GROUPDLA

Building Code of Australia 2022 Report

Report for BCA Compliance

PROJECT NAME: **Vincentia High School Upgrade - 142 The Wool Road, Vincentia NSW 2540**
PROJECT NUMBER: **GDL240273**
DATE: **31/03/2025 (REF) – Rev F**

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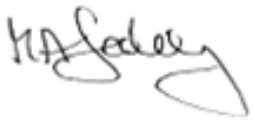
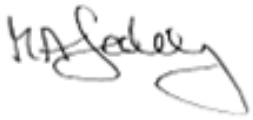
REVISION HISTORY

Revision	Date	Details	Authorised	
			Name/Position	Signature
A	11/09/2024	Masterplan Review	Prepared: Mike Gooley Associate	
			Reviewed: Justin Jones-Gardiner Director	
B	13/09/2024	Include FTA comments	Prepared: Mike Gooley Associate	
			Reviewed: Justin Jones-Gardiner Director	
C	08/11/2024	CD – 80%	Prepared: Mike Gooley Associate	
			Reviewed: Justin Jones-Gardiner Director	

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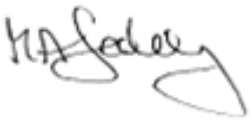
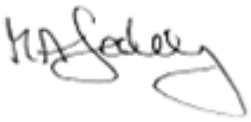
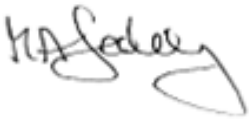
			Name/Position	Signature
D	19/12/2024	SD – 80%	Prepared: Mike Gooley Associate	
			Reviewed: Justin Jones-Gardiner Director	
E	24/03/2025	REF - draft	Prepared: Mike Gooley Associate	
			Reviewed: Justin Jones-Gardiner Director	
F	31/03/2025	REF - Final	Prepared: Mike Gooley Associate	
			Reviewed: Justin Jones-Gardiner Director	

Table 1 – Revision History

1.0 EXECUTIVE SUMMARY

This BCA Assessment Report has been prepared to support a Review of Environmental Factors (REF) for the NSW Department of Education (DoE) for Vincentia High School upgrade (the activity).

The purpose of the REF is to assess the potential environmental impacts of the activity prescribed by State Environmental Planning Policy (Transport and Infrastructure) 2021 (T&I SEPP) as "development permitted without consent" on land carried out by or on behalf of a public authority under Part 5 of the Environmental Planning and Assessment Act 1979 (EP&A Act). The activity is to be undertaken pursuant to Chapter 3, Part 3.4, Section 3.37 of the T&I SEPP.

The proposed activity relates to upgrades to Vincentia High School. Specifically, the proposed activity comprises the following:

- Construction of a new two-storey home base building.
- Installation of solar panels.
- Construction of new stairs and covered walkways.
- Internal road upgrade which involves providing a new drop off zone, parking spaces and pedestrian pathway.
- Relocation of existing shade structure.
- External landscape works.
- Tree removal.

This document has been prepared in accordance with the Guidelines for Division 5.1 assessments (the Guidelines) by the Department of Planning, Housing and Infrastructure (DPHI) as well as the Addendum Division 5.1 guidelines for schools. The purpose of this report is to supplement the REF submission to demonstrate that compliance is readily achieved with the National Construction Code, Volume 1, Class 2-9 Buildings, Building Code of Australia 2022 ("BCA").

Compliance with the BCA will be achieved by a combination of Deemed-to-Satisfy and Performance Solutions and will be assessed further as the design progresses towards the crown certification of building works. Refer to Section 5 and 6 of this report which details departures from the DTS to be addressed by performance solutions. The design documentation will require further assessment as the design progresses within the next stage of the design documentation.

2.0 INTRODUCTION

The subject BCA review has been limited to an assessment of the REF – architectural drawings (100% SD) from Fulton Trotter Architects against BCA 2022.

2.1 Reporting Team

The information contained within this report was prepared by Mike Gooley, Registered Certifier (BDC0143) and reviewed by Justin Jones-Gardiner, Registered Certifier (BDC0204) from Group DLA.

2.2 Current Legislation

The applicable legislation governing the BCA version for buildings is the Environmental Planning and Assessment Act 1979.

Whilst we await final confirmation on the building approval mechanism, it is understood at this stage that the project will follow a Crown Approval pathway (State Government Project or University). The provisions of Section 6.28 of the Environmental Planning and Assessment Act (Crown Building Work), require that the building work be carried out in accordance with the Building Code of Australia (BCA). The application of compliance with the particular version of the BCA is the date on which tenders were issued for the building works.

The BCA is now updated every three (3) years, the next updated will be BCA 2025 which is anticipated to come into force on the 1st of May 2025.

2.3 Fire Brigade

As per BCA 2022 Clause A2G2(4) all Performance Solutions are required to undertake a Performance Based Design Brief (PBDB) process, NSW Fire Brigades have advised (https://www.fire.nsw.gov.au/page.php?id=9154) that they will only provide their stakeholder input via a Fire Engineering Brief Questionnaire (FEBQ) process prepared and lodged by the engaged Fire Safety Engineer. This applies to all projects irrespective of the approval process, Crown, REF, CDC or Construction Certificate projects, if there are any Performance Solutions affecting fire safety all need to undertake this stakeholder engagement with NSW Fire Brigade which the Fire Safety Engineering will lodge.

Construction Certificates - the Environmental Planning and Assessment (Development Certification and Fire Safety) Regulations 2021 (EP&A Reg 2021), Section 27 (previously Clause 144 of the Old Regulation), requires buildings the subject of Construction Certificate approval to have the Fire Engineering Report to be referred to Fire Brigade within seven (7) days of lodgement of the CC application on the NSW Government e-Planning Portal in certain cases.

Section 27 of the EP&A 2021 Regs defines which fire engineering reports need to be referred, and generally relates to Category 2 Fire Safety Provisions (defined in the Act) and/or for cladding performance solutions[1], and the floor area of a fire compartment in general terms exceeds 2000 m^2 or the floor area of the building exceeds 6000 m^2, the Section 27 referral to the FRNSW is to be assessed and lodged by the engaged Registered Certifier assessing the Construction Certificate**.**

[1]***Category 2 fire safety provision means the following provisions of the Building Code of Australia, namely, CP9, EP1.3, EP1.4, EP1.6, EP2.2 and EP3.2 in Volume One of that Code.***

It is common practice to adopt this Construction Certificate process on Crown projects under a voluntary submission, however this is up to the discretion of the Crown Authority if this subsequent Fire Engineer Report referral and Inspection of Fire Brigades will be adopted on a project by project. (Note: there is no option for the FEBQ process, but voluntary for the Report lodgement and request for inspection on completion which can only be made if the report is lodged initially.)

Under recent changes to the legislation and Fire brigade advice, for Section 27 referrals of the Fire Engineering Report the fire brigade is required to respond within 10 days advising whether or not they will be proceeding with a review and providing the Initial Fire Safety Report. If so, they have not more than 28 days from the initial lodgement to provide their report or the Certifier can choose to invoke the provisions of Clause 144(6A)(c) and issue the Construction Certificate after 28 days of officially lodging the Clause 144 application; further consultation is required on this issue with the engaged Certifier as in almost all cases the Certifier will await comments and adopt any recommendations made by NSW Fire & Rescue which may have programme implications to be planned for.

2.4 Limitations

This report does not constitute or include, nor imply or audit any assessment of the following;

- This assessment is limited to the developed documentation at the date of this report and as referenced within the "Documentation Assessed" section of the Report.
- Preparation of performance provisions of the BCA are excluded.
- This report does not include assessment of the documentation against the provisions of the Disability Discrimination Act 1992 or (Access to Premises Buildings) Standards 2010.
- Any roof top plant or the like has been assessed (assumed) as open to the sky. Covered areas to roof tops may constitute an extra storey thus BCA requirement for the entire building may change.
- Travel distances have been assessed on an open plan basis with an allowance made for travel around pending fixed structures. No consideration has been given to any future fixed structures and accordingly, further assessment will be required in the event of floor plan or fixture amendments if and when these are provided formally.
- This report excludes any form of Certification Work as defined in the regulations, and is for BCA Compliance purposes only.
- Generally, the assessment does not include a detailed assessment of Australian Standards.
- Requirements of other Regulatory Authorities including, but not limited to, Telstra, Telecommunications Supply Authority, Water Supply Authority, Electricity Supply Authority, Work Cover, Roads and Maritime Services (RMS), Local Council, ARTC, Department of Planning, Liquor Licensing Act 1997 and the like; and
- Demolition Standards not referred to by the BCA.
- Work Healthy and Safety Act 2011 (Safety in Design).
- The National Construction Code – Plumbing Code of Australia Volume 3.
- BCA Report lists Clauses and Specifications are based on the Draft version of BCA 2022, should changes occur in the issued/adopted version then any changes are excluded and the actual clause in the BCA will supersede anything listed in the Report.
- The capacity of design of any Electrical, Fire, Hydraulic or Mechanical Services.
- Structural and services drawings have not been reviewed, nor any consideration given to the structural capacity (or inherent FRL's) of the building.

3.0 Site Description

The site is located at 142 The Wool Road, Vincentia, NSW, 2540 and has an approximate site area of 8.09ha. The site is comprised of two lots, legally referred to as Lot 1 Deposited Plan P809057 and Lot 1 Deposited Plan 550361 and is located within the Shoalhaven City Local Government Area (LGA). An aerial photograph of the site is provided at Figure 1.

