Building Code of Australia

Assessment Report

Project: Bungendore Temporary School

Site address: 4-6 Majara Street, 10 Majara Street and part Lot 1 DP 1276279 and part Lot 1 DP1276282, Bungendore

Client: Colliers

Report Number: RE230468.02BCA

Revision: 04

10 APRIL 2025

REPORT REVISION HISTORY

Revision	Date Issued	Revision Description
01	22.11.24	Draft issued for client & consultant comment
		Prepared by
		Chris Michaels *Executive Director*
02	10.04.25	Draft issued for client & consultant comment (minor update)
		Prepared by
		Chris Michaels *Executive Director*
03	14.04.25	Draft issued for client & consultant comment (minor update)
		Prepared by
		Chris Michaels *Executive Director*
04	16.04.25	Issued for lodgement with SSDA
		Prepared by
		 Chris Michaels *Executive Director*

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1. INTRODUCTION

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 Bungendore Temporary High School (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). The purpose of this report is to establish compliance with the Building Code of Australia and relevant Acts and Regulations of the planning documentation for the proposed activity.

1.1. General

The premises subject to this report is located at 10 Majara St, Bungendore. The proposal involves alterations and change of use of an existing office building to a temporary high school. The proposal also involves erection of demountable buildings to be used as part of the school.

1.2. Site Description

The project site, and land to which the REF applies (the site) includes Nos. 4-6, and 10 Majara Street, part Lot 1 DP 1276279 (Majara Street road reserve) and part Lot 1 DP 1276282 as identified in Figure 1.

As shown at Figure 2, the Bungendore North Campus High School will utilise the former Council administration building and car park located at 10 Majara Street. Demountable buildings are proposed to be placed north of the existing building. Public domain upgrades will feature in part Lot 1 DP 1276279 and part Lot 1 DP 1276282.

The site is located between Mick Sherd Oval (to the west) and the rail corridor (to the east). The site is located approx. 170m north of the Bungendore Train Station and Bungendore Primary School. The Bungendore Primary School, located on the corner of Gibraltar Street and Majara Street currently accommodates Bungendore High School on a temporary basis.

Figure 1 Aerial Photograph of the Site

1.3. Proposed Activity Description

The proposed activity is for the construction and operation of the new Bungendore North Campus High School. The high school will accommodate the operational needs of the high school on a temporary basis (together with the existing high school located within the grounds of Bungendore Public School) as students as enrolments continue to grow. These facilities will be utilised until such time the permanent high school at Birchfield Drive is established.

Specifically, the project involves the following:

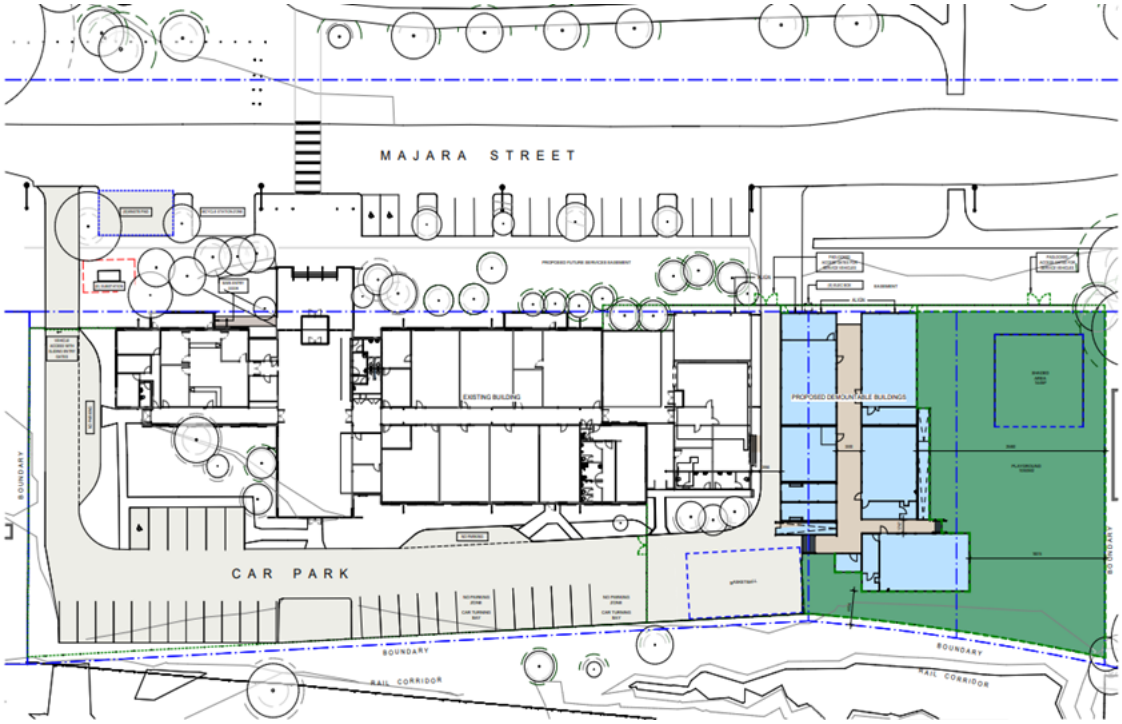
- Use of the former Council administration building as part of the new Bungendore North Campus High School,
- New demountable classrooms,
- Landscaping, outdoor play areas, shade structure and basketball court,
- On site staff parking which utilises the existing car park and access from Majara Street, and
- Public domain upgrades to part Lot 1 DP 1276279 (Majara Street Road reserve) and part lot 1 DP 1276282 to enable kiss and drop from Majara Street and pedestrian connectivity to surrounding areas.

