcome that is in keeping with a highly managed parkland environment.

21. Conclusion

State Significant Development application (SSD 16_8114) for the Lindfield Learning Village includes development for a school. This report supports the approval of the Phase 1 School for 350 students to be operational for Term 1, 2019.

As a State Significant Development application, the Department of Planning and Environment is responsible for assessing development applications relating to these project types. The Minister for Planning is the consent authority for SSD applications.

The design team has made every effort to locate the new development as far as practical from the bushfire prone land and has sought to use the existing buildings to provide shielding for the new development.

The Phase 1 School meets the requirements of Planning for Bush Fire Protection 2006. It is appreciated that a significant amount of work needs to be undertaken to provide surety for Construction of Stage 2, 2A, 2B. These additional areas will be worked through for compliance with PBP 2006/ 2018 and will require complex performance-based solutions in order to meet RFS requirements. Further consultation with the RFS will also be required.

The DoE have advised Blackash that occupation of areas outside the designated orange areas as per Appendix 1 will not occur until satisfactory resolution of outstanding issues and with concurrence from the RFS.

In the author's professional opinion, the bushfire protection measures demonstrated in this report comply with Planning for Bush Fire Protection 2006.



Lew Short | Principal

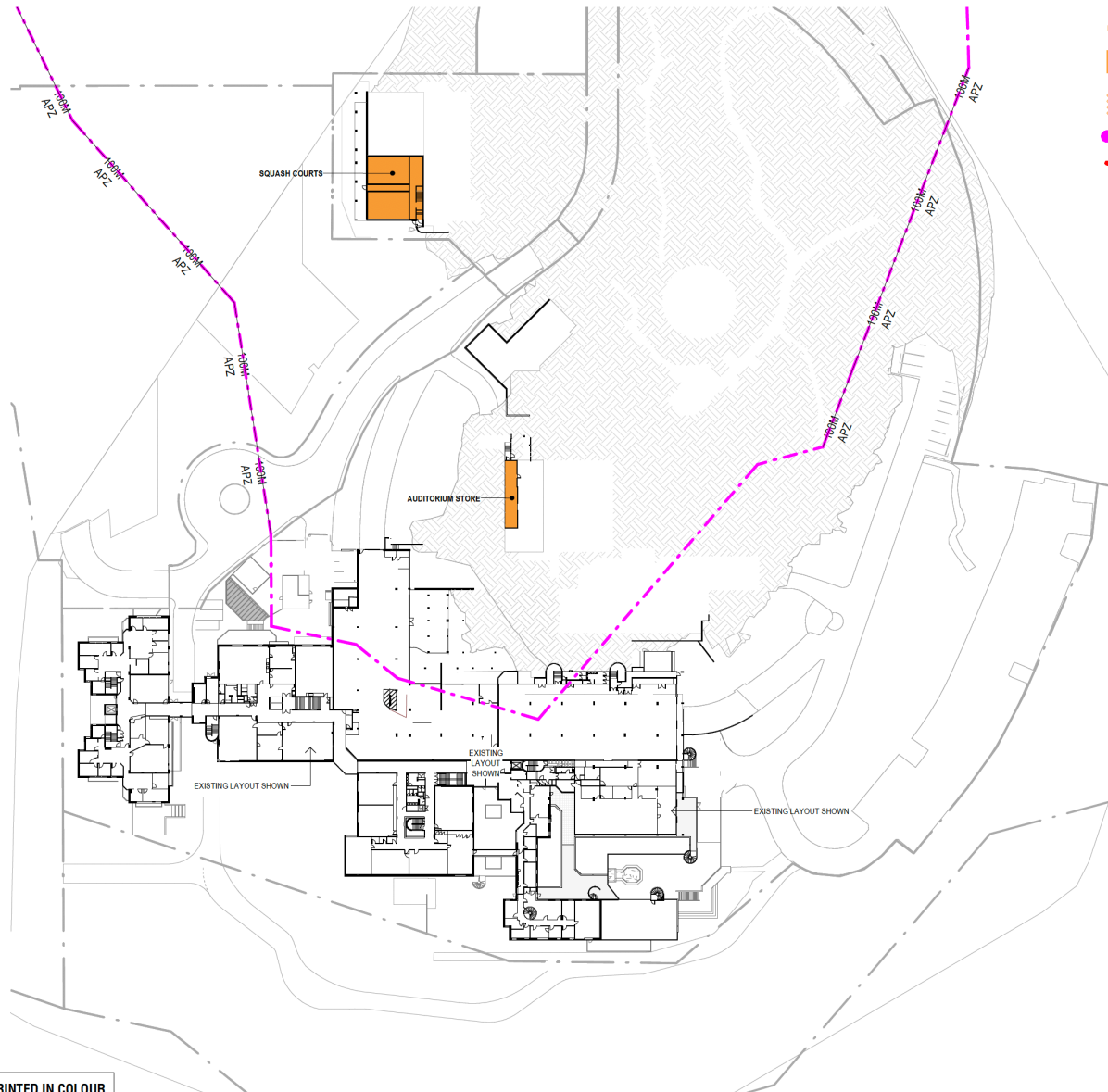
BlackAsh Bushfire Consulting

B.A., Grad. Dip. (Design for Bushfires), Grad. Cert. of Management (Macq), Grad. Cert. (Applied Management)

Fire Protection Association of Australia BPAD Level 3 BPD-PA 16373



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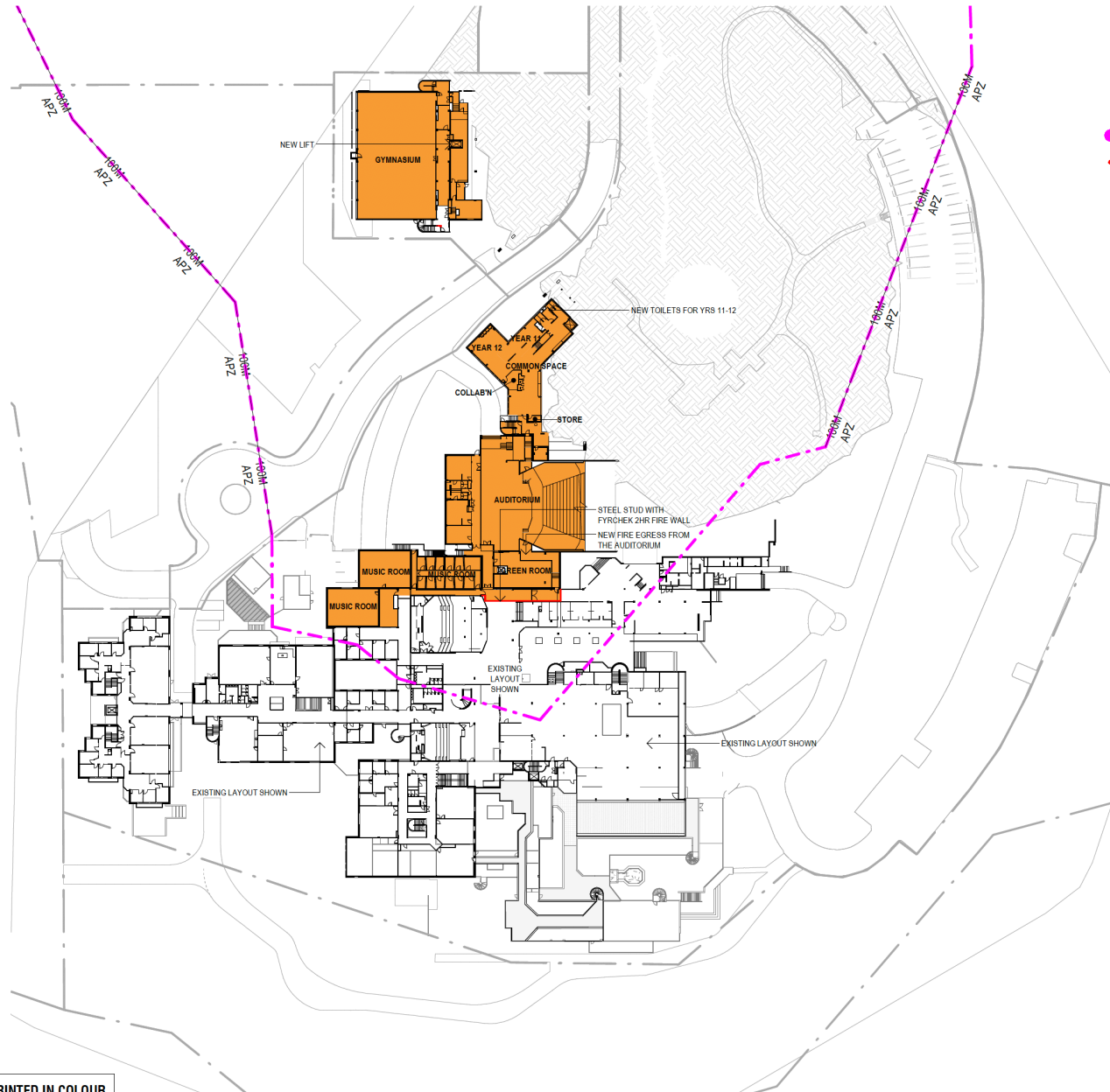
 2HR FIRE RATED WALL

