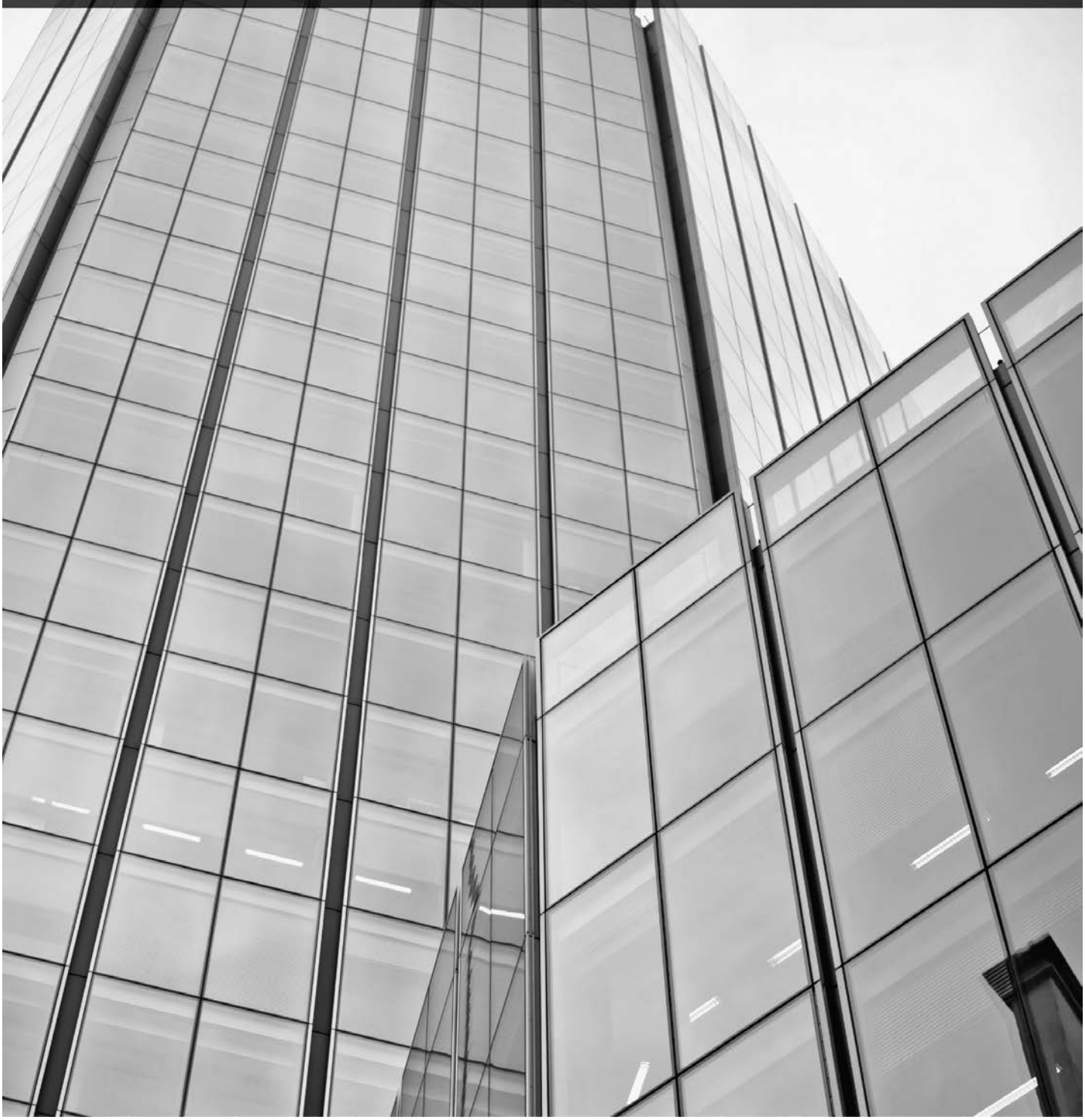
GROUPDLA

Building Code of Australia 2019 Amendment 1

Report for BCA Compliance – SSD Application Stage

PROJECT NAME: Wee Waa High School
PROJECT NUMBER: **GDL210338.1**
DATE: **29/10/2021**



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REVISION HISTORY

Revision	Date	Details	Authorised	
			Name/Position	Reviewed by:
A	28/09/2021	SEARS Stage Report	Mike Gooley / Associate	Charles Slack-Smith / Director
B	15/10/2021	SSD Application minor working changes	Mike Gooley / Associate	Charles Slack-Smith / Director
C	29/10/2021	SSD – Final	Gemma McKenna Building Surveyor	Charles Slack-Smith Director

Table 1 – Revision History

1.0 EXECUTIVE SUMMARY

Students and staff were evacuated from the current Wee Waa High School site due to ongoing health issues in late 2020. Students are currently collocated within the town's primary school in an overcrowded site. A Ministerial announcement made on 3 June 2021 committed to the construction of a new High School at Wee Waa on existing Department of Education owned land and adjacent Crown land as an urgent priority. The site is located on Mitchell Street/Kamliaroi Highway and is legally described as Lot 1 DP577294, Lot 2 DP550633 and Lots 124-125 DP757125.

This report accompanies a State Significant Development Application which seeks consent for the construction of a new high school. The school will service 200 students with potential to grow to a total capacity of 300 students, subject to further funding and service need, and 61 staff. The school will consist of a two-storey building, an Indigenous Cultural Centre, sporting fields and associated civil and utilities works. For a detailed project description refer to the EIS prepared by Ethos Urban.

The report is for the assessment of the subject development known as Wee Waa High School to assess compliance with the Building Code of Australia 2019 Amendment 1 ("BCA"). The information submitted at this stage of the design is not considered to be detailed to the extent where the development of a comprehensive BCA report is achievable and therefore this report is preliminary only for the SEARS Stage of the design.

The following items have been noted as items of interest at this stage of the review. The items have been considered non-compliant and require further review against the detailed design, or may be able to be justified as a Performance Solution:

Item	Query or DTS Non- Compliance	Suggested Resolution	BCA Clause
1	Tender date for the Construction works to be advised once known/tenders issued to the market (not ECI Tender, actual construction works tender date)	Provide letter or email confirming the date Tenders are issued to the market for the construction works to enable confirmation of the BCA version applicable to the project. Note: as long as Tender issued before 1 Sept 2022 then BCA 2019 Amendment 1 will be the applicable BCA.	Section 6.28 of the Environmental Planning and Assessment Act 1979.
2	External wall water proofing Design detail report / performance solution: External walls must prevent the penetration of water that could cause unhealthy or dangerous conditions, or loss of amenity for occupants; and undue dampness or deterioration of building elements.	Performance Solution required by Architect / Façade Consultant	FP1.4
3	Separate allotments and their associated boundaries create BCA non-compliance issues if they pass under or are in proximity to proposed buildings, as well as create infrastructure issues.	Consolidation of allotments of the site prior to the completion of works.	Part C & E

Table 2 – DtS Non-compliances Summary

2.0 INTRODUCTION

Students and staff were evacuated from the current Wee Waa High School site due to ongoing health issues in late 2020. Students are currently collocated within the town's primary school in an overcrowded site. A Ministerial announcement made on 3 June 2021 committed to the construction of a new High School at Wee Waa on existing Department of Education owned land and adjacent Crown land as an urgent priority.

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The subject BCA review has been limited to the evolving architectural drawings at this Concept Design stage, more detail and information is required to allow a full BCA Assessment to be produced.

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

2.1 Reporting Team

The information contained within this report was prepared by Mike Gooley, Accredited Building Surveyor - Unrestricted (BDC0143) and reviewed by Charles Slack-Smith, Accredited Building Surveyor - Unrestricted (BPB0378) from Group DLA.

2.2 Current Legislation

The applicable legislation governing the design of buildings is the Environmental Planning and Assessment Act 1979.

Whilst we await final confirmation on the building approval mechanism, it is understood that the project will follow a Crown Approval pathway. The provisions of Section 62.8 (formerly known as109R) (Crown Building Work), of this Act require that the building work be carried out in accordance with the Building Code of Australia (BCA).

The application of compliance with the version of the BCA is the date on which tenders were issued to the market for the Construction works.

This is assumed to be issued after the 23 September 2021 and prior to 1 September 2022, as such in accordance with this assumption the application of the provisions of the BCA 2019 Amendment 1 is the relevant Code for this report.

2.3 Fire Brigade

Fire & Rescue NSW ("FRNSW"): The BCA Clause A2.2(4) requires liaison with the Fire Brigade as a stakeholder for any Performance Solutions relating to Fire Safety. If Fire engineering is proposed for this building liaison and participation by the Fire Brigade as part of the Performance Based Design Brief will be required for this building and is to be undertaken / driven by the engaged Fire Safety Engineer and is not part of our role on the project.

2.4 Limitations

This report does not constitute or include, nor imply or audit any assessment of the following.

- This assessment is limited to the developed documentation at the date of this report and as referenced within the “Documentation Assessed” section of the Report.
- This report does not include assessment of the documentation against the provisions of the Disability Discrimination Act 1992 or (Access to Premises Buildings) Standards 2010.
- Any roof top plant or the like has been assessed (assumed) as open to the sky. Covered areas to roof tops may constitute an extra BCA requirement.
- Travel distances have been assessed on an open plan basis in plant areas with an allowance made for travel around pending fixed structures. No consideration has been given to any future fixed structures and accordingly, further assessment will be required in the event of plant layouts, floor plan or fixture amendments to the design.
- The compliance of the design or building with the performance provisions of the BCA is excluded.
- Schools Facility standard or EFSG is excluded as it is not a BCA referenced document or standard, and as such has not been assessed in this report or for our involvement.
- This assessment does not include a detailed assessment of Australian Standards, only the BCA Clauses.
- 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
- Indoor air quality, ventilation rates, mould or other such assessment is not included or part of this report
- The National Construction Code – Plumbing Code of Australia Volume 3;
- The capacity of and design of any Structural, External wall, Electrical, Fire, Hydraulic or Mechanical or any other type of Services/Design are excluded;
- Demolition Standards not referred to by the BCA;
- Work Healthy and Safety Act 2011 (Safety in Design);

3.0 BUILDING DESCRIPTION

3.1 Building Site

The proposed site for the new Wee Waa High School is located at 105 – 107 Mitchell Street, Wee Waa NSW 2388 which is one allotment. The site is on the opposite side of street to the existing Wee Waa Public School and currently bounded by Mitchell Street/Kamilaroi Highway, George Street to the east, Charles Street to the west.

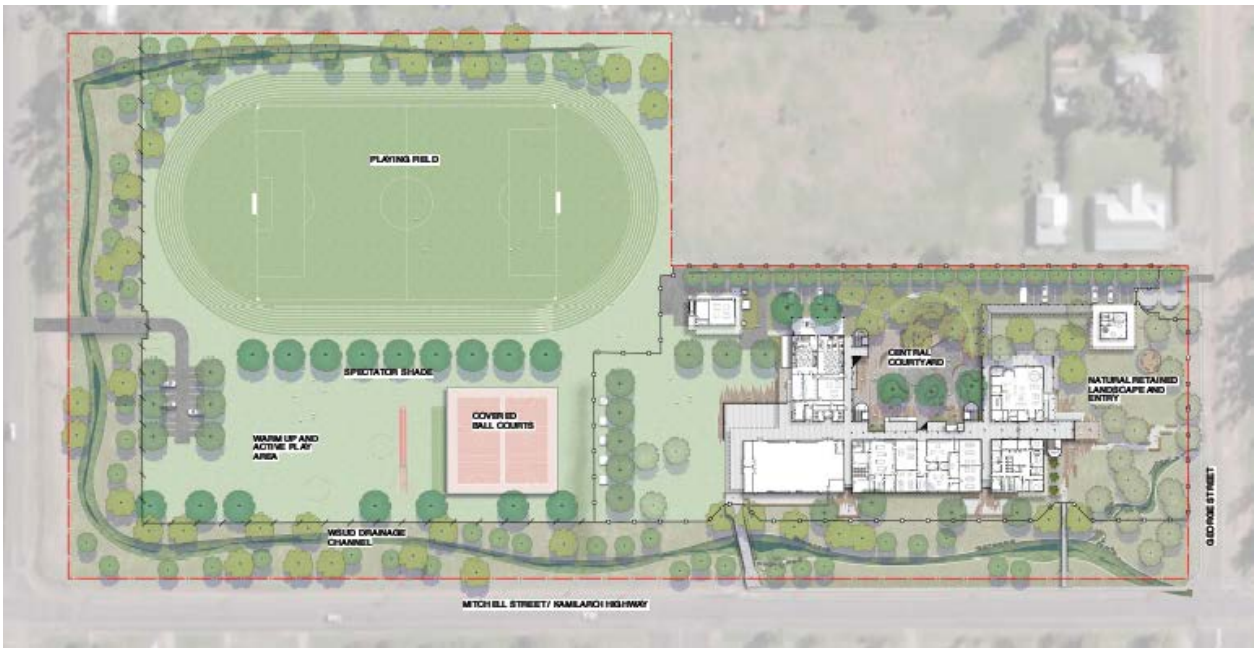

Figure 1: Site Plan

3.2 Building Development

The building development subject of this report is located at the proposed site for the new Wee Waa High School at 105 – 107 Mitchell Street, Wee Waa NSW 2388.

The proposed development involves the construction of one (1) and two (2) storey school buildings (known as Building A to F), Cola, covered walkways together with outdoor playing fields.

Building A to D is the main school building which is connected by open walkways on each level. The main principal entry to the school is from George Street which connects with the entry foyer of the building.

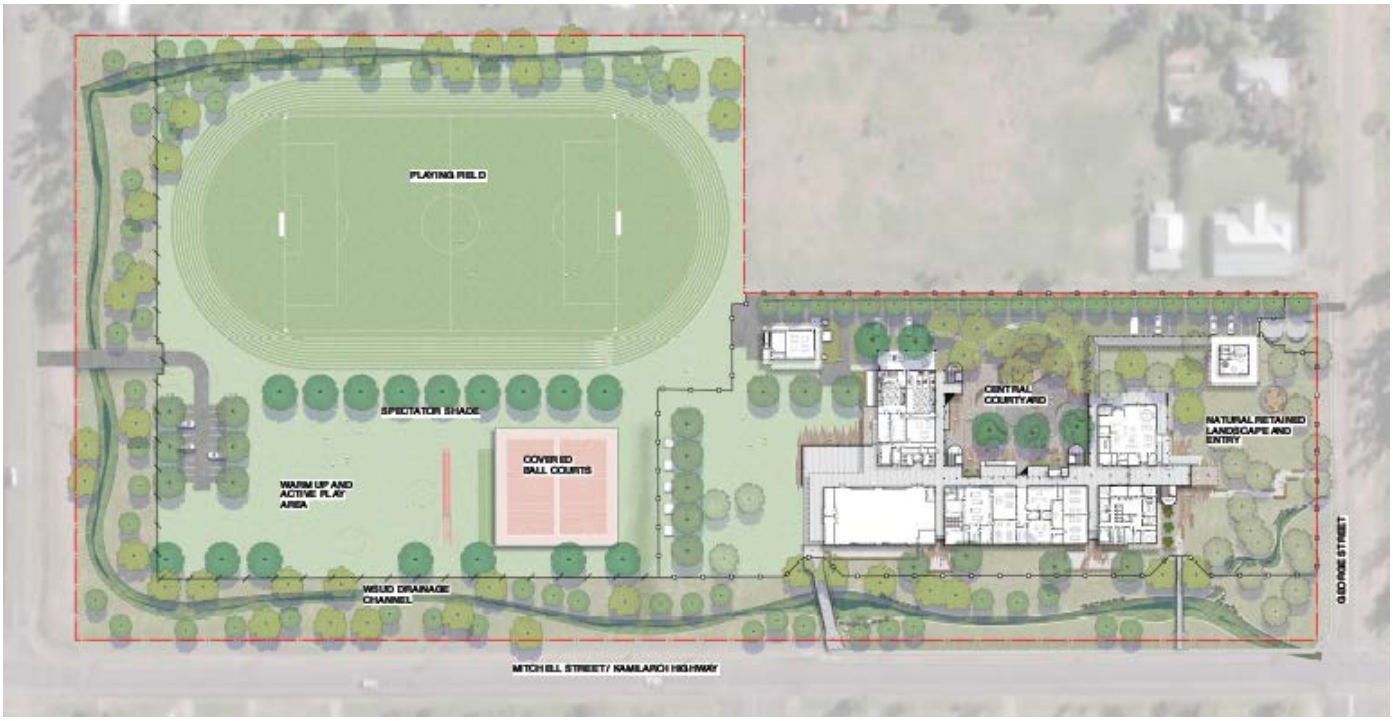

Figure 2 – Proposed development

3.3 BCA Description / Details

Characteristic	Description Building A to D	Description Agricultural and Environment Centre & Indigenous Cultural Centre
Type of Construction:	Type B	Type C
Classification	Class 5 (offices) and 9b (school building)	Class 9b (school)
Floor Area of Building:	Approximately 5,300m^2 *	Less than 500m^2 *
Max Fire Compartment Size:	Approximately 5,300m^2	Less than 500m^2 *
Rise in Storeys:	2 (two)	1 (one)
Levels Contained:	2 (two)	1 (one)
Effective Height ***	Approx. 4.20m	0.3m
Fire Compartments:	1 (one)	1 (one)
Climate Zone:	Zone 4	Zone 4
Importance Level (BCA B1.2) **	Importance Level 3 (Structural Engineer to confirm)	Importance Level 3 (Structural Engineer to confirm)
Earthquake Design Category (AS 1170.4)	EDC II or III (Structural Engineer to confirm)	EDC II or III (Structural Engineer to confirm)

*** Architect to confirm floor area.**

Table 5 – Building Characteristic

Definitions / Assumptions:

**Floor area to establish size of fire compartment is the total area contained within the external walls or if there are no enclosing walls, an area which has a use that contributes to fire load or impact on the safety, health or amenity of the occupants in relation to the provisions of the BCA.*

** *Importance Level*: Guide to the BCA 2019 used, and as there is no area designed / anticipated to have 300 persons able to congregate in one area, and not more than 500 persons for University use, and Building is not a Health Care Facility as no residents, as such Importance Level 2 outlined, Structural Engineer to confirm.

*** *Effective Height* : The definition of the effective height of a building changed on 1 May 2016 thus any Crown Building works tendered after this date will need to comply with the new definition. The BCA 2019 Amendment 1 definition is the following –

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

3.4 Documentation Assessed

The architectural plans are yet to be developed to the extent that a complete BCA assessment can be concluded and therefore this report is preliminary only.

This report is based on the following documentation prepared by SHAC Architects:

Description	Drawing No.	Revision	Date
Proposed Site Plan	CD1101	ZJ	8.10.2021
Proposed Site Plan – Detailed	CD1102	ZI	8.10.2021
Ground Floor Furniture Layout Plan	CD2105	ZI	8.10.2021
First Floor Furniture Layout Plan	CD2106	ZI	8.10.2021
Agriculture/Environmental Centre Plans	CD2107	J	8.10.2021
Roof Plan	CD2401	ZH	8.10.2021
Elevations	CD3101	ZH	8.10.2021
Agriculture/Environmental Centre Elevations	CD3103	ZH	8.10.2021

Table 6 – Documentation Assessed

3.5 Assumptions / Limitations

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

1. The school will service 200 students with potential to grow to a total capacity of 300 students, subject to further funding and service need, and 61 staff
2. Importance Level: Guide to the BCA 2019 indicates importance level 3 apply to buildings and facilities with a primary school, a secondary school or day care facilities with a capacity greater than 250.
3. Disabled Access, Section J energy Efficiency are excluded from this report, and details relating to these elements are located in others reports/documentation.
4. It is understood the allotments will be consolidated prior to the completion of works

4.0 BCA NON-COMPLIANCES & DESIGN CONSIDERATIONS

The assessment will provide an overview of the compliance with the BCA and identify issues (non-compliances) that require attention at this particular stage, read these issues outlined below in conjunction with clause-by-clause assessment of this report.

