GROUPDLA

Building Code of Australia 2022 Report

Report for BCA Compliance

PROJECT NAME: **New Primary School at Wilton Junction**
PROJECT NUMBER: **GDL230585**
DATE: **12/03/2025 (Rev D)**

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REVISION HISTORY

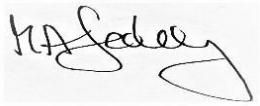
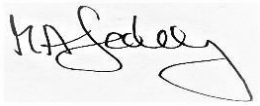
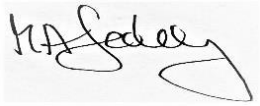
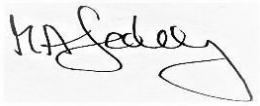
Revision	Date	Details	Authorised	
			Name/Position	Signature
A	06/02/2025	Schematic Design	Prepared: Mike Gooley Associate	
			Reviewed: Justin Jones-Gardiner Director	
B	14/02/2025	REF	Prepared: Mike Gooley Associate	
			Reviewed: Justin Jones-Gardiner Director	
C	25/02/2025	REF - Standard preambles updated	Prepared: Mike Gooley Associate	
			Reviewed: Justin Jones-Gardiner Director	
D	12/03/2025	REF – Update Mitigation Measures	Prepared: Mike Gooley Associate	
			Reviewed: Justin Jones-Gardiner Director	

Table 1 – Revision History

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 the construction and operation of the new primary school at Wilton Junction (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 3.37A of the T&I SEPP.

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.

INTRODUCTION

The subject BCA review has been limited to an assessment of the Schematic Design – architectural drawings against BCA 2022. The design is yet to be developed to the extent that a complete BCA assessment can be concluded and therefore this report is preliminary only.

The report is prepared based on a review of the documentation listed in Table 6 and the information provided by the client and is intended for their use only.

2.1 Reporting Team

The information contained within this report was prepared by Mike Gooley, Registered Certifier – Unrestricted (BDC0143) and reviewed by Justin Jones - Gardiner, Registered Certifier - Unrestricted (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 from this report.
- 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.
- Fire Ratings and FRL listings - Where the BCA / NCC requires an FRL, unless noted otherwise the fire rating is required to be in both directions of fire i.e. inside and outside for example, and not one way fire rated, where one way fire rating is allowed the BCA identifies that, and not the other way around.

BUILDING DESCRIPTION

3.1 Site Description

The current street address is 200 Fairway Drive, Wilton, 2571, NSW. The site forms part of the northern portion of Lot 1063 in Deposited Plan 1289197) that was previously subdivided by Landcom. The site is approximately 3.4ha hectares in size and is located within Wilton Junction which is part of the North Wilton Precinct.

As a result of precinct wide rezonings, the surrounding locality is transitioning from a semi-rural residential area to a highly urbanised area with new low to medium density residential development with supporting services. North Wilton Precinct is approximately 85km south-west of the Sydney CBD, 30km north-west of Wollongong and 30km southwest of Campbelltown-Macarthur Strategic Centre. The precinct is located on the interchange with the Hume Highway, which connects the Southern Highlands with the Sydney metropolitan region to the northeast and Canberra to the south-west.

The proposed school site does not currently have road access, however Landcom is expected to deliver the road network and surrounding public domain network in accordance with DA/2022/1279/1. Proposed Road 14 located on the eastern boundary of the site will ultimately provide future access to the site. The site contains several patches of remnant native vegetation particularly within the northern portion of the site. The central part of the site has been predominantly cleared and consists of grassland. An aerial photograph of the site is provided at **Figure 1.**

Figure 1 Aerial Photograph of the Site

Source: Urbis, 2024

Figure 1: Aerial View of Site

3.2 Proposed Activity Description

The proposed activity is for the construction and operation of a new primary school at Wilton Junction which will accommodate up to 552 students and 35 staff. Additionally, the proposal includes an integrated pre-school which will capacity for up to 60 students and 7 staff. In total, the new school will support up to 612 students and 42 staff.

The new school includes general and support learning spaces, a library, administrative areas and a staff hub. Core facilities include a standalone school hall and canteen, a carpark, a kiss and drop zone along future Road 14, and a sports court.

Specifically, this proposal includes the following:

i) Construction of a 3-storey learning hub which includes:
   1) 24 x General Learning Spaces
   2) 3 x Support Learning Spaces
   3) Staff hub including administrative areas and library.
   4) Integrated public pre-school.

ii) Standalone hall and COLA with outside of school hours care (OSHC).
iii) Associated landscaping including sports court and separate outdoor play space for the preschool.
iv) Associated site utilities and services including installation of new 1500 kVA padmount substation and a new main switchboard.
v) Main car park to the south of the site with 33 car spaces (including one accessible space).
vi) Separate car park for pre-school located to the north of the school with 18 spaces (including one accessible space).
vii) Main school pedestrian entrance proposed off Road 14.
viii) Earthworks.

Figure 2 Proposed Site Plan

Source: PTW, 2024

Figure 2 – Proposed development

3.3 Building Description

BCA Class	Level	Description/Use Proposed
Class 9b	Building A – L00 – Zone 1	Early Childhood Centre (pre-school)
Class 9b	Building A	Educational purposes (Primary school building)
Class 5	Building A – L00 Zone 2	School Administration (offices)
Class 9b	Building	Multi-purpose Hall and COLA
Class 10a	Ground – ancillary structures	Covered Awnings, ramps, stairways, sports courts and on-grade carpark.

Table 2 – Building Class (or part)

Characteristic	Primary School Building (Block A)	Multi-purpose Hall (Block B)
BCA Classifications:	Class 5 and 9b	Class 9b
Type of Construction:	Type A	Type C
Floor Area of Whole Building:	Less than 8,000m^2	1,200m^2
Volume of Whole Building:	TBC	TBC
Max Fire Compartment Size (Floor Area):	8,000m^2	3,000m^2
Max Fire Compartment Size (Volume):	48,000m^3	18,000m^3
Fire Compartments:	single fire compartment.	single fire compartment.
Rise in Storeys:	3	1
Levels Contained:	3	2
BCA Effective Height:	Less than 25m (i.e. 4.35m)	Less than 25m (i.e. 4.35m)
Climate Zone:	6	6
Importance Level (BCA Table B1D3a):	3	3

Table 3 – Building Characteristic

Note: "Effective height means the vertical distance between the floor of the lowest storey included in a determination of rise in storeys and the floor of the topmost storey (excluding the topmost storey if it contains only heating, ventilating, lift or other equipment, water tanks or similar service units)."

3.4 Documentation Assessed

The architectural plans are still under development to the extent that a complete BCA assessment can be concluded and therefore this report is preliminary only for information. This report is based upon architectural drawings prepared by PTW Architects (Revision 2, dated 31 January 2025).