The site is zoned SP2 Educational Establishment and existing development comprises various buildings, a car park, landscaping, a sports field and sports courts associated with Vincentia High School. Vincentia High School currently comprises 49 permanent teaching spaces (PTS) and 17 demountable teaching spaces (DTS). The eastern portion of the site contains natural bushland.

The site is an irregularly shaped lot. Vehicle access is provided to The Wool Road via a driveway that connects to a signalised intersection. There is a footpath and cycleway along The Wool Road. The surrounding land consists of extensive natural bushland (Jervis Bay National Park).

Figure 1: Aerial Photograph of the Site

Source: Urbis, January, 2024

Figure 1: Aerial View of Site

3.1 Proposed Activity Description

The proposed activity relates to upgrades to Vincentia High School. Specifically, the proposed activity comprises the following:

i) Construction of a new two-storey home base building.

ii) Installation of solar panels.

iii) Construction of new stairs and covered walkways.

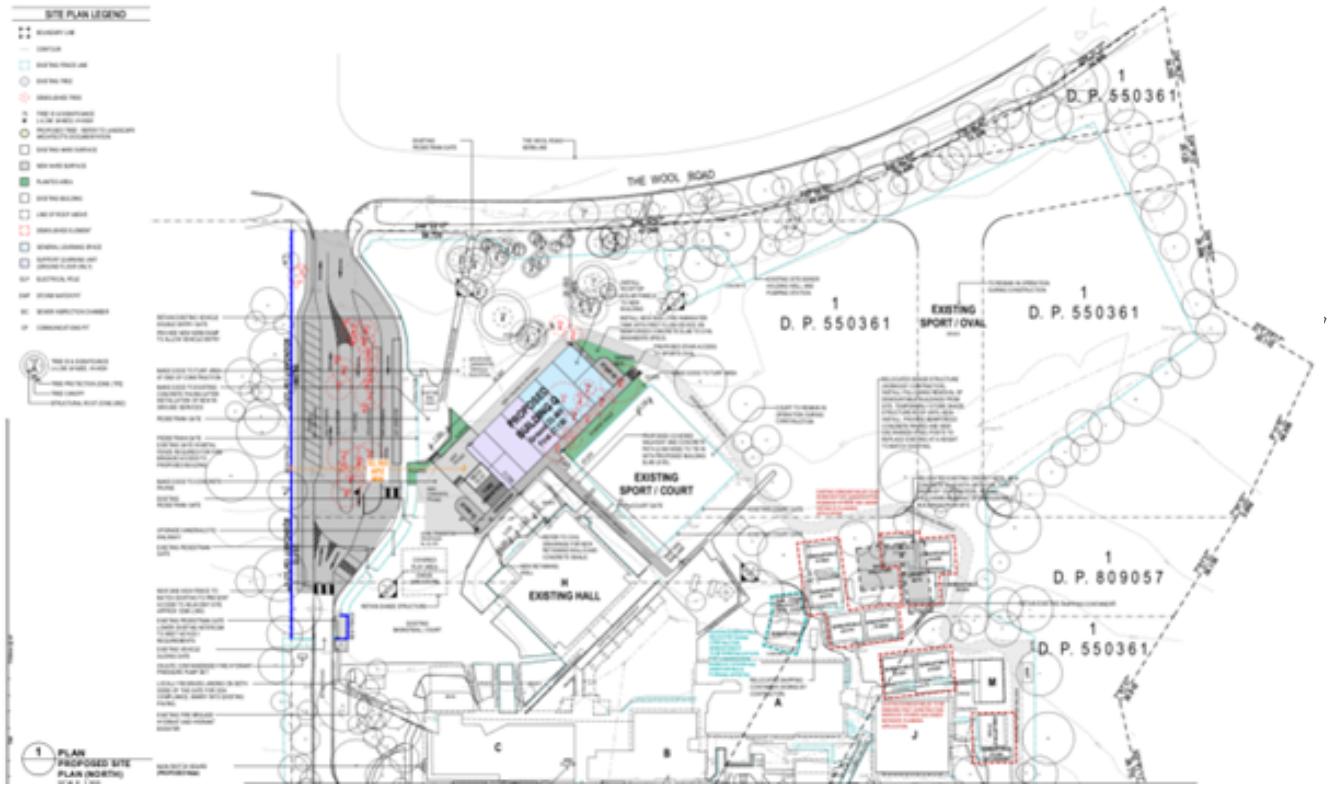
iv) Internal road upgrade which involves providing a new drop off zone, parking spaces and pedestrian pathway.

v) Relocation of existing shade structure.

vi) External landscape works.

vii) Tree removal.

Any works relating to the existing demountables will be undertaken via a separate planning pathway. **Figure 2** provides an extract of the proposed site plan.



Source: Fulton Trotter, 2025

Figure 2: Site Plan

The report will assess the preferred Schematic Design for Vincentia High School to assess compliance with the National Construction Code, Volume 1, Class 2-9 Buildings, Building Code of Australia 2022 ("BCA").

3.2 Building Description

BCA Class	Level	Description/Use Proposed
Class 9b	Ground and level 1	Educational Purposes
Class 10a	Ground Level	Covered Walkways

Table 2 – Building Class (or part)

Characteristic	Description Option 01 - (Preferred Masterplan)
BCA Classifications:	Class 9b & 10a
Type of Construction:	Type B
Floor Area of Whole Building:	(less than 3,000m^2)
Volume of Whole Building:	(Approx. 8,100m^3)
Max Fire Compartment Size (Floor Area):	5,500m^2
Max Fire Compartment Size (Volume):	33,000m^3
Fire Compartments:	Single fire compartment
Rise in Storeys:	2
Levels Contained:	2
BCA Effective Height:	Less than 25m
Climate Zone:	6
Importance Level (BCA Table B1D3a):	Assume 3
Bush Fire Prone Land	Yes

Table 3 – Building Characteristic

3.3 Documentation Assessed

This report is based on the following Schematic Design (architectural drawings – 100%, Revision 10 dated 07/02/2025) prepared by Fulton Trotter.

Description	Drawing No.	Revision
Existing Site Plan 01	DR-A-1001	10
Existing Site Plan 02	DR-A-1002	10
Site Analysis Plan	DR-A-1003	03
Proposed Site Plan 01	DR-A-1101	11
Proposed Site Plan 02	DR-A-1102	10
Site Sections	DR-A-1201	08
Shadow Diagrams	DR-A-1301	03
Shadow Diagrams	DR-A-1302	03
External Works Plan 01	DR-A-1401	02
Staging Plan 01	DR-A-1501	06
Staging Plan 02	DR-A-1502	06
Play space Calculations	DR-A-1601	03
Proposed Amenities Strategy	DR-A-1602	03
Indigenous Artwork Strategy	DR-A-1604	03
Proposed Ground Floor Plan	DR-A-2101	10
Proposed Level 1 Floor Plan	DR-A-2102	10
Proposed Level 1 Ceiling Plan	DR-A-2201	05
Proposed Level 1 Ceiling Plan	DR-A-2202	05
Proposed Roof Plan	DR-A-2103	10
Proposed Elevations	DR-A-3201	05
Proposed Elevations	DR-A-3202	05
Proposed Sections	DR-A-3301	05
Façade Strategy	DR-A-3401	08

Description	Drawing No.	Revision
External Materials and Finishes	DR-A-3402	04
External Wall Type Details	DR-A-4001	05
Internal Wall Type Details	DR-A-4002	05
Typical Details Section 01	DR-A-4201	05
Typical Detail Section 02	DR-A-4202	05
Stair & Ramp Details	DR-A-4401	02
Handrail & Balustrade Details	DR-A-4501	02
Typical Covered Walkway Details	DR-A-4801	03
Typical Fascia Details	DR-A-4901	03
Core Amenities Room Layouts Plans – Ground Floor	DR-A-5001	01
Core Amenities Room Layout Elevation – Ground Floor	DR-A-5002	01
Core Amenities Room Layouts Plans – First Floor	DR-A-5003	01
Core Amenities Room Layouts Elevations – First Floor	DR-A-5004	01
External Door & Window Schedule	DR-A-6001	02
Internal Door & Window Schedule	DR-A-6002	02
Perspectives 01	DR-A-9001	06

Table 4 – Documentation Assessed

Additional Supporting Documentation:
➢ Bushfire – Opportunities and Constraints Assessment Report by Eco Logical dated 1 November 2023.
➢ Bushfire Protection Assessment by Eco Logical (Revision 3 dated 3 March 2024).
➢ Annual Fire Safety Statement for Vincentia Public School

Table 5 – Documentation Assessed

Assumptions

Assumptions made in the preparation of the report are identified below:

1. A total school campus population of up to 999 (2024) students with 143 staff (129 full time equivalent) (2024).
2. Importance Level: Guide to the BCA indicates importance level 3 apply to buildings and facilities with a primary school, a secondary school or day care facilities with a capacity greater than 250.
3. The external balconies and walkways are open circulation areas with sterile finishes. Consequently, the use of these areas does not contribute to the fire load for the purposes of assessment under Part C3 of the BCA.
4. Disabled Access, Section J energy Efficiency (ESD Report) are excluded from this report and details relating to these elements are located in other reports / documentation.

