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Building Compliance

KOGARAH PUBLIC SCHOOL

PROPOSED SCHOOL UPGRADE

24B GLADSTONE STREET, KOGARAH NSW 2217

FINAL 80% SCHEMATIC DESIGN REPORT – BUILDING CODE OF AUSTRALIA 2022

Report prepared for:	NSW Department of Education | School Infrastructure (SINSW) Level 8, 259 George Street Sydney NSW 2000
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REVISION HISTORY

Revision No.	Prepared by	Description	Date
R01	Rhoebee Clemente	Draft Schematic Design BCA Report	12/12/2024
R02	Rhoebee Clemente	Final 80% Schematic Design BCA Report	21/01/2025

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1.0 Introduction and Documentation

This 80% schematic design report is issued to NSW Department of Education | School Infrastructure (SINSW), Architects and the service consultants in accordance with the requirements of the Building Code of Australia 2022. Where compliance with the deemed to satisfy provisions is not possible, performance solutions will be required and generally supported by Philip Chun provided the performance requirements are adequately addressed by a fire safety engineer.

This advice does not assess the impact of the Disability Discrimination Act (DDA) which is outside the scope of the BCA and Part D4 of the BCA. Please refer to a separate accessibility report issued by Philip Chun's access team. It also excludes any authority or utilities requirements applicable to the building design.

This report is based on the 80% schematic design plans dated 6/12/2024 and issued by Fulton Trotter. This report is prepared for the exclusive use of the client and cannot be used for any other purpose without prior permission from Philip Chun BC Pty Ltd. The report is valid only in its entire form. Philip Chun BC Pty Ltd accepts no responsibility for any loss suffered as a result of any reliance upon such assessment or report other than as being accurate at the date the property was inspected for the purposes of the assessment or report.

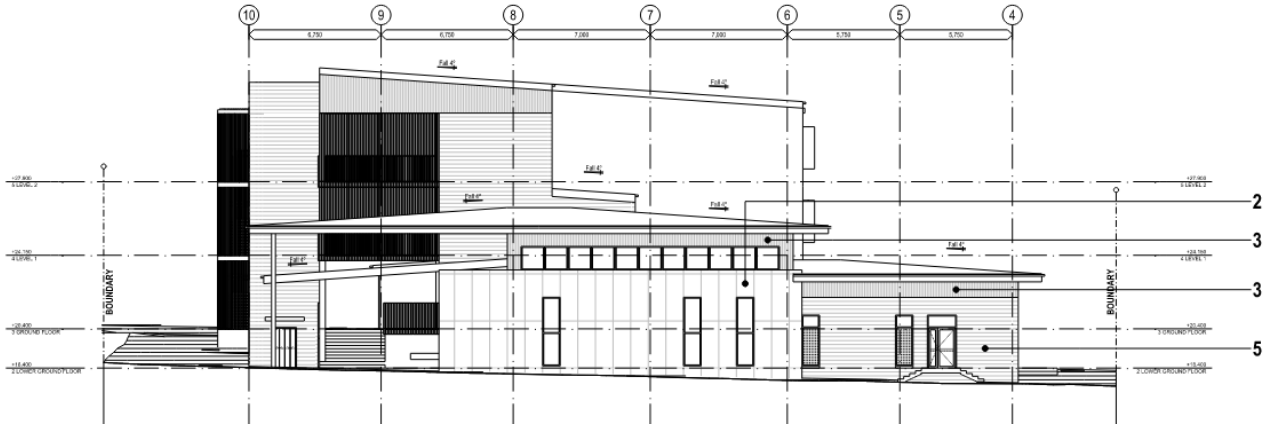

Figure 1: East Elevation

It is the responsibility of all designers and engineers to ensure that the design complies with the requirements of the Building Code of Australia, the Australian Standards and the applicable legislation. This report does not infer compliance of the design at this stage of documentation. Further assessment will be required to validate the full compliance of the building design.

This report is not to be construed as specialist advice as referenced in Clause 9(d) of the Design and Building Practitioners Regulation 2021 and as such is not to be referenced in any Compliance Declarations made under the Design and Building Practitioners Legislation.

2.0 Building Assessment

Building Code of Australia 2022 Definitions and Classifications

According to the Building Code of Australia the following definitions assist in the classification of the buildings and their various parts.

A6G1 Determining a building classification

(1) The classification of a building or part of a building is determined by the purpose for which it is designed, constructed or adapted to be used.

(2) Each part of a building must be classified according to its purpose and comply with all the appropriate requirements for its classification.