No	DATE	REVISIONS	BY
A	04/05/2018	ISSUED FOR DEVELOPMENT APPROVAL	TG

QUALITY CERTIFIED Completion of the Drawing Status is evidence the design has been verified as conforming to the requirements of the Project M.S. Plan. Initiating the "Drawn By" box confirms that this drawing has been prepared in conformity with

DEVELOPMENT APPLICATION

Phase 1 School - Lindfield Learning Village, Eton Road, Lindfield



- LEGEND:**
- PHASE 1: PARTIAL SCHOOL
 - PHASE 1: ADMINISTRATIVE PARTIAL SCHOOL
 - 100M APZ
 - 2HR FIRE RATED WALL

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No	DATE	REVISIONS	BY
A	18/04/2018	ISSUED FOR DEVELOPMENT APPROVAL	TS
B	18/04/2018	ISSUED FOR INFORMATION	PK

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CLIENT

SCHOOL INFRASTRUCTURE NSW

PROJECT

Lindfield Learning Village - Partial School
Eton Road,
Lindfield NSW 2070

TITLE

PARTIAL SCHOOL
PROPOSED FLOOR PLAN
LEVEL 4

DRAWN BY	TS, CS, HC, PK
SCALES	1 : 1000 @A3
PLOT DATE	26/04/2018
PROJECT N°	P18-023
DRAWING N°	DA-114
REVISION	B
FOR APPROVAL	REVIEWED BY SIGNATURE DATE

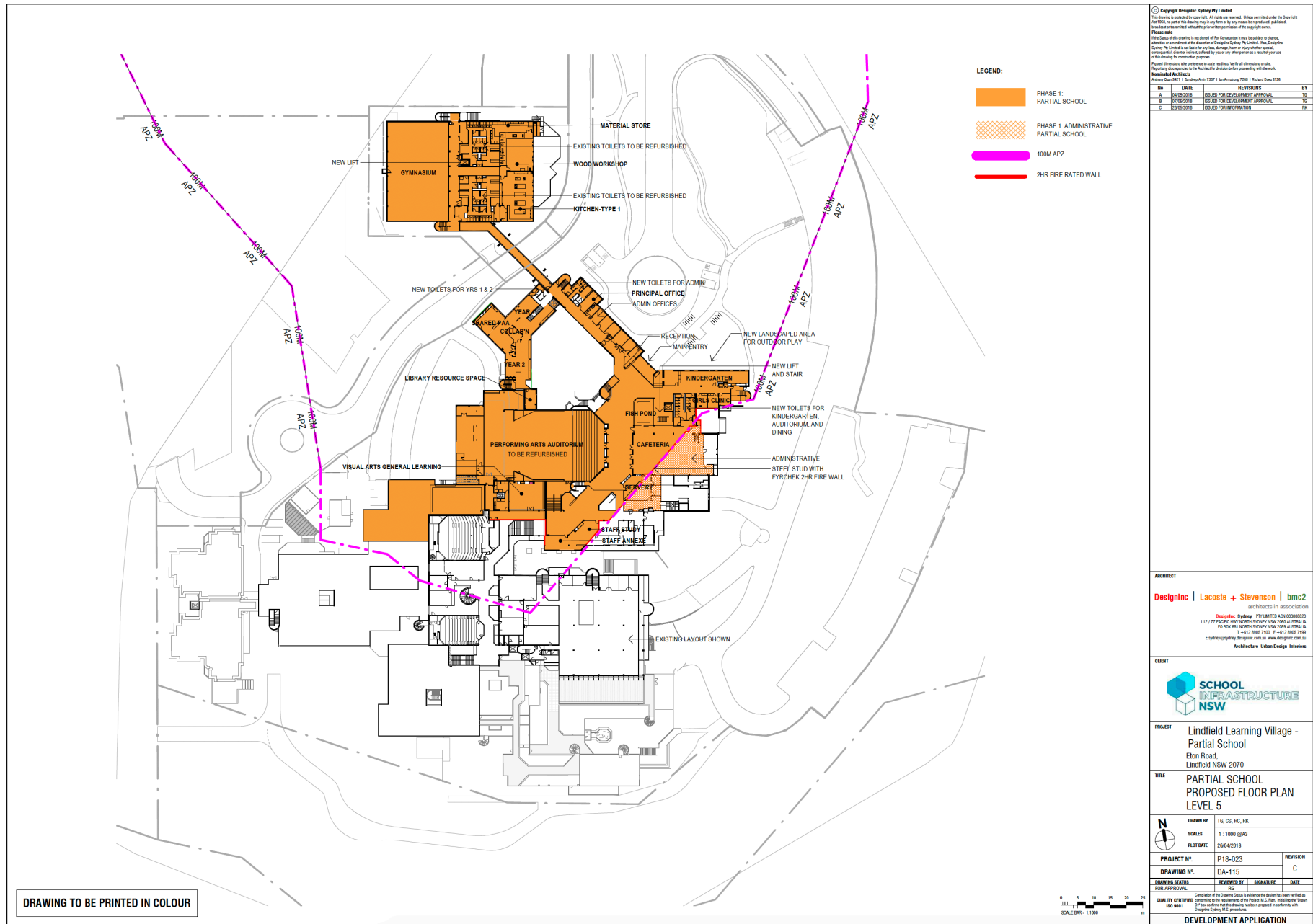
QUALITY CERTIFIED
Completion of the Drawing (Status) is evidence the design has been verified as conforming to the requirements of the Project N° 18-023. The Drawing (Status) has confirmed that this drawing has been prepared in conformity with ISO 9001.