4.0 BCA COMPLIANCE DISCUSSION & DESIGN CONSIDERATIONS

The following assessment will provide an overview of the compliance with the BCA and identify issues that require particular attention as the design progresses towards the crown certification of building works.

Section B – Structure

1. Structural Engineer to review and provide compliant design in accordance with Part B, Part C and Clauses D3D4 of BCA 2022, and all listed / referenced Australian Standards.

2. Structural Engineer is to outline and provide to the Consultant Team (Façade designer, Architect and Services Consultants) the calculated expected Earthquake actions and expected forces expected on non-structural components to be designed for, from Section 8 of AS 1170.4-2007 as referenced in BCA 2022.

3. Services Consultants to provide confirmation of compliance of non-structural elements in accordance with Sections 8 of AS1170.4-2007 or alternatively Structural Engineer to provide specific design statement referencing non-structural elements as outlined in Section 8 of AS1170.4-2007 Note: This may require input from Structural engineer as per Item 2 above.

4. Architect to provide confirmation of compliance of non-structural elements in accordance with Sections 8 of AS1170.4-2007 or alternatively Structural Engineer to provide specific design statement referencing non-structural elements as outlined in Section 8 of AS1170.4-2007. Note: This may require input from Structural engineer as per Item 2 above.

Section C – Fire Resistance

5. Structural Engineer and Architect to review and provide compliant design with respect to required FRL's for a Type B, 9b structure, including all loadbearing structures which provide direct vertical or lateral support to those elements with a required FRL. The proposed building will be located approximately 12m from existing buildings. This will require loadbearing elements of external walls situated within 18m of adjacent buildings to be designed to achieve an FRL of 120/30/- in accordance with Table S5C21a of BCA 2022.

6. Lift Shaft – should the lift shaft/s be designed to be non-loadbearing; the Structural engineer is to provide the required Earthquake information to the consultant designing the lift shafts to meet the requirements of Section 8 of AS 1170.4-2007 as referenced in BCA 2022.

7. Architect / Façade Consultant is to provide a Detailed statement outlining each part/element contained in the makeup of the external wall system and any other elements required to be non-combustible in accordance with C2D10 (external walls) & C2D14 (Ancillary Elements). Current fire test reports required to be provided in accordance with AS1530.1 for each element required to be non-combustible in accordance with C2D10 & C2D14.

8. The proposed new two storey building is situated across the 2 allotments which creates multiple technical non-compliances with the BCA:
    - External walls situated within 3.0m to the allotment boundary is required to achieve an FRL;
    - Window and doorway openings within 3.0m to the allotment boundary is required to be protected.
    - These departures from the DtS provisions can be readily address via a performance solution from a fire engineer to comply with the performance requirements of BCA 2022.

Type B, 9b structure:

(1) In a building *required* to be of **Type B construction**—

(a) each building element listed in Tables S5C21a to S5C21f, and any beam or column incorporated in it, must have an FRL not less than that listed in the Table for the particular Class of building concerned; and

(b) if a stair *shaft* supports any floor or a structural part of it—

(i) the floor or part must have an FRL of 60/–/– or more; or

(ii) the junction of the stair *shaft* must be constructed so that the floor or part will be free to sag or fall in a fire without causing structural damage to the shaft; and

(c) any *internal wall* which is *required* to have an FRL with respect to *integrity* and *insulation*, except a wall that bounds a *sole-occupancy unit* in the topmost (or only) *storey* and there is only one unit in that *storey*, must extend to—

(i) the underside of the floor next above if that floor has an FRL of at least 30/30/30; or

(ii) the underside of a ceiling having a *resistance to the incipient spread of fire* to the space above itself of not less than 60 minutes; or

(iii) the underside of the roof covering if it is *non-combustible* and, except for roof battens with dimensions of 75 mm x 50 mm or less or *sarking-type material*, must not be crossed by timber or other *combustible* building elements; or

(iv) 450 mm above the roof covering if it is *combustible*; and

(d) a *loadbearing internal wall* and a *loadbearing fire wall* (including those that are part of a *loadbearing shaft*) must be constructed from—

(i) concrete; or

(ii) masonry; or

(iii) subject to (2), *fire-protected timber*; or

(iv) any combination of (i) to (iii); and

(e) in a Class 5, 6, 7, 8 or 9 building, in the *storey* immediately below the roof, internal columns and *internal walls* other than *fire walls* and *shaft* walls, need not comply with Tables S5C21a to S5C21f; and

(f) in a Class 2 or 3 building, except where within the one *sole-occupancy units*, or a Class 9a *health-care building* or a **Class 9b building**, a floor separating *storeys* or above a space for the accommodation of motor vehicles or used for storage or any other ancillary purpose, must—

(i) be constructed so that it is at least of the standard achieved by a floor/ceiling system incorporating a ceiling which has a *resistance to the incipient spread of fire* to the space above itself of not less than 60 minutes; or

(ii) **have an FRL of at least 30/30/30**; or

(iii) have a *fire-protective covering* on the underside of the floor, including beams incorporated in it, if the floor is *combustible* or of metal; and

(g) in a Class 9c building a floor above a space for the accommodation of motor vehicles or used for storage or any other ancillary purpose, and any column supporting the floor must—

(i) be constructed so that it is at least of the standard achieved by a floor/ceiling system incorporating a ceiling which has a *resistance to the incipient spread of fire* to the space above itself of not less than 60 minutes; or

(ii) have an FRL of at least 30/30/30; or

(iii) have a *fire-protective covering* on the underside of the floor, including beams incorporated in it, if the floor is *combustible* or of metal.

(2) For the purposes of (1)(d)(iii), *fire-protected timber* may be used, provided that—

(a) the building is—

(i) a separate building; or

(ii) a part of a building—

(A) which only occupies part of a *storey*, and is separated from the remaining part by a fire wall; or

(B) which is located above or below a part not containing *fire-protected timber* and the floor between the adjoining parts is provided with an FRL not less than that prescribed for a *fire wall* for the lower *storey*; and

(b) the building has an effective height of not more than 25 m; and

(c) the building has a sprinkler system (other than a FPAA101D or FPAA101H system) throughout complying with Specification 17; and

(d) any insulation installed in the cavity of the timber building element required to have an FRL is non-combustible-

(e) ; and

(f) *cavity* barriers are provided in accordance with Specification 9.

(3) For the purposes of Table S5C21a and Table S5C21b, *external wall* includes any column and other building element incorporated within it or other external building element.

Table S5C21a: Type B construction: FRL of loadbearing parts of external walls

Distance from a fire-source feature	FRL (in minutes): Structural adequacy/ Integrity / Insulation			
	Class 2, 3 or 4 part	Class 5, 7a or 9	Class 6	Class 7b or 8
Less than 1.5 m	90/90/90	120/120/120	180/180/180	240/240/240
1.5 to less than 3 m	90/60/30	120/90/60	180/120/90	240/180/120
3 m to less than 9 m	90/30/30	120/30/30	180/90/60	240/90/60
9 m to less than 18m	90/30/–	120/30/–	180/60/–	240/60/–
18m or more	–/–/–	–/–/–	–/–/–	–/–/–

Table S5C21b: Type B construction: FRL of non-loadbearing parts of external walls

Distance from a fire-source feature	FRL (in minutes): Structural adequacy/ Integrity / Insulation			
	Class 2, 3 or 4 part	Class 5, 7a or 9	Class 6	Class 7b or 8
Loadbearing Column – less than 18 m	90/–/–	120/–/–	180/–/–	240/–/–
Loadbearing column – 18 m or more	–/–/–	–/–/–	–/–/–	–/–/–
Non-loadbearing column	–/–/–	–/–/–	–/–/–	–/–/–

Table S5C21c: Type B construction: FRL of common walls and fire walls

Wall Type	FRL (in minutes): Structural adequacy/ Integrity / Insulation			
	Class 2, 3 or 4 part	Class 5, 7a or 9	Class 6	Class 7b or 8
Loadbearing or Non-loadbearing	90/90/90	120/120/120	180/180/180	240/240/240

Table S5C21d: Type B construction: FRL of loadbearing internal walls

Location	FRL (in minutes): Structural adequacy/ Integrity / Insulation			
	Class 2, 3 or 4 part	Class 5, 7a or 9	Class 6	Class 7b or 8
Fire-resisting lift and stair *shafts*	90/90/90	120/120/120	180/180/180	240/240/240
Bounding *public corridors*, public lobbies and the like	60/60/60	120/–/–	180/–/–	240/–/–
Between or bounding *sole-occupancy units*	60/60/60	120/–/–	180/–/–	240/–/–

Table S5C21e: Type B construction: FRL of non-loadbearing internal walls

Location	FRL (in minutes): Structural adequacy/ Integrity / Insulation			
	Class 2, 3 or 4 part	Class 5, 7a or 9	Class 6	Class 7b or 8
Fire-resisting lift and stair *shafts*	–/90/90	–/120/120	–/120/120	–/120/120
Bounding *public corridors*, public lobbies and the like	–/60/60	–/–/–	–/–/–	–/–/–
Between or bounding *sole-occupancy units*	–/60/60	–/–/–	–/–/–	–/–/–

Table S5C21f: Type B construction: FRL of other building elements not covered by Tables S5C21a to S5C21e

Building Element	FRL (in minutes): Structural adequacy/ Integrity / Insulation			
	Class 2, 3 or 4 part	Class 5, 7a or 9	Class 6	Class 7b or 8
Other Loadbearing internal walls and columns	60/–/–	120/–/–	180/–/–	240/–/–
Roofs	–/–/–	–/–/–	–/–/–	–/–/–

9. General Floor area and Volume limitations (BCA Clause C3D3):

(1) The size of any *fire compartment* or *atrium* in a Class 5, 6, 7, 8 or 9 building must not exceed the relevant maximum *floor area* nor the relevant maximum *volume* set out in Table C3D3 and C3D6 except as permitted in C3D4.

