

NORTH SYDNEY PUBLIC SCHOOL

BUILDING CODE OF AUSTRALIA 2019 AMDT 1 FINAL REPORT FOR SSDA

Report prepared for: Department of Education (DoE)
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DOCUMENT ACCEPTANCE

	Name	Signed	Date
Reviewed by	Frank De Pasquale		13/08/2021

REVISION HISTORY

Revision No.	Prepared by	Description	Date
R01	Emrys Jones Coles	Draft BCA Design Report for Concept Design	30/07/2021
R02	Emrys Jones Coles	Draft BCA Design Report for Schematic Design	06/08/2021
R03	Emrys Jones Coles	Final BCA Report for SSDA Submission	13/08/2021



1.0 Introduction and Documentation

Philip Chun has been commissioned by the Department of Education (DoE) to prepare this report in accordance with the technical requirements of the Secretary's Environmental Assessment Requirements (SEARs), and in support of the SSD-11869481 for the development of North Sydney Public School.

This report is the result of the review of the design package as issued by Fulton Trotter and as available at the time of assessment against the requirements of the National Construction Code - Building Code of Australia 2019 Amdt 1 (BCA). This report overviews the design philosophy and provides information for the designers to incorporate into the design as well as identify areas that do not meet the BCA requirements and may require some revision, additional detail or performance solutions. Methodology is principally a review of the available design documentation.

Specifically this report addresses the following SEARs Requirement:

Planning Secretary's Environmental Assessment Requirements

Section 4.12(8) of the Environmental Planning and Assessment Act 1979
Schedule 2 of the Environmental Planning and Assessment Regulation 2000

Application Number	SSD- 11869481
Project Name	Upgrade to North Sydney Public School
Location	182 Pacific Highway, North Sydney within North Sydney Council
Applicant	NSW Department of Education
Date of Issue	24 December 2020
Key Issues	The EIS must address the following specific matters: 1. Statutory Context, Strategic Context and Policies Address the relevant planning provisions, goals and strategic planning objectives in the following: - North Sydney Development Control Plan Plan 2013
Plans and Documents	The EIS must include all relevant plans, architectural drawings, diagrams and relevant documentation required under Schedule 1 of the Regulation. Provide these as part of the EIS rather than as separate documents. In addition, the EIS must include the following: - BCA Report

We have been advised that this project is being approved on behalf of the Crown. We have reviewed the submitted documentation for compliance with the deemed-to-satisfy provisions of the Building Code of Australia 2019 Amdt 1 and the relevant major Australian Standards referenced by this code. Areas of the design are still being refined so that resolution will be possible prior to the issue of Crown Design Verification Certificate (CDVC) for the works.



This report does not assess the impact of the Disability Discrimination Act (DDA) which is outside the scope of the BCA nor does it include compliance with Part D3 or F2.4 of the BCA. Refer to Access Report to be issued by Philip Chun Access for DDA compliance. Any Access design amendments or additional information is to be addressed prior to the issue of a CDVC. It also excludes any authority or utilities requirements applicable to the building design.

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1.1 Site / Project Description

This SSDA seeks consent for alterations and additions to the existing North Sydney Public School. The proposal entails:

- Demolition of the existing hall (building B), haven building (building C) and 6 temporary buildings;
- Construction of a three storey building comprising:
 - staff administration rooms;
 - 16 homebases
 - a new library;
 - hall;
 - out of school hours care facilities;
 - covered outdoor learning area;
 - bicycle parking and end of trip facilities for staff; and
 - services, amenities and access.
 - New entry gate and forecourt from Bay Road;
 - Internal refurbishment of building G ground floor from the existing library to 3 homebases;
 - Capacity for an increase in student numbers from 869 to 1,012; and
 - Associated tree removal, landscaping and excavation.

