



BCA Assessment Report

New Public School at Mulgoa Rise – Temporary School Facilities



Project: New Public School at Mulgoa Rise – Temporary School Facilities

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EXECUTIVE SUMMARY

This document provides an assessment of the architectural design drawings and existing demountable buildings for the proposed temporary school development at New Public School at Mulgoa Rise – Temporary School Facilities, against the Deemed-to-Satisfy provisions of the Building Code of Australia (BCA) 2019, Volume 1 Amendment 1.

The plans assessed were developed to a standard suitable for submission as a development application and do not contain all the details necessary to allow a CC to be issued. As such, this assessment is limited to the major items under the BCA with the view of identifying any items that may result in a design change or additional key items that need to be included in the design.

The architectural design documentation as referred to in report has been assessed against the applicable provisions of the Building Code of Australia, (BCA) and it is considered that such documentation complies or is capable of complying with that Code as required for temporary buildings in accordance with relevant legislative requirements.

1 BASIS OF ASSESSMENT

1.1. Location and Description

The building development, the subject of this report, is located at the New Public School at Mulgoa Rise – Temporary School Facilities.

SSD-11070211 Consent Approval for the New Public School at Mulgoa Rise was received on the 18th March 2022. As a result of significant wet weather delays a delayed completion date of almost six months from a forecast Day 1 Term 1 2023 completion date is anticipated.

To allow the new school to begin regular operations on Day 1 Term 1 2023 and to enable the 230 students already enrolled to commence studies in 2023 the proposed development will be modified to provide temporary learning and support facilities while the construction of the permanent school occurs.

The development will include the construction, operation and eventual removal of temporary school facilities on the southern end of the current site. The temporary facilities will be directly connected to the partially complete permanent facilities.

The proposed Temporary Facilities are all single storey demountable buildings and comprise:

- 9 General Learning Spaces.
- Support Unit Learning Spaces.
- 1 Administration Block.
- 1 Staff Facilities Block.
- 1 Library Block.
- Toilet Block Facilities.
- 1 Accessible Toilet Block facility.

The proposed location of the temporary facilities is within the current site, as shown in **Figure 1** below.

It is proposed that students will have access to the Hall, COLA, bike racks, end of trip facilities and sports court, under the current approval, all of which can be delivered in time for the Day 1 Term 1 opening. In addition, the waste storage area and staff car park will be complete and operational to serve the temporary school. Pick up and drop off on Deerubbin Drive (to the north) will also be available as approved and won't conflict with construction access which is all from Darug Avenue.

The temporary school facilities will cater for 230 students and 25 staff.

The temporary school facilities will be completed in December 2022 and be in operation in January 2023 with students attending the school on Day 1 of Term 1 2023. The temporary facilities will be removed within 12 months of operation.

