



BCA COMPLIANCE ASSESSMENT REPORT

Building Code of Australia 2022 Amendment 2

PROJECT:	64-66 Lavender St, and 3-7 Middlemiss Street Lavender Bay
REF. No.:	NEW250950 (Rev 3)
DATE:	21/04/2026
CLIENT:	Central Element
CONTACT:	Hugh Roberts
EMAIL:	hroberts@ centralelement.com.au
CONSULTANT:	Mauricio Vera
PHONE No:	0451 078 790
EMAIL	mvera@newcrown.com.au

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REPORT REGISTER

Issue	Date	Description	Consultant	Signature
1.	05/02/2026	Preliminary BCA Report (SSDA Stage)	Prepared by: Mohamed Hammoud	--
			Reviewed by: Mauricio Vera	--
2.	12/03/2026	Final BCA Report (SSDA Stage)	Prepared by: Mohamed Hammoud	--
			Reviewed by: Mauricio Vera	--
3.	21/04/2026	Updated Final BCA Report (SSDA Stage)	Prepared by: Lu Xiaoxing Assistant Building Surveyor	<i>Lu Xiaoxing</i>
			Reviewed by: Mauricio Vera Director, Building Surveyor – unrestricted (BDC2854)	

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1.0 Executive Summary

This National Construction Code assessment report, in specific of the Building Code of Australia 2022 Amendment 2 (BCA), has been prepared by New Crown Consulting for Central Elements, and it relates to the proposed works associated to the subject development known as 64-66 Lavender St, Lavender Bay.

The evolving design documentation submitted at this stage of the design is detailed to the extent where the preparation of a comprehensive assessment report is achievable. This report is a final version for State Significant Development Application (SSDA) stage.

Table 1 (below) summarises the items of interest at this stage of the review, including variations to the DTS Provisions of the BCA, and aspects that require further information. The summary below is not an exhaustive list of all non-compliances for the development. The report in its entirety needs to be reviewed by the design team to obtain an understanding of all BCA related matters.

The following items listed in the table below are required to be clarified to confirm the design complies with the BCA:

Item	Non-Compliance	Resolution	Performance Requirement	Clause	Assessment Method
Identified Performance-Based Solutions					
1.	Use of loadbearing metal shelf angles on external walls with no FRL.	Performance solution	CIP1	C2D2, Spec 5	TBC
2.	Absence of an FRL to base of shaft serving as garbage chutes (x4).	Performance solution	CIP2	C2D2, S5C8	TBC
3.	Unprotected openings on western external walls (Tower A) required to have an FRL (within 3m of boundary)	Performance solution	CIP2, CIP8	C4D3	TBC
4.	Absence of bounding construction (60-90 minutes FRL) between public corridors and Communal spaces	Performance solution	CIP1, CIP2	C4D12	TBC
5.	Excessive travel distances have been identified (various locations)	Performance solution	DIP4, E2P2	D2D5	TBC
6.	Insufficient distance between alternative exits in scissors stairs of 5m in lieu of 9m minimum (both towers – all storeys)	Performance solution	DIP4, E2P2	D2D6	TBC

Table 1.0 – Executive Summary

2.0 Introduction

The present BCA assessment review has been limited to the evolving Architectural drawings (For Approval), listed in Addendum B of this report, which detail sufficient information to allow the identification of the matters included in the Executive Summary and examined for further consideration.

2.1 Purpose

The purpose of this report is to assess the proposed design against the Deemed-to-Satisfy (DTS) Provisions of National Construction Code, in specific to the Building Code of Australia 2022 Amendment 2 (BCA), and to establish any aspects where compliance may not be achieved, where compliance is capable to be achieved, or where compliance is readily achievable.

Any aspects where DTS compliance is not achieved, assessment against relevant performance criteria will need to be addressed by means of a separate Performance Based Solution (PBS) report and the associated Performance Based Design Brief (PBDB) report.

2.2 Applicable BCA

The design of buildings is bounded by the Environmental Planning and Assessment Act 1979. Compliance with the National Construction Code (BCA) is compulsory to all proposed "new works" regardless of the adopted certification pathway.

For Crown Land developments, the BCA edition is based on when tenders for main works are issued. For non-Crown developments, the BCA edition effective at the time of the construction certificate (CC) application, including the "entrance floor," applies to all subsequent CC applications under the same consent, per the Environmental Planning and Assessment (Development Certification and Fire Safety) Amendment (Construction Certificates) Regulation 2023.

The BCA is now updated every three (3) years, the last update occurred on the 29th of July 2025, thus applicable version is BCA 2022 Amendment 2.

2.3 Fire & Rescue (FRNSW)

Fire & Rescue NSW (FRNSW) is a regulatory authority in NSW. In accordance with Division 3 of the Environmental Planning and Assessment (Development Certification and Fire Safety) Regulation 2021, initial referral process to FRNSW, also known as Fire Engineering Brief Questionnaire (FEBQ), is adopted if fire safety compliance issues are raised in the Performance Based Design Brief (PBDB) required by the BCA.

2.4 Certifying Authority

A Principal Building Surveyor (also known as Accredited Certifier), whether in private practice or working for a council, is a public official whose role it is to issue certificates that authorise construction and building occupation in accordance with relevant planning and building legislation. They also inspect buildings to issue certificates.

In accordance with Section 24 Prescribed Conflicts (Part 4 – Conflicts of Interest) of the Building and Development Certifiers Regulations 2020, when a certifier is elected to act as the certifier for a project, the certifier cannot act as a consultant for that project, in any form, as it could give rise to conflicts of interest. Similarly, if a certifier acts as a consultant for a project, that certifier cannot subsequently act as the certifier for the same project.

Part 4 Conflicts of Interest.

24 Prescribed conflicts:

For the purposes of section 29(1)(b) of the Act, the following are circumstances in which a registered certifier has a conflict of interest in certification work—

- (a) the registered certifier issuing a strata certificate for a strata plan, strata plan of subdivision or a notice of conversion if the plan or notice has been prepared by the registered certifier or a person who has a relationship (whether family, personal, employment or business) with the registered certifier,*
 - (b) the registered certifier carrying out certification work in relation to an aspect of development if the registered certifier has done any of the following in relation to that aspect—*
 - (i) provided advice as to how to amend a plan or specification to ensure that the aspect will comply with the Building Code of Australia or a legislative requirement (but not if the advice was merely advice as to how the plan or specification could be amended to comply with a deemed-to-satisfy provision of the Building Code of Australia and the development relates only to a class 1 building or a class 10 building),*
 - (ii) proposed a design option for the aspect of development, including proposing a performance solution to achieve compliance with a performance requirement of the Building Code of Australia.*
-

2.5 Report Limitations

This Report does not include or imply any audit, assessment, or upgrading of the proposed development regarding:

- Disability Discrimination Act 1992 or (Access to Premises Buildings) Standards 2010.
- Deemed to satisfy provisions of Part D4, E3D8, F4D5, F4D6, F4D7 and F4D12 of the BCA.
- Detailed assessment of Australian Standards.
- Requirements of Regulatory Authorities such as 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.
- Demolition Standards not referred to by the BCA.
- Work Healthy and Safety Act 2011 (Safety in Design)
- Liquor Licensing Act 1997.
- The National Construction Code – Plumbing Code of Australia Volume 3.
- The National Construction Code – Building Code of Australia Volume 2.
- Structural capacity or any inherent FRL's of the building.
- Capacity of design of any Electrical, Fire, Hydraulic or Mechanical Services; and associated services drawings.
- Operating capabilities of any proposed/existing fire protection services such as electrical, mechanical, hydraulic, etc.
- Conditions of Development Consent issued by the Local Consent Authority.
- Planning requirements such as Livable and Adaptable Housing, number of car parks, setbacks, lighting, shadows, etc.
- Review and endorsement of any specialist documentation / drawings other than our report based on the reviewed architectural drawings. Final compliance is confirmed by means of Design Certificates from each specialist legalised by the Construction Certificate.

3.0 Project Profile

3.1 Site Location

The development site being the subject of this report is proposed to be located at 64-66 Lavender St, Lavender Bay. The site is currently bounded by Middlemiss Street to the north, private allotments to the east and west, and Lavender Street to the south.

The main portion of the site consists of existing buildings to be demolished.



Figure 3.1 – Site Location

3.2 Proposed Building

The building being subject of this report comprises of thirty-two (32) above-ground storeys plus five (5) below-ground basement levels.

The proposed development involves the construction of two (2) towers consisting of residential SOU's, storage, basements, waste rooms, communal spaces, services, swimming pool, gymnasium, yoga, and surrounding landscape.

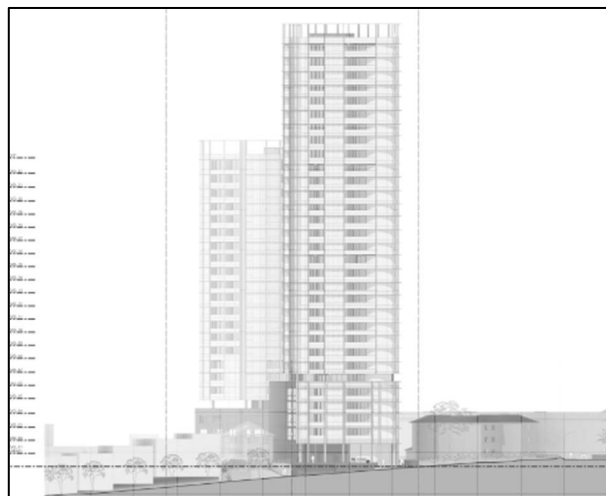


Figure 3.2 – Proposed development

3.3 Building Use

Class	Level / Location	Description
2	Ground, level 2, level 3, part level 4, and levels 5-31	Residential SOU's
7a	Basement 1 to 5	Carpark
9b	Part level 4	Assembly building

Note: Waste rooms are considered ancillary, thus not classified as Class 7b storage.

Table 3.3 – Building Use

3.4 Building Characteristics

Characteristic	Description
Number of Buildings:	One (1)
Type of Construction:	Type A
Floor Area of Building:	Circa 20,600m ²
Fire Compartment Size:	- Class 2: N/A - Class 7a: N/A - Class 9b: 800m ²
Fire Compartmentation Limit:	- Class 2: N/A - Class 7a: N/A (provided with AS2118.1 sprinkler system) - Class 9b: 8,000m ² and 48,000m ³
Rise in Storeys:	Thirty-three (33)
Levels Contained:	Thirty-seven (37)
Effective Height:	More than 50m (RL 132.40 – 29.90 = 102.5m)
Fire Compartments:	One (1)
Required Exits:	Two (2) per storey
Climate Zone:	Zone 5
Building Importance Level:	Two (2) Note: The building does not have an occupant load greater than 5000, and not more than 300 people will congregate in one area.
Fire-source features	- North: Further side of Middlemiss Street - East: Side boundary - South: Further side of Lavender Street - West: Side boundary

Table 3.4– Building Characteristics

3.5 Project Assumptions

The following assumptions outlined below were made in preparation of this assessment. If any of these assumptions are not correct, please contact the author of this report as it may have an impact on the assessment results.

- There will not be inter-allotment boundaries crossing (or nearby) the proposed building.
- External walls and any attachments to external walls will be fully non-combustible as defined by the BCA (i. e. framing, sarking, insulation, lining, cladding, noggings, etc).

- The proposed building will not be used as an Entertainment Venue as per the definition of the EP&A Act i.e. no theatre use, no cinema use, no performances by more than 1 person (if 2 or more then becomes a concert by definition).
- The building will be provided with a heating/cooling system thus Section J Energy Efficiency will be applicable (assessment excluded from this report).
- The building will be Accessible for people with disabilities (assessment excluded from this report).
- Storage areas in the building will not exceed 10% of the floor area of the storey, thus those areas will not adopt a 7b building classification.
- The exits located at open space will be connected to the road by firm pathways and a gradient not steeper than 1:8.
- Travel distances will be calculated to the true exits, which is where open to sky is reached (i. e. edge of roof/awning).
- Any bushfire requirements will be coordinated and approved with the Bushfire Consultant (assessment excluded from this report).
- The building (or part) will not include heritage status that may impede achieving BCA compliance.
- Any fire wall will extend all the way to the external walls of the building and from floor to ceiling/roof.
- Any roof top plant has been assessed as open to the sky (unroofed), thus not constituting a storey.

4.0 Compliance Issues for Attention

The reviewed documentation referenced in Addendum B of this report has been assessed against the Deemed-to-Satisfy (DTS) provisions of the BCA. This assessment has identified the following areas where compliance with the BCA will require further attention.

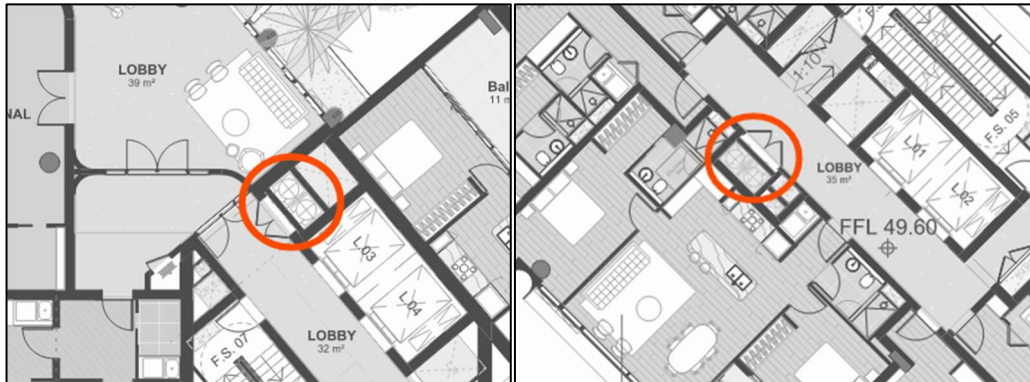
Please read the non-compliance issues outlined below in conjunction with the clause-by-clause assessment from Addendum A of this report.

Section C – Fire Resistance

1. Clause C2D2: Type of construction required & Specification S5C8: Enclosure of shafts.

- Use of loadbearing metal shelf angles on external walls with no FRL, resulting in a technical non-compliance with clause C2D2 and Specification 5.
- From the information provided, it is unlikely that the shaft accommodating the garbage chutes would be enclosed at the bottom with the FRL required for shafts, due to the nature of this system which requires the evacuation of the garbage thus must remain open, constituting a technical non-compliance with this clause and S5C8.

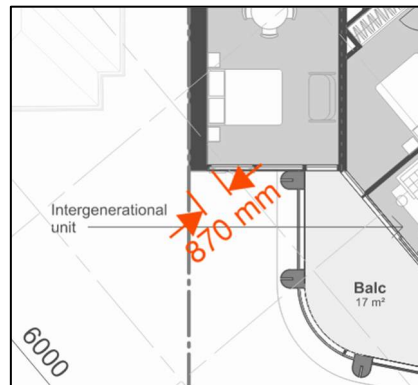
Design rectification is recommended. Alternatively, Fire Engineer to assess and advise if a Performance Solution is feasible.



2. Clause C4D3: Protection of openings in external walls.

The proposed window is identified to be exposed to a fire-source feature (western boundary) as located within 3m from it and being unprotected, in non-compliance with this clause. In order to protect this exposed opening, a side blade wall achieving the required FRL (90 mins) along the boundary could be proposed. Ensure this wall projects and shows in the drawings.

Design rectification is recommended. Alternatively, Fire Engineer to assess and advise if a Performance Solution is feasible.



3. Clause C4D12: Bounding construction Class2 and 3 buildings

Absence of bounding construction (60-90 minutes FRL) between public corridors and Communal spaces, in non-compliance with this clause and Specification 5.

Design rectification is recommended. Alternatively, Fire Engineer to assess and advise if a Performance Solution is feasible.



Section D – Access & Egress

4. Clause D2D5 & D2D6: Exit travel distances and distances between alternative exits

- Insufficient distance between alternative exits of 5m in lieu of 9m minimum (all storeys), in non-compliance with this clause.
- Excessive travel distances to a point of choice have been identified in various locations. Refer to Addendum C at the back of this report for travel distance markup

Design rectification is recommended. Alternatively, Fire Engineer to assess and advise if a Performance Solution is feasible.

5.0 Essential Fire Safety Measures (EFSM)

As a result of this BCA assessment, the below list of Essential Fire Safety Measures (EFSM's) is required/expected to be installed/designed in the building. The below table may require update as the design develops and option for compliance are confirmed.

Essential Fire Safety Measures (EFSM)	Standard of Performance	BCA Clause	Proposed EFSM
Access panels, doors & hoppers to fire resisting shafts	AS 1530.4 – 2014	C4D14	✓
Automatic fail-safe devices	--	C4D9, D3D26, Spec 12	✓
Automatic smoke detection & alarm systems	AS 1670.1 – 2018 AS 1668.1 – 2015	E2D3, E2D5. Spec 20.	✓
Automatic fire suppression systems (sprinklers)	AS 2118.1 – 2017	E1D4, E1D5, E1D9, Spec 17	✓
Emergency lift	--	E3D5	✓
Emergency lighting	AS 2293.1 – 2018	E4D2, E4D4	✓
Exit signs	AS 2293.1 – 2018	E4D5, E4D6, NSW E4D6, E4D8.	✓
Fire control room	--	E1D15, Spec 19	✓
Fire dampers	AS 1668.1 – 2015	C4D15, Spec 13	✓
Fire doors	AS 1905.1 – 2015	C3D13, C3D14, Spec 12, C4D9, C4D11	✓
Fire hose reel system	AS 2441 – 2005	E1D3	✓
Fire hydrant system	AS 2419.1 – 2021	E1D2	✓
- NSW Storz Couplings	FRNSW tech Sheet D15/45534.V9		
Fire seals (protecting openings in fire-resistant building elements)	AS 4072.1 – 2005 AS 1530.4 – 2014	C4D13, C4D14, C4D15, C4D16	✓
Lightweight construction	--	C2D2, Spec 5, C2D9, Spec 6, C1P1, C1P2	✓
Smoke hazard management	AS 1668.1 – 2015	E2D3, E2D4, E2D6, NSW E2D16.	✓
- Automatic shutdown system plus associated smoke detection	AS 1668.2 –2012		
- Stair pressurisation (fire-isolated stairs)			
- Stair pressurisation (pump room)			
- Zone pressurisation (vertical fire compartments)			
Portable fire extinguishers & fire blankets	AS 2444 – 2001	E1D14	✓
Emergency warning and intercom systems (EWIS)	AS 1670.4 – 2018	E4D9, Spec 20	✓
Building occupant warning system (BOWS)	AS 1670.1 – 2018	E1D5, Spec 17, Spec 20	✓
Warning and operational signs	EP&A Regs CI 183	C4D7, E3D4, D3D28, D4D7, S19C12	✓
Paths of Travel	EP&A (DCFS) Reg 2021, Part 15 Fire safety offences	D2D7, D1P4, D1P5, D1P6, E2P2	✓
Performance Based Solution, Report No. TBC, prepared by TBC,	TBC	TBC	TBC

Table 5.0 – Essential Fire Safety Measures (EFSM)

6.0 Fire Resistance Levels (FRL'S)

Specification S5C11 – Type A Construction: FRL of Building Elements

Item	Class 2	Class 7a & 9b
Loadbearing External Walls		
• Less than 1.5m to a fire source feature	90/90/90	120/120/120
• 1.5 – less than 3m from a fire source feature	90/60/60	120/90/90
• 3m or more from a fire source feature	90/60/30	120/60/30
Non-Loadbearing External Walls		
• Less than 1.5m to a fire source feature	-/90/90	-/120/120
• 1.5 – less than 3m from a fire source feature	-/60/60	-/90/90
• 3m or more from a fire source feature	-/-/-	-/-/-
External Columns		
• Loadbearing	90/-/-	120/-/-
• Non-loadbearing	-/-/-	-/-/-
Common Walls & Fire Walls	90/90/90	120/120/120
Stair and Lift Shafts required to be fire-resisting		
• Loadbearing	90/90/90	120/120/120
• Non-loadbearing	-/90/90	-/120/120
Internal walls bounding sole occupancy units		
• Loadbearing	90/90/90	120/-/-
• Non-loadbearing	-/60/60	-/-/-
Internal walls bounding public corridors, public lobbies and the like:	90/90/90	120/-/-
• Loadbearing	-/60/60	-/-/-
• Non-loadbearing		
Ventilating, pipe, garbage and like shafts:		
• Loadbearing	90/90/90	120/90/90
• Non-loadbearing	-/90/90	-/90/90
Other loadbearing internal walls, beams trusses and columns	90/-/-	120/-/-
Floors	90/90/90	120/120/120
Roofs	90/60/30	120/60/30

Note: See concessions in Spec 5 for potential concessions to these above tabulated requirements.

Table 6.0 – Fire Resistance Levels (FRL's)

BCA seeks to achieve acceptable standards for the benefit of the community.



Addendum A:

CLAUSE BY CLAUSE ASSESSMENT

BASIS OF THE ASSESSMENT

The following table is a clause-by-clause assessment of the reviewed architectural drawings against the deemed-to-satisfy (DTS) provisions of the BCA 2022 Amendment 2.

ACRONYMS & FIGURES

OK	The proposed building design complies with the DTS provisions of this clause.
X	The proposed building design does not comply with the DTS provisions of this clause.
?	Further information is required to clarify DTS compliance.
CRA	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.
N/A	Not applicable – This clause is not applicable to this project. No action required.
PSOL	Performance Solution is necessary to achieve compliance with this clause.
Noted	This clause is for informational purposes only, and no additional action is required.

Section A: Governing Requirements

Part A6 – Building Classification

Clause	Reference	Comment
A6G3	Class 2 buildings	
Noted	(1) A Class 2 building is a building containing two or more sole-occupancy units. (2) Each sole-occupancy unit in a Class 2 building must be a separate dwelling.	This clause is for informational purposes only, and no additional action is required. The proposed building comprises of residential SOU's, thus classified as a Class 2 building.
A6G8	Class 7 buildings	
Noted	(1) A Class 7 building is a storage-type building. (2) Class 7 includes the following sub-classifications: (a) Class 7a – a carpark. (b) Class 7b – a building that is used for storage or display of goods or produce for sale by wholesale.	This clause is for informational purposes only, and no additional action is required. - The proposed building comprises of basement carpark, thus classified as a Class 7a building. - Storage cages in basements to remain under the 10% of the floor area of each storey, to maintain 7a building classification (in lieu of 7b). Note: Waste rooms, plant rooms and the like are considered ancillary to the main building use.
A6G10	Class 9 buildings	
Noted	(1) A Class 9 building is a building of a public nature. (2) Class 9 includes the following sub-classifications: (a) Class 9a – a health-care building including any parts of the building set aside as laboratories and includes a health-care building used as a residential care building. (b) Class 9b – an assembly building including a trade workshop or laboratory in a primary or secondary school. (c) Class 9c – a residential care building. Note: Class 9b Entertainment Venues in NSW attract additional NCC Requirements	This clause is for informational purposes only, and no additional action is required. The proposed building comprises of assembly buildings (i.e. swimming pool, gym, etc) on level 4, thus classified as a Class 9b building.

Section B: Structure		
Part B1- Structural Provisions		
Clause	Reference	Comment
BID1 – BID6	Structural considerations, loads and resistance to actions	
CRA	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 BID3 and the general design procedures contained in AS/NZS1170.0; and (b) the resistance of a building or structure is determined in accordance with BID4. Compliance with the following Australian Standards is required: AS1170.1, AS1170.2, AS1170.3, AS1170.4, AS3700, AS3600, AS4100, AS1288-2006, AS2047, AS1562.1, AS1720.1, AS3660.1, AS4654.1-2, AS4505.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary. Structural Engineer to assess and confirm compliance.
Section C: Fire Provisions		
Part C1 – Fire Resistance (Objectives, Functional Statements, Performance Requirements and Verification Methods)		
There are no longer any DTS Clauses in Part C1 of the NCC 2022, the provisions have moved throughout this section.		
Part C2 – Fire resistance and stability		
Clause	Reference	Comment
C2D2	Type of construction required	
PSOL	(1) The minimum Type of fire-resisting construction of a building must be determined in accordance with Table C2D2, except as allowed for— (a) certain Class 2, 3 or 9c buildings, in C2D6; and (b) a Class 4 part of a building located on the top storey, in C2D4(2); and (c) open spectator stands and indoor sports stadiums, in C2D8. (2) Each building element must comply with Specification 5 as applicable	Performance Solution is necessary to achieve compliance with this clause - Metal shelf angles are proposed on loadbearing external walls with no FRL, in non-compliance with this clause. To be rectified, alternatively Fire Engineer to assess if a Performance Solution is feasible. - External walls on southern tower (western facade) are located closer than 3m from the fire source feature (boundary), thus required to have an FRL.

- Connection between fire rated floors and non-fire rated external walls may require barriers in cavities to prevent spread of fire and smoke. Currently unknown.
- The proposed building is of Type A construction. FRL's across the building are to comply with Specification 5.

Colour coded FRL drawings to be provided for review prior to construction.

C2D3	Calculation of rise in storeys	
Noted	(1) The rise in storeys is the sum of the greatest number of storeys at any part of the external walls of the building and any storeys within the roof space— (a) above the finished ground next to that part; or (b) if part of the external wall is on the boundary of the allotment, above the natural ground level at the relevant part of the boundary. (2) A storey is not counted if— (a) it is situated at the top of the building and contains only heating, ventilating or lift equipment, water tanks, or similar service units or equipment; or (b) it is situated partly below the finished ground and the underside of the ceiling is not more than 1 m above the average finished level of the ground at the external wall, or if the external wall is more than 12 m long, the average for the 12 m part where the ground is lowest. (3) In a Class 7 or 8 building, a storey that has an average internal height of more than 6 m is counted as— (a) one storey if it is the only storey above the ground; or (b) 2 storeys in any other case. (4) For the purposes of calculating the rise in storeys of a building— (a) a mezzanine is regarded as a storey in that part of the building in which it is situated if its floor area is more than 200 m² or more than $\frac{1}{3}$ of the floor area of the room, whichever is the lesser; and (b) two or more mezzanines are regarded as a storey in that part of the building in which they are situated if they are at or near the same level and have an aggregate floor area more than 200 m² or more than $\frac{1}{3}$ of the floor area of the room, whichever is the lesser.	This clause is for informational purposes only, and no additional action is required. The calculated rise in storeys of the building is thirty-four (34).

C2D4	Buildings of multiple classification	
CRA	(1) In a building of multiple classifications, the Type of construction required for the building is the most fire-resisting Type resulting from the application of Table C2D2 on the basis that the classification applying to the top storey applies to all storeys. (2) In a building containing a Class 4 part on the top storey, for the purpose of (1), the classification applying to the top storey must be— (a) when the Class 4 part occupies the whole of the top storey, the classification applicable to the next highest storey; or (b) when the Class 4 part occupies part of the top storey, the classification applicable to the adjacent part.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary. The building is of Type A Construction.
C2D9	Lightweight construction	
CRA	(1) Lightweight construction must comply with Specification 6 if it is used in a wall system— (a) that is required to have an FRL; or (b) for a lift shaft, stair shaft or service shaft or an external wall bounding a public corridor including a non-fire-isolated passageway or non-fire-isolated ramp, in a spectator stand, sports stadium, cinema or theatre, railway station, bus station or airport terminal. (2) If lightweight construction is used for the fire-resisting covering of a steel column or the like, and if— (a) the covering is not in continuous contact with the column, then the void must be filled solid, to a height of not less than 1.2 m above the floor to prevent indenting; and (b) the column is liable to be damaged from the movement of vehicles, materials or equipment, then the covering must be protected by steel or other suitable material.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.
C2D10	Non-Combustible Building elements	
CRA	(1) In a building required to be of Type A or B construction, the following building elements and their components must be non-combustible: (a) External walls and common walls, including all components incorporated in them including the facade covering, framing and insulation. (b) The flooring and floor framing of lift pits. (c) Non-loadbearing internal walls where they are required to be fire-resisting. (2) 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— (a) a building required to be of Type A construction; and	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary. External walls must be made completely of non-combustible materials (i. e. framing, cladding, insulation, sarking, internal lining, etc). NATA test reports of materials on external walls (i. e. framing, insulation, sarking, lining, cladding, etc) will be reviewed prior to construction. Note:

- (b) a building required to be of Type B construction, subject to C3D11, in—
 - (i) a Class 2, 3 or 9 building; and
 - (ii) a Class 5, 6, 7 or 8 building if the shaft connects more than 2 storeys.
- (3) A loadbearing internal wall and a loadbearing fire wall, including those that are part of a loadbearing shafts, must comply with Specification 5.
- (4) The requirements of (1) and (2) do not apply to the following:
 - (a) Gaskets; (b) Caulking; (c) Sealants; (d) Termite management systems; (e) Glass, including laminated glass, and associated adhesives, including tapes;
 - (f) Thermal breaks associated with—
 - (i) glazing systems; or
 - (ii) external wall systems, where the thermal breaks—
 - (A) are no larger than necessary to achieve thermal objectives; and
 - (B) do not extend beyond one storey; and
 - (C) do not extend beyond one fire compartment.
 - (g) Damp-proof courses.
 - (h) Compressible fillers and backing materials, including those associated with articulation joints, closing gaps not wider than 50 mm.
 - (i) Isolated—
 - (i) construction packers and shims; or
 - (ii) blocking for fixing fixtures; or
 - (iii) fixings, including fixing accessories; or
 - (iv) acoustic mounts.
 - (j) Waterproofing materials applied to the external face, used below ground level and up to 250 mm above ground level.
 - (k) Joint trims and joint reinforcing tape and mesh of a width not greater than 50 mm.
 - (l) Weather sealing materials, applied to gaps not wider than 50 mm, used within and between concrete elements.
 - (m) Wall ties and other masonry components complying with AS 2699 Part 1 and Part 3 as appropriate, and associated with masonry wall construction.
 - (n) Reinforcing bars and associated minor elements that are wholly or predominately encased in concrete or grout.
 - (o) A paint, lacquer or a similar finish or coating.

Consider adding a compliance note (C2D10) on drawings.

Note: Dintel Wall, Rediwall or the like, may need evidence of compliance with this clause if used on external walls, due to the presence of polymer materials encase (i. e. Code Mark).