ARCHITECTURAL DRAWING LIST

	SHEET NAME	REV	DESCRIPTION	DATE
00 - GENERAL INFORMATION				
WJPS-PTW-ZZ-XX-DR-A-000001	COVER PAGE	1	DRAFT SCHEMATIC DESIGN	31/01/25
WJPS-PTW-ZZ-XX-DR-A-000002	DOCUMENT REGISTER	1	DRAFT SCHEMATIC DESIGN	31/01/25
WJPS-PTW-ZZ-XX-DR-A-000003	LEGENDS, DISCLAIMERS + SYMBOLS	1	DRAFT SCHEMATIC DESIGN	31/01/25
02 - SITE PLANS				
WJPS-PTW-ZZ-GF-DR-A-020001	SITE PLAN - GROUND FLOOR	2	DRAFT SCHEMATIC DESIGN	31/01/25
WJPS-PTW-ZZ-L1-DR-A-020002	SITE PLAN - LEVEL 01	2	DRAFT SCHEMATIC DESIGN	31/01/25
WJPS-PTW-ZZ-L2-DR-A-020003	SITE PLAN - LEVEL 02	2	DRAFT SCHEMATIC DESIGN	31/01/25
WJPS-PTW-ZZ-RF-DR-A-020004	SITE PLAN - ROOF	2	DRAFT SCHEMATIC DESIGN	31/01/25
03 - SITE WORKS				
WJPS-PTW-ZZ-ZZ-DR-A-030020	SITE ELEVATIONS	2	DRAFT SCHEMATIC DESIGN	31/01/25
WJPS-PTW-ZZ-ZZ-DR-A-030030	SITE SECTIONS	2	DRAFT SCHEMATIC DESIGN	31/01/25
10 - GENERAL ARRANGEMENT PLANS				
WJPS-PTW-B00A-GF-DR-A-100101	GA - BUILDING A - ZONE 1 - GROUND FLOOR	2	DRAFT SCHEMATIC DESIGN	31/01/25
WJPS-PTW-B00A-L1-DR-A-100102	GA - BUILDING A - ZONE 1 - LEVEL 1	2	DRAFT SCHEMATIC DESIGN	31/01/25
WJPS-PTW-B00A-RF-DR-A-100103	GA - BUILDING A - ZONE 1 - ROOF	2	DRAFT SCHEMATIC DESIGN	31/01/25
WJPS-PTW-B00A-GF-DR-A-100111	GA - BUILDING A - ZONE 2 - GROUND FLOOR	2	DRAFT SCHEMATIC DESIGN	31/01/25
WJPS-PTW-B00A-L1-DR-A-100112	GA - BUILDING A - ZONE 2 - LEVEL 1	2	DRAFT SCHEMATIC DESIGN	31/01/25
WJPS-PTW-B00A-RF-DR-A-100113	GA - BUILDING A - ZONE 2 - ROOF	2	DRAFT SCHEMATIC DESIGN	31/01/25
WJPS-PTW-B00A-GF-DR-A-100121	GA - BUILDING A - ZONE 3 - GROUND FLOOR	2	DRAFT SCHEMATIC DESIGN	31/01/25
WJPS-PTW-B00A-L1-DR-A-100122	GA - BUILDING A - ZONE 3 - LEVEL 1	2	DRAFT SCHEMATIC DESIGN	31/01/25
WJPS-PTW-B00A-L2-DR-A-100123	GA - BUILDING A - ZONE 3 - LEVEL 2	2	DRAFT SCHEMATIC DESIGN	31/01/25
WJPS-PTW-B00A-RF-DR-A-100124	GA - BUILDING A - ZONE 3 - ROOF	2	DRAFT SCHEMATIC DESIGN	31/01/25
WJPS-PTW-B00A-GF-DR-A-100131	GA - BUILDING A - ZONE 4 - GROUND FLOOR	2	DRAFT SCHEMATIC DESIGN	31/01/25
WJPS-PTW-B00A-L1-DR-A-100132	GA - BUILDING A - ZONE 4 - LEVEL 1	2	DRAFT SCHEMATIC DESIGN	31/01/25
WJPS-PTW-B00A-L2-DR-A-100133	GA - BUILDING A - ZONE 4 - LEVEL 2	2	DRAFT SCHEMATIC DESIGN	31/01/25
WJPS-PTW-B00A-RF-DR-A-100134	GA - BUILDING A - ZONE 4 - ROOF	2	DRAFT SCHEMATIC DESIGN	31/01/25
WJPS-PTW-B00B-GF-DR-A-100201	GA - BUILDING B - GROUND FLOOR	2	DRAFT SCHEMATIC DESIGN	31/01/25
WJPS-PTW-B00B-RF-DR-A-100202	GA - BUILDING B - ROOF	2	DRAFT SCHEMATIC DESIGN	31/01/25
13 - REFLECTED CEILING PLANS				
WJPS-PTW-B00A-GF-DR-A-130101	RCP - BUILDING A - ZONE 1 - GROUND FLOOR	1	DRAFT SCHEMATIC DESIGN	31/01/25
WJPS-PTW-B00A-L1-DR-A-130102	RCP - BUILDING A - ZONE 1 - LEVEL 1	1	DRAFT SCHEMATIC DESIGN	31/01/25
WJPS-PTW-B00A-GF-DR-A-130111	RCP - BUILDING A - ZONE 2 - GROUND FLOOR	1	DRAFT SCHEMATIC DESIGN	31/01/25
WJPS-PTW-B00A-L1-DR-A-130112	RCP - BUILDING A - ZONE 2 - LEVEL 1	1	DRAFT SCHEMATIC DESIGN	31/01/25
WJPS-PTW-B00A-GF-DR-A-130121	RCP - BUILDING A - ZONE 3 - GROUND FLOOR	1	DRAFT SCHEMATIC DESIGN	31/01/25
WJPS-PTW-B00A-L1-DR-A-130122	RCP - BUILDING A - ZONE 3 - LEVEL 1	1	DRAFT SCHEMATIC DESIGN	31/01/25
WJPS-PTW-B00A-L2-DR-A-130123	RCP - BUILDING A - ZONE 3 - LEVEL 2	1	DRAFT SCHEMATIC DESIGN	31/01/25
WJPS-PTW-B00A-GF-DR-A-130131	RCP - BUILDING A - ZONE 4 - GROUND FLOOR	1	DRAFT SCHEMATIC DESIGN	31/01/25
WJPS-PTW-B00A-L1-DR-A-130132	RCP - BUILDING A - ZONE 4 - LEVEL 1	1	DRAFT SCHEMATIC DESIGN	31/01/25
WJPS-PTW-B00A-L2-DR-A-130133	RCP - BUILDING A - ZONE 4 - LEVEL 2	1	DRAFT SCHEMATIC DESIGN	31/01/25
WJPS-PTW-B00B-GF-DR-A-130201	RCP - BUILDING B - GROUND FLOOR	1	DRAFT SCHEMATIC DESIGN	31/01/25
20 - ELEVATIONS				
WJPS-PTW-B00A-ZZ-DR-A-200101	ELEVATIONS - BUILDING A - ZONE 1 - SHEET 1	1	DRAFT SCHEMATIC DESIGN	31/01/25
WJPS-PTW-B00A-ZZ-DR-A-200102	ELEVATIONS - BUILDING A - ZONE 1 - SHEET 2	1	DRAFT SCHEMATIC DESIGN	31/01/25
WJPS-PTW-B00A-ZZ-DR-A-200103	ELEVATIONS - BUILDING A - ZONE 2 - SHEET 1	1	DRAFT SCHEMATIC DESIGN	31/01/25
WJPS-PTW-B00A-ZZ-DR-A-200104	ELEVATIONS - BUILDING A - ZONE 2 - SHEET 2	1	DRAFT SCHEMATIC DESIGN	31/01/25
WJPS-PTW-B00A-ZZ-DR-A-200105	ELEVATIONS - BUILDING A - ZONE 3 - SHEET 1	1	DRAFT SCHEMATIC DESIGN	31/01/25
WJPS-PTW-B00A-ZZ-DR-A-200106	ELEVATIONS - BUILDING A - ZONE 3 - SHEET 2	1	DRAFT SCHEMATIC DESIGN	31/01/25
WJPS-PTW-B00A-ZZ-DR-A-200107	ELEVATIONS - BUILDING A - ZONE 4 - SHEET 1	1	DRAFT SCHEMATIC DESIGN	31/01/25
WJPS-PTW-B00A-ZZ-DR-A-200108	ELEVATIONS - BUILDING A - ZONE 4 - SHEET 2	1	DRAFT SCHEMATIC DESIGN	31/01/25
WJPS-PTW-B00B-ZZ-DR-A-200201	ELEVATIONS - BUILDING B - SHEET 1	1	DRAFT SCHEMATIC DESIGN	31/01/25
WJPS-PTW-B00B-ZZ-DR-A-200202	ELEVATIONS - BUILDING B - SHEET 2	1	DRAFT SCHEMATIC DESIGN	31/01/25
30 - SECTIONS				
WJPS-PTW-B00A-ZZ-DR-A-300101	SECTIONS - BUILDING A - SHEET 1	2	DRAFT SCHEMATIC DESIGN	31/01/25
WJPS-PTW-B00A-ZZ-DR-A-300102	SECTIONS - BUILDING A - SHEET 2	2	DRAFT SCHEMATIC DESIGN	31/01/25
WJPS-PTW-B00B-ZZ-DR-A-300103	SECTIONS - BUILDING B	2	DRAFT SCHEMATIC DESIGN	31/01/25
90 - SCHEDULES				
WJPS-PTW-ZZ-ZZ-SH-A-90001	SCHEDULE OF PRODUCTS AND MATERIALS	1	DRAFT SCHEMATIC DESIGN	31/01/25
WJPS-PTW-ZZ-ZZ-SH-A-90002	SCHEDULE OF INTERNAL FINISHES	1	DRAFT SCHEMATIC DESIGN	31/01/25
WJPS-PTW-ZZ-ZZ-SH-A-90003	SCHEDULE OF FURNITURE, FITTINGS AND EQUIPMENT	3	DRAFT SCHEMATIC DESIGN	31/01/25
WJPS-PTW-ZZ-ZZ-SH-A-90004	DOOR AND HARDWARE SCHEDULE	1	DRAFT SCHEMATIC DESIGN	31/01/25
WJPS-PTW-ZZ-ZZ-SH-A-90005	GENERAL SIGNAGE SCHEDULE	1	DRAFT SCHEMATIC DESIGN	31/01/25
WJPS-PTW-ZZ-ZZ-SH-A-90006	SCHEDULE OF SANITARY FIXTURES	3	DRAFT SCHEMATIC DESIGN	31/01/25
91 - ROOM DATA SHEETS				
WJPS-PTW-ZZ-ZZ-RD-A-910001	ROOM DATA SHEETS	1	DRAFT SCHEMATIC DESIGN	31/01/25
92 - REPORTS AND SPECIFICATIONS				
WJPS-PTW-ZZ-ZZ-SP-A-92001	ARCHITECTURAL SPECIFICATION	1	DRAFT SCHEMATIC DESIGN	31/01/25
WJPS-PTW-ZZ-ZZ-RP-A-920002	ARCHITECTURAL DESIGN REPORT	1	DRAFT SCHEMATIC DESIGN	31/01/25
93- SHADOW DIAGRAMS				
WJPS-PTW-ZZ-XX-DR-A-930001	SHADOW DIAGRAMS - JUNE - SHEET 1	1	DRAFT SCHEMATIC DESIGN	31/01/25
WJPS-PTW-ZZ-XX-DR-A-930002	SHADOW DIAGRAMS - JUNE - SHEET 2	1	DRAFT SCHEMATIC DESIGN	31/01/25
WJPS-PTW-ZZ-XX-DR-A-930003	SHADOW DIAGRAMS - DECEMBER - SHEET 1	1	DRAFT SCHEMATIC DESIGN	31/01/25
WJPS-PTW-ZZ-XX-DR-A-930004	SHADOW DIAGRAMS - DECEMBER - SHEET 2	1	DRAFT SCHEMATIC DESIGN	31/01/25
99-3D VIEWS				
WJPS-PTW-ZZ-XX-DR-A-990001	3D VIEWS	1	DRAFT SCHEMATIC DESIGN	31/01/25
WJPS-PTW-ZZ-XX-DR-A-990100	MATERIAL PALETTE	2	DRAFT SCHEMATIC DESIGN	31/01/25