The North Campus facilities proposed will supplement the existing high school facilities located within the Bungendore Primary School site.

Refer to the Review of Environmental Factors (REF) for the detailed scope of works and operational details.

Figure 2 provides an extract of the proposed Overall Campus Plan.

Figure 2 Overall Campus Plan Site and Roof Plan



1.4. Purpose of Report

This report has been prepared, on behalf of Colliers, to establish compliance to the Building Code of Australia and relevant Acts and Regulations of the planning documentation for the proposed works.

1.5. Report Basis

This report is based on:

- Architectural plans prepared by TKD Architects, as identified in the attached Appendix 1.
- The Building Code of Australia 2022, inclusive of NSW variations (See Note 1).
- Environmental Planning and Assessment Act 1979.
- Environmental Planning and Assessment (Development Certification and Fire Safety) Regulation 2021.

Note1: Building Code of Australia (BCA) 2022 was adopted in NSW on 01 May 2023. The version of the BCA applicable is the version as in force at the date of invitation of tenders to carry out the building work. Therefore, comments may be subject to changes to comply with updated versions of the Building Code of Australia.

1.6. Exclusions and Limitations

Refer to Attachment 2

2. BUILDING DESCRIPTION

2.1. The building classification relevant to the proposed use is Class 9b assembly building (school).

2.2. The building has an effective height of less than 12 m.

2.3. The required type of construction under C2D2 of the BCA is Type C.

2.4. The building has a rise in storeys of one (1)

2.5. The development has been assessed as five (5) separate buildings for the purposes of BCA assessment, as follows:

Building 1: The main existing building

Building 2: The existing adjunct building (proposed to be used as performance & storage)

Building 3: Proposed demountable Science and GLS

Building 4: Proposed demountable Wood food & Commercial kitchen

Building 4: Proposed shade structure

3. STRUCTURAL PROVISIONS

3.1. The Structural engineer shall certify that the structural capacity of the existing building will be appropriate for the new use.

3.2. The structural elements and forms of construction are required to be designed in accordance with BCA Section B and the relevant standards.

3.3. New glazed assemblies are to comply with AS 2047 or AS1288 as relevant.

3.4. Termite risk management is required in accordance Clause B1D4(i) and AS 3660.1-2014 Amdt 1. New primary building elements (as defined by the BCA) within the existing building must be of material not subject to termite attack in accordance with BCA B1D4(i). The new buildings must be protected with termite risk management measures in accordance with AS 3660.1 if they consist of material subject to termite attack.

4. FIRE RESISTANCE

4.1. Where buildings are located over property boundaries, those property boundaries are not assessed as fire source features based on the united building approach.

Fire resistance levels of external walls are not required if the external walls are 3 m or more from fire source features (boundary or separate building).

The buildings are more than 3 m apart and therefore do not require external walls to be fire rated in terms of separation of buildings.

The buildings are more than 3 m from the side and rear boundaries and therefore do not require an FRL.