- (p) Adhesives, including tapes, associated with stiffeners for cladding systems.
- (q) Fire-protective materials and components required for the protection of penetrations.
- (5) The following materials, when entirely composed of itself, are non-combustible and may be used wherever a non-combustible material is required:
 - (a) Concrete; (b) Steel, including metallic coated steel; (c) Masonry, including mortar; (d) Aluminium, including aluminium alloy; (e) Autoclaved aerated concrete, including mortar; (f) Iron; (g) Terracotta; (h) Porcelain; (i) Ceramic; (j) Natural stone; (k) Copper; (l) Zinc; (m) Lead, (n) Bronze; (o) Brass.
- (6) The following materials may be used wherever a non-combustible material is required:
 - (a) Plasterboard.
 - (b) Perforated gypsum lath with a normal paper finish.
 - (c) Fibrous-plaster sheet.
 - (d) Fibre-reinforced cement sheeting.
 - (e) Pre-finished metal sheeting having a combustible surface finish not exceeding 1 mm thickness and where the Spread-of-Flame Index of the product is not greater than 0.
 - (f) Sarking-type materials that do not exceed 1 mm in thickness and have a Flammability Index not greater than 5.
 - (g) Bonded laminated materials where—
 - (i) each lamina, including any core, is non-combustible; and
 - (ii) each adhesive layer does not exceed 1 mm in thickness, and the total thickness of the adhesive layers does not exceed 2 mm; and
 - (iii) the Spread-of-Flame Index and the Smoke-Developed Index of the bonded laminated material as a whole do not exceed 0 and 3 respectively; and
 - (iv) when located externally, are fixed in accordance with C2D15.

NSW C2D11	Fire hazard properties	
CRA	(1) The fire hazard properties of the following internal linings, materials and assemblies within a Class 2 to 9 building must comply with Specification 7: (a) Floor linings and floor coverings. (b) Wall linings and ceiling linings. (c) Air-handling ductwork. (d) Lift cars. (e) In Class 9b buildings used as— (i) an entertainment venue, a material used to cover closed back upholstered seats; and	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary. - Floor: Critical Radiant Flux (CRF) of not less than 1.2kW/m² for sprinkler protected buildings. - Wall and Ceiling: 1 or 2 group materials. - Lift Cars: CRF of 2.2 or more for floors, and Group 1 or 2 material for the wall/ceilings.

- (ii) a public hall or the like, a proscenium curtain required by Specification 32.
- (f) Escalators, moving walkways and non-required non-fire-isolated stairways or pedestrian ramps subject to Specification 14.
- (g) Sarking-type materials.
- (h) Attachments to floors, ceilings, internal walls, common walls, fire walls and to internal linings of external walls.
- (i) Other materials including insulation materials other than sarking-type materials.
- (2) Paint or fire-retardant coatings must not be used in order to make a material comply with a required fire hazard property, except in respect of a material referred to in NSW Specification 7, NSW Table S7C7 and to which Notes 4 and 5 are applicable.
- (3) The requirements of (1) do not apply to a material or assembly if it is—
 - (a) plaster, cement render, concrete, terrazzo, ceramic tile or the like; or
 - (b) a fire-protective covering; or
 - (c) a timber-framed window; or
 - (d) a solid timber handrail or skirting; or
 - (e) a timber-faced door; or
 - (f) an electrical switch, socket-outlet, cover plate or the like; or
 - (g) a material used for—
 - (i) a roof insulating material applied in continuous contact with a substrate; or
 - (ii) an adhesive; or
 - (iii) a damp-proof course, flashing, caulking, sealing, ground moisture barrier, or the like; or
 - (h) a paint, varnish, lacquer or similar finish, other than nitro-cellulose lacquer; or
 - (i) a clear or translucent roof light of glass fibre-reinforced polyester if—
 - (i) the roof in which it is installed forms part of a single storey building required to be Type C construction; and
 - (ii) the material is used as part of the roof covering; and
 - (iii) it is not closer than 1.5 m from another roof light of the same type; and
- each roof light is not more than 14 m² (iv) in area; and
- the area of the roof lights per 70 m² of roof surface is not more than 14 m² (v) ; or
- (j) a face plate or neck adaptor of supply and return air outlets of an air handling system; or
- (k) a face plate or diffuser plate of light fitting and emergency exit signs and associated electrical wiring and electrical components; or

- Sarking: Flammability Index (FI) shall not be more than 5.

- Insulation: Spread of flame index shall not be more than 5.

NATA test reports of internal lining (i. e. flooring, ceiling, walls, ducting) will be reviewed prior to construction. Note: Consider adding a compliance note (C2D11 and Spec 7) on drawings.

- (l) a joinery unit, cupboard, shelving, or the like; or
- (m) an attached non-building fixture and fitting such as—
 - (i) a curtain, blind, or similar decor, other than—
 - (A) a proscenium curtain required by Specification 32; or
 - (B) in a Class 9b building used as an entertainment venue, a material regulated under ; and
- (ii) a whiteboard, window treatment or the like; or
- (n) timber treads, risers, landings and associated supporting framework installed in accordance with D3D30 where the Spread-of-Flame Index and the Smoke-Developed Index of the timber does not exceed 9 and 8 respectively; or
- (o) any other material that does not significantly increase the hazards of fire.

C2D12	Performance of external walls in fire	
N/A	Concrete external walls that could collapse as complete panels (e.g. tilt-up and pre-cast concrete), in a building having a rise in storeys of not more than 2, must comply with Specification 8	Not applicable – This clause is not applicable to this project. No action required. It is understood that no tilt-up concrete panels will be used.
C2D14	Ancillary elements	
CRA	An ancillary element must not be fixed, installed, attached to or supported by the concealed internal parts or external face of an external wall that is required to be non-combustible unless it is one of the following: (a) An ancillary element that is non-combustible. (b) A gutter, downpipe or other plumbing fixture or fitting. (c) A flashing. - A grate, grille or similar cover not more than 2 m² (d) in area associated with a building service. (e) An electrical switch, socket-outlet, cover plate or the like. (f) A light fitting. (g) A required sign. (h) A sign other than one provided under (a) or (g) that— (i) achieves a group number of 1 or 2; and (ii) does not extend beyond one storey; and (iii) does not extend beyond one fire compartment; and (iv) is separated vertically from other signs permitted under (h) by at least 2 storeys. (i) An awning, sunshade, canopy, blind or shading hood other than one provided under (a) that—	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary. Any ancillary elements attached to the external wall (i.e. awning, shades, privacy screen, louver, or the like) must be made of non-combustible materials. NATA Test Reports will be necessary for review, refer to Clause C2D10.

- (i) meets the relevant requirements of Table S7C7 as for an internal element; and
- (ii) serves a storey—
 - (A) at ground level; or
 - (B) immediately above a storey at ground level; and
- (iii) does not serve an exit, where it would render the exit unusable in a fire.
- (j) A part of a security, intercom or announcement system.
- (k) Wiring.
- (l) Waterproofing material installed in accordance with AS 4654.2 and applied to an adjacent floor surface, including vertical upturn, or a roof surface.
- (m) Collars, sleeves and insulation associated with service installations.
- (n) Screens applied to vents, weepholes and gaps complying with AS 3959.
- (o) Wiper and brush seals associated with doors, windows or other openings.
- (p) A gasket, caulking, sealant or adhesive directly associated with (a) to (o).

C2D15 Fixing of bonded laminated cladding panels		
CRA	(1) In a building required to be of Type A or B construction, externally located bonded laminated cladding panels must have all layers of cladding mechanically supported or restrained to the supporting frame. (2) An externally located bonded laminated cladding panel need not comply with (1) if it is one of the following: (a) A laminated glass system; (b) Layered plasterboard product; (c) Perforated gypsum lath with a normal paper finish; (d) Fibrous-plaster sheet; (e) Fibre-reinforced cement sheeting; (f) A component of a garage door.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.

Part C3 – Compartmentation and Separation

Clause	Reference	Comment
C3D3 General floor area and volume limitations		
OK	(1) The size of any fire compartment or atrium in a Class 5, 6, 7, 8 or 9 building must not exceed the relevant maximum floor area, nor the relevant maximum volume set out in Table C3D3 and C3D6 except as permitted in C3D4. (2) A part of a building which contains only heating, ventilating, or lift equipment, water tanks, or similar service units is not counted in the floor area or volume of a fire compartment or atrium if it is situated at the top of the building.	The proposed building design complies with the DTS provisions of this clause. The following fire compartments have been scaled. - Class 2: N/A - Class 7a: N/A (AS2118.1-2017 sprinkler system) - Class 9b: 800m2

(3) In a building containing an atrium, the part of the atrium well bounded by the perimeter of the openings in the floors and extending from the level of the first floor above the atrium floor to the roof covering is not counted in the volume of the atrium for the purposes of this clause.

C3D7	Vertical separation of openings in external walls	
N/A	(1) If in a building of Type A construction, any part of a window or other opening in an external wall is above another opening in the storey next below and its vertical projection falls no further than 450 mm outside the lower opening (measured horizontally), the openings must be separated by— (a) a spandrel which— (i) is not less than 900 mm in height; and (ii) extends not less than 600 mm above the upper surface of the intervening floor; and (iii) is of non-combustible material having an FRL of not less than 60/60/60; or (b) part of a curtain wall or panel wall that complies with (a); or (c) construction that complies with (a) behind a curtain wall or panel wall and has any gaps packed with a non-combustible material that will withstand thermal expansion and structural movement of the walling without the loss of seal against fire and smoke; or (d) a slab or other horizontal construction that— (i) projects outwards from the external face of the wall not less than 1100 mm; and (ii) extends along the wall not less than 450 mm beyond the openings concerned; and (iii) is non-combustible and has an FRL of not less than 60/60/60. (2) The requirements of (1) do not apply to— (a) an open-deck carpark; or (b) an open spectator stand; or (c) a building which has a sprinkler system (other than a FPAA101D or FPAA101H system) complying with Specification 17 installed throughout; or (d) openings within the same stairway; or (e) openings in external walls where the floor separating the storeys does not require an FRL with respect to integrity and insulation. (3) For the purposes of C3D7, window or other opening means that part of the external wall of a building that does not have an FRL of 60/60/60 or greater.	Not applicable – This clause is not applicable to this project. No action required. The building is provided with an AS2118.1-2017 sprinkler system thus not required to be provided with spandrel separation.

C3D8	Separation by fire walls
Noted	(1) Construction — A fire wall must be constructed in accordance with the following: (a) The fire wall has the relevant FRL prescribed by Specification 5 for each of the adjoining parts, and if these are different, the greater FRL, except where S5C18(c), S5C21(3) and S5C25(1) permit a lower FRL on the carpark side. (b) Any openings in a fire wall must not reduce the FRL required by Specification 5 for the fire wall, except where permitted by the Deemed-to-Satisfy Provisions of Part C4. (c) Building elements, other than roof battens with dimensions of 75 mm x 50 mm or less or sarking-type material, must not pass through or cross the fire wall unless the required fire-resisting performance of the fire wall is maintained. (2) Separation of buildings — A part of a building separated from the remainder of the building by a fire wall may be treated as a separate building for the purposes of the Deemed-to-Satisfy Provisions of Sections C, D and E if it is constructed in accordance with (1) and the following: (a) The fire wall extends through all storeys and spaces in the nature of storeys that are common to that part and any adjoining part of the building. (b) The fire wall is carried through to the underside of the roof covering. (c) Where the roof of one of the adjoining parts is lower than the roof of the other part, the fire wall extends to the underside of— (i) the covering of the higher roof, or not less than 6 m above the covering of the lower roof; or (ii) the lower roof if it has an FRL not less than that of the fire wall and no openings closer than 3 m to any wall above the lower roof; or (iii) the lower roof if its covering is non-combustible and the lower part has a sprinkler system (other than a FPAI101D or FPAI101H system) complying with Specification 17. (3) Separation of fire compartments — A part of a building separated from the remainder of the building by a fire wall may be treated as a separate fire compartment if it is constructed in accordance with (a) and the fire wall extends to the underside of— (a) a floor having an FRL required for a fire wall; or (b) the roof covering. This clause is for informational purposes only; no additional action is required. Fire walls separating building classification are required to comply with this clause (extending slab to slab). Refer to clauses C3D9 and C3D10. Note: Walls bounding SOU's are not considered fire walls.

C3D9	Separation of classifications in the same storey	
CRA	(1) If a building has parts of different classifications located alongside one another in the same storey— (a) each building element in that storey must have the higher FRL prescribed in Specification 5 for that element for the classifications concerned; or (b) the parts must be separated in that storey by a fire wall. (2) A fire wall required by (1)(b) must have the FRL prescribed in accordance with Specification 5 as applicable for that element for the Type of construction and the classifications concerned. (3) For the purposes of (2), the FRL in Specification 5 must be either— (a) the higher FRL prescribed in Table S5C11d or S5C21d; or (b) the FRL prescribed in Table S5C24c. (4) For the purposes of (1), where one part is a carpark complying with S5C19, S5C22 or S5C25, the parts may be separated by a fire wall complying with S5C19, S5C22 or as appropriate.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary. A fire wall with 2hrs FRL is required to separate the Class 2 and 9b parts on Level 4. Note: Colour coded FRL drawings to be provided for review prior to construction.
C3D10	Separation of classifications in different storeys	
CRA	If parts of different classification are situated one above the other in adjoining storeys they must be separated as follows: (a) Type A construction – The floor between the adjoining parts must have an FRL of not less than that prescribed in Specification 5 for the classification of the lower storey. (b) Type B or C construction – If one of the adjoining parts is of Class 2, 3 or 4, the floor separating the part from the storey below must— (i) be a floor/ceiling system incorporating a ceiling which has a resistance to the incipient spread of fire to the space above itself of not less than 60 minutes; or (ii) have an FRL of at least 30/30/30; or (iii) have a fire-protective covering on the underside of the floor, including beams incorporated in it, if the floor is combustible or of metal.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary. Slab separating the Class 9b and Class 2 parts is required to be provided with 2hrs FRL (FRL applicable to the level below) Note: Colour coded FRL drawings to be provided for review prior to construction.
C3D11	Separation of lift shafts	
CRA	(1) Any lift connecting more than 2 storeys, or more than 3 storeys if the building is sprinklered, (other than lifts which are wholly within an atrium) must be separated from the remainder of the building by enclosure in a shaft in which— (a) in a building required to be of Type A construction – the walls have the relevant FRL prescribed by Specification 5; and (b) in a building required to be of Type B construction – the walls—	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary. The proposed passenger lifts connect more than three (3) storeys in a sprinkler protected

- (i) if loadbearing, have the relevant FRL prescribed by S5C21a, S5C21b, S5C21c, S5C21d, S5C21e and S5C21f of Specification 5; or
- (ii) if non-loadbearing, be of non-combustible construction.
- (2) Any lift in a patient care area in a Class 9a health-care building or a resident use area in Class 9c building must be separated from the remainder of the building by a shaft having an FRL of not less than—
 - (a) in a building of Type A or B construction — 120/120/120; or
 - (b) in a building of Type C construction — 60/60/60.
- (3) An emergency lift must be contained within a fire-resisting shaft having an FRL of not less than 120/120/120.
- (4) Openings for lift landing doors and services must be protected in accordance with the Deemed-to-Satisfy Provisions of Part C4.

building thus required to be within a fire-isolated shaft as per Specification 5.

C3D12	Stairways and lifts in one shaft		
OK	A stairway and lift must not be in the same shaft if either the stairway or the lift is required to be in a fire-resisting shaft.	The proposed building design complies with the DTS provisions of this clause. The proposed fire-isolated lift and stairs are not sharing the same shaft, in compliance with this clause.	
C3D13	Separation of equipment		
CRA	(1) Equipment other than that described in (2) and (3) must be separated from the remainder of the building with construction complying with (4), if that equipment comprises— (a) lift motors and lift control panels; or (b) emergency generators used to sustain emergency equipment operating in the emergency mode; or (c) central smoke control plant; or (d) boilers; or (e) a battery system installed in the building that has a total voltage of 12 volts or more and a storage capacity of 200 kWh or more. (2) Equipment need not be separated in accordance with (1) if the equipment comprises— (a) smoke control exhaust fans located in the air stream which are constructed for high temperature operation in accordance with Specification 21; or (b) stair pressurising equipment installed in compliance with the relevant provisions of AS 1668.1; or (c) a lift installation without a machine-room; or	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary. - Any emergency equipment to be identified and enclosed in rooms with 2hrs FRL minimum if necessary. - It is understood that no batteries over the limitations of this clause (12 volts or 200kWh) are proposed. Electrical Engineer to assess and confirm compliance prior to construction.	

- (d) equipment otherwise adequately separated from the remainder of the building.
- (3) Separation of on-site fire pumps must comply with the requirements of AS 2419.1.
- (4) Separating construction must have—
 - (a) except as provided by (b)—
 - (i) an FRL as required by Specification 5, but not less than 120/120/120; and
 - (ii) any doorway protected with a self-closing fire door having an FRL of not less than -/120/30; or
 - (b) when separating a lift shaft and lift motor room, an FRL not less than 120/-/-

C3D14	Electricity supply system
CRA	(1) An electricity substation located within a building must— (a) be separated from any other part of the building by construction having an FRL of not less than 120/120/120; and (b) have any doorway in that construction protected with a self-closing fire door having an FRL of not less than -/120/30. (2) A main switchboard located within the building which sustains emergency equipment operating in the emergency mode must— (a) be separated from any other part of the building by construction having an FRL of not less than 120/120/120; and (b) have any doorway in that construction protected with a self-closing fire door having an FRL of not less than -/120/30. (3) Subject to (4), electrical conductors must— (a) have a classification in accordance with AS/NZS 3013 of not less than— (i) if located in a position that could be subject to damage by motor vehicles — WS53W; or (ii) otherwise — WS52W; or (b) be enclosed or otherwise protected by construction having an FRL of not less than 120/120/120. (4) The requirements of (3) only apply to electrical conductors located within a building that supply— (a) a substation located within the building which supplies a main switchboard covered by (2); or (b) a main switchboard covered by (2). (5) Where emergency equipment is required in a building, all switchboards in the electrical installation, which sustain the electricity supply to the emergency equipment, must be constructed so that emergency equipment switchgear is separated from non-emergency equipment switchgear by metal partitions designed to minimise the spread of a fault from the non-emergency equipment switchgear. (6) For the purposes of (5), emergency equipment includes but is not limited to the following:

Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.

- Ensure main switch room and other service rooms are provided with 2hrs FRL if sustaining emergency equipment.
- Substation located within the building is required to be provided with an FRL of 120/120/120 and a self-closing fire door with an FRL of -/120/30. Note: Energy provider may require additional FRL's, blast protection, etc. To be queried at early stage.

Note: colour coded FRL drawings to be provided for review prior to construction.

Electrical Engineer to assess and confirm compliance prior to construction.

- (a) Fire hydrant booster pumps.
- (b) Pumps for automatic sprinkler systems, water spray, chemical fluid suppression systems or the like.
- (c) Pumps for fire hose reels where such pumps and fire hose reels form the sole means of fire protection in the building.
- (d) Air handling systems designed to exhaust and control the spread of fire and smoke.
- (e) Emergency lifts.
- (f) Control and indicating equipment.
- (g) Emergency warning and intercom systems

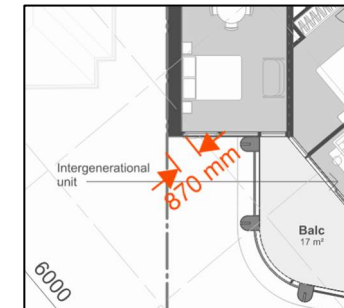
C3D15	Public corridors in Class 2 and 3 buildings	
CRA	In a Class 2 or 3 building, a public corridor, if more than 40 m in length, must be divided at intervals of not more than 40 m with smoke-proof walls complying with S11C2.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary. All residential corridors are not more than 40m in length.

Part C4 – Protection of Openings

Clause	Reference	Comment
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C4D3 Protection of openings in external walls

PSOL	(1) Subject to (2), openings in an external wall that is required to have an FRL must be protected in accordance with C4D5, and if wall-wetting sprinklers are used they must be located externally. (2) The requirements of (1) only apply if the distance between the opening and the fire-source feature to which it is exposed is less than— (a) 3 m from a side or rear boundary of the allotment; or (b) 6 m from the far boundary of a road, river, lake or the like adjoining the allotment, if not located in a storey at or near ground level; or (c) 6 m from another building on the allotment that is not Class 10. (3) Openings in an external wall that is required to have an FRL, if required to be protected under (1), must not occupy more than 1/3 of the area of the external wall of the storey in which it is located unless they are in a Class 9b building used as an open spectator stand.	Performance Solution is necessary to achieve compliance with this clause. Opening on external walls exposed (under 3m) to the fire-source feature (side boundary) will require protection as per C4D5. Currently unknown. To be rectified, alternatively Fire Engineer to assess if a Performance Solution is feasible.
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C4D5	Acceptable methods of protection	
CRA	(1) Where protection is required, doorways, windows and other openings must be protected as follows: (a) Doorways— (i) internal or external wall-wetting sprinklers as appropriate used with doors that are self-closing or automatic closing; or (ii) –/60/30 fire doors that are self-closing or automatic closing. (b) Windows— (i) internal or external wall-wetting sprinklers as appropriate used with windows that are automatic closing or permanently fixed in the closed position; or (ii) –/60/– fire windows that are automatic closing or permanently fixed in the closed position; or (iii) –/60/– automatic closing fire shutters. (c) Other openings— (i) excluding voids – internal or external wall-wetting sprinklers, as appropriate; or (ii) construction having an FRL not less than –/60/–. (2) Fire doors, fire windows and fire shutters must comply with Specification 12	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary. Refer to clause C4D3.
C4D6	Doorways in fire walls	
CRA	(1) The aggregate width of openings for doorways in a fire wall, which are not part of a horizontal exit, must not exceed ½ of the length of the fire wall, and each doorway must be protected by— (a) 2 fire doors or fire shutters, one on each side of the doorway, each of which has an FRL of not less than ½ that required by Specification 5 for the fire wall except that each door or shutter must have an insulation level of at least 30; or	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary. Doorways in required fire walls must comply with this clause achieving same FRL.

- (b) a fire door on one side and a fire shutter on the other side of the doorway, each of which complies with (a); or
- (c) a single fire door or fire shutter which has an FRL of not less than that required by Specification 5 for the fire wall except that each door or shutter must have an insulation level of at least 30.
- (2) A fire door or fire shutter required by (1)(a), (b) or (c) must be self-closing, or automatic closing in accordance with (3) and (4).
- (3) The automatic closing operation required by (2) must be initiated by the activation of a smoke detector, or any other detector deemed suitable in accordance with AS 1670.1 if smoke detectors are unsuitable in the atmosphere, installed in accordance with the relevant provisions of AS 1670.1 and located on each side of the fire wall not more than 1.5 m horizontal distance from the opening.
- (4) Where any other required suitable fire alarm system, including a sprinkler system (other than a FPAA101D system) complying with Specification 17, is installed in the building, activation of the system in either fire compartment separated by the fire wall must also initiate the automatic closing operation

C4D9	Openings in fire-isolated exits	
CRA	(1) 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 -/60/30 fire doors that are self-closing, or automatic closing in accordance with (2) and (3). (2) The automatic-closing operation required by (1) must be initiated by the activation of a smoke detector, or any other detector deemed suitable in accordance with AS 1670.1 if smoke detectors are unsuitable in the atmosphere, installed in accordance with the relevant provisions of AS 1670.1 and located not more than 1.5 m horizontal distance from the approach side of the doorway. (3) Where any other required suitable fire alarm system, including a sprinkler system (other than a FPAA101D system) complying with Specification 17, is installed in the building, activation of the system must also initiate the automatic closing operation. (4) A window in an external wall of a fire-isolated stairway, fire-isolated passageway or fire-isolated ramp must be protected in accordance with C4D5 if it is within 6 m of, and exposed to, a window or other opening in a wall of the same building, other than in the same fire-isolated enclosure.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary. Self-closing doorways and associated frames in fire-isolated exits are to have an FRL of at least -/60/30.
C4D10	Service penetrations in fire-isolated exits	
CRA	Fire-isolated exits must not be penetrated by any services other than— (a) electrical wiring permitted by D3D8(6) to be installed within the exit; or (b) ducting associated with a pressurisation system if it—	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.

- (i) is constructed of material having an FRL of not less than $-/120/60$ where it passes through any other part of the building; and
- (ii) does not open into any other part of the building; or
- (c) for fire services, water supply and test drain-pipes.

Ensure no services are proposed within or across fire-isolated exits unless they are necessary for the operation of the exits and exempt under this clause (i.e. stair pressurisation, etc).

C4D11	Openings in fire-isolated lift shafts	
CRA	(1) Doorways — If a lift shaft is required to be fire-isolated, an entrance doorway to that shaft must be protected by $-/60/-$ fire doors that— (a) comply with AS 1735.11; and (b) are set to remain closed except when discharging or receiving passengers, goods or vehicles. (2) Lift indicator panels — A lift call panel, indicator panel or other panel in the wall of a fire-isolated lift shaft must be backed by construction having an FRL of not less than $-/60/60$ if it exceeds 35000 mm² in area.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary. Doors in fire-isolated shafts are to have an FRL of $-/60/-$.
NSW C4D12	Bounding construction: Class 2 and 3 buildings and Class 4 parts	
PSOL	(1) A doorway in a Class 2 or 3 building must be protected if it provides access from a sole-occupancy unit to— (a) a public corridor, public lobby, or the like; or (b) a room not within a sole-occupancy unit; or (c) the landing of an internal non-fire-isolated stairway that serves as a required exit; or (d) another sole-occupancy unit. (2) A doorway in a Class 2 or 3 building must be protected if it provides access from a room not within a sole-occupancy unit to— (a) a public corridor, public lobby, or the like; or (b) the landing of an internal non fire-isolated stairway that serves as a required exit. (3) A doorway in a Class 4 part of a building must be protected if it provides access to any other internal part of the building. (4) Except as provided for in NSW C4D12(5), protection for a doorway required under (1), (2) or (3) must be at least— (a) in a building of Type A construction — a self-closing $-/60/30$ fire door; and (b) in a building of Type B or C construction — a self-closing, tight fitting, solid core door not less than 35 mm thick.	Performance Solution is necessary to achieve compliance with this clause. Absence of bounding construction (60-90 minutes FRL) between public corridors and Communal spaces, in non-compliance with this clause. To be rectified, alternatively Fire Engineer to assess if a Performance Solution is feasible.



- (5) In a Class 3 building used as a residential care building protected with a sprinkler system complying with Specification 17, protection for a doorway must be at least a tight-fitting solid core door not less than 35 mm thick that is—
 - (a) self-closing; or
 - (b) fitted with a free arm closing device which closes the door or causes the door to remain closed (without preventing manual re-opening), upon the detection of smoke caused by a smoke detector located within the room
- (6) Other openings in internal walls which are required to have an FRL with respect to integrity and insulation must not reduce the fire-resisting performance of the wall.
- (7) A door required by (4) or (5) may be automatic closing in accordance with the following:
 - (a) The automatic-closing operation must be initiated by the activation of a smoke detector, or any other detector deemed suitable in accordance with AS 1670.1 if smoke detectors are unsuitable in the atmosphere, installed in accordance with the relevant provisions of AS 1670.1 and located not more than 1.5 m horizontal distance from the approach side of the doorway.
 - (b) Where any other required suitable fire alarm system, including a sprinkler system (other than a FPAA101D system) complying with Specification 17, is installed in the building, activation of the system must also initiate the automatic-closing operation.
- (8) The requirements of (9) apply in a Class 2 or 3 building where a path of travel to an exit—
 - (a) does not provide a person seeking egress with a choice of travel in different directions to alternative exits; and
 - (b) is along an open balcony, landing or the like; and
 - (c) passes an external wall of—
 - (i) another sole-occupancy unit; or
 - (ii) a room not within a sole-occupancy unit.
- (9) The external wall mentioned in (8)(c) must—
 - (a) be constructed of concrete or masonry, or be lined internally with a fire-protective covering; and
 - (b) have any doorway fitted with a self-closing, tight-fitting solid core door not less than 35 mm thick; and
 - (c) have any windows or other openings—
 - (i) protected internally in accordance with C4D5; or
 - (ii) located at least 1.5 m above the floor of the balcony, landing or the like
- (10) In a Class 9b building used as an entertainment venue, openings in construction required to separate one space from another must be protected in accordance with C4D5.

C4D13	Openings in floors and ceilings for services	
CRA	(1) Where a service passes through— (a) a floor that is required to have an FRL with respect to integrity and insulation; or (b) a ceiling required to have a resistance to the incipient spread of fire, the service must be installed in accordance with (2). (2) A service must be protected— (a) in a building of Type A construction, by a shaft complying with Specification 5; or (b) in a building of Type B or C construction, by a shaft that will not reduce the fire performance of the building elements it penetrates; or (c) in accordance with C4D15. (3) Where a service passes through a floor which is required to be protected by a fire-protective covering, the penetration must not reduce the fire performance of the covering.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary. Refer to Clause C4D15.
C4D14	Openings in shafts	
CRA	In a building of Type A construction, an opening in a wall providing access to a ventilating, pipe, garbage or other service shaft must be protected by— (a) 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 (b) a self-closing –/60/30 fire door or hopper; or (c) an access panel having an FRL of not less than –/60/30; or (d) if the shaft is a garbage shaft – a door or hopper of non-combustible construction.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary. Refer to Clause C4D15.
C4D15	Openings for service installations	
CRA	(1) The requirements of (2) apply where an electrical, electronic, plumbing, mechanical ventilation, air-conditioning or other service penetrates a building element (other than an external wall or roof) that is required to have an FRL with respect to integrity or insulation or a resistance to the incipient spread of fire. (2) An installation mentioned in (1) must comply with any one of the following: (a) Tested systems – the following applies: (i) The service, building element and any protection method at the penetration— (A) are identical with a prototype assembly of the service, building element and protection method which has been tested in accordance with AS 4072.1 and AS 1530.4 and has achieved the required FRL or resistance to the incipient spread of fire; or	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary. Assessment of fire stopping methods (i.e. fire collars, fire dampers, fire pillows, mastic etc) to protect services penetrations through elements required to have an FRL (i.e. slabs, beams, shafts, etc) is required. Passive Fire Specialist to assess and confirm compliance prior to construction.

- (B) differ from a prototype assembly of the service, building element and protection method in accordance with Section 4 of AS 4072.1.
- (ii) It complies with (i) except for the insulation criteria relating to the service if—
- (A) the service is a pipe system comprised entirely of metal (excluding pipe seals or the like); and
- (B) any combustible building element is not located within 100 mm of the service for a distance of 2 m from the penetration; and
- (C) combustible material is not able to be located within 100 mm of the service for a distance of 2 m from the penetration; and
- (D) it is not located in a required exit.
- (iii) The determination of the required FRL must be confirmed in a report from an Accredited Testing Laboratory in accordance with Specifications 1 and 2.
- (b) Ventilation and air-conditioning — in the case of ventilating or air-conditioning ducts or equipment, the installation is in accordance with AS 1668.1.
- (c) Compliance with Specification 13 — the following applies:
- (i) The service is a pipe system comprised entirely of metal (excluding pipe seals or the like) and is installed in accordance with Specification 13 and it—
- (A) penetrates a wall, floor or ceiling, but not a ceiling required to have a resistance to the incipient spread of fire; and
- (B) connects not more than 2 fire compartments in addition to any fire-resisting service shafts; and
- (C) does not contain a flammable or combustible liquid or gas.
- (ii) The service is sanitary plumbing installed in accordance with Specification 13 and it—
- (A) is of metal or UPVC pipe; and
- (B) penetrates the floors of a Class 5, 6, 7, 8 or 9b building; and
- (C) is in a sanitary compartment separated from other parts of the building by walls with the FRL required by Specification 5 for a stair shaft in the building and a self-closing –/60/30 fire door.
- (iii) The service is a wire or cable, or a cluster of wires or cables installed in accordance with Specification 13 and it—
- (A) penetrates a wall, floor or ceiling, but not a ceiling required to have a resistance to the incipient spread of fire; and
- (B) connects not more than 2 fire compartments in addition to any fire-resisting service shafts.
- (iv) The service is an electrical switch, outlet, or the like, and it is installed in accordance with Specification 13.
- NATA Test Reports and fire stopping methods to be provided for review.