Section B – Structure

1. Structural Engineer to review and provide compliant design in accordance with Part B, Part C and Clauses D2.2, D2.3 of BCA 2019 Amendment 1, and all listed / referenced Australian Standards .

2. Structural Engineer is to outline and provide to the Consultant Team (Façade designer, Architect and Services Consultants) the calculated expected Earthquake actions and expected forces expected on non-structural components to be designed for, from Section 8 of AS 1170.4-2007 as referenced in BCA 2019 Amendment 1.

3. Services Consultants to provide confirmation of compliance of non-structural elements in accordance with Sections 8 of AS1170.4-2007 or alternatively Structural Engineer to provide specific design statement referencing non-structural elements as outlined in Section 8 of AS1170.4-2007 Note: This may require input from Structural engineer per Item 2.

4. Architect to provide confirmation of compliance of non-structural elements in accordance with Sections 8 of AS1170.4-2007 or alternatively Structural Engineer to provide specific design statement referencing non-structural elements as outlined in Section 8 of AS1170.4-2007. Note: This may require input from Structural engineer as per Item 2 above.

Section C – Fire Resistance

5. Structural Engineer to review and provide compliant design with respect to required FRL's for a Type B, Class 5 and 9b structure, including all loadbearing structures which provide direct vertical or lateral support to those elements with a required FRL.

6. Lift Shaft – It is assumed that the lift shaft/s be designed to be non-loadbearing; the Structural engineer is to provide the required Earthquake information to the consultant designing the lift shafts to meet the requirements of Section 8 of AS 1170.4-2007 as referenced in BCA 2019 Amendment 1.

7. Architect / Façade Consultant is to provide a Detailed statement outlining each part/element contained in the makeup of the external wall system and any other elements required to be non-combustible in accordance with Clause C1.9 (external walls) & C1.14 (Ancillary Elements). Current fire test reports required to be provided in accordance with AS1530.1 for each element required to be non-combustible in accordance with C1.9 & C1.14.

Section D – Access & Egress

8. Extended travel distances identified to a point of choice, to required exit and between exits, as per the table below:

Level	Distance to a PoC	Distance to required exit	Distance between exits
Building A	<20m	<40m	*<60m*
Building B	<20m	<40m	*<60m*
Building C	<20m	<40m	*<60m*
Building D	<20m	<40m	*<60m*
Agricultural and Environment Centre	<20m	<40m	*<60m*
Indigenous Cultural Centre	<20m	<40m	*<60m*

Note: See attached TD Plans as requires egress through rooms & classrooms – exit sign and no lockable doors required.

9. Disabled Access Consultant to review proposed works and provide compliance statement, as Disabled Access is not covered/included in this report.

Section E – Fire Services & Equipment

10. Fire Services and Mechanical Consultants to provide compliant design in accordance with Part E, for the purposes of the building design at this stage the following fire services are anticipated/expected:

    - Hydrant system to BCA Clause E1.3 and AS 2419.1-2005
    - Smoke Detection and Alarm system to AS 1670.1-2018, BCA Clause E2.2 (b) and Clause 6 of BCA Spec E2.2a (Shut down of Mechanical Air Handling System only)
    - Exit Signs and Emergency Lighting to BCA Part E4 and AS 2293.1-2005
    - Portable Extinguishers to BCA Clause E1.6 and AS 2444-2001
    - Mechanical System Auto Shut Down as per BCA Clause E2.2 (b)

Section F – Health and Amenity

11. Performance solution required to address BCA anomaly for water proofing of external walls in accordance with FP1.4

12. It is understood the school will service 200 students with potential to grow to a total capacity of 300 students, subject to further funding and service need, and 61 staff

Student – Sanitary Facilities

	Population	Pans	Urinals	Washbasins
Male	150	4	3	4
Female	150	7	n/a	4
	Unisex Accessible		1 per level	

Staff – Sanitary Facilities

	Population	Pans	Urinals	Washbasins
Male	31	2	2	2
Female	31	3	n/a	2
	Unisex Accessible		1 per level	

Section J – Energy Efficiency

13. ESD Consultant to review project and provide compliance statement/report for Section J. **Note** this is expected to include a review of the detailed design sections and detail of external walls for thermal break and make-up of the façade elements in the review, and not a high-level report outlining the required values only, this is due to the detailed assessment nature for Section J of external walls and roofs in BCA 2019 Amendment 1.

5.0 Performance Solutions (Fire Engineering and Others)

The following elements of the Design are expected to require Performance Solutions, these have been allocated into the relevant Disciplines where possible to determine and are listed below.

Client and relevant stakeholders are to be liaised with to ensure that a performance-based approach is acceptable for these elements of the building, and that the proposed method of the assessment is acceptable to the stakeholders.

Fire Safety Engineering

None proposed at this stage.

Disabled Access

See Disabled Access report for the building.

Energy Efficiency Provisions – JV3 Assessment

See Section J report from ESD or Energy Consultant

External Walls (Architect or Façade Consultant)

BCA Performance Clause FP1.4 – External walls do not have a Deemed to Satisfy option for compliance, as such a Performance Solution from the Façade consultant or Architect designing the external walls to the provision of this Clause of the BCA.

Note: as BCA Clause A2.2 (4) is no applicable a Performance Based Design Brief is also required to be undertaken for the preparation of this solution as to the why this is proposed to be justified by the Architect or Façade Consultant.

6.0 ESSENTIAL FIRE SAFETY MEASURES (EFSM)

Below is a list of essential fire safety services that are expected to be installed / designed for the building, and the relevant standards of performance for each measure to be designed/constructed to. This table may be required to be updated as the design develops and as Fire Engineering is documented, so the below is a preliminary list only at this stage.

Fire Safety Measure	Standard of Performance	BCA Clause(s)	Proposed Fire Safety Measures
Emergency lighting	AS 2293.1 – 2018	E4.2, E4.4	☑
Exit signs	AS 2293.1 – 2018	E4.5, NSW E4.6 & E4.8, EP4.2	☑
Fire hydrant systems	AS 2419.1 – 2005	E1.3, EP1.3	☑
Fire seals (protecting openings in fire resisting components of the building)	AS 4072.1 – 2005 AS 1530.4 – 2014	C3.12, C3.13, C3.15	☑
Lightweight construction	--	C1.8, Spec C1.8	☑
Mechanical air handling systems (Auto Shut down)	AS 1680.1-2018	E2.2, Clause 6 of Spec E2.2a, Clause E2.2(b)	☑
Portable fire extinguishers	AS 2444 – 2001	E1.6	☑
Warning and operational signs	--	E3.3 (lift) & D3.6 (Exit Sign)	☑

Table 7 – Essential Fire Safety Measures (EFSM)

Appendix A:

BCA Provisions

BCA PROVISIONS

The following is a clause-by-clause assessment of the architectural drawings against the deemed-to-satisfy provisions of the BCA 2019 Amendment 1.

Key of Figures:

✓	The building as designed / indicated complies with this clause.
X	The building does not comply with this clause.
?	Further information or documentation required to clarify compliance.
CR	Design statement (or other means) required from appropriately qualified designer/person that the building will comply with this clause at the design stage & installation certification will be required on completion of the project from the relevant installer or engaged consultant.
N/A	This clause is not applicable to this project.
PS	Performance Solution using Performance Requirements is expected to be proposed to address this item – see separate report from relevant consultant for method and requirements.
Noted	This clause is for information.

Section A: General Provisions		
A6	**Building Classification**	
Clause	**Reference**	**Comment**
A6.1-6.10	**Classifications**	
Noted	The classification of a building is determined by the purpose for which it is designed, constructed or adapted.	The proposed development compromises a building Class 5 (offices) and 9b (classrooms).
A6.11	**Multiple classification**	
Noted	Each part must be classified separately: (a) Classified to the major use if not more than 10% of the floor area of the storey. (b) Plant rooms are classified as the same part.	Noted
A7	**United Buildings**	
Clause	**Reference**	**Comment**
A7.0	**United Buildings**	
N/A	Two or more buildings adjoining each other form one united building if they are connected through openings in the walls dividing them and both buildings comply with the requirements of the BCA as though they are a single building.	Building A to D have been assessed as a single 2 storey building.
Section B: Structure		
B1	**Structural Provisions**	
Clause	**Reference**	**Comment**

B1.1	**Resistance to actions**	
CR	The resistance of a building or structure must be greater than the most critical action effect resulting from different combinations of actions, where— (a) the most critical action effect on a building or structure is determined in accordance with B1.2 and the general design procedures contained in AS/NZS 1170.0; and (b) the resistance of a building or structure is determined in accordance with B1.4.	**Structural Engineer to Confirm**
B1.2	**Determination of individual actions**	

CR	The magnitude of individual actions must be determined in accordance with the following: (a)Permanent actions: (i)the design or known dimensions of the building or structure; and (ii)the unit weight of the construction; and (iii)AS/NZS 1170.1. (b)Imposed actions: (i)the known loads that will be imposed during the occupation or use of the building or structure; and (ii)construction activity actions; and (iii)AS/NZS 1170.1. (c)Wind, snow and ice and earthquake actions: (i)the applicable annual probability of design event for safety, determined by— (A)assigning the building or structure an Importance Level in accordance with Table B1.2a; and (B)determining the corresponding annual probability of exceedance in accordance with Table B1.2b; and (ii)AS/NZS 1170.2; and (iii)AS/NZS 1170.3 and AS 1170.4 as appropriate; and (iv)in cyclonic areas, metal roof cladding, its connections and immediate supporting members must comply with Specification B1.2; and (v)for the purposes of (iv), cyclonic areas are those determined as being located in wind regions C and D in accordance with AS/NZS 1170.2. (d)Actions not covered in (a), (b) and (c) above: (i)the nature of the action; and (ii)the nature of the building or structure; and (iii)the Importance Level of the building or structure determined in accordance with Table B1.2a; and (iv)AS/NZS 1170.1. (e)For the purposes of (d) the actions include but are not limited to— (i)liquid pressure action; and (ii)ground water action; and (iii)rainwater action (including ponding action); and (iv)earth pressure action; and (v)differential movement; and (vi)time dependent effects (including creep and shrinkage); and (vii)thermal effects; and (viii)ground movement caused by— (A)swelling, shrinkage or freezing of the subsoil; and (B)landslip or subsidence; and (C)siteworks associated with the building or structure; and (ix)construction activity actions. Note: See BCA Clause for definitions of the above if clarification is required, where not defined the Dictionary definition is to be utilised	Structural Engineer to Confirm structural elements compliance. Services Consultants, Façade, and Architect to provide confirmation of compliance of non-structural elements in accordance with Sections 8 of AS1170.4-2007 as relevant.

B1.4	**Determination of Structural Materials and forms of Construction**	
CR	The structural resistance of materials and forms of construction must be determined in accordance with the following, as appropriate (see BCA Clause B1.4 for details) Forms of construction are to be designed to the following Australian Standards as applicable: (a) AS 3700 (b) AS 3600, and AS 5216 (c) AS 4100 (d) AS/NZS 4600 (e) AS 1664.1, AS 1664.2 (f) AS 2159 (g) AS 1288-2006 (see note below) (h) AS 2047 (i) AS 1562.1 (j) AS 1860.2 (k) AS 1720.1 (l) AS 3660.1 (BCA only requires if any primary building elements are timber) Note: not allowed in external walls or ancillary elements for Fire reasons) (m) AS 4654.1 and 2 – Waterproofing of external above ground areas Note: This is not a definitive list, consultant is to review BCA Clause B1.4 for an exhaustive list of required compliance requirements specific to their discipline.	All to be listed in the building specification, and Structural Engineer, Architect and Manufacturers to certify or detail in the Specification to be met in the construction.
B1.6	**Construction in Flood Prone Areas**	
N/A	A Class 2 or 3 building, Class 9a health-care building, Class 9c building or Class 4 part of a building, in a flood hazard area must comply with the ABCB Standard for Construction of Buildings in Flood Hazard Areas.	This clause is not applicable to this project as not containing these Classes in the building.

Section C: Fire Provisions		
Part C1 – Fire Resistance and Stability		
Clause	**Reference**	**Comment**
C1.1	**Type of construction required**	
Noted	The minimum Type of fire-resisting construction of a building must be determined in accordance with Table C1.1, except as allowed for— (i) certain Class 2, 3 or 9c buildings in C1.5; and (ii) a Class 4 part of a building located on the top storey in C1.3(b); and (iii) open spectator stands and indoor sports stadiums in C1.7. SA C1.1(a)(iv) and (v)	Building A to D - Type B Construction Agricultural and Environment Centre & Indigenous Cultural Centre – Type C Construction
C.1.2	**Calculation of rise in storeys**	
Noted	The rise in storeys is the greatest number of storeys at any part of the external walls of the building above the finished ground next to that part. It excludes a single level of plant room only, and any storeys completely below ground.	Building A to D - rise in storeys of two (2) Agricultural and Environment Centre & Indigenous Cultural Centre - rise in storeys of one (1)
C1.3	**Buildings of multiple classification**	
Noted	The Type of construction required is determined on the basis that the classification of the top storey applies to all storeys.	Building A to D - Type B Construction Agricultural and Environment Centre & Indigenous Cultural Centre – Type C Construction
C1.4	**Mixed types of construction**	
N/A	Building may be of mixed Types of Construction where it is separated in accordance with C2.7	This clause is not applicable to this project.
C1.5	**Two storey Class 2, 3 or 9c buildings**	
N/A	Class 2 or 3 of two storeys may be Type C construction if each SOU has: • Access to at least 2 exits; or • Its own direct access to a road or open space.	This clause is not applicable to this project.
C1.6	**Class 4 parts of a building**	
N/A	Class 4 part of a building requires same FRL as that required by a Class 2 in similar circumstances.	This clause is not applicable to this project.
C1.7	**Open spectator stands and indoor sports stadium**	
N/A	May be of Type C construction if it contains only 1 tier and is of non-combustible material.	This clause is not applicable to this project.

Clause	Reference	Comment
C1.8	**Lightweight construction**	
Noted	Lightweight construction may be used if it is in compliance with Specification C1.8.	Compliance required where applicable.
C1.9	**Non-Combustible Building Elements**	
? / CR	(a) Buildings of Type A or B construction must have building elements and their components be non-combustible. (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 certain buildings. (c) A loadbearing internal wall, fire wall or shaft must comply with Specification 1.1	Compliance required. Further information or documentation required to clarify compliance. The BCA defines non-combustible as being materials deemed non-combustible as determined by AS1530.1 – Combustibility test for Materials. Each element forming part of the external wall system must comply with the requirements of this Clause, with respect to external walls this includes all components incorporated in them (such as façade coverings, framing and insulation, packers etc).
C1.10	**Fire hazard properties**	
CR	Materials and assemblies used in the building must comply with the requirements of Specification C1.10. • In the case of a sarking material the Smoke-Developed Index shall not be more than 8, with a Spread-of-Flame Index of not more than 5. • Floor materials – Critical Radiant Flux (CRF) of not less than 1.2kW/m^2 (sprinkler protected building) • Wall and Ceiling materials – Either Group 1, 2 or 3 materials. • Fire Stairs – Group 1 Wall and Ceiling linings, 2.2kW/m2 or more for Flooring. • Ductwork – to comply with AS 4254 • Lift Cars – to be CRF of 2.2 or more for floors, and Group 1 or 2 material for the wall/ceilings.	Compliance required. Design statement (or other means) required from appropriately qualified designer/person that the building will comply with this clause at the design stage & installation certification will be required on completion of the project from the relevant installer or engaged consultant. Fire Hazard test reports and certificates will be required for review and comment, suggest these are submitted prior to purchasing of the product and installation.
C1.11	**Performance of external wall in fire**	
N/A	In buildings of up to two storeys, any concrete external walls that could collapse as complete panels to comply with specification C1.11.	This clause is not applicable to this project.

Clause	Reference	Comment
C1.13	**Fire-protected timber – Concession**	
Noted	Fire-protected timber may be used wherever an element is required to be non-combustible, provided: • The building is a separate building or part of a building. • The building has an effective height of not more than 25 m; and • The building contains a sprinkler system throughout; and • Any related insulation is non-combustible; and • Cavity barriers are provided in accordance with Specification C1.13.	Further information or documentation required to clarify compliance. Architect to advise if this method of construction is proposed
C1.14	**Ancillary Elements**	
? / CR	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 not combustible as tested to AS 1530.1 (Test report required) • Plumbing fixtures / fitting (i.e., gutter, downpipe, etc) • Grate / grille with less than $2m^2$ associated with a building service • Light fittings • Required sign (BCA required sign only) • Flashing • Awning, sunshade, canopy (except ground level and level above) that is not in an exit, subject to fire test reports and that not located over an exit. • Security, Intercom, or announcement devices • Wiring • Paint, lacquer, or similar finish • Gasket / caulking / sealant for any of the above **BCA Definition**: Ancillary element means an element that is secondary to and not an integral part of another element to which it is attached.	Compliance required for any ancillary elements. Further information or documentation required to clarify compliance.

Part C2 – Compartmentation and Separation		
Clause	**Reference**	**Comment**
C2.2	**General floor area limitations**	
? / PS	Table C2.2 limits the size of fire compartments to: - Class 5 or 9b or 9c Type B, 5,500 m^2 & 33,000m^3 Type C, 3,000 m^2 & 18,000m^3	Building A to D have been assessed as a single fire compartment with floor area less than 5,500m^2. Architect to provide total floor area and volume of building to confirm compliance.
C2.3	**Large isolated buildings**	
N/A	A fire compartment may exceed that specified in Table C2.2. Buildings under of exceeding 18,000m^2 in floor area to be provided with specific requirements Generally, a sprinkler system complying with Specification E1.5 provided with a perimeter vehicular access complying with C2.4 (b) – additional measures may include a smoke exhaust system in accordance with Specification E2.2b or smoke-and-heat vents in accordance with Specification E2.2c.	The proposed development has not been assessed as a large isolated building. This clause is not applicable to this project.
C2.4	**Requirements for open spaces and vehicular access**	
N/A	Requirements for open spaces and vehicular access capable of supporting emergency vehicles, 6m wide not more than 18m from the building. Part (a) – 18m wide open space without any buildings or obstructions whatsoever and must also comply with Part (b) of this section.	This clause is not applicable to this project.