(3) A room that contains a mechanical, thermal or electrical facility or the like that serves the building must have the same classification as the major part or principal use of the building or fire compartment in which it is situated.

(4) Unless another classification is more suitable an occupiable outdoor area must have the same classification as the part of the building to which it is associated.

Class 5: - A Class 5 building is an office building used for professional or commercial purposes.

Class 6: - A Class 6 building is a shop or other building used for the sale of goods by retail or the supply of services direct to the public, including—
(1) an eating room, café, restaurant, milk or soft-drink bar; or
(2) a dining room, bar area that is not an assembly building, shop or kiosk part of a hotel or motel; or
(3) a hairdresser's or barber's shop, public laundry, or undertaker's establishment; or
(4) a market or sale room, showroom, or service station.

Class 7 - A Class 7 building is a storage-type building that includes one or more of the following sub-classifications:
(1) Class 7a — a carpark.
(2) Class 7b — a building that is used for storage, or display of goods or produce for sale by wholesale.

Class 9: - A Class 9 building is a building of a public nature that includes one or more of the following sub-classifications:
(1) Class 9a — a health-care building including any parts of the building set aside as laboratories, and includes a health-care building used as a residential care building.
(2) Class 9b — an assembly building including a trade workshop or laboratory in a primary or secondary school

BCA Parameters	
BCA Classifications	Building L – Class 9b (Classrooms) Building M – Class 9b (Multipurpose Hall)
Rise in Storeys (RIS)	Building L & M – 3
Number of Storeys	Building L & M – 3
Effective Height	Building L & M – 9.5M
Type of Construction	Building L & M – Type A Construction (combined fire compartment)
Fire Compartment	Ground floor – Approx. 2,345m^2 Level 1 – Approx. 1,200m^2 Level 2 – Approx. 1,200m^2

Structural Importance Level	Level 3 (Structural Engineer to confirm)
Climate Zone	5 (refer to appendix C)

Section B – Structure

The structural components of the building must comply with the applicable Australian Standards. A structural engineer will need to ensure the structural requirements of BCA Clauses B1D2, B1D3, and B1D4 are considered in the building design (including the importance level of the building). This will mean assessment according to all relevant parts of Section B of the Building Code of Australia and where any provisions cannot be met, a performance solution to be formulated for consideration of the relevant project stakeholders.

Under Part B1D1 of the Building Code of Australia (BCA), a building or structure must be designed to withstand earthquake loads in accordance with AS1170.4-2007, as appropriate. Whilst earthquake loads have obvious implications to the structural design of a building or structure and any alterations to structural elements within an existing building or structure, it is important to note that within AS1170.4-2007, there is also an obligation for certain non-structural parts, components and their connections to be designed & constructed to withstand earthquake loads. All designers need to be aware of this requirement.

Section C – Fire Resistance / Compartmentation / Separation

Clause	Requirement	Comments
Part C2		
C2D2 & Spec 5	**Type of construction required & FRLs** The minimum Type of fire-resisting construction of a building must be determined in accordance with Table C2D2. Fire Resistance Levels (FRLs) of various building elements are determined in accordance with Specification 5 of BCA.	Building L & M – Type A construction is required. Structural Engineers will need to confirm the Fire Resistance Levels (FRL's) of the external walls, columns, floors, etc meet the requirements of Specifications 5. Generally, FRLs for different classifications identified in this report are: • **Class 9b –** 120 mins Refer to Appendix A for full list of elements requiring an FRL. ***The deletion of FRL to the loadbearing roof beams and trusses will need to be addressed in a Performance Solution by the fire safety engineer.***
C2D3	**Calculation of rise in storeys**	3 storeys
C2D9	**Lightweight construction** If lightweight construction is utilised to achieve the required FRL, it must comply with Specification 6 of the BCA.	Lightweight construction used in walls or used to give steel columns or the like a required FRL must comply with Clause C2D9 and Specification 6.
C2D10	**Non-combustible building elements** The external façade and other external elements must comply with the following.	Wall design system to be developed during the next phases of design development. Architect to ensure all materials used