C4D16	Construction joints	
CRA	(1) Construction joints, spaces and the like in and between building elements required to be fire-resisting with respect to integrity and insulation must be protected in a manner— (a) identical with a prototype tested in accordance with AS 4072.1 and AS 1530.4 to achieve the required FRL; or (b) that differs from a prototype in accordance with Section 4 of AS 4072.1 and achieves the required FRL. (2) The determination of the required FRL must be confirmed in a report from an Accredited Testing Laboratory in accordance with Specifications 1 and 2. (3) The requirements of (1) do not apply where joints, spaces and the like between fire-protected timber elements are provided with cavity barriers in accordance with Specification 9.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary. Refer to Clause C4D15.
C4D17	Columns protected with lightweight construction to achieve an FRL	
CRA	A column protected by lightweight construction to achieve an FRL which passes through a building element that is required to have an FRL or a resistance to the incipient spread of fire, must be installed using a method and materials identical with a prototype assembly of the construction which has achieved the required FRL or resistance to the incipient spread of fire.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.
Specification 5 – Fire Resisting Construction		
Clause	Reference	Comment
S5C2	Exposure to fire-source features	
CRA	(1) A part of 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— (a) has an FRL of not less than 30/-/-; and (b) is neither transparent nor translucent. (2) A part of a building element is not exposed to a fire-source feature if the fire-source feature is— (a) an external wall of another building that stands on the allotment and the part concerned is more than 15 m above the highest part of that external wall; or (b) a side or rear boundary of the allotment and the part concerned is below the level of the finished ground at every relevant part of the boundary concerned. (3) If various distances apply for different parts of a building element—	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.

- (a) the entire element must have the FRL applicable to that part having the least distance between itself and the relevant fire-source feature; or
- (b) each part of the element must have the FRL applicable according to its individual distance from the relevant fire-source feature.
- (4) The requirements of (3) do not override or permit any exemption from S5C3.

S5C3	Fire protection for a support of another part	
CRA	(1) 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, subject to (2), must— (a) have an FRL not less than that required by other provisions of this Specification; and (b) 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— (i) for the supporting part itself; and (ii) for the part it supports; and (c) be non-combustible— (i) if required by other provisions of this Specification; or (ii) if the part it supports is required to be non-combustible. (2) The following building elements need not comply with (1)(b) and (1)(c)(ii): (a) An element providing lateral support to an external wall complying with S5C24(1)(b) or C2D12. (b) An element providing support within a carpark and complying with S5C19, S5C22 or S5C25. (c) A roof providing lateral support in a building— (i) of Type A construction if it complies with S5C15(a), (b) or (d); and (ii) of Type B and C construction. (d) A column providing lateral support to a wall where the column complies with S5C6(1) and (2). (e) An element providing lateral support to a fire wall or fire-resisting wall, provided the wall is supported on both sides and failure of the element on one side does not affect the fire performance of the wall.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.
S5C4	Lintels	
CRA	(1) A lintel must have the FRL required for the part of the building in which it is situated. (2) A lintel need not comply with (1) if it does not contribute to the support of a fire door, fire window or fire shutter, and— (a) it spans an opening in— (i) a wall of a building containing only one storey; or	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.

- (ii) a non-loadbearing wall of a Class 2 or 3 building; or
- (b) it spans an opening in masonry which is not more than 150 mm thick and—
 - (i) not more than 3 m wide if the masonry is non-loadbearing; or
 - (ii) not more than 1.8 m wide if the masonry is loadbearing and part of a solid wall or one of the leaves of a cavity wall.

S5C5	Method of attachment not to reduce the fire-resistance of building elements	
CRA	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 – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.
S5C6	General concessions	
CRA	(1) Steel columns – A steel column, other than one in a fire wall or common wall, need not have an FRL in a building that contains— (a) only 1 storey; or (b) 2 storeys in some of its parts and 1 storey only in its remaining parts if the sum of the floor areas of the upper storeys of its 2 storey parts does not exceed the lesser of— (i) 1/8 of the sum of the floor areas of the 1 storey parts; or (ii) in the case of a building to which one of the maximum floor areas specified in Table C3D3 is applicable – 1/10 of that area; or (iii) in the case of a building to which two or more of the maximum floor area specified in Table C3D3 is applicable – 1/10 of the lesser of those areas. (2) Timber columns – A timber column may be used in a single storey building if— (a) in a fire wall or common wall the column has an FRL not less than that listed in the appropriate Table S5C11d, S5C21d or S5C24c as appropriate; and (b) in any other case where the column is required to have an FRL in accordance with Table S5C11a, S5C11c, S5C11g, S5C21a, S5C21c, S5C21g, S5C24a or S5C24b it has an FRL of not less than 30/–/–. (3) 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— (a) lift motor equipment; or (b) one or more of the following: (i) Hot water or other water tanks. (ii) Ventilating ductwork, ventilating fans and their motors.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.

- (iii) Air-conditioning chillers.
- (iv) Window cleaning equipment.
- (v) Other service units that are non-combustible and do not contain flammable or combustible liquids or gases.
- (4) Curtain walls and panel walls — A requirement for an external wall to have an FRL does not apply to a curtain wall or panel wall which is of non-combustible construction and fully protected by automatic external wall-wetting sprinklers.
- (5) Balconies and verandahs — A balcony, verandah or the like and any incorporated supporting part, which is attached to or forms part of a building, need not comply with Table S5C11c, S5C11g, S5C21c, S5C21g, S5C24b or S5C24e if—
 - (a) it does not form part of the only path of travel to a required exit from the building; and
 - (b) in Type A construction—
 - (i) it is situated not more than 2 storeys above the lowest storey providing direct egress to a road or open space; and
 - (ii) any supporting columns are of non-combustible construction.

S5C8	Enclosure of shafts	
PSOL	(1) Shafts required to have an FRL must be enclosed at the top and bottom by construction having an FRL not less than that required for the walls of a non-loadbearing shaft in the same building. (2) The provisions of (1) need not apply to— (a) the top of a shaft extending beyond the roof covering, other than one enclosing a fire-isolated stairway or ramp; or (b) the bottom of a shaft if it is non-combustible and laid directly on the ground	Performance Solution is necessary to achieve compliance with this clause. Garbage chutes (x4) shafts will not be provided with a compliant fire-rated enclosure at base, in non-compliance with this clause. To be rectified, alternatively Fire Engineer to assess if a Performance Solution is feasible.
S5C11	Fire-resistance of building elements – Type A Construction	
CRA	(1) In a building required to be of Type A construction— (a) each building element listed in Tables S5C11a, S5C11b, S5C11c, S5C11d, S5C11e, S5C11f and S5C11g and any beam or column incorporated in it, must have an FRL not less than that listed in those Tables for the particular Class of building concerned; and (b) any internal wall required to have an FRL with respect to integrity and insulation must extend to— (i) the underside of the floor next above; or (ii) the underside of a roof complying with Table S5C11g; or	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary. Refer to Section 6 of this report which outlines the required FRL's from this clause.

- (iii) if under S5C15 the roof is not required to comply with Table S5C11g, the underside of the non-combustible roof covering and, except for roof battens with dimensions of 75 mm x 50 mm or less or sarking-type material, must not be crossed by timber or other combustible building elements; or
 - (iv) a ceiling that is immediately below the roof and has a resistance to the incipient spread of fire to the roof space between the ceiling and the roof of not less than 60 minutes; and
 - (c) a loadbearing internal wall and a loadbearing fire wall (including those that are part of a loadbearing shaft) must be constructed from—
 - (i) concrete; or
 - (ii) masonry; or
 - (iii) subject to (2), fire-protected timber; or
 - (iv) any combination of (i) to (iii); and
 - (d) the FRLs specified in Table S5C11c for an external column apply also to those parts of an internal column that face and are within 1.5 m of a window and are exposed through that window to a fire-source feature.
- (2) For the purposes of (1)(c)(iii), fire-protected timber may be used, provided that—
- (a) the building is—
 - (i) a separate building; or
 - (ii) a part of a building—
 - (A) which only occupies part of a storey, and is separated from the remaining part by a fire wall; or
 - (B) which is located above or below a part not containing fire-protected timber and the floor between the adjoining parts is provided with an FRL not less than that prescribed for a fire wall for the lower storey; and
 - (b) the building has an effective height of not more than 25 m; and
 - (c) the building has a sprinkler system (other than a FPAAI01D or FPAAI01H system) throughout complying with Specification 17; and
 - (d) any insulation installed in the cavity of the timber building element required to have an FRL is non-combustible; and
 - (e) cavity barriers are provided in accordance with Specification 9.
- (3) For the purposes of Table S5C11a and Table S5C11b, external wall includes any column and other building element incorporated within it or other external building element.
- Note: Refer to Section 6 of this report which outlines the required FRL from this clause.

S5C12	Concessions for floors	
CRA	A floor need not comply with Table S5C11g if— (a) it is laid directly on the ground; or (b) 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 (c) 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 (d) it is within a sole-occupancy unit in a Class 2 or 3 building or Class 4 part of a building; or (e) it is an open-access floor (for the accommodation of electrical and electronic services and the like) above a floor with the required FRL.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary. Slab on basement laid on ground is not required to have an FRL.
S5C14	Roof superimposed on concrete slab: Concession	
CRA	A roof superimposed on a concrete slab roof need not comply with S5C11 as to fire-resisting construction if— (a) the superimposed roof and any construction between it and the concrete slab roof are non-combustible throughout; and (b) the concrete slab roof complies with Table S5C11g.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary. Roof is laid directly on a concrete slab.
S5C16	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— (a) have an aggregate area of not more than 20% of the roof surface; and (b) be not less than 3 m from— (i) any boundary of the allotment other than the boundary with a road or public place; and (ii) 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 C4D5; and (iii) 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 (iv) any roof light or the like in an adjoining fire-separated section of the building; and (c) 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.	Not applicable – This clause is not applicable to this project. No action required. No roof lights are proposed. Smoke exhaust on the eastern boundary is located more than 3m from it.

S5C19	Carparks
CRA	(1) Notwithstanding S5C11, a carpark may comply with this clause if it is an open-deck carpark or is protected with a sprinkler system (other than a FPAA101D or FPAA101H system) complying with Specification 17 and is— (a) a separate building; or (b) a part of a building— (i) which only occupies part of a storey, and is separated from the remaining part by a fire wall; or (ii) which is located above or below another classification, and the floor separating the classifications complies with C3D10; or (iii) which is located above another Class 7 part of the building not used for carparking, and the floor separating the parts complies with Table S5C11g for a Class 7 part other than a carpark; or (iv) which is located below another Class 7 part of the building not used for carparking, and the floor separating the parts complies with this clause. (2) For the purposes of this clause, a carpark— (a) includes— (i) an administration area associated with the functioning of the carpark; and (ii) where the carpark is sprinklered, is associated with a Class 2 or 3 building and provides carparking for separate sole-occupancy units, each carparking area with an area not greater than 10% of its floor area for purposes ancillary to the sole-occupancy units; but (b) excludes— (i) except for (a), any area of another classification, or other part of a Class 7 building not used for carparking; and (ii) a building or part of a building specifically intended for the parking of trucks, buses, vans and the like. (3) For building elements in a carpark as described in (1) and (2), the following minimum FRLs are applicable: (a) External wall: (i) Less than 3 m from a fire-source feature to which it is exposed: (A) Loadbearing: 60/60/60. (B) Non-loadbearing: -/60/60. (ii) 3 m or more from a fire-source feature to which it is exposed: -/-/-. (b) Internal wall: (i) Loadbearing, other than one supporting only the roof (not used for carparking): 60/-/-.

Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.

- (ii) Supporting only the roof (not used for carparking): -/-/-.
- (iii) Non-loadbearing: -/-/-.
- (c) Fire wall:
 - (i) From the direction used as a carpark: 60/60/60.
 - (ii) From the direction not used as a carpark: as required by Table S5C11d.
- (d) Columns:
 - (i) Supporting only the roof (not used for carparking) and 3 m or more from a fire-source feature to which it is exposed: -/-/-.
 - (ii) Steel column, other than one covered by (i) and one that does not support a part of a building that is not used as a carpark—
 - (A) 60/-/-; or
 - (B) an ESA/M of not greater than 26m² /tonne.
 - (iii) Any other column not covered by (i) or (ii): 60/-/-.
- (e) Beams:
 - (i) Steel floor beam in continuous contact with a concrete floor slab—
 - (A) 60/-/-; or
 - (B) an ESA/M of not greater than 30m² /tonne.
 - (ii) Any other beam: 60/-/-.
- (f) Fire-resisting lift and stair shaft (within the carpark only): 60/60/60.
- (g) Floor slab and vehicle ramp: 60/60/60.
- (h) Roof (not used for carparking): -/-/-.
- (4) For the purposes of sub-clause (3):
 - (a) ESA/M means the ratio of exposed surface area to mass per unit length.
 - (b) Refer to Specification 17 for special requirements for a sprinkler system in a carpark complying with (3) and located within a multi-classified building.

Specification 6 – Structural Test for Lightweight Construction

Clause	Reference	Comment
S6C4	Walls of shafts and fire-isolated exits generally	
CRA	A wall of lightweight construction that is required to be fire-resisting and which bounds a lift shaft, stair shaft, or service shaft, fire-isolated passageway or fire-isolated ramp must be subjected to the following tests and must fulfil the following criteria:	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.

- (a) The materials tests of S6C10(a) and the criteria of S6C11(a).
- (b) A static test by the imposition of a uniformly distributed load of 0.35 kPa (or its equivalent) in accordance with S6C10(b) and the damage and deflection criteria of S6C11(b) and (c) respectively.
- (c) A dynamic test by the fall of the impact bag through a height of 150 mm in accordance with S6C10(c) and the damage and deflection criteria of S6C11(b) and (d) respectively.
- (d) The surface indentation test of S6C10(d) and the surface indentation criterion of S6C11(e).

S6C5	Additional requirements for lift shafts	
CRA	(1) In addition to the requirements of S6C3 and S6C4, a wall system for use in a lift shaft that is required to be fire resisting must be subjected to dynamic test by the imposition of— (a) where the lift car speed is 7 m/s or less — 10^6 cycles of a uniformly distributed load between 0 and 0.2 kPa (or its equivalent); or (b) where the lift car speed is greater than 7 m/s — 10^6 cycles of a uniformly distributed load between 0 and 0.35 kPa (or its equivalent) in accordance with S6C10(e) and must fulfil the damage criteria of S6C11(b). (2) The wall system must be subjected to the static test in accordance with S6C4(b) after the successful conclusion of the dynamic test specified in (1).	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.
S6C6	Walls generally	
CRA	An external and internal wall of lightweight construction that is required to be fire-resisting, other than one covered by S6C3, S6C4 or S6C5, must be subjected to the following tests and must fulfil the following criteria: (a) The materials tests of S6C10(a) and the criteria of S6C11(a). (b) A static test by the imposition of a uniformly distributed load of 0.25 kPa (or its equivalent) in accordance with S6C10(b) and the damage and deflection criteria of S6C11(b) and (c) respectively. (c) A dynamic test by fall of the impact bag through a height of 100 mm in accordance with S6C10(c) and the damage and deflection criteria of S6C11(b) and (d) respectively. (d) The surface indentation test of S6C10(d) and the surface indentation criterion of S6C11(e).	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.
S6C7	General requirements for testing	
CRA	Testing must be carried out on either— (a) construction in-situ; or (b) a laboratory specimen of the construction.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.

S6C8	Testing in-situ	
CRA	If testing is carried out in-situ, it must be done on that part of the construction least likely, because of the particular combination of the height of the walls, the support conditions and other aspects of the construction, to resist the loads	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.
S6C9	Testing of specimens	
CRA	If a laboratory specimen is tested, the specimen must span only in the direction corresponding to the height of the wall and testing must be done in accordance with either (a) or (b) of Clause S6C9 of the BCA.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.
S6C10	Test methods	
CRA	Tests must be carried out in accordance with Clause S6C10 of the BCA	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.
S6C11	Criteria for compliance	
CRA	The wall system or the specimen of it must fulfil the criteria listed in Clause S6C11 of the BCA	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.
Specification 7 – Fire Hazard Properties		
Clause	Reference	Comment
S7C3	Floor linings and floor coverings	
CRA	A floor lining or floor covering must have— (a) a critical radiant flux not less than that listed in Table S7C3; and (b) in a building not protected by a sprinkler system (other than a FPAA101D or FPAA101H system) complying with Specification 17, a maximum smoke development rate of 750 percent-minutes; and (c) a group number complying with S7C6(b), for any portion of the floor covering that is continued more than 150 mm up a wall.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.
S7C4	Wall and ceiling linings	
CRA	(1) A wall or ceiling lining system must comply with the group number specified in Table S7C4 and for buildings not fitted with a sprinkler system (other than a FPAA101D or FPAA101H system) complying with Specification 17 have—	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.

- (a) a smoke growth rate index not more than 100; or
an average specific extinction area less than 250 m² (b) /kg.
(2) 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 AS 5637.1.

S7C5	Air-handling ductwork	
CRA	Rigid and flexible ductwork in a Class 2 to 9 building must comply with the fire hazard properties set out in AS 4254.1 and AS 4254.2	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.
S7C6	Lift cars	
CRA	Materials used as— (a) floor linings and floor coverings must have a critical radiant flux not less than 2.2; and (b) wall and ceiling linings must be a Group 1 material or a Group 2 material in accordance with AS5637.1.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.
S7C7	Other materials	
CRA	Materials and assemblies not included in S7C3, S7C4, S7C5 or S7C6 must not exceed the indices set out in Table S7C7 – Table S7C7: Other materials Notes – see Table Notes in the BCA NSW Table S7C7 for details of the notes listed in the above table.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.

Specification 12 – Fire Doors, Smoke Doors, Fire Windows and Shutters

Clause	Reference	Comment
S12C2	Fire Doors	
CRA	A required fire door must— (a) comply with AS 1905.1; and (b) not fail by radiation through any glazed part during the period specified for integrity in the required FRL.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.
S12C5	Fire shutters	
CRA	A required fire shutter must— (a) be a shutter that— (i) is identical with a tested prototype that has achieved the required FRL; and (ii) is installed in the same manner and in an opening that is not larger than the tested prototype; and (iii) did not have a rise in average temperature on the side remote from the furnace of more than 140 K during the first 30 minutes of the test; or	If proposed compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.

(b) be a steel shutter complying with AS 1905.2 if a metallic fire shutter is not prohibited by C4D6.

S12C6	Fire Windows	
CRA	A required fire window must be— (a) identical in construction with a prototype that has achieved the required FRL; and (b) installed in the same manner and in an opening that is not larger than the tested prototype.	If proposed compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.

Specification 13 – Penetration of Walls, Floors and Ceiling by Services

Clause	Reference	Comment
S13C3	Metal pipe system	
CRA	(1) A pipe system comprised entirely of metal (excluding pipe seals or the like) that is not normally filled with liquid must not be located within 100 mm, for a distance of 2 m from the penetration, of any combustible building element or a position where combustible material may be located, and must be constructed of— (a) copper alloy or stainless steel with a wall thickness of at least 1 mm; or (b) cast iron or steel (other than stainless steel) with a wall thickness of at least 2 mm. (2) An opening for a pipe system comprised entirely of metal (excluding pipe seals or the like) must— (a) be neatly formed, cut or drilled; and (b) be no closer than 200 mm to any other service penetration; and (c) accommodate only one pipe. (3) A pipe system comprised entirely of metal (excluding pipe seals or the like) must be wrapped but must not be lagged or enclosed in thermal insulation over the length of its penetration of a wall, floor or ceiling unless the lagging or thermal insulation fulfils the requirements of S13C7. (4) The gap between a metal pipe and the wall, floor or ceiling it penetrates must be fire-stopped in accordance with S13C7.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.
S13C4	Pipes penetrating sanitary compartments	
CRA	If a pipe of metal or UPVC penetrates the floor of a sanitary compartment in accordance with C4D15(2)(c)(ii)— (a) the opening must be neatly formed and no larger than is necessary to accommodate the pipe or fitting; and (b) the gap between pipe and floor must be fire-stopped in accordance with S13C7.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.

S13C5	Wires and cables	
CRA	If a wire or cable or cluster of wires or cables penetrates a floor, wall or ceiling— (a) the opening must be neatly formed, cut or drilled and no closer than 50 mm to any other service; and (b) the opening must be no larger in cross-sectional area than— (i) 2000 mm² if only a single cable is accommodated and the gap between cable and wall, floor or ceiling is no wider than 15 mm; or (ii) 500 mm² in any other case; and (c) the gap between the service and the wall, floor or ceiling must be fire-stopped in accordance with S13C7.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.
S13C6	Electrical switches and outlets	
CRA	If an electrical switch, outlet, socket or the like is accommodated in an opening or recess in a wall, floor or ceiling— (a) the opening or recess must not— (i) be located opposite any point within 300 mm horizontally or 600 mm vertically of any opening or recess on the opposite side of the wall; or (ii) extend beyond half the thickness of the wall; and (b) the gap between the service and the wall, floor or ceiling must be fire-stopped in accordance with S13C7.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.
S13C7	Fire-stopping	
CRA	(1) Material: The material used for the fire-stopping of service penetrations must be concrete, high-temperature mineral fibre, high-temperature ceramic fibre or other material that does not flow at a temperature below 1120°C when tested in accordance with ISO 540, and must have— (a) demonstrated in a system tested in accordance with C4D15(2)(a) that it does not impair the fire-resisting performance of the building element in which it is installed; or (b) demonstrated in a test in accordance with (5) that it does not impair the fire-resisting performance of the test slab. (2) Installation: Fire-stopping material must be packed into the gap between the service and wall, floor or ceiling in a manner, and compressed to the same degree, as adopted for testing under (1)(a) or (b). (3) Hollow construction: If a pipe penetrates a hollow wall (such as a stud wall, a cavity wall or a wall of hollow blockwork) or a hollow floor/ceiling system, the cavity must be so framed and packed with fire-stopping material that is—	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.

- (a) installed in accordance with (2) to a thickness of 25 mm all round the service for the full length of the penetration; and
- (b) restrained, independently of the service, from moving or parting from the surfaces of the service and of the wall, floor or ceiling.
- (4) Recesses: If an electrical switch, socket, outlet or the like is accommodated in a recess in a hollow wall or hollow floor/ceiling system—
 - (a) the cavity immediately behind the service must be framed and packed with fire-stopping material in accordance with (3); or
 - (b) the back and sides of the service must be protected with refractory lining board identical with and to the same thickness as that in which the service is installed.
- (5) Test: The test to demonstrate compliance of a fire-stopping material with this Specification must be conducted as follows:
 - (a) The test specimen must comprise a concrete slab not less than 1 m square and not more than 100 mm thick, and appropriately reinforced if necessary for structural adequacy during manufacture, transport and testing.
 - (b) The slab must have a hole 50 mm in diameter through the centre and the hole must be packed with the fire-stopping material.
 - (c) The slab must be conditioned in accordance with AS 1530.4.
 - (d) Two thermocouples complying with AS 1530.4 must be attached to the upper surface of the packing each about 5 mm from its centre.
 - (e) The slab must be tested on flat generally in accordance with Section 10 of AS 1530.4 and must achieve an FRL of 60/60/60 or as otherwise required.

Section D: Access and Egress

Part D2 – Provision for Escape

Clause	Reference	Comment
D2D3 & NSW D2D3	Number of exits required	
OK	(1) All buildings – Every building must have at least one exit from each storey. (2) Class 2 to 8 buildings – (a) In addition to any horizontal exit, not less than 2 exits must be provided from the following: (i) Each storey if the building has an effective height of more than 25 m.	The proposed building design complies with the DTS provisions of this clause. Two (2) exits per storey (each tower) is provided, in compliance with this clause.

- (ii) A Class 2 or 3 building subject to C2D6.
- (b) The requirements of (a)(i) do not apply to a part of a storey that—
 - (i) is provided with direct egress to a road or open space; and
 - (ii) satisfies D2D5 by the provision of 1 exit.
- (3) Basements — In addition to any horizontal exit, not less than 2 exits must be provided from any storey if egress from that storey involves a vertical rise within the building of more than 1.5 m, unless—
 - (a) the floor area of the storey is not more than 50 m²; and
 - (b) the distance of travel from any point on the floor to a single exit is not more than 20 m.
- (4) Class 9 buildings—
 - (a) In addition to any horizontal exit, not less than 2 exits must be provided from the following:
 - (i) Each storey if the building has a rise in storeys of more than 6 or an effective height of more than 25 m.
 - (ii) Any storey which includes a patient care area in a Class 9a health-care building.
 - (iii) Any storey that contains sleeping areas in a Class 9c building.
 - (iv) Any storey used as a Class 9b early childhood centre, or any Class 9b early childhood centre which forms part of a storey.
 - (v) Each storey in a primary or secondary school with a rise in storeys of 2 or more.
 - (vi) Any storey or mezzanine that accommodates more than 50 persons, calculated under D2D18.
 - (vii) Any storey or mezzanine within an auditorium in an entertainment venue.
 - (b) The requirements of (a) do not apply to a part of a storey that—
 - (i) is a plant room, machinery room, storeroom, lift-machine room or the like; and
 - (ii) is provided with direct egress to a road, open space or a fire-isolated exit complying with D2D12(2); and
 - (iii) satisfies D2D5 by the provision of 1 exit.
- (5) Exits from Class 9c buildings and patient care areas in Class 9a health-care buildings — In a Class 9a health-care building and a Class 9c building, at least one exit must be provided from every part of a storey which has been divided into fire compartments in accordance with C3D3 or C3D6.
- (6) Exits in open spectator stands — In an open spectator stand containing more than one tier of seating, every tier must have not less than 2 stairways or ramps, each forming part of the path of travel to not less than 2 exits.
- (7) Access to exits — Without passing through another sole-occupancy unit every occupant of a storey or part of a storey must have access to—
 - (a) an exit; or
 - (b) at least 2 exits if 2 or more exits are required.

D2D4	When fire-isolated stairways and ramps are required
CRA	(1) Class 2 and 3 buildings — The following applies: (a) Subject to (b), every stairway or ramp serving as a required exit must be fire-isolated unless it connects, passes through or passes by not more than— (i) 3 consecutive storeys in a Class 2 building; or (ii) 2 consecutive storeys in a Class 3 building. (b) Notwithstanding (a), one extra storey of any classification may be included if— (i) it is only for the accommodation of motor vehicles or for other ancillary purposes; or (ii) the building has a sprinkler system (other than a FPAA101D system) complying with Specification 17 installed throughout; or (iii) the required exit does not provide access to or egress for, and is separated from, the extra storey by construction having— (A) an FRL of -/60/60, if non-loadbearing; and (B) an FRL of 90/90/90, if loadbearing; and (C) no opening that could permit the passage of fire or smoke. (2) Class 5, 6, 7 or 9 buildings — Every stairway or ramp serving as a required exit must be fire-isolated unless— (a) in a Class 9a health-care building — it connects, or passes through or passes by not more than 2 consecutive storeys in areas other than patient care areas; or (b) it is part of an open spectator stand; or (c) in any other case, except in a Class 9b early childhood centre or a Class 9c building, it connects, passes through or passes by not more than 2 consecutive storeys and one extra storey of any classification may be included if— (i) the building has a sprinkler system (other than a FPAA101D system) complying with Specification 17 installed throughout; or (ii) the required exit does not provide access to or egress for, and is separated from, the extra storey by construction having— (A) an FRL of -/60/60, if non-loadbearing; and (B) an FRL of 90/90/90 for Type A construction or 60/60/60 for Type B or C construction, if loadbearing; and (C) no opening that could permit the passage of fire or smoke. Exemptions: D2D4(2) does not apply to— Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary. The proposed stairs connect more than three (3) storeys in a sprinkler protected building thus, required to be within a fire-isolated shaft. Currently, all stairs are proposed within fire-isolated shafts, in compliance with this clause.

- (a) a Class 9b early childhood centre wholly within a storey that provides direct egress to a road or open space; or
- (b) a Class 9b early childhood centre with a rise in storeys of not more than 2, where the Class 9b early childhood centre is the only use in that building.

D2D5	Exit travel distances	
PSOL	(1) Class 2 and 3 buildings – (a) The entrance doorway of any sole-occupancy unit must be not more than— (i) 6 m from an exit or from a point from which travel in different directions to 2 exits is available; or (ii) 20 m from a single exit serving the storey at the level of egress to a road or open space; and (b) no point on the floor of a room which is not in a sole-occupancy unit must be more than 20 m from an exit or from a point at which travel in different directions to 2 exits is available. (2) Class 4 parts of a building – The entrance doorway to any Class 4 part of a building must be not more than 6 m from an exit or a point from which travel in different directions to 2 exits is available. (3) Class 5, 6, 7, 8 or 9 buildings – Subject to (4), (5) and (6)— (a) no point on a floor must be more than 20 m from an exit, or a point from which travel in different directions to 2 exits is available, in which case the maximum distance to one of those exits must not exceed 40 m; and (b) in a Class 5 or 6 building, the distance to a single exit serving a storey at the level of access to a road or open space may be increased to 30 m. (4) Class 9a buildings – In a patient care area in a Class 9a building— (a) no point on the floor must be more than 12 m from a point from which travel in different directions to 2 of the required exits is available; and (b) the maximum distance to one of those exits must not be more than 30 m from the starting point. (5) Open spectator stands – The distance of travel to an exit in a Class 9b building used as an open spectator stand must be not more than 60 m. (6) Assembly buildings – In a Class 9b building other than a school or early childhood centre, the distance to one of the exits may be 60 m if— (a) the path of travel from the room concerned to that exit is through another area which is a corridor, hallway, lobby, ramp or other circulation space; and (b) the room is smoke-separated from the circulation space by construction having an FRL of not less than 60/60/60 with every doorway in that construction protected by a tight fitting, self-closing, solid-core door not less than 35 mm thick; and	Performance Solution is necessary to achieve compliance with this clause. Excessive travel distances to a point of choice have been identified in various locations. To be rectified, alternatively Fire Engineer to assess if a Performance Solution is feasible. Refer to Addendum C at the back of this report for travel distance markup.