Clause	Reference	Comment
C2.5	**Class 9a & 9c buildings**	
N/A	Class 9a & 9c Fire Compartmentation and separation requirements	This clause is not applicable to this project.
C2.6	**Vertical separation of openings in external walls**	
N/A	The following applies to buildings Type A Construction that are not provided with a sprinkler system installed throughout. Where the vertical projection of an opening in an external wall falls no further than 450 mm outside an opening in the storey next below, the openings must be provided with vertical separation complying with Clause C2.6, that is: • They must be protected with a 900mm high (FRL 60/60/60) spandrel extending at least 600mm above the separating slab, or • They must be provided with a 1.1m horizontal projection (FRL 60/60/60) also extending at least 450mm either side of the openings. Note: The above does not apply to openings within the same stairway. Note: When the BCA requires an FRL the fire rating is required to come from both directions, from outside in and from inside out.	This clause is not applicable to this project.
Clause	**Reference**	**Comment**
C2.7	**Separation by fire walls**	
PS	Firewalls are to be designed/built to the various requirements of this provision.	This clause is not applicable to this project.
C2.8	**Separation of classifications in the same storey**	
Noted	Firewalls are needed to separate different classifications, or the building must be built to the higher fire resistance level.	This clause is not appliable to this project.
C2.9	**Separation of classifications in different storeys**	
Noted	The separating floors must have an FRL not less than that required for the lower storey use. Note: Determination of Floor FRL's must also consider compliance with C2.7 whereby the floor must have the same FRL as the fire wall of the fire compartment below and D2.12 whereby roof as open space must have an FRL not less than 120/120/120.	Noted
C2.10	**Separation of lift shafts**	

Clause	Reference	Comment
CR	The lift is to be enclosed in a fire-isolated shaft if it connects more than two storeys or three storeys if provided with a sprinkler system. Note: Emergency lifts must be in fire-rated shafts not less than FRL 120/120/120 (Type A Construction).	Lift Shafts are required to be fire isolated shafts. Colour coded FRL plans – Fire Rating Plans from the Architect are required for further assessment as the design progresses.
C2.11	**Stairs and lift in one shaft**	
✓	Not to be within the same shaft if either is required to be fire isolated.	The stairs and lifts are not sharing the same fire-isolated shaft
C2.12	**Separation of equipment**	
CR	Equipment comprising • lift motors and control plant, • emergency generators • central smoke control plant; • boilers or • batteries (over a certain size) Are required to be separated from the remainder of the building by construction achieving a FRL of 120/120/120 with openings protected by self-closing fire doors having an FRL of not less than –/120/30 to AS 1905.1. When separating a lift shaft and lift motor room, a FRL not less than 120/-/- is required. Note: Separation of on-site fire pumps must comply with the requirements of AS 2419.1-2005. Note: Battery rooms are rooms where the batteries stored exceed 200 kWh and 12 volts	None proposed. Machine room less lift assumed

Clause	Reference	Comment
C2.13	**Electricity supply system**	
CR	A substation located within a building or main switchboard, which sustains emergency equipment, must be separated from the remainder of the building by construction achieving a FRL of not less than 120/120/120.	No Substation is proposed inside the building/s, No emergency equipment proposed as detailed in this BCA Clause.
C2.14	**Public corridors in Class 2 & 3 buildings**	
N/A	In a Class 2 & 3 building, a public corridor, if more than 40m in length, must be divided at intervals of not more than 40m with smoke-proof walls complying with Clause 2 of Spec C2.5.	This clause is not applicable to this project.
Part C3 – Protection of Openings		
Clause	**Reference**	**Comment**
C3.2	**Protection of opening in external walls**	
✓	Openings in the external walls of adjoining buildings are to be protected in accordance with BCA Clause C3.4 if: • less than 3m to side or rear boundary • less than 6m from the far boundary of a road if not located at or near ground level • *Less than 6m from another building on the same allotment.*	*The buildings are setback greater than 3.0m from side boundaries with adjacent buildings greater than 6.0m apart.*

<table>
<tr><th>Clause</th><th>Reference</th><th>Comment</th></tr>
<tr><td>C3.3</td><td colspan="2">Separation of external walls and associated openings in different fire compartment</td></tr>
<tr><td>N/A</td><td>External walls of a <u>different fire compartments</u> to be separated by a fire wall of not less than FRL 60/60/60 or any openings must be protected in accordance with Clause C3.4 if within the distance set out in Table C3.3.

Table C3.3 DISTANCE BETWEEN EXTERNAL WALLS AND ASSOCIATED OPENINGS IN DIFFERENT FIRE COMPARTMENTS<table><tr><th>Angle between walls</th><th>Min Distance</th></tr><tr><td>0° (walls opposite)</td><td>6m</td></tr><tr><td>more than 0° to 45°</td><td>5m</td></tr><tr><td>more than 45° to 90°</td><td>4m</td></tr><tr><td>more than 90° to 135°</td><td>3m</td></tr><tr><td>more than 135° to less than 180°</td><td>2m</td></tr><tr><td>180°or more</td><td>Nil</td></tr></table><u>Note:</u> Please note that fire does not transfer through openings in 180° between different fire compartments.</td><td>The Building has been assessed as being one (1) fire compartment, as such at this stage this clause has no application.</td></tr>
<tr><td>C3.4</td><td colspan="2">Acceptable methods of protection</td></tr>
<tr><td>Noted</td><td>Where openings are exposed require to be protected by the followings:
Doorways:
Internal or external wall-wetting sprinklers as appropriate used with doors that are self-closing; or
–/60/30 fire doors that are self-closing.
Windows:
Internal or external wall-wetting sprinklers as appropriate used with windows that are automatic closing or permanently fixed in the closed position; or
–60/– fire windows that are automatically closing or permanently fixed in the closed position; or
–/60/– automatic closing fire shutters.
Other openings:
Excluding voids – internal or external wall-wetting sprinklers; or
Construction having an FRL not less than –/60/–
<u>Note:</u> Fire doors, fire windows and fire shutters must comply with BCA Specification C3.4.</td><td>Protection to openings required to be protected in Clause C3.2 must be protected in accordance with this clause or via Fire Safety Engineering if not DTS protection is proposed.</td></tr>
<tr><td>C3.5</td><td colspan="2">Doorways in fire walls</td></tr>
<tr><td>Noted</td><td>Doorways in a fire wall which are not part of a horizontal exit, <u>must not exceed ½ the length of the fire wall</u>, and:
have the FRL required for the fire wall, and
Be self-closing or automatic closing.
<u>Note:</u> Door in a fire wall can have an insulation level of at least 30.</td><td>This clause is for information.</td></tr>
</table>

Clause	Reference	Comment
C3.6	**Sliding fire doors**	
N/A	If utilised must fail-safe in the closed position, be suitably signposted with an audible alarm, signage, and directional arrow to indicate direction to slide door to open when in the closed position.	Sliding Fire Doors are not proposed for this building.
C3.7	**Doorways in horizontal exits**	
Noted	To be suitably protected by fire doors with FRL of not less than that required for the fire wall and be self-closing or automatic closing. Note: Door must swing in the direction of travel (this may be both ways if so either two doors or a multi directional swing fire door is required).	This clause is for information.
C3.8	**Openings in fire-isolated exits**	
CR	Doorways that open to fire-isolated stairways, fire-isolated passageways, or fire-isolated ramps, and are not doorways opening to a road or open space, must be protected by a -/60/30 fire door that is self-closing, or automatic closing. Fire Doors must also comply with AS 1905.1for the Fire Doors.	Compliance required.
C3.9	**Service penetrations in fire-isolated exits**	
CR	Fire exits must not be penetrated by services other than electrical wiring associated with lighting, stair pressurisation or the intercommunication system & hydrant system. ***Note***: No duct runs, pipes or electrical cables or plumbing can be located within or run through or at high level in fire stairs or corridors.	Compliance required.
C3.10	**Openings in fire rated lift shafts**	
N/A	Doors to be - /60/ - fire doors to AS1735.11. Lift indicator panels to be backed by -/60/60 construction if exceeding 35,000mm^2 in area.	Lift connects 2 levels only – not required
C3.11	**Bounding Construction; Class 2, 3 & 4 buildings**	
N/A	Doorway to each SOU to be protected by self-closing -/60/30 fire doors. Note: Protection of openings in an external wall are required where a path of travel from an SOU to a single exit does not provide a person seeking egress with alternative exits, and passes another SOU along a balcony, landing or the like.	This clause is not applicable to this project.
C3.12	**Openings in floors for services**	

Clause	Reference	Comment
CR	To be enclosed in a fire rated shaft with a FRL or a ceiling required to have a resistance to the incipient spread of fire in accordance with Specification C1.1 or protected by Clause C3.15 of BCA	Compliance required
Clause	**Reference**	**Comment**
C3.13	**Openings in shafts**	
CR	Openings in shafts must be protected by: • if it is in a sanitary compartment – a door or panel which together with its frame, is non-combustible or has an FRL of not less than –/30/30; or • a self-closing –/60/30 fire door or hopper; or • an access panel having an FRL of not less than –/60/30; or • if the shaft is a garbage shaft – a door or hopper of non-combustible construction.	Compliance required where applicable.
C3.15	**Openings for service installations**	
CR	Where services pass through an element which is required to achieve a FRL (other than an external wall or roof), the service must be fire protected in accordance with BCA Clause C3.15. These electrical, plumbing mechanical ventilation shafts etc. not to impair the FRL of rated members.	Compliance required where applicable.
C3.16	**Construction joints**	
CR	Where constriction joints are required to be fire resisting for integrity and insulation, they must be constructed identical to test prototype tested in accordance with AS1530.4	Compliance required.
C3.17	**Columns protected with lightweight construction to achieve an FRL**	
CR	Where required and passing through and building element required to have an FRL must be installed same as tested prototype	Compliance required.
Specification C1.1 – Fire Resisting Construction		
Clause	**Reference**	**Comment**
2.0	**General Requirements**	
Noted	Informational	Noted
2.1	**Exposure to fire-source features**	
Noted	A building element is exposed to a fire-source feature if any of the horizontal straight lines between that part and the fire-source feature, or vertical projection of the feature, is not obstructed by another part of the building that– • has an FRL of not less than 30/–/–; and • is neither transparent nor translucent.	Compliance required.
2.2	**Fire protection for a support of another part**	

Clause	Reference	Comment
CR	Where a part of a building required to have an FRL depends upon direct vertical or lateral support from another part to maintain its FRL, that supporting part must have an FRL not less than that required by other provisions of this Specification; and if located within the same fire compartment as the part it supports have an FRL in respect of structural adequacy the greater of that required for the supporting part itself and for the part it supports.	Compliance required.
2.3	**Lintels**	
Noted	A lintel must have the FRL required for the part of the building in which it is situated unless it does not contribute to the support of a fire door, fire window or fire shutter and meets the requirements of Spec C1.1 Clause 2.3 (a) & (b).	This clause is for information should lintels be proposed.
2.4	**Attachments not to impair fire-resistance**	
CR	The method of attaching or installing a finish, lining, ancillary element, or service installation to the building element must not reduce the fire-resistance of that element to below that required.	Compliance required.
Clause	**Reference**	**Comment**
2.5	**General concessions**	
Noted	Structures on roofs A non-combustible structure situated on a roof need not comply with the other provisions of this Specification if it only contains— (i) lift motor equipment; or (ii) one or more of the following: (A) Hot water or other water tanks. (B) Ventilating ductwork, ventilating fans, and their motors. (C) Air-conditioning chillers. (D) Window cleaning equipment. (E) (E) Other service units that are non-combustible and do not contain flammable or combustible liquids or gases.	This clause is for information.
2.6	**Mezzanine floors: Concession**	
N/A	Informational	This clause is not applicable to this project as no Mezzanines that meet BCA compliance are provided in the building.
2.7	**Enclosure of shafts**	
Note	Fire-isolated shafts are required to be enclosed at the top and bottom of the shaft with fire rated construction having an FRL required for the walls of a non-load-bearing shaft in the same building, as per specification C1.1. This fire rating is required in two directions. The above does not apply to shafts extending beyond the roof covering, other than fire isolated stair and lift shafts and the bottom of non-combustible shafts laid directly on the ground.	Fire and Lift Shafts are to be provided with a fire rated lid (in both directions of fire) to achieve an FRL of 120/120/120. Other Shafts – details of lid or extension above roof covering to be detailed on roof plan/detailed design

Clause	Reference	Comment
2.8	**Carparks in Class 2 and 3 Buildings**	
N/A	Class 2 buildings not more than 4 storeys Class 3 building not more than 3 storeys	This clause is not applicable to this project.
4.0	**Type B fire resisting construction**	
CR	The building is to be designed to comply with the general requirements of Spec C1.1 and Spec C1.1 Part 3.	Compliance required. Colour coded FRL plans – Fire Rating Plans are required for further assessment.
Clause	**Reference**	**Comment**
3.1	**Fire-resistance of building elements**	
CR	• The FRL's of all elements are to be in accordance with the FRL's detailed in the Table contained within Part 5.0 of this report (see above). • External walls, common walls and the flooring and floor framing of lift pits must be non-combustible. (Note: insulation and other components including sarking used must be non-combustible or C1.9) • Internal walls required to be fire rated must extend to– - To the underside of the floor next above; or - The underside of a roof complying with Table 3; or - If under Clause 3.5 the roof is not required to comply with Table 3, the underside of the non-combustible roof covering and, except for roof battens with dimensions of 75x50 mm or less or sarking-type material, must not be crossed by timber or other combustible building elements. • Load bearing internal walls (including those part of a loadbearing shaft) and fire walls must be of concrete or masonry. • Non-loadbearing internal walls required to be fire rated, as well as non-load bearing lift, ventilating, pipe, garbage, or similar shaft wall must be of non-combustible construction. Note: This includes non-combustible insulation. When an insulation material is not certified as non-combustible to AS 1530.1 then this material will need to be changed to a compliant insulation material i.e., not Rigid Board style. Note: The FRLs specified in Table 3 for an external column apply also to those parts of an internal column that face and are within 1.5m of a window and are exposed through that window to a fire-source feature. Note: It should also be noted that if Dincel material is to be used as an element where the BCA requires such element to be non-combustible, this material will need to be the subject of a Fire Engineering Assessment as is not DTS.	Compliance required for Type B Construction Refer Appendix B extract of Table 4 of Specification C1.1 which details the FRLs required for Type B Construction for Class 5 and 9b structures. Colour coded FRL plans – Fire Rating Plans are required for further assessment.

Clause	Reference	Comment
3.2	**Concessions for floors**	
Noted	A floor need not comply with Table 3 if — • it is laid directly on the ground; or • in a Class 2, 3, 5 or 9 building, the space below is not a storey, does not accommodate motor vehicles, is not a storage or work area, and is not used for any other ancillary purpose; or • it is a timber stage floor in a Class 9b building laid over a floor having the required FRL and the space below the stage is not used as a dressing room, storeroom, or the like; or • it is within a sole-occupancy unit in a Class 2 or 3 building or Class 4 part of a building; or • it is an open-access floor (for the accommodation of electrical and electronic services and the like) above a floor with the required FRL.	This clause is for information.
3.3	**Floor Loading of Class 5 and 9b buildings: Concession**	
Noted	If a floor in a Class 5 or 9b building is designed for a live load not exceeding 3kPa – • The floor next above (including floor beams) may have an FRL of 90/90/90; or • The roof if that is next above (including roof beams) may have an FRL of 90/60/30.	This clause is for information.
3.4	**Roof superimposed on concrete slab: Concession**	
Noted	A roof superimposed on a concrete slab roof need not comply with Clause 3.1 as to fire resisting construction if— • The superimposed roof and any construction between it and the concrete slab roof are non-combustible throughout; and • The concrete slab roof complies with Table 3.	This clause is for information.
3.5	**Roof: Concession**	
✓	A roof need not comply with Table 3 if its covering is non-combustible and the building— • *has a sprinkler system complying with Specification E1.5 installed throughou*t; or • **has a rise in storeys of 3 or less; or** • is of Class 2 or 3; or • has an effective height of not more than 25m and the ceiling immediately below the roof has a resistance to the incipient spread of fire to the roof space of not less than 60 minutes.	

Clause	Reference	Comment
3.6	**Roof lights**	
N/A	If a roof is required to have an FRL or its covering is required to be non-combustible, roof lights or the like installed in that roof must — • Have an aggregate area of not more than 20% of the roof surface; and • Be not less than 3m from— - Any boundary of the allotment other than the boundary with a road or public place; and - Any part of the building which projects above the roof unless that part has the FRL required of a fire wall and any openings in that part of the wall for 6 m vertically above the roof light or the like are protected in accordance with C3.4; and - Any roof light or the like in an adjoining sole-occupancy unit if the walls bounding the unit are required to have an FRL; and - Any roof light or the like in an adjoining fire-separated section of the building; and • If a ceiling with a resistance to the incipient spread of fire is required, be installed in a way that will maintain the level of protection provided by the ceiling to the roof space.	This clause is not applicable to this project
3.7	**Internal columns and walls: Concession**	
CR	For a building with an effective height of not more than 25 m and having a roof without an FRL in accordance with Clause 3.5, in the storey immediately below that roof, internal columns other than those referred to in Clause 3.1(f) and internal walls other than fire walls and shaft walls may have— • in a Class 2 or 3 building: FRL 60/60/60; or • in a Class 5, 6, 7, 8 or 9 building— - with rise in storey exceeding 3: FRL 60/60/60 - ***with rise in storey not exceeding 3: no FRL***.	Noted – Concession able to be utilised for ***internal*** columns on upper level.
3.8	**Open spectator stands and indoor sports stadiums concession**	
N/A	In an open spectator stand or indoor sports stadium, the following building elements need not have the FRL specified in Table 3: • The roof if it is non-combustible. • Columns and loadbearing walls supporting only the roof if they are non-combustible. Any non-loadbearing part of an external wall less than 3 m—from any fire-source feature to which it is exposed if it has an FRL of not less than –/60/60 and is non-combustible; or - from an external wall of another open spectator stand if it is non-combustible.	This clause is not applicable to this project.

Clause	Reference	Comment
3.9	**Carparks**	
	Notwithstanding Clause 3.1, a carpark may comply with Table 3.9 if it is an open deck carpark or is protected with a sprinkler system complying with Specification E1.5. Note: See Table 3.9 directly from the BCA for more details.	This clause is not applicable to this project as no internal carparks proposed.
4.0	**Type B fire resisting construction**	
CR	The building is to be designed to comply with the general requirements of Spec C1.1 and Spec C1.1 Part 4.	Compliance required.
5.0	**Type C fire resisting construction**	
N/A	The building is to be designed to comply with the general requirements of Spec C1.1 and Spec C1.1 Part 5.	This clause is not applicable to this project.
Specification C1.8 – Structural Test for Lightweight Construction		
Clause	**Reference**	**Comment**
1-6	**Tests, specimens, methods, and criteria from compliance**	Compliance required.
Specification C1.10 – Fire Hazard Properties		
Clause	**Reference**	**Comment**
1	**Scope**	
Noted	Informational	Noted
2	**Application**	
Noted	Informational	Noted
3	**Floor linings and floor coverings**	
CR	A floor lining or floor covering must have– • a critical radiant flux not less than that listed in Table 2; and • in a building not protected by a sprinkler system complying with Specification E1.5, a maximum smoke development rate of 750 percent-minutes; and • a group number complying with Clause 6(b), for any portion of the floor covering that is continued more than 150 mm up a wall.	Design statement (or other means) required from appropriately qualified designer/person that the building will comply with this clause at the design stage & installation certification will be required on completion of the project from the relevant installer or engaged consultant.
4	**Wall and ceiling linings**	

Clause	Reference	Comment
CR	• A wall or ceiling lining system must comply with the group number specified in Table 3 (Group 1, 2 or 3 for non-fire / lift areas) and for buildings not fitted with a sprinkler system complying with Specification E1.5 have – - a smoke growth rate index not more than 100; or - an average specific extinction area less than 250 m2/kg. • A group number of a wall or ceiling lining and the smoke growth rate index or average specific extinction area must be determined in accordance with AS5637.1.	Design statement (or other means) required from appropriately qualified designer/person that the building will comply with this clause at the design stage & installation certification will be required on completion of the project from the relevant installer or engaged consultant.
5	**Air-handling ductwork**	
CR	Rigid and flexible ductwork must comply with the fire hazard properties set out in AS4254 Parts 1 and 2.	Design statement (or other means) required from appropriately qualified designer/person that the building will comply with this clause at the design stage & installation certification will be required on completion of the project from the relevant installer or engaged consultant.
Clause	**Reference**	**Comment**
6	**Lift cars**	
CR	Materials used as— • floor linings and floor coverings must have a critical radiant flux not less than 2.2; and • wall and ceiling linings must be a Group 1 material or a Group 2 material in accordance with AS5637.1.	Design statement (or other means) required from appropriately qualified designer/person that the building will comply with this clause at the design stage & installation certification will be required on completion of the project from the relevant installer or engaged consultant.
7	**Other materials**	
CR	Materials and assemblies not included in Clauses 3, 4, 5 or 6 must not exceed the indices set out in Table 4. This applies to such elements such as : • Insulation to internal walls/ceilings • Other items captured by C1.10 not listed in the specification	Design statement (or other means) required from appropriately qualified designer/person that the building will comply with this clause at the design stage & installation certification will be required on completion of the project from the relevant installer or engaged consultant.
Specification C3.4 – Fire Doors, Smoke Doors, Fire Windows, and Shutters		
Clause	**Reference**	**Comment**
1	**Scope**	
Noted	Informational	This clause is for information.
2	**Fire doors**	
CR	Fire door sets must comply with AS1905.1 be self-closing. Not Fail by radiation through any glazed part during the period specified for integrity in the required FRL.	Design statement (or other means) required from appropriately qualified designer/person that the building will comply with this clause at the design stage & installation certification will be required on completion of the project from the relevant installer or engaged consultant.