Section C – Fire Resistance / Compartmentation / Separation		
Clause	**Requirement**	**Comments**
	(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. (c) A loadbearing internal wall and a loadbearing fire wall, including those that are part of a loadbearing shaft, must comply with Specification 5.	within external walls and fire resisting walls are non-combustible – applies to Type A Construction.
C2D11	**Fire hazard properties** All new surface finishes, assemblies and linings are to comply with BCA Clause C2D11 and Specification 7 including NSW variations with regard to Fire Hazard Properties of varies finishes and materials within the building.	All new surface finishes, assemblies and linings are to comply with BCA Clause C2D11 (Specification 7) with regard to Fire Hazard Properties. Compliance to be specified in the architectural specifications and finishes schedules with respect to floor, wall, ceiling covering as well as air-handling ductwork and lift cars.
C2D14	**Ancillary Elements** An ancillary elements 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: a. An *ancillary element* that is *non-combustible*. b. A gutter, downpipe or other plumbing fixture or fitting. c. A flashing. d. A grate, grille or similar cover not more than 2 m^2 in area associated with a building service. e. An electrical switch, socket-outlet, cover plate or the like. f. A light fitting. g. A *required* sign. h. A sign other than one provided under (a) or (g) that— i. achieves a *group number* of 1 or 2; and ii. does not extend beyond one *storey*; and	Architect and structural engineer to note – details are to be provided prior to the issue of relevant building approval.

Section C – Fire Resistance / Compartmentation / Separation		
Clause	**Requirement**	**Comments**
	iii. does not extend beyond one *fire compartment*; and iv. is separated vertically from other signs permitted under (h) by at least 2 *storeys*. i. An awning, sunshade, canopy, blind or shading hood other than one provided under (a) that— i. meets the relevant requirements of Table S7C7 as for an internal element; and ii. serves a *storey*— 1. at ground level; or 2. immediately above a *storey* at ground level; and iii. does not serve an *exit*, where it would render the *exit* unusable in a fire. j. A part of a security, intercom or announcement system. k. Wiring. l. Waterproofing material installed in accordance with AS 4654.2 and applied to an adjacent floor surface, including vertical upturn, or a roof surface. m. Collars, sleeves and insulation associated with service installations. n. Screens applied to vents, weepholes and gaps complying with AS 3959. o. Wiper and brush seals associated with doors, windows or other openings. p. A gasket, caulking, sealant or adhesive directly associated with (a) to (o).	
C2D15	**Fixing of bonded laminated cladding panels** In a building required to be of Type B construction, externally located bonded laminated cladding panels must have all layers of cladding mechanically supported or restrained to the supporting frame unless where exempted by this clause.	Designers to note
Part C3		
C3D3	**General floor area and volume limitations** The maximum size of fire compartments is noted in the Table below:	The current plans appear to comply, as the fire compartments are separated on a floor-by-floor basis.

Section C – Fire Resistance / Compartmentation / Separation

Clause	Requirement	Comments
	<table><tr><th>Classification</th><th>Type A construction</th><th>Type B construction</th><th>Type C construction</th></tr><tr><td>5, 9b or 9c</td><td>Max *floor area*—8 000 m^2</td><td>Max *floor area*—5 500 m^2</td><td>Max *floor area*—3 000 m^2</td></tr><tr><td></td><td>Max *volume*—48 000 m^3</td><td>Max *volume*—33 000 m^3</td><td>max *volume*—18 000 m^3</td></tr><tr><td>6, 7, 8 or 9a (except for *patient care areas*)</td><td>Max *floor area*—5 000 m^2</td><td>Max *floor area*—3 500 m^2</td><td>Max *floor area*—2 000 m^2</td></tr><tr><td></td><td>Max *volume*—30 000 m^3</td><td>Max *volume*—21 000 m^3</td><td>Max *volume*—12 000 m^3</td></tr></table>	
C3D7	**Vertical separation of openings in external walls** Applies to Type A Construction. Spandrel separation is required to Type A buildings that are not proposed to be sprinkler protected; Any part of a window or other opening in an external wall is above another opening in the storey next below and its vertical projection falls no further than 450 mm outside the lower opening (measured horizontally), the openings must be separated by— (a) a spandrel which— (i) is not less than 900 mm in height; and (ii) extends not less than 600 mm above the upper surface of the intervening floor; and (iii) is of non-combustible material having an FRL of not less than 60/60/60. Construction behind a curtain wall or panel wall and has any gaps packed with a non-combustible material that will withstand thermal expansion and structural movement of the walling without the loss of seal against fire and smoke. For the purposes of C3D7, window or other opening means that part of the external wall of a building that does not have an FRL of 60/60/60 or greater.	Applicable to Type A Construction – architect to note and to provide details prior to the issue of CDVC approval.
C3D8	**Separation by Fire Walls** Construction – A fire wall must be constructed in accordance with the following: a) The fire wall has the relevant FRL prescribed by Specification 5 for each of the adjoining parts, and if these are different, the greater FRL, except where S5C19(3)(c)(i), S5C22(3)(c)(i) and S5C25(3)(c)(i) permit a lower FRL on the carpark side. b) Any openings in a fire wall must not reduce the FRL required by Specification 5 for the fire wall, except where permitted by the Deemed-to-Satisfy Provisions of Part C4.	FRL of fire walls to be in accordance with Specification 5 of the BCA for a Type A construction. Fire compartmentation drawings to be developed during the next stage of design development identifying the location of fire walls.