The floor, internal walls and roof are not required to have an FRL.

4.2. Fire Hazard properties of new internal linings, materials or assemblies used in the building are required to comply with C2D11 and Specification 7 of the BCA.

The fire hazard properties of existing combustible floor linings cannot be determined. However the requirements for school buildings are the same as office buildings, therefore it is not considered necessary that the existing floor finishes be verified for compliance. Existing wall and ceiling linings are typically non-combustible.

4.3. The maximum permitted fire compartment sizes are 3,000 m² and 18,0000 m³. The buildings comply.

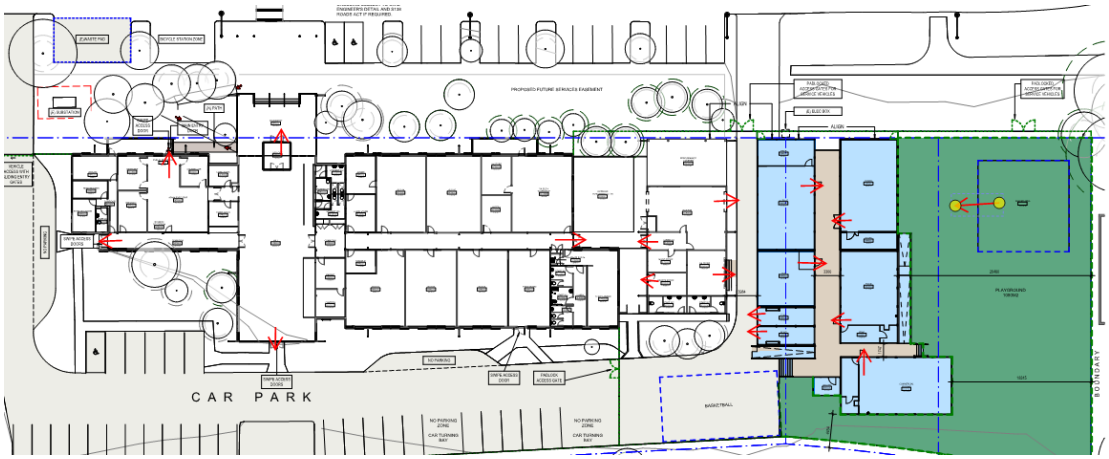
4.4. The doors to the existing comms and electrical cupboards shall be upgraded as follows:

(a) Installation of smoke seals

(b) Installation of a metal sheet to the back of the door leaf.

5. ACCESS AND EGRESS

5.1. Every storey that accommodates more than 50 persons must have access to two exits. The exits have been identified below:



The Performance building, Science/GLS building & Wood/ Food/commercial kitchen building have been assessed as having a population of under 50 each building.

5.2. The total student numbers have been given as 110 students.

5.3. Travel distances comply.

5.4. The dimensions of exits and paths of travel are capable of complying.

5.5. Installations in exits and paths of travel are to comply with BCA D3D8.

5.6. The floor surface of proposed ramps must have a slip-resistance classification not less than that listed in Table D3D15 when tested in accordance with AS 4586-2013 Amdt 1.

5.7. Goings and risers of proposed stairways are required to be designed to comply with BCA D3D14, including slip resistance requirements.

5.8. Landings of stairways and ramps must comply with BCA D2.14, including slip resistance requirements.

5.9. Thresholds at doorways are to comply with BCA D3D16.

5.10. Handrails are to be provided to new stairs and ramps in accordance with BCA D3D22. Handrails must comply with Clause 12 of AS 1428.1-2009 Amdt 1.

5.11. Door hardware to new doors is to comply with BCA D3D26.

5.12. The existing main entry doors contain auto open doors. Should this auto open operation be maintained, it shall comply with the following:

(a) it must be able to be opened manually under a force of not more than 110 N if there is a malfunction or failure of the power source; and

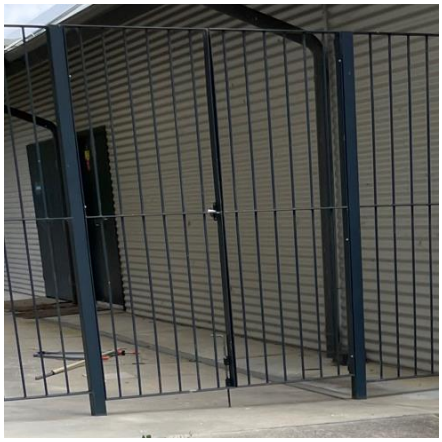
(b) if it leads directly to a road or open space it must open automatically if there is a power failure to the door or on the activation of a fire or smoke alarm anywhere in the fire compartment served by the door.