DEVELOPMENT APPLICATION

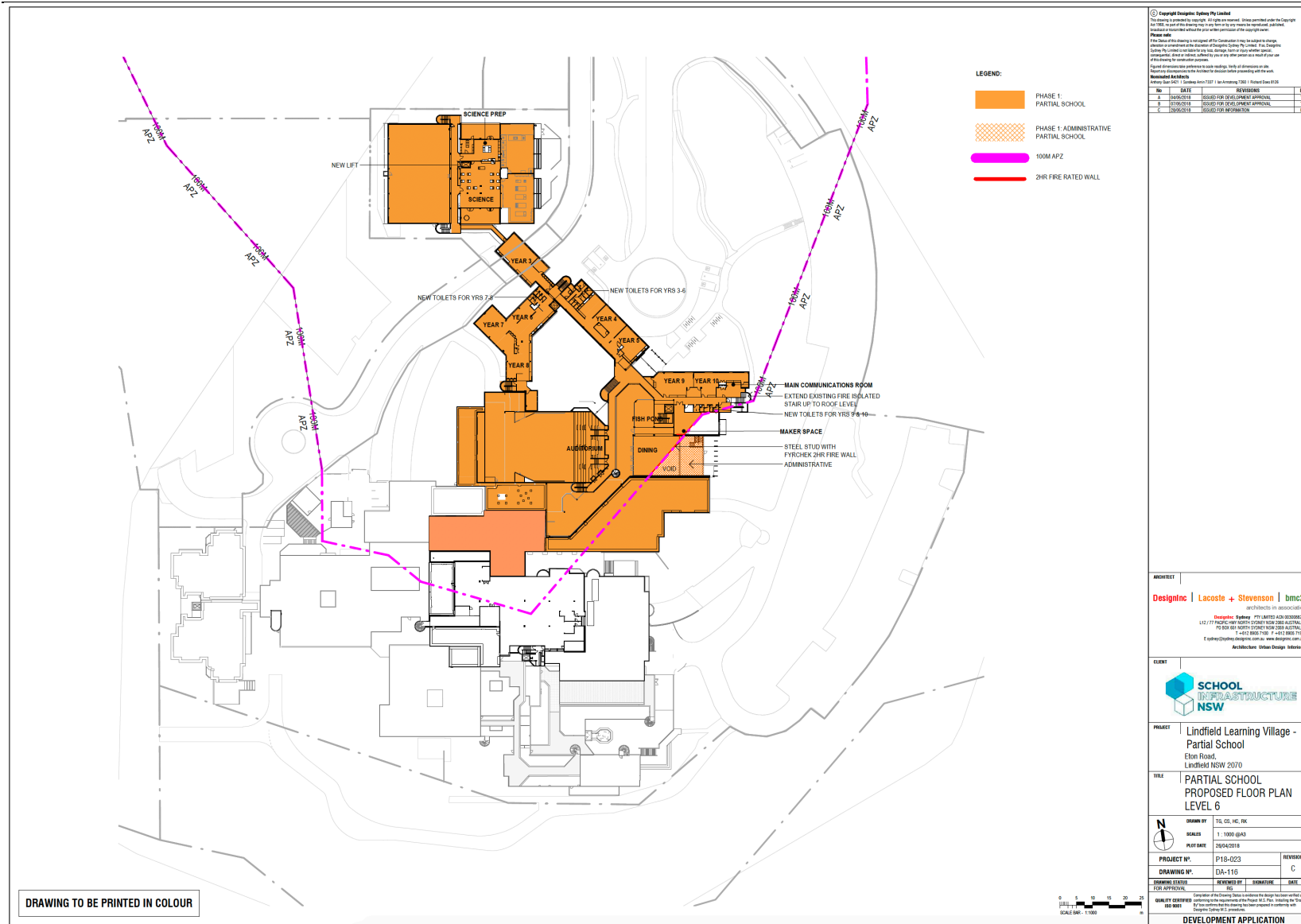
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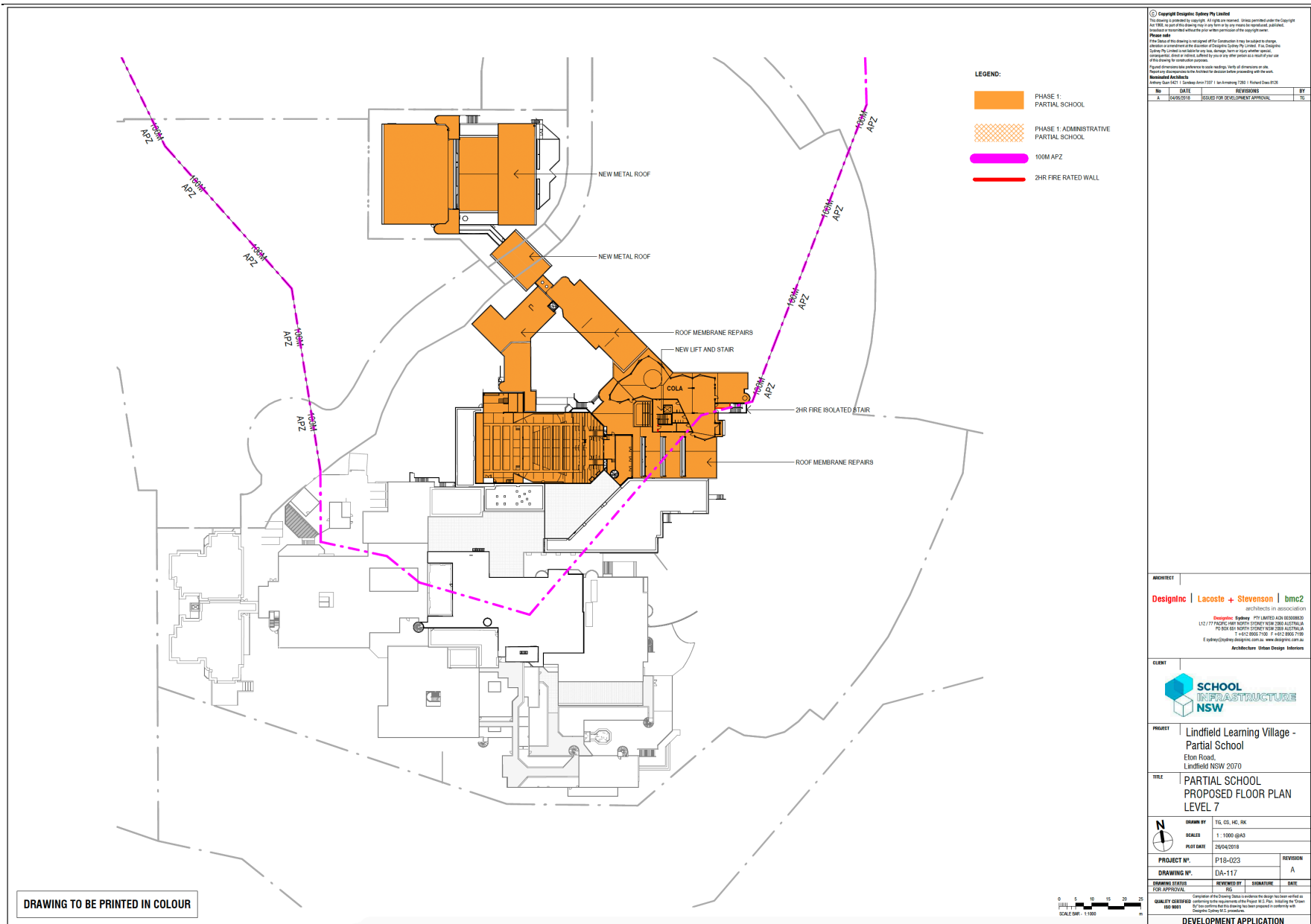
Phase 1 School - Lindfield Learning Village, Eton Road, Lindfield



Phase 1 School - Lindfield Learning Village, Eton Road, Lindfield



Phase 1 School - Lindfield Learning Village, Eton Road, Lindfield



Appendix 2 - Response to Submissions (2017)

Appendix 2 is a summary of issues raised by Ku-ring-gai Council of 9 August 2017.

A peer review of the Bushfire Assessment Report commissioned by Council (BAR) concluded that the development does not comply with the relevant specifications of Planning for Bush Fire Protection 2006 and cannot satisfy the requirements to receive a Bushfire Safety Authority (BSA) as it is currently presented.

1.1 The development is not considered Infill SFPP - the Bushfire Assessment Report relies on the development being assessed under the provisions for Special Fire Protection Purpose as Infill under section 4.2.5 of PBP although the original development (UTS Campus) is not Special Fire Protection Purpose as defined under the Rural Fires Act 1997 or Rural Fires Regulation 2013.

The UTS Campus never contained student or staff accommodation and would therefore not have been captured as Special Fire Protection Purpose development under the Rural Fires Act 1997 or Rural Fires Regulation 2013. However, schools and child care centres are listed as Special Fire Protection Purpose development under the Rural Fires Act 1997. PBP specifies that universities should be considered on their merits under sections 79BA and 79C of the EP&A Act, with consideration of the specific objectives listed in 4.2.3 of PBP and does not trigger the full application of SFPP development (4.2.7 of PBP). This subsequently can facilitate various concessions that could not be applied to a SFPP development. If the proposal was assessed under section 4.2.7 Standards for Bush Fire Protection Measures for Special Fire Protection Purpose of PBP the development could not satisfy the relevant specification and requirements.

RESPONSE: Refer to legal advice from Hunt and Hunt Lawyers dated 10 May 2018.

The UTS Ku-ring-gai Campus (UTS Campus) was a long-standing use and was in place prior to the current bushfire legislative framework and requirements. The current proposal encapsulates a formal 'change-of-use' through the planning system to include a school, and therefore, assessment and the proposal shall occur as a merits-based assessment.

The RFS have advised that the 'infill provisions' for SFPP and other development does not apply and the proposal is considered a change of use. The proposed school usage has been correctly identified as SFPP and should therefore, be subjected to the relevant requirements of PBP 2006 - particularly in relation to APZs / radiant heat exposure (10kW/m² to occupants and buildings), access arrangements, and evacuation management.

1.2 Increase in occupant vulnerability is not adequately addressed. Due to the change in use to more vulnerable occupants the application should be assessed against the full requirements of Special Fire Protection Purpose development under section 4.2.7 Standards for Bush Fire Protection Measures for Special Fire Protection Purpose of PBP. The Bushfire Assessment Report identifies an increase in risk and vulnerability as part of this development and rather than demonstrating compliance with SFPP development seeks to address this 'primarily by a comprehensive Bushfire Emergency Evacuation Plan'. The current use of the site supported 3000 university students. University students are expected to be competent to follow emergency management procedures with minimal assistance / guidance from staff or emergency service personnel. The proposed school will accommodate approximately 2,100 students from Kindergarten to Year 12 and a 94-space child care centre (12 staff) accommodating 0-5 year olds. Most of these occupants are minors and all but perhaps Year 11 and 12 students would require intensive assistance from staff and / or emergency service personnel in the event of a bushfire. It is considered that the proposed increase in risk and vulnerability requires more extensive consideration and that if this is to be primarily addressed by a comprehensive Bushfire Emergency Evacuation Plan then this Plan should also form part of the submission package. It is noted that the Bushfire Assessment Report makes reference to PBP addressing change of use in section 4.3.6. The opening paragraph in this section states 'Applications for developments that are not residential/rural residential subdivisions, SFPPs or residential infill should....' As this application relates to a SFPP development this section of PBP is not relevant.

RESPONSE: Addressed - refer to 1.1 above, relevant legal advice from Hunt and Hunt Lawyers dated 10 May

2018 and supporting Bushfire Assessment Report and Bushfire Evacuation Plan prepared by Blackash.

The proposed development will provide a significant shift in the population profile - both in terms of the site UTS Campus buildings themselves, and more broadly for the Crimson Hill community. The Crimson Hill residential community currently has a population of approximately 700 people within dwellings and apartment buildings.