(2) A part of a building which contains only heating, ventilating, or lift equipment, water tanks, or similar service units is not counted in the *floor area* or *volume* of a *fire compartment* or *atrium* if it is situated at the top of the building.

(3) In a building containing an *atrium*, the part of the *atrium* well bounded by the perimeter of the openings in the floors and extending from the level of the first floor above the *atrium* floor to the roof covering is not counted in the *volume* of the *atrium* for the purposes of this clause.

Table C3D3: maximum size of fire compartments or atria:

Classification	Type A construction	Type B construction	Type C construction
5, 9b or 9c	Max *floor area* - 8 000 m^2	Max *floor area* - 5 500 m^2	Max *floor area* - 3 000 m^2
	Max volume - 48 000 m^3	Max volume - 33 000 m^3	Max volume – 18 000 m^3
6, 7, 8 or 9a (except for patient care areas)	Max *floor area* - 5 000 m^2	Max *floor area* - 3 500 m^2	Max *floor area* - 2 000 m^2
	Max volume - 30 000 m^3	Max volume - 21 000 m^3	Max volume - 12 000 m^3

- The Building has been assessed as Type B construction with the floor area less than 5,500m^2 and volume less than 33,000m^3.

Section D – Access & Egress

10. Number of Exits Required:

The BCA prescribes that not less than 2 require exits must be provided from each storey in a Class 9b – Primary/secondary School building. Compliance will be achieved with these provisions of the BCA.

11. Travel Distance to Exits and between Alternative Exits:

- Travel distances on the floor must be not more than 20m to an exit or a point in which travel in different directions to 2 exits is available, in which case, the maximum distance to 1 exit cannot exceed 40m; and
- Travel distances between alternative exits must be at least 9.0m apart and not exceed a distance of 60m in all other classes, uniformly distributed with access to 2 exits if required and not converge so they become less than 6m apart.

Initial review of the architectural drawings indicates that travel distances will not comply with the DtS provisions of the BCA. Refer to Appendix A. This will require a performance solution from a fire engineer to comply with the performance requirements of BCA 2022.

12. Widths of exits and path of travel to exits (BCA Clause D2D8):

D2D8	**Width of exits and paths of travel to exits**
	If the *storey*, *mezzanine* or *open spectator stand* accommodates more than 200 persons, the aggregate unobstructed width of each *required exit* or path of travel to an *exit*, except for doorways, must be not less than— (a) 2 m plus 500 mm for every 60 persons (or part) in excess of 200 persons if egress involves a change in floor level by a stairway or ramp with a gradient steeper than 1 in 12; or (b) in any other case, 2 m plus 500 mm for every 75 persons (or part) in excess of 200. In an *open spectator stand* which accommodates more than 2000 persons, the aggregate unobstructed width of each *required exit* or path of travel to an *exit*, except for doorways, must be not less than 17 m plus a width (in metres) equal to the number in excess of 2000 divided by 600 In a *required exit* or path of travel to an *exit*, **the unobstructed width of a doorway** must be not less than— (i) where the doorway referred to in (i) is fitted with two leaves and one leaf is secured in the closed position in accordance with D3D26(3)(e), the other leaf must permit an unobstructed opening not less than 800 mm wide; or **(ii)** the unobstructed width of each *exit* provided to comply with D2D8(1), (2), (3) or (4), **minus 250 mm;**

Building	Level	Population	Aggregate Exit Widths Required	Aggregate Exit Widths (Design)	Compliance Comments (Y/N)
	Ground Floor	560	5.0m	5.0m	Yes
	Level 1	560	5.0m	5.0m	Yes
The unobstructed width of a required exit must not diminish in the direction of travel to a road or open space. The building caters for an occupancy density 560 persons/storey based upon the aggregate exit widths within each storey.					

13. Travel by non-fire-isolated stairways or ramps (BCA Clause D2D14):

A non-*fire-isolated stairway* or non-*fire-isolated ramp* serving as a *required exit* must provide a continuous means of travel by its own *flights* and landings from every *storey* served to the level at which egress to a road or *open space* is provided.

a. In a Class 5, 6, 7, 8 or 9 building, the distance from any point on a floor to a point of egress to a road or *open space* by way of a *required* non-*fire-isolated stairway* or non-*fire-isolated ramp* **must not exceed 80 m.**

b. In a Class 5 to 8 or 9b building, a *required* non-*fire-isolated stairway* or non-*fire-isolated ramp* must discharge at a point not more than—

- 20 m from a doorway providing egress to a road or *open space* or from a *fire-isolated passageway* leading to a road or *open space*; or
- 40 m from one of 2 such doorways or passageways if travel to each of them from the non-*fire-isolated stairway* or non-*fire-isolated ramp* is in opposite or approximately opposite directions.

Based upon a review of the travel distances compliance will be readily achieved with BCA Clause D2D14.

14. Egress Paths to the Public Roadway:

The path of travel to the public road after egress from the stairway must be via the same allotment of land. The proposed new two storey building is situated across the 2 allotments which creates a technical non-compliance as egress to the public roadway is not located on the same allotment.

This departures from the DtS provisions can be readily address via a performance solution from a fire engineer to comply with the performance requirements of BCA 2022.

15. Access for People with Disabilities (Part D4 of BCA):

Buildings and parts of buildings must be accessible as required by this clause, unless exempted by D4D5.	Refer to Access Consultants Report in regard to compliance with this part of the BCA.

Section E –Services & Equipment

16. Fire Services and Mechanical Consultants to provide compliant design in accordance with Part E, for the purposes of the building design at this stage the following fire services are anticipated/expected:

    - Fire Hydrant system to BCA Clause E1D2 and AS 2419.1-2021;

      The existing fire hydrant system for the site was designed and installed in accordance with AS 2419.1-2005. The existing fire hydrant booster assembly is not located along the street frontage as required by the requirements of the BCA Clause E1D2 & AS 2419.1-2021. The existing fire hydrant booster assembly shall be retained which is located parallel with the occupant vehicle access road that navigates along the western site boundary. All new parts of the fire hydrant system serving the Building Q shall be in accordance with BCA Clause E1D2 and AS 2419.1-2021.

      A performance solution will be prepared by the fire engineer to address unassisted fire hydrant pressure for the most hydraulically disadvantage fire hydrant.

      The proposed new building due to the existing allotments have not been amalgamated into the one-parent allotment, therefore, a performance solution by a fire engineer is required to permit shared fire hydrant services over allotments.

    - Fire Hose Reels is not required to serve a class 9b – classrooms.

    - Smoke detection system that is provided to satisfy the requirements for automatic shutdown of air-handling system in accordance with NSW E2D16 and S20C6 of the BCA.

    - Exit Signs and Emergency Lighting to BCA Part E4 and AS 2293.1-2005.

    - Portable Extinguishers to BCA Clause E1D14 and AS 2444-2001.

Section F – Health and Amenity

17. Weatherproofing of External Walls:

    As the materials that can be used as external walls under the DTS provisions are limited, and the proposed design is expected to contain other external wall material/cladding a Performance Solution to BCA Clause F3P1 is to be provided as part of the Crown Certificate Application to the Certifier.

18. Damp and Weatherproofing:

    - There are new requirements that a roof, balcony, podium or similar horizontal surface part of a building must be provided with a waterproofing membrane in accordance with AS 4654.1 and AS 4651.2. Careful design consideration will need to be applied in the areas of the balconies and the like in this development. This may be applicable for the proposed trafficable rooftop area of the design.

    - There may be conflict with the accessible provisions of Part D4 of the BCA which will need to be comment on further by the access consultant, as this Standard may require hobs at the thresholds to the rooftop, see Figure 9 below. There is relief available as the Standard does allow for a gutter system at the threshold of the door sill, which is to be fitted with an AS1428.1-2009 approved grate, in lieu of a hob (Ref: AS 4654.2). However, such detail should only be determined in accordance with the hydraulic engineer and the access consultant. Note that the accessible Standard contains restrictions on heights differences between abutting surfaces, such as the flooring and door sill, and a review of Section 7 of AS 1428.1-2009 (note the designer will need to review the 2021 version of this standard as this will be applicable at the time of the Construction Certificate) should be considered as part of the threshold designs.

Figure 3 below also illustrates the membrane termination heights which are given in Table A1 of Appendix of the Waterproofing Standard. Note that the heights are related to the determined wind class from AS 4055-2012 and should only be determined by the appropriate project engineer, i.e., structural, hydraulic or façade engineer.