The proposal maintains:

- The gates and fence of former Crows Nest House including the entrance from Pacific Highway and Bay Road;
- Existing gate along McHatton Street;
- The outdoor play area to the east of Building A;
- Existing covered outdoor learning area adjacent to Building A;
- The basketball courts and staff carpark in the western portion of the site;
- The significant tree planting on all school boundaries;
- Buildings A, D and F noting minor internal refurbishments are being undertaken outside of the SSDA scope of work (exempt development) to improve student amenities and canteen; and
- Building G noting ground floor internal refurbishment is proposed in the SSDA.

1.2 Site and Contexts

The site of North Sydney Public School is addressed Bay Road, North Sydney NSW 2060 and is bounded by McHatton Street to the north, Bay Road to the south, Pacific Highway to the east and existing residential dwellings to the west.

The existing pedestrian approach to the school is from the public pedestrian foot paths running along McHatton Street to the north, Bay Road to the south and Pacific Highway to the east.



1.3 Documentation available and assessed

The design phase documentation assessed comprises of the following relevant documents issued by Fulton Trotter via Aconex transmittal FTArch-TRANSMIT-000012:

Document No	Title	Revision
SD-1001	EXISTING & DEMOLITION SITE PLAN	D
SD-1002	PROPOSED SITE PLAN	D
SD-2001	BUILDING J - LEVEL 1 FLOOR PLAN	E
SD-2002	BUILDING I - LEVEL 1 FLOOR PLAN	E
SD-2003	BUILDING J - LEVEL 2 FLOOR PLAN	E
SD-2004	BUILDING I - LEVEL 2 FLOOR PLAN	E
SD-2005	BUILDING I - LEVEL 3 FLOOR PLAN	E
SD-2006	BUILDING J - ROOF PLAN	E
SD-2007	BUILDING I - ROOF PLAN	E
SD-3001	BUILDING I & J - ELEVATION 01	E
SD-3002	BUILDING I & J - ELEVATION 02	E
SD-3003	BUILDING J – ELEVATION 03	E
SD-3004	BUILDING I – ELEVATION 03	E



2.0 Performance solutions and performance based assessment

Where compliance with the deemed to satisfy provisions is not readily achievable, performance based assessment and performance solutions will need to be used to demonstrate compliance with the BCA. This may not be the final list of performance solutions as the building will undergo design development and other issues may arise that also affect ability to comply with the deemed to satisfy provisions of the Building Code of Australia.

This comes about due to the generic and prescriptive nature of the BCA with respect to the deemed to satisfy provisions and the inability for the document to be ultimately flexible for all building types and applications. This is the main reason the document allows performance based solutions, where meeting the performance requirements of the code, are deemed to also be in compliance with the BCA.

The following performance solutions identified, although needing justification at the next stage of design is anticipated based on our assessment and reviews completed to date.

2.1 Current anticipated performance solutions

Fire Related Performance Solutions

DtS Clause	Performance Requirement	Variance from Deemed-to-Satisfy provisions
E1.3	EP1.3	The booster location does not fully comply with the standard.

Non fire and life safety variances from the deemed to satisfy provisions and hence addressable by performance solutions are as follows:-

FP1.4 Weather proofing	A roof and external wall (including openings around windows and doors) must prevent the penetration of water that could cause— (a) unhealthy or dangerous conditions, or loss of amenity for occupants; and (b) undue dampness or deterioration of building elements	Performance solution to be provided for the wall construction and waterproofing to ensure compliance. Assessment by the architects and designers is required to validate that the walls will meet the performance requirements of the BCA. Compliance readily achievable and shall be detailed during the next phase of design.
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3.0 Building Code of Australia 2019 Amdt 1 Comments

Section A – Governing Requirements

1. Compliance with the NCC (BCA) is achieved by complying with –

- a. The Governing Requirements of the NCC; and
- b. The Performance Requirements.

This development will comply with the Governing Requirements and adopt Performance Solutions to satisfy the Performance Requirements of the NCC (BCA). Performance Solutions are identified in the body of this report.