Section C – Fire Resistance / Compartmentation / Separation		
Clause	**Requirement**	**Comments**
	c) Building elements, other than roof battens with dimensions of 75 mm x 50 mm or less or sarking-type material, must not pass through or cross the fire wall unless the required fire-resisting performance of the fire wall is maintained. Separation of buildings — A part of a building separated from the remainder of the building by a fire wall may be treated as a separate building for the purposes of the Deemed-to-Satisfy Provisions of Sections C, D and E if it is constructed in accordance with (1) and the following: a. The fire wall extends through all storeys and spaces in the nature of storeys that are common to that part and any adjoining part of the building. b. The fire wall is carried through to the underside of the roof covering. c. Where the roof of one of the adjoining parts is lower than the roof of the other part, the fire wall extends to the underside of— i. the covering of the higher roof, or not less than 6 m above the covering of the lower roof; or ii. the lower roof if it has an FRL not less than that of the fire wall and no openings closer than 3 m to any wall above the lower roof; or iii. the lower roof if its covering is non-combustible and the lower part has a sprinkler system (other than a FPAA101D or FPAA101H system) complying with Specification 17. Separation of fire compartments – A part of a building separated from the remainder of the building by a fire wall may be treated as a separate fire compartment if it is constructed in accordance with (a) and the fire wall extends to the underside of— a) a floor having an FRL required for a fire wall; or b) the roof covering.	
C3D11	**Separation of lift shafts** 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 having and FRL in accordance with Specifications 5 of the BCA.	Applies to Building L – architect to note and to provide details prior to the issue of CDVC approval.
C3D13	**Separation of equipment** Equipment comprising of lift motors, lift control panels, emergency generators, central smoke control plant, boilers or a battery or batteries installed in the building that have a voltage of 12 or more and a storage capacity of 200kWh or more must be constructed with an FRL in accordance specification 5, Table S5C11a-g of BCA. Separation of on-site fire pumps must comply with the requirements of AS 2419.1.	Fire compartmentation plans to clearly identify rooms requiring an FRL enclosure – architect and structural engineer to note. Details to be provided prior to the issue of CDVC approval.

<table>
<tr><th colspan="3">Section C – Fire Resistance / Compartmentation / Separation</th></tr>
<tr><th>Clause</th><th>Requirement</th><th>Comments</th></tr>
<tr><td></td><td></td><td></td></tr>
<tr><td>C3D14</td><td>Electricity supply system
An electricity substation or main switchboard that sustains emergency equipment operating in the emergency mode located within a building must be separated from other parts of the building by construction having an FRL of not less than 120/120/120, and doorways in that construction to be self-closing fire doors with an FRL of not less than -/120/30.</td><td>Architect to note the requirement.
Electrical engineer to confirm if MSB will be supplying power to emergency equipment, in which case, MSB must be enclosed with fire rated construction separating it from the remainder of building.</td></tr>
<tr><td colspan="3">Part C4</td></tr>
<tr><td>C4D3</td><td>Protection of openings in external walls
Openings in an external wall that is required to have an FRL where within 3m of a side and rear boundary or 6m of the far boundary or from another building on the same allotment must be protected in accordance with C4D5 and if used, wall-wetting sprinklers are to be externally fitted.</td><td>Architect to note the requirement with respect to setback of buildings from lot boundaries and from each other.</td></tr>
<tr><td>C4D4</td><td>Separation of external walls and associated openings in different fire compartments
The distance between parts of external walls and any openings within them in different fire compartments separated by a fire wall must not be less than that set out in Table C4D4, unless—
(a) those parts of each wall have an FRL not less than 60/60/60; and
(b) any openings are protected in accordance with C4D5.