Clause	Reference	Comment
3	**Smoke Doors**	
N/A	Smoke doors must be constructed so that smoke will not pass from one side of the doorway to the other and, if they are glazed, there is minimal danger of a person being injured by accidentally walking into them. Refer to Clause 3.2 of BCA Specification C3.4.	Not Applicable at this stage, no Smoke Doors proposed
4	**Fire Shutters**	
N/A	Fire shutters must comply with Clause 4 of BCA Specification C3.4.	Design statement (or other means) required from appropriately qualified designer/person that the building will comply with this clause at the design stage & installation certification will be required on completion of the project from the relevant installer or engaged consultant.
5	**Fire Windows**	
N/A	Fire window must be identical to the prototype which achieved the required FRL and be installed in the same manner and in an opening that is not larger than the tested prototype.	
Specification C3.15 – Penetration of Walls, Floors and Ceiling by Services		
Clause	**Reference**	**Comment**
1	**Scope**	
Noted	Informational	Noted
2	**Application**	
Noted	Informational	Noted
3	**Metal pipe system**	
CR	Metal pipes must be 200mm separated from any other penetration otherwise insulated according to this clause. The penetration must be fire stopped.	Compliance required. Design statement (or other means) required from appropriately qualified designer/person that the building will comply with this clause at the design stage & installation certification will be required on completion of the project from the relevant installer or engaged consultant.
4	**Pipes penetrating sanitary compartments**	
CR	The penetration of a PVC or metal pipe must be fire stopped in accordance with this clause.	Compliance required. Design statement (or other means) required from appropriately qualified designer/person that the building will comply with this clause at the design stage & installation certification will be required on completion of the project from the relevant installer or engaged consultant.
5	**Wires and cables**	

Clause	Reference	Comment
CR	Wires and cables must be located 50mm from any other penetration (40mm max. bunch of cables). The penetration must be fire stopped.	Compliance required. Design statement (or other means) required from appropriately qualified designer/person that the building will comply with this clause at the design stage & installation certification will be required on completion of the project from the relevant installer or engaged consultant.
6	**Electrical switches and outlets**	
CR	Recess for electrical switched or the like must be not more than 300mm horizontally, 600mm vertically of any opening or recess on the opposite side of the wall, or half of the wall thickness.	Compliance required. Design statement (or other means) required from appropriately qualified designer/person that the building will comply with this clause at the design stage & installation certification will be required on completion of the project from the relevant installer or engaged consultant.
Clause	**Reference**	**Comment**
7	**Fire-stopping**	
CR	Fire stopping methods must be used in accordance with this clause and according to the test report. Prototype must be identical to the installed penetration. I	Compliance required. Design statement (or other means) required from appropriately qualified designer/person that the building will comply with this clause at the design stage & installation certification will be required on completion of the project from the relevant installer or engaged consultant.

Section D: Access and Egress		
Part D1 – Provision for Escape		
Clause	**Reference**	**Comment**
D1.2	**Number of exits required**	
✓	• The number of exits is to be designed to satisfy performance standard DP4 of the BCA. • A minimum of one exit is required from all buildings, and • Two (2) exits for each storey are required for buildings over 25m, basement storeys or for class 9b of 6 storey or greater, buildings that exceed 50 persons, school buildings, class 9a patient care areas or class 9c sleeping areas, etc.	The building as designed / indicated complies with this clause.
D1.3	**When fire isolated exits are required**	
N/A	• Every stair in a building must be fire isolated unless it does not connect or pass through more than 3 consecutive floors in a sprinkler protected building or 2 storeys in a non-sprinkler protected building. • Class 9a & 9c buildings require stairs to be fire isolated. • Those stairs not requiring fire isolating must discharge at a level of road or open space	This clause is not applicable to this project.

Clause	Reference	Comment
D1.4	**Exit travel distances**	
✓	No point on the floor must be more than 20m to an exit or a point in which travel in different directions to 2 exits is available, in which case, the maximum distance to 1 exit cannot exceed 40m.	This is complied with, however there are some areas that have egress travel through classrooms, meeting rooms etc. ***Note***: Exit sign detail to indicate egress paths and Door Latching to ensure no lockable doors in direction of egress.
Clause	**Reference**	**Comment**
D1.5	**Distance between alternative exits**	
✓	To be no less than 9m or more than 45m in a Class 2, 3, and 9a, or 60m in all other classes, uniformly distributed with access to 2 exits if required and not converge so they become less than 6m apart.	The building as designed / indicated complies with this clause.
D1.6	**Dimensions of exits and paths of travel**	
CR	• Height – minimum 2.1m or 2.4m for other areas: doorways 1980mm • Width 1m minimum clear width • Width change based upon populations – generally for populations up to 100 persons require 1m of egress, up to 200- 2m and then varies according to use over 200 people per floor / storey depending on the use/classification. • Door width clear opening size of a minimum 850mm (AS 1428.1-2009) • Egress dimensions are not to diminish in direction of travel. Note: see also re number of exits for certain uses Clause D1.2 as may require additional exits no matter the population of the storey.	Further review of the developed detailed design is required for absolute confirmation.
D1.7	**Travel by fire isolated stairs**	
N/A	• A Doorway opening into a fire isolated stair or passageway the sole occupancy unit can only come from an area/ room occupying the entire floor as defined in the BCA. • Must provide independent egress and discharge to road or open space or complying covered area. • Details of height and extent of open area depends on distance and location of the discharge. This clause outlines details of the methods of compliance. • Also, if passing by openings of the building within 6m of the pathway, then the openings are to be protected internally 9 Fire doors fire dampers, fire shutters or sprinklers on fixed non-operable glazing • More than two (2) doorways opening into a fire isolated stair/passageway	This clause is not applicable to this project.
D1.8	**External stairs or ramps in lieu of fire isolated exits**	

Clause	Reference	Comment
✓	External stairs or ramps may be used in lieu of a fire-isolated stair or ramp to a building under 25m in effective height.	This clause is not applicable to this project.
D1.9	**Travel by non-fire-isolated stairs**	
CR	Travel by non-fire-isolated stairs: • The distance from any point on the floor to a point of egress not to exceed 80m. • The stairway not to discharge at a point more than: - 20m to an exit - 40m to one of 2 exits.	Compliance is readily achieved with these requirements. Confirmation received as design progresses by Structural Engineering/Architect.
D1.10	**Discharge from exits**	
✓	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. If a required exit leads to an open space, the path of travel to the road must have an unobstructed width throughout of not less than— (i)the minimum width of the required exit; or (ii)1 m, whichever is the greater. If an exit discharges to open space that is at a different level than the public road to which it is connected, the path of travel to the road must be by— (i)a ramp or other incline having a gradient not steeper than 1:8 at any part, or not steeper than 1:14 if required by the Deemed-to-Satisfy Provisions of Part D3; or (ii) a stairway complying with the Deemed-to-Satisfy Provisions of the BCA. (if Class 9a cannot be a stair) The discharge point of alternative exits must be located as far apart as practical.	The building as designed / indicated appears to comply with this clause at this stage of the design.
D1.11	**Horizontal exits**	
N/A	May be counted as required exits if the path of travel from a fire compartment leads by one or more horizontal exits directly into another fire compartments which has at least one required exit which is not a horizontal exit. Cannot be utilised in some classes or areas of buildings details to be assessed to ensure compliance with specific clause	Not applicable at this stage as no fire walls are proposed at this stage.
D1.12	**Non-required stairs**	
✓	May connect 2 levels in a non-sprinkler protected building. Within a sprinkler protected building may connect / serve 3 storeys as long as one level is at ground level/open space discharging.	Compliance readily achieves with the BCA.
D1.13	**Number of persons accommodated**	

Clause	Reference	Comment
✓	To be in accordance with Table D1.13 of the BCA or by other means such as confirmation by client of design occupancy for the building.	Population has been provided, refer Clause F2.4 of this report.
D1.16	**Plant rooms and lift motor rooms: Concessions**	
N/A	• Where a plant room or lift motor, room has a floor area: - Not more than 100m2 a ladder may be used in lieu of a stairway. - More than 100m2 but less than 200m2 where two or more points of egress are provided, a ladder may be used in lieu of a stairway from all but one of those points. • A ladder to the plant room is to comply with AS 1657 and the ladder to the lift motor room is to comply with AS 1735.2. Note: Lift machine room access – AS 1657 access may be utilised if the lift machine room complies with the listed parameters of Clause D1.16 (a) and (b) (iv) of the BCA	Plant room is on Floor level, no Ladder access expected / proposed
Clause	**Reference**	**Comment**
D1.17	**Access to lift pits**	
CR	Requirements apply to access to lift pits greater than 3m including signage.	Design statement (or other means) required from appropriately qualified designer/person that the building will comply with this clause at the design stage & installation certification will be required on completion of the project from the relevant installer or engaged consultant.
D1.18	**Egress from Early Childhood Centres**	
N/A	(a) Every part of a Class 9b early childhood centre must be wholly within a storey that provides direct egress to a road or open space. (b) The requirements of (a) do not apply in a building with a rise in storeys of not more than 2, where the class 9b early childhood centre is the only use in that building.	This clause is not applicable to this project as no Childcare proposed in the building.
Part D2 – Construction of Exits		
Clause	**Reference**	**Comment**
D2.2	**Fire isolated stairs**	
N/A	Must be in a fire resisting shaft and be constructed of non-combustible materials and if there is local failure, not cause structural damage or impair the fire resistance of the shaft.	This clause is not applicable to this project
D2.3	**Non-fire-isolated stairs**	

Clause	Reference	Comment
CR	Non fire isolated stairways must be constructed of either: • reinforced or pre-stressed concrete • 6mm thick steel • 44mm thick timber	Compliance required.
D2.4	**Separation of rising and descending stairs flights**	
N/A	A required fire isolated stair cannot connect above and below ground flights unless separated by fire and smoke separation in accordance with this clause of the BCA.	This clause is not applicable to this project
Clause	**Reference**	**Comment**
D2.5	**Open access ramps and balconies**	
N/A	Open access ramp or balcony is provided to meet the requirements of smoke hazard management E2.2a, it must; • have ventilation openings to the outside air; and • Not be enclosed on its open sides above height of 1m.	This clause is not applicable to this project.
D2.6	**Smoke lobbies**	
N/A	Smoke lobby required by D1.7 must; • have a floor area not less than 6sqm; and • be separated by walls impervious to smoke; and • be fitted with smoke doors; and • Be pressurised if the exit is required to be.	This clause is not applicable to this project.
D2.7	**Installations in exits and paths of travel**	
CR	• No openings to ducts conveying hot products of combustion permitted. • Gas or fuel services not permitted in required exits. • Electric or services equipment not permitted unless in a non-combustible and smoke sealed enclosure.	Design statement (or other means) required from appropriately qualified designer/person that the building will comply with this clause at the design stage & installation certification will be required on completion of the project from the relevant installer or engaged consultant.
D2.8	**Enclosure of space beneath stairs**	
✓	• in a fire stair no cupboards/rooms are permitted under the stair • The space beneath the non-fire isolated stairs is not to be enclosed to form cupboards, rooms or the like unless in 60/60/60 FRL construction with 60/60/30 fire doors to AS 1905.1 self-closing doors..	No enclosure under any of the stairs or stage stairts is indicated / proposed on the plans.
D2.9	**Width of stairs**	
CR	Width is to be measured clear of all obstructions and the stair must extend a minimum 2.0m above nosing's. (unless specified elsewhere to require a greater height)	Further review of the detailed design required in order to determine design compliance.
D2.10	**Pedestrian ramps**	

<table>
<tr><th>Clause</th><th>Reference</th><th>Comment</th></tr>
<tr><td>N/A</td><td>A fire isolated ramp may be substituted for a fire isolated stairway where installed in accordance with AS 1428.1, and not having a gradient steeper than 1:8 and be finished with a slip resistant as per Table D2.14</td><td>This clause is not applicable to this project.</td></tr>
<tr><td>D2.11</td><td colspan="2">Fire-isolated passageways</td></tr>
<tr><td>CR</td><td>To attain the same FRL as the fire isolated stair being an FRL of 120/120/120 FRL in both directions of fire.</td><td>Compliance required to any passageways leading to the fire stairs. Further assessment of the FRL Plans is required.</td></tr>
<tr><th>Clause</th><th>Reference</th><th>Comment</th></tr>
<tr><td>D2.12</td><td colspan="2">Roof as open space</td></tr>
<tr><td>N/A</td><td>If an exit discharges to a roof of a building, the roof must;
have an FRL 120/120/120; and
Have roof lights or other openings within 3m of the path of travel.</td><td>This clause is not applicable to this project.</td></tr>
<tr><td>D2.13</td><td colspan="2">Treads and risers</td></tr>
<tr><td>CR</td><td>minimum 2 risers / maximum 18 in each flight
risers 115mm min 190 mm max - going 250mm min 355mm max - 2R+G 550mm min 700mm max.
Goings and risers to be constant.
risers not to permit 125mm sphere to pass through
treads to be slip resistant as per Table D2.14
no stepped quarter landings</td><td>Further review of the detailed design required in order to determine design compliance.</td></tr>
<tr><td>D2.14</td><td colspan="2">Landings & Slip Resistance requirements</td></tr>
<tr><td>CR</td><td>Maximum gradient not to exceed 1:50 and be a minimum 750 long measured from the inside edge of the landing.

<u>Note</u>: if required for Disabled access the landing sizes and circulation areas will be determine in accordance with AS 1428.1-2009 and will exceed these minimums.

<table>
<tr><th rowspan="2">Application</th><th colspan="2">Surface Conditions</th></tr>
<tr><th>Dry</th><th>Wet</th></tr>
<tr><td>Ramp Steeper than 1:14</td><td>P4 or R11</td><td>P5 or R12</td></tr>
<tr><td>Ramp steeper than 1:20 but flatter than 1:14</td><td>P3 or R10</td><td>P4 or R11</td></tr>
<tr><td>Tread or Landing Surface</td><td>P3 or R10</td><td>P4 or R11</td></tr>
<tr><td>Nosing or landing edge strip</td><td>P3</td><td>P4</td></tr>
</table></td><td>Design statement required from the architect.</td></tr>
<tr><td>D2.15</td><td colspan="2">Thresholds</td></tr>
</table>

Clause	Reference	Comment
CR	• No step or ramp at any point closer to the door than the width of the door leaf. • Generally, doors opening to outside are able to be provided with a maximum 190mm step or 50mm if Class 9b Assembly building (NSW) • If the building is required to be accessible the doorways that open to road or open space and must be provided with a threshold ramp or step ramp in accordance with AS1428.1-2009 (except for D3.4 exempted areas and discharges from fire isolated stairs)	Compliance required. Further review of the pending detail required.
Clause	**Reference**	**Comment**
D2.16	**Balustrades**	
CR	A continuous balustrade or barrier must be provided along the side of any roof to which public access is provided, any stairway or ramp, any floor, corridor, hallway, balcony, veranda, mezzanine, access bridge or the like and along any side of any access path to a building if it is not bounded by a wall and the level above the floor or ground surface is more than 4m where it is possible to fall through an open window or 1m in any other case. Note: Frameless glass balustrades are no longer a feasible option to achieve compliance with the BCA – see AS 1288-2006 for details of balustrade to ensure design achieves compliance or the structural engineer is to design the glazing in this location to ensure compliance with the structural code. BCA 2014 (Residential buildings): Effective from 1st May 2013, the BCA will require window barriers and non-climbable elements below openable windows where the floor beneath the window is more than certain distances above the surface beneath. – See BCA Clause D2.24 for details	Compliance required. Further review of the pending detail required.
D2.17	**Handrails**	
CR	Required along one side and on both sides of stairs over 2m in width, 865mm above nosing's and be continuous.	Further review of the detailed design required in order to determine design compliance.
D2.18	**Fixed platforms, walkways, stairways, and ladders**	
CR	Treads, risers, handrails, ladders and balustrades to plant rooms and the like must comply with AS 1657	Further review of the detailed design required in order to determine design compliance.
D2.19	**Doorways and doors**	
CR	A doorway serving as a required exit (or forming part of a required exit) must not be revolving door, roller shutter or tilt door. Can be fitted with a sliding door if it leads directly to open space and can be opened manually under a force of not more than 110N and be fitted with a fail-safe device if the door is power operated.	Compliance Required

Clause	Reference	Comment
D2.20	**Swinging doors**	
CR	Must not encroach more than 500mm into the required width of the stair or 100mm when fully open and swing in the direction of travel.	Compliance Required
Clause	**Reference**	**Comment**
D2.21	**Operation of latch**	
CR	To be located 900mm to 1100mm above the floor and be openable with a single-handed downward action. It must be such that the hand must not slip, i.e., "D" shaped handle and have a clearance between the handle and the back of the door of not less than 35 mm and bot more than 45 mm. Fail safe unlock is permitted as long as linked to the base building fire alarm system. OR a single hand pushing action on a single device which is located between 900 mm and 1.2 m from the floor; and where the latch is not on the door itself; manual controls to power-operated doors must be at least 25 mm wide, proud of the surrounding surface and located— (aa) not less than 500 mm from an internal corner; and (bb) for a hinged door, between 1 m and 2 m from the door leaf in any position; and (cc) for a sliding door, within 2 m of the doorway and clear of a surface mounted door in the open position, braille and tactile signage complying with Clause 3 and 6 of Specification D3.6 must identify the latch operation device.	Compliance Required Design statement (or other means) required from appropriately qualified designer/person that the building will comply with this clause at the design stage & installation certification will be required on completion of the project from the relevant installer or engaged consultant. ***Note: Doors in path of travel for egress compliance are not able to be lockable and to be free egress in path of travel with associated exit signage.***
D2.22	**Re-entry from fire-isolated exits**	
N/A	Every door serving a fire isolated must not be locked from the inside to prevent re-entry to the storey or room, where the subject stair serves any storey over 25m in height. Specific details of compliance are defined in this clause of the BCA – the doors all must unlock on fire trip, if needed to be locked may be provided with alarm to allow re-entry in a non-fire situation	This clause is not applicable to this project as the building is less than 25m effective height as defined in the BCA.

Clause	Reference	Comment
D2.23	**Signs on doors**	
N/A	Fire & Smoke Door signage required: • "Fire Safety Door – Do Not Obstruct" (if on magnamatic hold open device • "Fire Safety Door-Do Not Obstruct – Do Not Keep open" – if self-closing door • Fire Safety Door – DO Not Obstruct – for the discharge door to outside from a fire isolated exit These signs are only required to: • Doors opening into a fire isolated exit • Required Smoke Doors • Fire doors used as Horizontal Exits • Door leading from a fire isolated exit to outside The location of signs, i.e., on one side or both sides is: • For Horizontal fire door exits, smoke doors that swing both ways, doors on hold open devices and door leading from a fire exit to outside – signage on both sides of the door • Doors into fire isolated exits, and single swing smoke doors – on the side facing the occupants when exiting the area Note: See Clause D3.6 for Exit Signage to Exit doors, which is in addition to this signage, Braille, and Tactile signage for Disabled access reasons.	Not required as no Fire isolated exits required for the building.