2. Building Assessment

Class and use and type of construction of the buildings are as follows:-

Building	Proposed/Existing Use	BCA Class	Rise in Storeys	Type of Construction
A	Classrooms	9b	3	Type A
B	Communal Hall	9b	2	Type B
C	Classrooms	9b	1	Type C
D	Classrooms and Canteen	9b and 6	2	Type B
F	Classrooms and Administration	9b and 5	3	Type A
G	Classrooms and Library	9b	2	Type B
H	Classrooms	9b	1	Type C
New Building	Classrooms	9b	3	Type A
COLA	Covered Outdoor Learning Area	10a	N/A	N/A

New Building:-

Building Classification(s)	Class 9b (Assembly Building)
Rise in Storeys	Three
Type of Construction	Type A Construction
Effective Height (m)	Less than 25m

3. Building Classifications

The following BCA Classifications are considered applicable to the proposed works based on the classification and use of the building. For clarity see definition below for the applicable class.

Class 9b: - a building of a public nature—

Class 9b — an [assembly building](#), including a trade workshop, laboratory or the like in a primary or secondary [school](#), but excluding any other parts of the building that are of another Class.



Section B – Structure

4. Structural Provisions

The structural design engineers will need to complete the design for the proposed works in accordance with the Building Code of Australia including but not limited to:

- Compliance with the requirements of BCA B1.2, B1.4 & Specification B1.2;
- All adopted Australian Standards relevant to the design;
- Individual actions including permanent actions, imposed actions and wind, snow, ice and earthquake actions i.e. the following standards AS1170.1, AS1170.2 and AS1170.4;
- BCA Table 3 of Specification C1.1.

Structural Engineer to provide structural drawings and design statement for further assessment prior to issue of a CDVC.

Section C – Fire Resistance / Compartmentation / Separation

5. **Type of Construction** – The building will have a rise in storey of 3 or more and is therefore required to be of not less than Type A construction. The building needs to comply with BCA Table 3 for Type A Construction (See appendix A). Structural engineer will need to confirm at CDVC stage the FRL's of the columns slabs and load bearing walls in accordance with Table 3 of Spec C1.1 i.e. -

Class 9b – 120 mins

Any departures to the Deemed-to-Satisfy provisions of the BCA will require a Performance Solution from an accredited fire safety engineer.

Structural engineer to verify the load-bearing elements of the existing building G external wall, (including any column and other building element incorporated within it) or other external building element, where the external wall of building G is within 9 to 18 m of the proposed new building – FRL to be verified as 120/30/-. Details to be provided prior to issue of a CDVC.

6. **Fire Compartmentation** – The maximum area and maximum volume of fire compartments allowed as specified in Part C2.2 of the BCA for Type A construction 8,000m² and 48,000m³ respectively for a class 9b building. ***Compliance is readily achievable.***
7. **Lightweight construction (C1.8)** –
- (a) Lightweight construction must comply with Specification C1.8 if it is used in a wall system—
 - (i) that is required to have an FRL; or
 - (ii) for a lift shaft, stair shaft or service shaft or an external wall bounding a public corridor including a non fire-isolated passageway or non fire-isolated ramp, in a spectator stand, sports stadium, cinema or theatre, railway station, bus station or airport terminal.
 - (b) If lightweight construction is used for the fire-resisting covering of a steel column or the like, and if—
 - (i) the covering is not in continuous contact with the column, then the void must be filled solid, to a height of not less than 1.2 m above the floor to prevent indenting; and
 - (ii) the column is liable to be damaged from the movement of vehicles, materials or equipment, then the covering must be protected by steel or other suitable material.
8. **Non-Combustible materials (C1.9)** –
- a) In a building required to be of Type A or B construction, the following building elements and their components must be non-combustible:
 - i. External walls and common walls, including all components incorporated in them including the facade covering, framing and insulation.
 - ii. The flooring and floor framing of lift pits.
 - iii. Non-loadbearing internal walls where they are required to be fire-resisting.
 - b) A shaft, being a lift, ventilating, pipe, garbage, or similar shaft that is not for the discharge of hot



products of combustion, that is non-loadbearing, must be of non-combustible construction in—