Table C4D4: Distance between external walls and associated openings in different fire compartments
<table><tr><th>Angle between walls</th><th>Minimum distance (m)</th></tr><tr><td>0° (walls opposite)</td><td>6</td></tr><tr><td>more than 0° to 45°</td><td>5</td></tr><tr><td>more than 45° to 90°</td><td>4</td></tr><tr><td>more than 90° to 135°</td><td>3</td></tr><tr><td>more than 135° to less than 180°</td><td>2</td></tr><tr><td>180° or more</td><td>Nil</td></tr></table></td><td>Architect to note the requirements where fire compartmentation is required.</td></tr>
</table>

Section D – Access and Egress		
Clause	**Requirement**	**Comments**
Part D2		
D2D3	**Number of exits required** Each storey of a primary or secondary school with a rise in storeys of 2 or more must be provided with a minimum of 2 exits.	Current plans appear to comply. At least 2 exits are provided.
D2D4	**When fire-isolated stairways and ramps are required** Every stairway or ramp serving as a required exit must be fire-isolated unless it connects, passes through or passes by not more than 2 consecutive storeys and one extra storey of any classification may be included if— (i) the building has a sprinkler system (other than a FPAA101D system) complying with Specification 17 installed throughout.	Applicable to Building L, however, it is noted that fire stairs will be designed to comply with BCA Clause D2D13 (external stairways in lieu of fire isolated stairs).
D2D5	**Exit travel distances** Where there is more than one exit, the maximum distance of travel to an exit must not exceed 40 metres, and to a point of choice must not exceed 20 metres.	***Does not comply – the travel distance to a point of choice on levels 1 and 2 of Building L is up to 24m in lieu of 20m – architect to amend design or fire safety engineer to address in a Performance Solution.*** ***Additionally, the RLs of the natural ground need to be confirmed, as this may affect the travel distances on the ground floor.***
D2D6	**Distance between alternative exits.** Exits that are required as alternative means of egress must be distributed as uniformly as practicable within or around the storey served and in positions where unobstructed access to at least 2 exits is readily available from all points on the floor including lift lobby areas, and no less than 9m apart and no more than 60m apart. Paths of travel must not converge such that they become less than 6m apart.	Current plans appear to comply. ***Additionally, the RLs of the natural ground need to be confirmed, as this may affect the travel distances on the ground floor.***
D2D7	**Height of exits, paths of travel to exits and doorways.** In a required exit or path of travel to an exit the unobstructed height throughout must be not less than 2 m, except the unobstructed height of any doorway may be reduced to not less than 1980 mm.	Architect to note the requirements
D2D8	**Width of exits and paths of travel to exits.** The minimum unobstructed width of required exit must not be less than 1m within the common areas of the building except doorways where it can be reduced by no more than 250mm.	Architect to note the requirements. Client to confirm number of occupants to confirm compliance.

Section D – Access and Egress		
Clause	**Requirement**	**Comments**
	Generally 1m of aggregate egress width is required for 100 occupants (i.e. 400 persons requires 4m of aggregate egress width per floor).	
D2D13	**External Stairways or ramps in lieu of fire-isolated exits** (1) An external stairway or ramp 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— a) non-combustible throughout; and b) protected in accordance with (3) if it is within 6 m of, and exposed to, any part of the external wall of the building it serves. (3) The protection referred to in (1)(b), must adequately protect occupants using the exit from exposure to a fire within the building, in accordance with one of the following methods: a) The part of the external wall of the building to which the exit is exposed must have— (i) an FRL of not less than 60/60/60; and (ii) no openings less than 3 m from the exit (except a doorway serving the exit protected by a –/60/30 fire door in accordance with C4D9(1)); and (iii) any opening 3 m or more but less than 6 m from the exit, protected in accordance with C4D5 and if wall wetting sprinklers are used, they are located internally. b) The exit must be protected by construction of a wall, roof, floor or other shielding element as appropriate in accordance with (4) from— (i) any part of the external wall of the building having an FRL of less than 60/60/60; and (ii) any openings in the external wall (4) The wall, roof, floor or other shielding element required by (3)(b) must— a) have an FRL of not less than 60/60/60; and b) have no openings less than 3 m from the external wall of the building (except a doorway serving the exit protected by a –/60/30 fire door in accordance with C4D9(1)); and c) have any opening 3 m or more but less than 6 m from any part of the external wall of the building protected in accordance with C4D5 and if wall wetting sprinklers are used, they are located on the side exposed to the external wall.	Applicable to Building L – current design appears to comply. All external stairs are more than 6m away from the external walls of the building it is serving.
D2D14	**Travel by non-fire-isolated stairways** A non-fire-isolated stairway serving as a required exit must provide a continuous means	***Current plans appear to comply. However, the RLs of the natural ground need to be confirmed, as this may affect***