Table 4 – Documentation Assessed

3.5 Assumptions

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

1. Total population of up to 552 students with 35 staff is proposed throughout the school campus.
2. The early childhood centre will cater for 60 children with 7 staff.
3. 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.
4. 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.
5. Disabled Access, Section J energy Efficiency are excluded from this report, and details relating to these elements are located in others reports / documentation.
6. The multi-purpose hall shall be used for normal school activities and will not be accessible to the public for community events. As such, the requirements of EWIS will not apply to this building.

BCA COMPLIANCE DISCUSSION & DESIGN CONSIDERATIONS

The following assessment will provide an overview of the compliance with the BCA and identify items that will be assessed further 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

1. Structural Engineer and Architect to review and provide compliant design with respect to required FRL's for a Type A, 5 & 9b structure (Building A - Primary School Building) and Type C, 9b structure (Building B – Multi-purpose Hall), including all loadbearing structures which provide direct vertical or lateral support to those elements with a required FRL.

2. Where a part of a building required to have an FRL depends upon direct vertical or lateral support from another part to maintain its FRL, that supporting part must have an FRL not less than that required by other provisions of Specification 5.

Type A, 5 & 9b structure (Building A - Primary School Building):

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

(a) each building element listed in Tables S5C11a to S5C11g and any beam or column incorporated in it, must have an FRL not less than that listed in those Tables for the particular Class of building concerned; and

(b) any *internal wall required* to have an FRL with respect to *integrity* and *insulation* must extend to—

(i) the underside of the floor next above; or

(ii) the underside of a roof complying with Tables S5C11a to S5C11g; or

(iii) if under S5C15 the roof is not *required* to comply with Tables S5C11a to S5C11g, the underside of the *non-combustible* roof covering 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) a ceiling that is immediately below the roof and has a *resistance to the incipient spread of fire* to the roof space between the ceiling and the roof of not less than 60 minutes; and

(c) 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

(d) the FRLs specified in Tables S5C11a to S5C11g for an external column apply also to those parts of an internal column that face and are within 1.5 m of a window and are exposed through that window to a fire-source feature

(2) For the purposes of (1)(c)(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*; and

(e) cavity barriers are provided in accordance with Specification 9

(3) For the purposes of Table S5C11a and Table S5C11b, includes any column and other building element incorporated within it or other external building element

Table S5C11a: Type A 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 1.5m	90/90/90	120/120/120	180/180/180	240/240/240
1.5 to less than 3m	90/60/60	120/90/90	180/180/120	240/240/180
3m or more	90/60/30	120/60/30	180/120/90	240/180/90

Table S5C11b: Type A 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
Less than 1.5m	–/90/90	–/120/120	–/180/180	–/240/240
1.5 to less than 3m	–/60/60	–/90/90	–/180/120	–/240/180
3m or more	–/–/–	–/–/–	–/–/–	–/–/–

Table S5C11c: Type A construction: FRL of external columns not incorporated in an external wall

Column 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	90/–/–	120/–/–	180/–/–	240/–/–
Non-Loadbearing	–/–/–	–/–/–	–/–/–	–/–/–

Table S5C11d: Type A 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 S5C11e: Type A construction: FRL of loadbearing internal 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
Fire-resisting lift and stair *shafts*	90/90/90	120/120/120	180/120/120	240/120/120
Bounding *public corridors*, public lobbies and the like	90/90/90	120/–/–	180/–/–	240/–/–
Between or bounding *sole-occupancy units*	90/90/90	120/–/–	180/–/–	240/–/–
Ventilating, pipe, garbage, and like *shafts* not used for the discharge of hot products of combustion	90/90/90	120/90/90	180/120/120	240/120/120

Table S5C11f: Type A 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	–/–/–	–/–/–	–/–/–
Ventilating, pipe, garbage, and like *shafts* not used for the discharge of hot products of combustion	–/90/90	–/90/90	–/120/120	–/120/120

Table S5C11g: Type A construction: FRL of other building elements not covered by Tables S5C11a to S5C11f

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, internal beams, trusses and columns	90/–/–	120/–/–	180/–/–	240/–/–
Floors	90/90/90	120/120/120	180/180/180	240/240/240
Roofs	90/60/30	120/60/30	180/60/30	240/90/60

➢ **Roof: Concession**

A roof need not comply with Tables S5C11a to S5C11g if its covering is *non-combustible* and the building—

(a) has a sprinkler system (other than a FPAA101D or FPAA101H system) complying with Specification 17 installed throughout; or

(b) **has a *rise in storeys* of 3 or less**; or

(c) is of Class 2 or 3; or

➢ has an *effective height* of not more than 25 m and the ceiling immediately below the roof has a *resistance to the incipient spread of fire* to the roof space of not less than 60 minutes.

3. 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 School Building has been assessed as less than 8,000m^2 and compliance will be achieved with floor area and volume limitations.

4. Early Childhood Centre – Separate Fire Compartment:

BCA Clause C3D6:

In a building containing a Class 9b *early childhood centre*, (a) unless the Class 9b *early childhood centre* is the only use in the building, the Class 9b *early childhood centre* must be separated from the remainder of the building by walls and/or floors with an FRL not less than that *required* for a *fire wall; and*

Each storey within the Class 9b early childhood centre must contain not less than 2 fire compartments.

Exemptions:

C3D6 (2) does not apply to a Class 9b early childcare centre –

(a). Wholly within a storey that provides direct egress to a road or open space; or

(b). With a rise in storeys of not more than 2, where the Class 9b early childhood centre is the only use in the building.

Assessment:

The early childhood centre is situated at the ground floor level, however the required exit open into a covered area with the path of travel to open space being another 20.0m. The childcare centre does not have direct egress to open space and exemption under C3D6 (2) (a) cannot be applied in this instance.

The Early Childhood Centre is required to be contained within a separate fire compartment as direct egress is not available to open space. Each storey within the Class 9b early childhood centre must contain not less than 2 fire compartments.