- i. a building required to be of Type A construction; and
 - ii. a building required to be of Type B construction, subject to C2.10, in—
 - (A) a Class 2, 3 or 9 building; and
 - (B) a Class 5, 6, 7 or 8 building if the shaft connects more than 2 storeys.
- c) A loadbearing internal wall and a loadbearing fire wall, including those that are part of a loadbearing shaft, must comply with Specification C1.1.
- d) The requirements of (a) and (b) do not apply to gaskets, glass, termite management systems, thermal breaks associated with glazing systems, caulking, sealants and damp-proof courses.
- e) The following materials may be used wherever a non-combustible material is required:
- i. Plasterboard.
 - ii. Perforated gypsum lath with a normal paper finish.
 - iii. Fibrous-plaster sheet.
 - iv. Fibre-reinforced cement sheeting.
 - v. Pre-finished metal sheeting having a combustible surface finish not exceeding 1mm thickness and where the Spread-of-Flame Index of the product is not greater than 0.
 - vi. Bonded laminated materials where—
 - (A) each lamina, including any core, is non-combustible and
 - (B) each adhesive layer does not exceed 1 mm in thickness and the total thickness of the adhesive layers does not exceed 2 mm; and
 - (C) the Spread-of-Flame Index and the Smoke-Developed Index of the bonded laminated material as a whole do not exceed 0 and 3 respectively.

Architect and Structural Engineer to note as this clause relates to the external walls including any material fixed to the inside face of the external wall. Details to be provided prior to issue of a CDVC.

9. **Fire Hazard Properties (C1.10)** – All new surface finishes, assemblies and linings are to comply with BCA Clause C1.10 (Specification C1.10) with regard to Fire Hazard Properties. - **Compliance achievable.**

10. **Ancillary Elements (C1.14)** – An ancillary element must not be fixed, installed or attached to the internal parts or external face of an external wall that is required to be non-combustible unless it is one of the following;

- An ancillary element that is non-combustible.
- A gutter, downpipe or other plumbing fixture or fitting.
- A flashing.
- A grate or grille not more than 2m² in area associated with building service.
- An electrical switch, socket-outlet, cover plate or the like.
- A light fitting.
- A required sign etc.

Architect and Structural Engineer to note as this clause relates to the external walls. Details to be provided prior to issue of a CDVC.

11. **Spandrels (C2.6)** – Vertical separation of openings in external walls (Spandrels). Spandrel separation under C2.6 is required to Type A buildings that are not proposed to be sprinkler protected; details of all proposed spandrels are required for compliance i.e. not less than 900mm in height, extends not less than 600mm above the upper surface of the intervening floor and is of non-combustible material having an FRL of not less than 60/60/60. **Architect to note specifics and provide details prior to issue of a CDVC.**

12. **Separation of lift shafts – (C2.10)** Any lift connecting more than 2 storeys, or more than 3 storeys if the building is sprinklered must be separated from the remainder of the building by enclosure in a shaft which, in a building required to be of Type A construction is to be separated from the rest of the building as per Table 3 of Spec C1.1. - **Details required prior to issue of CDVC.**

13. **Separation of equipment (C2.12)** – Equipment comprising of lift motors, lift control panels, emergency generators, central smoke control plant, boilers or ant battery or batteries installed in the building that have a voltage exceeding 24 volts and a capacity exceeding 10 ampere hours must be constructed with an FRL in accordance with Table 3 and Specification C1.1 BCA. **Services engineer to provide further details prior to the issue of a CDVC.**