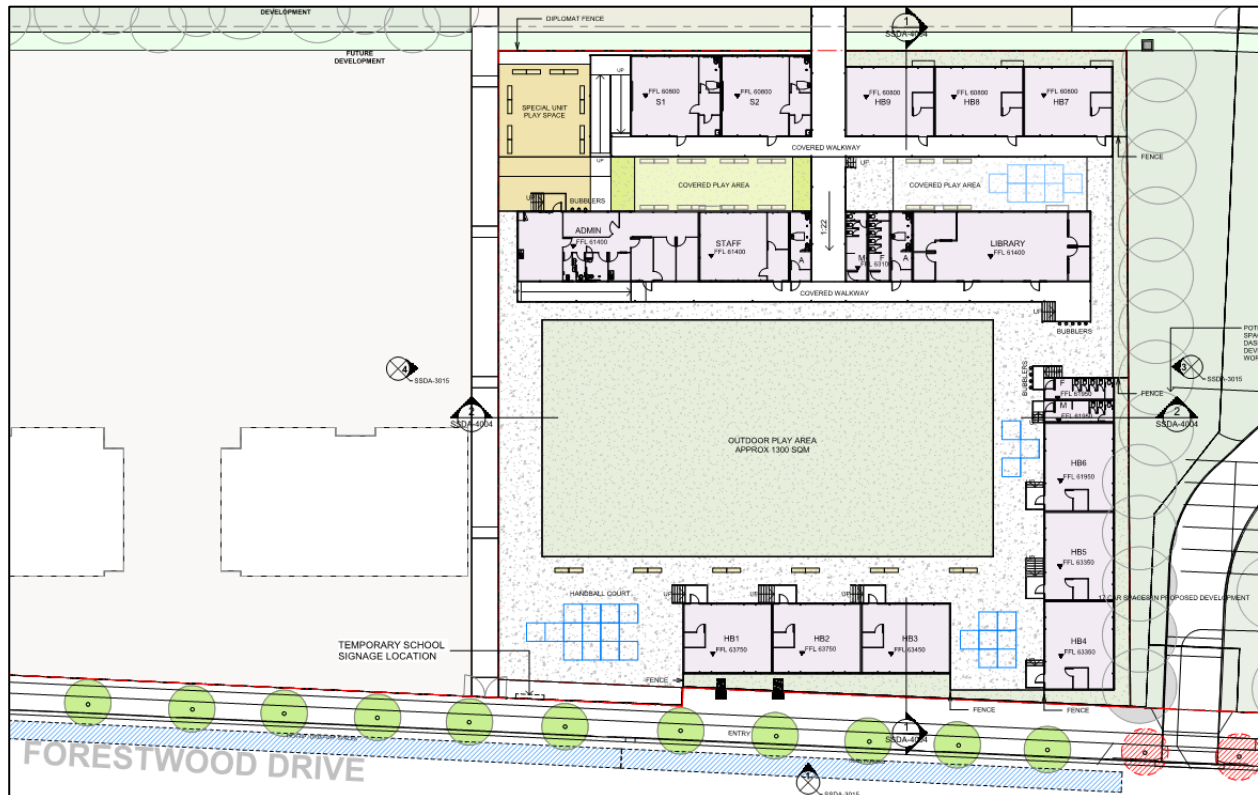
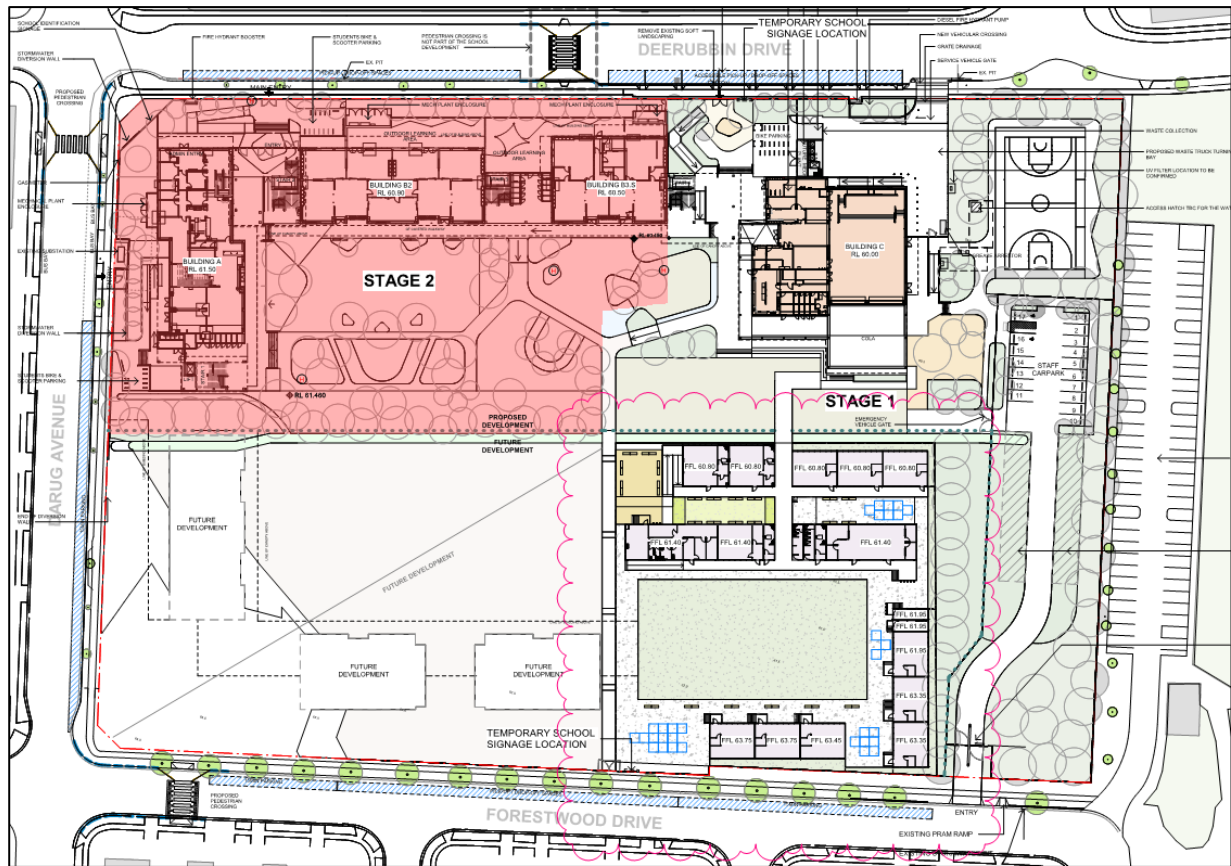
Pedestrian access to the temporary school will be provided via:

- A pedestrian walkway access from Forestwood Drive.
- Pedestrian entry off Deerubbin Drive.