5. Building A has a rise in storey of 3 and must be designed to comply with Type A construction. The windows between storeys must be suitably fire-separated by spandrel separation which achieve compliance with Clause C3D7 of the BCA. The architectural design drawings being suitable detailed to satisfy these requirements. Spandrel separation in accordance with BCA Clause C3D7 is not required where a building is proposed to be sprinkler protected throughout.

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.

Section D – Access & Egress

1. Number of Exits Required (BCA Clause D2D3):

   - 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.

- Class 9b early childhood centre which form part of a storey must be served by 2 required exits, in addition to any horizontal exit. The early childhood centre is provided with alternative paths of travel to open space. Compliance will be achieved with these provisions.

2. Travel Distance to Exits and between Alternative Exits (BCA Clause D2D5 & D2D6):

- Travel distances on the floor must be 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.

Assessment of Travel Distances – Early Childhood Centre:

- The travel distance to required exits will comply with BCA Clause D2D5 and D2D6.

Assessment of Travel Distances – Primary School:

Ground Floor Level:

- Travel distance along the covered walkway (Block A – Zone 2) to open space is greater than 60.0m apart (i.e. measured up to 63.0m). It is noted there are security fences with gates along the path of travel to open space. The gates are required to be fitted with a fail-safe device to release in fire mode;
- The travel distance from the security fence (Block A – Zone 2) to open space is greater than 20.0m (i.e. measured up to 24.0m);
- Travel distance along the covered walkway to open space (required exit) exceeds 40.0m (i.e. measured up to 50.0m;
- Travel distance between alternative exits via the covered walkway exceeds 60.0m apart. The distance has been measured up to 100m. It is noted a retaining wall along the walkways prevent egress to open space to the playgrounds.

First Floor Level:

- Travel distance to Point of choice to alternative exits exceed 20.0m from Library (Building A – L01 – Zone 2). The travel distance has been measured up to 30.0m located on the balcony.
- Travel distances to required exits (Building A – L01 – Zone 4) > 40.0m (i.e. measured up to 43.0m).
- Travel distance between alternative exits < 60.0m apart. Compliance has been achieved with DtS provisions.

2nd Floor Level:

- Travel distance to point of choice to alternative exit < 20.0m. Compliance has been achieved;
- Travel distance to required exit is greater than 40.0m (i.e. measured up to 43.0m). Compliance has not been achieved with DtS provisions.
- Travel distance between alternative exits < 60.0m apart. Compliance has been achieved with DtS provisions.

Assessment of Travel Distances – Multi-purpose Hall:

- Travel distance to point of choice to alternative exit < 20.0m. Compliance has been achieved;
- Travel distance to required exit is less than 40.0m. Compliance has been achieved;
- Travel distance between alternative exits < 60.0m apart. Compliance has been achieved with DtS provisions.

The extended travel distances to required exit being suitable address by a performance solution from a fire engineer to satisfy the performance requirements of the BCA.

3. Fire-isolated stairways:

   - BCA clause D2D4 requires every stairway or ramp serving as a required exit must be fire-isolated unless it connects or passes through or passes by not more than 2 consecutive storeys and one extra storey may be included if the building has a sprinkler system complying with Specification 17 installed throughout.

     The 3 storey school building (Building A) will be protected by a sprinkler system and the stairways are not required to be fire isolated.

4. External stairway in lieu of fire-isolated exits:

   - The building must be served by 2 perimeter stairways being designed as external stairways in lieu of fire-isolated stairways.
   - Bounding walls of external stairways or the external wall of the building situated within 6.0m of the external wall of the building to achieve an FRL 60/60/60 with doorways protected by self-closing fire doors. Doorway or windows openings are not permitted within 3.0m to the external stairways.
   - Refer to mark-up drawings within Appendix A which reflect fire-rating requirements of external walls where exposed to the external stairways.

5. 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)
Primary School	Level 1	552	5.0m	6.3m	Yes
Primary School	Level 2	552	5.0m	6.3m	Yes
Multi-purpose Hall		360	3.5m	4.0m	Yes
The unobstructed width of a required exit must not diminish in the direction of travel to a road or open space.					

6. 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.

7. Egress from primary schools (BCA Clause D2D23):

(1) Every part of a Class 9b primary school must be wholly within a storey that provides direct egress to a road or open space. (2) The requirements of (1) do not apply to a building with a rise in storeys of not more than 4 used only as a school.	The required exits that serve the primary school building will comply with these provisions.

8. Installations in exits and paths of travel (BCA Clause D3D8):

(1) Services or equipment enclosed in accordance with these provisions may be installed in a *required exit*, or in any corridor, hallway, lobby or the like leading to a *required exit*, where that service or equipment comprises— (a) electricity meters, distribution boards or ducts; or (b) central telecommunications distribution boards or equipment; or (c) electrical motors or other motors serving equipment in the building. (2) An enclosure for the purposes of (1) must be— (a) *non-combustible* construction; or (b) a *fire-protective covering* with doorways or openings suitably sealed against smoke spreading from the enclosure.	EDB cupboards along the path of travel to required exits being suitable enclosed to comply with these provisions. Architectural drawings to detail compliance with these provisions.

9. Protection of openable windows (BCA Clause D3D29):

(1) A window opening must be provided with protection, if the floor below the window is 2 m or more above the surface beneath in— (a) a Class 9b *early childhood centre*. (2) Where the lowest level of the window opening is less than 1.7 m above the floor, a window opening covered by (1) must comply with the following: (a) The openable portion of the window must be protected with— (i) a device capable of restricting the window opening; or	Architectural drawings to detail openable windows within the early childhood centre and method of achieving compliance with these provisions.

(ii) a screen with secure fittings. (b) A device or screen *required* by (a) must— (i) not permit a 125 mm sphere to pass through the window opening or screen; and (ii) resist an outward horizontal action of 250 N against the— (A) window restrained by a device; or (B) screen protecting the opening; and (iii) have a child resistant release mechanism if the screen or device is able to be removed, unlocked or overridden. (3) A barrier with a height not less than 865 mm above the floor is *required* to an openable window— (a) in addition to window protection, when a child resistant release mechanism is *required* by (2)(b)(iii); and (b) where the floor below the window is 4 m or more above the surface beneath if the window is not covered by (1). (4) A barrier covered by (3) except for (5) must not— (a) permit a 125 mm sphere to pass through it; and (b) have any horizontal or near horizontal elements between 150 mm and 760 mm above the floor that facilitate climbing (c) A barrier *required* by (3) to an openable window in—*fire-isolated stairways*, *fire-isolated ramps* and other areas used primarily for emergency purposes, excluding external stairways and external ramps; and	

10. 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

1. 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;

     A fire hydrant booster assembly is required to be within sight of the pedestrian entrance to the building and adjacent to the property boundary and the vehicle access for the fire brigade. The fire hydrant system for the new building being designed to comply with the requirements of AS 2419.1-2021.

   - Fire Hose Reels to BCA Clause E1D3 and AS 2441;

   - Class 9b – classrooms or class 5 offices – FHR are not required to serve classrooms and associated corridors in a primary school and Class 5 (administration offices);

   - Fire Hose Reels are required to serve the Multi-purpose Hall and Library areas of the Primary School Building. The FHR which serves the library is required to be situated within 4.0m to the external

stairway. Consideration may be given to a performance solution to locate the FHR within the library rather than close to the external stairway;

- Fire Hose Reels are required to serve each storey of the Class 9b – Early Childhood Centre.

  Consideration may be given to a performance solution for the location of FHR's. This can be discussed further with the fire engineer.

➢ Where sprinklers are required: Class 9b buildings (BCA Clause E1D11);

(1) In a Class 9b building, other than an early childhood centre, see Part I1. (2) In a Class 9b early childhood centre and any other class of building containing a Class 9b early childhood centre part, sprinklers are required throughout the whole building, including any part of another class. Exemptions: a). Wholly within a storey that provides direct egress to a road or open space; or b). with a rise in storeys of not more than 2, where the class 9b early childhood centre is the only use in the building	The required exit from the early childhood centre discharge to a covered walkway area. The distance along the covered walkway to open space is up to 20.0m. Therefore – direct egress to open space is not achieved. A sprinkler system must be installed throughout Building A in accordance with BCA Clause E1D11, specification 17 and AS 2118.1-2017.

➢ Portable Fire Extinguishers to BCA Clause E1D14 and AS 2444.