5.13. The existing building contains exit doors that contain nib locks that do not comply with this clause. An upgrade is considered necessary. The exit doors and doors within a path of travel must be readily openable without a key from the side that faces a person seeking egress by:

1. a single hand downward action on a single device which is located between 900 mm and 1.1 m from the floor and if serving an area required to be accessible by Part D4—
   (a) be such that the hand of a person who cannot grip will not slip from the handle during the operation of the latch; and
   (b) have a clearance between the handle and the back plate or door face at the centre grip section of the handle of not less than 35 mm and not more than 45 mm; or
2. a single hand pushing action on a single device which is located between 900 mm and 1.2 m from the floor.

Alternatively, the doors may be fitted with a fail-safe device which automatically unlocks the door upon the activation of smoke, or any other detector system deemed suitable in accordance with AS 1670.1 installed throughout the building and is readily openable when unlocked.

Similarly, any external gates that provide egress to the street shall be readily openable without a key from the side that faces a person seeking egress in accordance with standard above.



5.13 Refer to separate access report for access for people with disabilities.

6. SERVICES AND EQUIPMENT

6.1 The existing building is required to be served by a hydrant system in accordance with BCA E1D2 and AS 2419.1-2005 Amdt 1. External street hydrants may be utilized if they provide the required coverage and flows/pressures and comply with AS 2419.1-2021. The hydraulic fire consultant is to verify compliance.

6.2 Fire hose reel coverage is required to the existing building except for classrooms and associated corridors. Coverage is achieved from the existing FHRs. It is noted that the existing FHR near the proposed Hall is more than 4 m from the nearest exit and that both FHRs have clearance non-compliances around the drums however as these are exiting it is not considered that they be upgraded to comply with AS 2441-2005 Amdt 1 subject to portable fire extinguishers being provided throughout the building in accordance with AS2444-2001. However, should annual certification of fire safety measures (annual fire safety statement) present an issue due to the non-compliance, an upgrade of the fire hose reels should be considered or alternately performance justification (fire engineering report) may be provided.

6.3 Portable fire extinguishers must be provided throughout in accordance with AS 2444-2001.

6.4 The building must be provided with automatic shutdown of any air-handling system (other than non-ducted individual room units with a capacity not more than 1000 L/s and miscellaneous exhaust air systems installed in accordance with Sections 5 and 6 of AS 1668.1), on the activation of smoke detectors installed complying with S20C6. Should the building contain such air handling systems, a smoke detection system will need to be installed. Clause S20C6 requires smoke detectors:

1. be spaced—

   (a) not more than 20 m apart and not more than 10 m from any wall, bulkhead or smoke curtain; and

   (b) in enclosed malls and walkways in a Class 6 building not more than 15 m apart and not more than 7.5 m from any wall, bulkhead or curtain; and

2. have a sensitivity in accordance with AS 1670.1

6.5 Emergency lighting is required to all parts of the existing main building (referred to as building 1 in item 2.5 above) and the Demountable wood, food and commercial kitchen building in accordance with AS 2293.1-2018.

6.6 Exit signs must be provided in accordance with BCA Part E4 & AS 2293.1-2018

7 HEALTH AND AMENITY

7.1 Waterproofing of new wet areas must comply with BCA F2D2, F2D3 & AS 3740-2021

7.2 Where new floor wastes are installed, the floor to the floor to the waste must be complying with BCA F2D4 (150 – 1:80).

7.3 Stormwater drainage to new buildings must comply with AS/NZS 3500.3-2021. The civil drawings will demonstrate compliance with this requirement.

7.4 Damp-proofing of new buildings is required to prevent moisture from the ground reaching the:

1. the lowest floor timbers and the walls above the lowest floor joists; and

2. the walls above the damp-proof course; and

3. the underside of a suspended floor constructed of a material other than timber, and the supporting beams or girders.