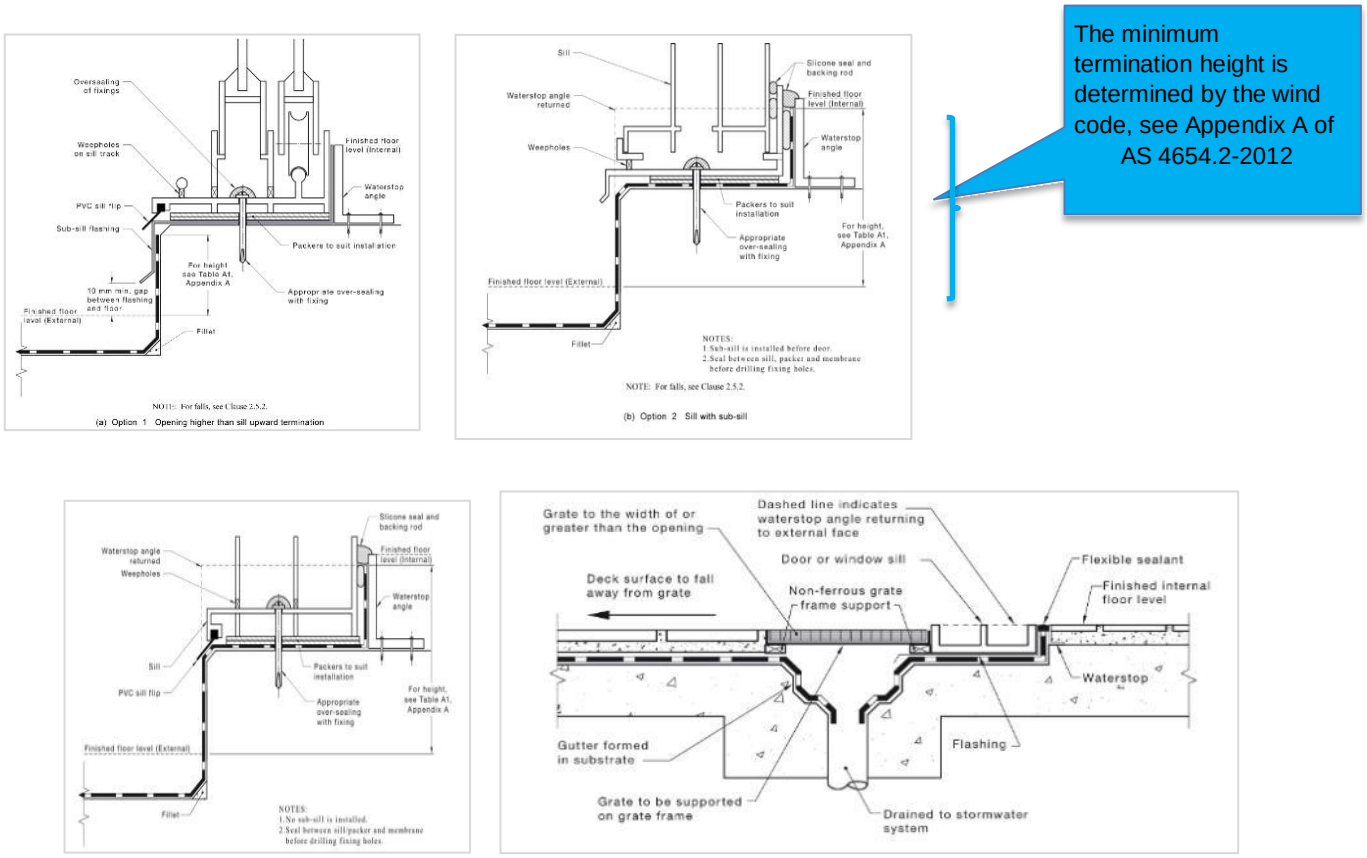


Figure 3: Various waterproofing options at threshold and outlets.

Doors and windows onto external waterproof areas are required to comply with either of the 4 options above. Consideration must be given to access for people with disabilities which requires 5mm tolerance in difference with floor levels at door thresholds. Therefore – Clause 2.8.3 from AS 4654.2 requires grates to be provided as per figure 2.9 in front of doorways along the balconies within each storey.

The architectural, structural and Hydraulic details will be further developed to achieve compliance with these provisions of the BCA.

19. <u>Occupant Numbers and Assessment of Sanitary Facilities</u>:

- A total school campus population of up to 999 (2024) students with 143 staff (129 full time equivalent) (2024).
- The proposed school building will be designed to accommodate 400 students.
- (30 students X 12 GLS) + (10 students x 4 Support Learning GLS).

Based upon the student and staff numbers for the proposed new building, we can calculate the number of sanitary facilities required for students and employees.

Sanitary Facilities required based upon Design Occupancy

Student – Sanitary Facilities

	Population	Pans	Urinals	Washbasins
Male	200	7	-	5
Female	200	7	N/A	5
	Unisex Accessible		1 per Bank	

Staff – Sanitary Facilities

	Population	Pans	Urinals	Washbasins
Male	72	4	-	3
Female	72	6	N/A	3
	Unisex Accessible		1 per Bank	

There are sufficient sanitary facilities based upon student and staff numbers proposed within the new school building.

Notes:

1. Each urinal for males can be substituted with a water closet.
2. An accessible unisex facility required for people with a disability may be counted once for each sex. This concession means that for each wash basin and closet pan counted above, you may deduct for each accessible unisex facility provided.
3. Ambulant facilities must be provided with the block of sanitary facilities in accordance with BCA and AS 2419.1- 2009.

20. Sanitary Compartment must not open directly into Workspace

Sanitary compartment must not open directly into a workspace. The entry doors to the toilets within the Learning Commons being adequately screened from view or area being reconfigured to open into a corridor rather than open workspace.

Section G – Ancillary Provisions

21. The Deemed-to-Satisfy provisions apply in a designated bushfire prone area to a building located in an area subject to a Bushfire Attack Level (BAL) not exceeding BAL – 12.5, determined with AS 3959 that is a Class 9b – primary or secondary school.

The "Bushfire Protection Assessment" by ECO Logical has confirmed the subject land is mapped as bush fire prone land (BFPL). As the subject site is located on designated bushfire prone land and the proposal relates to a Class 9b building that are special fire protection purpose, Specification 43 will be applicable. The following table outlines the current provisions outlined in Specification 43, inclusive of the NSW variations:

Clause	Requirement
NSWS43C2 Separation from classified vegetation	S43C2 does not apply in NSW as Asset Protection Zones must be determined in accordance with Planning for Bush Fire Protection.
S43C3 Separation between buildings	(1) The building must be located not less than 12 m from any other building. (2) The separation distance required by (1) need not be complied with if the building is constructed— (a) with external walls that have an FRL of not less than 60/60/60 when tested from the outside, including any openings protected in accordance with AS 3959 for BAL—19 or greater; or (b) for external walls and roof, using a material or system that satisfies the test criteria of AS 1530.8.1 for a radiant heat flux of 10 kW/m² or greater. **Comments:** The proposed site plan indicates the proposed 2 storey building will be setback greater than 12.0m from the closest building. Compliance will be achieved with S43C3.
S43C4 Separation from allotment boundaries and carparking areas	(1) The building must be located not less than 10 m from any allotment boundary or open carparking area/spots. (2) The separation distance required by (1) need not be complied with if the building is constructed— (a) with external walls that have an FRL of not less than 60/60/60 when tested from the outside, including any openings protected in accordance with AS 3959 for BAL—19 or greater; or

	(b) for external walls and roof, using a material or system that satisfies the test criteria of AS 1530.8.1 for a radiant heat flux of 10 kW/m² or greater. **Comments:** There are 2 allotments within the school campus. The new building will be situated across the inter-allotment boundary. It is noted the building will be greater than 10m from pen carpark area. Compliance will be achieved with S43C4.
S43C5 Separation from hazards	The external walls and roof of the building must be protected from potential hazards on the site such as liquefied petroleum gas bottles, fuel storage, storage of combustible materials, waste bins, vehicles, machinery, and the like, by— (a) a separation distance of not less than 10 m; or (b) where within the 10 m separation distance described in (a), constructed with external walls that have an FRL of not less than 60/60/60 when tested from the outside, including any openings protected in accordance with AS 3959 for BAL—19 or greater; or for external walls and roof, using a material or system that satisfies the test criteria of AS 1530.8.1 for a radiant heat flux of 10 kW/m² or greater. **Comments:** It is recommended that the Bushfire Consultant review any potential hazard and provide written recommendations, if any within updated Bush Fire Assessment Report/Statement.
S43C6 Non-combustible path around building	A non-combustible pathway directly adjacent to the building and not less than 1.5 m wide must be provided around the perimeter of the building. **Comments:** Architectural and landscape plans to detail external pathways in consultation with Bushfire Consultants requirements.
S43C7 Access pathways	Access pathways that lead to a road or open space must— 1. be readily identifiable; and 2. have an even surface; and 3. have a minimum clear width of not less than 1 m. If the access pathway is an accessway that is required to comply with Part D4, the requirements of Part D4 override (1) to the extent of any inconsistency. **Comments:** Architectural plans to detail compliance with these requirements.
S43C8 Exposed external areas	An external area designed to hold people unable to be safely accommodated within the building, that may be exposed to radiant heat flux from a fire front during a bushfire event, must not be exposed to an incident radiant heat flux from the fire front exceeding 1 kW/m2 above background solar radiant heat flux. **Comments:** Bushfire Consultant to review and confirm if these provisions will be applicable.
S43C9 Internal tenability	To maintain internal tenability throughout the duration of occupancy during a bushfire event, the building must comply with the following: (a) An air handling system must be provided that is capable of— (i) being adjusted for full recycling of internal air for a period of not less than 4 hours to avoid the introduction of smoke into the building; and (ii) maintaining an internal air temperature of not more than 25°C.