➢ Smoke Hazard Management:

- A building containing a Class 9b early childhood centre must be provided with an automatic smoke detection and alarm system complying with BCA Clause E2D20 and Specification 20.

- 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.

Section F – Health and Amenity

1. 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.

2. 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.

This is a new requirement coming into effect as of 1 May 2022 and 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 9 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.

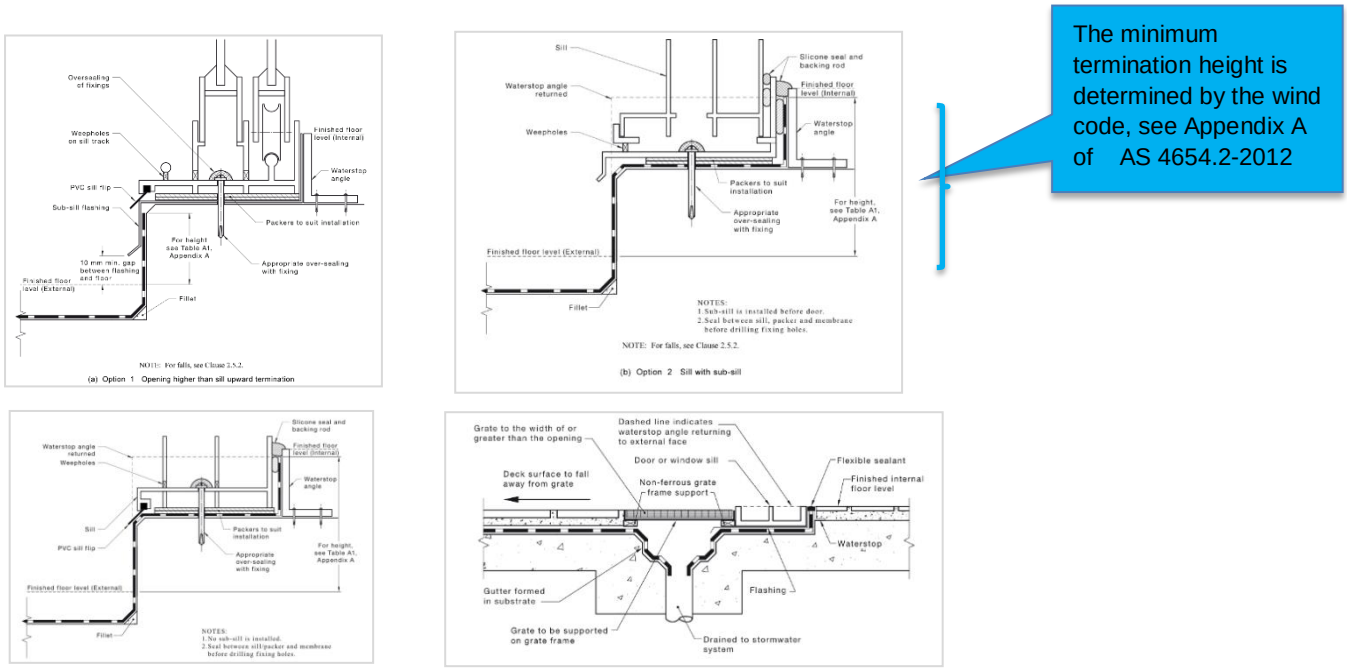


Figure 3 - Various waterproofing options at threshold and outlets.

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

3. <u>Occupant Numbers and Assessment of Sanitary Facilities (BCA Clause F4D4):</u>

A total population of up to 552 students with 35 staff is proposed throughout the school campus. Based on this population the below minimum number of sanitary facilities will be required:

Sanitary Facilities required based upon Design Occupancy

Student – Sanitary Facilities

	Population	Pans	Urinals	Washbasins
Male	276	5	4	6
Female	276	8		6
	Unisex Accessible		1 per Bank	

Staff – Sanitary Facilities

	Population	Pans	Urinals	Washbasins
Male	18	1	1	1
Female	18	2	N/A	1
	Unisex Accessible		1 per Bank	

Based upon the occupant density within the school campus the number of sanitary facilities will comply with the provisions of the BCA. The NCC requires separate sanitary facilities once the number of employees exceed 10 persons.

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.
4. If not more than 10 people are employed, a unisex facility may be provided instead of separate facilities for each sex.

4. Early Childhood Centre:

A Class 9b early childhood centre must be provided with—

(a) a kitchen or food preparation area with a kitchen sink, separate hand washing facilities, space for a refrigerator and space for cooking facilities, with—

(i) the facilities protected by a door or gate with child proof latches to prevent unsupervised access to the facilities by children younger than 5 years old; and

(ii) the ability to facilitate supervision of children from the facilities if the early childhood centre accommodates children younger than 2 years old; and

(b) one bath, shower or shower-bath; and

(c) if the centre accommodates children younger than 3 years old—

(i) a laundry facility comprising a washtub and space in the same room for a washing machine; and

(ii) a bench type baby bath, which is within 1 m of the nappy change bench; and

(iii) a nappy changing bench which—

(A) is within 1 m of separate adult hand washing facilities and bench type baby bath; and

(B) must be not less than 0.9 m^2 in area and at a height of not less than 850 mm, but not more than 900 mm above the finished floor level; and

(C) must have a space not less than 800 mm high, 500 mm wide and 800 mm deep for the storage of steps; and

(D) is positioned to permit a staff member changing a nappy to have visibility of the play area at all times.

Table F4D4g: Sanitary facilities in Class 9b buildings – early childhood centres

User group	Closet pans		Washbasins	
	Design occupancy	Number	Design occupancy	Number
Children	1 - 30	2	1 - 30	2
	>30	Add 1 per 15	>30	Add 1 per 15

Table Notes:

- Urinals are not required for a Class 9b early childhood centre.
- Facilities for use by children must be –
  - Junior pans; and
  - Washbasins with a rim height not exceeding 600mm; and
  - Accessible from both indoor and outdoor areas.

Architectural drawings being suitable detailed to provide sufficient provisions for sanitary facilities within the early childhood centre as the design progresses towards the crown certification of building works.

5. Provision of Natural Light to Classrooms (BCA Clause F6D2):

   Natural light must be provided in a Class 9b building – to all general purpose classrooms in primary and secondary schools and all playrooms or the like for the use of children in an early childhood centre. Method and extent of natural lights must be provided by windows that comply with the following:
   a. Have an aggregate light transmitting area measured exclusive of framing members, glazed bars or other obstructions of not less than 10% of the floor area of the room; and
   b. Are open to the sky or face a court or other space open to the sky or an open verandah, carport or the like.

Review of architectural drawings indicates compliance will be readily achieved with these provisions of the BCA.

Part G5 – Construction in Bushfire Prone Areas

1. 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.

   Bushfire Hazards and Risk Assessment Report (Revision V0 dated 17/01/2025) by GHD has indicated the subject site is depicted on Wollondilly Shie Council's Bushfire Prone Land (BFPL) Map as BFPL, with the site classified as bushfire prone land due to the presence across the entire site of mapped bushfire prone Vegetation Category 3 (see Figure). The application of Planning for Bush Fire Protection (PBP) 2019 and AS 3959-2018 'Construction of buildings in bushfire-prone areas' (AS 3959-2018) is therefore triggered for any future development application.

   As the subject site is located on designated bushfire prone land and the proposal relates to a Class 9 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:** Building A and B will be less than 12.0m apart. Compliance will be required with (a) or (b). Architectural drawings to detail compliance 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:** Compliance is required to be achieved with (a) or (b) as the carpark area is within 10.0m of the buildings.
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:** It is noted an Addendum is proposed to modified/remove these provisions from specification 43.
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. Architectural drawings to detail compliance with BAL 19.
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.
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.

S43C13 Signage	Signage must be provided to warn building occupants against storing combustible materials under or adjacent to the building. **Comments:** (3) 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:** It is recommended that the Bushfire Consultant seek exemption from NSW Rural Fire Services rather than providing perimeter around the building.

Section J – Energy Efficiency

1. 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.

   The recommendations from the ESD Consultants/Section J Report being incorporated into the architectural and services design documentation.