14. **Electricity supply system (C2.13)** – Where emergency equipment is required in a building, all switchboards in the electrical distribution system, which sustain the electricity supply to the emergency equipment, must provide full segregation by way of enclosed metal partitions designed to prevent the spread of any fault from non-emergency equipment switchgear to the emergency equipment switchgear. **Services engineer to provide further details prior to the issue of a CDVC.**
15. **Protection of openings in external walls (C3.2)** – Any openings in an external wall required to have an FRL must be protected in accordance with BCA C3.4 and if used, wall-wetting sprinklers are to be externally fitted. **Compliance achievable.**
16. **Doorways in fire walls (C3.5)** – to be fire rated with an FRL of not less than that required by Specification C1.1 for the fire wall except that each door must have an insulation level of at least 30 – **Compliance readily achievable. Architect to provide door schedule for compliance prior to issue of CDVC.**
17. **Openings in fire isolated lift shafts (C3.10)** – Entrance doorways in lift shafts required to be fire isolated must be constructed with an FRL of not less than -/60/- and remain close when not in use. - **Compliance achievable.**
18. **Openings in floors and ceilings for services (C3.12)** –
 - (a) Where a service passes through—
 - (i) a floor that is required to have an FRL with respect to integrity and insulation; or
 - (ii) a ceiling required to have a resistance to the incipient spread of fire, the service must be installed in accordance with (b)
 - (b) A service must be protected—
 - (i) in a building of Type A construction, by a shaft complying with Specification C1.1; or
 - (ii) in a building of Type B or C construction, by a shaft that will not reduce the fire performance of the building elements it penetrates; or
 - (iii) in accordance with C3.15.
 - (c) Where a service passes through a floor which is required to be protected by a fire-protective covering, the penetration must not reduce the fire performance of the covering. **Compliance achievable. Services engineer to note prior to the issue of a CDVC.**
19. **Openings in shafts (C3.13)** – In a building required to be of Type A construction, any opening in a wall providing access to ventilating, pipe, garbage or other services shafts must be protected by - an access panel having an FRL of not less than -/60/30 or a self-closing -/60/30 fire door or hopper. - **Compliance readily achievable. Architect to provide door schedule for compliance prior to issue of CDVC.**
20. **Openings for service installations (C3.15)** - Electrical, plumbing, mechanical ventilation, air-conditioning or other service penetrations that are required to have an FRL with respect to integrity or insulation or a resistance to the incipient spread of fire, must be fire sealed, fire rated or otherwise comply with listed standards. **Compliance achievable. Services engineer to note prior to the issue of a CDVC.**



Section D – Access and Egress

21. Access and Egress - Principles

The buildings egress system has been assessed and designed to ensure compliance with the following principles:

- Each storey in a class 9b school must be provided with at least two exits, where there is a rise in storeys of 2 or more. **Compliance achievable.**
- The maximum distance of travel to an exit to floors is to be 40 metres, and to a point of choice is to be 20 metres. **Compliance achievable.**
- The distance between alternate exits is not to exceed 60 metres. **Compliance achievable.**
- The distance between alternate exits is to be not less than 9 metres. **Compliance achievable.**
- In a Class 9b building, the distance from any point on the floor to a point of egress to a road or open space by way of non-fire-isolated stairs must not exceed 80m. **Compliance achievable.**
- An external stairway may serve as a required exit in lieu of a fire-isolated exit serving a storey below an effective height of 25 m, if the stairway or ramp is non-combustible throughout and protected in accordance with D1.8(c) if it is within 6 m of, and exposed to any part of the external wall of the building it serves. **Compliance achievable.**
- The construction and discharge of stairs, landings, thresholds, balustrades and handrails will need to meet the requirements of Part D2 of the BCA. **Compliance achievable further details to be provided prior to issue of the CDVC.**
- All paths of travel are to be a minimum of 1000mm in clear width. **Compliance achievable.**
- All doors need to be provided with a free lever latch located at 900-1100mm high or be fitted with fail- safe device which automatically unlocks the door upon fire trip. **Door schedule to be provided prior to issue of the CDVC.**
- Doors in a required exit, forming part of a required exit or in the path of travel to a required exit, serving a storey or room accommodating more than 100 persons in a Class 9b part of the building, must be provided with panic bars and swing in the direction of egress (BCA NSW Clause D2.21). **Door schedule to be provided prior to issue of the CDVC.**
- All swinging doors in a required exit or forming part of a required exit must swing in the direction of egress. **Compliance achievable.**
- The space below a required non-fire-isolated stairway must not be enclosed to form a cupboard or similar enclosed space unless the enclosing walls and ceilings have an FRL of not less than 60/60/60 and access doorway is a self-closing -/60/30 fire door. **Compliance achievable, no storage currently proposed beneath the stairways.**
- An exit must not be blocked at the point of discharge and where necessary, suitable barriers must be provided to prevent vehicles from blocking the exit, or access to it. **Compliance achievable.**