(c) the maximum distance of travel does not exceed 40 m within the room and 20 m from the doorway to the room through the circulation space to the exit.

D2D6	Distance between alternative exits	
PSOL	Exits that are required as alternative means of egress must be— (a) distributed as uniformly as practicable within or around the storey served and in positions where unobstructed access to at least 2 exits is readily available from all points on the floor including lift lobby areas; and (b) not less than 9 m apart; and (c) not more than— (i) in a Class 2 or 3 building — 45 m apart; or (ii) in a Class 9a health-care building, if such required exit serves a patient care area — 45 m apart; or (iii) in all other cases — 60 m apart; and (d) located so that alternative paths of travel do not converge such that they become less than 6 m apart.	Performance Solution is necessary to achieve compliance with this clause. Insufficient distance between alternative exits of 5m in lieu of 9m minimum (all storeys), in non-compliance with this clause. To be rectified, alternatively Fire Engineer to assess if a Performance Solution is feasible. Refer to Addendum C at the back of this report for travel distance markup.
D2D7	Height of doorways in exits and paths of travel to exits	
CRA	In a required exit or path of travel to an exit the unobstructed height throughout must be not less than 2 m, except the unobstructed height of any doorway may be reduced to not less than 1980 mm	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.
D2D8	Width of exits and paths of travel to exits	
CRA	(1) The unobstructed width of each required exit or path of travel to an exit, except for ladders provided in accordance with D2D21, D3D23 or I3D5, and doorways, must be not less than— (a) 1 m; or (b) 1.8 m in a passageway, corridor or ramp normally used for the transportation of patients in beds within a treatment area or ward area; and (c) in a public corridor in a Class 9c aged care building, notwithstanding (2) and (3)— (i) 1.5 m; and (ii) 1.8 m for the full width of the doorway, providing access into a sole-occupancy unit or communal bathroom. (2) If the storey, mezzanine or open spectator stand accommodates more than 100 persons but not more than 200 persons, the aggregate unobstructed width of each required exit or path of travel to an exit, except for doorways, must be not less than— (a) 1 m plus 250 mm for each 25 persons (or part) in excess of 100; or	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary. – The building is provided with a clear egress width of 1000mm throughout, in compliance with this clause. – The building is provided with the following aggregate exit width, which is considered sufficient. • Basement 1 to 5: 4m (400 people) • Ground floor: 2m (200 people) • Level 1: 4m (400 people) • Level 2: 4m (400 people)

(b) 1.8 m in a passageway, corridor or ramp normally used for the transportation of patients in beds within a treatment area or ward area.

(3) If the storey, mezzanine or open spectator stand accommodates more than 200 persons, the aggregate unobstructed width of each required exit or path of travel to an exit, except for doorways, must be not less than—

(a) 2 m plus 500 mm for every 60 persons (or part) in excess of 200 persons if egress involves a change in floor level by a stairway or ramp with a gradient steeper than 1 in 12; or

(b) in any other case, 2 m plus 500 mm for every 75 persons (or part) in excess of 200.

(4) In an open spectator stand which accommodates more than 2000 persons, the aggregate unobstructed width of each required exit or path of travel to an exit, except for doorways, must be not less than 17 m plus a width (in metres) equal to the number in excess of 2000 divided by 600.

Note: See NSW D2D8 (5) if the building comprises an entertainment venue.

- Level 3: 4m (400 people)
- Level 4: 4m (400 people)
- Level 5 to 14: 4m (400 people)
- Level 15 to 20: 4m (400 people)
- Level 21 to 22: 4m (400 people)
- Level 23: 4m (400 people)
- Level 24 to 31: 2m (200 people)

D2D9	Width of doorways in exits or paths of travel to exits	
CRA	In a required exit or path of travel to an exit, the unobstructed width of a doorway must be not less than— (a) in patient care areas through which patients would normally be transported in beds— (i) if the doorway provides access to, or from, a corridor of width— (A) less than 2.2 m — 1200 mm; or (B) 2.2 m or greater — 1070 mm; and (ii) where the doorway referred to in (i) is fitted with two leaves and one leaf is secured in the closed position in accordance with D3D26(3)(e), the other leaf must permit an unobstructed opening not less than 800 mm wide; or (b) in patient care areas in a horizontal exit — 1250 mm; or (c) the unobstructed width of each exit provided to comply with D2D8(1), (2), (3) or (4), minus 250 mm; or (d) in a Class 9c building, 800 mm, except— (i) in resident use areas the minimum unobstructed width must be 870 mm; and (ii) for doorways leading from a public corridor to a sole-occupancy unit the minimum unobstructed width must be 1070 mm; and (iii) where the doorway is fitted with two leaves and one leaf is secured in the closed position in accordance with D3D26(3)(e), the other leaf must permit an unobstructed opening not less than 870 mm wide in resident use areas and 800 mm wide in non-resident use area; or (e) in any other case except where it opens to a sanitary compartment or bathroom — 750 mm wide.	The proposed building design complies with the DTS provisions of this clause. All doorways are proposed with clear openings of 750mm minimum in compliance with this clause.

D2D10	Exit width not to diminish in direction of travel	
CRA	The unobstructed width of a required exit must not diminish in the direction of travel to a road or open space, except where the width is increased in accordance with D2D8(1)(b) or D2D9(a)(i).	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.
D2D11	Determination and measurement of exits and paths of travel to exits	
Noted	For the purposes of D2D7 to D2D10 the following apply: (a) The required width of a stairway or ramp in a required exit or path of travel to an exit must— (i) be measured clear of all obstructions such as handrails, projecting parts of barriers and the like; and (ii) extend without interruption, except for ceiling cornices, to a height not less than 2 m vertically above a line along the nosings of the treads or the floor surface of the ramp or landing. (b) To determine the aggregate unobstructed width, the number of persons accommodated must be calculated according to D2D18.	This clause is for informational purposes only, and no additional action is required.
D2D12	Travel via fire-isolated exits	
CRA	(1) A doorway from a room must not open directly into a stairway, passageway or ramp that is required to be fire-isolated unless it is from— (a) a public corridor, public lobby or the like; or (b) a sole-occupancy unit occupying all of a storey; or (c) a sanitary compartment, airlock or the like. (2) Each fire-isolated stairway or fire-isolated ramp must provide independent egress from each storey served and discharge directly, or by way of its own fire-isolated passageway— (a) to a road or open space; or (b) to a point— (i) in a storey or space, within the confines of the building, that is used only for pedestrian movement, car parking or the like and is open for at least $\frac{2}{3}$ of its perimeter; and (ii) from which an unimpeded path of travel, not further than 20 m, is available to a road or open space; or (c) into a covered area that— (i) adjoins a road or open space; and (ii) is open for at least $\frac{1}{3}$ of its perimeter; and (iii) has an unobstructed clear height throughout, including the perimeter openings, of not less than 3 m; and	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary. Fire-isolated exits discharge to a road or open space with no roof or awning above, in compliance with this clause.

(iv) provides an unimpeded path of travel from the point of discharge to the road or open space of not more than 6 m.

(3) Where a path of travel from the point of discharge of a fire-isolated exit necessitates passing within 6m of any part of an external wall of the same building, measured horizontally at right angles to the path of travel, the following applies:

(a) That part of the wall must have—

(i) an FRL of not less than 60/60/60; and

(ii) any openings protected internally in accordance with C4D5; and

(b) The protection required by (a) must extend for a distance of 3 m above or below, as appropriate, the level of the path of travel, or for the height of the wall, whichever is the lesser.

(4) If more than 2 access doorways, not from a sanitary compartment or the like, open to a required fire-isolated exit in the same storey—

(a) a smoke lobby in accordance with D3D7 must be provided; or

(b) the exit must be pressurised in accordance with AS 1668.1.

(5) A ramp must be provided at any change in level less than 600 mm in a fire-isolated passageway in a Class 9 building

NSW D2D15

Discharge from exits

CRA	(1) 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. (2) 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— (a) the minimum width of the required exit; or (b) 1 m, whichever is the greater. (3) 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— (a) 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 D4; or (b) except if the exit is from a Class 9a building, a stairway complying with the Deemed-to-Satisfy Provisions of the BCA. (4) The discharge point of alternative exits must be located as far apart as practical.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary. Ensure exits and egress paths are not blocked or obstructed (i.e. locked gates, bollards, etc).
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(5) In a Class 9b building which is an open spectator stand that accommodates more than 500 persons, a required stairway or required ramp must not discharge to the ground in front of the stand.

(6) In a Class 9b building containing an auditorium which accommodates more than 500 persons, not more than $\frac{2}{3}$ of the required width of exits must be located in the main entrance foyer.

(7) The number of persons accommodated must be calculated according to D2D18.

Note: See NSW D2D15(6) if the building comprises an entertainment venue.

D2D18	Number of persons accommodated	
CRA	For the purposes of the Deemed-to-Satisfy Provisions, the number of persons accommodated in a storey, room or mezzanine must be determined with consideration to the purpose for which it is used and the layout of the floor area by— (a) calculating the sum of the numbers obtained by dividing the floor area of each part of the storey by the number of square metres per person listed in Table D2D18 according to the use of that part, excluding spaces set aside for— (i) lifts, stairways, ramps and escalators, corridors, hallways, lobbies and the like; and (ii) service ducts and the like, sanitary compartments or other ancillary uses; or (b) reference to the seating capacity in an assembly building or room; or (c) any other suitable means of assessing its capacity.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary. It is understood that not more than 100 occupants will occupy each storey.
D2D19	Measurement of distances	
Noted	The nearest part of an exit means in the case of— (a) a fire-isolated stairway, fire-isolated passageway, or fire-isolated ramp, the nearest part of the doorway providing access to them; and (b) a non-fire-isolated stairway, the nearest part of the nearest riser; and (c) a non-fire-isolated ramp, the nearest part of the junction of the floor of the ramp and the floor of the storey; and (d) a doorway opening to a road or open space, the nearest part of the doorway; and (e) a horizontal exit, the nearest part of the doorway.	This clause is for informational purposes only, and no additional action is required.
D2D20	Method of measurement	
Noted	The clause of the BCA outlines the methods of measurement utilised in the provisions of this report.	This clause is for informational purposes only, and no additional action is required.

D2D21	Plant rooms, lift machine rooms and electricity network substations; concession	
CRA	(1) A ladder may be used in lieu of a stairway to provide egress from— a plant room with a floor area of not more than 100 m² (a) ; or (b) all but one point of egress from a plant room, a lift machine room or a Class 8 electricity network substation with a floor area of not more than 200 m². (2) A ladder permitted under (1)— (a) may— (i) form part of an exit provided that in the case of a fire-isolated stairway it is contained within the shaft; or (ii) discharge within a storey in which case it must be considered as forming part of the path of travel; and (b) for a plant room or a Class 8 electricity network substation, must comply with AS 1657; and (c) for a lift machine room, where access is provided from within a machine room to a secondary floor, a fixed rung type ladder complying with AS 1657 may be used, provided that— (i) the height between the floors is not more than 2800 mm; and (ii) the ladder is inclined at an angle to the horizontal not less than 65 degrees nor more than 75 degrees; and (iii) the distance between the front face of the ladder and any adjacent obstruction is not less than— (A) 960 mm, where the ladder is inclined 65 degrees to the horizontal; or (B) 760 mm, where the ladder is inclined 75 degrees to the horizontal; or (C) a distance that is determined by interpolating the values in (A) and (B), where the ladder is inclined at any angle between 65 degrees and 75 degrees to the horizontal; and (iv) a clear space not less than 600 mm exists between the foot of the ladder and any equipment.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.
D2D22	Access to lift pits	
CRA	Access to lift pits must— (a) where the pit depth is not more than 3 m, be through the lowest landing doors: or (b) where the pit depth is more than 3 m, be provided through an access doorway complying with the following: (i) In lieu of D2D7 to D2D11, the doorway must be level with the pit floor and not be less than 600 mm wide by 1980 mm high clear opening, which may be reduced to 1500 mm where it is necessary to comply with (ii). (ii) No part of the lift car or platform must encroach on the pit doorway entrance when the car is on a fully	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.

compressed buffer.

(iii) Access to the doorway must be by a stairway complying with AS 1657.

(iv) In lieu of D3D26, doors fitted to the doorway must be—

(A) of the horizontal sliding or outwards opening hinged type; and

(B) self-closing and self-locking from the outside; and

(C) marked on the landing side with the letters not less than 35 mm high:

DANGER LIFTWELL – ENTRY OF UNAUTHORIZED PERSONS – KEEP CLEAR AT ALL TIMES

Part D3 – Construction of Exits

Clause	Reference	Comment
D3D3	Fire-isolated stairways and ramps	
CRA	A stairway or ramp (including any landings) that is required to be within a fire-resisting shaft must be constructed— (a) of non-combustible materials; and (b) so that if there is local failure it will not cause structural damage to, or impair the fire-resistance of, the shaft.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary. Ensure fire-isolated stairs do not have combustible elements inside.
D3D5	Separation of rising and descending stair flights	
OK	If a stairway serving as an exit is required to be fire-isolated— (a) there must be no direct connection between— (i) a flight rising from a storey below the lowest level of access to a road or open space; and (ii) a flight descending from a storey above that level; and (b) any construction that separates or is common to the rising and descending flights must be— (i) non-combustible; and (ii) smoke proof in accordance with S11C2.	The proposed building design complies with the DTS provisions of this clause. Fire isolated stairs rising from the basement and descending from the upper levels discharge independently at street level. Note: The building appears to be provided with scissor stairs.
D3D8	Installations in exits and paths of travel	
CRA	(1) Access to service shafts and services other than to fire-fighting or detection equipment as permitted in the Deemed-to-Satisfy Provisions of Section E, must not be provided from a fire-isolated stairway, fire-isolated passageway or fire-isolated ramp. (2) An opening to any chute or duct intended to convey hot products of combustion from a boiler, incinerator, fireplace or the like, must not be located in any part of a required exit or any corridor, hallway, lobby or the like leading to a required exit.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary. Ensure services along egress paths are enclosed in non-combustible construction

- (3) Gas or other fuel services must not be installed in a required exit.
- (4) Except for in a fire-isolated exit specified in (1), services or equipment enclosed in accordance with (5) may be installed in a required exit, or in any corridor, hallway, lobby or the like leading to a required exit, where that service or equipment comprises—
 - (a) electricity meters, distribution boards or ducts; or
 - (b) central telecommunications distribution boards or equipment; or
 - (c) electrical motors or other motors serving equipment in the building.
- (5) An enclosure for the purposes of (4) must be suitably sealed against smoke spreading from the enclosure and be—
 - (a) non-combustible construction; or
 - (b) a fire-protective covering.
- (6) Electrical wiring may be installed in a fire-isolated exit if the wiring is associated with—
 - (a) a lighting, detection, or pressurisation system serving the exit; or
 - (b) a security, surveillance or management system serving the exit; or
 - (c) an intercommunication system or an audible or visual alarm system in accordance with D3D27; or
 - (d) the monitoring of hydrant or sprinkler isolating valves.

(door metal backing may be necessary) and smoke sealed.

Electrical Engineer to assess and confirm compliance prior to construction.

D3D9	Enclosure of space under stairs and ramps	
N/A	(1) Fire-isolated stairways and ramps — If the space below a required fire-isolated stairway or fire-isolated ramp is within the fire-isolated shaft, it must not be enclosed to form a cupboard or similar enclosed space. (2) Non-fire-isolated stairways and ramps — The space below a required non-fire-isolated stairway (including an external stairway) or non-fire-isolated ramp must not be enclosed to form a cupboard or other enclosed space unless— (a) the enclosing walls and ceilings have an FRL of not less than 60/60/60; and (b) any access doorway to the enclosed space is fitted with a self-closing –/60/30 fire door.	Not applicable – This clause is not applicable to this project. No action required. It appears that no enclosures underneath the stairs are identified.
D3D12	Fire-isolated passageways	
CRA	(1) The enclosing construction of a fire-isolated passageway must have an FRL when tested for a fire outside the passageway in another part of the building of— (a) if the passageway discharges from a fire-isolated stairway or ramp — not less than that required for the stairway or ramp shaft; or (b) in any other case — not less than 60/60/60.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary. The fire-isolated passageways are understood to have the same FRL of the fire-isolated stair.

- (2) Notwithstanding (1)(b), the top construction of a fire-isolated passageway need not have an FRL if the walls of the fire-isolated passageway extend to the underside of—
- (a) a non-combustible roof covering; or
 - (b) a ceiling having a resistance to the incipient spread of fire of not less than 60 minutes separating the roof space or ceiling space in all areas surrounding the passageway within the fire compartment.

Note: Colour coded FRL drawings to be provided for review prior to construction.

D3D13	Roof as open space	
CRA	If an exit discharges to a roof of a building, the roof must— (a) have an FRL of not less than 120/120/120; and (b) not have any roof lights or other openings within 3 m of the path of travel of persons using the exit to reach a road or open space.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary. Exits discharge to roof as open space on ground floor, ensure no openings closer than 3m from the egress path are proposed.
D3D14	Goings and risers	
CRA	(1) A stairway must have— (a) not more than 18 and not less than 2 risers in each flight; and (b) going (G), riser (R) and quantity (2R + G) in accordance with Table D3D14, except as permitted by (2) and (3); and (c) constant goings and risers throughout each flight, except as permitted by (2) and (3), and the dimensions of goings (G) and risers (R) in accordance with (1)(b) are considered constant if the variation between— (i) adjacent risers, or between adjacent goings, is no greater than 5 mm; and (ii) the largest and smallest riser within a flight, or the largest and smallest going within a flight, does not exceed 10 mm; and (d) risers which do not have any openings that would allow a 125 mm sphere to pass through between the treads; and (e) treads which have— (i) a surface with a slip-resistance classification not less than that listed in Table D3D15 when tested in accordance with AS 4586; or (ii) a nosing strip with a slip-resistance classification not less than that listed in Table D3D15 when tested in accordance with AS 4586; and	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary. - Stair geometry to comply with the tolerances and restrictions of this clause. Survey may be required to conform compliance prior to completion. - Slip resistance to have a rating of P3 (dry – internal) and P4 (wet – external) as minimum.

- (f) treads of solid construction (not mesh or other perforated material) if the stairway is more than 10 m high or connects more than 3 storeys; and
- (g) in a Class 9b building, not more than 36 risers in consecutive flights without a change in direction of at least 30°; and
- (h) in the case of a required stairway, no winders in lieu of a landing.
- (2) In the case of a non-required stairway—
 - (a) the stairway must have—
 - (i) not more than 3 winders in lieu of a quarter landing; and
 - (ii) not more than 6 winders in lieu of a half landing; and
 - (b) the going of all straight treads must be constant throughout the same flight and the dimensions of goings (G) is considered constant if the variation between—
 - (i) adjacent goings, is no greater than 5 mm; and
 - (ii) the largest and smallest going within a flight, does not exceed 10 mm; and
 - (c) the going of all winders in lieu of a quarter or half landing may vary from the going of the straight treads within the same flight provided that the going of all such winders is constant.
- (3) Where a stairway discharges to a sloping public walkway or public road—
 - (a) the riser (R) may be reduced to account for the slope of the walkway or road; and
 - (b) the quantity (2R+G) may vary at that location.

D3D15	Landings	
CRA	In a stairway— (a) landings having a maximum gradient of 1:50 may be used in any building to limit the number of risers in each flight and each landing must— (i) be not less than 750 mm long, and where this involves a change in direction, the length is measured 500 mm from the inside edge of the landing; and (ii) have— (A) a surface with a slip-resistance classification not less than that listed in Table D3D15 when tested in accordance with AS4586; or (B) a strip at the edge of the landing with a slip-resistance classification not less than that listed in Table D3D15 when tested in accordance with AS 4586, where the edge leads to a flight below; and (b) in a Class 9a building—	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary. Slip resistance to have a rating of P3 (dry – internal) and P4 (wet – external) as minimum.

- (i) the area of any landing must be sufficient to move a stretcher, 2 m long and 600 mm wide, at a gradient not more than the gradient of the stairs, with at least one end of the stretcher on the landing while changing direction between flights; or
- (ii) the stair must have a change of direction of 180°, and the landing a clear width of not less than 1.6 m and a clear length of not less than 2.7 m.

D3D16	Thresholds	
CRA	The threshold of a doorway must not incorporate a step or ramp at any point closer to the doorway than the width of the door leaf unless— (a) in patient care areas in a Class 9a health-care building, the door sill is not more than 25 mm above the finished floor level to which the doorway opens; or (b) in resident use areas in a Class 9c building, a ramp is provided with a maximum gradient of 1:8 for a maximum height of 25 mm over the threshold; or (c) in a building required to be accessible by Part D4, the doorway— (i) opens to a road or open space; and (ii) is provided with a threshold ramp or step ramp in accordance with AS 1428.1; or (d) in other cases— (i) the doorway opens to a road or open space, external stair landing or external balcony; and (ii) the door sill is not more than 190 mm above the finished surface of the ground, balcony, or the like, to which the doorway opens.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary. – It is understood all internal surfaces will be level with no thresholds, steps or the like. – Balconies and external areas are allowed to have a 190mm maximum water sill.
D3D17	Barriers to prevent falls	
CRA	(1) A continuous barrier must be provided along the side of— (a) a roof to which general access is provided; and (b) a stairway or ramp; and (c) a floor, corridor, hallway, balcony, deck, verandah, mezzanine, access bridge or the like; and (d) any delineated path of access to a building, if the trafficable surface is 1 m or more above the surface beneath. (2) The requirements of (1) do not apply to— (a) the perimeter of a stage, rigging loft, loading dock or the like; or (b) areas referred to in D3D23; or (c) a retaining wall unless the retaining wall forms part of, or is directly associated with a delineated path of access to a building from the road, or a delineated path of access between buildings; or	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary. A continuous barrier is to be provided along where falls are greater than 1000mm (i.e. balconies), in compliance with this clause. Note: Detailed drawings to be reviewed at a later stage.

- (d) a barrier provided to an openable window covered by D3D29.
(3) A barrier required by (1) must be constructed in accordance with D3D18, D3D19, D3D20 and, if a wire barrier is used, D3D21.

D3D18	Height of barriers	
CRA	(1) The height of a barrier required by D3D17 must be not less than the following: (a) For stairways or ramps with a gradient of 1:20 or steeper – 865 mm. (b) For landings to a stair or ramp where the barrier is provided along the inside edge of the landing and does not exceed 500 mm in length – 865 mm. (c) In front of fixed seating on a mezzanine or balcony within an auditorium in a Class 9b building— (i) 1 m; or (ii) 700 mm where the horizontal projection extends not less than 1 m outwards from the top of the barrier; (d) ... (e) For all other locations – 1 m. (2) For a barrier provided under (1) — (a) barrier heights are measured vertically from the surface beneath, except that for stairways the height must be measured above the nosing line of the stair treads; and (b) a transition zone may be incorporated where the barrier height changes from 865 mm on a stair flight or ramp to 1 m at a landing or floor.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary. A continuous barrier is to be provided along where falls are greater than 1000mm (i.e. balconies), in compliance with this clause. Note: Detailed drawings to be reviewed at a later stage.
D3D19	Openings in barriers	
CRA	(1) Except where allowed by (2), openings in a required barrier must not allow a 125 mm sphere to pass through. (2) In a fire-isolated stairway, fire-isolated ramp or other area used primarily for emergency purposes, openings in a required barrier— (a) must not allow a 300 mm sphere to pass through; or (b) where rails are used— (i) a 150 mm sphere must not be able to pass through the opening between the nosing line of the stair treads and the rail or between the rail and the floor of the landing, balcony or the like; and (ii) the opening between rails must not be more than 460 mm. (3) In Class 7 (other than carparks) and Class 8 buildings, openings in a required barrier— (a) must not allow a 300 mm sphere to pass through; or (b) where rails are used—	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary. - Openings on barriers are not shown greater than 125mm in balustrades. - Ensure openings on barriers are not greater than 300mm in fire-isolated stairs.

- (i) a 150 mm sphere must not be able to pass through the opening between the nosing line of the stair treads and the rail or between the rail and the floor of the landing, balcony or the like; and
- (ii) the opening between the rails must not be more than 460 mm.
- (4) The requirements of (2) do not apply to external stairways, external ramps, or fire-isolated stairways or fire-isolated ramps serving Class 9b early childhood centres.
- (5) For a barrier provided under (1), the maximum 125 mm barrier opening for a stairway, such as a non fire-isolated stairway, is measured above the nosing line of the stair treads.
- (6) Where a required barrier is fixed to the vertical face forming an edge of a landing, balcony, deck, stairway or the like, the opening formed between the barrier and the face must not exceed 40 mm.
- (7) For the purposes of (6), the opening is measured horizontally from the edge of the trafficable surface to the nearest internal face of the barrier.

D3D20	Barrier climbability	
CRA	(1) A barrier required by D3D17, located on a floor more than 4 m above the surface beneath, must not incorporate horizontal or near horizontal elements that could facilitate climbing between 150 mm and 760 mm above the floor. (2) The requirements of (1) do not apply to— (a) fire-isolated stairways, fire-isolated ramps and other areas used primarily for emergency purposes, other than— (i) external stairways; and (ii) external ramps; and (b) Class 7 (other than carparks) and Class 8 buildings	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary. Ensure no climbable elements (i.e. horizontal inserts, kerbing, A/C units, planter boxes, GPO's, taps, etc) are present in balconies over 4m height (and throughout as best practice). Note: Compliance with AS1926.1 may be used as guidance on climbability.
D3D22	Handrails	
CRA	(1) Except for handrails referred to in D3D23, and subject to (2), handrails must— (a) be located along at least one side of the ramp or flight; and (b) be located along each side if the total width of the stairway or ramp is 2 m or more; and (c) in a Class 9b building used as a primary school or a building that contains an early childhood centre— (i) have one handrail fixed at a height of not less than 865 mm; and (ii) in addition to (i), have a handrail— (A) fixed at a height between 665 mm and 750 mm in a primary school; and (B) with a cross-sectional dimension not less than 16 mm and not greater than 45 mm as measured in	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary. Absence of a single continuous handrail to all stairs, in non-compliance with this clause. To be rectified/clarified. Note: Ensure staggered stairs are set back to achieve handrail installation at a constant height as per AS1428.1.

any direction across its centre, fixed at a height between 450 mm and 700 mm in a Class 9b early childhood centre; and

(d) in any other case, be fixed at a height of not less than 865 mm; and

(e) be continuous between stair flight landings and have no obstruction on or above them that will tend to break a hand-hold; and

(f) in a required exit serving an area required to be accessible, be designed and constructed to comply with clause 12 of AS 1428.1, except that clause 12(d) does not apply to a handrail required by (1)(c)(ii).

(2) The height required by (1)(c) and (d) is measured above the nosings of stair treads and the floor surface of the ramp, landing or the like.

(3) Handrails—

(a) in a Class 9a health-care building must be provided along at least one side of every passageway or corridor used by patients, and must be—

(i) fixed not less than 50 mm clear of the wall; and

(ii) where practicable, continuous for their full length; and

(b) in a Class 9c aged care building must be provided along both sides of every passageway or corridor used by residents, and must be—

(i) fixed not less than 50 mm clear of the wall; and

(ii) where practicable, continuous for their full length.

(4) Handrails required to assist people with a disability must be provided in accordance with D4D4.

(5) Handrails to a stairway or ramp within a sole-occupancy unit in a Class 2 or 3 building or Class 4 part of a building must—

(a) be located along at least one side of the flight or ramp; and

(b) be located along the full length of the flight or ramp, except in the case where a handrail is associated with a barrier, the handrail may terminate where the barrier terminates; and

(c) have the top surface of the handrail not less than 865 mm vertically above the nosings of the stair treads or the floor surface of the ramp; and

(d) have no obstruction on or above them that will tend to break a handhold, except for newel posts, ball type stanchions, or the like.

(6) The requirements of (5) do not apply to—

(a) handrails referred to in D3D23; or

(b) a stairway or ramp providing a change in elevation of less than 1 m; or

(c) a landing; or

Note: Access Consultant to review and assess against AS1428.1.

(d) a winder where a newel post is installed to provide a handhold.

D3D23	Fixed platforms, walkways, stairways and ladders	
CRA	A fixed platform, walkway, stairway, ladder and any going and riser, landing, handrail or barrier attached thereto may comply with AS 1657 in lieu of D3D14, D3D15, D3D17, D3D18, D3D19, D3D20, D3D21 and D3D22 if it only serves— (a) machinery rooms, boiler houses, lift-machine rooms, plant-rooms, and the like; or (b) non-habitable rooms, such as attics, storerooms and the like that are not used on a frequent or daily basis in the internal parts of a sole-occupancy unit in a Class 2 building or Class 4 part of a building.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.
D3D24	Doorways and doors	
CRA	(1) A doorway in a resident use area of a Class 9c building must not be fitted with— (a) a sliding fire door; or (b) a sliding smoke door; or (c) a revolving door; or (d) a roller shutter door; or (e) a tilt-up door. (2) A doorway serving as a required exit or forming part of a required exit, or a doorway in a patient care area of a Class 9a health-care building— (a) must not be fitted with a revolving door; and (b) must not be fitted with a roller shutter or tilt-up door unless— (i) it serves a Class 6, 7 or 8 building or part with a floor area not more than 200 m²; and (ii) the doorway is the only required exit from the building or part; and (iii) it is held in the open position while the building or part is lawfully occupied; and (c) must not be fitted with a sliding door unless— (i) it leads directly to a road or open space; and (ii) the door is able to be opened manually under a force of not more than 110 N; and (d) if fitted with a door which is power-operated— (i) it must be able to be opened manually under a force of not more than 110 N if there is a malfunction or failure of the power source; and (ii) if it leads directly to a road or open space it must open automatically if there is a power failure to the door or on the activation of a fire or smoke alarm anywhere in the fire compartment served by the door. (e) ...	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary. Refer to clause D3D26.

(3) A power-operated door in a path of travel to a required exit, except for a door in a patient care area of a Class 9a health-care building as provided in (2), must be able to be opened manually under a force of not more than 110 N if there is a malfunction or failure of the power source.