In relation to the bushfire evacuation and emergency planning, it should be noted that there is an existing plan in place for the broader Crimson Hill residential community - this has been in place for a number of years and is managed by the Crimson Hill Community Association (previously DHA) - however, this plan was not prepared with consideration of an additional 2,200 (school) students utilising the UTS Campus buildings, and associated internal infrastructure.

The implementation of appropriate evacuation management within this site is a key issue and a new Bushfire Evacuation and Emergency Management Plan has been prepared as part of the submission in order to adequately address the specific needs of the school-aged community during a bushfire event.

1.3 Buildings are located within the Flame Zone and therefore the development does not comply with the aim and objectives of PBP (it is noted that an incorrect flame temperature was used in the bushfire design modelling). Table A3.4.2 of PBP describes Flame Zone as:

Significant radiant heat and significant higher likelihood of flame contact from the fire front will threaten building integrity and result in significant risk to residents.

The proposal does not satisfy the aim and objectives of PBP as it does not "provide appropriate separation between a hazard and buildings which, in combination with other measures, prevent direct flame contact and material ignition".

RESPONSE: Addressed - refer to 1.1 above and supporting Bushfire Assessment Report prepared by Blackash. The proposed Phase 1 School has been correctly captured as SFPP development, and has been subjected to all the relevant provisions and requirements in accordance with PBP 2006. These provisions include a maximum radiant heat threshold of 10kW/m² to any part of the building (particular focus on all relevant entry/exit points) and a modelled flame temperature of 1200 degrees Kelvin - the primary output of which would be increased separation distances / APZs from the hazard. Deemed to satisfy APZs from PBP 2006 have been applied to the Phase 1 School that provide a separation from the hazard of 100 metres.

Some of the existing buildings may be located within the Flame Zone. However, these will not be used for the Phase 1 School or any other purpose at this stage of assessment.

The existing nature of many of (previous) UTS Campus buildings, means that a combination of significant APZ management and/or performance solutions for the buildings and surrounds will be required in order to satisfy the aim and objectives of PBP 2006 - refer to supporting Bushfire Assessment Report for further detail.

The implementation of a compliant APZ in combination with performance solutions incorporating fire 'compartmentalisation' via the construction of fire-rated walls through the existing LLV building structures will provide a satisfactory outcome and are located at or below 10Kw/m² of radiant heat.

1.4 Asset Protection Zones are located on slopes greater than 18 degrees. As identified in the Bushfire Assessment Report there are various areas within the Asset Protection Zones which are located on slopes greater than 18 degrees. Location of APZs on slopes greater than 18 degrees is not supported for new developments, due to environmental constraints and difficulties in managing vegetation (A2.3 of PBP). Due to the steep slopes within both the APZs and adjacent hazards the canopy within the APZs could carry a fire regardless of the understorey management, compromising its integrity. There is opportunity to satisfy the Performance Criteria to address the APZs being located on slopes >18 degrees however this has not been included within the Bushfire Assessment Report.

RESPONSE: Addressed - refer to supporting Bushfire Assessment Report (Section 8.5) prepared Blackash.

Small sections of slopes over 18 degrees have APZs within the site (southern boundary). However, these

sections are short and will be accessed by foot with contractors using hand tools. APZ establishment and maintenance can be undertaken in accordance with PBP 2006 and RFS Standards for Asset Protection Zones.

The implementation of APZs of on steep land with slopes greater than 18 degrees, is not permissible as a deemed-to-satisfy outcome, as per Section 4.2.7 of PBP 2006, due to the difficulties in providing ongoing management in these areas and the potential environmental impacts that can occur. However, the relevant Performance Criteria within PBP also allows for the following:

"Applicants demonstrate that issues relating to slope are addressed : maintenance is practical, soil stability is not compromised and the potential for crown fires is negated."

The supporting Bushfire Assessment Report notes that the majority of the required APZs will no longer be situated on lands with slope greater than 18 degrees. Any residual steep areas requiring management will be subject to a Vegetation Management Plan to ensure management occurs to the appropriate standards with consideration of the ecological / environmental outcomes.

1.5 The development relies on Asset Protection Zones outside the site's boundaries which are currently not maintained to the standard of an Asset Protection Zone and would require significant tree removal to do so. The proposal seeks to utilise Asset Protection Zones that were required as part of the 'Edgelea Estate' development. These areas are included in a Bushfire Management Plan but at the time of a recent site inspection (19 July 2017) significant vegetation removal / modification would be required to achieve the requirement of an Asset Protection Zone (Inner Protection Area). The applicant does not have control of this adjoining land and does not have the ability to undertake the necessary clearing works. It is also noted that this Bushfire Management Plan is now overdue for a complete evaluation, review and update as it has been more than 5 years since it was prepared.

RESPONSE: Addressed - refer to supporting Bushfire Assessment Report prepared by Blackash. The majority of required APZs have been modified to be within the boundaries of the DoE / LLV lands. The key exception is to the north east where there is reliance upon management within the adjoining Crimson Hill residential community (DHA). The designated APZs for Crimson Hill have been designated to be managed entirely as APZ use under the governance of a Bushfire Management Plan prepared for the development.

The APZs in these areas have been managed as IPAs in close proximity to the residential buildings, with the majority of the remaining APZ being an OPA to ensure environmental sensitivity is achieved through the bushfire mitigation of the site.

In order for the for the proposed SFPP development to achieved APZ compliance, some of the currently OPA-managed areas on adjoining land, may need to be managed more intensely, in order to achieve an IPA standard. The BMP for the Crimson Hill was prepared over 5 years ago and is correctly noted as being due for review / amendment.

Issue 1.3 raised by Council notes that some of the buildings are currently within BAL Flame Zone. This is not acceptable to the DoE from a risk management perspective and represents a vicarious liability through Council to enable State Significant infrastructure to be exposed to unreasonable risk. The Rural Fires Act, 1997 in its objectives has a clear hierarchy to protects; life, then property, then the environment.

The legislative provisions provide opportunity for management of land to establish and maintain APZs to protect life and property. It is accepted that tension exist between the need to provide for APZs and manage areas for other purposes. The SSD application seeks approval to establish and maintain APZs that will address Councils concerns for the provision of APZs.

1.6 Significant vegetation removal / management is required to create the Asset Protection Zones onsite which has not been reflected in the EIS or accompanying Biodiversity Assessment Report;

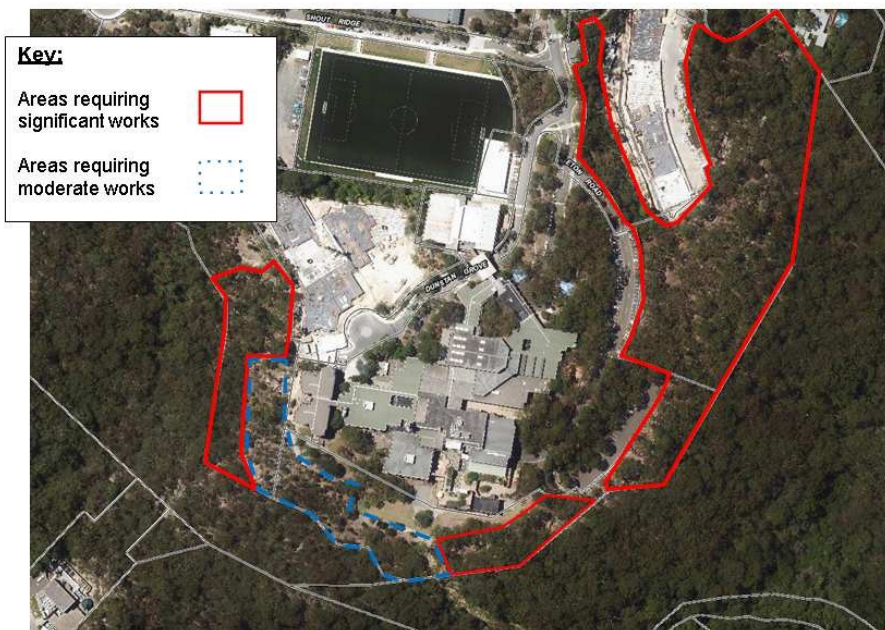


Image 02: External APZs which require works

RESPONSE: Addressed - refer to 1.5 above and supporting Bushfire Assessment Report prepared by Blackash regarding proposed vegetation management. All supporting planning approval documents should be amended to reflect required APZs.

1.7 The bushfire design modelling included in the Bushfire Assessment Report has relied on a flame temperature of 1090K where SFPP development must use a flame temperature of 1200K in bushfire design modelling (Addendum Appendix 3 PBP 2010). The increase of the flame temperature from 1090K to 1200K would result in higher radiant heat levels, and subsequently Bushfire Attack Levels, to the subject buildings than the reported in the Bushfire Assessment Report.

RESPONSE: Addressed - refer to 1.3 above and supporting Bushfire Assessment Report prepared by Blackash.