7.5 Subfloor ventilation is required to the new buildings in accordance with F1D8.

7.6 Roof coverings to new buildings must comply with BCA F2D2 and F2D3.

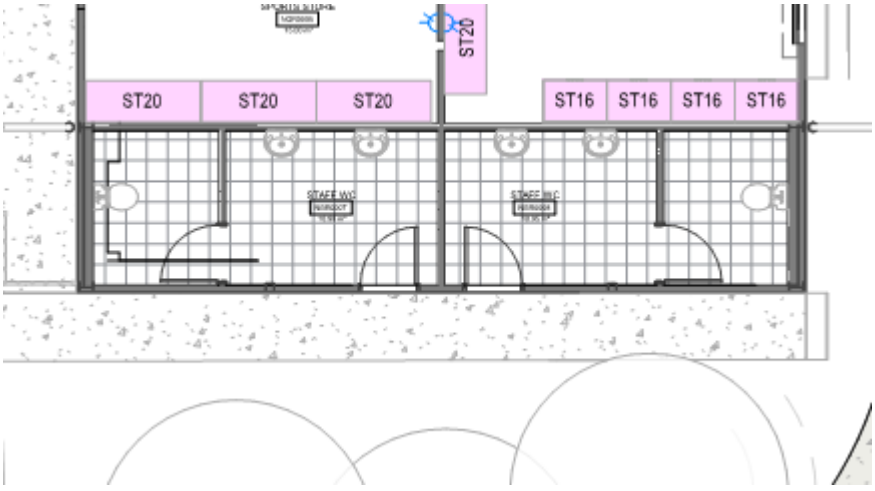
7.7 Glazed assemblies to new buildings are to comply with BCA F3D4 & AS 2047-2014 Amdt 1 & 2 for the resistance of water penetration.

7.8 Wall cladding to new building are to comply with BCA F3D5.

7.9 Sanitary facilities are to be provided in accordance with BCA Part F4. The following number of sanitary facilities are required:

Gender	Number of persons	Required facilities	Provided facilities	Compliance status
Students				
Male	55	1WC; 2UR; 2 WB	7WCs; 0UR; 4 WB	Complies
Female	55	3WCs; 2 WB	7WCs; 5 WB	Complies
Access		1	2	Complies
				Employees
Male	10	0WC; 0 UR; 0WB	2 WC; 1UR; 3WB;	Complies
Female	10	0WC; 0WB	2 WC; 3WB;	Complies
Access		1	1	Complies

The two staff sanitary facilities in existing adjunct building (proposed to be used as performance & storage) are to be signposted as one female and one male facilities.



7.10 Refer to separate Access report for sanitary facilities for people with disabilities.

7.11 Where new sanitary compartment doors swing into the sanitary compartment room and the hinge side of the door is less than 1.2 m from the WC pan, lift off hinges are required to the door (BCA F4D8 (b)).

7.12 The ceiling heights are to be a minimum of:

(a) Admin areas: 2.4 m

(b) School classroom or other part of school accommodating less than 100 persons and associated corridors: 2.4 m.

(c) School classroom or other part of school accommodating more than 100 persons and associated corridors: 2.7 m

(d) Sanitary compartments & store rooms: 2.1m

The existing building and proposed buildings comply.

7.13 Natural lighting is required to all general purpose classrooms by windows providing an aggregate light transmitting area of not less than 10% the area of the room. The external windows to GLS 02, GLS 03 & GLS 04 do not comply (they contain window of 4.8 m^2 to a room size of approximately 66 m^2), however these rooms have glazed doors and sidelights bounding the central corridor which is served skylights. This borrowing of natural light from the adjoining corridor skylights offsets the direct natural light deficiency, in performance terms, and taking into consideration the temporary nature of the school. A performance solution report will be required to be provided.

7.14 Artificial lighting, where required by BCA F6D5, must comply with AS/NZS 1680.0

7.15 Rooms not provided with natural ventilation in accordance with BCA Clause F6D7, are required to be mechanically ventilated in accordance with AS 1668.2-2012 Amdt 1 & 2. Provide details demonstrating compliance.

7.16 A commercial kitchen must be provided with a kitchen exhaust hood complying with AS 1668.1 and AS 1668.2 where—

(a) any cooking apparatus has—

(i) a total maximum electrical power input exceeding 8 kW; or

(ii) a total gas power input exceeding 29 MJ/hour; or

(b) the total maximum power input to more than one apparatus exceeds, per m^2 of floor area of the room or enclosure—

(i) 0.5 kW electrical power; or

(ii) 1.8 MJ/hour gas.