D3D25	Swinging doors	
OK	(1) A swinging door in a required exit or forming part of a required exit— (a) must not encroach— (i) at any part of its swing by more than 500 mm on the required width (including any landings) of a required stairway, ramp or passageway if it is likely to impede the path of travel of the people already using the exit; and (ii) when fully open, by more than 100 mm on the required width of the required exit; and (b) must swing in the direction of egress unless— (i) it serves a building or part with a floor area not more than 200 m², it is the only required exit from the building or part and it is fitted with a device for holding it in the open position; or (ii) it serves a sanitary compartment or airlock (in which case it may swing in either direction); and (c) must not otherwise impede the path or direction of egress. (2) The measurement of encroachment referred to in (1)(a) in each case is to include door handles or other furniture or attachments to the door.	The proposed building design complies with the DTS provisions of this clause. All exit doors are identified swinging in the direction of egress, in compliance with this clause.
NSW D3D26	Operation of latch	
CRA	(1) A door in a required exit, forming part of a required exit or in the path of travel to a required exit must be readily openable without a key from the side that faces a person seeking egress, by— (a) a single hand downward action on a single device which is located between 900 mm and 1.1 m from the floor and if serving an area required to be accessible by Part D4— (i) be such that the hand of a person who cannot grip will not slip from the handle during the operation of the latch; and (ii) have a clearance between the handle and the back plate or door face at the centre grip section of the handle of not less than 35 mm and not more than 45 mm; or (b) a single hand pushing action on a single device which is located between 900 mm and 1.2 m from the floor. (2) Where the latch operation device referred to in (1)(b) is not located on the door leaf itself— (a) manual controls to power-operated doors must be at least 25 mm wide, proud of the surrounding surface and located—	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.

- (i) not less than 500 mm from an internal corner; and
- (ii) for a hinged door, between 1 m and 2 m from the door leaf in any position; and
- (iii) for a sliding door, within 2 m of the doorway and clear of a surface mounted door in the open position; and
- (b) braille and tactile signage complying with S15C3 and S15C6 must identify the latch operation device.
- (3) The requirements of (1) and (2) do not apply to a door that—
 - (a) serves a vault, strong-room, sanitary compartment, or the like; or
 - (b) serves only, or is within—
 - (i) a sole-occupancy unit in a Class 2 building or a Class 4 part of a building; or
 - (ii) a sole-occupancy unit in a Class 3 building (other than an entry door to a sole-occupancy unit of a boarding house, guest house, hostel, lodging house or backpacker accommodation); or a sole-occupancy unit with a floor area not more than 200 m² (iii) in a Class 5, 6, 7 or 8 building; or
 - (iv) a space which is otherwise inaccessible to persons at all times when the door is locked; or
 - (c) complies with (4) and serves—
 - (i) Australian Government Security Zones 4 or 5; or
 - (ii) the secure parts of a bank, detention centre, mental health facility, early childhood centre or the like; or
 - (d) is fitted with a fail-safe device which automatically unlocks the door upon the activation of any sprinkler system (other than a FPA101D system) complying with Specification 17 or smoke, or any other detector system deemed suitable in accordance with AS 1670.1 installed throughout the building, and is readily openable when unlocked; or
 - (e) is in a Class 9a or 9c building and—
 - (i) is one leaf of a two-leaf door complying with D2D9(1)(a) or D2D9(1)(d) provided that it is not held closed by a locking mechanism and is readily openable; and
 - (ii) the door is not required to be a fire door or smoke door.
 - (4) A door referred to in (3)(c) must be able to be immediately unlocked—
 - (a) by operating a fail-safe control switch, not contained within a protective enclosure, to actuate a device to unlock the door; or
 - (b) by hand by a person or persons, specifically nominated by the owner, properly instructed as to the duties and responsibilities involved and available at all times when the building is lawfully occupied so that persons in the building or part may immediately escape if there is a fire.
 - (5) The requirements of (1) and (2) do not apply in a Class 9b building (other than a school, an early childhood centre or a building used for religious purposes) to a door in a required exit, forming part of a

required exit or in the path of travel to a required exit serving a storey or room accommodating more than 100 persons, determined in accordance with D2D18, in which case it must be readily openable—

- (a) without a key from the side that faces a person seeking egress; and
- (b) by a single hand pushing action on a single device such as a panic bar located between 900 mm and 1.2 m from the floor; and
- (c) where a two-leaf door is fitted, the provisions of (a) and (b) need only apply to one door leaf if the appropriate requirements of D2D7 to D2D11 are satisfied by the opening of that one leaf; and
- (d) where the door is a door in a path of travel providing re-entry to the building from a balcony, terrace or the like, it may be fitted with key-operated fastenings only, the tongues of which must be locked in the retracted position whenever the building is occupied by the public, so the door can yield to pressure
- (6) ...

D3D27	Re-entry from fire-isolated exits	
CRA	(1) Doors of a fire-isolated exit must not be locked from the inside as follows: (a) In a Class 9a health-care building. (b) In a Class 9b early childhood centre. (c) In a Class 9c building. (d) In a fire-isolated exit serving any storey above an effective height of 25 m, throughout the exit. (2) The requirements of (1)(a), (c) and (d) do not apply to a door fitted with a fail-safe device that automatically unlocks the door upon the activation of a fire alarm and— (a) on at least every fourth storey, the doors are not able to be locked and a sign is fixed on such doors stating that re-entry is available; or (b) an intercommunication system, or an audible or visual alarm system, operated from within the enclosure is provided near the doors and a sign is fixed adjacent to such doors explaining its purpose and method of operation. (3) The requirements of (1)(b) do not apply to a door fitted with a fail-safe device that automatically unlocks the door serving the Class 9b early childhood centre upon the activation of a fire alarm.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary. Ensure doors to fire-isolated exits are provided with re-entry door hardware or fail-safe device to comply with this clause.
D3D28	Signs on doors	
CRA	(1) A sign, to alert persons that the operation of certain doors must not be impaired, must be installed where it can readily be seen on, or adjacent to, in accordance with (2)— (a) a required—	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.

- (i) fire door providing direct access to a fire-isolated exit, except a door providing direct egress from a sole-occupancy unit in a Class 2 or 3 building or Class 4 part of a building; and
- (ii) smoke door; and
- (b) any door which is a—
 - (i) fire door forming part of a horizontal exit; and
 - (ii) smoke door that swings in both directions; and
 - (iii) door leading from a fire isolated exit to a road or open space.
- (2) A sign required by (1)(a) must be fixed on the side of the door that faces a person seeking egress and, if the door is fitted with a device for holding it in the open position, either a sign must be fixed on the wall adjacent to the doorway, or signs must be fixed to both sides of the door.
- (3) A sign required by (1)(b) must be fixed on each side of the door.
- (4) A sign referred to in (1) must be in capital letters not less than 20 mm high in a colour contrasting with the background and state the following:
 - (a) For an automatic door held open by an automatic hold-open device—
FIRE SAFETY DOOR — DO NOT OBSTRUCT
 - (b) For a self-closing door—
FIRE SAFETY DOOR
DO NOT OBSTRUCT
DO NOT KEEP OPEN
 - (a) For a door discharging from a fire-isolated exit—
FIRE SAFETY DOOR — DO NOT OBSTRUCT

D3D29	Protection of openable windows
CRA	(1) A window opening must be provided with protection, if the floor below the window is 2 m or more above the surface beneath in— (a) a bedroom in a Class 2 or 3 building or Class 4 part of a building; or (b) a Class 9b early childhood centre. (2) Where the lowest level of the window opening is less than 1.7 m above the floor, a window opening covered by (1) must comply with the following: (a) The openable portion of the window must be protected with— (i) a device capable of restricting the window opening; or (ii) a screen with secure fittings. (b) A device or screen required by (a) must— Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary. Openable windows located higher than 2m require child-proof protection. Windows without an 865mm sill will not be openable. Any other will be provided with a 125mm max child proof restriction.

- (i) not permit a 125 mm sphere to pass through the window opening or screen; and
- (ii) resist an outward horizontal action of 250 N against the—
 - (A) window restrained by a device; or
 - (B) screen protecting the opening; and
- (iii) have a child resistant release mechanism if the screen or device is able to be removed, unlocked or overridden.
- (3) A barrier with a height not less than 865 mm above the floor is required to an openable window—
 - (a) in addition to window protection, when a child resistant release mechanism is required by (2)(b)(iii); and
 - (b) where the floor below the window is 4 m or more above the surface beneath if the window is not covered by (1).
- (4) A barrier covered by (3) except for (5) must not—
 - (a) permit a 125 mm sphere to pass through it; and
 - (b) have any horizontal or near horizontal elements between 150 mm and 760 mm above the floor that facilitate climbing.
- (5) A barrier required by (3) to an openable window in—
 - (a) fire-isolated stairways, fire-isolated ramps and other areas used primarily for emergency purposes, excluding external stairways and external ramps; and
 - (b) Class 7 (other than car parks) and Class 8 buildings and parts of buildings containing those classes, must not permit a 300 mm sphere to pass through it.

Part D4 – Access for People with Disabilities

Clause	Reference	Comment
CRA	Access Consultant to assess and confirm compliance.	Access Consultant to assess and confirm compliance.

Section E: Services and Equipment

Part E1 – Fire Fighting Equipment

Clause	Reference	Comment
EID2	Fire Hydrants	
CRA	(1) A fire hydrant system must be provided to serve a building— having a total floor area greater than 500 m² (a) ; and (b) where a fire brigade station is— (i) no more than 50 km from the building as measured along roads; and (ii) equipped with equipment capable of utilising a fire hydrant. (2) The fire hydrant system must be installed in accordance with AS 2419.1. (3) Notwithstanding (2), a Class 8 electricity network substation need not comply with clause 4.2 of AS 2419.1 if— (a) it cannot be connected to a town main supply; and (b) one hour water storage is provided for fire-fighting. (4) Where internal fire hydrants are provided, they must serve only the storey on which they are located except that a sole-occupancy unit— (a) in a Class 2 or 3 building or Class 4 part of a building may be served by a single fire hydrant located at the level of egress from that sole-occupancy unit; or (b) of not more than 2 storeys in a Class 5, 6, 7, 8 or 9 building may be served by a single fire hydrant located at the level of egress from that sole-occupancy unit provided the fire hydrant can provide coverage to the whole of the sole-occupancy unit.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary. - The building has a floor area over 500m², thus required to be provided with a fire hydrant booster at the main entrance. Currently, a fire hydrant booster (FHB) is proposed at the main entrance (Lavender St), in compliance with this clause. - The proposed fire-hydrant pump room is required to comply with AS2419.1-2021 Clause 6.11.2 as follows: • To be provided with an airlock that leads to a fire-isolated passageway or stair leading to a road or open space. Provided. • A pressurised fire-isolated passageway or stair in compliance with AS1668.1, leading to a road or open space. To be confirmed Hydraulic Engineer to assess and confirm compliance.
EID3	Fire Hose Reels	
CRA	(1) EID3 does not apply to— (a) a Class 2, 3 or 5 building or Class 4 part of a building; or (b) a Class 8 electricity network substation; or (c) a Class 9c building; or (d) classrooms and associated corridors in a primary or secondary school. (2) A fire hose reel system must be provided—	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary. The Class 9b part is provided with fire hose reels located 4m from the exit, in compliance with this clause.

- (a) to serve the whole building where one or more internal fire hydrants are installed; or
- (b) where internal fire hydrants are not installed, to serve any fire compartment with a floor area greater than 500 m².
- (3) The fire hose reel system must—
 - (a) have fire hose reels installed in accordance with AS 2441; and
 - (b) provide fire hose reels to serve only the storey at which they are located, except a sole-occupancy unit of not more than 2 stores in a Class 6, 7, 8 or 9 building may be served by a single fire hose reel located at the level of egress from that sole-occupancy unit provided the fire hose reel can provide coverage to the whole of the sole-occupancy unit.
- (4) Fire hose reels must be located internally, externally or in combination, to achieve the system coverage specified in AS 2441.
- (5) In achieving system coverage, one or a combination of the following criteria for individual internally located fire hose reels must be met in determining the layout of any fire hose reel system:
 - (a) Fire hose reels must be located adjacent to an internal fire hydrant (other than one within a fire-isolated exit), except that a fire hose reel need not be located adjacent to every fire hydrant, provided system coverage can be achieved.
 - (b) Fire hose reels must be located within 4 m of an exit, except that a fire hose reel need not be located adjacent to every exit, provided system coverage can be achieved.
 - (c) Where system coverage is not achieved by compliance with (a) and (b), additional fire hose reels may be located in paths of travel to an exit to achieve the required coverage.
 - (6) Fire hose reels must be located so that the fire hose will not need to pass through doorways fitted with fire or smoke doors, except—
 - (a) doorways in walls referred to in C3D6(1)(e) in a Class 9a building and C3D6(5)(d) in a Class 9c building, separating ancillary use areas of high potential fire hazard; and
 - (b) doorways in walls referred to in C3D13 or C3D14 separating equipment or electrical supply systems; and
 - (c) doorway openings to shafts referred to in C4D14.
- (7) Where the normal water supply cannot achieve the flow and pressures required by AS 2441, or is unreliable—
 - (a) a pump; or
 - (b) water storage facility; or
 - (c) both a pump and water storage facility, must be installed to provide the minimum flow and pressures required by clause 6.1 of AS 2441.

Note: Class 2 building parts are not required to be provided with fire hose reels.

EID4	Sprinklers	
CRA	A sprinkler system must— (a) be installed in a building or part of a building when required by EID5 to EID12 as applicable; and (b) comply with Specification 17 and Specification 18 as applicable.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.
EID5	Where sprinklers are required: all classifications	
CRA	Sprinklers are required throughout all buildings if any part of the building has an effective height of more than 25 m— (a) including an open-deck carpark within a multi-classified building; but (b) excluding— (i) an open-deck carpark being a separate building; and (ii) a Class 8 electricity network substation, with a floor area not more than 200 m2, located within a multi-classified building.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary. The building is over 25m in effective height, thus provided with a AS2118.1-2017 sprinkler system, in compliance with this clause.
EID9	Where sprinklers are required: Class 7a building, other than an open-deck carpark	
CRA	In a Class 7a building, other than an open-deck carpark, sprinklers are required in fire compartments where more than 40 vehicles are accommodated.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary. The basement carpark accommodates more than 40 vehicles thus provided with a sprinkler system (AS2118.1-2017), in compliance with this clause.
EID14	Portable fire extinguishers	
CRA	(1) Portable fire extinguishers must be— (a) provided as listed in (3) and (4); and (b) for a Class 2, 3 or 5 building or Class 4 part of a building, provided— (i) to serve the whole Class 2, 3 or 5 building or Class 4 part of a building where one or more internal fire hydrants are installed; or (ii) where internal fire hydrants are not installed, to serve any fire compartment with a floor area greater than 500 m2, and for the purposes of this clause, a sole-occupancy unit in a Class 2 or 3 building or Class 4 part of a building is considered to be a fire compartment; and (c) subject to (2), selected, located and distributed in accordance with Sections 1, 2, 3 and 4 of AS 2444.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary. Portable fire extinguisher is to be provided throughout the entire building.

- (2) Portable fire extinguishers provided in a Class 2 or 3 building or Class 4 part of a building must be—
 - (a) an ABE type fire extinguisher; and
 - (b) a minimum size of 2.5 kg; and
 - (c) distributed outside a sole-occupancy unit—
 - (i) to serve only the storey at which they are located; and
 - (ii) so that the travel distance from the entrance doorway of any sole-occupancy unit to the nearest fire extinguisher is not more than 10 m.
- (3) In Class 2 to 9 buildings (except within sole-occupancy units of a Class 9c building), portable fire extinguishers must be provided as follows:
 - (a) To cover Class AE or E fire risks associated with emergency services switchboards.
 - (b) To cover Class F fire risks involving cooking oils and fats in kitchens.
 - (c) To cover Class B fire risks in locations where flammable liquids in excess of 50 litres are stored or used (not including that held in fuel tanks of vehicles). To cover Class A fire risks in normally occupied fire compartments less than 500 m²
 - (d) not provided with fire hose reels (excluding open-deck carparks).
 - (e) To cover Class A fire risks in classrooms and associated corridors in primary and secondary schools not provided with fire hose reels.
 - (f) To cover Class A fire risks associated with a Class 2, 3 or 5 building or Class 4 part of a building.
- (4) In addition to the requirements of (3), portable fire extinguishers must be provided to cover Class A and E fire risks in the following occupancies in buildings, or parts of a building:
 - (a) A Class 9a health-care building, including a Class 9a building used as a residential care building.
 - (b) Class 3 parts of detention and correctional occupancies.
 - (c) Class 3 accommodation for children, aged persons and people with disabilities, including a Class 3 building used as a residential care building.
 - (d) A Class 9c building.
- (5) For the purposes of (3) and (4):
 - (a) Fire risks are defined in accordance with AS 2444.
 - (b) An emergency services switchboard is one which sustains emergency equipment operating in the emergency mode.
 - (c) A Class E fire extinguisher need only be located at each nurses' station, supervisors' station or the like.
 - (d) Additional extinguishers may be required to cover fire risks in relation to special hazards provided for in EID17.

(e) The fire risks in a Class 2 or 3 building or Class 4 part of a building must include risks within any sole-occupancy units, however portable fire extinguishers are not required to be located within a sole-occupancy unit unless the sole-occupancy unit has a floor area greater than 500 m².

EID15	Fire control centres	
CRA	A fire control centre facility in accordance with Specification 19 must be provided for— (a) a building with an effective height of more than 25 m; and (b) a Class 6, 7, 8 or 9 building with a total floor area of more than 18000 m ² .	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary. The building is over 25m in effective height, thus required to be provided with a fire control room. Refer to Specification 19.
EID16	Fire precautions during construction	
CRA	In a building under construction— (a) not less than one fire extinguisher to suit Class A, B and C fires and electrical fires must be provided at all times on each storey adjacent to each required exit or temporary stairway or exit; and (b) after the building has reached an effective height of 12 m— (i) the required fire hydrants and fire hose reels must be operational in at least every storey that is covered by the roof or the floor structure above, except the 2 uppermost storeys; and (ii) any required booster connections must be installed.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary. – Portable fire extinguishers are to be provided, maintained and operable during construction, – Fire hydrant and fire hose reel systems to be active once the building reaches 12m effective height.
EID17	Provision for special hazards	
CRA	Suitable additional provision must be made if special problems of fighting fire could arise because of— (a) the nature or quantity of materials stored, displayed or used in a building or on the allotment; or (b) the location of the building in relation to a water supply for fire-fighting purposes.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary. Specialist to assess and confirm compliance. Note: No EV charging stations are proposed.

Part E2 – Smoke Hazard Management

Clause	Reference	Comment
E2D3	Air handling systems other than as part of a smoke hazard management system	
CRA	(1) An air-handling system which does not form part of a smoke hazard management system in accordance with E2D4 to E2D20 and which recycles air from one fire compartment to another fire	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject

compartment or operates in a manner that may unduly contribute to the spread of smoke from one fire compartment to another fire compartment must, subject to (2), be designed and installed—

- (a) to operate as a smoke control system in accordance with AS 1668.1; or
- (b) such that it—
 - (i) incorporates smoke dampers where the air-handling ducts penetrate any elements separating the fire compartments served; and
 - (ii) is arranged such that the air-handling system is shut down and the smoke dampers are activated to close automatically by smoke detectors complying with clause 7.5 of AS 1670.1.

(2) For the purposes of (1), each sole-occupancy unit in a Class 2 or 3 building is treated as a separate fire compartment.

(3) Miscellaneous air-handling systems covered by Sections 5 and 6 of AS 1668.1 serving more than one fire compartment (other than a carpark ventilation system) and not forming part of a smoke hazard management system must comply with these Sections of the Standard.

(4) A smoke detection system must be installed in accordance with S20C6 to operate AS 1668.1 systems that are provided for zone pressurisation and automatic air pressurisation for fire-isolated exits.

to specialist confirmation where necessary. Ensure fresh air intake and aircon system shall not impact the functionality of the smoke hazard management systems (smoke detection and alarm system).

E2D4	Fire-isolated exits	
CRA	(1) A part of a building listed in (2) must be provided with— (a) an automatic air pressurisation system for fire-isolated exits in accordance with AS 1668.1; or (b) open access ramps or balconies in accordance with D3D6. (2) The requirements of (1) apply to— (a) a required fire-isolated stairway, including any associated fire-isolated passageway or fire-isolated ramp serving— (i) any storey above an effective height of 25 m; or (ii) more than 2 below ground storeys, not counted in the rise in storeys in accordance with C2D3; or (iii) an atrium to which Part G3 applies; or (iv) a Class 9a building with a rise in storeys of more than 2; or (v) a Class 9c building with a rise in storeys of more than 2; or (vi) a Class 3 building used as a residential care building with a rise in storeys of more than 2; and (b) a required fire-isolated passageway or fire-isolated ramp with a length of travel more than 60 m to a road or open space. (3) An automatic air pressurisation system for a fire-isolated exit must serve the entire exit	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary. The building is over 25m in effective height and contains more than two (2) below ground storeys, thus fire isolated stairs are required to be provided with automatic air pressurisation system. Mechanical Engineer to assess and confirm compliance prior to construction.

E2D5	Buildings more than 25 m in effective height: Class 2 and 3 buildings and Class 4 part of a building	
CRA	An automatic smoke detection and alarm system complying with Specification 20 must be provided to the following: (a) A Class 2 or 3 building which is more than 25 m in effective height. (b) A Class 2 or 3 part of a building, or a Class 4 part of a building, in a building which is more than 25 m in effective height.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary. An automatic smoke detection and alarm system complying with Specification 20, is required. Electrical Engineer to assess and confirm compliance prior to construction.
E2D6	Buildings more than 25 m in effective height: Class 5, 6, 7b, 8 or 9b buildings	
CRA	(1) A Class 5, 6, 7b, 8 or 9b building or part of a building must be provided with a zone pressurisation system between vertically separated fire compartments in accordance with AS 1668.1, if the building is more than 25 m in effective height. (2) The requirements of (1) do not apply to a building that has a fire compartment containing a Class 5, 6, 7b, 8 or 9b part (or a combination of these classes in the same fire compartment) where there is only one fire compartment containing these classifications in an otherwise Class 2, 3, 9a or 9c building. (3) For the purposes of (1), 'vertically separated fire compartments' are fire compartments above and below each other, and not fire compartments within the same storey.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary. Zone pressurisation is required between vertical fire compartments.
E2D12	Class 7a buildings	
CRA	A Class 7a building, including a basement, provided with a mechanical ventilation system in accordance with AS 1668.2, must comply with clause 5.5 of AS 1668.1.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary. Mechanical ventilation system is to be provided in the basement carpark complying with AS1668.1 and AS1668.2.
E2D16 & NSW E2D16	Class 9b – Assembly buildings: All	
CRA	The following provisions apply to all Class 9b assembly buildings: (a) A building or part of a building used as an assembly building must be provided with automatic shutdown of any air-handling system (other than non-ducted individual room units with a capacity not	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.

more than 1000 L/s and miscellaneous exhaust air systems installed in accordance with Sections 5 and 6 of AS 1668.1) which does not form part of the smoke hazard management system, on the activation of—

- (i) smoke detectors installed complying with S20C6; and
- (ii) any other installed fire detection and alarm system, including a sprinkler system (other than a FPAA101D or FPAA101H system) complying with Specification 17.

(b) A basement not counted in the rise in storeys in accordance with C2D3, less than 2000 m² used as an assembly building or part of an assembly building containing an auditorium or other public area, must be equipped with—

- (i) an automatic smoke detection system in accordance with Specification 20; or
- (ii) an automatic zone pressurisation system in accordance with AS 1668.1 if the basement has more than one fire compartment; or if the basement forms part of a multi fire compartmented building served by the zone pressurisation system; or
- (iii) a sprinkler system (other than a FPAA101D or FPAA101H system) complying with Specification 17.

(c) Stages and backstages:

(i) For the purposes of this clause, where a stage is separated from the auditorium by a proscenium wall incorporating a proscenium opening, a backstage room or area that is not separated from the stage by construction having an FRL of not less than 60/60/60, is taken to form part of the stage.

(ii) A building or part of a building used as an assembly building which has a stage with a floor area of more than 50 m² and not more than 150 m² must, over the stage, be provided with—

- (A) an automatic smoke exhaust system complying with Specification 21 (including Figure S21C2); or
- (B) roof mounted automatic smoke-and-heat vents complying with NSW I4D59, in a single storey building or the top storey of a multi storey building.

(iii) A building or part of a building used as an assembly building which has a stage with a floor area of more than 150 m² must, over the stage, be provided with an automatic smoke exhaust system complying with Specification 21 (including Figure S21C2).

(iv) A building or part of a building used as an assembly building which has a stage equipped with means of flying scenery must, over the stage, be provided with an automatic smoke exhaust system complying with Specification 21 (including Figure S21C2).

An automatic shutdown system plus associated smoke detection system in compliance with Specification 20 is required to the Class 9b parts if provided with a ducted aircon system.

E2D21	Provision for special hazards	
CRA	Additional smoke hazard management measures may be necessary due to the— (a) special characteristics of the building; or (b) special function or use of the building; or	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.

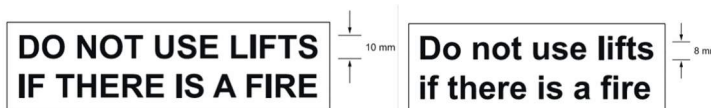
(c) special type or quantity of materials stored, displayed or used in a building; or

(d) special mix of classifications within a building or fire compartment, which are not addressed in E2D4 to E2D20.

Specialist to assess and confirm compliance.

Note: No EV charging stations are proposed.

Part E3 – Lift Installations		
Clause	Reference	Comment
E3D2	Lift installations	
CRA	An electric passenger lift installation and an electrohydraulic passenger lift installation must comply with Specification 24.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.
E3D3	Stretcher facility in lifts	
CRA	(1) A stretcher facility in accordance with (2) must be provided— (a) in at least one emergency lift required by E3D5; or (b) where an emergency lift is not required, if passenger lifts are installed to serve any storey above an effective height of 12 m, in at least one of those lifts to serve each floor served by the lifts. (2) A stretcher facility must accommodate a raised stretcher with a patient lying on it horizontally by providing a clear space not less than 600 mm wide x 2000 mm long x 1400 mm high above the floor level.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary. The proposed passenger lifts are able to accommodate a stretcher facility of 600mm W x 2000mm L x 1400mm H, in compliance with this clause.
E3D4	Warning against use of lifts in fire	
CRA	(1) A warning sign must be displayed where it can be readily seen near every call button for a passenger lift or group of lifts throughout a building. (2) The requirements of (1) do not apply to a small lift such as a dumb-waiter or the like that is for the transport of goods only. (3) Each warning sign required by (1) must comply with the details and dimensions of Figure E3D4 and consist of— (a) incised, inlaid or embossed letters on a metal, wood, plastic or similar plate securely and permanently attached to the wall; or (b) letters incised or inlaid directly into the surface of the material forming the wall. Figure E3D4: Warning sign for passenger lifts (both options are suitable)	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.



E3D5	Emergency lifts	
CRA	(1) At least one emergency lift complying with (4) must be installed in— (a) a building which has an effective height of more than 25 m; and (b) 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. (2) 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. (3) 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— (a) at least two emergency lifts must be provided to serve those storeys; and (b) if located within different shafts, at least one emergency lift must be provided in each shaft. (4) An emergency lift must— (a) be contained within a fire-resisting shaft in accordance with C3D11; and (b) in a Class 9a building serving a patient care area— (i) have minimum dimensions, measured clear of all obstructions, including handrails, etc complying with Table E3D5; and (ii) be connected to a standby power supply system where installed; and (c) if the building has an effective height of more than 75 m, have a rating of at least— (i) 600 kg if not provided with a stretcher facility: or (ii) 900 kg if provided with a stretcher facility.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary. The proposed building is over 25m in effective height thus required to be provided with an emergency lift. (each tower must be provided with an emergency lift).
E3D6	Landings	
CRA	Access and egress to and from lift well landings must comply with the Deemed-to-Satisfy Provisions of Parts D2, D3 and D4.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.

E3D8	Features required by passenger lifts	
CRA	In an accessible building, every passenger lift must have the following features where applicable: (a) A handrail complying with the provisions for a mandatory handrail in AS 1735.12 for all lifts except— (i) a stairway platform lift; and (ii) a low-rise platform lift. (b) Lift floor dimensions of not less than 1400 mm wide x 1600 mm deep for all lifts which travel more than 12 m. (c) Lift floor dimensions of not less than 1100 mm wide x 1400 mm deep for all lifts which travel not more than 12m, except a stairway platform lift. (d) Lift floor dimensions of not less than 810 mm wide x 1200 mm deep for a stairway platform lift. (e) Minimum clear door opening complying with AS 1735.12 for all lifts except a stairway platform lift. (f) Passenger protection system complying with AS 1735.12 for all lifts with power-operated doors. (g) Lift landing doors at the upper landing for all lifts except a stairway platform lift. (h) Lift car and landing control buttons complying with AS 1735.12 for all lifts except— (i) a stairway platform lift; and (ii) a low-rise platform lift. (i) Lighting in accordance with AS 1735.12 for all enclosed lift cars. (j) For all lifts serving more than 2 levels— (i) automatic audible information within the lift car to identify the level each time the car stops; and (ii) audible and visual indication at each lift landing to indicate the arrival of the lift car; and (iii) audible information and audible indication required by (i) and (ii) is to be provided in a range of between 20-80 dB(A) at a maximum frequency of 1500 Hz. (k) Emergency hands-free communication, including a button that alerts a call centre of a problem and a light to signal that the call has been received, for all lifts except a stairway platform lift.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary. Access Consultant to assess and confirm compliance.
E3D9	Fire service controls	
CRA	Where lifts serve any storey above an effective height of 12 m, the following must be provided: (a) A fire service recall control switch complying with E3D11 for— (i) a group of lifts; or (ii) a single lift not in a group that serves the storey. (b) A lift car fire service drive control switch complying with E3D12 for every lift	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.

E3D11	Fire service recall control switch
CRA	(1) Each group of lifts must be provided with one fire service recall control switch required by E3D9 that activates the fire service recall operation at (6). (2) The switch required by (1) must— (a) be located at the landing nominated by the appropriate authority; and (b) be labelled “FIRE SERVICE” in indelible white lettering on a red background; and (c) have two positions with an “OFF” and an “ON” position identified; and (d) be operable only by the use of a key that is removable in either the “OFF” position or the “ON” position. (3) Adhesive labels must not be used for compliance with (2)(b) and (c). (4) The key in (2)(d) 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. (5) The fire service recall operation must be activated by— (a) switching the fire service recall control switch in (1) to “ON”; or (b) a signal from a fire management system approved by the appropriate authority. (6) The activation of the fire service recall operation at (5) must— (a) cancel all registered car and landing calls; and (b) inactivate all door reopening devices that may be affected by smoke; and (c) ensure lift cars travelling toward the nominated floor continue to the nominated floor without stopping; and (d) 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 (e) for lifts stopped at a floor other than the nominated floor, close the doors and travel without stopping to the nominated floor; and (f) ensure that lifts stay at the nominated floor with doors open; and (g) permit all lifts to return to normal service if the fire service recall control switch at (1) is switched to the “OFF” position during or after the fire service recall operation. (7) The requirements of (6) do not apply to lifts on inspection service or when the lift car fire service control switch required by E3D12 is in the “ON” position. (8) 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.

Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.

E3D12	Lift car fire service drive control switch	
CRA	(1) The lift car fire service drive control switch required by E3D9 must be activated from within the lift car. (2) The switch must— (a) be located between 600 mm and 1500 mm above the lift car floor; and (b) be labelled “FIRE SERVICE” by indelible white lettering on a red background; and (c) have two positions with an “OFF” and an “ON” position identified; and (d) operate only by the use of a key that is removable in either the “OFF” position or the “ON” position. (3) Adhesive labels must not be used for compliance with (2)(b) or (c). (4) When the lift car fire service drive control switch at (1) is turned to the “ON” position, the lift must— (a) not respond to the fire service recall control switch; and (b) cancel all registered lift car and landing calls; and (c) override all lift car call access control systems; and (d) inactivate all door reopening devices that may be affected by smoke; and (e) 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 (f) 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 (g) 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 (h) 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 (i) 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. (5) The requirements of (4)(a) to (i) do not apply to a lift operating on inspection service. (6) A multi-deck lift installation must have systems in place that— (a) 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 (b) ensure there is an appropriate method of clearing all deck landings of passengers; and (c) 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.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.

Part E4 – Visibility in an Emergency, Exit Signs and Warning Systems

Clause	Reference	Comment
E4D2	Emergency lighting requirements	
CRA	An emergency lighting system must be installed— (a) in every fire-isolated stairway, fire-isolated passageway or fire-isolated ramp; and (b) in every storey of a Class 5, 6, 7, 8 or 9 building where the storey has an area more than 300 m²— (i) in every passageway, corridor, hallway, or the like, that is part of the path of travel to an exit; and - in any room having a floor area more than 100 m² (ii) that does not open to a corridor or space that has emergency lighting or to a road or open space; and in any room having a floor area more than 300 m² (iii) ; and (c) in every passageway, corridor, hallway, or the like, having a length of more than 6 m from the entrance doorway of any sole-occupancy unit in a Class 2 or 3 building or Class 4 part of a building to the nearest doorway opening directly to— (i) a fire-isolated stairway, fire-isolated passageway or fire-isolated ramp; or (ii) an external stairway serving instead of a fire-isolated stairway under D2D13; or (iii) an external balcony leading to a fire-isolated stairway, fire-isolated passageway or fire-isolated ramp; or (iv) a road or open space; and (d) in every required non-fire-isolated stairway; and (e) in a sole-occupancy unit in a Class 5, 6 or 9 building if— - the floor area of the unit is more than 300 m² (i) ; and (ii) an exit from the unit does not open to a road or open space or to an external stairway, passageway, balcony or ramp, leading directly to a road or open space; and (f) in every room or space to which there is public access in every storey in a Class 6 or 9b building if— the floor area in that storey is more than 300 m² (i) ; or (ii) any point on the floor of that storey is more than 20 m from the nearest doorway leading directly to a stairway, ramp, passageway, road or open space; or (iii) egress from that storey involves a vertical rise within the building of more than 1.5 m, or any vertical rise if the storey concerned does not admit sufficient light; or (iv) the storey provides a path of travel from any other storey required by (i), (ii) or (iii) to have emergency lighting; and	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary. Emergency lighting is to be provided throughout the entire building.

- (g) in a Class 9a health-care building—
- (i) in every passageway, corridor, hallway, or the like, serving a treatment area or a ward area; and
- (ii) in every room having a floor area of more than 120 m² in a patient care area; and
- (h) in every Class 9c building excluding within sole-occupancy units; and
- (i) in every required fire control centre.

E4D3	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 informational purposes only, and no additional action is required.
E4D4	Design and operation of emergency lighting	
CRA	Every required emergency lighting system must comply with AS/NZS 2293.1	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.
E4D5	Exit signs	
CRA	An exit sign must be clearly visible to persons approaching the exit, and must be installed on, above or adjacent to each— (a) door providing direct egress from a storey to— (i) an enclosed stairway, passageway or ramp serving as a required exit; and (ii) an external stairway, passageway or ramp serving as a required exit; and (iii) an external access balcony leading to a required exit; and (b) door from an enclosed stairway, passageway or ramp at every level of discharge to a road or open space; and (c) horizontal exit; and (d) door serving as, or forming part of, a required exit in a storey required to be provided with emergency lighting in accordance with E4D2.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary. Exit signs are to be provided throughout the entire building.
E4D6	Direction signs	
Noted	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	This clause is for informational purposes only, and no additional action is required.

E4D7	Class 2 and 3 buildings and Class 4 parts: exemptions	
CRA	E4D5 does not apply to— (a) a Class 2 building in which every door referred to is clearly and legibly labelled on the side remote from the exit or balcony— (i) with the word “EXIT” in capital letters 25 mm high in a colour contrasting with that of the background; or (ii) by some other suitable method; and (b) an entrance door of a sole-occupancy unit in a Class 2 or 3 building or Class 4 part of a building.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.
E4D8	Design and operation of exit signs	
CRA	Every required exit sign must— (a) comply with— (i) AS/NZS 2293.1; or (ii) for a photoluminescent exit sign, Specification 25; and (b) be clearly visible at all times when the building is occupied by any person having the right of legal entry to the building.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.
E4D9	Emergency warning and intercom systems	
CRA	An emergency warning and intercom system complying, where applicable, with AS 1670.4 must be installed— (a) in a building with an effective height of more than 25 m; and (b) in a Class 3 building having a rise in storeys of more than 2 and used as— (i) the residential part of a primary or secondary school; or (ii) accommodation for the aged, children or people with a disability; and (c) in a Class 3 building used as a residential care building, except that the system— (i) must be arranged to provide a warning for occupants; and (ii) in areas used by the residents, may have its alarm adjusted in volume and content to minimise trauma consistent with the type and condition of residents; and (d) in a Class 9a building having a floor area of more than 1000 m² or a rise in storeys of more than 2, and the system— (i) must be arranged to provide a warning for occupants; and (ii) in a ward area, may have its alarm adjusted in volume and content to minimise trauma consistent with the type and condition of patients; and (e) in a Class 9b building—	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary. The building is over 25m in effective height thus, required to be provided with an Emergency Warning and Intercom System (EWIS).

- (i) used as a school and having a rise in storeys of more than 3; or
- (ii) used as a theatre, public hall, or the like, having a floor area more than 1000 m² or a rise in storeys of more than 2.

Specification 17 – Fire Sprinkler System		
Clause	Reference	Comment
S17C2	Application of automatic fire sprinkler standards	
Noted	Subject to this Specification, an automatic fire sprinkler system must comply with— (a) for all building classifications: AS 2118.1; or (b) for a Class 2 or 3 building with an effective height of not more than 25 m and a rise in storeys of 4 or more: Specification 18 and the relevant provisions of this Specification as applicable; or (c) for Class 5, 6, 7, 8, 9a (other than a residential care building) or 9b (other than a Class 9b early childhood centre) parts of a building with an effective height not more than 25 m, which also contains Class 2 or 3 parts: a sprinkler system in accordance with Specification 18 as for a Class 2 or 3 building and the relevant provisions of this Specification except— (i) a FPAA101D sprinkler system cannot be used where the Class 5, 6, 7, 8, 9a (other than a residential care building) or 9b parts— (A) contain more than 2 storeys; or (B) are more than 25% of the total floor area of the building; or (C) are located above the fourth storey; and (ii) a FPAA101D or FPAA101H sprinkler system cannot be used where the Class 7a part (other than an open-deck carpark) accommodates more than 40 vehicles; or (d) for a combined sprinkler and fire hydrant system: AS 2118.6; or (e) for a Class 9a health-care building used as a residential care building: AS 2118.4 as applicable; or (f) for a Class 2, 3 or 9c building: AS 2118.4 as applicable.	This clause is for informational purposes only, and no additional action is required.
S17C3	Separation of sprinklered and non-sprinklered areas	
CRA	Where a part of a building is not protected with sprinklers, the sprinklered and non-sprinklered parts must be fire-separated with a wall or floor which must— (a) comply with any specific requirement of the Deemed-to-Satisfy Provisions of the BCA; or (b) where there is no specific requirement, comply with the relevant part of AS 2118, FPAA101D or FPAA101H.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.

S17C4	Protection of openings	
CRA	Any openings, including those for service penetrations, in construction separating sprinklered and non-sprinklered parts of a building, including the construction separating the areas nominated for omitted protection in AS 2118.1, must be protected in accordance with the Deemed-to-Satisfy Provisions of Part C4.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.
S17C5	Quick response sprinklers	
CRA	Quick response sprinklers may be installed only if they are suitable for the type of application proposed and it is demonstrated that the sprinkler system is designed to accommodate their use.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.
S17C6	Sprinkler valve enclosures	
?	(1) Sprinkler alarm valves must be located in a secure room or enclosure which has direct egress to a road or open space. (2) All sprinkler valve rooms and enclosures must be secured with a system suitable for use by the fire brigade.	Further information is required to clarify DTS compliance. Sprinkler valve enclosure to be directly connected to the road. To be shown in the drawings.
S17C7	Water supply	
CRA	(1) A required sprinkler system must be provided with at least one water supply. (2) A required sprinkler system in a building greater than 25 m in effective height must be provided with dual water supply except that a secondary water supply storage capacity of 25,000 litres may be used if— (a) the storage tank is located at the topmost storey of the building; and (b) the building occupancy is classified as no more hazardous than Ordinary Hazard 2 (OH2) under AS 2118.1; and (c) an operational fire brigade service is available to attend a building fire.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.
S17C8	Building occupant warning system	
CRA	A required sprinkler system, except a FPAA101D sprinkler system, must be connected to and activate a building occupant warning system complying with S20C7.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.

S17C9	Connection to other systems	
CRA	Where a smoke hazard management system is installed and is actuated by smoke detectors, the sprinkler system must, wherever practicable, be arranged to also activate the smoke hazard management system.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.
S17C10	Anti-tamper devices	
CRA	(1) Where a sprinkler system is installed— (a) over any stage area in a theatre, public hall or the like, visual and audible status indication of sprinkler valves must be provided at the location normally used by the stage manager; or (b) in a space housing lift electrical and control equipment (including machine rooms, secondary floors and sheave rooms), any valves provided to control sprinklers in these spaces must be located adjacent to the space. (2) Any valves provided to control sprinklers required by (1) must be fitted with anti-tamper monitoring devices connected to a monitoring panel.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.
S17C11	Sprinkler systems in carpark	
CRA	A sprinkler system protecting a carpark complying with S5C19(3) in a multi-classified building must— (a) be independent of the sprinkler system protecting any part of the building not used as a carpark; or (b) if forming part of a sprinkler system protecting a part of the building not used as a carpark, be designed such that the section protecting the non-carpark part can be isolated without interrupting the water supply or otherwise affecting the effective operation of the section protecting the carpark	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.
S17C13	Sprinkler systems in lift installations	
CRA	(1) Where sprinklers are installed in a space housing lift electrical and control equipment, including machine rooms, secondary floors and sheave rooms, sprinklers in these spaces must— (a) have heads protected from accidental damage by way of a guard that will not impair the performance of the head; and (b) be capable of being isolated and drained, either separately or collectively, without isolating any other sprinklers within the building. (2) Valves provided to control sprinklers referred to in (1) must be installed in accordance with S17C10(2).	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.

Specification 19 – Fire Control Centre		
Clause	Reference	Comment
S19C3	Purpose and content of fire control centre	
CRA	A fire control centre must— (a) provide an area from which fire-fighting operations or other emergency procedures can be directed or controlled; and (b) contain controls, panels, telephones, furniture, equipment and the like associated with the required fire services in the building; and (c) not be used for any purpose other than the control of— (i) fire-fighting activities; and (ii) other measures concerning the occupant safety or security.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.
S19C4	Location of fire control centre	
CRA	A fire control centre must be so located in a building that egress from any part of its floor to a road or open space, does not involve changes in level which in aggregate exceed 300 mm.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary. From the information provided it appears that the fire control room does not involve a level change of more than 300mm (circa 200mm), in compliance with this clause.
S19C5	Equipment not permitted within a fire control centre	
CRA	An internal combustion engine, pumps, sprinkler control valves, pipes and pipe fittings must not be located in a fire control centre but may be located in rooms accessed through the fire control centre.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.
S19C6	Ambient sound level for a fire control centre	
CRA	(1) The ambient sound level within the fire control centre measured when all fire safety equipment is operating in the manner in which it operates in an emergency must not exceed 65 dB(A). (2) The measurement must be taken for a sufficient time to characterise the effects of all sound sources. (3) Where there is not a great variation in noise level, a measurement time of 60 seconds may be used.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.

S19C7	Construction of a fire control room	
CRA	A fire control centre in a building more than 50 m in effective height must be in a separate room where— (a) the enclosing construction is of concrete, masonry or the like, sufficiently impact resistant to withstand the impact of any likely falling debris, and with an FRL of not less than 120/120/120; and (b) any material used as a finish, surface, lining or the like within the room complies with the requirements of Specification 7; and (c) services, pipes, ducts and the like that are not directly required for the proper functioning of the fire control room do not pass through it; and (d) openings in the walls, floors or ceiling which separate the room from the interior of the building are confined to doorways, ventilation and other openings for services necessary for the proper functioning of the facility.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary. The building is over 50m in effective height thus, the fire control room must be in a separate room with 2hrs FRL. Note: Colour coded FRL drawings to be provided for review prior to construction.
S19C8	Protection of openings in a fire control room	
CRA	Openings permitted by S19C7 must be protected as follows: (a) Openings for windows, doorways, ventilation, service pipes, conduits and the like, in an external wall of the building that faces a road or open space, must be protected in accordance with the Deemed-to-Satisfy Provisions of Part C4. (b) Openings in the floors, ceilings and internal walls enclosing a fire control room must, except for doorways, be protected in accordance with the Deemed-to-Satisfy Provisions of Part C4. (c) A door opening in the internal walls enclosing a fire-control room, must be fitted with a self-closing – /120/30 smoke sealed fire door. (d) Openings associated with natural or mechanical ventilation must— (i) not be made in any ceiling or floor immediately above or below the fire control room; and (ii) be protected by a –/120/– fire damper if the opening is for a duct through a wall required to have an FRL, other than an external wall.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.
S19C9	Doors to a fire control room	
CRA	(1) Required doors to a fire control room must open into the room, be lockable and located so that persons using escape routes from the building will not obstruct or hinder access to the room. (2) The fire control room must be accessible via two paths of travel— (a) one from the front entrance of the building; and (b) one direct from a public place or fire-isolated passageway which leads to a public place and has a door with an FRL of not less than –/120/30.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary. – The fire control room is accessed from two (2) doorways from the entrance of the building

and from a public space (lobby), in compliance with this clause.

- Self-closing fire doors with an FRL of -/120/30 are required to the fire control room.

S19C10	Size and contents of a fire control room	
CRA	(1) A fire control room must contain— (a) a Fire Indicator Panel and necessary control switches and visual status indication for all required fire pumps, smoke control fans and other required fire safety equipment installed in the building; and (b) a telephone directly connected to an external telephone exchange; and (c) a blackboard or whiteboard not less than 1200 mm wide x 1000 mm high; and (d) a pin-up board not less than 1200 mm wide x 1000 mm high; and (e) a raked plan layout table of a size suitable for laying out the plans provided under (f); and (f) colour-coded, durable, tactical fire plans. (2) In addition, a fire control room may contain— (a) master emergency control panels, lift annunciator panels, remote switching controls for gas or electrical supplies and emergency generator backup; and (b) building security, surveillance and management systems if they are completely segregated from all other systems. (3) A fire control room must— (a) have a floor area of not less than 10 m² and the length of any internal side must be not less than 2.5 m; and (b) if only the minimum prescribed equipment is installed — have a net floor area of not less than 8 m² with a clear space of not less than 1.5 m² in front of the Fire Indicator Panel; and (c) if additional equipment is installed — have an additional area of not less than 2 m² net floor area for each additional facility and a clear space of not less than 1.5 m² in front of each additional control or indicator panel; and (d) be constructed such that the area required for any path of travel through the room to other areas is provided in addition to the requirements (b) and (c).	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary. Fire control room can achieve 10m² minimum (circa 3x3m). Narrow corners are considered additional space.

S19C11	Ventilation and power supply for a fire control room	
CRA	(1) A fire control room must be ventilated by— (a) natural ventilation from a window or doorway in an external wall of the building which opens directly into the fire control room from a road or open space; or (b) a pressurisation system that only serves the fire control room, and— (i) is installed in accordance with AS 1668.1 as though the room is a fire-isolated stairway; and (ii) is activated automatically by operation of the fire alarm, or sprinkler system complying with Specification 17, installed in the building and manually by an over-riding control in the room; and (iii) provides a flow of fresh air through the room of not less than 30 air changes per hour when the system is operating and any door to the room is open; and (iv) has fans, motors and ductwork that form part of the system but not contained within the fire control room protected by enclosing construction with an FRL of not less than 120/120/120; and (v) has any electrical supply to the fire control room or equipment necessary for its operation connected to the supply side of the main disconnection switch for the building. (2) No openable devices other than necessary doorways, pressure-controlled relief louvres and windows that are openable by a key, must be constructed in the fire control room.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.
S19C12	Sign for a fire control room	
CRA	The external face of the door to the fire control room must have a sign with the words— FIRE CONTROL ROOM in letters not less than 50 mm high and of a colour which contrasts with that of the background	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.
S19C13	Lighting for a fire control room	
CRA	Emergency lighting in accordance with the Deemed-to-Satisfy Provisions of Part E4 must be provided in a fire control room, except that an illumination level of not less than 400 lux must be maintained at the surface of the plan table.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.
Specification 20 – Smoke Detection and Alarm Systems		
Clause	Reference	Comment
S20C2	Type of system	
CRA	A required automatic smoke detection and alarm system must be provided in accordance with the following: (a) Class 2 buildings and Class 4 parts of a building—	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.

- (i) a smoke alarm system complying with S20C3; or
- (ii) a smoke detection system complying with S20C4; or
- (iii) a combination of a smoke alarm system and a smoke detection system complying with S20C5.
- (b) Class 3 buildings—
 - (i) with a Class 3 part located more than 2 storeys above ground level — a smoke detection system complying with S20C4; or
 - (ii) which accommodate more than 20 residents and are the residential part of a school, accommodation for the aged, children or people with a disability — a smoke detection system complying with S20C4; or
 - (iii) all other Class 3 buildings—
 - (A) a smoke alarm system complying with S20C3; or
 - (B) a smoke detection system complying with S20C4; or
 - (C) a combination of a smoke alarm system and a smoke detection system complying with S20C5.
- (c) Class 5, 6, 7, 8, 9b and 9c buildings — a smoke detection system complying with S20C4
- (d) Class 9a health-care buildings—
 - (i) where more than 6 bed patients are accommodated — a smoke detection system complying with S20C4; or
 - (ii) where 6 or less bed patients are accommodated—
 - (A) a smoke alarm system complying with S20C3; or
 - (B) a smoke detection system complying with S20C4.

A smoke detection system complying with Specification 20 is required.

S20C3	Smoke alarm system	
CRA	(1) In all Class 2 - 9 buildings provided with a smoke alarm system, the following applies: (a) A smoke alarm system must— (i) consist of smoke alarms complying with AS 3786; and (ii) be powered from the consumer mains source. (b) In kitchens and other areas where the use of the area is likely to result in smoke alarms causing spurious signals, subject to (c)— (i) any other alarm deemed suitable in accordance with AS 1670.1 may be installed provided that smoke alarms are installed elsewhere in the sole-occupancy unit in accordance with (2)(a) and (2)(b); or (ii) an alarm acknowledgement facility may be installed. (c) Where a kitchen or other area referred to in (b) is in a building protected with a sprinkler system complying with Specification 17 (other than a FPAAI01D system), alarms need not be installed in the kitchen or other area likely to result in spurious signals.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary. A smoke alarm system complying with AS3786 is required.

(2) In a Class 2 or 3 building or Class 4 part of a building provided with a smoke alarm system, the following applies:

(a) Alarms must be installed within each sole-occupancy unit, and located on or near the ceiling in any storey—

(i) containing bedrooms—

(A) between each part of the sole-occupancy unit containing bedrooms and the remainder of the sole-occupancy unit; and

(B) where bedrooms are served by a hallway, in that hallway; and

(ii) not containing any bedrooms, in egress paths.

(b) Where there is more than one alarm installed within a sole-occupancy unit, alarms must be interconnected within that sole-occupancy unit.

(c) Subject to (d), alarms must be—

(i) installed in public corridors and other internal public spaces, located in accordance with the requirements for smoke detectors in AS 1670.1; and

(ii) connected to activate a building occupant warning system in accordance with S20C7.

(d) In a Class 2 or 3 building or Class 4 part of a building protected with a sprinkler system complying with Specification 17 (other than a FPAA101D system), alarms are not required in public corridors and other internal public spaces.

(3) In a Class 9a building provided with a smoke alarm system, smoke alarms must be—

(a) installed in every room, public corridor and other internal public space; and

(b) located in accordance with the requirements for smoke detectors in AS 1670.1; and

(c) interconnected to provide a common alarm; and

(d) have manual call points installed in evacuation routes so that no point on a floor is more than 30 m from a manual call point.

S20C4	Smoke detection system	
CRA	(1) In all Class 2 - 9 buildings provided with a smoke detection system, the following applies: (a) A smoke detection system must— (i) subject to (2) and (3), comply with AS 1670.1; and (ii) activate a building occupant warning system in accordance with S20C7. (b) In kitchens and other areas where the use of the area is likely to result in smoke detectors causing spurious signals, subject to (c)—	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary. A smoke detection system complying with AS1670.1 is required.

- (i) any other detector deemed suitable in accordance with AS 1670.1 may be installed provided that smoke detectors are installed elsewhere in the sole-occupancy unit in accordance with the requirements for alarms in S20C3(2)(a) and (2)(b); or
- (ii) an alarm acknowledgement facility may be installed.
- (c) Where a kitchen or other area referred to in (b) is in a building protected with a sprinkler system complying with Specification 17 (other than a FPAA101D or FPAA101H system), detectors need not be installed in the kitchen or other areas likely to result in spurious signals.
- (2) In a Class 2 or 3 building or Class 4 part of a building provided with a smoke detection system, the following applies:
 - (a) Smoke detectors must be installed—
 - (i) within each sole-occupancy unit, in accordance with the requirements for alarms in S20C3(2)(a) and (2)(b); and
 - (ii) subject to (b), in public corridors and other internal public spaces.
 - (b) In a Class 2 or 3 building or Class 4 part of a building protected with a sprinkler system complying with Specification 17 (other than a FPAA101D or FPAA101H system), smoke detectors are not required in public corridors and other internal public spaces.
- (3) In a Class 9a health-care building provided with a smoke detection system, the following applies:
 - (a) Except as provided in (b)—
 - (i) photoelectric type smoke detectors must be installed in patient care areas and in paths of travel to exits from patient care areas; and
 - (ii) in areas other than patient care areas and paths of travel to exits from patient care areas, where the use of the area is likely to result in smoke detectors causing spurious signals, any other detector deemed suitable in accordance with AS 1670.1 may be installed in lieu of smoke detectors.
 - (b) The requirements of (a) do not apply where an area is protected with a sprinkler system complying with Specification 17, smoke detectors need not be installed where the use of the area is likely to result in spurious signals.
 - (c) Manual call points must be installed in evacuation routes so that no point on a floor is more than 30 m from a manual call point.
- (4) In a Class 9c building provided with a smoke detection system, the following applies:
 - (a) remote automatic indication of each zone must be given in each smoke compartment by means of—
 - (i) mimic panels with an illuminated display; or
 - (ii) annunciator panels with alpha numeric display; and

(b) if the building accommodates more than 20 residents, manual call points must be installed in paths of travel so that no point on a floor is more than 30 m from a manual call point.

S20C5	Combined smoke alarm and smoke detection system	
CRA	(1) A Class 2 or 3 building or Class 4 part of a building provided with a combination of a smoke alarm system and smoke detection system in accordance with S20C2 must— (a) be provided with a smoke alarm system complying with S20C3 within sole-occupancy units; and (b) subject to (2), be provided with a smoke detection system complying with S20C4 in areas not within sole-occupancy units. (2) In a Class 2 or 3 building or Class 4 part of a building protected with a sprinkler system complying with Specification 17 (other than a FPAA101D or FPAA101H system), smoke detectors are not required in public corridors and other internal public spaces.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.
S20C6	Smoke detection for smoke control systems	
CRA	(1) Smoke detectors required to activate air pressurisation systems for fire-isolated exits and zone pressurisation systems must— (a) be installed in accordance with AS 1670.1; and (b) have additional smoke detectors installed adjacent to each bank of lift landing doors set back horizontally from the door openings by a distance of not more than 3 m. (2) Smoke detectors required to activate— (a) automatic shutdown of air-handling systems in accordance with E2D16, E2D17 or E2D19; or (b) a smoke exhaust system in accordance with Specification 21, must comply with the requirements of (3). (3) Smoke detectors referred to in (2) must— (a) be spaced— (i) not more than 20 m apart and not more than 10 m from any wall, bulkhead or smoke curtain; and (ii) in enclosed malls and walkways in a Class 6 building not more than 15 m apart and not more than 7.5 m from any wall, bulkhead or curtain; and (b) have a sensitivity— (i) in accordance with AS 1670.1 in areas other than a multi-storey walkway and mall in a Class 6 building; and (ii) not exceeding 0.5% smoke obscuration per metre with compensation for external airborne contamination as necessary, in a multi-storey walkway and mall in a Class 6 building.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary. Shutdown system will comply with this clause.

- (4) Smoke detectors provided to activate a smoke control system must—
- (a) either—
 - (i) form part of a building fire or smoke detection system complying with AS 1670.1; or
 - (ii) be a separate dedicated system incorporating control and indicating equipment complying with AS1670.1; and
 - (b) activate a building occupant warning system complying with S20C7, except that smoke detectors provided solely to initiate automatic shutdown of air-handling systems in accordance with (2)(a) need not activate a building occupant warning system

S20C7	Building occupant warning system	
CRA	Subject to E4D9, a building occupant warning system provided as part of a smoke hazard management system must comply with clause 3.22 of AS 1670.1 to sound through all occupied areas except— (a) in a Class 2 and 3 building or Class 4 part of a building provided with a smoke alarm system in accordance with S20C3(2)(c)— (i) the sound pressure level need not be measured within a sole-occupancy unit if a level of not less than 85 dB(A) is provided at the door providing access to the sole-occupancy unit; and (ii) the inbuilt sounders of the smoke alarms may be used to wholly or partially meet the requirements; and (b) in a Class 2 and 3 building or Class 4 part of a building provided with a smoke detection system in accordance with S20C4(2), the sound pressure level from a building occupant warning system need not be measured within a sole-occupancy unit if a level of not less than 100 dB(A) is provided at the door providing access to the sole-occupancy unit; and (c) in a Class 3 building used as a residential care building, the system— (i) must be arranged to provide a warning for occupants; and (ii) in areas used by residents, may have its alarm adjusted in volume and content to minimise trauma consistent with the type and condition of residents; and (d) in a Class 9a health-care building, in a patient care area, the system— (i) must be arranged to provide a warning for occupants; and (ii) in a ward area, may have its alarm adjusted in volume and content to minimise trauma consistent with the type and condition of the patients; and (e) in a Class 9c building, the system— (i) must be arranged to provide a warning for occupants; and (ii) must notify staff caring for the residents of the building; and	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.

(iii) in areas used by residents, may have its alarm adjusted in volume and content to minimise trauma consistent with the type and condition of residents.

Specification 24 – Lift Installations

Clause	Reference	Comment
S24C2	Lift cars exposed to solar radiation	
CRA	(1) A lift car exposed to solar radiation directly, or indirectly by re-radiation, must have— (a) mechanical ventilation at a rate of one air change per minute; or (b) mechanical cooling. (2) A 2 hour alternative power source for ventilation or mechanical cooling at (1) must be provided in the event of normal power loss.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.
S24C3	Lift car emergency lighting	
CRA	A lift car must have an emergency lighting system designed— (a) to come on automatically upon failure of the normal lighting supply; and (b) to provide at least 20 lux of lighting for 2 hours on the alarm initiation button.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.
S24C4	Cooling of lift shaft	
CRA	While a lift in a lift shaft is in service, the cooling of the lift shaft must— (a) ensure that the dry bulb air temperature in the lift shaft does not exceed 40°C; and (b) if the cooling is by a ventilation system, be provided with an air change rate determined using a temperature rise of no more than 5 K.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.
S24C5	Lift foyer access	
CRA	Where there is a security foyer in a building, access may be via locked security doors provided— (a) security doors revert to the unlocked state in the event of— (i) power failure; or (ii) fire alarm; and (b) locked foyer areas are monitored by closed circuit television and intercom system to a 24 hour staffed location.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.

S24C6	Emergency access doors in a single enclosed lift shaft	
CRA	(1) Where a lift is installed in a single enclosed lift shaft having a distance between normal landing entrances greater than 12.2 m, emergency access doors must be provided and constructed as follows: (a) The clear opening size of emergency doors must be not less than 600 mm wide x 980 mm high. (b) Hinged doors must not open towards the interior of the lift shaft. (c) Doors must be self-closing and self-locking. (d) Doors must be marked on the landing side with the letters not less than 35 mm high: - DANGER LIFTWELL ACCESS - KEEP FURNITURE AND FIXTURES CLEAR (e) Doors from the landing side must only be openable by a tool. (f) Each emergency door must be provided with a positive breaking electrical contact, wired into the control circuit to prevent movement of the lift until the emergency door is both closed and locked. (2) Emergency egress from the lift car must be provided in single enclosed lift shafts where— (a) ropes are installed; and (b) the vertical distance between the lift car sill and the landing door head is less than 600 mm; and (c) the counterweight is resting on its fully compressed buffer. (3) Emergency egress required by (2) must be in the form of an interlocked door with clear opening dimensions not less than 600 mm x 600 mm, accessible from the lift car entrance or the lift car roof (where the door is located in the wall of the lift shaft).	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.

Specification 25 – Photoluminescent exit signs		
Clause	Reference	Comment
S25C3	Illumination	
CRA	A photoluminescent exit sign must— (a) be maintained in a continuously charged state by a minimum illumination of 100 lux at the face of the sign by a dedicated light source with a colour temperature not less than 4000 K; and (b) in the event of a power failure, continue to provide a minimum luminance of 30 mcd/m² for not less than 90 minutes; and (c) have its performance verified by testing in accordance with ASTM E2073-10, except the activation illumination in clause 8.3 is replaced with 54 lux.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.