Clause	Reference	Comment
D2.24	**Protection of Openable Windows**	
CR	(a) A window opening must be provided with protection, if the floor below the window is 2 m or more above the surface beneath in— (i) a bedroom in a Class 2 or 3 building or Class 4 part of a building; or (ii) a Class 9b early childhood centre. (b) Where the lowest level of the window opening is less than 1.7 m above the floor, a window opening covered by (a) must comply with the following: (i) The openable portion of the window must be protected with— (A) a device to restrict the window opening; or (B) a screen with secure fittings. (ii) A device or screen required by (i) must— (A) not permit a 125mm sphere to pass through the window opening or screen; and (B) resist an outward horizontal action of 250 N against the— (aa) window restrained by a device; or (bb) screen protecting the opening; and (C) have a child resistant release mechanism if the screen or device is able to be removed, unlocked, or overridden. (c) A barrier with a height not less than 865 mm above the floor is required to an openable window— (i) in addition to window protection, when a child resistant screen release mechanism is required by (b)(ii)(C); and (ii) for openable windows 4m or more above the surface beneath if the window is not covered by (a). (d) A barrier covered by (c) must not— (i) permit a 125mm sphere to pass through it; and (ii) have any horizontal or near horizontal elements between 150mm and 760mm above the floor that facilitate climbing	Compliance required if any openable windows are proposed to upper storey.

Clause	Reference	Comment
D2.25	**Timber Stairways – Concession**	
Noted	(a) Notwithstanding D2.2(a), timber treads, risers, landings and associated supporting framework which— (i) has a finished thickness of not less than 44 mm; and (ii) has an average density of not less than 800 kg/m3 at a moisture content of 12%, may be used within a required fire-isolated stairway or fire-isolated passageway constructed from fire-protected timber in accordance with C1.13 subject to— (iii) the building being protected throughout by a sprinkler system complying with Specification E1.5 which extends to within the fire-isolated enclosure; and (iv) fire protection being provided to the underside of stair flights and landings located immediately above a landing level which— (A) is at or near the level of egress; or (B) provides direct access to a carpark. (C) Fire protection required by (a) must be not less than one layer of 13 mm fire-protective grade plasterboard fixed in accordance with the system requirements for a fire-protective covering.	This clause is for information.

Part D3 – Access for People with Disabilities – Excluded; **refer to separate report from Access Consultant**

Section E: Services and Equipment		
Part E1 – Fire Fighting Equipment		
Clause	**Reference**	**Comment**
E1.3	**Hydrants**	
CR / PS	• System to be provided to serve whole building: - Floor area exceeds 500m^2 - Installed to AS2419.1-2005 - Pump set to AS2419.1-2005. - A fire brigade is within 50km from the building measured along roads and is capable of utilising a fire hydrant. • The fire hydrant system must be installed in accordance with AS 2419.1 except – (A) a Class 8 electricity network substation need not comply with clause 4.2 of AS 2419.1 if— (aa) it cannot be connected to a town main supply; and (bb) one hour water storage is provided for firefighting; and (B) where a sprinkler system is installed throughout a building in accordance with AS 2118.1, AS 2118.4, AS 2118.6, FPAA101H or FPAA101D the fire hydrant booster protection requirements of clauses 7.3(c)(ii) and 7.3(d)(iii) of AS 2419.1 do not apply; and (C) a fire hydrant booster assembly may be located between 3.5 m and 10 m of the building, and need not comply with clause 7.3(d)(iii) of AS 2419.1 where the assembly is protected by an adjacent fire-rated freestanding wall that— (aa) achieves an FRL of not less than 90/90/90; and (bb)extends not less than 1 m each side <u>Note:</u> Details of the proposed Hydrant Booster locations are to be provided, to ensure compliance with AS2419.1 (2005)	As the building has a floor area greater than 500m2, a fire hydrant system complying with AS2419.1-2005 must be provided to serve the building. Details of the proposed Hydrant Booster locations are to be provided, to ensure compliance with AS2419.1 (2005) Details should be provided showing: • Hydrant booster assembly location. The booster location must comply with the following: - be within 8m of a hardstand for fire brigade appliance; - be within sight of the main entry; - **<u>If</u>** it is attached to the building, be separated from the building by construction achieving FRL 90/90/90 for 2m either side of and 3m above the upper hose connections. - **<u>If</u>** Separate to the Building to be located more than 10m away from the building • Hydrant pump room location (if a pump set is required). An internal pump room must have a door opening to road or open space or egress to open space via a fire-isolated exit.

E1.4	**Fire hose reels**	
CR	E1.4 does not apply to— (i) a Class 2, 3 or 5 building or Class 4 part of a building; or (ii)a Class 8 electricity network substation; or (iii)a Class 9c building; or (iv)classrooms and associated corridors in a primary or secondary school.	Hydraulic Consultant to confirm compliance to BCA E1.4 and AS 2441-2005 Fire Hose Reels required to Hall (Building C) This clause is not applicable to all other areas as they are Class 5 ad Class 9b Classrooms areas.
Clause	**Reference**	**Comment**
E1.5	**Sprinklers**	
N/A	System may be required to be provided to serve the entire building to AS2118.1 and Spec E1.5 as applicable, see Table E1.5 for details when required	This clause is not applicable to this project
Spec E1.5	**Fire Sprinkler Systems**	
N/A	Sprinkler Alarm valves must be located in a secure room which has direct egress to a road or open space. The area must be secured with system suitable to the NSWFB	This clause is not applicable to this project
E1.6	**Portable fire extinguishers**	
CR	To be installed to Table E1.6 and AS 2444. Note: For Class 5 buildings the Portable extinguishers are to be as per the enhanced requirements of this clause of the BCA..	Design statement (or other means) required from appropriately qualified Fire Services Engineer that the building will comply with this clause at the design stage & installation certification will be required on completion of the project from the relevant installer or engaged consultant.
E1.8	**Fire control centres**	
N/A	A fire control centre facility is required for a building which; • Exceeds 25m in effective height, or • Class 6, 7, 8 or 9 with a total floor area exceeding 18,000m2	This clause is not applicable to this project.

Part E2 – Smoke Hazard Management		
Clause	**Reference**	**Comment**
E2.2a	**General requirements**	
CR	This building requires those highlighted in bold below: • ~~Smoke Detection and Alarm System~~ • ~~Sprinkler system~~ • ~~Stair pressurisation~~ • ~~Automatic Smoke Exhaust system~~ • **Shutdown of Air Handling system and units** • ~~BOWS (Building Occupant Warning System)~~ • ~~Sound systems and intercom systems for emergency purposes~~	Design statement (or other means) required from appropriately qualified designer/person that the building will comply with this clause at the design stage & installation certification will be required on completion of the project from the relevant installer or engaged consultant. Service consultants are to advise any expected deviations from the BCA or Australian Standards for any fire services, to ensure design changed or fire engineering captures any issues
Clause	**Reference**	**Comment**
E2.3	**Provision for special hazards**	
N/A	Additional smoke hazard management measures may be necessary due to the: • Special characteristics of the building, including nature or quantity of materials stored or location of building in relation to a water supply to fight fire.	No special characteristics or hazards identified. No Laboratories proposed or any hazardous storage proposed on the plans at this stage.
Part E3 – Lift Installations		
Clause	**Reference**	**Comment**
E3.1	**Lift Installations**	
CR	An electric passenger lift installation and an electrohydraulic passenger lift installation must comply with Specification E3.1.	Design statement (or other means) required from appropriately qualified designer/person that the building will comply with this clause at the design stage & installation certification will be required on completion of the project from the relevant installer or engaged consultant.
E3.2	**Stretcher facility in lifts**	
N/A	• Must be provided within: - at least 1 emergency lift (if required by E3.4), or - where an emergency lift is not required, in at least 1 passenger lift installed to serve a storey above an effective height of 12m. • Required to be not less than 600mm wide and 2000mm long x 1400mm height.	This clause is not applicable to this project.
E3.3	**Warning against use of lift in fire**	
CR	Warning signs are required at each lift landing located near every call button in accordance with Figure E3.3.	Compliance required.
Clause	**Reference**	**Comment**
E3.4	**Emergency lifts**	

N/A	(a) At least one emergency lift complying with (e) must be installed in— (i) a building which has an effective height of more than 25 m; and (ii) a Class 9a building in which patient care areas are located at a level that does not have direct egress to a road or open space. (b) An emergency lift may be combined with a passenger lift and must serve those storeys served by the passenger lift so that all storeys of the building served by passenger lifts are served by at least one emergency lift. (c) Where two or more passenger lifts are installed and serve the same storeys, excluding a lift that is within an atrium and not contained wholly within a shaft— (i) at least two emergency lifts must be provided to serve those storeys; and (ii) if located within different shafts, at least one emergency lift must be provided in each shaft. (d) An emergency lift must— (i) be contained within a fire-resisting shaft in accordance with C2.10; and (ii) in a Class 9a building serving a patient care area— (A) have minimum dimensions, measured clear of all obstructions, including handrails, etc complying with Table E3.4; and (B) be connected to a standby power supply system where installed; and (iii) if the building has an effective height of more than 75 m, have a rating of at least— (A) 600 kg if not provided with a stretcher facility; or (B) 900 kg if provided with a stretcher facility.	This clause is not applicable to this project.
E3.5	**Landings**	
CR	Access and egress to and from lift well landings must comply with the Deemed-to-Satisfy Provisions of Section D.	Access consultant to confirm.
E3.6	**Passenger lifts**	
CR	Every passenger lift must comply with Table E3.6a and include Disabled accessible features as per Table E3.6b. The lift must not rely on a constant pressure device for its operation if the lift car is fully enclosed	Design statement (or other means) required from appropriately qualified designer/person that the building will comply with this clause at the design stage & installation certification will be required on completion of the project from the relevant installer or engaged consultant.
Clause	**Reference**	**Comment**
E3.7	**Fire service controls**	

CR	All passenger lift cars require fire service controls in accordance with AS 1735.2, serving a storey above an effective height of 12m.	Design statement (or other means) required from appropriately qualified designer/person that the building will comply with this clause at the design stage & installation certification will be required on completion of the project from the relevant installer or engaged consultant.
E3.8	**Aged care buildings**	
N/A	Where residents are on levels which do not have direct access to a road or open space the building must be provided with either: • At least one lift to accommodate a stretcher or • A ramp in accordance with AS1428.1 • Must both discharge at a level providing direct access to a road or open space	This clause is not applicable to this project.

Clause	Reference	Comment
E3.9	**Fire service recall operation switch**	
CR	(a) Each group of lifts must be provided with one fire service recall control switch required by E3.7 that activates the fire service recall operation at (e). The switch must— (i) be located at the landing nominated by the appropriate authority; and (ii) be labelled "FIRE SERVICE" in indelible white lettering on a red background; and (iii) have two positions with an "OFF" and an "ON" position identified; and (iv) be operable only by the use of a key that is removable in either the "OFF" position or the "ON" position. (b) Adhesive labels must not be used for compliance with (a)(ii) and (a)(iii). (c) The key in (a)(iv) must be able to turn all fire service recall control switches in the building and must have a different key combination to other keys used for lifts in the building. (d) The fire service recall operation must be activated by— (i) switching the fire service recall control switch in (a) to "ON"; or (ii) a signal from a fire management system approved by the appropriate authority. (e) The activation of the fire service recall operation at (d) must— (i) cancel all registered car and landing calls; and (ii) inactivate all door reopening devices that may be affected by smoke; and (iii) ensure lift cars travelling toward the nominated floor continue to the nominated floor without stopping; and (iv) ensure lift cars travelling away from the nominated floor stop at or before the next available floor without opening the doors (either automatically or by the door open button), reverse direction and travel without stopping to the nominated floor; and (v) for lifts stopped at a floor other than the nominated floor, close the doors and travel without stopping to the nominated floor; and (vi) ensure that lifts stay at the nominated floor with doors open; and (vii) permit all lifts to return to normal service if the fire service recall control switch at (a) is switched to the "OFF" position during or after the fire service recall operation. (f) The requirements of (e) do not apply to lifts on inspection service or when the lift car fire service control switch required by E3.10 is in the "ON" position. (g) Lifts having manual controls must signal an alert to the lift for the lift to return to the nominated floor containing the recall switch that activated the signal.	Design statement (or other means) required from appropriately qualified designer/person that the building will comply with this clause at the design stage & installation certification will be required on completion of the project from the relevant installer or engaged consultant.

Clause	Reference	Comment
E3.10	**Lift Car Fire Service Drive Control**	
CR	(a) The lift car fire service drive control switch required by E3.7 must be activated from within the lift car. The switch must— (i) be located between 600 mm and 1500 mm above the lift car floor; and (ii) be labelled "FIRE SERVICE" by indelible white lettering on a red background; and (iii) have two positions with an "OFF" and an "ON" position identified; and (iv) operate only by the use of a key that is removable in either the "OFF" position or the "ON" position. (b) Adhesive labels must not be used for compliance with (a)(ii) or (a)(iii). (c) When the lift car fire service drive control switch at (a) is turned to the "ON" position, the lift must— (i) not respond to the fire service recall control switch; and (ii) cancel all registered lift car and landing calls; and (iii) override all lift car call access control systems; and (iv) inactivate all door reopening devices that may be affected by smoke; and (v) allow the registration of lift car call by lift car call buttons, however the lift doors must not close in response to the registration of lift car calls; and (vi) activate door closing by constant pressure being applied on the "door close" button unless the button is released before the doors are fully closed, in which case the doors must reopen, and any registered lift car calls must be cancelled; and (vii) when the doors are closed, move the lift in response to registered lift car calls while allowing additional lift car calls to also be registered; and (viii) travel to the first possible floor in response to registered lift car calls and cancel all registered lift car calls after the lift stops; and (ix) ensure doors do not open automatically, rather by constant pressure being applied on the "door open" button unless the button is released before the doors are fully open, in which case the doors must re-close; and (x) the requirements of (c)(i) to (c)(ix) do not apply to a lift operating on inspection service. (d) A multi-deck lift installation must have systems in place that— (i) are able to communicate to the fire officer that the fire service drive control switch will not operate until all decks have been cleared of passengers; and (ii) ensure there is an appropriate method of clearing all deck landings of passengers; and (iii) (iii) maintain all doors to deck landings not containing the fire service control switch closed and inoperative while the lift is on fire service drive control.	Required. Design statement (or other means) required from appropriately qualified designer/person that the building will comply with this clause at the design stage & installation certification will be required on completion of the project from the relevant installer or engaged consultant.

Part E4 – Emergency Lighting, Exit and Warning Systems		
Clause	**Reference**	**Comment**
E4.2	**Emergency lighting**	
CR	Required in every path of travel to an exit and any room having a floor area more than 100m^2 that does not open to a corridor or space with emergency lighting and any room having a floor area in excess of 300m^2 required in every required non-fire isolated stair way. Emergency signage to be installed to AS 2293.1 -2005	Design statement (or other means) required from appropriately qualified designer/person that the building will comply with this clause at the design stage & installation certification will be required on completion of the project from the relevant installer or engaged consultant.
E4.3	**Measurement of distance**	
Noted	Distances other than vertical rise must be measured along the shortest path of travel whether by straight lines, curves, or a combination of both.	This clause is for information.
E4.4	**Design and operation of exit signs**	
CR	Every required exit sign must comply with AS 2293.1-2005 Note: Exit signs are required to be designed/installed to be over doorways or at a maximum height of 2.7m above FFL.	Design statement (or other means) required from appropriately qualified designer/person that the building will comply with this clause at the design stage & installation certification will be required on completion of the project from the relevant installer or engaged consultant.
E4.5	**Exit signage**	
CR	Required above egress doors and doors from an enclosed stair to open space. Directorial signs required to designate paths of travel. Exit signage to be installed to AS 2293.1 Note: Exit signs are required to be designed/installed to be over doorways or at a maximum height of 2.7m above FFL	Design statement (or other means) required from appropriately qualified designer/person that the building will comply with this clause at the design stage & installation certification will be required on completion of the project from the relevant installer or engaged consultant. **Note: Exit Signage to identify egress paths through meeting rooms/classrooms for travel distance compliance is to be provided**
E4.6	**Direction signs**	
CR	If an exit is not readily apparent to persons occupying or visiting the building then exit signs must be installed in appropriate positions in corridors, hallways, lobbies, and the like, indicating the direction to a required exit.	Design statement (or other means) required from appropriately qualified designer/person that the building will comply with this clause at the design stage & installation certification will be required on completion of the project from the relevant installer or engaged consultant. **Note: Exit Signage to identify egress paths through meeting rooms/classrooms for travel distance compliance is to be provided**
E4.7	**Class 2, 3 and 4 parts: Exemptions**	
N/A	E4.5 does not apply to- • Class 2 building if the word “EXIT” is placed on the side of door remote from an exit, • An entrance door of a SOU in Class 2, 3 or 4.	This clause is not applicable to this project.

E4.8	**Design and operation of exit signs**	
CR	Every required exit sign must - • Comply with AS 2293.1; and • be clearly visible at all times when the building is occupied by any person having the right of legal entry to the building.	Design statement (or other means) required from appropriately qualified designer/person that the building will comply with this clause at the design stage & installation certification will be required on completion of the project from the relevant installer or engaged consultant.
Clause	**Reference**	**Comment**
E4.9	**Emergency warning and intercom systems**	
N/A	Emergency Warning and Intercom Systems for emergency purposes required to comply with AS 1670.4-2018; • Spec G3.8 -Buildings containing an Atrium require an EWIS system • Buildings exceeding 25m in effective height • In a Class 3 building having an RIS greater than 2, used as a residential part of a primary or secondary school or accommodation for aged or children • Class 3 residential age care • Class 9b building having RIS more than 2 and floor area greater than 1000m2 • Class 9b used as school (RIS greater than 3), or public hall / theatre having RIS more than 2 and floor area greater than 100m2	This clause is not applicable to this project.
Section F: Health and Amenity		
Part F1 – General		
Clause	**Reference**	**Comment**
FP1.4	**External Wall Water Proofing**	
PS	An external wall (including openings around windows and doors) must prevent the penetration of water that could cause unhealthy conditions, or loss of amenity for occupants; and undue dampness or deterioration of building elements.	Performance Solution is required to address this item, this should be provided from the façade consultant or architect and should include manufacturer's relevant details and any tests reports.
F1.1	**Stormwater Drainage**	
CR	Stormwater drainage must comply to AS 3500.3	Design statement (or other means) required from appropriately qualified designer/person that the building will comply with this clause at the design stage & installation certification will be required on completion of the project from the relevant installer or engaged consultant.

F1.4	**External Waterproofing of above ground membranes**	
CR	Waterproofing membranes for external above ground use must comply with AS 4654 Parts 1 and 2 - 2012	Design statement (or other means) required from appropriately qualified designer/person that the building will comply with this clause at the design stage & installation certification will be required on completion of the project from the relevant installer or engaged consultant. There may or may not be a conflict in this area and the accessible provision of Part D3, in relation to any required threshold step to the proposed balcony/external areas. Access consult and architect to confirm.
F1.5	**Roof Covering**	
CR	Roof covering must comply with required Australian Standard	Design statement (or other means) required from appropriately qualified designer/person that the building will comply with this clause at the design stage & installation certification will be required on completion of the project from the relevant installer or engaged consultant.
F1.6	**Sarking**	
CR	Sarking used for weather proofing of roofs must comply with AS/NZS 4200.	Design statement (or other means) required from appropriately qualified designer/person that the building will comply with this clause at the design stage & installation certification will be required on completion of the project from the relevant installer or engaged consultant.
F1.7	**Water Proofing of Wet Areas in Buildings**	
CR	Water proofing of wet areas within a building to comply with AS 3740.	Design statement (or other means) required from appropriately qualified designer/person that the building will comply with this clause at the design stage & installation certification will be required on completion of the project from the relevant installer or engaged consultant.
F1.9	**Damp-proofing**	
CR	Damp-proofing where required to be installed in accordance with AS/NZS 2904 or AS 3660.1	Design statement (or other means) required from appropriately qualified designer/person that the building will comply with this clause at the design stage & installation certification will be required on completion of the project from the relevant installer or engaged consultant.
F1.10	**Damp-proofing of Floors on the Ground**	
CR	Damp-proofing where required to be installed in accordance with AS 2870	Design statement (or other means) required from appropriately qualified designer/person that the building will comply with this clause at the design stage & installation certification will be required on completion of the project from the relevant installer or engaged consultant.