	(b) The building envelope must be designed such that if an air handling system required by (a) fails, then— (i) internal air temperatures can be maintained below 39°C; and (ii) internal surface temperatures can be maintained below 60°C. (c) If the building is divided into separate compartments then, for the purposes of (a), each compartment must have a separate air handling system. d) Each air handling system required by (a) must be designed to account for the activation of smoke detectors from low. **Comments:** Design statement together with mechanical drawings to demonstrate compliance will be achieved with these requirements. These provisions may conflict with Mechanical Ventilation Systems – Auto shut-down of any air-handling system as per BCA Clause E2D16. Further advice from the Mechanical Engineer to confirm any departures from the DtS provisions. Consideration being given to a performance solution from a fire engineer to delete these provisions based upon enhanced construction of external façade as per the Bushfire Consultants recommendations.
S43C10 Building envelope	The building envelope must be constructed in accordance with AS 3959 – BAL 19 or greater, except that where the use of combustible materials is permitted by AS 3959, they are not to be used unless permitted by C2D10(4), (5) or (6). **Comments:** Refer to Bushfire Assessment Report.
NSW S43C11 Supply of water for fire-fighting purposes	Water for fire-fighting purposes must be available and consist of— (a) A fire hydrant system complying with E1D2; or (b) A static water supply consisting of tanks, swimming pools, dams or the like, or a combination of these, together with suitable pumps, hoses and fittings, determined in consultation with the relevant fire brigade that— (i) is capable of providing the required flow rate for a period of not less than 4 hours; or (ii) has a volume of 10 000 litres for each occupied building. **Comments:** The Fire Services Engineer to evaluate the existing booster system (location together with pressures and flow testing will achieve compliance with the requirements of AS 2419.1-2021).
S43C12 Emergency power supply	(1) Emergency power must be provided to support, for not less than 4 hours before and 2 hours after the passing of the fire front during a bushfire event, the ongoing operation of— (a) air handling systems to maintain internal tenability; and (b) any pumps for firefighting; and (c) any emergency lighting and exit signs; and (d) any other emergency equipment listed in C3D14(6) and required to be provided. (2) Manual control for emergency back-up power supply must be provided to facilitate manual intervention where the power supply fails or runs out.

	Comments: Refer to advice under Clause S43C9. A Performance Solution will be documented from a Fire Engineer to not provide an emergency power source as per S43C2.
S43C13 Signage	Signage must be provided to warn building occupants against storing combustible materials under or adjacent to the building. **Comments:** It is recommended appropriate signage being provided based upon Bushfire Consultants advice and recommendations.
S43C14 Vehicular access	Vehicular access to the building must be provided in accordance C3D5(2), as if the building were a large isolated building for the purposes of C3D4. **Comments:** A performance solution will be documented to not provide perimeter vehicle access path in accordance with BCA C3D4.

Section J – Energy Efficiency

22. ESD Consultant to review project and provide compliance statement/report for Section J. Note this is expected to include a review of the detailed design sections and detail of external walls for thermal break and make-up of the façade elements in the review, and not a high-level report outlining the required values only, this is due to the detailed assessment nature for Section J of external walls and roofs in BCA 2022.

5.0 PERFORMANCE SOLUTIONS

The following are Performance Solutions proposed or expected as a result of our assessment of the listed documentation:

Fire Engineering Performance Solutions

1.	<u>Unamalgamated Lot Boundaries:</u> The school campus is located across 2 separate allotments with existing school buildings built across the allotment boundary. The proposed new two storey building is situated across the 2 allotments which creates multiple technical non-compliances with the BCA: ➢ FRL Requirements as the building is within 3.0m from the boundary; ➢ Egress routes require occupants to cross lot boundaries to reach the public roadway; ➢ Shared Services for fire hydrant system across lot boundaries.	C2D2, C4D3, Spec. 5, D2D3, D2D15, E1D2	C1P1, C1P2, D1P4, E2P2, E1P3.
2.	<u>Travel Distance exceed the DtS provisions:</u> ➢ Travel distance to point of choice to alternative exits > 20.0m (i.e. measured up to 22.0m within Ground and Level 01); ➢ Travel distance to required exit > 40.0m (i.e. measured up to 50.0m) within Level 01. ➢ Distance between alternative exit > 60.0m apart (i.e. measured up to 64.0m) within Level 01.	D2D5 & D2D6	D1P4, E2P2
3.	<u>Fire Hydrant System:</u> ➢ The unassisted operational pressure of the internal fire hydrant shall achieve a 232 kPA in lieu of 250 kPA required as per AS 2419.1-2021 Clause 2.2.6.	E1D2, S43C11	E1P3
4.	<u>Bushfire Provisions:</u> The new Building N of Vincentia High School serving as the upgrade to the otherwise existing school shall: 1. Not be provided with an air handling system which satisfies with the operational functionality specified in BCA S4C9(a); and 2. Not be provided with an emergency power source as specified in BCA S43C12; and 3. Not be provided with perimeter vehicle access path in accordance with BCA C3D4 – The available vehicle path – a. Is not capable of providing continuous access for emergency vehicles to enable travel in a forward direction; and b. Does not maintain a minimum unobstructed width of 6m and extends more than 18m from the building.	NSW E2D16, S4C9, S43C12, S43C14.	C1P9, E2P2, NSW G5P1, NSW G5P2.

Table 6 – Performance Solutions

Disabled Access Performance Solutions

Disabled Access consultant is to advise if any Performance Solutions are proposed for any Disabled Access matters for the building

– see separate Access consultant's report for details.

Section J Energy Efficiency (ESD Report)

It is expected that a Verification Method approach is proposed for the building based off the design, if that is the case then the Provision of the Section J report will be required to meet the requirements of the relevant Verification Clause of Section J and be provided as part of the Crown Certificate Application to the Certifier.

See Section J Consultants report for requirements relating to the design of the building and services requirements, which may differ from the BCA clauses contained in this report.

Weatherproofing of External Walls

As the materials that can be used as external walls under the DTS provisions (BCA Clause F3D5) are limited, and the proposed design is expected to contain other external wall material/cladding a Performance Solution to BCA Clause F3P1 is to be provided as part of the Construction Certificate/Crown Certificate/Complying Development Certificate Application to the Certifier.

Note: Design team is to establish which consultant will be preparing this Report, and the required PBDB for it as well, this is not as simple as a Design Statement but involves the preparation of a Performance Solution Report.

6.0 Mitigation Measures

Subject to compliance with the mitigation measures of this report, it is considered that the activity can readily comply with the relevant requirements of the BCA

In order to ensure the design complies with the BCA, the following items listed in Table 7 below are required to be clarified, submitted, illustrated, etc. as the case may be as the design progresses toward the application for crown certification of building works.

Item No.	Mitigation Measure	Reason/Comment	BCA Clause
A.	Fire-rating of Building Elements: Structural steel columns incorporated within the external walls together with external columns to the fire-source feature must achieve the required FRL's.	Architect/structural engineer to detail compliance with the provisions of the BCA.	Spec. 5 of BCA.
B.	External Walls – Non-combustible Construction: The elements that make up an external wall must be tested and certified as non-combustible (i.e., wall assembly, insulation, sarking and attachments).	Architectural design to be development.	C2D10
C.	Damp and Weatherproofing: There are new requirements that a roof, balcony, podium or similar horizontal surface part of a building must be provided with a waterproofing membrane in accordance with AS 4654.1.	Architectural, hydraulic services and structural design to detail the waterproof membrane in accordance with AS 4654.1 and AS 4651.2.	F1D5
D.	Services Design	Fire Services, Electrical, Mechanical, Hydraulic Engineering design to be developed to achieve compliance with the prescriptive provisions of the BCA.	Part C, D, E, F and J
E	Sanitary Facilities:	There are sufficient sanitary facilities based upon student numbers proposed within the new school building. Further details will be required to evaluate the location of staff – sanitary facilities within or nearby buildings.	Part F
F.	Bushfire Protection: Refer to assessment of specification 43 which will be required for the proposed new building.	Further advice from the Architect, Bushfire Consultant and Electrical and Mechanical Services to determine the capability to comply with the DtS provisions. Departures from the DtS provisions will be address at the crown certificate stage by a performance solution from the Fire Engineer.	Spec 43

Table 7 – Mitigation Measures

7.0 Evaluation of Environmental Impacts

Compliance with the BCA will be achieved by a combination of Deemed-to-Satisfy and Performance Solutions and will be assessed further as the design progresses towards the crown certification of building works.

Performance Solution Reports as identified within the report will be prepared and verified by appropriate qualified persons and mitigation measures suitable incorporated into the design to verify compliance with BCA 2022.

Based upon review of design documentation as reference within this report. We conclude the following:

1. The extent and nature of potential impacts are low and will not have significant impact on the locality, community and/or the environment.
2. Potential impacts can be appropriately mitigated or managed to ensure that there is minimal impact on the locality, community and/or the environment.

8.0 ESSENTIAL FIRE SAFETY MEASURES (EFSM)

Below is a list of essential fire safety services that may be required to serve a 2-storey school building. This table may be required to be updated as the design develops.