S25C4	Pictorial elements	
CRA	Pictorial elements on a photoluminescent exit sign must— (a) where the colour white is used, be replaced with a photoluminescent material; and (b) be not less than 1.3 times larger than that specified in Table 5.1 of AS/NZS 2293.1; and (c) have a border of photoluminescent material that extends not less than 15 mm beyond the pictorial elements.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.
S25C5	Viewing distance	
CRA	The maximum viewing distance in clause 5.6 of AS/NZS 2293.1 must not be more than 24 m.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.
S25C6	Smoke control systems	
CRA	Smoke control systems required by clause 5.3 of AS/NZS 2293.1 do not apply to a photoluminescent exit sign.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.
Section F: Health and Amenity		
Deemed-to-satisfy Provisions		
Clause	Reference	Comment
FID3	Stormwater drainage	
CRA	Stormwater drainage must be designed and constructed in accordance with AS/NZS3500.3	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.
FID4	Exposed joints	
CRA	Exposed joints in the drainage surface on a roof, balcony, podium or similar horizontal surface part of a building must— (a) be protected in accordance with Section 2.9 of AS 4654.2; and (b) not be located beneath or run through a planter box, water feature or similar part of the building.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.

FID5	External waterproofing membranes	
CRA	A roof, balcony, podium or similar horizontal surface part of a building must be provided with a waterproofing membrane— (a) consisting of materials complying with AS 4654.1; and (b) designed and installed in accordance with AS 4654.2.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.
FID6	Damp-proofing	
CRA	(1) Except for a building covered by (3), moisture from the ground must be prevented from reaching— (a) the lowest floor timbers and the walls above the lowest floor joists; and (b) the walls above the damp-proof course; and (c) the underside of a suspended floor constructed of a material other than timber, and the supporting beams or girders. (2) Where a damp-proof course is provided, it must consist of— (a) a material that complies with AS/NZS 2904; or (b) impervious sheet material in accordance with AS 3660.1. (3) The following buildings need not comply with (1): (a) A Class 7 or 8 building where in the particular case there is no necessity for compliance. (b) A garage, tool shed, sanitary compartment, or the like, forming part of a building used for other purposes. (c) An open spectator stand or open-deck carpark.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary. Ensure all balconies and horizontal surfaces (external areas) are provided with a waterproofing membrane. Note: Roof can comply with F3D2 if necessary. Waterproofing specialist to assess and confirm compliance prior to construction. .
FID7	Damp-proofing of floors on the ground	
CRA	(1) If a floor of a room is laid on the ground or on fill, moisture from the ground must be prevented from reaching the upper surface of the floor and adjacent walls by the insertion of a vapour barrier in accordance with AS 2870. (2) The requirements of (1) do not apply where— (a) weatherproofing is not required; or (b) the floor is the base of a stair, lift or similar shaft which is adequately drained by gravitation or mechanical means.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary. Ensure the slab laid on ground is provided with a vapour moisture barrier to comply with this clause.

Part F2 – Wet areas and overflow protection		
Clause	Reference	Comment
F2D2	Wet area construction	
CRA	(1) In a Class 2 and 3 building and a Class 4 part of a building, building elements in wet areas must— (a) be water resistant or waterproof in accordance with Specification 26; and (b) comply with AS 3740. (2) In a Class 5, 6, 7, 8 or 9 building, building elements in a bathroom or shower room, a slop hopper or sink compartment, a laundry or sanitary compartment must— (a) be water resistant or waterproof in accordance with Specification 26; and (b) comply with AS 3740, as if they were in a Class 2 or 3 building or a Class 4 part of a building.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.
F2D4	Floor Waste	
CRA	(1) In a Class 2 or 3 building or Class 4 part of a building, a bathroom or laundry located at any level above a sole occupancy unit or public space must have a floor waste. (2) Where a floor waste is installed— (a) the minimum continuous fall of a floor plane to the waste must be 1:80; and (b) the maximum continuous fall of a floor plane to the waste must be 1:50.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary. Ensure falls of floor wastes are within the tolerances of this clause. (1:50-1:80.) Note: Ensure floor wastes do not impact waterproofing compliance and FRL (thickness) of slabs.
Part F3 – Roof and Wall Cladding		
Clause	Reference	Comment
F3D1	Weatherproofing	
CRA	(1) Where a Deemed-to-Satisfy Solution is proposed, Performance Requirement F3P1 is satisfied by complying with F3D2 to F3D5. (2) Where a Performance Solution is proposed, the relevant Performance Requirements must be determined in accordance with A2G2(3) and A2G4(3) as applicable.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary. External wall systems from this part can achieve DTS compliance any other alternative may require a Performance Solution. Façade Engineer to assess and confirm compliance.

F3D2	Roof Coverings	
CRA	A roof must be covered with— (a) roof tiles complying with AS 2049, fixed in accordance with AS 2050; or (b) metal sheet roofing complying with AS 1562.1; or (c) plastic sheet roofing designed and installed in accordance with AS 1562.3; or (d) terracotta, fibre-cement and timber slates and shingles designed and installed in accordance with AS4597, except in cyclonic areas; or (e) an external waterproofing membrane complying with FID5.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.
F3D3	Sarking	
CRA	Sarking-type material used for weatherproofing of roofs and walls must comply with AS/NZS 4200.1 and AS 4200.2.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.
F3D4	Glazed assemblies	
CRA	(1) Subject to (2) and (3), the following glazed assemblies in an external wall, must comply with AS 2047 requirements for resistance to water penetration: (a) Windows. (b) Sliding and swinging glazed doors with a frame, including French and bi-fold doors with a frame. (c) Adjustable louvres. (d) Shopfronts. (e) Window walls with one piece framing. (2) The following buildings need not comply with (1): (a) A Class 7 or 8 building where in the particular case there is no necessity for compliance. (b) A garage, tool shed, sanitary compartment, or the like, forming part of a building used for other purposes, except where the construction of the garage, tool shed, sanitary compartment or the like contributes to the weatherproofing of the other part of the building. (c) An open spectator stand or open-deck carpark. (3) The following glazed assemblies need not comply with (1): (a) All glazed assemblies not in an external wall. (b) Revolving doors. (c) Fixed louvres. (d) Skylights, roof lights and windows in other than the vertical plane.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.

- (e) Sliding and swinging glazed doors without a frame.
- (f) Windows constructed on site and architectural one-off windows, which are not design tested in accordance with AS 2047.
- (g) Second-hand windows, re-used windows and recycled windows.
- (h) Heritage windows.

F3D5	Wall cladding	
CRA	(1) External wall cladding must comply with one or a combination of the following: (a) Masonry, including masonry veneer, unreinforced and reinforced masonry: AS 3700. (b) Autoclaved aerated concrete: AS 5146.3. (c) Metal wall cladding: AS 1562.1. (2) The following buildings need not comply with (1): (a) A Class 7 or 8 building where in the particular case there is no necessity for compliance. (b) A garage, tool shed, sanitary compartment, or the like, forming part of a building used for other purposes, except where the construction of the garage, tool shed, sanitary compartment or the like contributed to the weatherproofing of another part of the building that is required to be weatherproofed. (c) An open spectator stand or open deck carpark.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.

Part F4 – Sanitary and other facilities

Clause	Reference	Comment
F4D2	Facilities in residential buildings	
CRA	(1) For facilities in Class 2 buildings, the following applies: (a) Within each sole-occupancy unit, provide— (i) a kitchen sink and facilities for the preparation and cooking of food; and (ii) a bath or shower; and (iii) a closet pan; and (iv) a washbasin. (b) For laundry facilities, provide either— (i) in each sole-occupancy unit— (A) clothes washing facilities, comprising at least one washtub and a space for a washing machine; and (B) clothes drying facilities comprising clothes line or a hoist with not less than 7.5 m of line, or space for one heat operated drying cabinet or appliance in the same room as the clothes washing facilities; or (ii) a separate laundry for each 4 sole-occupancy units, or part thereof, that must comprise—	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary. The following facilities are provided within all SOU's in compliance with this clause. - Kitchen sink - Bath or shower - Closet pan - Washbasins - Laundry facilities

- (A) clothes washing facilities, comprising at least one washtub and a space for a washing machine; and
- (B) clothes drying facilities comprising clothes line or a hoist with not less than 7.5 m of line per sole-occupancy unit, or space for one heat operated drying cabinet or appliance.
- (c) For the purposes of (a) and (b), a kitchen sink or washbasin must not be counted as a laundry washtub.
- (2) For facilities in Class 3 buildings other than residential care buildings, the following applies:
 - (a) For residents in each building or group of buildings, for each 10 residents for whom private facilities are not provided, provide—
 - (i) a bath or shower; and
 - (ii) a closet pan; and
 - (iii) a washbasin.
 - (b) Notwithstanding (a), if one urinal is provided for each 25 males up to 50 and one additional urinal for each additional 50 males or part thereof, one closet pan for each 12 males may be provided.
 - (c) Facilities for employees must be provided in accordance with F4D4.
 - (d) Facilities required by (a), (b) or (c) need not be situated in the same building.
- (3) For facilities in Class 3 residential care buildings, the following applies:
 - (a) For residents in each building or group of buildings, provide—
 - (i) a shower, closet pan and wash basin for each 8 residents or part thereof where private facilities are not provided; and
 - (ii) a suitable bath for each 30 residents or part thereof.
 - (b) For the purposes of (a), urinals must not be taken into consideration in calculating the number of facilities.
- (4) For facilities in a Class 4 part of a building, the following applies:
 - (a) For the sole-occupancy unit, provide—
 - (i) a kitchen sink and facilities for the preparation and cooking of food; and
 - (ii) a bath or shower; and
 - (iii) a closet pan; and
 - (iv) a washbasin; and
 - (v) clothes washing facilities, comprising a washtub and space in the same room for a washing machine; and
 - (vi) a clothes line or hoist, or space for a heat-operated drying cabinet or similar appliance for the exclusive use of the occupants.
 - (b) For the purposes of (a), a kitchen sink or washbasin must not be counted as a laundry washtub.

Note: Architect has confirmed that level 4 assembly parts are used by the residents only and not open to the public.

- (5) For facilities in Class 9c buildings, the following applies:
- (a) For residents in each building or group of buildings, provide—
 - (i) a closet pan and wash basin for each 6 residents or part thereof where private facilities are not provided; and
 - (ii) a shower for each 7 residents or part thereof for where private facilities are not provided; and
 - (iii) a suitable bath, fixed or mobile.
 - (b) In addition to the facilities required by (a), provide—
 - (i) one kitchen or other adequate facility for the preparation and cooking or reheating of food including a kitchen sink and washbasin; and
 - (ii) laundry facilities for the cleansing and drying of linen and clothing or adequate facilities for holding and dispatch or treatment of soiled linen and clothing and the like and the receipt and storage of clean linen; and
 - (iii) one clinical hand washing basin for each 16 residents or part thereof.
 - (c) For the purposes of (a), urinals must not be taken into consideration in calculating the number of facilities.

F4D5	Accessible sanitary facilities
CRA	In a building required to be accessible— (a) accessible unisex sanitary compartments must be provided in accessible parts of the building in accordance with F4D6; and (b) accessible unisex showers must be provided in accordance with F4D7; 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, not less than one sanitary compartment suitable for a person with an ambulant disability for use by males and one sanitary compartment suitable for a person with an ambulant disability for use by females, must be provided; and (d) an accessible unisex sanitary compartment must contain a closet pan, washbasin, shelf or bench top and adequate means of disposal of sanitary products; and (e) the circulation spaces, fixtures and fittings of all accessible sanitary facilities provided in accordance with F4D6 and F4D7 must comply with the requirements of AS 1428.1; 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 Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary. Access Consultant to assess and confirm compliance.

- (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 D4D4(f) to be provided with a passenger lift or ramp complying with AS 1428.1.

F4D8	Construction of sanitary compartments	
CRA	(1) Other than in an early childhood centre, sanitary compartments must have doors and partitions that separate adjacent compartments and extend— (a) from floor level to the ceiling in the case of a unisex facility; or (b) to a height of not less than 1.5 m above the floor if primary school children are the principal users; or (c) 1.8 m above the floor in all other cases. (2) The door to a fully enclosed sanitary compartment must— (a) open outwards; or (b) slide; or (c) be readily removable from the outside of the sanitary compartment, unless there is a clear space of at least 1.2 m, measured in accordance with Figure F4D8, between the closet pan within the sanitary compartment and the doorway. (3) In an early childhood centre, facilities for use by children must have each sanitary compartment screened by a partition which, except for the doorway, is opaque for a height of at least 900 mm but not more than 1200 mm above the floor level.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary. All sanitary compartments are to be provided with lift-off hinges.

Part F5 – Room Heights

Clause	Reference	Comment
F5D2	Height of rooms and other spaces	
CRA	(1) The height of rooms and other spaces in a Class 2 or 3 building or Class 4 part of a building must be not less than— (a) for a kitchen, laundry, or the like – 2.1 m; and (b) for a corridor, passageway or the like – 2.1 m; and (c) for a habitable room excluding a kitchen – 2.4 m; and (d) in a habitable room, or space within a habitable room, with a sloping ceiling or projections below the ceiling line—	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary. - The Class 2 building parts is provided with a ceiling height of at least 2500mm, in compliance with this clause.

- (i) in an attic – a height of not less than 2.2 m for not less than two-thirds of the floor area of the room or space; and
- (ii) in other rooms – a height of not less than 2.4 m for not less than two-thirds of the floor area of the room or space; and
- (e) in a habitable room, or space within a habitable room, with a sloping ceiling or projections below the ceiling line – a height of not less than 2.1 m for not less than two-thirds of the floor area of the room or space.
- (2) For the purposes of (1), when calculating the floor area of a room or space, any part that has a ceiling height of less than 1.5 m is not included.
- (3) The height of rooms and other spaces in a Class 5, 6, 7 or 8 building must be not less than—
 - (a) except as allowed in (b) and (8) – 2.4 m; and
 - (b) a corridor, passageway, or the like – 2.1 m.
- (4) The height of rooms and other spaces in a Class 9a health-care building must be not less than—
 - (a) for a patient care area – 2.4 m; and
 - (b) for an operating theatre or delivery room – 3 m; and
 - (c) for a treatment room, clinic, waiting room, passageway, corridor, or the like – 2.4 m.
- (5) The height of rooms and other spaces in a Class 9b building must be not be less than—
 - (a) for a school classroom or other assembly building or part that accommodates not more than 100 persons – 2.4m; and
 - (b) for a theatre, public hall or other assembly building or part that accommodates more than 100 persons – 2.7 m; and
 - (c) for a corridor—
 - (i) that serves an assembly building or part that accommodates not more than 100 persons – 2.4 m; or
 - (ii) that serves an assembly building or part that accommodates more than 100 persons – 2.7 m.
- (6) For the purposes of (5) the number of persons accommodated must be calculated according to D2D18.
- (7) The height of rooms and other spaces in a Class 9c building must be not be less than—
 - (a) for a kitchen, laundry, or the like – 2.1 m; and
 - (b) for a corridor, passageway or the like – 2.4 m; and
 - (c) for a habitable room excluding a kitchen – 2.4 m.
- (8) The height of rooms and other spaces in any building must be not be less than—
 - (a) for a bathroom, shower room, sanitary compartment, other than an accessible adult change facility, airlock, tea preparation room, pantry, store room, garage, car parking area, or the like – 2.1 m; and
- The Class 7a basement carpark are provided with a ceiling height of 2700mm, in compliance with this clause.
- The Class 9b buildings are provided with a ceiling height of 2900mm, in compliance with this clause.

- (b) for a commercial kitchen – 2.4 m; and
- (c) above a stairway, ramp, landing or the like – 2 m measured vertically above the nosing line of stairway treads or the floor surface of the ramp, landing or the like; and
- (d) for a required accessible adult change facility – 2.4 m.

Part F6 – Light and Ventilation		
Clause	Reference	Comment
F6D2	Provision of natural light	
CRA	Natural light must be provided in: (a) A Class 2 building and a Class 4 parts of a building – to all habitable rooms. (b) A Class 3 building – to all bedrooms and dormitories. (c) Class 9a and 9c buildings – to all rooms used for sleeping purposes. (d) A Class 9b building – to all general purpose classrooms in primary or secondary schools and all playrooms or the like for the use of children in an early childhood centre	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary. All habitable rooms are to be provided with sufficient natural light including study rooms, in compliance with this clause. Currently, some study rooms may not be provided with natural light.
F6D3	Methods and extent of natural light	
CRA	(1) Required natural light must be provided by– (a) windows, excluding roof lights, that– (i) have an aggregate light transmitting area measured exclusive of framing members, glazing bars or other obstructions of not less than 10% of the floor area of the room; and (ii) are open to the sky or face a court or other space open to the sky or an open verandah, carport or the like; or (b) roof lights, that– (i) have an aggregate light transmitting area measured exclusive of framing members, glazing bars or other obstructions of not less than 3% of the floor area of the room; and (ii) are open to the sky; or (c) a proportional combination of windows and roof lights required by (a) and (b). (2) Except in a Class 9c aged care building, in a Class 2, 3 or 9 building or Class 4 part of a building, a required window that faces a boundary of an adjoining allotment or a wall of the same building or another building on the allotment must not be less than a horizontal distance from that boundary or wall that is the greater of–	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary. Ensure natural light intake (10%) of floor area complies with the provisions of this clause. Window schedule to be provided for review and confirmation.

- (a) generally – 1 m; and
- (b) in a patient care area or other room used for sleeping purposes in a Class 9a building – 3 m; and
- (c) 50% of the square root of the exterior height of the wall in which the window is located, measured in metres from its sill.
- (3) In a Class 9c aged care building, a required window must be transparent and located—
 - (a) in an external wall with the window sill not more than 1 m above the floor level; and
 - (b) where the window faces an adjoining allotment, another building or another wall of the same building, it must not be less than a horizontal distance of 3 m from the adjoining allotment, other building or wall.
- (4) In a Class 9b early childhood centre, the sills of 50% of windows in children's rooms must be located not more than 500 mm above the floor level.

F6D4	Natural light borrowed from adjoining room	
CRA	(1) Natural light to a room in a Class 2 building or Class 4 part of a building or in a sole-occupancy unit of a Class 3 building, may come through one or more glazed panels or openings from an adjoining room (including an enclosed verandah) if— (a) both rooms are within the same sole-occupancy unit or the enclosed verandah is on common property; and (b) the glazed panels or openings have an aggregate light transmitting area of not less than 10% of the floor area of the room to which it provides light; and (c) the adjoining room has— (i) windows, excluding roof lights, that— (A) have an aggregate light transmitting area of not less than 10% of the combined floor areas of both rooms; and (B) are open to the sky or face a court or other space open to the sky or an open verandah, carport or the like; or (ii) roof lights, that— (A) have an aggregate light transmitting area of not less than 3% of the combined floor areas of both rooms; and (B) are open to the sky; or (iii) a proportional combination of windows and roof lights required by (i) and (ii). (2) The areas specified in (1)(b) and (c) may be reduced as appropriate if direct natural light is provided from another source.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.

F6D5	Artificial lighting	
CRA	(1) Artificial lighting must be provided— (a) in required stairways, passageways, and ramps; and (b) if natural light of a standard equivalent to that required by F6D3 is not available, and the periods of occupation or use of the room or space will create undue hazard to occupants seeking egress in an emergency, in— (i) a Class 4 part of a building — to sanitary compartments, bathrooms, shower rooms, airlocks and laundries; and (ii) a Class 2 building — to sanitary compartments, bathrooms, shower rooms, airlocks, laundries, common stairways and other spaces used in common by the occupants of the building; and (iii) Class 3, 5, 6, 7, 8 and 9 buildings — 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. (2) The artificial lighting system must comply with AS/NZS 1680.0. (3) The system may provide a lesser level of illumination to the following spaces during times when the level of lighting would be inappropriate for the use: (a) A theatre, cinema or the like, when performances are in progress, with the exception of aisle lighting required by Part II. (b) A museum, gallery or the like, where sensitive displays require low lighting levels. (c) A discotheque, nightclub or the like, where to create an ambience and character for the space, low lighting levels are used.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary. Artificial light is to be provided to all rooms and spaces.
F6D6 & NSW F6D6	Ventilation of rooms	
CRA	A habitable room, office, shop, factory, workroom, sanitary compartment, bathroom, shower room, laundry and any other room occupied by a person for any purpose must have— (a) natural ventilation complying with F6D7; or (b) a mechanical ventilation or air-conditioning system complying with AS 1668.2.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary. The building will be provided with a combination of natural and mechanical ventilation.

F6D7	Natural ventilation	
CRA	(1) Natural ventilation provided in accordance with F6D6(a) must consist of openings, windows, doors or other devices which can be opened— (a) with a ventilating area not less than 5% of the floor area of the room required to be ventilated; and (b) open to— (i) a suitably sized court, or space open to the sky; or (ii) an open verandah, carport, or the like; or (iii) an adjoining room in accordance with F6D8. (2) The requirements of (1)(a) do not apply to a Class 8 electricity network substation	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary. The building will be provided with a combination of natural and mechanical ventilation.
F6D8	Ventilation borrowed from adjoining room	
CRA	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.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.
F6D9	Restriction on location of sanitary compartments	
CRA	A sanitary compartment 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	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.

- (d) a room used for public assembly (which is not an early childhood centre, primary school or open spectator stand); or
(e) a workplace normally occupied by more than one person.
- All sanitary compartments open into a corridor (or ensuite), in compliance with this clause.

F6D10 Airlocks		
CRA	If a sanitary compartment is prohibited under F6D9 from opening directly to another room— (a) in a sole-occupancy unit in a Class 2 or 3 building or Class 4 part of a building— (i) access must be by an airlock, hallway or other room; or (ii) the sanitary compartment must be provided with mechanical exhaust ventilation; and (b) in a Class 5, 6, 7, 8 or 9 building (which is not an early childhood centre, primary school or open spectator stand)— (i) access must be by an airlock, hallway or other room with a floor area of not less than 1.1 m² and fitted with self-closing doors at all access doorways; or (ii) the sanitary compartment must be provided with mechanical exhaust ventilation and the doorway to the room adequately screened from view.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary. All sanitary compartments will be mechanically ventilated.
F6D11 Carparks		
CRA	Every storey of a carpark, except an open-deck carpark, must have— (a) a system of mechanical ventilation complying with AS 1668.2; or (b) a system of natural ventilation complying with Section 4 of AS 1668.4.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary. Basement carpark is to be mechanically ventilated.

Part F7 – Sound transmission and insulation (Class 2)		
Clause	Reference	Comment
F7D3 Determination of airborne sound insulation ratings		
CRA	A form of construction required to have an airborne sound insulation rating must— (a) have the required value for weighted sound reduction index (R_w) or weighted sound reduction index with spectrum adaptation term (R_w + C_{tr}) determined in accordance with AS/NZS ISO 717.1 using results from laboratory measurements; or (b) comply with Specification 28.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary. Acoustic Engineer to assess and confirm compliance.

F7D4	Determination of impact sound insulation ratings	
CRA	(1) A floor in a building required to have an impact sound insulation rating must— (a) have the required value for weighted normalised impact sound pressure level ($L_{n,w}$) determined in accordance with AS ISO 717.2 using results from laboratory measurements; or (b) comply with Specification 28. (2) A wall in a building required to have an impact sound insulation rating must— (a) for a Class 2 or 3 building be of discontinuous construction and (b) for a Class 9c building, must— (i) for other than masonry, be two or more separate leaves without rigid mechanical connection except at the periphery; or (ii) be identical with a prototype that is no less resistant to the transmission of impact sound when tested in accordance with Specification 29 than a wall listed in S28C4 to S28C7. (3) For the purposes of this Part, discontinuous construction means a wall having a minimum 20 mm cavity between 2 separate leaves, and— (a) for masonry, where wall ties are required to connect leaves, the ties are of the resilient type; and (b) for other than masonry, there is no mechanical linkage between leaves except at the periphery.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary. Sound insulated walls (Class 2 part) require discontinuous construction (air gap).
F7D5	Sound insulation rating of floors	
CRA	(1) A floor in a Class 2 or 3 building must have an $R_w + C_{tr}$ (airborne) not less than 50 and an $L_{n,w}$ (impact) not more than 62 if it separates— (a) sole-occupancy units; or (b) a sole-occupancy unit from a plant room, lift shaft, stairway, public corridor, public lobby or the like, or parts of a different classification. (2) A floor in a Class 9c building separating sole-occupancy units must have an R_w not less than 45.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.
F7D6	Sound insulation rating of walls	
CRA	(1) A wall in a Class 2 or 3 building must— (a) have an $R_w + C_{tr}$ (airborne) not less than 50, if it separates sole-occupancy units; and (b) have an R_w (airborne) not less than 50, if it separates a sole-occupancy unit from a plant room, lift shaft, stairway, public corridor, public lobby or the like, or parts of a different classification; and (c) comply with F7D4(2) if it separates— (i) a bathroom, sanitary compartment, laundry or kitchen in one sole-occupancy unit from a habitable room (other than a kitchen) in an adjoining unit; or	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.

- (ii) a sole-occupancy unit from a plant room or lift shaft.
- (2) A door may be incorporated in a wall in a Class 2 or 3 building that separates a sole-occupancy unit from a stairway, public corridor, public lobby or the like, provided the door assembly has an R_w not less than 30.
- (3) A wall in a Class 9c building must have an R_w not less than 45 if it separates—
 - (a) sole-occupancy units; or
 - (b) a sole-occupancy unit from a kitchen, bathroom, sanitary compartment (not being an associated ensuite), laundry, plant room or utilities room.
- (4) In addition to (3), a wall separating a sole-occupancy unit in a Class 9c building from a kitchen or laundry must comply with F7D4(2).
- (5) Where a wall required to have sound insulation has a floor above, the wall must continue to—
 - (a) the underside of the floor above; or
 - (b) a ceiling that provides the sound insulation required for the wall.
- (6) Where a wall required to have sound insulation has a roof above, the wall must continue to—
 - (a) the underside of the roof above; or
 - (b) a ceiling that provides the sound insulation required for the wall.

F7D7	Sound insulation rating of internal services	
CRA	(1) If a duct, soil, waste or water supply pipe, including a duct or pipe that is located in a wall or floor cavity, serves or passes through more than one sole-occupancy unit, the duct or pipe must be separated from the rooms of any soleoccupancy unit by construction with an $R_w + C_{tr}$ (airborne) not less than— (a) 40 if the adjacent room is a habitable room (other than a kitchen); or (b) 25 if the adjacent room is a kitchen or non-habitable room. (2) If a stormwater pipe passes through a sole-occupancy unit, it must be separated in accordance with (1)(a) and (b).	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.
F7D8	Sound isolation of pumps	
CRA	A flexible coupling must be used at the point of connection between the service pipes in a building and any circulating or other pump.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.

Part F8 – Condensation Management (Class 2)

Clause	Reference	Comment
F8D3	External walls construction	
CRA	(1) Where a pliable building membrane is installed in an external wall, it must— (a) comply with AS 4200.1; and (b) be installed in accordance with AS 4200.2; and (c) be located on the exterior side of the primary insulation layer of wall assemblies that form the external envelope of a building. (2) Where a pliable building membrane, sarking-type material or insulation layer is installed on the exterior side of the primary insulation layer of an external wall it must have a vapour permeance of not less than— (a) in climate zones 4 and 5, 0.143 µg/N.s; and (b) in climate zones 6, 7 and 8, 1.14 µg/N.s. (3) 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.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary. Facade Engineer to assess and confirm compliance.
F8D4	Exhaust systems	
CRA	(1) An exhaust system installed in a kitchen, bathroom, sanitary compartment or laundry must have a minimum flow rate of— (a) 25 L/s for a bathroom or sanitary compartment; and (b) 40 L/s for a kitchen or laundry. (2) Exhaust from a kitchen, kitchen range hood, bathroom, sanitary compartment or laundry must discharge directly or via a shaft or duct to outdoor air. (3) Where space for a clothes drying appliance is provided in accordance with F4D2(1)(b), space must also be provided for ducting from the clothes drying appliance to outdoor air. (4) (3) does not apply if a condensing-type clothes drying appliance is installed. (5) An exhaust system that is not run continuously and is serving a bathroom or sanitary compartment that is not ventilated in accordance with F6D7 must— (a) be interlocked with the room's light switch; and (b) include a run-on timer so that the exhaust system continues to operate for 10 minutes after the light switch is turned off.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.

(6) Except for rooms that are ventilated in accordance with F6D7, a room with space for ducting a clothes drying appliance to outdoor air in accordance with (3) must be provided with make-up air in accordance with AS 1668.2

Specification 26 – Waterproofing and water-resistance requirements for building elements in wet areas

Clause	Reference	Comment
S26C3	Shower area (enclosed and unenclosed)	
CRA	(1) For a shower area with a hob, step-down or level threshold, the following applies: (a) The floor of the shower area must be waterproof, including any hob or step-down; and (b) The walls of the shower area must be waterproof not less than 1800 mm above the floor substrate. (c) Wall junctions and joints within the shower area must be waterproof. (d) Wall/floor junctions within the shower area must be waterproof. (e) Penetrations within the shower area must be waterproof. (2) A shower with a preformed shower base must also comply with the requirements of (1), except for (a) which is not applicable.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.
S26C4	Area outside shower area	
CRA	(1) For concrete, compressed fibre-cement and fibre-cement sheet flooring, the floor of the room must be water resistant. (2) For timber floors including particleboard, plywood and other timber based flooring materials, the floor of the room must be waterproof. (3) Wall/floor junctions must be waterproof	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.
S26C6	Other areas	
CRA	(1) For walls adjoining other types of vessels (e.g. sink, basin or laundry tub), the following applies: (a) Walls must be water resistant to a height of not less than 150 mm above the vessel, for the extent of the vessel, where the vessel is within 75 mm of a wall. (b) Waterproof wall junctions where a vessel is fixed to a wall. (c) Waterproof tap and spout penetrations where they occur in surfaces required to be waterproof or water resistant. (2) For laundries and WCs, other than WCs as described in (3), the following applies: (a) Water resistant floor of the room. (b) Water resistant wall/floor junctions.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.