22. Populations and aggregate exits (D1.6)

BCA Clause D1.6 states if the storey accommodates more than 100 persons but not more than 200 persons, the aggregate unobstructed width, except for doorways, must be not less than—

- 1 m plus 250 mm for each 25 persons (or part) in excess of 100; and;
- If the storey, accommodates more than 200 persons, the aggregate unobstructed width, except for doorways, must be increased to —
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.

Given the number of exits and use of the building in the base building design, the population requirements of the BCA are unlikely to be exceeded. Further review is to be undertaken at CDVC stage.

23. Access for people with disabilities – Refer to Philip Chun Access report.



Section E – Services and Equipment

24. **Fire Hydrants** (E1.3) – The building must be served with fire hydrants complying with the requirements of BCA Clause E1.3 and AS 2419.1-2005 – ***Hydraulic consultant to provide details prior to issue of CDVC.***
25. **Hydrant Booster** – The booster must comply with AS 2419.1-2005 i.e. Booster to be within sight of the Main Entrance of the building and be protected by a 90 minute fire rated wall extending 2 metres either side of the booster and 3 metres above the hydrant outlet. ***The current Booster location does not fully comply with the standard. The non-compliances may be addressed through a Performance Solution from a C10 Fire Safety Engineer. The Performance Solution would need to be accepted by the Registered Certifier and Fire and Rescue NSW prior to issue of a CDVC.***
26. **Pumprooms** – Pumprooms located within a building shall have—
(a) a door opening to a road or open space, or a door opening to fire-isolated passage or stair which leads to a road or open space; and
(b) except where the building is sprinkler protected in accordance with AS 2118.1, enclosing walls with an FRL not less than that prescribed by the BCA for a firewall for the particular building classification served by the fire hydrant system.
Hydraulic consultant to provide details prior to issue of CDVC.
27. **Fire Hose-reels** (E1.4) – Fire hose-reels must provide for full coverage to the buildings in accordance with AS 2444.1-2005. Fire hose-reels are to be located within 4m of an exit or adjacent to an internal fire hydrant (Note - Fire hose-reels are not required to be provided in classrooms and associated corridors in a primary or secondary school). ***Hydraulic / Fire Services consultant to provide details prior to issue of CDVC. Any departures to be addressed via Performance Solution.***
28. **Smoke hazard management** (E2) – One of the following smoke hazard management systems must be provided in the ***new building***.
 - in each required fire-isolated stairway, including any associated fire-isolated passageway or fire-isolated ramp, an automatic air pressurisation system for fire-isolated exits in accordance with AS 1668.1; or
 - a zone pressurisation system between vertically separated fire compartments in accordance with AS 1668.1, if the building has more than one fire compartment; or
 - an automatic smoke detection and alarm system complying with Specification E2.2a; or
 - a sprinkler system (other than a FPAA101D or FPAA101H system) complying with Specification E1.5.***Compliance readily achievable. Fire Services consultants to provide details prior to issue of the relevant CDVC.***
29. **Automatic shutdown** – All Class 9b buildings in NSW 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/NZS 1668.1) which does not form part of the smoke hazard management system, on the activation of— smoke detectors installed complying with Clause 5 of Specification E2.2a; and any other installed fire detection and alarm system, including a sprinkler system complying with Specification E1.5. ***Compliance readily achievable. Mechanical and Fire Services consultants to provide details prior to issue of the relevant CDVC.***
30. **Extinguishers** (E1.6) – Fire extinguishers must be provided to all locations which are deemed a potential risk to the occupants of the building, i.e. areas such as main switchboards and to cover Class A fire risks in classrooms and associated corridors in primary and secondary schools not provided with fire hose reels. ***Compliance readily achievable. Fire Services consultant to provide details prior to issue of the relevant CDVC. Any departures to be addressed via Performance Solution.***
31. **Exit and emergency lighting** (E2) – Emergency lighting and exit signs must be installed in accordance with AS2293.1-2018 to all buildings on the site. ***Compliance readily achievable. Electrical consultant to provide details prior to issue of the relevant CDVC.***
32. **Emergency warning and intercom systems** (E4.9) – EWIS may be required to comply with