Waste service and delivery vehicles will enter and exit the site from the approved entry / exit point adjacent to Deerubbin Drive.

Operating hours of the temporary school will be from 8.00 AM to 4.00 PM.

An updated Site Plan is provided in **Figure 1** with a Design Plan for the Temporary School Site provided in **Figure 2**



1.2. Purpose

The purpose of this report is to assess the current design proposal against the Deemed-to-Satisfy Provisions of BCA 2019, Amendment 1, and to clearly outline those areas (if any) where compliance is not achieved, where areas may warrant redesign to achieve strict BCA compliance or where areas may be able to be assessed against the relevant performance criteria of BCA 2019.

As the modification application is for temporary learning and support facilities while the construction of the permanent school occurs, compliance with the provisions of Building Code of Australia is mandated through the Environmental Planning & Assessment (EP&A) Act and Regulation.

The following clauses under the EP&A Act and Regulation 2021 relate to the SSDA Modification application for the temporary school's sites at Mulgoa and Hawkesbury.

- Section 4.40 of EP&A Act requires SSDA to be assessed under Section 4.15 of EP&A Act
- Section 4.15 of EP&A Act outlines the 'Evaluation' criteria for DA's
- Part 4 of the EP&A Regulation 2021 'Determination of development applications' outlines the criteria under the Regulation that must be considered during the DA process.
- Clause 63 of the EP&A Regulation 2021 relates to Temporary Structures – it clearly focuses on fire safety and structural capacity.
- Clause 69 of the EP&A Regulation 2021 outlines the mandatory conditions of consent applicable to a DA approval. Clause 69(1) requires a condition of consent that all development must comply with the BCA. However, Clause 69(6)(b) excludes temporary structures from the mandatory condition of consent to comply with the BCA.
- As a result, it appears the consent authority has the mandate to determine the level of BCA compliance (partial or total conformity) applicable to the temporary school developments and needs to be reviewed at DA stage and likely implemented via a condition of consent. Whilst Clause 63 of the EP&A Regulation 2021 relates to Temporary Structures and clearly focuses on fire safety and structural capacity, it is envisaged that the consent authority may include a condition of consent which may cover other Sections of the BCA, including but not limited to, Part D3 Access for People with a Disability.

It shall be acknowledged that the demountable buildings are existing temporary buildings which may have been in circulation as temporary school buildings for up to 30 years and will have varying levels of compliance in relation to the Deemed-to-Satisfy Provisions of BCA 2019, Amendment 1. As such, the approach for these temporary school buildings is to achieve an appropriate and reasonable level of fire safety and life safety with the design of the temporary school. This will be achieved under the guidance of Clause 63 of the EP&A Regulation 2021 and generally in accordance with BCA 2019 and the applicable Australian Standards.

1.3. Building Code of Australia

This report is based on the Deemed-to-Satisfy Provisions of the National Construction Code Series Volume 1 – Building Code of Australia, 2019, Amendment 1 (BCA) incorporating the State variations where applicable. Please note that the version of the BCA applicable to these building works under the Modification application is the version applicable to the main SSDA works – being Building Code of Australia 2019 Amendment 1.

1.4. Limitations

This report does not include nor imply any detailed assessment for design, compliance or upgrading for:

- (a) the structural adequacy or design of the building;
- (b) the inherent derived fire-resistance ratings of any proposed structural elements of the building (unless specifically referred to); and

- (c) the design basis and/or operating capabilities of any proposed electrical, mechanical or hydraulic fire protection services.