Fire Safety Measure	Standard of Performance	BCA 2022 Clause/Specification(s)
Access panels, doors & hoppers to fire resisting shafts	AS 1530.4 – 2014	C4D14
Automatic fire detection & alarm systems	AS 1670.1 – 2018	Part E2, Specification 20, G3D8
Emergency lighting	AS 2293.1 – 2018	E4D2, E4D4, E4D8
Exit signs	AS 2293.1 – 2018	E4D5, E4D6, NSWWE4D6, E4D8, Spec 25
Fire doors	AS 1905.1 – 2015	C4D7, Spec 12
Fire Doors – Lift Landing Doors	AS 1735.11-1986	C4D11
Fire hydrant systems	AS 2419.1 – 2021	E1D2, Spec 18
Fire seals (protecting openings in fire resisting components of the building)	AS 4072.1 – 2005 AS 1530.4 – 2014	C4D15, C4D16, Spec 13
Lightweight construction	--	C2D9, Spec 6
Mechanical air handling systems • Auto shutdown	AS 1668.1 – 2015 AS 1668.2 –2012	E2D4, E2D3, E2D4, Spec 19, Spec 21, Spec 31
Portable fire extinguishers	AS 2444 – 2001	E1D14
Fire Blankets	AS 2444-2001	E1D14
Warning and operational signs	--	C4D7, E3D4, D3D28 & Spec 17

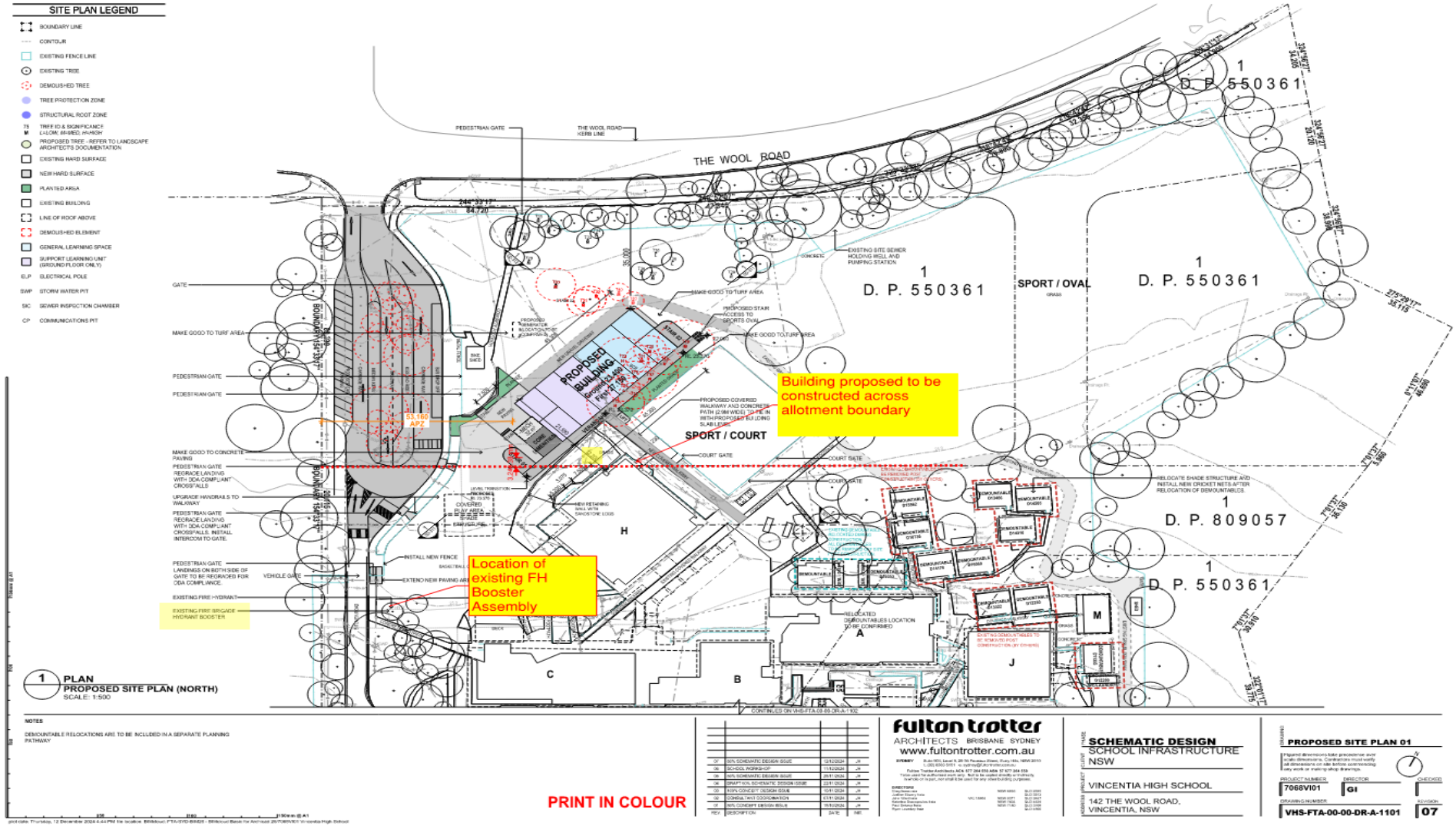
Table 8 – Essential Fire Safety Measures (EFSM)

Appendix A:

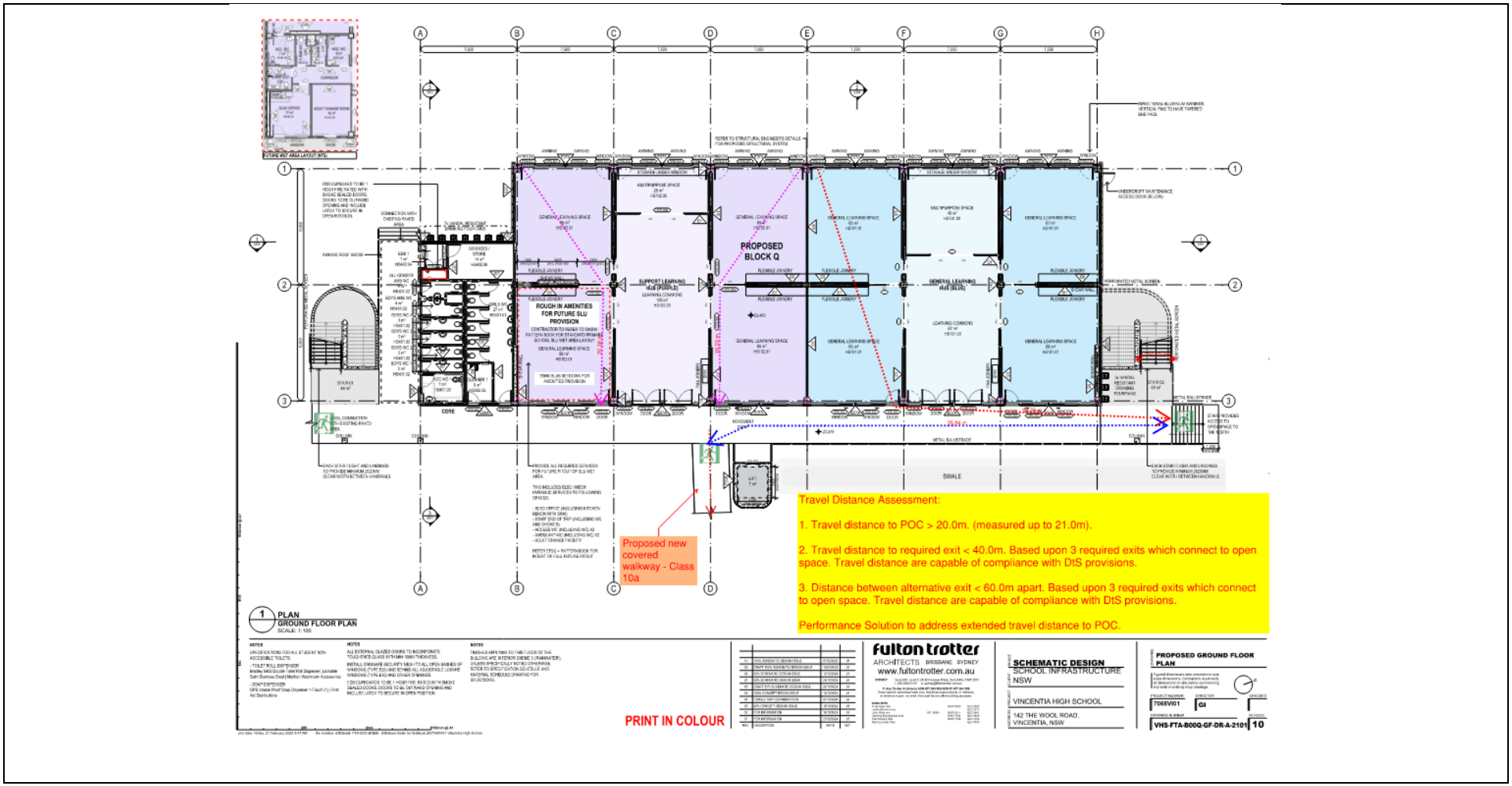
Ancillary Information

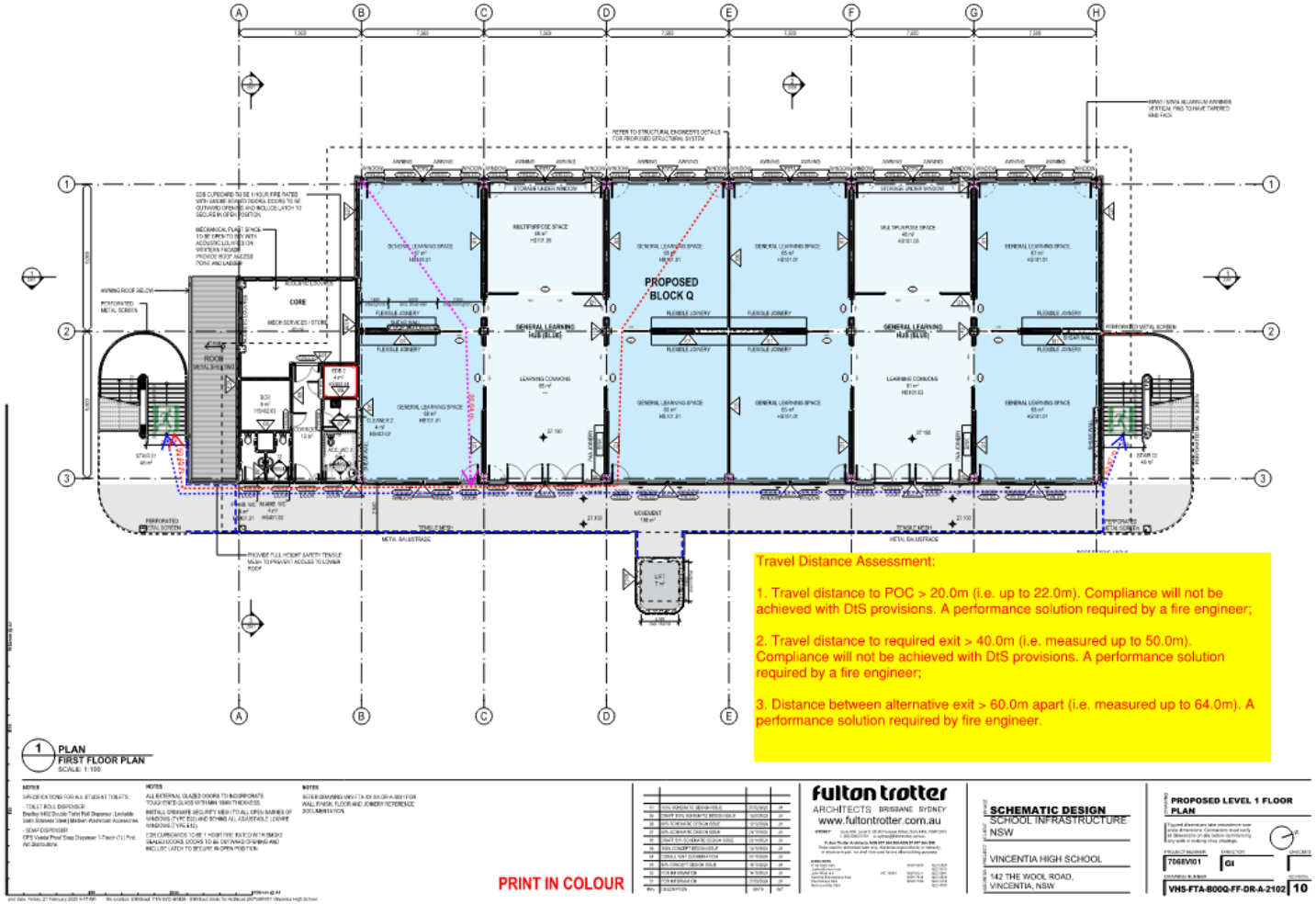
- Exits location
- Stair Precis Table
- Travel distance Assessment

School Campus



BCA Assessment – Markup Plans




PROPOSED
BLOCK Q
Travel Distance Assessment:
1. Travel distance to POC > 20.0m (i.e. up to 22.0m). Compliance will not be achieved with DtS provisions. A performance solution required by a fire engineer;
2. Travel distance to required exit > 40.0m (i.e. measured up to 50.0m). Compliance will not be achieved with DtS provisions. A performance solution required by a fire engineer;
3. Distance between alternative exit > 60.0m apart (i.e. measured up to 64.0m). A performance solution required by fire engineer.
1 PLAN
FIRST FLOOR PLAN
SCALE: 1:100
PRINT IN COLOUR
fulton trotter
ARCHITECTS BRISBANE SYDNEY
www.fultontrotter.com.au
SCHEMATIC DESIGN
SCHOOL INFRASTRUCTURE NSW
VINCENTIA HIGH SCHOOL
142 THE WOOL ROAD, VINCENTIA, NSW
PROPOSED LEVEL 1 FLOOR PLAN
7068VI01
GI
VHS-FTA-B00Q-FF-DR-A-2102
10

Stair / Ramp Precis

Stairs	Access requirement	Handrails	Balustrade	Slip Resistance	Treads, Risers, Widths, Other	TGSI	Common Issues
Interconnecting Communication Stairs	**YES**	**YES:** Fully accessible handrails required to both sides as follows: • 180 degrees handrail turndown or return to wall, • 30 to 50 mm diameter with a 270 degrees clearance around the top of the handrail, • 50 mm clearance to back of handrail, and to a height of 600 mm above the handrail. • Located between 865 mm and 1 m above nosing line. And must be at consistent height through the stairs and landings. • Continuous rail, no handhold breaks. • Clear area for 270o to the top of the handrail. **Ref:** BCA D2.17, D3.3(a)(ii) & Cl 11 & 12 of AS 1428.1-2009.	**YES:** No Less than 865 mm above stair nosing line, no less tanh 1 m above landings. No openings greater than 125 mm. No climbable members between 150 and 760 mm where the floor level is 4 m or more above the surface beneath. **Ref:** BCA D2.16(g)(h)(ii)	**YES:** P3 (dry) and P4 (wet) rated slip resistance and highlighted nosing's to no less than 30% luminance contrast to the background. Nosing widths to be between 50 & 75 mm. Strip may be set back 15 mm from the front edge of the nosing but where it is not set back the luminance contrast must not extend down the riser by more than 10 mm. The lip between the tread and strip must not exceed 3 mm, or 5 mm where the edges are chamfered. **Ref:** BCA D2.13, D2.14, D3.3(a)(iii) & Cl 11, 7.2, 7.3 of AS 1428.1-2009.	**Tread:** 250 to 355 mm. (Public) **Tread:** 240 to 355 mm. (Private) **Riser:** 115 to 190 mm. **Quantity:** Must be between 550 to 700 when applying (2 x Riser + Tread.) **Open Riser:** Not permitted, must be opaque. **Riser Splay Back:** Be vertical or max 25 mm. **Stair Width:** Minimum unobstructed width of 1000 mm, measured clear of handrails. Note: 1000 mm clear width will only allow for 100 persons, occupancy quantity review may be required. **Stair Height:** No less than 2 m. **Ref:** BCA D2.13, D1.6	**YES:** Required to the top and bottom of landings. No requirement for the mid landing. And around base of stair stringer or stair when it can be considered as an overhead obstruction within 2 m from floor level. **Ref:** BCA D3.8, AS/NZS 1428.4.1-2009	• Lip of the nosing strip excessive in height. • No site allowance for balustrade tolerances. • If separate handrail and balustrade is not used, this usually causes a conflict with the requirement to have the same heights throughout the landings and stairs.
Accessible Ramp (1:14 max. gradient)	**YES**	**YES:** Fully accessible handrails required to both sides as follows: • 180 degrees handrail turndown or return to wall, • 30 to 50 mm diameter with a 270 degrees clearance around the top of the handrail, • 50 mm clearance to back of handrail, and to a height of 600 mm above the handrail. • Located between 865 mm and 1 m above the surface. And must be at consistent height through the ramp and mid-landings. • Continuous rail, no handhold breaks. • Continuous kerbing on both sides in compliance with AS1428.1 Figures (18 & 19). • Handrails not to protrude into over the traverse path. • Clear area for 270 degrees to the top of the handrail. **Ref:** BCA D2.17, D3.3(a)(i) & Cl 1.3 & 12 of AS 1428.1-2009.	**YES:** No Less than 865 mm above stair nosing line, no less tanh 1 m above landings. No openings greater than 125 mm. No climbable members between 150 and 760 mm where the floor level is 4 m or more above the surface beneath. **Ref:** BCA D2.16(g)(h)(ii)	**YES:** P3 (dry) and P4 (wet) rated slip resistance and highlighted nosing's to no less than 30% luminance contrast to the background. Nosing widths to be between 50 & 75 mm. Strip may be set back 15 mm from the front edge of the nosing but where it is not set back the luminance contrast must not extend down the riser by more than 10 mm. The lip between the tread and strip must not exceed 3 mm, or 5 mm where the edges are chamfered. **Ref:** BCA D2.13, D2.14, D3.3(a)(iii) & Cl 11, 7.2, 7.3 of AS 1428.1-2009.	**Ramp Width:** Minimum unobstructed width of 1000 mm, measured clear of handrails. Note: 1000 mm clear width will only allow for 100 persons, occupancy quantity review may be required. **Ref:** BCA D2.13, D1.6	**YES:** Required to the top and bottom of landings. No requirement for the mid landing. **Ref:** BCA D3.8, AS/NZS 1428.4.1-2009	• Handrails extension protruding over traverse path or side boundary. Note: TGSI are not required for residential aged care and nursing homes buildings.

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