AS1670.4-2018 for the building is likely the school is likely to share its hall for use by the public and has a floor area more than 1000 m² and a rise in storeys of more than 2. – **Fire services consultant to provide details prior to issue of CDVC.**

Section F – Health and Amenity

33. **Damp and Weatherproofing (FP1.4)** - The roofing and external wall systems shall be designed using materials and methods to prevent unhealthy or dangerous conditions or loss of amenity for occupants and undue dampness or deterioration of building element – Performance solution to be provided for the wall construction and waterproofing to ensure compliance. Assessment by the architects and designers is required to validate that the walls will meet the performance requirements of the BCA.
A performance solution for external walls and roofs is to be provided prior to issue of the CDVC.
34. **Stormwater drainage (F1.1)** - Stormwater drainage must comply with AS/NZS 3500.3. **Hydraulic services consultant to provide details prior to issue of CDVC.**
35. **Waterproofing of wet areas in buildings (F1.7)** - (b) In a Class 9b building, building elements in wet areas must— (i) be water resistant or waterproof in accordance with Table F1.7; and (ii) comply with AS 3740. **Architect to note and provide details prior to issue of CDVC.**

36. Sanitary Facilities (F2)

The following sanitary facilities are required to be provided to the buildings:

- Staff and students must not use the same facilities, hence separate staff facilities are required (note this includes separate Unisex accessible sanitary facilities for staff and students).
- One of the cubicles in each of the male and female staff and student sanitary facility banks are required to be ambulant cubicles in accordance with BCA F2.4 and AS1428.1-2009.
- Unisex accessible sanitary facilities to be provided in accordance with BCA F2.4 and AS1428.1-2009.
- Building occupants are to be assessed based on 50% male and 50% females or as specified by the client.
- Facilities are to be provided on this basis according to F2 of the Building Code of Australia.

Architect to note and provide details prior to issue of CDVC.

37. **Construction of sanitary facilities (F2.5)** - Doors to fully enclosed sanitary compartments are to open outwards, or slide or have 1.2 metres clear space between door and closet plan or be readily removable from the outside of the sanitary compartment. **Architect to note.**

38. Room Sizes (F3.1)

In a Class 9b building—

- a school classroom or other assembly building or part that accommodates not more than 100 persons — 2.4 m; and
- a theatre, public hall or other assembly building or part that accommodates more than 100 persons — 2.7 m
- A bathroom, shower room, sanitary compartment, airlock, tea preparation room, pantry, store room, garage, car parking area, or the like requires a minimum height of 2.1 m.
- Above a stairway, ramp, landing or the like requires a minimum height of 2 m measured vertically above the nosing line of stairway treads or the floor surface of the ramp, landing or the like.

Compliance readily achievable. Architect to ensure compliance prior to issue of the CDVC.

39. Light and Mechanical ventilation



The following light and ventilation provisions will apply to the buildings:

- In a Class 9b building all general purpose classrooms in primary or secondary schools is required to be provided with natural light. Required natural light must be provided by the following:
 - (i) windows, excluding roof lights, that — have an aggregate light transmitting area measured exclusive of framing members, glazing bars or other obstructions of not less than 10% of the floor area of the room; and are open to the sky or face a court or other space open to the sky or an open verandah, carport or the like; or roof lights, that—
 - (ii) have an aggregate light transmitting area measured exclusive of framing members, glazing bars or other obstructions of not less than 3% of the floor area of the room; and are open to the sky; or
 - (iii) a proportional combination of windows and roof lights required by (i) and (ii).
- Artificial lighting must comply with Clause F4.4 of the BCA and AS/NZS 1680.0-2009.
- The Building is required to be provided with mechanical ventilation under AS1668.2-2012 if sufficient natural ventilation is not provided (openings for natural ventilation need to be 5% of the floor area they serve).