F1.12	**Sub-floor Ventilation**	
N/A	The sub-floor space between a suspended floor of a building and the ground must be in accordance with the requirements of this clause.	This clause is not applicable to this project as no sub floor is currently proposed in the design.
F1.13	**Glazed assemblies**	
CR	Glazed assemblies in an external wall to comply with AS 2047 requirements for resistance to water penetration	Design statement (or other means) required from appropriately qualified designer/person that the building will comply with this clause at the design stage & installation certification will be required on completion of the project from the relevant installer or engaged consultant.
Part F2 – Sanitary and Other Facilities		
Clause	**Reference**	**Comment**
F2.1	**Facilities in Residential Buildings**	
N/A	Within each sole occupancy unit, the following are to be provided; • Kitchen sink, including area for food preparation; • Bath or shower; • Closet pan and washbasin • Laundry facilities, including at least one washtub and space for washing machine, and clothes drying facilities, including clothesline or hoist (min. 7.5m line) or space for heat operated drying appliance., or • A separate laundry for each 4 Sole occupancy units or part thereof.	This clause is not applicable to this project.
F2.3	**Sanitary facilities in Class 3-9 buildings**	
✓/ CR	The number of sanitary facilities must be based upon the number of persons accommodated calculated in accordance with D1.13 Note: Showers are required for Class 9b Theatres and sporting venues must be provided, being 1 shower for each 10 participants.	It is understood the school will service 200 students with potential to grow to a **total capacity of 300 students**, subject to further funding and service need, and **61 staff** proposed, based on this population the below minimum number of sanitary facilities will be required: **Student – Sanitary Facilities** **Staff – Sanitary Facilities** Any changes to the occupant numbers required to be provided prior to Crown Certificate stage from the client/user.

Student – Sanitary Facilities

	Pans	Urinals	Basins
Male	4	3	4
Female	7	n/a	4
Unisex Accessible	1 per storey		

Staff – Sanitary Facilities

	Pans	Urinals	Basins
Male	2	2	2
Female	3	n/a	2
Unisex Accessible	1 per storey		

Clause	Reference	Comment
F2.4	**Facilities for persons with disabilities**	
CR	In a building required to be accessible— (a) accessible unisex sanitary compartments must be provided in accessible parts of the building in accordance with Table F2.4(a); and (b) accessible unisex showers must be provided in accordance with Table F2.4(b); and (c) at each bank of toilets where there is one or more toilets in addition to an accessible unisex sanitary compartment at that bank of toilets, a sanitary compartment suitable for a person with an ambulant disability in accordance with AS 1428.1 must be provided for use by males and females; and (d) an accessible unisex sanitary compartment must contain a closet pan, washbasin, shelf or bench top and adequate means of disposal of sanitary towels; and (e) the circulation spaces, fixtures and fittings of all accessible sanitary facilities provided in accordance with Table F2.4(a) and Table F2.4(b) must comply with the requirements of AS 1428.1-2009; and (f) an accessible unisex sanitary facility must be located so that it can be entered without crossing an area reserved for one sex only; and (g) where two or more of each type of accessible unisex sanitary facility are provided, the number of left and right handed mirror image facilities must be provided as evenly as possible; and (h) where male sanitary facilities are provided at a separate location to female sanitary facilities, accessible unisex sanitary facilities are only required at one of those locations; and (i) an accessible unisex sanitary compartment or an accessible unisex shower need not be provided on a storey or level that is not required by D3.3(f) to be provided with a passenger lift or ramp complying with AS 1428.1.	Access Consultant to confirm compliance.
F2.5	**Construction of sanitary compartments**	
CR	Where clear space between closet pan and doorway is less than 1.2m, doors must open outwards, slide or be readily removable from outside. Doors to disabled toilets are required to be provided with Lift off hinges to the doors irrespective of distance between pan and doorway	Compliance required. Further review of the detailed design required in order to determine design compliance.
F2.6	**Interpretation: Urinals and washbasins**	
Noted	Urinal may be 600 mm of urinal trough or a closet pan used in place of a urinal Washbasin me be individual basin or part of a hand washing trough served by a single water tap	This clause is for information.

Clause	Reference	Comment
F2.8	**Waste management**	
N/A	In a Class 9a a slop hopper or other device must be provided on any storey containing ward areas or bedrooms and a flushing apparatus, tap and grating. In a Class 9c for every 60 beds on each storey containing resident use areas must be provided with a slop-hopper and a device for the disinfection of pans or an adequate means to dispose of receptacles	This clause is not applicable to this project.
F2.9	**Accessible Adult Change Facilitates**	
N/A	Accessible Adult change tables where required, must be constructed in accordance with Specification F2.9; and (i) cannot be combined with another sanitary compartment. (ii) One unisex accessible adult change facility must be provided in an accessible part of a— (iii) Class 6 building that is a shopping centre having a design occupancy of not less than 3,500 people, calculated on the basis of the floor area, and containing a minimum of 2 sole-occupancy units; and (iv) Class 9b sports venue or the like that— (v) has a design occupancy of not less than 35,000 spectators; or contains a swimming pool that has a perimeter of not less than 70 m and that is required by Table D3.1 to be accessible; and (vi) museum, art gallery or the like having a design occupancy of not less than 1,500 patrons; and (vii) (iv)theatre or the like having a design occupancy of not less than 1,500 patrons; and (viii) passengers use area of an airport terminal building within an airport that accepts domestic and/or international flights that are public transport services as defined in the Disability Standards for Accessible Public Transport 2002. For the purposes of (b), design occupancy must be calculated in accordance with D1.13, but excluding any area that— (i) can only be accessed by staff, employees, contractors, maintenance personnel and the like; or is subject to an exemption under D3.4.	This clause is not applicable to this project.

Part F3 – Room Sizes		
Clause	**Reference**	**Comment**
F3.1	**Height of Rooms**	
CR	Room heights to be a minimum of 2.4m generally for office and other habitable areas and adult accessible change facilities, 2.7m for other areas, except as follows in which case 2.1m is allowable; • Corridors, passageways, or the like. • Car parking areas • Sanitary compartments • Kitchen / Laundry • Non-habitable rooms	Further review of the detailed design required in order to determine design compliance as the design progresses, but compliance is assumed to be achieved.
Part F4 – Provision of Natural Light		
Clause	**Reference**	**Comment**
F4.1	**Provision of Natural Light**	
CR	Class 2 buildings, Class 3 buildings and Class 4 parts and Class 9b classrooms to schools – to habitable rooms and classrooms	Architect is to confirm 10% of Floor area of classrooms are provided with Windows that provide natural light to classrooms.
F4.4	**Artificial Lighting**	
CR	Required to all rooms that are frequently occupied, all spaces required to be accessible, all corridors, lobbies, internal stairways, other circulation spaces and paths of egress. Artificial lighting system is to comply with AS1680.0 Note: See also Section J for details of energy efficiency of lighting required.	Design statement (or other means) required from appropriately qualified designer/person that the building will comply with this clause at the design stage & installation certification will be required on completion of the project from the relevant installer or engaged consultant.
F4.5	**Ventilation of Rooms**	
CR	A mechanical ventilation or air conditioning system complying with AS 1668.2 - 2012 version is required. Note: See also Section J for details of energy efficiency of Ventilation / Mechanical Ventilation/Air-conditioning required.	Design statement (or other means) required from appropriately qualified designer/person that the building will comply with this clause at the design stage & installation certification will be required on completion of the project from the relevant installer or engaged consultant. Window and door schedules are required for further review against the natural lighting and natural ventilation provisions of the BCA.

Clause	Reference	Comment
F4.6	**Natural ventilation**	
N/A	(a) Natural ventilation provided in accordance with F4.5(a) must consist of openings, windows, doors, or other devices which can be opened— (i) with a ventilating area not less than 5% of the floor area of the room require (ii) ventilated; and (iii) open to— (A) a suitably sized court, or space open to the sky; or (B) an open verandah, carport, or the like; or (C) an adjoining room in accordance with F4.7. (b) The requirements of (a)(i) do not apply to a Class 8 electricity network substation.	Mechanical Ventilation proposed for the building.
F4.7	**Ventilation borrowed from adjoining room**	
N/A	Natural ventilation to a room may come through a window, opening, door or other device from an adjoining room (including an enclosed verandah) if both rooms are within the same sole occupancy unit or the enclosed verandah is common property, and— (a) in a Class 2 building, a sole-occupancy unit of a Class 3 building or Class 4 part of a building— (i) the room to be ventilated is not a sanitary compartment; and (ii) the window, opening, door or other device has a ventilating area of not less than 5% of the floor area of the room to be ventilated; and (iii) the adjoining room has a window, opening, door or other device with a ventilating area of not less than 5% of the combined floor areas of both rooms; and (b) in a Class 5, 6, 7, 8 (except a Class 8 electricity network substation) or 9 building— (i) the window, opening, door or other device has a ventilating area of not less than 10% of the floor area of the room to be ventilated, measured not more than 3.6 m above the floor; and (ii) the adjoining room has a window, opening, door or other device with a ventilating area of not less than 10% of the combined floor areas of both rooms; and (c) the ventilating areas specified in (a) and (b) may be reduced as appropriate if direct natural ventilation is provided from another source.	Mechanical Ventilation proposed for the building.

Clause	Reference	Comment
F4.8	**Restriction on location of sanitary compartments**	
✓	Sanitary compartments must not open directly into— (a) a kitchen or pantry; or (b) a public dining room or restaurant; or (c) a dormitory in a Class 3 building; or (d) a room used for public assembly (which is not an early childhood centre, primary school (e) a workplace normally occupied by more than one person.	Toilet locations achieve compliance with this clause of the BCA as designed.
F4.9	**Airlocks**	
N/A	Required for rooms containing a closet pan or urinal where it opens directly to another room Exemption to use mechanical exhaust if Class 5-9	This clause is not applicable to this project.
F4.11	**Car Parks**	
N/A	Every storey of a car park, except an open deck car park, must have a system of ventilation complying with AS/NZS 1668.1-2015 and AS/NZS1668.2 – 2012 or AS1668.4-2012 Note: for natural ventilation AS1668.4-Natural Ventilation of buildings is now a referenced Australia standard Note: If jet fans are to be used further discussion with the relevant stakeholders will be required, including FRNSW.	This clause is not applicable to this project.
F4.12	**Kitchen local exhaust ventilation**	
N/A	Commercial kitchen must be provided with a kitchen exhaust hood complying with AS/NZS1668.1- 2015 and AS1668.2 - 2012 (depending on input)	This clause is not applicable to this project as no Kitchen or Cooking area is proposed in the design
Part F5 – Sound Insulation & Transmission		
Clause	**Reference**	**Comment**
Part F5	**General requirements from the Part**	
N/A	Applicable to Class 2, 3 and 9c buildings only. Various walls, doors & Floors require airborne and impact sound insulation ratings as noted within F5.2 to F5.6, to AS/NZS 1276.1 or ISO 717.1, or comply with Specification F5.2. Discontinuous construction required to various walls as noted within F5.5. Sound insulation rating of internal services & pumps is required as per F5.6 & F5.7.	This clause is not applicable to this project.

Clause	Reference	Comment
Part F6	**Condensation Management**	
N/A	This clause applies only to a sole occupancy unit in a Class 2 building and a Class 4 part of a building. **Pliable Building Membrane** • Where a pliable building Membrane is installed in an external wall is must – comply with AS/NZS 4200.1 & AS4200.1. If it is in a climate zone of 6,7 or 8, be a vapour permeable barrier, and be located on the exterior side of the primary insulation layer of wall assemblies that form the external envelope of the building. • Except for single skin masonry and single skin concrete, where a pliable building membrane is not installed in an external wall, the primary water control layer must be separated from water sensitive materials by a drained cavity. **Flow Rate & Discharge of Exhaust Systems** • Exhaust fans must have a minimum flow rate of 25L/s in bathrooms and sanitary compartments and 40L/s in a kitchen or laundry. • Exhaust fans from a kitchen must discharge directly into outdoor air. Exhaust fans from a bathroom or sanitary compartment or laundry may discharge into outdoor air or a roof space ventilated in accordance with F6.4. **Ventilation of Roof Spaces** • Where an exhaust system discharges into a roof space it must be ventilated via evenly distributed openings to the outdoor air. • These openings must be located at least 900mm below the ridge or highest point of the roof space.	This clause is not applicable to this project.

Section G: Ancillary Provisions		
Part G1 – Minor Structures and Components		
Clause	**Reference**	**Comment**
G1.2	**Refrigeration and Cool rooms and Vaults**	
N/A	(a) A refrigerated or cooling chamber, strongroom or vault which is of sufficient size for a person to enter must have— (i) a door which is capable of being opened by hand from inside without a key; and (ii) internal lighting controlled only by a switch which is located adjacent to the entrance doorway inside the chamber, strongroom, or vault; and (iii) an indicator lamp positioned outside the chamber, strongroom or vault which is illuminated when the interior lights required by (a)(ii) are switched on; and (iv) an alarm that is— (A) located outside but controllable only from within the chamber, strongroom, or vault; and (B) able to achieve a sound pressure level outside the chamber, strongroom, or vault of 90 dB(A) when measured 3 m from the sounding device. (b) A door required by (a)(i) in a refrigerated or cooling chamber must have a doorway with a clear width of not less than 600 mm and a clear height not less than 1.5 m.	This clause is not applicable to this project. No Coolroom or Freezer is proposed in the current design of the building.
NSW G1.101	**Provision for Cleaning of Windows**	
N/A	Provision is to be made for the cleaning of windows either within the building or to the WH&S Act 2011 and Regulations for any windows three (3) or more storeys above the ground.	This clause does not apply to this building as only Tw (2) Storeys.

Clause	Reference	Comment
Part G3	**Atrium Construction**	
N/A	An atrium is defined as a space within a building that connects two or more storeys and is wholly or substantially enclosed at the top by a floor or roof (including a glazed roof structure). Atrium means a space within a building that connects 2 or more storeys and— (a)is enclosed at the top by a floor or roof (including a glazed roof structure); and (b)includes any adjacent part of the building not separated by an appropriate barrier to fire; but (c) does not include a stairwell, ramp well or the space within a shaft; and (d)for the purposes of (a) a space is considered enclosed if the area of the enclosing floor or roof is greater than 50% of the area of the space, measured in plan, of any of the storeys connected by the space. This part does not apply to an atrium which; • Connects only 2 storeys, or • Connects only 3 storeys, providing each storey is provided with a sprinkler protection system, and a storey discharges direct to road or open space. The requirements of atrium under this clause and associated specification include; • Sprinkler protection throughout; and • Separation of atrium by bounding walls; and • Fire and Smoke Control provisions • Enhanced EWIS system • Smoke Detection throughout to AS 1670.1 • Automatic Smoke Exhaust • Pressurisation of fire stairs	This clause does not apply to this building.

Part G6	Occupiable Outdoor Areas	
N/A	Occupiable Outdoor Areas This part applies to buildings containing an occupiable outdoor area. Occupiable outdoor area (OOA) is defined in the BCA as a space on a roof, balcony, or similar part of a building— (a) that is open to the sky; and (b) to which access is provided, other than access only for maintenance; and (c) that is not open space or directly connected with open space. Fire Hazard Properties - A lining, material or assembly in an occupiable outdoor area must comply with C1.10 as for an internal element. Important Note: For the purposes of the following clauses an occupiable outdoor area is included in any reference to “a storey”. BCA provisions apply to these areas, and requirements will be detailed if one of these areas is provided to the building. Outdoor Occupiable Area is required to comply with the requirements and provisions of this Part of the BCA.	This clause does not apply to this building.

Section J: Energy Efficiency		
Part J1 to J8 – Building Fabric		
Clause	**Reference**	**Comment**
J0.1	**Application of Section J**	
CR	Performance Requirements JP1 is satisfied by complying with— • for reducing the heating or cooling loads of a Class 2 to 9 building, other than the sole-occupancy units of a Class 2 building or a Class 4 part of a building, Parts J1,J3; and • for air-conditioning and ventilation, Part J5; and • for artificial lighting and power, Part J6; and • for hot water supply and swimming pool and spa pool plant, Part J7; and • for facilities for maintenance and monitoring, Part J8.	Energy Efficiency Consultant to confirm compliance. Design statement (or other means) required from appropriately qualified designer/person that the building will comply with this clause at the design stage & installation certification will be required on completion of the project from the relevant installer or engaged consultant.
J1.1	**Application of Part**	
CR	The Deemed-to-Satisfy Provisions of this Part apply to building elements forming the envelope of a Class 2 to 9 building. (Excluding Class 2 and 4 buildings that have BASIX certificates in NSW). Envelope, for the purposes of Section J, means the parts of a building's fabric that separate a conditioned space or habitable room from – • the exterior of the building; or • a non-conditioned space including – - the floor of a rooftop plant room, lift-machine room, or the like; and - the floor above a carpark or warehouse; and the common wall with a carpark, warehouse or the like. Conditioned space means a space within a building, including a ceiling or under-floor supply air plenum or return air plenum, where the environment is likely, by the intended use of the space, to have its temperature controlled by air-conditioning, but does not include— • a space in a Class 6, 7, 8 or 9b building where the input energy to an air-conditioning system is not more than 15 W/m2 or 15 J/s.m2 (54 KJ/hour.m2); or • a lift shaft.	Energy Efficiency Consultant to confirm compliance. Design statement (or other means) required from appropriately qualified designer/person that the building will comply with this clause at the design stage & installation certification will be required on completion of the project from the relevant installer or engaged consultant

Clause	Reference	Comment
J1.2	**Thermal Construction General**	
CR	• Where required, insulation must comply with AS/NZS 4859.1 and be installed so that it— - abuts or overlaps adjoining insulation other than at supporting members such as studs, noggings, joists, furring channels and the like where the insulation must be against the member; and - forms a continuous barrier with ceilings, walls, bulkheads, floors or the like that inherently contribute to the thermal barrier; and - does not affect the safe or effective operation of a service or fitting. • Where required, reflective insulation must be installed with— - the necessary airspace to achieve the required R-Value between a reflective side of the reflective insulation and a building lining or cladding; and - the reflective insulation closely fitted against any penetration, door or window opening; and - the reflective insulation adequately supported by framing members; and - each adjoining sheet of roll membrane being— - (A) overlapped not less than 50mm; or - (B) taped together. • Where required, bulk insulation must be installed so that— - it maintains its position and thickness, other than where it is compressed between cladding and supporting members, water pipes, electrical cabling, or the like; and - in a ceiling, where there is no bulk insulation or reflective insulation in the wall beneath, it overlaps the wall by not less than 50mm. • Roof, ceiling, wall and floor materials, and associated surfaces are deemed to have the thermal properties listed in Specification J1.2. • The required total R-Value and total system U-Value, including allowance for thermal bridging, must be – - Calculated in accordance with AS/NZS 4859.2 for a roof or floor; or - Determined in accordance with specification J1.5a for wall glazing construction; or - Determined in accordance with Specification J1.6a or Section 3.5 of CIBSE Guide A for soil or sub-floor spaces.	Energy Efficiency Consultant to confirm compliance. Design statement (or other means) required from appropriately qualified designer/person that the building will comply with this clause at the design stage & installation certification will be required on completion of the project from the relevant installer or engaged consultant. A Section J building envelope plan will need to be completed for further review and comment.
J1.3	**Roof and Ceiling Construction**	
CR	A roof or ceiling in Climate Zone 5 is to achieve a Total R-Value in the DOWNWARD direction of heat flow of not less than R3.2	Energy Efficiency Consultant to confirm compliance. Details of proposed roof colour / surface solar absorption levels are required and if any roof lights etc are proposed.