This report does not include, or imply compliance with:

- (a) the National Construction Code – Plumbing Code of Australia Volume 3
- (b) the Disability Discrimination Act 1992 including the Disability (Access to Premises – Buildings) Standards 2010; (Note: The provision of disability access to the subject temporary development has been assessed against Part D3 and F2.4 of BCA2019 under a separate Access Report by BCA Logic);
- (c) Section J of BCA2019 (SINSW have advised the temporary structures/buildings are existing demountable structures which may be up to 20-30 years old and are not expected to comply with Section J);
- (d) Demolition Standards not referred to by the BCA;
- (e) Work Health and Safety Act 2011;
- (f) Requirements of Australian Standards unless specifically referred to;
- (g) 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 and the like; and
- (h) Conditions of Development Consent issued by the Local Consent Authority.

1.5. Design Documentation

This report has been based on the Design plans and Specifications listed in Annexure A of this Report.

2 BUILDING DESCRIPTION

For the purposes of the Building Code of Australia (BCA) the development may be described as follows.

2.1. Rise in Storeys (Clause C1.2)

The temporary buildings are all single storey.

2.2. Classification (Clause A6.0)

The building has been classified as follows.

Table 1. Building Classification

Class	Level	Description
9b	Single Storey	Homebases & Library, Admin
Class 10		Ancillary covered walkways

2.3. Effective Height (Clause A1.0)

The temporary buildings are all single storey.

2.4. Type of Construction Required (Table C1.1)

The temporary buildings are to be assessed under Type C Construction.

2.5. Floor Area and Volume Limitations (Table C2.2)

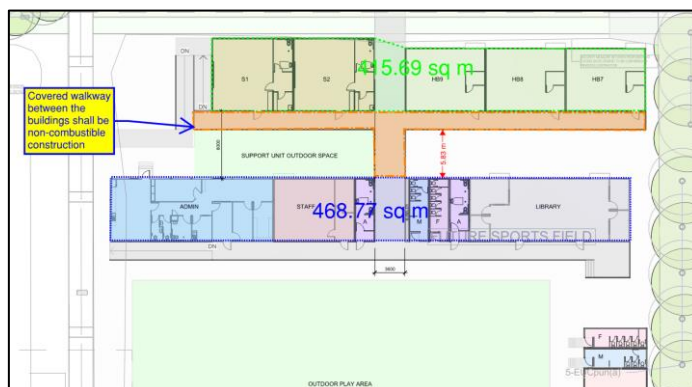
The buildings are subject to maximum floor area and volume limits of:-

Class 9b	Maximum Floor Area	3,000m ²
	Maximum Volume	18,000m ³

2.6. Fire Compartments

The following *fire compartments* have been assumed:

- Northern homebases (S1/S2/HB7/8/9) form a single fire compartment. They will be connected by non-combustible Class 10b covered walkway which is not considered to contribute to the fire load, therefore excluded from connection to the adjacent Admin/Library building.
- Admin/Library form a single fire compartment.
- Other separate homebase structures are separate fire compartments.



2.7. Exits

The following points in the building have been considered as the exits: assumed:

- (a) All portions of the temporary buildings can egress direct to the external walkway with alternative exits available or direct to open space

2.8. Location of Fire-source features

The fire source features for the subject development are:

North: Building C Hall.

South: The far boundary of Forestwood Drive

East: The allotment boundary.

West: The allotment boundary.

However, also note the temporary buildings are fire-source features to each other in certain groupings. Each group of buildings forms a fire compartment less than 500m² and each grouping are separated by a distance greater than 3m to avoid being exposed to one another.

3 BCA ASSESSMENT

3.1. Introduction

The assessment undertaken is in relation to the plans prepared for the development consent application. The technical details required for a development consent are far less than that required for a construction certificate and as such, this assessment is designed to address a higher level assessment of the building against the provisions of the BCA.

The main purpose of this report is to address any major design changes required to the building, services required to be installed, and the fundamentals of design required by sections C, D, E, F, G and H (where applicable) of the BCA. This report does not address the design requirements for the structure of the building (Section B), or for the detailed design of services (Section E).

3.2. Fire Resistance and Stability – Part C1 & Specification C1.1

The temporary buildings are not required to have any fire rated construction as Type C construction.

3.3. Compartmentation and Separation – Part C2

Under the provisions of clause C2.2 of the BCA, the temporary buildings satisfy the floor area and volume limitations.

3.4. Protection of Openings – Part C3

The temporary buildings are not required to have any protection of openings.

3.5. Occupant Access and Egress – Section D

3.5.1. Egress from the buildings

Under Clause 63 of the EP&A Regulation 2021 which relates to temporary structures, the consent authority must consider the fire protection of the structure will be appropriate to the proposed use. Fire safety requires consideration of safe egress from the temporary buildings.