Section D – Access and Egress		
Clause	**Requirement**	**Comments**
	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. 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.	***the travel distances on the ground floor.***
D2D18	**Number of persons accommodated** To be determined in consultation with SINSW. BCA provides the following *area per person* for schools: General classrooms: $2m^2$ Multi-purpose hall: $1m^2$ Staff rooms: $10m^2$ Trade and practical area for primary: $4m^2$ Trade and practical area for secondary: $5m^2$	Architect to note the requirements
Part D3		
D3D14 to D3D22	**Construction of stairways, balustrade and handrails** The construction and discharge of stairs, landings, thresholds, balustrades, and handrails will need to meet the requirements of the BCA and AS1428.1.	Architect to note the requirements Detailed stairway design including balustrade and handrails, consistent going and risers, etc to be developed at future design development stages of the project.
Part D4	**Access for people with a disability** *To be provided by Philip Chun's Access Consultant. Any departures to Part D4 of the BCA shall be addressed by an Access Consultant.*	

Section E – Services and Equipment		
Clause	**Requirement**	**Comments**
Part E1		
E1D2	**Fire Hydrants** (1) A fire hydrant system must be provided to serve a building— a) having a total floor area greater than 500 m^2; and b) where a fire brigade station is— i. no more than 50 km from the building as measured along roads; and ii. equipped with equipment capable of utilising a fire hydrant. (2) The fire hydrant system must be installed in accordance with AS 2419.1.	Fire Protection Engineer to note the requirements

Section E – Services and Equipment		
Clause	**Requirement**	**Comments**
E1D3	**Fire hose reels** E1D3 does not apply to class 5 offices, classrooms and associated corridors in a primary or secondary school.	Fire Protection Engineer to note the requirements
E1D4	**Sprinklers** Sprinklers are required in buildings having an effective height of more than 25m	NA *Note: there might be other triggers such as fire protected timber construction or stages over 300m^2 which will require sprinkler coverage.*
E1D14	**Portable Fire Extinguishers** PFE's are required to be located throughout the building in accordance with Part E1D14 of BCA2022. PFE's are to comply with AS2444.	Fire Protection Engineer to note the requirements
E1D15	**Fire control centers** A fire control centre facility in accordance with Specification 19 must be provided for – (a) a building with an effective height of more than 25 m; and (b) a Class 6, 7, 8 or 9 building with a total floor area of more than 18000 m^2.	NA unless total floor areas of a building exceed 18000m^2.
Part E2		
E2D9	**Buildings not more than 25 m in effective height: Class 5, 6, 7b, 8 and 9b buildings** A system of smoke detection and alarm system in accordance with Specification 20 is required.	Dry fire engineer to note the requirements
NSW E2D16	**Class 9b – Automatic shut down of air handling system** A building or part of a building used as an assembly 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) which does not form part of the smoke hazard management system, on the activation of— (i) smoke detectors installed complying with S20C6; and (ii) any other installed fire detection and alarm system, including a sprinkler system (other than a FPAA101D or FPAA101H system) complying with Specification 17.	Mechanical engineer and electrical engineer to note the requirements
NSW E2D16	**Class 9b – Stages** Additional requirement will apply to stages over 50m^2 such as automatic smoke exhaust system	The proposed stage is less than 50m^2 hence not applicable.
NSW E2D19	**Class 9b – assembly buildings: other assembly buildings (not listed in NSW E2D16 to E2D18)**	Architect and mechanical engineer to note the requirements

Section E – Services and Equipment		
Clause	**Requirement**	**Comments**
	Additional requirements may apply to fire compartments over 2000m^2 such as smoke exhaust system. This requirement does not apply to school classrooms.	
Part E3		
E3D2	**Lift Installations** An electric passenger lift installation and an electrohydraulic passenger lift installation must comply with Specification 24. Stretcher facilities in lifts are required where the lift services the floor of a building with ar effective height of 12m.	Architect to note the requirements
E3D3	**Stretcher facility in lifts** A stretcher facility must be provided in at least one emergency lift or where an emergency lift is not required, if passenger lifts are installed to serve any storey above an effective height of 12 m, in at least one of those lifts to serve each floor served by the lifts.	Architect to note the requirements
Part E4		
E4D2 - E4D8	**Emergency lighting and existing sign requirements including design and operation** Emergency lighting, exit and direction signs are to be located, designed and installed in accordance with Part E4 of BCA2022 and AS2293.1-2018.	Electrical engineer to note the requirements
E4D9	**Emergency warning and intercom systems** An EWIS system is required in a school having a rise in storeys of more than 3.	Dry fire engineer to note the requirements

Section F – Health and Amenity		
Clause	**Requirement**	**Comments**
Part F1		
F4	**Sanitary and other facilities** The following general requirement are summarised below: a) Staff and students must not use the same facilities, separate staff facilities are required. b) Cubicles in each of the male and female staff and student sanitary facilities are required to be ambulant cubicles in accordance with BCA F4D5 and AS1428.1-2009. c) Unisex accessible sanitary facilities to be provided in accordance with BCA	Building L: <u>Ground Floor</u> – the student amenities can cater for 200 male and 200 female students.