1.8 Additional transects should be included within the bushfire design modelling as steeper gradients than the transects reported were recorded on the site. It was identified onsite and also validated in reviewing topographic mapping of the subject area (0.5m contours) that there are additional transects which are located on steeper gradients that should be considered. The gradient is a fundamental input in the bushfire design modelling and an increase in downslope gradients results in larger flame length, higher radiant heat flux, faster rate of spread and higher fire intensity.

RESPONSE: Addressed - refer to supporting Bushfire Assessment Report prepared by Blackash (Section 8.5 and Figure 5).

As part of the detailed site assessment undertaken additional slope transects have been included in order to more accurately reflect the effective slope present within the hazard areas to the south of LLV.

In consideration of the steep slopes present, and the potentially significant fire behaviour, radiant heat loads and potential flame length generated within the landscape, the development proposal has been positioned in order to provided for a maximum setback / APZ distance of 100m - consistent with the maximum DTS requirements within PBP 2006 for SFPP development.

1.9 Access to the site exceeds 100 metres from a public through road. The subject site is serviced by Eton

Road to the north. Eton Road also forms part of the sole access to the surrounding 'Edgelea Estate' (which includes numerous residential apartment buildings and lower density residential dwellings) and Charles Bean Sports Field. Part of Eton Road could also be subject to direct impact from bushfires given the current state of the vegetation adjacent the roadway. As the subject buildings are located greater than 100 metres from a public through road, the development does not satisfy the Internal Road requirements detailed in section 4.2.7 of PBP. Traffic impact assessment considering use of Eton Road by surrounding dwellings, sports oval and the proposed school has not been sufficiently addressed. Specifically, Clause 44 of the Rural Fires Regulation 2013 requires the following items to be addressed:

- *the capacity of public roads in the vicinity to handle increased volumes of traffic in the event of a bush fire emergency*
- *whether or not public roads in the vicinity that link with the fire trail network have two-way access*
- *the adequacy of arrangements for access to and egress from the development site for the purposes of an emergency response*

RESPONSE: Addressed - refer to supporting Bushfire Assessment Report prepared by Blackash.

Historically, the entire Crimson Hill community (including residential subdivision) has been heavily constrained due to the existing access arrangements that serviced the previous UTS Campus, the difficult surrounding landscape / topography and presence of the surrounding Lane Cove National Park areas. Therefore, the infrastructure upgrades - especially the public road network - within the Crimson Hill area was generally limited to upgrading the existing roads to ensure compliance with PBP 2006 wherever possible - including road widths, turning areas, parking provisions, connections with existing road networks and vegetation management around access roads.

The context of the overall Crimson Hill area means there is only 'one road in and out' via Eton Road in the north. Serious explorations were previously undertaken about providing an alternate public road connection directly to the south of the LLV buildings to connect with Millwood Avenue, however, these were considered unachievable.

Variation connections with the existing fire trail network within Lane Cove National Park were also explored, to the south towards Fullers Park Road, and to the east and west of the residential areas, however, these were also unable to be implemented.

An extensive traffic study was undertaken for the Crimson Hill residential community and the impacts upon the internal and surrounding road network, both under emergency and normal use conditions, with the findings being the road network was satisfactory.

All of the above did not have any consideration (or expectation) that a 2100 student school would be operating within the same public road network with the same access/egress arrangements. Given the high level of vulnerability and the limited access arrangements available within the overall Crimson Hill area, a focus on onsite refuge and emergency evacuation has been undertaken (with more work to be completed prior to occupation) considering key the access and emergency management strategies for the proposed LLV.

1.10 The Bushfire Assessment Report primarily relies on a comprehensive Bushfire Emergency Evacuation Plan to justify the reduction in the minimum required Asset Protection Zones for SFPP development. Given the significance this Plan has, it should also form part of the submission package rather than being a recommendation.

RESPONSE: Addressed - refer to supporting Bushfire Assessment Report and Bushfire Evacuation Plan prepared by Blackash. The Bushfire Evacuation Plan has been provided in draft form and will be worked through with key stakeholders prior to occupation to ensure engagement and understanding of the evacuation plan and its requirements are completed.

It is also important to note that a Bushfire Evacuation and Emergency Management Plan was provided for the broader Crimson Hill residential community, and is administered by DHA / Community Association. This plan did have consideration to the proposed LLV reuse of the UTS Campus buildings.

1.11 The car parking is located within the Asset Protection Zone and on the hazard side of the development which does not comply for schools within PBP (s4.2.4).

RESPONSE: Addressed - refer to supporting Bushfire Assessment Report prepared by Blackash. There are extensive existing car parking areas surrounding the proposed LLV. These are sealed, fuel free areas suitable to be considered as part of the required APZs.

Within the context of SFPP development, PBP has a preference (as per s. 4.2.4) for car parking areas to be located strategically away from the hazard and adjacent to key access areas in order to facilitate egress under emergency conditions.

The extensive, and strategic nature of the existing car park areas, means that a significant benefit is still provided by their presence - particularly in terms of being fuel free / contributing to APZs, fragmenting existing retained vegetation areas, providing buffering to the primary access / egress routes within the site, and providing extensive, hard-stand defensible / operational areas for fire-fighters to undertake fire fighting / property protection activities.

1.12 There are additional pedestrian entry / exit points from the buildings not identified in the Bushfire Assessment Report, which are in the Flame Zone. The Performance Criteria for Asset Protection Zones in Special Fire Protection Purpose developments is that radiant heat levels of greater than 10kW/m will not be experienced by occupants or emergency services workers entering or exiting a building. While the Bushfire Assessment Report has focused on the primary entry / exit point, all other entry / exit point must also be considered as attending fire services and occupants may use any entry point at their disposal. Numerous entry / exit points (some of which were not identified in the Bushfire Assessment Report) are within the Flame Zone and indeed not even the primary entry / exit point satisfies this requirement given the state of the vegetation within the adjacent 'Edgelea Estate'. Regardless, if the adjacent APZs were adequately managed numerous entry / exit points would still exceed this threshold.

RESPONSE: Addressed - refer to 1.3 above and supporting Bushfire Assessment Report prepared by Blackash (Section 12 and 14).

1.13 The proposed construction measures are not considered adequate. The Bushfire Assessment Report indicates that the buildings will exceed the minimum standard for BAL 29 under AS3959 – 2009. The existing campus was constructed in the early 1970s and subsequently predates any bushfire regulations. While it is acknowledged that the masonry walls and concrete roofs would exceed the provisions for BAL 29, the recommended grade A safety glass does not. However, there are buildings located in a higher Bushfire Attack Level than BAL 29 (including Flame Zone). The fact that the minimum required Asset Protection Zones have not been achieved puts a higher reliance on the subject buildings being able to withstand the passage of a bushfire and provide a suitable onsite refuge location for students. If it was accepted by the NSW Rural Fire Service that the minimum required APZs could be reduced to that available to this development, then the proposal should include full retrospective compliance to the relevant Bushfire Attack Level under Australian Standard 3959 'Construction of buildings in bushfire-prone areas' 2009 to all buildings.

RESPONSE: Addressed - refer to supporting Bushfire Assessment Report prepared by Blackash (Section 12 and 14).

1.14 New construction, including the shade structures, should also comply with the relevant Bushfire Attack Level. It should be noted that from BAL 12.5 and above (i.e. anything within 100m from a bushfire hazard) Australian Standard 3959 'Construction of buildings in bushfire-prone areas' 2009 requires roof coverings to be non-combustible and subsequently fabric shade structures cannot comply.

RESPONSE: Addressed - refer to supporting Bushfire Assessment Report prepared by Blackash (Section 12 and 14).

1.15 Soft fall play surfaces and synthetic turf are also not covered in AS3959 – 2009 and as these materials generally comprise plastics / rubbers and they can give off various toxic by-products during the combustion process which are not conducive to a safe environment for attending fire services and occupants. Careful consideration should be given to the suitability of these products, which should be approved by the NSW Rural Fire Service as an alternate solution.

RESPONSE: Agree – this issue will be investigated prior to installation of soft fall.

1.16 The development has not sought to improve perimeter access around the buildings which is the preferred design option under PBP. The application relies on easements for Asset Protection Zones on adjacent properties. It should be investigated whether these agreements could be potentially broadened to also accommodate improved access provisions around the perimeter of the site and buildings to the south and west. Poor access to the APZs on the adjacent properties is most likely a contributing factor to their current unacceptable state.

RESPONSE: Addressed - refer to supporting Bushfire Assessment Report prepared by Blackash (Section 11).

Appendix 3 – Response to Submissions (2018)

Appendix 3 is a summary of issues raised by Department of Planning & Environment (DPE), within August 2018.