Whilst BCA clause D1.2(d)(vi) requires two exits for any storey with more than 50 persons, this may not be deemed appropriate or necessary for temporary school buildings. For example, Homebases 1/2/3 and 4/5/6 will likely have over 50 persons however it is considered satisfactory for each homebase to have direct egress to open space in less than 20m.

For the northern buildings (S1/S2; HB7/8/9 and Admin/Library) each homebase or area has direct egress to the external walkway in less than 20m and three exit points to open space to satisfy egress requirements of Part D1 of BCA.

Where the egress discharges to open space on the property, a continuous pathway from the point of discharge to the street is required. The plans do indicate such a pathway and as such the provisions of Clause D1.10 of the BCA are readily satisfied.

Details of treads and risers, landings, thresholds, balustrades and handrails have not been provided however compliance is readily achievable. The design of these elements can be assessed at construction stage.

Electrical distribution cupboards are to be provided with smoke separation to satisfy the requirements of BCA D2.7. The doors are to be lined internally with fire grade plasterboard or metal backing sheets and smoke seals provided to all four sides, including drop down seals on the bottom. All penetrations from the enclosure are to be suitable sealed against smoke spread by sealing with fire mastic.

3.5.2. Access for people with disabilities

Refer to separate Access Report by BCA Logic for the temporary buildings.

3.6. Services and equipment- Parts E1, E2 and E4

The building is required to be provided with the services and equipment set out in Annexure B of this report. The annexure also outlines the standard of performance to be achieved by the services and equipment.

Whilst the buildings are in groupings with a floor area less than 500m² and an onsite hydrant system is not required, the provision of street hydrant to the south on Forestwood Drive is available to assist FRNSW provide some level of coverage to the site if required. It is also anticipated the external hydrant system serving the permanent school site will be operational during operation of the temporary buildings, thereby allowing some level of coverage to the site if required.

3.7. Facilities in Class 3 to 9 buildings – Part F2

The number of toilet facilities shown on the plans are sufficient to satisfy the requirements of Clause F2.3 and the requirements for ambulant and accessible facilities. The temporary buildings will have a population of 230 students and 25 full time staff.

3.8. Room Heights – Part F3

The ceiling heights within the temporary buildings are assumed to be suitable for the proposed use within all habitable spaces, corridors and the like.

3.9. Light and Ventilation – Part F4

Natural light and ventilation are required to all general purpose classrooms within a school development. The plans have been assessed and the temporary buildings are assumed to be suitable for the proposed classrooms to provide the required minimum natural light and ventilation to all habitable rooms.

As required, any other rooms or spaces within the Admin/Staff or Library areas which require artificial lighting and mechanical ventilation can be readily installed in the building.

5 STATEMENT OF COMPLIANCE

The plans assessed were developed to a standard suitable for submission as a development application and do not contain all the details necessary to allow a construction approval to be issued. As such, this assessment was limited to the major items of the BCA with the view of identifying any items that may result in a modified development consent being required, or additional key items that need to be included in the design.

The architectural design documentation as referred to in report has been assessed against the applicable provisions of the Building Code of Australia, (BCA) and it is considered that such documentation complies or is capable of complying with that Code as required for temporary buildings in accordance with relevant legislative requirements.

ANNEXURE A DESIGN DOCUMENTATION

Annexure A – Design Documentation

This report has been based on the following design documentation.

Table 3. Architectural Plans

Architectural Plans Prepared by NBR S			
Drawing Number	Revision	Date	Title
20415-NBR S-DW-AR-SSDA-0001	5	04.07.2022	COVER PAGE
20415-NBR S-DW-AR-SSDA-0110	12	04.07.2022	SITE PLAN
20415-NBR S-DW-AR-SSDA-0113	9	04.07.2022	SITE ACCESS & SECURITY PLAN
20415-NBR S-DW-AR-SSDA-1003	1	04.07.2022	GROUND FLOOR PLAN
20415-NBR S-DW-AR-SSDA-1004	1	04.07.2022	ROOF PLAN
20415-NBR S-DW-AR-SSDA-3015	1	04.07.2022	ELEVATIONS
20415-NBR S-DW-AR-SSDA-4004	1	04.07.2022	SECTIONS

ANNEXURE B ESSENTIAL SERVICES

Annexure B - Essential Services

The following fire safety measures are required to be installed in the building. The following table may be required to be updated as the design develops and options for compliance are confirmed.