Section F – Health and Amenity

Clause	Requirement	Comments

F4D5 and AS1428.1-2009.

d) Building occupants are to be assessed based on 50% male and 50% females or as directed or specified by the client.

e) Facilities are to be provided on this basis according to F4 of the Building Code of Australia.

f) Doors to fully enclosed sanitary compartments must open outwards, or slide or have 1.2m clear space between door and closet plan or be readily removable from the outside of the sanitary compartment.

Note that the students and staff cannot share the amenities. Any accessible WCs shared by students and staff will need to be addressed in a Performance Solution.

Class 9b - schools	Pans	Urinals	Washbasins
Male employees	0	0	0
Allowable Population	**0**	**10**	**0**
Female employees	0	-	0
Allowable Population	**0**	**-**	**0**
Male students	4	3	6
Allowable Population	**200**	**200**	**325**
Female students	7	-	6
Allowable Population	**200**	**-**	**325**

Level 1 – the student amenities can cater for 25 male and 25 female students.

Class 9b - schools	Pans	Urinals	Washbasins
Male employees	0	0	0
Allowable Population	**0**	**10**	**0**
Female employees	0	-	0
Allowable Population	**0**	**-**	**0**
Male students	1	1	2
Allowable Population	**25**	**50**	**50**
Female students	2	-	2
Allowable Population	**25**	**-**	**50**

Level 2 – the student amenities can cater for 25 male and 25 female students.

Class 9b - schools	Pans	Urinals	Washbasins
Male employees	0	0	0
Allowable Population	**0**	**10**	**0**
Female employees	0	-	0
Allowable Population	**0**	**-**	**0**
Male students	1	1	2
Allowable Population	**25**	**50**	**50**
Female students	2	-	2
Allowable Population	**25**	**-**	**50**

Building M:
The unisex accessible WC can cater for 10 staff max.
The student amenities can cater for 150 male students and 150 female students.

Section F – Health and Amenity

Clause	Requirement	Comments

Class 9b - schools	Pans	Urinals	Washbasins
Male employees	0	0	0
Allowable Population	**0**	**10**	**0**
Female employees	0	-	0
Allowable Population	**0**	**-**	**0**
Male students	3	3	4
Allowable Population	**150**	**200**	**175**
Female students	6	-	4
Allowable Population	**150**	**-**	**175**

Part F5		
F5	**Room heights** The following minimum room heights are applicable to the buildings: a) for a school classroom or other assembly building or part that accommodates not more than 100 persons — 2.4 m; and b) for a theatre, public hall or other assembly building or part that accommodates more than 100 persons — 2.7 m; and c) for a corridor— ○ that serves an assembly building or part that accommodates not more than 100 persons — 2.4 m; or ○ that serves an assembly building or part that accommodates more than 100 persons — 2.7 m. d) 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. e) for a commercial kitchen — 2.4 m; and f) 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.	Architect to note the requirements. However, current section drawings appear to comply.
Part F6		
F6	**Light and Ventilation** The following light and ventilation provisions will apply to the buildings: a) 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: a) windows, excluding roof lights, that— have an aggregate light transmitting area measured exclusive of framing members, glazing bars	Architect, mechanical and electrical engineers to note the requirements

Section F – Health and Amenity		
Clause	**Requirement**	**Comments**
	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— b) 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 a proportional combination of windows and roof lights required by (i) and (ii). Artificial lighting must comply with Clause F6D5 of the BCA and AS/NZS 1680.0. The building is required to be provided with mechanical ventilation under AS1668.2 if sufficient natural ventilation is not provided (openings for natural ventilation need to be 5% of the floor area they serve).	

Section I – Special use Buildings		
Clause	**Requirement**	**Comments**
Part I1		
I1D1	**Application of Part** Part I1 of the BCA only applies to a school assembly, church, or community hall with a stage and any backstage area with a total floor area of more than 300m2; or otherwise, has a stage and any backstage area with a total floor area of more than 200m2; or has a stage with an associated rigging loft. Sprinkler provisions OR separation of stage by proscenium wall will be required.	Assume there is no rigging loft and it appears there is no stage or backstage that is more than 200m2 hence, this clause is not applicable – architect to also confirm.