TABLE 1 – AGENCY SUBMISSIONS **UPDATED BY BLACKASH 23 AUGUST 2018**

MATTER	ISSUE	ACTION/COMMENT	RESPONSIBILITY
Department of Planning and Environment			
Heritage Impact Statement	An updated Heritage Impact Statement (HIS) may be required given the new impacts proposed on the landscape element (total clearing). The updated HIS included in the RfS does not make a genuine effort to assess the impacts on the significance of the landscape element.	HIS acknowledged impact but balanced with priority to maintain education use. Allie and Fiona to further comment and respond.	Urbis Heritage
Conservation Management Plan	Conservation management strategies and conservation works should be guided by a Conservation Management Plan (CMP). As such, a CMP should be prepared prior to determination.	CMP typically prepared prior to any design work. A CMP at this late stage may not achieve anything. Interpretation strategy and archival recording have been done. Urbis will have capacity to do this but will take 3-4 weeks.	Urbis Heritage
Office of Environment and Heritage			
Partial approval	Partial approval of Phase 1 will influence approvals of future Phases 2 and 3, without cumulative impacts.	Cumulative impacts will be considered for future phases of the LLV development. Phases 2 and 3 are subject to further consultation with RFS and will require assessment. In terms of cumulative impacts of bushfire mitigation measures, the APZs required for the Phase 1 school are the same width / separation distance for Phase 2 and 3.	Blackash

1



MATTER	ISSUE	ACTION/COMMENT	RESPONSIBILITY
Asset Protection Zone	Regardless of Phase 1 being given consent, Phases 2 and 3 cannot require or propose APZs in the National Park for any part of the development.	The current application is seeking approval to Phase 1 only. Phases 2 and 3 are subject to further consultation with RFS. In terms of the APZs required for the Phase 1 school, APZs are not being sought within the adjoining NPWS land for the current (or proposed future) phases of development. Refer to Attachment 2 – Management Zone Status for details regarding the ownership/responsibility of particular areas and the current or proposed management state. Attachment 2 demonstrates that the vast majority of the prescribed APZs is achievable within the boundaries of the LLV site. In particular, APZ are not being sought within adjoining NPWS lands. The only exceptions to the above, are two smaller areas of APZ to the east and west of the proposed Phase 1 building that encroach within an existing APZ that has been established (and subject to ongoing management as per an approved Bushfire Management Plan). These areas have been defined as an APZ, but are currently being managed to only an Outer Protection Area (OPA) standard – approximately 8-10 t/ha reduced fuel loads. This management intensity will need to be increased to ensure these areas are compliant with an Inner Protection Area (IPA) – approximately 3-4 t/ha fuel loads. PBP 2006 does allow managed lands / APZs within adjoining properties to be utilised (i.e. for the benefit of Phase 1) provided they are tied to consent,	Blackash

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Phase 1 School - Lindfield Learning Village, Eton Road, Lindfield



MATTER	ISSUE	ACTION/COMMENT	RESPONSIBILITY
Phase 1 Plan	Figures in Bushfire Assessment to ensure consistency with RTS and Architectural plans.	<p>therefore providing a guarantee of management in perpetuity. The adjoining APZs in this case are subject to a consent, are management regularly by contractors and subject to bi-annual certification.</p> <p>Blackash Bushfire Assessment report – figures have been updated to include accurate alignment of the Phase 1 footprint, and to include the gymnasium section to the north (and associated APZs).</p> <p>Refer to Figure 6 in Bushfire Assessment report and refer to Attachment 3 – Asset Protection Zones (Phase 1) for details regarding the required extent of vegetation management in order to mitigate the impacts of bushfire / radiant heat upon the proposed Phase 1 school buildings.</p>	Blackash
Biodiversity likelihood	Darwinia biflora and Epacris purpurascens have not been included in the species credit requiring further assessment.	<p><u>Darwinia biflora and Epacris purpurascens var. purpurascens:</u></p> <ul style="list-style-type: none"> The reason why they haven't been included in Table 4.3 as 'species credits requiring further assessment' is that they aren't candidate species for the two PCTs identified within the subject site. We have sufficient tracks across the subject site, although most are outside of the survey months for <i>Darwinia biflora</i> (except for Tammy's plot that she did in November 	EcoPlanning

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MATTER	ISSUE	ACTION/COMMENT	RESPONSIBILITY
		<p>2017 due to the updated site boundaries). Not sure why you can't survey all year round for the <i>Darwinia</i>, this can be justified as both species can be identified all year round without flowers, especially in that modified environment. A pre-clearance survey post consent could be added as a condition, to tag any individuals so they are not cleared.</p> <ul style="list-style-type: none"> Survey dates and times attributable to targeted flora survey: 24/03/17 = 7 hours (Lucas setting up EPP traps) 27/03/2017 = 6 hours (Tom doing veg plots/setting up camera traps) 5/05/2017 = 17 hours (Tom and Tam doing veg plots) 23/11/2017 = 2.5 hours (Tam's additional vegetation plot) -> We might need to confirm that the survey effort figure includes the tracks. Tam/Daz to confirm? Our botanists (Tammy Paartulu and Tom Hickman) identified and counted a number of <i>Darwinia biflora</i> outside of the subject site to the east of the Charles Bean oval. It could be worth including the tracks and results of the species count in Figure 4.1 to show that we know they are present nearby. I am sure we have this data. It doesn't make sense including these two species to Table 4.3, but maybe we could make another section in the report that discusses other species that were 	

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Phase 1 School - Lindfield Learning Village, Eton Road, Lindfield



MATTER	ISSUE	ACTION/COMMENT	RESPONSIBILITY
Plot/transect	No justification has been provided for using Plot/transects outside the site.	considered/surveyed for given their close proximity to the subject site (i.e. <i>Darwinia biflora</i> and <i>Epacris purpurascens</i>). Plots/transects being outside (or partially outside) the subject site (direct impact area) One plot was completed partially outside the subject site (Plot 1) and one plot was completed totally outside the subject site (Plot 4) due to the subject site boundary being refined several times during the life of the project. Both plots were previously within the project boundary, and although now partially or totally outside the subject site the data captured adequately reflects the condition of the vegetation zone being sampled.	EcoPlanning
Biodiversity Offset Strategy	Biodiversity Offset Strategy not adequate.	The BOS not being adequate (similar to previous comments) Due to a lack of credits available on the market the proponent intends to offset the project through payment to the Biodiversity Conservation Trust (BCT). Discussions will be held with the BCT to begin this process.	EcoPlanning
Native over-storey, ground cover and mid-storey	OEH questions the values being offered.	Site value not being reduced enough for overstorey, midstorey and shrubs Our position is that trees and shrubs can be removed and still maintained within the range of the	EcoPlanning

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MATTER	ISSUE	ACTION/COMMENT	RESPONSIBILITY
		benchmark for PCT 1782 (Site value score = 3: 14-41%); and for PCT 1776, within >50% - <100% of the benchmark (Site value score = 2: 7-13%). OEHL have requested we assume more clearing is required, as no 'lower limit' is provided in the PBP (RFS 2006). The revised and more conservative PBP document is consistent with our approach (as attached, provided by Lew Short), however OEHL correctly state these are the upper limits, not the lower limit. Given we don't have the RFS comments as yet, they may specify a lower limit and this can be updated if necessary.	
Aboriginal cultural heritage	At a minimum consult with Aboriginal Land Council and rewrite ACHIA to meet the requirements of ACHAR	The comments do not take issue with the report or its findings, but its format and consultation. Consultation with Aboriginal Land Council to be a phone call in the first instance. ACHIA to be rewritten as ACHAR (not done initially given extremely low likelihood of finding anything).	Urbis Heritage
Flood	Provide clear details on methodology and type of model used. Provide comprehensive understanding of the nature of overland flow for full range of flooding, including PMF. Prepare an emergency response plan.	Luke to respond. Flooding is not an issue for this project and further information is not considered necessary.	EWFW
Phases 2 and 3	Confirm APZs are not in National Park.	We are only seeking approval for Phase 1 so we should push back on this.	