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

The Following measures are proposed to be justified via Performance Solutions for the proposed building / works as follows:

Item	Query or DTS Non- Compliance	BCA Clause	BCA Performance Requirements
1.	<u>External Stairway in Lieu of Fire-Isolated Stairways:</u> The occupant density has been calculated at 2sqm/person for classrooms. The aggregate exit widths based upon occupant density 400 persons per storey equals 3.80m. External stairway in lieu of fire-isolated stairway is required to allow for circulation width of approx.. 1.90m at the landing within each storey. The external stairway circulation zone at the landing will be within 6.0m to the external walls. The external walls within this 6.0m zone are required to achieve an FRL 60/60/60 with openings protected. Compliance will not be achieved with BCA Clause D2D13.	D2D13	C1P2
2.	<u>Travel Distances – Primary School:</u> Ground Floor Level: • Travel distance along the covered walkway (Block A – Zone 2) to open space is greater than 60.0m apart (i.e. measured up to 63.0m). It is noted there are security fences with gates along the path of travel to open space. The gates are required to be fitted with a fail-safe device to release in fire mode; • The travel distance from the security fence (Block A – Zone 2) to open space is greater than 20.0m (i.e. measured up to 24.0m); • Travel distance along the covered walkway to open space (required exit) exceeds 40.0m (i.e. measured up to 50.0m; • Travel distance between alternative exits via the covered walkway exceeds 60.0m apart. The distance has been measured up to 100m. It is noted a retaining wall along the walkways prevent egress to open space to the playgrounds. First Floor Level: • Travel distance to Point of choice to alternative exits exceed 20.0m from Library (Building A – L01 – Zone 2). The travel distance has been measured up to 30.0m located on the balcony.	D2D4, D2D5	D1P2 & E2P2

Item	Query or DTS Non- Compliance	BCA Clause	BCA Performance Requirements
	• Travel distances to required exits (Building A – L01 – Zone 4) > 40.0m (i.e. measured up to 43.0m). 2nd Floor Level: • Travel distance to required exit is greater than 40.0m (i.e. measured up to 43.0m). Compliance has not been achieved with DtS provisions.		
3.	Fire Hose Reels; Fire Hose Reels are required to serve the Multi-purpose Hall and Library areas of the Primary School Building; Fire Hose Reels are required to serve each storey of the Class 9b – Early Childhood Centre. Consideration may be given to a performance solution to locate the FHR within a cupboard outside of the Library rather than within 4.0m to the required exit.	E1D3	E1P1

The list of performance solutions above will be suitable address at the crown certification stage by the documentation of a performance solution report by an accredited fire engineer.

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

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 Construction Certificate/Crown Certificate/Complying Development 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

Further BCA Documentation at Detailed Design / Crown Certificate Stage:

The following items will be assessed further as the design progresses towards the crown certification of building works. In order for Group DLA to confirm the design complies with the BCA, the following items listed in Table 5 below are required to be clarified, submitted, illustrated, etc. as the case may be:

1.1 Additional Information required for further assessment at Design Development

Item No.	Item	Comment	BCA Clause
A.	Early Childhood Centre – Sprinklers: The current design reflects exit discharge to a covered walkway area. The distance along the covered walkway to open space is up to 20.0m. Therefore – direct egress to open space is not achieved. Building A has been designed as a sprinkler protected building in accordance with E1D11 of BCA 2022.	Further assessment has determined subject to an external exit doorway being provided within the eastern external wall then the exemption can be applied under E1D11 (2) (a) and the building is not required to be sprinkler protected.	E1D11.
B.	Early Childhood Centre - Fire Compartments: The Early Childhood Centre is required to be contained within a separate fire compartment as direct egress is not available to open space. Each storey within the Class 9b early childhood centre must contain not less than 2 fire compartments.	Further assessment has determined subject to an external exit doorway being provided within the eastern external wall then the exemption can be applied under C3D6 (2) (a). Exemptions: C3D6 (2) does not apply to a Class 9b early childcare centre – (a). Wholly within a storey that provides direct egress to a road or open space.	C3D6 (2) (a).
C.	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.	Tables S5C21a to S5C21f
D.	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 developed to detail compliance with these provisions.	C2D10
E.	Spandrel Separation: Spandrel separation in accordance with BCA Clause C3D7 is not required where a building is proposed to be sprinkler protected throughout.	The windows between storeys must be suitably fire-separated by spandrel separation which achieve compliance with Clause C3D7 of the BCA. The architectural design drawings being suitable detailed to satisfy these requirements.	C3D7

Item No.	Item	Comment	BCA Clause
F.	Non-Fire-Isolated Stairways: The 3 storey school building (Building A) will be protected by a sprinkler system and the stairways are not required to be fire isolated.	External Stairway in Lieu of Fire-Isolated Stairways: The occupant density has been calculated at 2sqm/person for classrooms. The aggregate exit widths based upon occupant density 400 persons per storey equals 3.80m. External stairway in lieu of fire-isolated stairway is required to allow for circulation width of approx.. 1.90m at the landing within each storey. The external stairway circulation zone at the landing will be within 6.0m to the external walls. The external walls within this 6.0m zone are required to achieve an FRL 60/60/60 with openings protected. Compliance will not be achieved with BCA Clause D2D13. A performance solution will address this departure from the BCA.	D2D13
G.	Sanitary Facilities: Sanitary facilities to serve the early childhood centre being provided as per item 12 on Page 23 of this report.	Architectural drawings being suitable updated to provide sanitary facilities.	F4D4
H.	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
I.	Bushfire Protection: Refer to assessment of specification 43 which will be required for the proposed new buildings.	The Bushfire Hazards and Risk Assessment Report has indicated the proposed school falls within the future town centre and significant changes to the landscape will result from proposed activity. This will result in the amendment to the mapped BFPL to exclude the school site. Subject to the land being mapped as outside the BFPL then BCA Clause G5 and specification 43 will not apply to the land.	Spec. 43

Table 5 – Documentation

The list above is not an exhaustive list, however, reflects BCA items to be incorporated into the design as the development progresses into detailed design application for a crown certificate.

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.

The documentation of a Performance Solution Report as identified within this report will be prepared and verified by appropriate qualified persons prior to the preparation and issue of crown certification of building work.

ESSENTIAL FIRE SAFETY MEASURES (EFSM)

Below is a list of essential fire safety services that are required / expected to be installed / designed for the building, and the relevant standards of performance for each measure to be designed / constructed to. This table may be required to be updated as the design develops.

Building A (Early Childhood Centre and Primary School Building):

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 fail-safe devices	--	C4D4, D3D24, D3D26, D3D27, Specification 12
Automatic fire detection & alarm systems	AS 1670.1 – 2018	Part E2, Specification 20, G3D8
Automatic fire suppression systems (Note 1)	AS 2118.1 – 2017	Part E2, E1D2, Spec 17
Emergency lighting	AS 2293.1 – 2018	E4D2, E4D4, E4D8
Exit signs	AS 2293.1 – 2018	E4D5, E4D6, NSWWE4D6, E4D8, Spec 25
Fire dampers	AS 1668.1 – 2015 AS 1682.1 & 2-2015	C4D15
Fire doors	AS 1905.1 – 2015	C4D7, Spec 12
Fire Doors – Lift Landing Doors	AS 1735.11-1986	C4D11
Fire hose reel systems	AS 2441 – 2005	E1D3
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
Wall wetting sprinklers & drencher systems	AS 2118.1 – 2017 AS 2118.2	D2D13, Spec 14, Spec 31
Warning and operational signs	--	C4D7, E3D4, D3D28 & Spec 17
Fire Safety Schedule being updated to reference a Fire Engineering Report and any additional fire safety measures to be installed within the building at the Crown Certificate stage.		
Note 1:	Subject to an external exit doorway being provided within the eastern external wall then the exemption can be applied under E1D11 (2) (a) and the building is not required to be sprinkler protected.	

Table 6 – Essential Fire Safety Measures (EFSM)

Building B (Multi-purpose Hall):

Fire Safety Measure	Standard of Performance	BCA 2022 Clause/Specification(s)
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 hose reel systems	AS 2441 – 2005	E1D3
Fire hydrant systems	AS 2419.1 – 2021	E1D2, Spec 18
Mechanical air handling systems • Auto shutdown	AS 1668.1 – 2015 AS 1668.2 –2012	E2D4, E2D3, E2D4, Spec 19
Portable fire extinguishers	AS 2444 – 2001	E1D14
Fire Safety Schedule being updated to reference a Fire Engineering Report and any additional fire safety measures to be installed within the building at the Crown Certificate stage.		