		If unknown, then a R value of 4.2 (or more) will need to be designed for to ensure compliance until such time as the colour is known A Section J building envelope plan will need to be completed for further review and comment.
Clause	**Reference**	**Comment**
J1.4	**Roof Lights**	
CR	Roof lights must have— a total area of not more than 5% of the floor area of the room or space served; and transparent and translucent elements, including any imperforate ceiling diffuser, with a combined performance of – • For total system SHGC, in accordance with Table J1.4 and; • For total System U-Value, not more than U3.9	Energy Efficiency Consultant to confirm compliance. Design statement (or other means) required from appropriately qualified designer/person that the building will comply with this clause at the design stage & installation certification will be required on completion of the project from the relevant installer or engaged consultant. A Section J building envelope plan will need to be completed for further review and comment.
J1.5	**Walls & Glazing**	
CR	(a) The Total System U-Value of *Wall-Glazing* construction must not be greater than (i) For a class 2 common area, a class 5,6,7,8 or 9b building other than a ward area, U2.0;and (ii) For a class 3 or 9c building or a class 9a ward area – (A) in climate zones 1,3,4,6 or 7, U1.1;or (B) in climate zones 2 or 5, U2.0; or (C) in climate zone 8, U0.9 (a) The total System U-Value of Display Glazing must not be greater than U5.8. (b) Total System U-Value of Wall glazing to be calculated in accordance with Specification J1.5a (c) Wall components of wall glazing construction must achieve a minimum Total R-Value of - Where the wall is less than 80% of the area of the wall glazing construction, R1.0 or - Where the wall is 80% or more of the area of the wall-glazing construction, the value specified in Table J1.5a. (a) The solar admittance of a wall glazing construction must not be greater than: (i) For a class 2 common area, class 5,6,7,8 or 9a building other than a ward area. The values specified in Table J1.5b (ii) For a class 3 or 9c or 9a ward area, the values specified in Table J1.5c	Energy Efficiency Consultant to confirm compliance. Design statement (or other means) required from appropriately qualified designer/person that the building will comply with this clause at the design stage & installation certification will be required on completion of the project from the relevant installer or engaged consultant. A Section J building envelope plan will need to be completed for further review and comment. A Section J building envelope plan will need to be completed for further review and comment.

Clause	Reference	Comment
J1.6	**Floors**	
CR	(a) A floor must achieve the total R-Value specified in Table J1.6 (b) A floor must be insulated around the vertical edge of its perimeter with insulation having an R-Value greater than or equal to 1.0 when the floor – (i) Is a concrete slab-on-ground in climate zone 8; or (ii) Has an in-slab or in screed heating or cooling system except where used solely in a bathroom, amenity area or the like. (a) Insulation required by (b) for a concrete slab-on-ground must – (i) Be water resistant; and (ii) Be continuous from the adjacent finished ground level to a depth of 300mm OR for the full depth of the vertical edge of the concrete slab on ground.	Energy Efficiency Consultant to confirm compliance. Energy Efficiency Consultant to confirm compliance. Design statement (or other means) required from appropriately qualified designer/person that the building will comply with this clause at the design stage & installation certification will be required on completion of the project from the relevant installer or engaged consultant. A Section J building envelope plan will need to be completed for further review and comment.
Part J3 – Building Sealing		
Clause	**Reference**	**Comment**
J3.1	**Application of Part**	
CR	The Deemed-to-Satisfy Provisions of this Part apply to elements forming the envelope of a Class 2 to 9 building, other than— • a building in climate zones 1, 2, 3 and 5 where the only means of air-conditioning is by using an evaporative cooler; or • a permanent building opening, in a space where a gas appliance is located, that is necessary for the safe operation of a gas appliance; or • a building or space where the mechanical ventilation required by Part F4 provides sufficient pressurisation to prevent infiltration. • NSW Variation - Parts of the building that cannot be fully enclosed	Energy Efficiency Consultant to confirm compliance. Energy Efficiency Consultant to confirm compliance. Design statement (or other means) required from appropriately qualified designer/person that the building will comply with this clause at the design stage & installation certification will be required on completion of the project from the relevant installer or engaged consultant. A Section J building envelope plan will need to be completed for further review and comment.

Clause	Reference	Comment
J3.2,3,5	**Chimneys, Roof lights, exhaust fans**	
CR	**Chimneys or flues** must be provided with a damper or flap that can be closed to seals the chimney or flu when not in use **Roof lights** (a) A roof light must be sealed, or capable of being sealed, when serving— (i) a conditioned space; or (ii) a habitable room in climate zones 4, 5, 6, 7 or 8. (b) A roof light required by (a) to be sealed, or capable of being sealed, must be constructed with— (i) an imperforate ceiling diffuser or the like installed at the ceiling or internal lining level; or (ii) (ii) a weatherproof seal; or (iii) (iii) a shutter system readily operated either manually, mechanically, or electronically by the occupant. **Miscellaneous Exhaust fans** A miscellaneous exhaust fan, such as a bathroom or domestic kitchen exhaust fan, must be fitted with a sealing device such as a self-closing damper or the like when serving— (a) a conditioned space; or (b) a habitable room in climate zones 4, 5, 6, 7 or 8.	Energy Efficiency Consultant to confirm compliance. A Section J building envelope plan will need to be completed for further review and comment. Energy Efficiency Consultant to confirm compliance. Design statement (or other means) required from appropriately qualified designer/person that the building will comply with this clause at the design stage & installation certification will be required on completion of the project from the relevant installer or engaged consultant.

Clause	Reference	Comment
J3.4	**Windows and Doors**	
CR	(a) A door, openable window or the like must be sealed – (i) When forming part of the envelope; or (ii) In climate zones 4,5,6,7 or 8 (b) The requirements of (a) do not apply to- (i) A window complying with AS 2047; or (ii) A fire door or smoke door; or (iii) A roller shutter door, roller shutter grille or other security door or device installed only for out of hours security. (c) A seal to restrict air infiltration – (i) For the bottom edge of a door, must be a draft protection device; and (ii) For the other edges of a door or the edges of openable window or other such opening, may be a foam or rubber compression strip, fibrous strip, or the like. (d) An entrance to a building, if leading to a conditioned space must have an airlock, sell closing door, rapid roller door, revolving door or the like other than – (i) Where the conditioned space has a floor area of not more than 50m2; or (ii) Where a café restaurant, open front shop or the like has – (A) A 3m deep un-conditioned zone between the main entrance, including an open front, and the conditioned space; and (B) At all other entrances to the café, restaurant, open front shop or the like, self-closing doors. (e) A loading dock entrance, if leading to a conditioned space, must be fitted with rapid roller door or the like.	Energy Efficiency Consultant or Architect is to confirm compliance with the design. A Section J building envelope plan will need to be completed for further review and comment. Energy Efficiency Consultant to confirm compliance. Design statement (or other means) required from appropriately qualified designer/person that the building will comply with this clause at the design stage & installation certification will be required on completion of the project from the relevant installer or engaged consultant.
J3.5	**Exhaust Fans**	
CR	An exhaust fan must be fitted with a sealing device such as a self-closing damper or the like when serving a conditioned space or a habitable room in climate zone 4,5,6,7 or 8.	Energy Efficiency Consultant to confirm compliance. A Section J building envelope plan will need to be completed for further review and comment. Energy Efficiency Consultant to confirm compliance. Design statement (or other means) required from appropriately qualified designer/person that the building will comply with this clause at the design stage & installation certification will be required on completion of the project from the relevant installer or engaged consultant.

Clause	Reference	Comment
J3.6	**Construction of Ceilings, Walls, and Floors**	
CR	(a) Ceilings, walls, floors and any opening such as a window frame, door frame, roof light frame or the like must be constructed to minimise air leakage in accordance with (b) when forming part of— (i) the envelope; or (ii) the external fabric of a habitable room or a public area in climate zones 4, 5, 6, 7 or 8. (b) Construction required by (a) must be— (i) enclosed by internal lining systems that are close fitting at ceiling, wall, and floor junctions; or (ii) sealed by caulking, skirting, architraves, cornices, or the like. (c) The requirements of (a) do not apply to openings, grilles or the like required for smoke hazard management.	Energy Efficiency Consultant to confirm compliance. A Section J building envelope plan will need to be completed for further review and comment. Energy Efficiency Consultant to confirm compliance. Design statement (or other means) required from appropriately qualified designer/person that the building will comply with this clause at the design stage & installation certification will be required on completion of the project from the relevant installer or engaged consultant.
J3.7	**Evaporative Coolers**	
CR	An evaporative cooler must be fitted with a self-closing damper or the like when serving— (a) a heated space; or (b) (b) in a climate zones 4, 5, 6, 7 or 8.	Required if provided. Energy Efficiency Consultant to confirm compliance. Design statement (or other means) required from appropriately qualified designer/person that the building will comply with this clause at the design stage & installation certification will be required on completion of the project from the relevant installer or engaged consultant.

Part J5 – Air Condition & Ventilation Systems		
Clause	**Reference**	**Comment**
Part J5	**Air Con and Mech Vent system design**	
CR	(a) An air-conditioning system— (i) must be capable of being deactivated when the building or part of a building served by that system is not occupied; and (ii) when serving more than one air-conditioning zone or area with different heating or cooling needs, must— (A) thermostatically control the temperature of each zone or area; and (B) not control the temperature by mixing actively heated air and actively cooled air; and (C) limit reheating to not more than— (aa) for a fixed supply air rate, a 7.5 K rise in temperature; and (bb) for a variable supply air rate, a 7.5 K rise in temperature at the nominal supply air rate but increased or decreased at the same rate that the supply air rate is respectively decreased or increased; and (iii) which provides the required mechanical ventilation, other than in climate zone 1 or where dehumidification control is needed, must have an outdoor air economy cycle if the total air flow rate of any airside component of an air-conditioning system is greater than or equal to the figures in Table J5.2; and. (iv) which contains more than one water heater, chiller, or coil, must be capable of stopping the flow of water to those not operating; and (v) with an airflow of more than 1000 L/s, must have a variable speed fan when its supply air quantity is capable of being varied; and (vi) when serving a sole-occupancy unit in a Class 3 building, must not operate when any external door of the sole-occupancy unit that opens to a balcony or the like, is open for more than one minute; and (vii) must have the ability to use direct signals from the control components responsible for the delivery of comfort conditions in the building to regulate the operation of central plant; and (viii) must have a control dead band of not less than 2°C, except where a smaller range is required for specialised applications; and (ix) must be provided with balancing dampers and balancing valves that ensure the maximum design air or fluid flow is achieved but not exceeded by more than 15% above design at each— (A) component; or (B) group of components operating under a common control in a system containing multiple	Mechanical Consultant to confirm compliance. Design statement (or other means) required from appropriately qualified designer/person that the building will comply with this clause at the design stage & installation certification will be required on completion of the project from the relevant installer or engaged consultant.

	components, as required to meet the needs of the system at its maximum operating condition; and (x) must ensure that each independently operating space of more than 1 000 m2 and every separate floor of the building has provision to terminate airflow independently of the remainder of the system sufficient to allow for different operating times; and (xi) must have automatic variable temperature operation of heated water and chilled water circuits; and (xii) when deactivated, must close any motorised outdoor air, or return air damper that is not otherwise being actively controlled. (b) When two or more air-conditioning systems serve the same space, they must use control sequences that prevent the systems from operating in opposing heating and cooling modes. (c) **Time Switches** - A time switch must be provided to control an air-conditioning system that serves one sole-occupancy unit in a class 2,3 or 9c building **OR** a class 4 part of a building, OR a conditioned space where air-conditioning is needed for 24hr continuous use.	
J5.3	**Mechanical ventilation system control**	
CR	(a) General — A mechanical ventilation system, including one that is part of an air-conditioning system, except where the mechanical system serves only one sole-occupancy unit in a Class 2 building or serves only a Class 4 part of a building, must— (i) be capable of being deactivated when the building or part of the building served by that system is not occupied; and (ii) when serving a conditioned space, except in periods when evaporative cooling is being used— (A) where specified in Table J5.3, have— (aa) an energy reclaiming system that preconditions outdoor air at a minimum sensible heat transfer effectiveness of 60%; or (bb) demand control ventilation in accordance with AS 1668.2 if appropriate to the application; and (B) not exceed the minimum outdoor air quantity required by Part F4 by more than 20%, except where— (aa) additional unconditioned outdoor air is supplied for free cooling; or (bb) additional mechanical ventilation is needed to balance the required exhaust or process exhaust; or (cc) an energy reclaiming system preconditions all the outdoor air; and (iii) for an airflow of more than 1000 L/s, have a variable speed fan unless the downstream airflow is required by Part F4 to be constant.	Mechanical Consultant to confirm compliance. Design statement (or other means) required from appropriately qualified designer/person that the building will comply with this clause at the design stage & installation certification will be required on completion of the project from the relevant installer or engaged consultant.

	(a) Exhaust systems — An exhaust system with an air flow rate of more than 1000 L/s must be capable of stopping the motor when the system is not needed, except for an exhaust system in a sole-occupancy unit in a Class 2, 3 or 9c building. (b) Carpark exhaust systems must be in accordance with 4.11.2 of AS 1668.2; **OR** 4.11.3 of AS 1668.2. (c) A time switch must be provided to a mechanical ventilation system with an air flow rate of more than 1000 L/s. (i) The time switch must be capable of switching electric power on and off at variable pre-programmed times and on variable pre-programmed days. (ii) The requirements of (i) and (ii) do not apply to— (A) a mechanical ventilation system that serves— (aa) only one sole-occupancy unit in a Class 2, 3 or 9c building; or (bb) a Class 4 part of a building; or (B) a building where mechanical ventilation is needed for 24-hour occupancy.	
J5.4	**Fan Systems**	
CR	(a) Fans, ductwork, and duct components that form part of an air-conditioning system or mechanical ventilation system must— (i) separately comply with (b), (c), (d) and (e); or (ii) achieve a fan motor input power per unit of flowrate lower than the fan motor input power per unit of flowrate achieved when applying (b), (c), (d) and (e) together.	Mechanical Consultant to confirm compliance. Design statement (or other means) required from appropriately qualified designer/person that the building will comply with this clause at the design stage & installation certification will be required on completion of the project from the relevant installer or engaged consultant.
J5.5	**Ductwork Insulation**	
CR	(a) Ductwork and fittings in an air conditioning system must be provided with insulation complying with AS/NZS 4859.1 and having an R Value greater than or equal to 1.0 for flexible ductwork **OR** for cushion boxes the same as that of the connecting ductwork **OR** that specified in Table J5.5. (b) Insulation must be protected from the effects of weather and sunlight and be installed so that it abuts joining insulation and maintains its position and thickness, other than at flange supports and; When conveying cooled air – (A) Be protected by a vapour barrier on the outside of the insulation and; (B) Where the vapour barrier is a membrane, be installed so that the sheets of the membrane overlap by at least 50mm and are bonded or taped together. (c) The requirements of (a) above do not apply to: (i) ductwork and fittings located within the only or last room served by the system; or	Mechanical Consultant to confirm compliance. Design statement (or other means) required from appropriately qualified designer/person that the building will comply with this clause at the design stage & installation certification will be required on completion of the project from the relevant installer or engaged consultant.

	(ii) fittings that form part of the interface with the conditioned space; or (iii) return air ductwork in, or passing through, a conditioned space; or (iv) ductwork for outdoor air and exhaust air associated with an air-conditioning system; or (v) the floor of an in-situ air-handling unit; or (vi) packaged air conditioners, split systems, and variable refrigerant flow air-conditioning equipment complying with MEPS; or (vii) flexible fan connections. (d) For the purposes of (a), (b) and (c), fittings— (i) include non-active components of a ductwork system such as cushion boxes; and (ii) exclude active components such as air-handling unit components.	
J5.6	**Ductwork sealing**	
CR	Ductwork in an air-conditioning system with a capacity of 3000 L/s or greater, not located within the only or last room served by the system, must be sealed against air loss in accordance with the duct sealing requirements of AS 4254.1 and AS 4254.2 for the static pressure in the system.	Mechanical Consultant to confirm compliance. Design statement (or other means) required from appropriately qualified designer/person that the building will comply with this clause at the design stage & installation certification will be required on completion of the project from the relevant installer or engaged consultant.
J5.7	**Pump Systems**	
CR	(a) General — Pumps and pipework that form part of an air-conditioning system must either— (i) separately comply with (b), (c) and (d); or (ii) achieve a pump motor power per unit of flowrate lower than the pump motor power per unit of flowrate achieved when applying (b), (c) and (d) together.	Mechanical Consultant to confirm compliance. Design statement (or other means) required from appropriately qualified designer/person that the building will comply with this clause at the design stage & installation certification will be required on completion of the project from the relevant installer or engaged consultant.
J5.8	**Pipework Insulation**	
CR	(a) Piping, vessels, heat exchangers and tanks containing heating or cooling fluid, where the fluid is held at a heated or cooled temperature, that are part of an air-conditioning system, other than in appliances covered by MEPS, must be provided with insulation— (i) complying with AS/NZS 4859.1; and (ii) for piping of heating and cooling fluids, having an insulation R-Value in accordance with Table J5.8a; and (iii) for vessels, heat exchangers or tanks, having an insulation R-Value in accordance with Table J5.8b; and (iv) for refill or pressure relief piping, having an insulation R-Value equal to the required insulation R-Value of the connected pipe, vessel, or tank within 500 mm of the connection. (b) Insulation must be protected against the effects of weather and sunlight; and be able to withstand the	Mechanical Consultant to confirm compliance. Design statement (or other means) required from appropriately qualified designer/person that the building will comply with this clause at the design stage & installation certification will be required on completion of the project from the relevant installer or engaged consultant.

	temperatures within the piping, vessel, heat exchanger or tank. (c) Insulation provided to piping, vessels, heat exchangers or tanks containing cooling fluid must be protected by a vapour barrier on the outside of the insulation. (d) The requirements of (a) and (b) do not apply to piping, vessels, or heat exchangers— (i) located within the only or last room served by the system and downstream of the control device for the regulation of heating or cooling service to that room; or (ii) encased within a concrete slab or panel which is part of a heating or cooling system; or (iii) supplied as an integral part of a chiller, boiler or unitary air-conditioner complying with the requirements of J5.9, J5.10 and J5.11; or (iv) inside an air-handling unit, fan-coil unit, or the like. (e) For the purposes of (a), (b), (c) and (d)— (i) heating fluids include refrigerant, heated water, steam, and condensate; and (ii) cooling fluids include refrigerant, chilled water, brines, and glycol mixtures, but do not include condenser cooling water.	
J5.9	**Space Heating**	
CR	(a) A heater used for air-conditioning or as part of an air-conditioning system must be— (i) a solar heater, gas heater, heat pump heater; or (ii) a heater using reclaimed heat from another process such as reject heat from a refrigeration plant; or (iii) an electric heater if – (A) the heating capacity is not more than— (aa) 10 W/m2 of the floor area of the conditioned space in climate zone 1; or (bb) 40 W/m2 of the floor area of the conditioned space in climate zone 2; or (cc) the value specified in Table J5.9 where reticulated gas is not available at the allotment boundary; or (B) the annual energy consumption for heating is not more than 15 kWh/m2 of the floor area of the conditioned space in climate zones 1, 2, 3, 4 and 5; or (C) the in-duct heater complies with J5.2(a)(ii)(C); or (iv) any combination of (i) to (v). (b) An electric heater may be used for heating a bathroom in a Class 2, 3, 9a or 9c building if the heating capacity is not more than 1.2 kW and the heater has a timer. (c) A fixed heating or cooling appliance that moderates the temperature of an outdoor space must be configured to automatically shut down when— (i) there are no occupants in the space served; or	Mechanical Consultant to confirm compliance. Design statement (or other means) required from appropriately qualified designer/person that the building will comply with this clause at the design stage & installation certification will be required on completion of the project from the relevant installer or engaged consultant.