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Phase 1 School - Lindfield Learning Village, Eton Road, Lindfield



MATTER	ISSUE	ACTION/COMMENT	RESPONSIBILITY
NSW Rural Fire Service			
General Comments	General response to the RFS correspondence.	<p>The NSW Rural Fire Service (RFS) has issued formal correspondence in response to the proposed Phase 1 Lindfield Learning Village school.</p> <p>The RFS has provided support for the Phase 1 application subject to conditions including the following key areas:</p> <ul style="list-style-type: none"> Asset Protection Zones Water and Utilities Access Design and Construction Evacuation and Emergency Management Landscaping Annual Certification <p>The DoE is generally supportive and seeking to fully implement the provided bushfire protection measures as recommended by the RFS. There are some exceptions, which have been outlined below.</p> <p>Blackash understands that Phases 2 and 3 will be subject to further consultation with RFS and require performance-based solutions to be developed.</p>	Blackash

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MATTER	ISSUE	ACTION/COMMENT	RESPONSIBILITY
Prior to Construction	RFS has outlined a number of conditions that require implementation of the required measure 'prior to construction'.	<p>RFS has outlined a number of conditions that require implementation of the required measure 'prior to construction'.</p> <p>DoE has already commenced construction within the site and, therefore, is seeking some dispensation (where the bushfire protection outcomes are not compromised) for the relevant measures to be <u>deferred until prior to occupation</u> (Occupation Certificate stage).</p> <p>The relevant measures have been highlighted below:</p> <p>a) <i>APZs: 'Prior to the commencement of building works for the proposed Phase 1 School, suitably worded instruments shall be created pursuant to section 88b of the Conveyancing Act 1919 to ensure ongoing management of the proposed APZs in perpetuity within the subject site...'</i></p> <p>Response: There is no significant bushfire protection (or other) benefit to the proposed Phase 1 school development by implementing the above requirement prior to construction. <u>Recommend deferral of condition to be implemented prior to occupation (OC stage).</u></p>	<p>Blackash</p> <p>Blackash</p>

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Phase 1 School - Lindfield Learning Village, Eton Road, Lindfield



MATTER	ISSUE	ACTION/COMMENT	RESPONSIBILITY
		<p>b) Access – Roads: 'Prior to commencement of building works the proposed Phase 1 School, the existing internal roads shall be upgraded to comply with section 4.2.7 of Planning for Bush Fire Protection...'</p> <p>Response: There is no significant bushfire protection (or other) benefit to the proposed Phase 1 school development by implementing the above requirement prior to construction. <u>Recommend deferral of condition to be implemented prior to occupation (OC stage).</u></p> <p>c) Access – Fire Trails: 'Prior to commencement of building works the proposed Phase 1 School, fire trails shall be provided as shown on Phase 1 Site Plan...'</p> <p>Response: There is no significant bushfire protection (or other) benefit to the proposed Phase 1 school development by implementing the above requirement prior to construction. <u>Recommend deferral of condition to be implemented prior to occupation (OC stage).</u></p>	

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MATTER	ISSUE	ACTION/COMMENT	RESPONSIBILITY
Slopes over 18 degrees	RFS has flagged issues with the ability to establish and maintain APZs on slopes over 18 degrees.	<p>d) Landscaping: 'Prior to commencement of building works the proposed Phase 1 School, details of landscaping plans shall be prepared to demonstrate compliance of landscaping to the site...'</p> <p>Response: There is no significant bushfire protection (or other) benefit to the proposed Phase 1 school development by implementing the above requirement prior to construction. <u>Recommend deferral of condition to be implemented prior to occupation (OC stage).</u></p> <p>The proposed Phase 1 LLV development does include some small sections of APZs, adjacent to the southern boundary of the site, where slopes are over 18 degrees. However, it is important to note that these sections are relatively short (less than 20m in width). APZ establishment and maintenance can be undertaken in accordance with PBP 2006 and RFS 'Standards for Asset Protection Zones'.</p> <p>The implementation of APZs of on steep land with slopes greater than 18 degrees, is not permissible as a deemed-to-satisfy outcome, as per Section 4.2.7 of PBP 2006, due to the difficulties in providing ongoing management in these areas and the potential environmental impacts that can occur.</p>	Blackash/ Kleinfelder

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Phase 1 School - Lindfield Learning Village, Eton Road, Lindfield



MATTER	ISSUE	ACTION/COMMENT	RESPONSIBILITY
		<p>However, the relevant Performance Criteria within PBP also allows for the following:</p> <p><i>"Applicants demonstrate that issues relating to slope are addressed : maintenance is practical, soil stability is not compromised and the potential for crown fires is negated."</i></p> <p>The supporting Blackash Bushfire Assessment Report notes that the majority of the required APZs will not be situated on lands with slope greater than 18 degrees.</p> <p>Any residual steep areas requiring management will be subject to a Vegetation Management Plan (VMP) to ensure management occurs to the appropriate standards with consideration of the ecological / environmental outcomes.</p> <p>See Attachment 1 for Phase 1 Slope Analysis map.</p> <p>Kleinfelder are providing the Vegetation Management Plan (VMP) that will include establishment and maintenance of APZs. Accessibility of slopes over 18 degrees will be addressed in the VMP, and will include measures such as, primary access to steep lands being via foot, with contractors using hand tools.</p> <p>RFS have confirmed that use of the maximum APZ of 100m, as per PBP 2006 table A2.6, for Phase 1 is acceptable.</p> <p>In summary the proposed Phase 1 school</p>	

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MATTER	ISSUE	ACTION/COMMENT	RESPONSIBILITY
		<p>development:</p> <ul style="list-style-type: none"> Satisfies the requirements for management of lands in excess of 18 degrees. Provides a VMP, prepared by Kleinfelder, that will address the maintenance of these steep slopes; and Includes steep slopes that are part of the existing APZ management plan, as previously approved. 	
RMS			
Awaiting comment			
TfNSW			
Bus serviceability	Consult further with TfNSW to address operational requirements for remaining phases.	Noted.	
School bus plan for Phase 1	Develop school bus plan in consultation with TfNSW prior to school commencement.	Andrew to respond. Condition of consent?	Arup
Cycling access and bicycle parking provision	Details required on location/type of EOTF for staff and students. Identify and assessment potential cycle routes.	Arup to respond.	Arup
Changes to parking controls on Eton Road	May require approval from Council's Local traffic committee and should be undertaken as soon as possible.	Noted.	
Ku-ring-gai Council			

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Phase 1 School - Lindfield Learning Village, Eton Road, Lindfield



MATTER	ISSUE	ACTION/COMMENT	RESPONSIBILITY
External APZs	External APZs should not be relied on.	<p>There is a general preference within areas of new development (such as Phase 1) for APZs positioned within adjoining lands to not be relied upon to provide bushfire protection and compliant APZ outcomes for the benefit of new development proposal. However, PBP 2006 does make allowances for certain types of vegetation and land use to be considered as 'managed'. Existing APZs on adjoining land can be considered and utilised, provided management can be demonstrated and achieved in perpetuity – with linkages to approved consent conditions.</p> <p>In this particular instance, the APZs that have been implemented as part of the adjoining Crimson Hill residential development have been approved by Kuring-gai Council and conditioned to ensure management in perpetuity. PBP states, in relation to APZs for new development, that:</p> <p><i>"As a condition of development consent, the consent authority is required to ensure that a mechanism is established for the maintenance of the APZs over the life of the development".</i></p> <p>In this instance, various mechanisms have been implemented, including a body corporate carrying responsibility, regular maintenance (as per BMP) and regular auditing to ensure BMP/PBP principles have been implemented.</p> <p>In relation to the Strategic Fire Advantage Zones (SFAZ) – including the those with 'Heavy Landscaping' – the approved BMP notes that these</p>	Blackash

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MATTER	ISSUE	ACTION/COMMENT	RESPONSIBILITY
		<p>are still to managed to a level consistent with (at least) an Outer Protection Area (OPA) fuel modification/reduction, as prescribed within PBP 2006.</p> <p>Provided that these areas (APZs & SFAZ) are managed in perpetuity as per the relevant consent, then they can be relied upon as APZs for the Phase 1 proposal.</p> <p>Furthermore, the Phase 1 footprint has been modified to ensure the majority of required APZs are within the boundaries of the DoE / LLV lands.</p> <p>The key exception to the above is to the north east where there is reliance upon management within the adjoining Crimson Hill residential community (DHA). The designated APZs for Crimson Hill have been designated to be managed entirely as APZ use under the governance of a Bushfire Management Plan (BMP) prepared for the development.</p> <p>Refer to Attachment 2 – Management Zone Status for details regarding the ownership/responsibility of particular areas and the current or proposed management state.</p> <p>Attachment 2 demonstrates that the vast majority of the prescribed APZs is achievable within the boundaries of the LLV site. In particular, APZ are not being sought within adjoining NPWS lands.</p> <p>Therefore, in summary, the proposed Phase 1 School development:</p> <ul style="list-style-type: none"> Provides both existing and newly established APZs within the LLV lands. 	