Table 7 – Essential Fire Safety Measures (EFSM)

Appendix A:

Ancillary Information

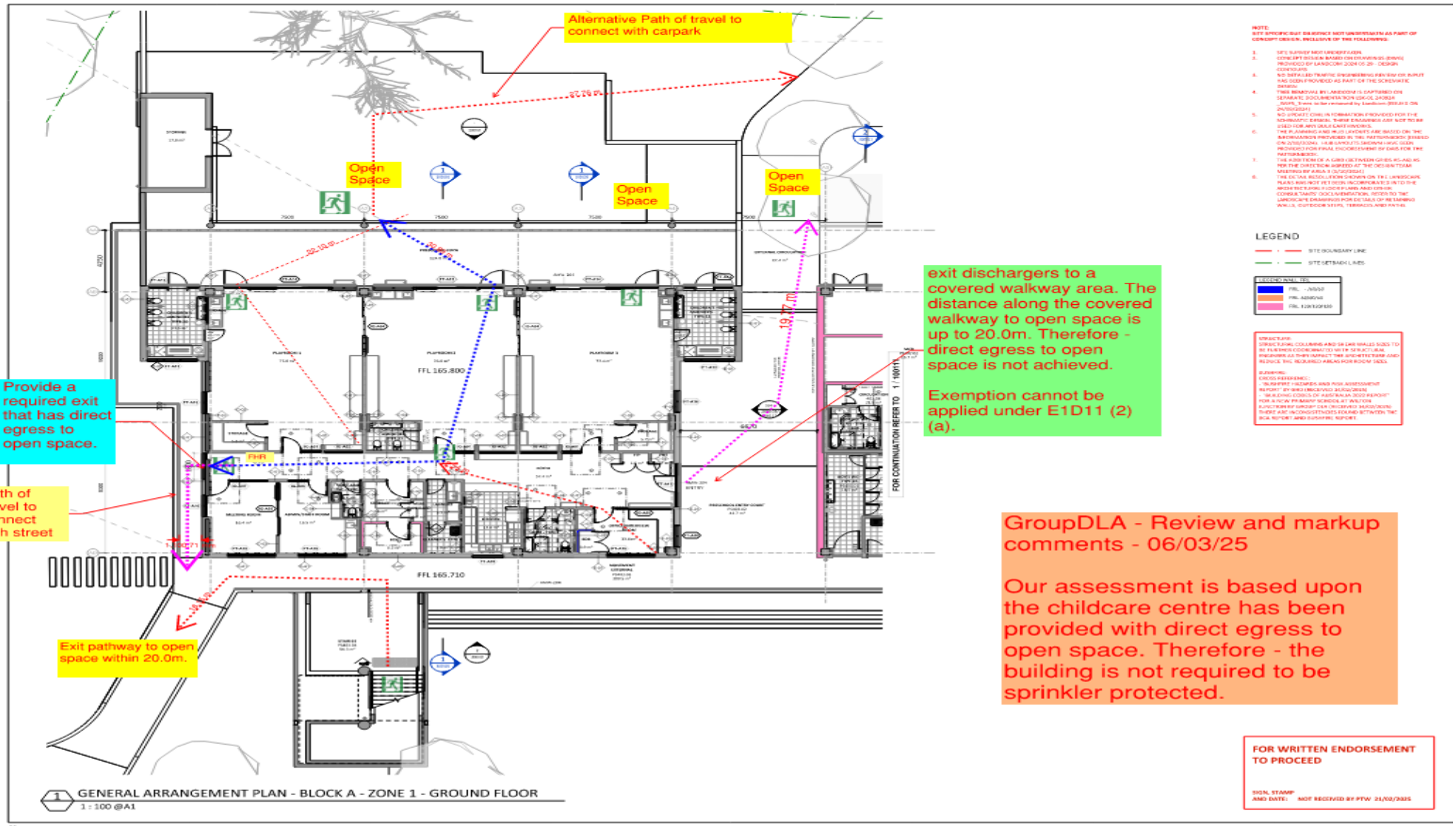
- Stair Precis Table
- Travel Distance Assessment
- Markup Egress Plans

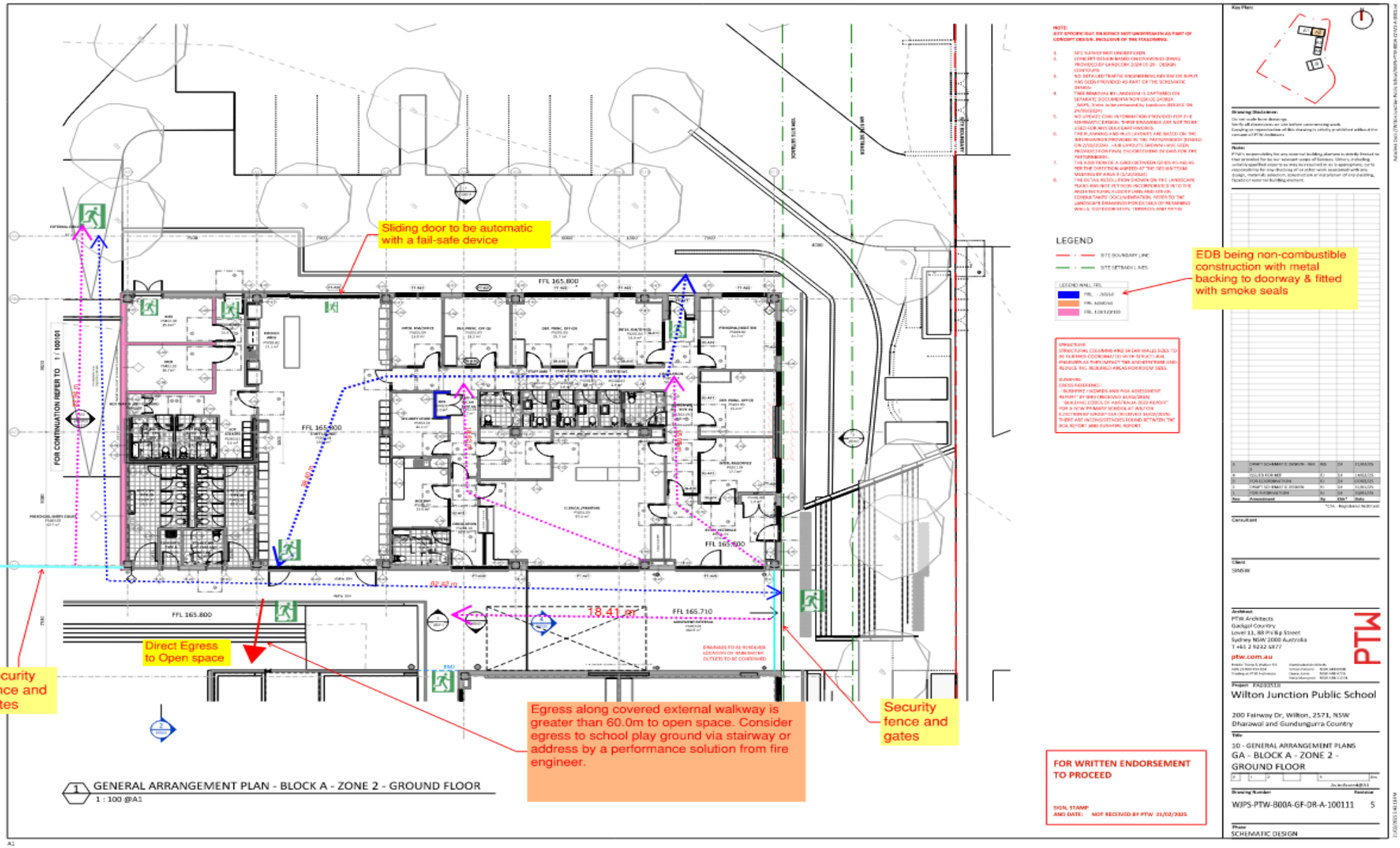
Travel Distances Assessment:

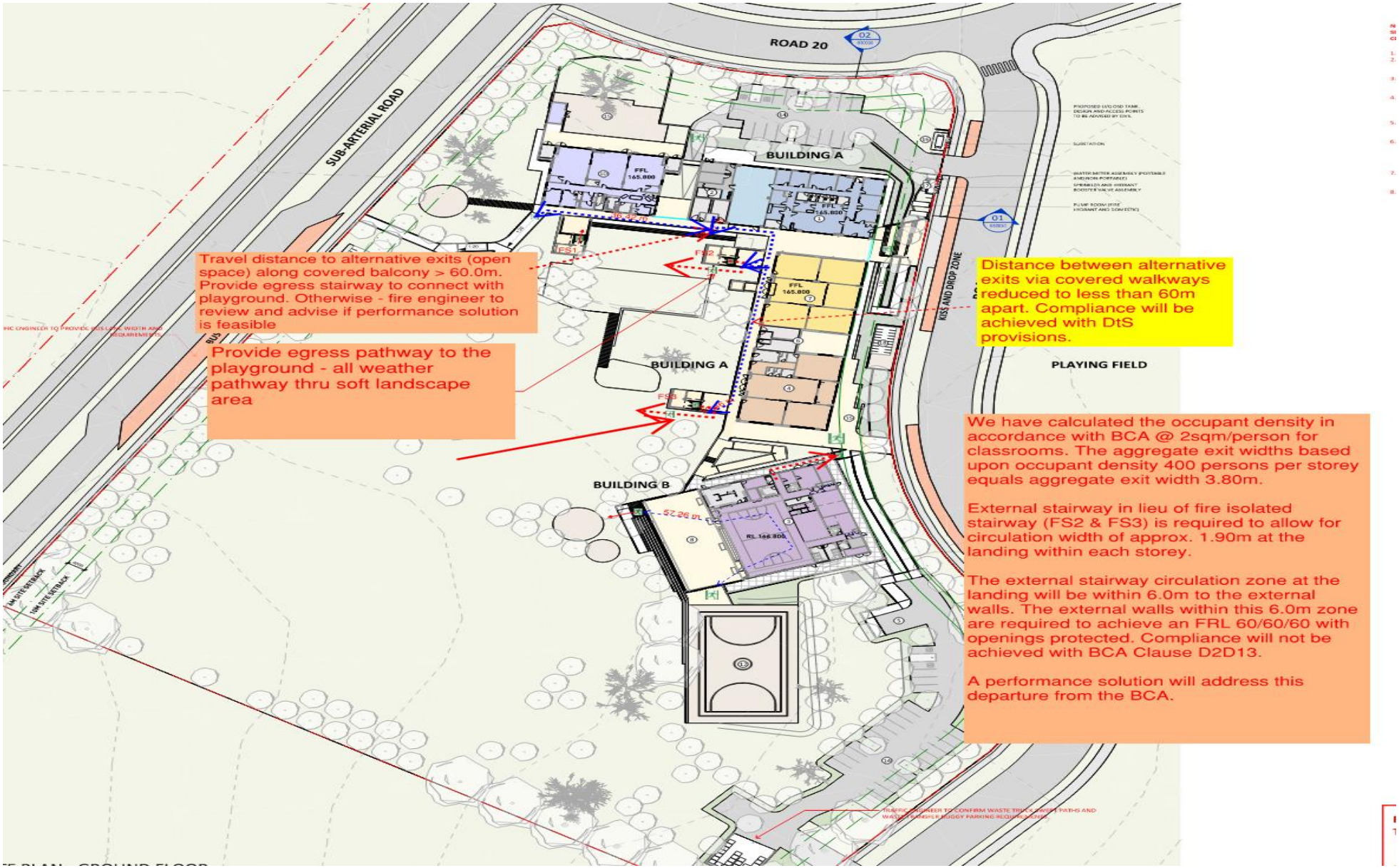
Location	DTS Travel Distance Requirement	Current condition	Performance Requirement	Resolution
Early Childhood Centre	• 20m max. to a point of choice. • 40m max. to an exit (where min of Two. provided). • 60m max between alternative exits • 9m min.	20/40/60	N/A	Travel distances will comply with the DtS provisions of the BCA. Alternative path of travel being provided via the playground to connect with public roadway. The entry doorway is a required exit and must swing in the direction of egress.
Primary School – Ground Floor (Building A)	• 20m max. to a point of choice. • 40m max. to an exit (where min of Two. provided) • 60m max between alternative exits • 9m min.	20/**50/100**	D1P2 & E2P2	Egress along the walkway to open space has been measured up to 100m. Compliance has not been achieved with D2D4 & D2D5. ➢ Egress to required exit (open space) via covered walkway exceeds 40.0m; ➢ Egress between exits (open space) along the walkways exceed 60.0m The travel distance after discharge from FS2 and FS3 to open space will not be achieved with BCA Clause D2D14 (3) & (5). ➢ Travel distance after discharge from FS2 & FS3 to open space > 20m or 40m in opposite directions. ➢ The distance from any point on the floor to a point of egress to road or open space by way of the required non-fire-isolated stairway exceed 80m. Retaining walls along the external walkway prevent a path of travel to open space on the playgrounds. Can a egress stairway be provided to connect with the playgrounds. This will reduce the overall travel distance to open space.

Primary School – Level 01 (Building A)	• 20m max. to a point of choice. • 40m max. to an exit (where min of Two. provided) • 60m max between alternative exits • 9m min.	**28/43**/60	D1P2 & E2P2	Travel distance from the furthest point on the floor within the library to POC on the balcony is greater than 20.0m (i.e. measured up to 28m); The travel distance from the furthest point on the floor to FS3 exceeds 40m (i.e. measured up to 43m). The extended travel distance being assessed as a performance solution from a fire engineer.
Primary School – Level 02 (Building A)	• 20m max. to a point of choice. • 40m max. to an exit (where min of Two. provided) • 60m max between alternative exits • 9m min.	20/**43**/60	D1P2 & E2P2	The travel distance from the furthest point on the floor to FS3 exceeds 40m (i.e. measured up to 43m).
Multi-purpose Hall (Building B)	• 20m max. to a point of choice. • 40m max. to an exit (where min of Two. provided) • 60m max between alternative exits • 9m min.	20/40/60	TBC	The multi-purpose hall is served by required exit doors that discharge within the COLA and covered walkway. It is recommended that a compliant egress stairway being provided that connects with the playground from northern end of the COLA. A central double handrail being provided to the stairway to allow access to the seating platform. A centrally located handrail does not comply with the DtS provisions of the BCA. This will be subject to a performance solution from the Accessibility Consultant.

Markup Travel Distances:




Sliding door to be automatic with a fail-safe device
EDB being non-combustible construction with metal backing to doorway & fitted with smoke seals
Security fence and gates
Direct Egress to Open space
Egress along covered external walkway is greater than 60.0m to open space. Consider egress to school play ground via stairway or address by a performance solution from fire engineer.
Security fence and gates
GENERAL ARRANGEMENT PLAN - BLOCK A - ZONE 2 - GROUND FLOOR
1 : 100 @A1
LEGEND
FOR WRITTEN ENDORSEMENT TO PROCEED
Wilton Junction Public School
GA - BLOCK A - ZONE 2 - GROUND FLOOR
W3PS-PTW-800A-GF-DR-A-100111
SCHEMATIC DESIGN


ROAD 20
SUB-ARTERIAL ROAD
BUILDING A
BUILDING A
BUILDING B
PLAYING FIELD
KISS AND DROP ZONE
Travel distance to alternative exits (open space) along covered balcony > 60.0m. Provide egress stairway to connect with playground. Otherwise - fire engineer to review and advise if performance solution is feasible
Provide egress pathway to the playground - all weather pathway thru soft landscape area
Distance between alternative exits via covered walkways reduced to less than 60m apart. Compliance will be achieved with DtS provisions.
We have calculated the occupant density in accordance with BCA @ 2sqm/person for classrooms. The aggregate exit widths based upon occupant density 400 persons per storey equals aggregate exit width 3.80m.
External stairway in lieu of fire isolated stairway (FS2 & FS3) is required to allow for circulation width of approx. 1.90m at the landing within each storey.
The external stairway circulation zone at the landing will be within 6.0m to the external walls. The external walls within this 6.0m zone are required to achieve an FRL 60/60/60 with openings protected. Compliance will not be achieved with BCA Clause D2D13.
A performance solution will address this departure from the BCA.

Stair / Ramp Precis

Stairs	Access requirement	Handrails	Balustrade	Slip Resistance	Treads, Risers, Widths, Other	TGSI	Common Issues
FIS & 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 270 degrees 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 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. **Ref:** BCA D3.8, AS/NZS 1428.4.1-2009	• Lip of the nosing strip excessive in height. • Outer handrail not continuous due to allowing for fire hydrant equipment. • 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. • Tread and riser dimensions not constructed uniform in dimension.
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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