	(ii) a period of one hour has elapsed since the last activation of the heater; or (iii) the space served has reached the design temperature. (d) A gas water heater, that is used as part of an air-conditioning system, must— (i) if rated to consume 500 MJ/hour of gas or less, achieve a minimum gross thermal efficiency of 86%; or (ii) if rated to consume more than 500 MJ/hour of gas, achieve a minimum gross thermal efficiency of 90%.	
J5.10	**Refrigerant Chillers**	
CR	An air-conditioning system refrigerant chiller must comply with MEPS and the full load operation energy efficiency ratio and integrated part load energy efficiency ratio in Table J5.10a or Table J5.10b when determined in accordance with AHRI 551/591.	Mechanical Consultant to confirm compliance. Design statement (or other means) required from appropriately qualified designer/person that the building will comply with this clause at the design stage & installation certification will be required on completion of the project from the relevant installer or engaged consultant.
J5.11	**Unitary Air-Conditioning Equipment**	
CR	Unitary air-conditioning equipment including packaged air-conditioners, split systems, and variable refrigerant flow systems must comply with MEPS and for a capacity greater than or equal to 65 kWr— (a) where water cooled, have a minimum energy efficiency ratio of 4.0 Wr / Winput power for cooling when tested in accordance with AS/NZS 3823.1.2 at test condition T1, where input power includes both compressor and fan input power; or (b) where air cooled, have a minimum energy efficiency ratio of 2.9 Wr / Winput power for cooling when tested in accordance with AS/NZS 3823.1.2 at test condition T1, where input power includes both compressor and fan input power.	Mechanical Consultant to confirm compliance. Design statement (or other means) required from appropriately qualified designer/person that the building will comply with this clause at the design stage & installation certification will be required on completion of the project from the relevant installer or engaged consultant.
J5.12	**Heat Rejection Equipment**	
CR	(a) The motor rated power of a fan in a cooling tower, closed circuit cooler or evaporative condenser must not exceed the allowances in Table J5.12. (b) The fan in an air-cooled condenser must have a motor rated power of not more than 42 W for each kW of heat rejected from the refrigerant, when determined in accordance with AHRI 460 except for— (i) a refrigerant chiller in an air-conditioning system that complies with the energy efficiency ratios in J5.10; or (ii) packaged air-conditioners, split systems, and variable refrigerant flow air-conditioning equipment that complies with the energy efficiency ratios in J5.11.	Mechanical Consultant to confirm compliance. Design statement (or other means) required from appropriately qualified designer/person that the building will comply with this clause at the design stage & installation certification will be required on completion of the project from the relevant installer or engaged consultant.

Part J6 – Artificial Lighting & Power		
Clause	**Reference**	**Comment**
J6.1	**Application of part**	
CR	This part does not apply to a Class 8 electricity network substation	Electrical Consultant to confirm compliance. Design statement (or other means) required from appropriately qualified designer/person that the building will comply with this clause at the design stage & installation certification will be required on completion of the project from the relevant installer or engaged consultant.
J6.2	**Interior artificial lighting**	
CR	In a building other than a sole-occupancy unit of a Class 2 building or a Class 4 part of a building— (i) for artificial lighting, the aggregate design illumination power load must not exceed the sum of the allowances obtained by multiplying the area of each space by the maximum illumination power density in Table J6.2a; and (ii) the aggregate design illumination power load in (i) is the sum of the design illumination power loads in each of the spaces served; and (iii) in determining the design illumination power load for (ii) the following must be used: (A) Where there are multiple lighting systems serving the same space— (aa) the total illumination power load of all systems; or (bb) for a control system that permits only one system to operate at a time, the design illumination power load is— (AA) based on the highest illumination power load; or (BB) determined by the formula listed in this clause of the BCA (B) Where there is adjustable position lighting such as trapeze lighting or track lighting other than trunking systems that accept fluorescent lamps— (aa) the rating of the circuit breaker protecting the track; or (bb) of extra low voltage, 80% of the power rating of the transformer; or (cc) of mains voltage, 100 W per metre of track. (C) The requirements of this clause **do not apply** to the following: (i) Emergency lighting in accordance with Part E4. (ii) Signage and display lighting within cabinets and display cases that are fixed in place. (iii) Lighting for accommodation within the residential part of a detention centre. (iv) A heater where the heater also emits light, such as in bathrooms.	Electrical Consultant to confirm compliance. Design statement (or other means) required from appropriately qualified designer/person that the building will comply with this clause at the design stage & installation certification will be required on completion of the project from the relevant installer or engaged consultant.

	(v) Lighting of a specialist process nature such as in an operating theatre, fume cupboard or clean workstation. (vi) Lighting of performances such as theatrical or sporting. (vii) Lighting for the permanent display and preservation of works of art or objects in a museum or gallery other than for retail sale, purchase, or auction.	
J6.3	**Interior artificial lighting and power control**	

CR	(a) Artificial lighting of a room or space must be individually operated by a switch or other control device. (b) An occupant activated device, such as a room security device, a motion detector in accordance with Specification J6, or the like, must be provided in the sole-occupancy unit of a Class 3 building, other than where providing accommodation for people with a disability or the aged, to cut power to the artificial lighting, air-conditioner, local exhaust fans and bathroom heater when the sole-occupancy unit is unoccupied. (c) An artificial lighting switch or other control device in (a) must— (i) if an artificial lighting switch, be located in a visible position— (A) in the room or space being switched; or (B) in an adjacent room or space from where the lighting being switched is visible; and (ii) for other than a single functional space such as an auditorium, theatre, swimming pool, sporting stadium or warehouse— (A) not operate lighting for an area of more than 250 m^2 if in a Class 5 building or a Class 8 laboratory; or (B) not operate lighting for an area of more than— (aa) 250 m^2 for a space of not more than 2000 m^2; or (bb) 1000 m2 for a space of more than 2000 m2, if in a Class 3, 6, 7, 8 (other than a laboratory) or 9 building. (d) 95% of the light fittings in a building or storey of a building, other than a Class 2 or 3 building or a Class 4 part of a building, of more than 250 m^2 must be controlled by— (i) a time switch in accordance with Specification J6; or (ii) an occupant sensing device such as— (A) a security key card reader that registers a person entering and leaving the building; or (B) a motion detector in accordance with Specification J6. (e) In a Class 5, 6 or 8 building of more than 250 m^2, artificial lighting in a natural lighting zone adjacent to windows must be separately controlled from artificial lighting not in a natural lighting zone in the same storey except where— (i) the room containing the natural lighting zone is less than 20 m^2; or (ii) the room's natural lighting zone contains less than 4 luminaires; or (iii) 70% or more of the luminaires in the (f) Artificial lighting in a fire-isolated stairway, fire-isolated passageway, or fire-isolated ramp, must be controlled	Electrical Consultant to confirm compliance. Design statement (or other means) required from appropriately qualified designer/person that the building will comply with this clause at the design stage & installation certification will be required on completion of the project from the relevant installer or engaged consultant.

	by a motion detector in accordance with Specification J6. room are in the natural lighting zone. (g) Artificial lighting in a foyer, corridor, and other circulation spaces— (i)of more than 250 W within a single zone; and (ii)adjacent to windows, must be controlled by a daylight sensor and dynamic lighting control device in accordance with Specification J6. (h) Artificial lighting for daytime travel in the first 19 m of travel in a carpark entry zone must be controlled by a daylight sensor in accordance with Specification J6. (i) The requirements of (a), (b), (c), (d) and (e) do not apply to the following: (i) Emergency lighting in accordance with Part E4. (ii) Where artificial lighting is needed for 24 hour occupancy such as for a manufacturing process, parts of a hospital, an airport control tower or within a detention centre. (j) The requirements of (d) do not apply to the following: (i) Artificial lighting in a space where the sudden loss of artificial lighting would cause an unsafe situation such as in a patient care area in a Class 9a building or in a Class 9c aged care building. (ii) plant room or lift motor room (iii) workshop where power tools are used (iv) A heater where the heater also emits light, such as in bathrooms.	

Clause	Reference	Comment
J6.4	**Interior decorative and display lighting**	
CR	(a) Interior decorative and display lighting, such as for a foyer mural or art display, must be controlled— (i) separately from other artificial lighting; and (ii) (ii) by a manual switch for each area other than when the operating times of the displays are the same in a number of areas such as in a museum, art gallery or the like, in which case they may be combined; and (iii) (iii) by a time switch in accordance with Specification J6 where the display lighting exceeds 1 kW. (b) Window display lighting must be controlled separately from other display lighting.	Electrical Consultant to confirm compliance. Design statement (or other means) required from appropriately qualified designer/person that the building will comply with this clause at the design stage & installation certification will be required on completion of the project from the relevant installer or engaged consultant.
J6.5	**Artificial lighting around the perimeter of a building**	
CR	(a) Artificial lighting around the perimeter of a building, must— (i) be controlled by— (A) a daylight sensor; or (B) a time switch that is capable of switching on and off electric power to the system at variable pre-programmed times and on variable pre-programmed days; and (ii) when the total perimeter lighting load exceeds 100 W— (A) have an average light source efficacy of not less than 60 Lumens/W; or (B) be controlled by a motion detector in accordance with Specification J6; and (iii) when used for decorative purposes, such as facade lighting or signage lighting, have a separate time switch in accordance with Specification J6. (b) The requirements of (a)(ii) do not apply to the following: (i) Emergency lighting in accordance with Part E4. (ii) Lighting around a detention centre.	Electrical Consultant to confirm compliance. Design statement (or other means) required from appropriately qualified designer/person that the building will comply with this clause at the design stage & installation certification will be required on completion of the project from the relevant installer or engaged consultant.
J6.6	**Boiling water and chilled water units**	
CR	Power supply to these units (Billy units and Chilled water units) must be controlled by a time switch that complies with Spec J6	Electrical Consultant to confirm compliance. Design statement (or other means) required from appropriately qualified designer/person that the building will comply with this clause at the design stage & installation certification will be required on completion of the project from the relevant installer or engaged consultant.
J6.7	**Lifts – Energy Efficiency**	
CR	Lifts must—	Appropriate Consultant to confirm compliance. Design statement (or other means) required from appropriately qualified designer/person

	(a) be configured to ensure artificial lighting and ventilation in the car are turned off when it is unused for 15 minutes; and (b) achieve the idle and standby energy performance level in Table 6.7a; and (c) achieve— (i) the energy efficiency class in Table 6.7b; or (ii) if a dedicated goods lift, energy efficiency class D in accordance with ISO 25745-2.	that the building will comply with this clause at the design stage & installation certification will be required on completion of the project from the relevant installer or engaged consultant.
J6.8	**Escalators and Moving Walkways**	
N/A	Escalators and moving walkways must have the ability to slow to between 0.2 m/s and 0.05 m/s when unused for more than 15 minutes.	This clause is not applicable to this project.
Part J7 – Hot Water Supply		
Clause	**Reference**	**Comment**
J7.2	**Hot Water Supply**	
CR	Hot water supply for food preparation and sanitary purposes must comply with Part B2 of NCC Volume 3	Hydraulic Consultant to confirm compliance. Design statement (or other means) required from appropriately qualified designer/person that the building will comply with this clause at the design stage & installation certification will be required on completion of the project from the relevant installer or engaged consultant.
J7.3 & J7.4	**Swimming Pool and Spa Heating and Pumping Requirements**	
N/A	Should a swimming pool or Spa form part of this development, compliance with the requirements of these clauses of the BCA will be required	This clause is not applicable to this project.
Part J8 – Energy Monitoring		
Clause	**Reference**	**Comment**
J8.3	**Energy Monitoring**	
CR	(a) A building or sole-occupancy unit with a floor area of more than 500m^2 must have an energy meter configured to record the time of use consumption of gas and electricity. (b) A building with a floor area of more than 2,500m^2 must have energy metres configured to record the time of use consumption of gas and electricity— (i) air-conditioning plant including, where appropriate, heating plant, cooling plant and air handling fans; and (ii) artificial lighting; and (iii) appliance power; and (iv) central hot water supply; and (v) internal transport devices including lifts, escalators, and travelators where there is more than one serving the building; and	Note: Building Exceeds 2,500m2 in Floor Area Details of compliance are to be provided by the relevant consultant/s for these monitoring devices. Design statement (or other means) required from appropriately qualified designer/person that the building will comply with this clause at the design stage & installation certification will be required on completion of the project from the relevant installer or engaged consultant.

	(vi) other ancillary plant. (c) Energy Metres required by (b) must be interlinked by a communication system that collates the time of use energy consumption data to a single interface monitoring system where it can be stored, analysed, and reviewed.	

Appendix B:

Fire Resistance Levels (FRL's)

Specification C1.1, BCA Table No. 4 – Type B Construction: FRL of Building Elements

Item	Class 5 and 9b
Loadbearing External Walls • Less than 1.5m to a fire source feature • 1.5 - less 3m from fire source feature; • 3 - less 9m from a fire source feature • 9 - less 18m from a fire source feature • 18m or more from a fire source feature	 120/120/120 120/90/60 120/30/30 120/30/- -/-/-
Non-Loadbearing External Walls • Less than 1.5m to a fire source feature • 1.5 - less 3m from fire source feature; • 3m or more from a fire source feature.	 -/120/120 -/90/60 -/-/-
Loadbearing External Columns • Less than 18m • 18m or more	 120/-/- -/-/-
Non-Loadbearing External Columns	-/-/-
Common Walls & Fire Walls	120/120/120
Stair and Lift Shafts required to be fire-resisting • Loadbearing Stair & Lift shaft • Non-loadbearing Stair shaft only	 120/120/120 -/120/120
Internal walls bounding sole occupancy units • Loadbearing • Non-loadbearing	 120/-/- -/-/-
Internal walls bounding public corridors, public lobbies and the like: • Loadbearing • Non-loadbearing	 120/-/- -/-/-
Other loadbearing internal walls and columns	120/-/-
Roofs	-/-/-

Note: See concessions in Spec C1.1 for concessions to these above tabulated requirements, as this may reduce or remove fire rating requirements subject to certain criteria and haven't been captured in this report.
* **Fire-source feature** means the far boundary of a public road adjoining the allotment; or a side or rear boundary of the allotment; or an external wall of another building on the allotment which is not a Class 10 building.

Appendix C:

Travel Distance Mark Up

CONSULTANTS

CONSULTANT AREA
Company Name
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CONSULTANT AREA
Company Name
T 4927 5566

CONSULTANT AREA
Company Name
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CONSULTANT AREA
Company Name
T 4927 5566

CONSULTANT AREA
Company Name
T 4927 5566

CONSULTANT AREA
Company Name
T 4927 5566

AMENDMENTS

No	Drn	Chk	Date	Comment
A			25.05.21	Weekly Project Meeting
B			28.05.21	Stakeholder Workshop
C	HS	JH	11.06.21	Draft - Work In Progress
D	HS	JH	16.07.21	Floor Plans
ZE	HS	JH	15.09.21	Consultant coordination
ZF	HS	JH	23.09.21	Consultant Issue
ZG	HS	JH	28.09.21	Consultant Issue
ZH	HS	JH	07.10.21	EIS Submisison
ZI	HS	JH	08.10.21	Consultant coordination

NOTES

1. Dimensions are in millimetres unless otherwise shown.
2. Work to given dimensions. Do not scale from drawing
3. Check all dimensions on site prior to construction and fabrication.
4. Bring any discrepancies to the attention of the proprietor & architect.

CLIENT NAME

School Infrastructure NSW

NSW GOVERNMENT Education School Infrastructure

SCALE

1:200 @A1

PROJECT NAME AND ADDRESS

Wee Waa High School
105-107 Mitchell St, Wee Waa NSW 2388

DRAWN: HS
APPROVED: JH

STATUS

DRAWING TITLE

Ground Floor Plan

PROJECT NO. 4474
DRAWING NO. CD2103
REV. ZI

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Nominated Architect
Justin Hamilton (6160)
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CONSULTANTS

CONSULTANT AREA Company Name T 4927 5566 (×6)

AMENDMENTS

No	Drn	Chk	Date	Comment
A			25.05.21	Weekly Project Meeting
B			28.05.21	Stakeholder Workshop
C	HS	JH	11.06.21	Draft - Work In Progress
D	HS	JH	16.07.21	Floor Plans
ZE	HS	JH	15.09.21	Consultant coordination
ZF	HS	JH	23.09.21	Consultant Issue
ZG	HS	JH	28.09.21	Consultant Issue
ZH	HS	JH	07.10.21	EIS Submission
ZI	HS	JH	08.10.21	Consultant coordination

NOTES

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4. Bring any discrepancies to the attention of the proprietor & architect.

CLIENT NAME
School Infrastructure NSW
NSW GOVERNMENT Education School Infrastructure

SCALE 1:200 @A1

PROJECT NAME AND ADDRESS
Wee Waa High School
105-107 Mitchell St, Wee Waa NSW 2388

DRAWN HS | APPROVED JH

STATUS

DRAWING TITLE
First Floor Plan

PROJECT NO. 4474 | DRAWING NO. CD2104 | REV. ZI

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CONSULTANTS

CONSULTANT AREA
Company Name
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AMENDMENTS

No	Drn	Chk	Date	Comment
A			25.05.21	Weekly Project Meeting
B			28.05.21	Stakeholder Workshop
C			11.06.21	Draft - Work In Progress
D	RT / HS / EF	JH	16.06.21	Issue to Client - Early Contractor Involvement
E	RT / HS / EF	JH	22.06.21	Issue to Client - for Civil input
F	RT / HS / EF	JH	08.07.21	Issue to Client - Early Contractor Involvement - Addendum 01
G	RT / HS / EF	JH	04.08.21	90% (pending client approval)

NOTES

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2. Work to given dimensions. Do not scale from drawing
3. Check all dimensions on site prior to construction and fabrication.
4. Bring any discrepancies to the attention of the proprietor & architect.

CLIENT NAME

School Infrastructure NSW

NSW GOVERNMENT Education School Infrastructure

SCALE 1:200 @A1

PROJECT NAME AND ADDRESS

Wee Waa High School
105-107 Mitchell St, Wee Waa NSW 2388

DRAWN RT / HS / EF

APPROVED JH

STATUS

DRAWING TITLE

Ground Floor Furniture Layout Plan

PROJECT NO. 4474

DRAWING NO. CD2105

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AMENDMENTS

No	Drn	Chk	Date	Comment
A			25.05.21	Weekly Project Meeting
B			28.05.21	Stakeholder Workshop
C			11.06.21	Draft - Work In Progress
D	RT / HS / EF	JH	16.06.21	Issue to Client - Early Contractor Involvement
E	RT / HS / EF	JH	22.06.21	Issue to Client - for Civil input
F	RT / HS / EF	JH	08.07.21	Issue to Client - Early Contractor Involvement - Addendum 01
G	RT / HS / EF	JH	04.08.21	90% (pending client approval)

NOTES

1. Dimensions are in millimetres unless otherwise shown.
2. Work to given dimensions. Do not scale from drawing
3. Check all dimensions on site prior to construction and fabrication.
4. Bring any discrepancies to the attention of the proprietor & architect.

CLIENT NAME
School Infrastructure NSW
NSW GOVERNMENT Education School Infrastructure

SCALE
0m 2 4 6 8 10 1:200 @A1

PROJECT NAME AND ADDRESS
Wee Waa High School
105-107 Mitchell St, Wee Waa NSW 2388

DRAWN: RT / HS / EF
APPROVED: JH

STATUS

DRAWING TITLE
First Floor Furniture Layout Plan

PROJECT NO.: 4474
DRAWING NO.: CD2106
REV.: G

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