8 ANCILLARY PROVISIONS

8.1 A refrigerated or cooling chamber that is of sufficient size for a person to enter must have the access provisions specified in BCA G1D3. No cool rooms are identified on plans. Should they be provided, compliance with access provision are readily achievable without impact on gross floor area.

9 ENERGY EFFICIENCY

9.1 The new building work must be designed in accordance with energy efficiency measures as outlined the NSW variation of the BCA Part J1(B). Your attention is drawn to the following provisions:

a) Energy efficacy (BCA Part J2)
b) Building fabric including insulation & glazing (BCA Part J4)
c) Building sealing (BCA Part J5)
d) Air conditioning and ventilating systems (BCA Part J6)
e) Artificial lighting and power (BCA Part J7)
f) Heated water supply (BCA Part J8)

10 CONCLUSION

The design as proposed is capable of complying with the Building Code of Australia and will be subject to construction documentation that will provide appropriate details to demonstrate compliance. This report has identified areas of non-compliance with the deemed-to-satisfy provisions and indicates the design intent to modify the design or demonstrate compliance with the Performance Requirements of the BCA. The main mitigation measures required to be implemented are:

1. The doors to the existing comms and electrical cupboards shall be upgraded as follows:

   (a) Installation of smoke seals

   (b) Installation of a metal sheet to the back of the door leaf.

2. The existing main entry doors contain auto open doors. Should this auto open operation be maintained, it shall comply with the following:

   (a) it must be able to be opened manually under a force of not more than 110 N if there is a malfunction or failure of the power source; and

   (b) if it leads directly to a road or open space it must open automatically if there is a power failure to the door or on the activation of a fire or smoke alarm anywhere in the fire compartment served by the door.

3. The existing building contains exit doors that contain nib locks that do not comply with this clause. An upgrade is considered necessary. The exit doors and doors within a path of travel must be readily openable without a key from the side that faces a person seeking egress by:

   (a) a single hand downward action on a single device which is located between 900 mm and 1.1 m from the floor and if serving an area required to be accessible by Part D4—

      (i) be such that the hand of a person who cannot grip will not slip from the handle during the operation of the latch; and

(ii) have a clearance between the handle and the back plate or door face at the centre grip section of the handle of not less than 35 mm and not more than 45 mm; or

(b) a single hand pushing action on a single device which is located between 900 mm and 1.2 m from the floor.

Alternatively, the doors may be fitted with a fail-safe device which automatically unlocks the door upon the activation of smoke, or any other detector system deemed suitable in accordance with AS 1670.1 installed throughout the building and is readily openable when unlocked.

Similarly, any external gates that provide egress to the street shall be readily openable without a key from the side that faces a person seeking egress in accordance with standard above.

4. The two staff sanitary facilities in existing adjunct building (proposed to be used as performance & storage) are to be signposted as one female and one male facilities.

5. Natural lighting is required to all general purpose classrooms by windows providing an aggregate light transmitting area of not less than 10% the area of the room. The external windows to GLS 02, GLS 03 & GLS 04 do not comply (they contain window of 4.8 m2 to a room size of approximately 66 m2), however these rooms have glazed doors and sidelights bounding the central corridor which is served skylights. This borrowing of natural light from the adjoining corridor skylights offsets the direct natural light deficiency, in performance terms, and taking into consideration the temporary nature of the school. A performance solution report will be required to be provided.

6. Rooms not provided with natural ventilation in accordance with BCA Clause F6D7, are required to be mechanically ventilated in accordance with AS 1668.2-2012 Amdt 1 & 2.