Compliance readily achievable. Architect, electrical and mechanical consultants are to ensure compliance prior to issue of the CDVC.

Section G - Ancillary Provisions

40. Window Cleaning NSW (G1.101)

- a) A building must provide for a safe manner of cleaning any windows located 3 or more storeys above ground level.
- b) A building satisfies (a) where—
 - (i) the windows can be cleaned wholly from within the building; or
 - (ii) provision is made for the cleaning of the windows by a method complying with the Work Health and Safety Act 2011 and regulations made under that Act.

Confirm the method of compliance prior to issue of CDVC.

41. Occupiable Outdoor Areas (G6)

Outdoor areas that are normally occupied such as balconies and podiums will need to comply with Part G6 of the BCA. ***Compliance readily achievable. Architect to note – details are to be provided prior to issue of the relevant CDVC.***

Section J – Energy Efficiency

- 42. The building must be designed in accordance with the requirements of Part J of the BCA 2019 Amdt 1 in terms of Energy Efficiency. The architectural drawings must note compliance with J0, J1, J2 and J3. The services drawings particularly the electrical, hydraulic and mechanical drawings must include compliance with Parts J5, J6, J7 & J8 of BCA. A Section J Consultants report will be required prior to the issue of the CDVC.

Conclusion

We have assessed the drawings with respect to the Building Code of Australia 2019 Amdt 1. We are confident that the design is generally capable of meeting the Deemed-to-Satisfy Requirements of the Building Code of Australia 2019 Amdt 1. Areas of the design are still being developed but likely to be addressed prior to issue of a CDVC.



Appendix A

Table 3 - TYPE A CONSTRUCTION: FRL OF BUILDING ELEMENTS

Building element	Class of building-FRL: (in minutes)			
	Structural adequacy/Integrity/Insulation			
	2, 3 or 4 part	5, 7a or 9	6	7b or 8
EXTERNAL WALL (including any column and other building element incorporated therein) or other external building element, where the distance from any fire-source feature to which it is exposed is-				
For loadbearing parts				
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
For non-loadbearing parts				
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	-/-/-	-/-/-	-/-/-	-/-/-
EXTERNAL COLUMN not incorporated in an external wall, where the distance from any fire-source feature to which it is exposed is-				
Less than 3m	90/-/-	120/-/-	180/-/-	240/-/-
3m or more	-/-/-	-/-/-	-/-/-	-/-/-
COMMON WALLS and FIRE WALLS-	90/90/90	120/120/120	180/180/180	240/240/240
INTERNAL WALLS				
Fire- resisting lift and stair shafts-				
Loadbearing	90/90/90	120/120/120	180/120/120	240/120/120
Non-loadbearing	-/90/90	-/120/120	-/120/120	-/120/120
Bounding public corridors, public lobbies and the like-				
Loadbearing	90/90/90	120/-/-	180/-/-	240/-/-
Non-loadbearing	-/60/60	-/-/-	-/-/-	-/-/-
Between or bounding sole-occupancy units-				
Loadbearing	90/90/90	120/-/-	180/-/-	240/-/-
Non-loadbearing	-/60/60	-/-/-	-/-/-	-/-/-
Ventilating, pipe, garbage, and like shafts not used for the discharge of hot products of combustion				
Loadbearing	90/90/90	120/90/90	180/120/120	240/120/120
Non-loadbearing	-/90/90	-/90/90	-/120/120	-/120/120
OTHER LOADBEARING INTERNAL WALLS, INTERNAL BEAMS, TRUSSES and COLUMNS-				
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