Section J – Energy Efficiency

The building must be designed in accordance with the requirements of Part J of the BCA in terms of Energy Efficiency. We recommend an Energy Efficiency consultant be engaged to provide a report for compliance.

3.0 Conclusion

We have assessed the 80% schematic design package provided with respect to the Building Code of Australia 2022 and provided a summary of applicable BCA requirements for the stakeholder's information. Ongoing BCA assessment of the design is necessary to ensure design meets the requirements of the BCA prior to submission for Section 6.28 certification.

Appendix A – List of Proposed Fire Safety Measures for Buildings L & M

PROPOSED FIRE SAFETY MEASURES	
FIRE SAFETY MEASURES	**PROPOSED STANDARD OF PERFORMANCE**
ACCESS PANELS, DOORS & HOPPERS TO FIRE RESISTING SHAFT	BCA 2022 C4D14 & AS 1905.1-2015, AS 1905.2-2005 AND MANUFACTURER'S SPECIFICATION.
AUTOMATIC FAIL-SAFE DEVICES	BCA 2022 D3D24, D3D26
AUTOMATIC FIRE DETECTION AND ALARM SYSTEM	BCA 2022 E2D3, NSW E2D16, AND AS 1670.1-2018
EMERGENCY LIGHTING	BCA 2022 E4D2, E4D4, & AS 2293.1–2018
EXIT SIGNS	BCA 2022 E4D5, E4D6, E4D8, & AS 2293.1-2018,
FIRE DAMPERS	BCA 2022 C4D13, C4D15, AS/NZS 1668.1-2015 AMDT 1, AS 1668.2-2012 AMDT 1 & 2, AS 1682.1-2015, AS 1682.2-2015 AND MANUFACTURER'S SPECIFICATION.
FIRE DOORS	BCA 2022 C3D13 (SEPARATION OF EQUIPMENT), C3D14 (ELECTRICITY SUPPLY SYSTEMS), C4D4 (SEPARATION OF EXTERNAL WALLS & ASSOCIATED OPENINGS IN FIRE COMPARTMENTS), C4D5, & AS 1905.1–2015 AMDT 1 AND MANUFACTURER'S SPECIFICATION.
FIRE RATED LIFT LANDING DOORS	BCA 2022 C4D11 & AS 1735.11-1986
FIRE HOSE REEL SYSTEMS	BCA 2022 E1D3 & AS 2441-2005 AMDT 1
FIRE HYDRANT SYSTEMS	BCA 2022 E1D2 & AS 2419.1-2021
FIRE SEALS PROTECTING OPENINGS IN FIRE RESISTING COMPONENTS OF THE BUILDING	BCA 2022 C4D13, C4D15, SPECIFICATION 13, AS 1530.4.-2014 & AS 4072.1-2005 AMDT 1, AND MANUFACTURER'S SPECIFICATION.
LIGHTWEIGHT CONSTRUCTION	BCA 2022 C2D9 & SPECIFICATION 6; MANUFACTURERS SPECIFICATION.
MECHANICAL AIR HANDLING SYSTEM	BCA 2022 E2D3, AS/NZS 1668.1-2015AMDT1 & AS 1668.2 2012.
PORTABLE FIRE EXTINGUISHERS	BCA 2022 E1D14 & AS 2444-2001.
SMOKE ALARMS AND HEAT ALARMS	BCA 2022 E2D3, AS3786-2014
SOUND SYSTEMS AND INTERCOM SYSTEMS FOR EMERGENCY PURPOSE	BCA 2022 E4D9, AS1670.4-2018
WARNING AND OPERATIONAL SIGNS	BCA 2022 D4D7, E3D4
FIRE ENGINEERING REPORT	TBC

Please note that the above schedule is a draft and may change as the project progresses.

Appendix B – FRL of Building Elements

TYPE A CONSTRUCTION – FRL OF BUILDING ELEMENTS

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
1.5m 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
1.5m 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				
Location	FRL (in minutes): *Structural adequacy/ integrity / insulation*			
	Class 2, 3 or 4 part	Class 5, 7a or 9	Class 6	Class 7b or 8
Fire-resisting lift and stair shafts	90/90/90	120/120/120	180/180/180	240/240/240
Bounding public corridors, public lobbies and the like	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 or 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 or hot products of combustion	-/90/90	-/90/90	-/120/120	-/120/120

Table S5C11g: Type A Construction: FRL of non-loadbearing internal walls				
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