ATTACHMENT 1

Assessed plans prepared by TDK Architects

Plan Title	Drawing No	Revision	Date
Coversheet, Drawing List and Site Context	AR REF 0000	P12	04/04/25
Site Analysis Plan (Site Shown Pre Existing)	AR REF 1000	P12	04/04/25
Public Domain and Landscaping Plan	AR REF 1100	P12	04/04/25
Existing Ground Floor Plan	AR REF 1300	P12	04/04/25
Exiting Site and Roof Plan	AR REF 1301	P12	04/04/25
Overall Campus Plan - Ground Floor	AR REF 2000	P12	04/04/25
Overall Campus Plan - Site and Roof Plan	AR REF 2001	P12	04/04/25
Overall Building Elevations	AR REF 3000	P12	04/04/25
Overall Building Sections	AR REF 3400	P12	04/04/25
Shadow Analysis - Existing	AR REF 8000	P12	04/04/25
Shadow Analysis - Proposed	AR REF 8001	P12	04/04/25
Schedule of Materials and Finishes	AR REF 9900	P12	04/04/25
Interiors - Ground Floor Plan	AR REF 6000	P3	04/04/25
Interiors - Room Elevations - Sheet 01	AR REF 6010	P3	04/04/25
Interiors - Room Elevations - Sheet 02	AR REF 6011	P3	04/04/25
Interiors - Room Elevations - Sheet 03	AR REF 6012	P3	04/04/25
Interiors - Room Elevations - Sheet 04	AR REF 6013	P3	04/04/25
Interiors - Room Elevations - Sheet 05	AR REF 6014	P3	04/04/25
Interiors - Room Elevations - Sheet 06	AR REF 6014	P3	04/04/25
Overall Project Site Plan	AR REF 2100	P4	04/04/25

Architectural Electrical - Ground Floor Plan	AR REF 2600	P7	04/04/25
Furniture Layouts - Ground Floor Plan	AR REF 2700	P8	04/04/25
Furniture Layouts - Ground Floor Plan - Part 01	AR REF 2710	P8	04/04/25
Furniture Layouts - Ground Floor Plan - Part 02	AR REF 2711	P8	04/04/25

ATTACHMENT 2 – EXCLUSIONS AND LIMITATIONS

1. This report has been prepared by City Plan for Colliers and may only be used and relied on by Colliers for the purpose agreed between City Plan and Colliers, as set out in section 2.1 and 2.2 of this report.
2. City Plan otherwise disclaims responsibility to any person other than Colliers arising in connection with this report. City Plan also excludes implied warranties and conditions, to the extent legally permissible.
3. City Plan Services Pty Ltd undertakes no duty, nor accepts any responsibility, to any third party who may rely upon or use this document.
4. The services undertaken by City Plan in connection with preparing this report are limited to those specifically detailed within the report and subject to scope limitations as set out in the report but specifically exclude:
   - Structural design in any form or content.
   - The Disability Discrimination Act 1992.
   - Disability (Access to Premises – Building) Standards 2010.
   - The existing level of Building Code of Australia compliance unless specifically identified in Section 2.3 within this report.
   - The operational capabilities or compliance of any existing services installed within the building.
   - Assessment of any existing Performance Solutions, including Fire Safety, addressing compliance with the Performance Requirements of the BCA.
5. This report is not a Part 6 compliance certificate under the Environmental Planning & Assessment Act 1979
6. The opinions, conclusions and any recommendations within this report are based on conditions encountered and information reviewed at the date of preparation of the report. City Plan has no responsibility or obligation to update this report to account for events or changes occurring after the date that the report was prepared.
7. The methodologies adopted within this report specifically relate to the subject building and must not be used for any other purpose.
8. City Plan has prepared this report based on information provided by others, including but not limited to Architectural Plans and Annual Fire Safety Statements. City Plan has not independently verified or checked beyond the agreed scope of work the validity of the documentation prepared and provided by others. City Plan accepts no liability in connection with such unverified information, including errors and omissions in the report which were caused by errors or omissions within the information relied upon.
9. The documentation relied upon has been reviewed only to the degree reasonable as pertaining to City Plan's scope, as defined within the contract and fee agreement. It is expressly not City Plan's responsibility to:
   - Familiarise ourselves with all information and documentation relating to the project, or the potential BCA, Access, or fire safety aspect derivatives thereof,
   - Conduct a "full BCA audit or compliance assessment" in any way defined, implied, or assumed, for matters outside of City Plans scope.
   - Prepare a holistic BCA, Access or Fire Safety strategy for the building or carry out a full assessment of all information and documentation relating to the project, or the potential BCA, Access, or Fire Safety aspect derivatives thereof.
10. Where the report relied on a site inspection, the inspection was based on a visual, non-invasive check of representative samples of the building to which the report and scope applied, and to which safe and reasonable access was available/permitted on the date and time of the inspection. The inspection should not be considered as a testing, commissioning or maintenance procedure nor act as a guarantee or warranty of any kind.