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Phase 1 School - Lindfield Learning Village, Eton Road, Lindfield



MATTER	ISSUE	ACTION/COMMENT	RESPONSIBILITY
Minimum APZs	Minimum APZs have been calculated using wrong provisions of PBP 2017.	<ul style="list-style-type: none"> Relies (in some areas to the east and west of the building footprint) on existing approved APZ's. Relies on areas that are not currently managed / designated APZ's to achieve the 100m - this is permissible as these areas are required by consent to managed to APZ standards. <p>The NSW RFS and Fire Protection Association of Australia (FPAA) have advised all bushfire consultant in NSW not to use the draft version of <i>Planning for Bush Fire Protection 2018</i>.</p> <p>PBP 2006 is the in-force document at the time of submission to the Department of Planning as has been correctly used as the reference document.</p> <p>APZs requirements for Phase 1 of the LLV proposal have been based on the maximum (100m) deemed to satisfy (DTS) requirements of PBP 2006. PBP 2018 also provides a maximum DTS APZ of 100m for schools. The APZs used comply with both PBP 2006 and PBP 2018.</p> <p>RFS have confirmed that use of the maximum APZ of 100m, as per PBP 2006 table A2.6, for Phase 1 is acceptable.</p>	Blackash

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MATTER	ISSUE	ACTION/COMMENT	RESPONSIBILITY
Traffic Study	The revised Bushfire Report references a traffic study which was undertaken for the Crimson Hill residential development and the impacts upon the internal and surrounding road network, both under emergency and normal use conditions, with the findings being the road network was satisfactory. This study did not consider the proposed school. Consideration as to whether a traffic study should be undertaken which considers the existing Crimson Hill residential community and the proposal under emergency conditions.	<p>The Draft Bushfire Evacuation Plan has a range of options that can be implemented based on the realisation of various scenarios that limits traffic issues. This includes early evacuation (by foot or bus) to Lindfield Public School, where available relocation by bus or remaining on site until directed to move by emergency services. Under these provisions, it is not anticipated that traffic will be of consequence.</p> <p>Any cars parked on the site at the time of evacuation will remain on site and not be used for evacuation.</p> <p>Further refinement / development of the Evacuation Plan is being undertaken, including investigation of closure of the school during Extreme and Catastrophic Fire Danger Rating / fire weather scenarios. Closure of the school when there is bushfire activity within the vicinity is also being considered.</p> <p>Blackash also expects to undertake consultation with the school principal before finalising all elements of the evacuation plan to ensure the process can be suitably managed. Broader precinct level considerations will be worked through in the Evacuation Plan.</p>	Traffic Engineer with input from Blackash

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Phase 1 School - Lindfield Learning Village, Eton Road, Lindfield



MATTER	ISSUE	ACTION/COMMENT	RESPONSIBILITY
Consideration matters	<ul style="list-style-type: none"> Suitability of proposed internal fire stair. Suitability of upgrade measures for the balance of the existing building. Traffic study for Crimson Hill residential and the proposal under emergency conditions. 	<p>Importantly, the RFS has <u>not</u> specified within their conditions for Phase 1 School development that the existing buildings are to be upgraded.</p> <p>In this case, the limitation of the future school use to the Phase 1 footprint only, in combination with the internal 'fire separation' from the other portions of the building, mean that upgrades to these areas of the building are less likely to be as effective or necessary.</p> <p>The base building construction already utilises a significant amount of non-combustible materials in the form of masonry / concrete-based materials. The most obvious candidates for upgrades include the windows, doors and other penetrations – vulnerable portions of the buildings.</p> <p>Should Phase 2 and 3 proceed, upgraded construction would be required at that point.</p> <p>Blackash understands that no construction upgrade measures are proposed to remainder of the LLV building, as it will remain unused.</p> <p>Phase 1 is fully compliant and does not rely on upgrades to the rest of the building.</p>	Blackash and Arup
Biodiversity	Amend BAR to provide species credits to offset the loss of habitat for <i>Darwinia biflora</i> , Redcrowned Toadlet and Powerful Owl.	EV comments: <i>BAR has been amended and awaiting comments from Klienfelder n minimum fuel loads.</i>	Ecoplaning
Tree removal	Complete tree removal is inconsistent with Arborist report. Arborist report is inadequate.	EV comment: <i>Lucas is updating his report to align with the revised APZ's outlined in the VPM.</i>	Ecoplaning

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MATTER	ISSUE	ACTION/COMMENT	RESPONSIBILITY
Landscape Plan	Detailed landscape plan should identify trees to be removed and trees to be retained or transplanted. Landscape plans are inadequate for various reasons – refer to Council's letter.	Detailed landscape plan can be prepared for CC, so can be conditioned. DesignInc to comment on Council letter.	DesignInc
Landscape Heritage	Assessment of landscape design has not been provided and HIA is inconsistent with Arborist Report.	Urbis Heritage to comment. HIA to remove reference to Arborist report considering the proposal is for full tree removal.	Urbis Heritage
Certification of landscape design	Bushfire assessment should include certification of landscape design.	Blackash can provide a review, advice and certification of the proposed landscape design for the Phase 1 development works, in terms of compliance against PBP 2006. Landscape design TBC.	Blackash
Preliminary Construction Management Plan	Inadequate with reference to Phase 1 and 2 works. Show trees to be removed and retained. Swept paths should be provided.	Unnecessary. CMP can be conditioned for CC.	
Flood	Flood study be revised in accordance with DCP Part 24R.7. Prepare hazard assessment of whole site.	Luke to respond. Flooding is not an issue for this project and further information is not considered necessary.	EWFW
Stormwater	Consider substantial increases to capacity of the rainwater reuse tanks.	The proposal is not changing.	
Heritage	<ul style="list-style-type: none"> Extensive intervention CMP Bushland setting 	Allie and Fiona to comment.	Urbis Heritage

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Phase 1 School - Lindfield Learning Village, Eton Road, Lindfield



MATTER	ISSUE	ACTION/COMMENT	RESPONSIBILITY
Private vehicles	How will pick up operation be achieved.	Andrew to comment but response not necessary (non-issue).	Arup
Bicycle	Comply with AS	Response not necessary.	
Parking			
On-Street parking	Any changes to parking restrictions on Eton Road need to be approved by Traffic committee.	Noted. Response not necessary.	
No parking restrictions	On both sides of Eton Road between Austral Ave and curve of Austral Ave is excessive. Only the southern side of Eton Road be considered for No Parking restrictions between (approximately) 76 Eton Road at the curve west of Austral Avenue, and on a part-time basis (7am-9.30am, 2.30pm-4.30pm, School Days only).	Andrew to comment. Condition of consent if we agree?	Arup
Pedestrian footpaths	Upgrading the footpath width to 2m would not be satisfactory for subsequent stages when student numbers are projected to reach 2,100. The location of the bicycle racks near the entrance to the main building suggests that the route of the upgraded footpath (between the Eton Road bus stop and the bike racks) would likely be used by children riding bicycles to school, necessitating additional width and possibly some separation.	Andrew to comment but response not necessary (non-issue).	Arup
Bus facilities		Andrew to comment but response not necessary (non-issue).	Arup
Transport strategies		Andrew to comment but response not necessary (non-issue).	Arup
Stage 1 revised traffic distribution	Does not address potential impact/growth in traffic on certain local roads.	Andrew to comment.	Arup

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MATTER	ISSUE	ACTION/COMMENT	RESPONSIBILITY
Stage 2 assessment	Various comments	Andrew to comment but response not necessary.	Arup
Heritage Council			
Landscape heritage	While the Heritage Council is supportive of the adaptive reuse of the place for its continued conservation and maintenance, there are strong concerns that the amended application would facilitate establishment of the Phase 1 School and removal of large number of trees from a significant landscape without guaranteeing that the remainder of the site will be approved for use in future. Alternative approaches for an appropriate fire solution to the site be canvassed which are sympathetic to the heritage significance of the site and its landscape, before works for the extensive or complete removal of trees on the site is approved	Comments at odds with Council and RFS. No response necessary.	
Action for Public Transport			
Public transport options and routes	<ul style="list-style-type: none"> Don't have staggered starts. Allow buses onto campus. Operate a small fleet of dedicated buses. Offer long-day childcare only. Prohibit parent cars from campus at peak times with exceptions for mobility problems. Kindergarten drop-offs and pickups would have to be (say) 15 minutes after the morning peak and 15 minutes before afternoon peak respectively. Provide drop-off and pick-up facilities at appropriate locations in Eton Road and either 	Andrew to comment. This was specifically mentioned by DPE as a letter was issued to the Minister.	Arup

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Phase 1 School - Lindfield Learning Village, Eton Road, Lindfield



MATTER	ISSUE	ACTION/COMMENT	RESPONSIBILITY
	<div>Abingdon Road or Westbourne Road. Some cover from rain might be appropriate.</div> <ul style="list-style-type: none">• Devise tactics for deterring parent and other unessential traffic from Eton west of Austral and Abingdon west of Westbourne during school peak hours.• Efficient shuttle services should be provided inside that area.• Devise a procedure for controlling resident cars on campus in the event of any emergency		

Appendix 4 - References

Australian Building Codes Board *Building Code of Australia Volumes 1&2*

Australian Standard AS/NZS 1596 'The storage and handling of LP Gas'

Councils of Standards Australia AS3959 (2009) – *Australian Standard Construction of buildings in bushfire-prone areas*

Keith, David (2004) – *Ocean Shores to Desert Dunes – The Native Vegetation of New South Wales and the ACT*. The Department of Environment and Climate Change

NSW Rural Fire Service (2015) *Guide for Bushfire Prone Land Mapping*

NSW Rural Fire Service (2011) Practice Note 1/11 Telecommunication Towers in Bushfire Prone Areas

NSW Rural Fire Service (RFS). 2006. *Planning for Bush Fire Protection: A Guide for Councils, Planners, Fire Authorities, Developers and Home Owners*. Australian Government Publishing Service, Canberra

NSW Government (1979) *Environmental Planning and Assessment Act 1979*. NSW Government Printer