Table 4. Essential Fire Safety Measures

Item	Essential Fire and Other Safety Measures	Standard of Performance
1.	Portable fire extinguishers	BCA2019 E1.6 AS 2444–2001
2.	Emergency lighting	BCA2019 E4.2, E4.4 AS/NZS 2293.1:2018
3.	Exit signs	BCA2019 E4.5, E4.6 & E4.8 AS/NZS 2293.1:2018

ANNEXURE C FIRE RESISTANCE LEVELS

Annexure C - Fire Resistance Levels

Note: The temporary buildings do not require any fire resisting construction.

ANNEXURE F BCA COMPLIANCE SPECIFICATION

Annexure F – BCA Compliance Specification

The following BCA matters are assumed to be applicable to the new works and to be addressed by specific BCA Design Certificates to be issued by the relevant architectural, services and engineering consultants at the construction approval stage. This schedule will be further assessed and modified subject to the understanding of which works are new works and which works are existing demountable buildings which may not be subject to compliance with current BCA requirements:

Architectural Design Certification

1. New works: Materials, floor and wall linings/coverings, surface finishes and air-handling ductwork used in the works will comply with the fire hazard properties of Clause C1.10 and Specification C1.10 of BCA2019.
2. The number of exits provided to the building will be in accordance with Clause D1.2 of BCA2019.
3. Travel distances to exits will be in accordance with Clause D1.4 of BCA2019.
4. The alternative exits will be distributed uniformly around the storey and will not be less than 9m apart and not more than 60m apart in accordance with Clause D1.5 of BCA2019.
5. The dimensions of exits and paths of travel to exits will be provided in accordance with Clause D1.6 of BCA2019.
6. New Works: The construction of EDB's and telecommunications distribution boards will be in accordance with Clause D2.7 of BCA2019 with the enclosure bounded by non-combustible construction or fire protective covering and smoke seals provided around the perimeter of the non-combustible doors and any openings sealed with non-combustible mastic to prevent smoke spreading from the enclosure.
7. New works: Pedestrian ramps will comply with AS 1428.1:2009, Clause D2.10 and Part D3 of BCA2019. The floor surface of a ramp must have a slip-resistance classification complying with Table D2.14 when tested in accordance with AS 4586:2013.
8. New works: Stair geometry to the new stairways will be in accordance with Clause D2.13 of BCA2019. Stair treads are to have a surface with a slip-resistance classification complying with Table D2.14 when tested in accordance with AS 4586:2013.
9. New works: Landings and door thresholds throughout the development will be provided in accordance with Clause D2.14 and D2.15 of BCA2019. Landings to have either a surface with a slip-resistance classification complying with Table D2.14 when tested in accordance with AS 4586:2013 or a strip at the edge of the landing with a slip-resistance classification complying with Table D2.14 when tested in accordance with AS 4586:2013 where the edge ledge to a flight below.
10. New works: The handrails and balustrades to all stairs and throughout the building will be in accordance with Clause D2.16, and D2.17 of BCA2019.
11. The doorways and doors will be in accordance with Clause D2.19 and D2.20 of BCA2019.
12. Door latching mechanisms will be in accordance with Clause D2.21 of BCA2019
13. Sanitary facilities will be provided in the building in accordance with Clause F2.3 and Table F2.3 of BCA2019.
14. Ceiling heights to the new areas will be in accordance with Clause F3.1 of BCA2019.
15. Natural light will be provided in accordance with Clause F4.1, F4.2, and F4.3 of BCA2019.
16. Natural ventilation will be provided in accordance with Clause F4.5, F4.6 and F4.7 of BCA2019.
17. Portable fire extinguishers will be installed in accordance with Clause E1.6 of BCA2019 and AS 2444:2001.

18. Exit signs and emergency lighting shall be provided in accordance with Part E4 of BCA 2019 and AS/NZS 2293.1:2018.
19. Where not naturally ventilated the building will be mechanically ventilated in accordance with Clause F4.5 of BCA2019 and AS 1668.2:2012.
20. The material and forms of construction for the proposed works will be in accordance with Clause B1.2, B1.4 and B1.6 of BCA2019 as required:
 - Dead and Live Loads – AS/NZS 1170.1:2002
 - Wind Loads – AS/NZS 1170.2:2011
 - Earthquake actions – AS 1170.4:2007
 - Masonry – AS 3700:2018
 - Concrete Construction – AS 3600:2018
 - Steel Construction AS 4100:1998
 - Aluminium Construction – AS/NZS 1664.1 or 2:1997
 - Timber Construction – AS 1720.1:2010