- (c) Waterproof penetrations where they occur in surfaces required to be waterproof.
- (3) For WCs with a handheld bidet spray installation, the following applies:
 - (a) Waterproof floor of the room.
 - (b) Walls must be—
 - (i) waterproof within a 1500 mm radius from the wall connection of the handheld bidet spray device to a height of not less than 150 mm above the floor substrate; and
 - (ii) water resistant within a 1500 mm radius from the wall connection of the handheld bidet spray device to a height of not less than 1200 mm above the finished floor level of the WC.
 - (c) Waterproof wall junctions within the WC area within 1500 mm radius from the wall connection of the handheld bidet spray device.
 - (d) Waterproof wall/floor junctions within the WC area within 1500 mm radius from the wall connection of the handheld bidet spray device.
 - (e) Waterproof penetrations in WC area.
- (4) For bathrooms and laundries required to be provided with a floor waste by F2D4, the following applies:
 - (a) Waterproof floor of the room.
 - (b) Waterproof wall/floor junctions.
 - (c) Waterproof penetrations where they occur through the floor

Specification 28 – Sound insulation for building elements

Clause	Reference	Comment
S28C2	Discontinuous construction	
CRA	Wall systems listed in S28C4 to S28C7 having a minimum 20 mm cavity between 2 separate leaves are deemed to be discontinuous construction if— (a) for masonry, where wall ties are required to connect leaves, the ties are of the resilient type; and (b) for other than masonry, there is no mechanical linkage between leaves except at the periphery.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.
S28C3	Construction Deemed-to-Satisfy	
CRA	(1) The forms of wall construction described in S28C4 to S28C7 and floor construction described in S28C8 to S28C10, are considered to have the R_w, $R_w + C_{tr}$ and $L_{n,w}$ stated in those clauses. (2) The forms of construction referred to in (1) must be installed as follows: (a) Masonry units must be laid with all joints filled solid, including those between the masonry and any adjoining construction.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.

- (b) Joints between concrete slabs or panels and any adjoining construction must be filled solid.
 - (c) For sheeting materials—
 - (i) if one layer is required on both sides of a wall, it must be fastened to the studs with joints staggered on opposite sides; and
 - (ii) if two layers are required, the second layer must be fastened over the first layer so that the joints do not coincide with those of the first layer; and
 - (iii) joints between sheets or between sheets and any adjoining construction must be taped and filled solid.
 - (d) Timber or steel-framed construction — perimeter framing members must be securely fixed to the adjoining structure and—
 - (i) bedded in resilient compound; or
 - (ii) the joints must be caulked so that there are no voids between the framing members and the adjoining structure.
 - (e) Services must not be chased into concrete or masonry elements.
- A door or panel required to have a certain $R_w + C_{tr}$ (f) that provides access to a duct, pipe or other service must—
- (i) not open into any habitable room (other than a kitchen); and
 - (ii) be firmly fixed so as to overlap the frame or rebate of the frame by not less than 10 mm, be fitted with a sealing gasket along all edges and be constructed of—
 - (A) wood, particleboard or blockboard not less than 33 mm thick; or
 - (B) compressed fibre-reinforced cement sheeting not less than 9 mm thick; or
 other suitable material with a mass per unit area not less than 24.4 kg/m² (C) .
 - (g) A water supply pipe must—
 - (i) only be installed in the cavity of discontinuous construction; and
 - (ii) in the case of a pipe that serves only one sole-occupancy unit, not be fixed to the wall leaf on the side adjoining any other sole-occupancy unit and have a clearance not less than 10 mm to the other wall leaf.
 - (h) Electrical outlets must be offset from each other—
 - (i) in masonry walling, not less than 100 mm; and
 - (ii) in timber or steel-framed walling, not less than 300 mm.

S28C4	Acceptable forms of construction for walls — masonry	
CRA	(1) Acceptable forms of construction for masonry walls are set out in (2) to (9). (2) Two leaves of 110 mm clay brick masonry with— (a) a cavity of not less than 50 mm between leaves; and	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.

50 mm thick glass wool insulation with a density of 11 kg/m³ (b) or 50 mm thick polyester insulation with a density of 20 kg/m³ in the cavity,

has an $R_w + C_{tr}$ of not less than 50 and an R_w of not less than 50, if constructed as shown in Figure S28C4a.

(3) Two leaves of 110 mm clay brick masonry with—

(a) a cavity of not less than 50 mm between leaves; and

(b) 13 mm cement render on each outside face,

has an $R_w + C_{tr}$ of not less than 50 and an R_w of not less than 50, when constructed as shown in Figure S28C4b.

(4) A single leaf of 110 mm clay brick masonry with—

(a) a row of 70 mm x 35 mm timber studs or 64 mm steel studs at 600 mm centres, spaced 20 mm from the masonry wall; and

(b) 50 mm thick glass or mineral wool insulation with a density of 11 kg/m³ positioned between studs; and

(c) one layer of 13 mm plasterboard fixed to outside face of studs and outside face of masonry, has an $R_w + C_{tr}$ of not less than 50 and an R_w of not less than 50, if constructed as shown in Figure S28C4c.

(5) A single leaf of 90 mm clay brick masonry with—

(a) a row of 70 mm x 35 mm timber studs or 64 mm steel studs at 600 mm centres, spaced 20 mm from each face of the masonry wall; and

(b) 50 mm thick mineral insulation or glass wool insulation with a density of 11 kg/m³ positioned between studs in each row; and

(c) one layer of 13 mm plasterboard fixed to studs on each outside face, has an $R_w + C_{tr}$ of not less than 50 and an R_w of not less than 50, if constructed as shown in Figure S28C4d.

(6) A single leaf of 150 mm brick masonry with 13 mm cement render on each face has an R_w of not less than 50 if constructed as shown in Figure S28C4e.

(7) A single leaf of 220 mm brick masonry with 13 mm cement render on each face has an $R_w + C_{tr}$ of not less than 50 and an R_w of not less than 50, if constructed as shown in Figure S28C4f.

(8) 110 mm thick brick masonry with 13 mm cement render on each face has an R_w of not less than 45 if constructed as shown in Figure S28C4g.

(9) 110 mm thick concrete brickwork has an R_w of not less than 45 if constructed as shown in Figure S28C4h.

Note: Refer to the abovementioned figures directly from the BCA.

S28C5	Acceptable forms of construction for walls — concrete	
CRA	(1) Acceptable forms of construction for concrete walls are set out in (3) to (12). (2) For the purposes of this clause, the term 'concrete panel' is a reference to a solid in-situ concrete panel or solid precast concrete panel. (3) A 150 mm thick concrete panel has an $R_w + C_{tr}$ of not less than 50 and an R_w of not less than 50, if constructed as shown in Figure S28C5a. (4) A 150 mm thick concrete panel with one layer of 10 mm plasterboard fixed to 28 mm metal furring channels on each face, has an R_w of not less than 50, if constructed as shown in Figure S28C5b. (5) A 200 mm thick concrete panel with one layer of 13 mm plasterboard or 13 mm cement render on each face has an $R_w + C_{tr}$ of not less than 50 and an R_w of not less than 50, if constructed as shown in Figure S28C5c. (6) A 100 mm thick concrete panel with— (a) a row of 64 mm steel studs at 600 mm centres, spaced 25 mm from the concrete panel; and (b) 80 mm thick polyester insulation or 50 mm thick glass wool insulation with a density of 11 kg/m³, positioned between studs; and (c) two layers of 13 mm plasterboard fixed to outside face of studs and one layer of 13 mm plasterboard fixed to outside face of concrete panel, has an with an $R_w + C_{tr}$ of not less than 50 and an R_w of not less than 50, if constructed in accordance with Figure S28C5d. (7) A 125 mm thick concrete panel with— (a) a row of 64 mm steel studs at 600 mm centres, spaced 20 mm from the concrete panel; and (b) 70 mm polyester insulation with a density of 9 kg/m³, positioned between studs; and (c) one layer of 13 mm plasterboard fixed to the outside face of the studs, has an with an $R_w + C_{tr}$ of not less than 50 and an R_w of not less than 50, if constructed in accordance with Figure S28C5e. (8) A 125 mm thick concrete panel has an R_w of not less than 50, if constructed as shown in Figure S28C5f. (9) A 100 mm concrete panel with 13 mm cement render or one layer of 13 mm plasterboard on each face has an R_w of not less than 50, if constructed as shown in Figure S28C5g. (10) A 190 mm thick concrete blockwork has an R_w of not less than 45, if constructed as shown in Figure S28C5h. (11) A 140 mm thick concrete blockwork, the face shell thickness of the blocks being not less than 44 mm and with—	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.

(a) 50 mm x 50 mm timber battens spaced at not more than 610 mm centres screw-fixed on one face of the blocks into resilient plugs with rubber inserts between battens and the wall; and

(b) the face of the battens clad with 13 mm plasterboard,

has an R_w of not less than 45, if constructed as shown in Figure S28C5i.

(12) A concrete panel, 100 mm thick, has an R_w of not less than 45, if constructed as shown in Figure S28C5j.

Note: Refer to the abovementioned figures directly from the BCA.

S28C6	Acceptable forms of construction for walls — autoclaved aerated concrete	
CRA	(1) Acceptable forms of construction for autoclaved aerated concrete walls are set out in (2) to (5). (2) A 75 mm thick autoclaved aerated concrete wall panel with— (a) a row of 64 mm steel studs at 600 mm centres, spaced 20 mm from the autoclaved aerated concrete wall panel; and (b) 75 mm thick glass wool insulation with a density of 11 kg/m³ positioned between studs; and (c) one layer of 10 mm moisture resistant plasterboard or 13 mm fire protective grade plasterboard fixed to outside face of studs and outside face of autoclaved aerated concrete wall panel, has an $R_w + C_{tr}$ of not less than 50 and an R_w of not less than 50, if constructed as shown in Figure S28C6a. (3) A 75 mm thick autoclaved aerated concrete wall panel with— (a) a row of 64 mm steel studs at 600 mm centres, spaced 35 mm from the autoclaved aerated concrete panel wall; and (b) 28 mm metal furring channels fixed to the outside face of the autoclaved aerated concrete wall panel, with 50 mm thick polyester insulation with a density of 9 kg/m³ positioned between furring channels and one layer of 13 mm fire protective grade plasterboard fixed to furring channels; and (c) 105 mm thick glass wool insulation with a density of 7 kg/m³ positioned between studs; and (d) one layer of 13 mm fire protective grade plasterboard fixed to the outside face of the studs, has an $R_w + C_{tr}$ of not less than 50 and an R_w of not less than 50, if constructed as shown in Figure S28C6b. (4) Two leaves of 75 mm autoclaved aerated concrete wall panel with— a cavity not less than 30 mm between panels containing 50 mm glass wool insulation with a density of 11 kg/m³ (a); and (b) one layer of 10 mm plasterboard fixed to outside face of each panel, has an $R_w + C_{tr}$ of not less than 50 and an R_w of not less than 50, if constructed as shown in Figure S28C6c. (5) A 75 mm thick autoclaved aerated concrete wall panel with— (a) one layer of 10 mm moisture resistant plasterboard on one face; and	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.

(b) 28 mm metal furring channels and resilient mounts, 75 mm polyester insulation with a density of 9 kg/m³ and 13 mm fire-protective grade plasterboard fixed to the other face, has an Rw of not less than 50, if constructed as shown in Figure S28C6d.

Note: Refer to the abovementioned figures directly from the BCA.

S28C7	Acceptable forms of construction for walls – timber and steel framing	
CRA	(1) Acceptable forms of construction for timber and steel framing wall are set out in (2) to (11). (2) Two rows of 70 x 35 mm timber studs at 450 mm centres with— (a) an air gap not less than 20 mm between the rows of studs; and (b) 75 mm thick glass or mineral wool insulation with a density of 8 kg/m³ or 60 mm thick polyester insulation with a density of 11 kg/m³ positioned between one row of studs; and (c) two layers of 13 mm fire protective grade plasterboard or one layer of 6 mm fibre-cement sheet and one layer of 13 mm fire protective grade plasterboard, fixed to outside face of studs, has an Rw + Ctr of not less than 50 and an Rw of not less than 50, if constructed as shown in Figure S28C7a. (3) One row of 70 mm x 35 mm staggered timber studs, without noggings between adjacent studs, at not less than 450 mm centres, fixed to 90 mm x 35 mm wall plates with— (a) 75 mm thick glass or mineral wool insulation with a minimum density of 8 kg/m³ positioned between studs; and (b) two layers of 13 mm fire-protective grade plasterboard fixed to outside face of studs, has an Rw of not less than 50, if constructed as shown in Figure S28C7b. (4) One row of 70 mm x 35 mm timber studs at not less than 600 mm centres with— (a) 75 mm thick glass or mineral wool insulation with a minimum density of 8 kg/m³ positioned between studs; and (b) two layers of 13 mm fire-protective grade plasterboard fixed to outside face of studs, has an Rw of not less than 45, if constructed as shown in Figure S28C7c. (5) One row of 70 mm x 35 mm timber studs at not less than 450 mm centres with— (a) 28 mm furring channels installed horizontally on one side; and (b) two layers of 13 mm fire-protective plasterboard fixed on each face, has an Rw of not less than 45, if constructed as shown in Figure S28C7d. (6) Two rows of 64 mm steel studs at 600 mm centres with— (a) an air gap not less than 20 mm between the rows of studs; and (b) 50 mm thick glass wool insulation or 60 mm thick polyester insulation with a density of 11 kg/m³ positioned between one row of studs; and	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.

- (c) two layers of 13 mm fire-protective grade plasterboard or one layer of 6 mm fibre-cement sheet and one layer of 13 mm fire-protective grade plasterboard, fixed to outside face of studs, has an $R_w + C_{tr}$ of not less than 50 and an R_w of not less than 50, if constructed as shown in Figure S28C7e.
- (7) Two rows of 64 mm steel studs at 600 mm centres with—
- (a) an air gap not less than 80 mm between the rows of studs; and
- (b) 200 mm thick polyester insulation with a density of 14 kg/m³ positioned between studs; and
- (c) one layer of 13 mm fire-protective grade plasterboard and one layer 13 mm plasterboard on one outside face and one layer of 13 mm fire-protective grade plasterboard on the other outside face, has an $R_w + C_{tr}$ of not less than 50 and an R_w of not less than 50, if constructed as shown in Figure S28C7f.
- (8) One row of 92 mm steel studs at 600 mm centres with—
- (a) 50 mm thick glass wool insulation with a density of 11 kg/m³ or 60 mm thick polyester insulation with a density of 8 kg/m³, positioned between studs; and
- (b) two layers of 13 mm fire-protective grade plasterboard or one layer of 6 mm fibre-cement sheet and one layer of 13 mm fire-protective grade plasterboard, fixed to each face, has an R_w of not less than 50, if constructed as shown in Figure S28C7g.
- (9) One row of 64 mm steel studs with 2 layers of 16 mm fire-protective grade plasterboard fixed to each face has an R_w of not less than 45, if constructed as shown in Figure S28C7h.
- (10) One row of 64 mm steel studs with—
- (a) one layer of 16 mm fire-protective grade plasterboard fixed to one face; and
- (b) 50 mm thick glass or mineral wool insulation with a density of 11 kg/m³ positioned between the studs; and
- (c) two layers of fire-protective grade plasterboard fixed to the other face, the inner layer being 16 mm thick and the outer layer being 13 mm, has an R_w of not less than 45, if constructed as shown in Figure S28C7i.
- (11) One row of 64 mm steel studs with two layers of 13 mm plasterboard on each face has an R_w of not less than 45, if constructed as shown in Figure S28C7j.

Note: Refer to the abovementioned figures directly from the BCA.

S28C8	Acceptable forms of construction for floors — concrete	
CRA	(1) Acceptable forms of construction for concrete floors are set out in (2) to (4). (2) 150 mm thick concrete slab with— (a) 28 mm metal furring channels and isolation mounts fixed to underside of slab, at 600 mm centres; and (b) 65 mm thick polyester insulation with a density of 8 kg/m³, positioned between furring channels; and	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.

(c) one layer of 13 mm plasterboard fixed to furring channels, has an $R_w + C_{tr}$ of not less than 50, an $L_{n,w}$ of not more than 62 and an R_w of not less than 50, if constructed as shown in Figure S28C8a.

(3) 200 mm thick concrete slab with carpet on underlay has an $R_w + C_{tr}$ of not less than 50, an $L_{n,w}$ of not more than 62 and an R_w of not less than 50, if constructed as shown in Figure S28C8b.

(4) 100 mm thick concrete slab has an $R_w + C_{tr}$ of not less than 45 and an R_w of not less than 45, if constructed as shown in Figure S28C8c.

Note: Refer to the abovementioned figures directly from the BCA.

S28C9	Acceptable forms of construction for floors – autoclaved aerated concrete	
CRA	(1) An acceptable form of construction for autoclaved aerated concrete floors is set out in (2). (2) 75 mm thick autoclaved aerated concrete floor panel with— (a) 8 mm ceramic tiles with flexible adhesive and waterproof membrane, located above the slab; and (b) timber joists at 600 mm centres; and (c) R1.5 glass wool insulation positioned between timber joists; and (d) 28 mm metal furring channels and resilient mounts fixed to underside of joists; and (e) two layers of 13 mm plasterboard fixed to furring channels, has an $R_w + C_{tr}$ of not less than 50, an $L_{n,w}$ of not more than 62 and an R_w of not less than 50, if constructed as shown in Figure S28C9. Note: Refer to the abovementioned figures directly from the BCA.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.
S28C10	Acceptable forms of construction for floors – timber	
CRA	(1) Acceptable forms of construction for timber floors are set out in (2) to (4). (2) 19 mm thick particleboard floor sheeting with— (a) 190 mm x 45 mm timber joists at 450 mm centres; and (b) R2.5 glass or mineral wool insulation positioned between timber joists; and (c) 28 mm metal furring channels and isolation mounts fixed to underside of joists, isolation mounts to be of natural rubber with a dynamic factor of not more than 1.1 and static deflection of not less than 3 mm at actual operating load; and (d) two layers of 16 mm fire-protective grade plasterboard fixed to furring channels, has an $R_w + C_{tr}$ of not less than 50, an $L_{n,w}$ of not more than 62 and an R_w of not less than 50, if constructed as shown in Figure S28C10a. (3) Timber flooring with minimum 8.5 kg/m² mass, over 19 mm thick particleboard floor sheeting with—	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.

- (a) 190 mm x 45 mm timber joists at not less than 450 mm centres; and
 - (b) R2.5 glass or mineral wool insulation positioned between timber joists; and
 - (c) 28 mm metal furring channels fixed to underside of joists at 600 mm centres by clip or mount; and
 - (d) one layer of 13 mm acoustic grade plasterboard fixed to furring channels,
- has an $R_w + C$ of not less than 45 and an R_w of not less than 45, if constructed as shown in Figure S28C10b.

Note: Refer to the abovementioned figures directly from the BCA.

Specification 29 – Impact sound – test of equivalence

Clause	Reference	Comment
S29C2	Construction to be tested	
CRA	(1) The test is conducted on a specimen of prototype wall construction and on a specimen of one or other of the constructions specified in S28C4 to S28C7. (2) The testing of a construction specified in S28C4 to S28C7 need not be repeated for subsequent comparisons provided complete records of the results, the test equipment and the technique of testing are kept so that identical equipment can be employed and an identical technique can be adopted in the testing of specimens of prototype wall construction.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.
S29C3	Method	
CRA	(1) The wall constructions to be compared must be tested in accordance with AS 1191. (2) A horizontal steel platform 510 mm x 460 mm x 10 mm thick must be placed with one long edge in continuous and direct contact with the wall to be tested on the side of the wall on which the impact sound is to be generated. (3) A tapping machine complying with ISO 140/6 – 1998 (E) must be mounted centrally on the steel platform. (4) The sound transmission through the wall must be determined in accordance with AS 1191 except that the tapping machine as mounted on the steel platform must be used as the source of sound. (5) The impact sound pressure levels measured in the receiving room must be converted into normalised levels using a reference equivalent absorption area of 10 m².	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.

Section G – Ancillary Provisions		
Clause	Reference	Comment
G1D2 & NSW G1D2	Swimming pools	
CRA	(1) NSW G1D2(2) applies to the technical construction requirements for barriers to restrict access to swimming pools, subject to— (a) out-of-ground pool walls and the walls of above ground pools, including inflatable pools, not being considered to be effective barriers; and (b) the reference in clause 2.3.1 of AS 1926.1 to a barrier within a property including a boundary barrier. (2) A swimming pool with a depth of water more than 300 mm and which is associated with a Class 2 or 3 building or Class 4 part of a building, must have suitable barriers to restrict access by young children to the immediate pool surrounds in accordance with— (a) AS 1926 Parts 1 and 2; or (b) if the swimming pool is a spa pool— (i) the requirements of (a); or (ii) clause 9 of the Swimming Pools Regulation 2018. (3) A water recirculation system in a swimming pool with a depth of water more than 300 mm must comply with AS1926.3.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary. Swimming pool barriers are to comply with AS1926.1. Note: The Swimming Pools Act 1992 and the Swimming Pools Regulation 2018, applicable to swimming pool with a depth of water of more than 300 mm, regulate the circumstances in which a barrier is required and prevail in the case of any inconsistency.
NSW G1D5	Provision for cleaning windows	
CRA	(1) A building must provide for a safe manner of cleaning any windows located 3 or more storeys above ground level. (2) A building satisfies (1) where— (a) the windows can be cleaned wholly from within the building; or (b) provision is made for the cleaning of the windows by a method complying with the Work Health and Safety Act 2011 and regulations made under that Act.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.

Part G3 - Atrium construction

Clause	Reference	Comment
G3D1	Application of Part	
N/A	This Part does not apply to an atrium which— (a) connects only 2 storeys; or (b) connects only 3 storeys if— (i) each storey is provided with a sprinkler system (other than a FPAA10ID or FPAA10IH system) complying with Specification 17 throughout; and (ii) one of those storeys is situated at a level at which there is direct egress to a road or open space	Not applicable – This clause is not applicable to this project. No action required. No part G3 atriums were identified.

Part G5 - Construction in bushfire prone areas

Clause	Reference	Comment
NSW G5D2	Application of Part	
Noted	The Deemed-to-Satisfy Provisions of this Part apply in a designated bushfire prone area to— (a) a Class 2 or 3 building; or (b) a Class 4 part of a building; or (c) a Class 9 building that is a special fire protection purpose located in an area subject to a Bushfire Attack Level (BAL) not exceeding BAL-12.5, determined in accordance with Planning for Bush Fire Protection; or (d) a Class 10a building or deck immediately adjacent or connected to a building or part of a type in (a), (b) or (c).	This clause is for informational purposes only, and no additional action is required.
NSW G5D3	Protection — residential buildings	
N/A	In a designated bushfire prone area, a Class 2 building, a Class 3 building, a Class 4 part of a building or a Class 10a building or deck immediately adjacent or connected to such a building or part, must comply with the following— (a) AS 3959 except— (i) as amended by Planning for Bush Fire Protection; and (ii) for Section 9 Construction for Bushfire Attack Level FZ (BAL-FZ), buildings subject to BAL-FZ must comply with specific conditions of development consent for construction at this level; or	Not applicable – This clause is not applicable to this project. No action required. It is likely the parcel of land is not in a bushfire fire prone area. Bushfire Consultant to assess and confirm compliance.

- (b) the requirements of (a) above as modified by the development consent following consultation with the NSW Rural Fire Service under section 4.14 of the Environmental Planning and Assessment Act 1979 if required; or
- (c) the requirements of (a) above as modified by development consent with a bushfire safety authority issued under section 100B of the Rural Fires Act 1997 for the purposes of integrated development.

Part G6 - Occupiable outdoor areas		
Clause	Reference	Comment
G6D1	Application of Part	
N/A	(1) The Deemed-to-Satisfy Provisions of this Part apply to buildings containing an occupiable outdoor area in addition to the other Deemed-to-Satisfy Provisions of NCC Volume One. (2) The Deemed-to-Satisfy Provisions of this Part take precedence where there is a difference to the Deemed-to-Satisfy Provisions of Sections C, D, E, F and G. (3) Except for G6D2, the Deemed-to-Satisfy Provisions of this Part do not apply to— (a) an occupiable outdoor area of a sole-occupancy unit in a Class 2 or 3 building, Class 9c building or Class 4 part of a building; or (b) an occupiable outdoor area with an area less than 10m².	Not applicable – This clause is not applicable to this project. No action required. No Occupiable Outdoor Areas were identified/proposed (open to sky spaces with no direct connection to the road). Note: Rooftop only consists of plant, and not a communal open space that is open to sky.
G6D2	Fire hazard properties	
CRA	(1) Subject to (2), a lining, material or assembly in an occupiable outdoor area must comply with C2D11 as for an internal element. (2) The following fire hazard properties of a lining, material or assembly in an occupiable outdoor area are not required to comply with C2D11: (a) Average specific extinction area. (b) Smoke-Developed Index. (c) Smoke development rate. (d) Smoke growth rate index (SMOGRARC).	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary. Fire hazard properties must comply with NSW C2D11 and Specification 7. Consider avoiding plastic pedestals under tiling on balconies that may not comply with fire hazard properties (Spec 7)

Section J – Energy Efficiency

Section J1 – Energy Efficiency performance requirements

Clause	Reference	Comment
J1V1	NABERS Energy (Verification Methods)	
Noted	(1) For a Class 5 building, compliance with J1P1 is verified when— (a) a minimum 5.5-star NABERS Energy base building Commitment Agreement is obtained; and (b) the energy model required for (a) demonstrates— (i) the base building’s greenhouse gas emissions are not more than 67% of the 5.5-star level when excluding— (A) tenant supplementary heating and cooling systems; and (B) external lighting; and (C) carpark services; and (ii) a thermal comfort level of between a Predicted Mean Vote of -1 to +1 is achieved across not less than 95% of the floor area of all occupied zones for not less than 98% of the annual hours of operation of the building; and (c) the building complies with the additional requirements in Specification 33. (2) For a Class 2 building, other than sole-occupancy units, compliance with J1P1 is verified when— (a) a minimum 4-star NABERS Energy for Apartment Buildings Commitment Agreement is obtained; and (b) air-conditioning, which operates not less than 18 hours per day, is provided to all enclosed common lift lobbies and corridors; and (c) the energy model required for (a) demonstrates— (i) the greenhouse gas emissions of the services are less than 90% of the 5-star level; and (ii) a thermal comfort level of between a Predicted Mean Vote of -1 to +1 is achieved across not less than 95% of the floor area of the air-conditioned common area occupied zones, excluding indoor swimming pool chambers, for not less than 98% of the annual hours of operation of the building; and (iii) the space temperature in any indoor swimming pool chamber is maintained at 2°C above the pool temperature during occupied hours of not less than 12 hours per day; and (d) the building complies with the additional requirements in Specification 33. (3) For a Class 3 building, compliance with J1P1 is verified when— (a) a minimum 4-star NABERS Energy for Hotels Commitment Agreement is obtained; and	This clause is for informational purposes only, and no additional action is required.

- (b) the operating hours of the services are not less than 12 hours per day in bedrooms, dining rooms and conference facilities, 24 hours per day in corridors and foyers and 18 hours per day in back-of-house areas; and
- (c) the energy model required for (a) demonstrates that—
 - (i) the greenhouse gas emissions of the services are less than 70% of the 5-star level; and
 - (ii) a thermal comfort level of between a Predicted Mean Vote of -1 to +1 is achieved across not less than 95% of the floor area of occupied zones, excluding indoor swimming pool chambers, for not less than 98% of the annual hours of operation of the building; and
 - (iii) the space temperature in any indoor swimming pool chamber is maintained at 2°C above the pool temperature during occupied hours of not less than 12 hours per day; and
- (d) the building complies with the additional requirements in Specification 33.
- (4) For a Class 6 shopping centre, compliance with JIP1 is verified when—
 - (a) a minimum 4.5-stars NABERS Energy for Shopping Centres Commitment Agreement is obtained; and
 - (b) the building has:
 - (i) an air-conditioned common area of not less than 20% of the gross lettable area; and
 - (ii) a gross lettable area greater than 15 000 m²; and
 - (c) the energy model required for (a) demonstrates—
 - (i) the greenhouse gas emissions of the services covered within the scope of NABERS Energy for Shopping Centres ratings are less than 80% of the 4.5-star level; and
 - (ii) a thermal comfort level of between a Predicted Mean Vote of -1 to +1 is achieved across not less than 95% of the floor area of air-conditioned spaces within the scope of the rating for not less than 98% of the annual hours of operation the building; and
 - (d) the building complies with the additional requirements in Specification 33.
- (5) The calculation method for (1), (2), (3) and (4) must comply with ANSI/ASHRAE Standard 140.

JIV2	Green Star (Verification Methods)	
Noted	(1) For a Class 3, 5, 6, 7, 8 or 9 building, or common area of a Class 2 building, compliance with JIP1 is verified when— (a) the building complies with the simulation requirements, and is registered, for a Green Star – Design & As-Built or Green Star Buildings rating; and (b) the annual greenhouse gas emissions of the proposed building are less than 90% of the annual greenhouse gas emissions of the reference building; and	This clause is for informational purposes only, and no additional action is required.

- (c) in the proposed building, a thermal comfort level of between a Predicted Mean Vote of -1 to +1 is achieved across not less than 95% of the floor area of all occupied zones for not less than 98% of the annual hours of operation of the building; and
- (d) the building complies with the additional requirements in Specification 33.
- (2) The calculation method used for (1) must comply with ANSI/ASHRAE Standard 140.

JIV3	Verification using a reference building	
Noted	(1) For a Class 3, 5, 6, 7, 8 or 9 building or common area of a Class 2 building, compliance with JIP1 is verified when— (a) it is determined that the annual greenhouse gas emissions of the proposed building are not more than the annual greenhouse gas emissions of a reference building when— (i) the proposed building is modelled with the proposed services; and (ii) the proposed building is modelled with the same services as the reference building; and (b) in the proposed building, a thermal comfort level of between a Predicted Mean Vote of -1 to +1 is achieved across not less than 95% of the floor area of all occupied zones for not less than 98% of the annual hours of operation of the building; and (c) the building complies with the additional requirements in Specification 33. (2) The annual greenhouse gas emissions of the proposed building may be offset by— (a) renewable energy generated and used on site; and (b) another process such as reclaimed energy, used on site. (3) The calculation method used for (1) and (2) must comply with— (a) ANSI/ASHRAE Standard 140; and (b) Specification 34	This clause is for informational purposes only, and no additional action is required.
JIV4	Building envelope sealing	
Noted	(1) Compliance with JIP1(e) and JIP2 is verified for building envelope sealing when the envelope is sealed at an air permeability rate, tested in accordance with Method 1 of AS/NZS ISO 9972, of not more than— (a) for a Class 2 building or a Class 4 part of a building, 10 m³/hr.m² at 50 Pa reference pressure; or (b) for a Class 5, 6, 8 or 9a or 9b building, other than a ward area, in climate zones 1, 7 and 8, 5 m³/hr.m² at 50 Pa reference pressure; or (c) for a Class 3 or 9c building, or a Class 9a ward area in climate zones 1, 3, 4, 6, 7 and 8, 5 m³/hr.m² at 50 Pa reference pressure.	This clause is for informational purposes only, and no additional action is required.

- (2) In a sole-occupancy unit of a Class 2 building or a Class 4 part of a building, where an air permeability rate of not more than 5 m³/hr.m² at 50 Pa reference pressure is achieved—
- (a) a mechanical ventilation system must be provided that—
 - (i) can be manually overridden; and
 - (ii) provides outdoor air, either—
 - (A) continuously; or
 - (B) intermittently, where the system has controls that enable operation for not less than 25 per cent of each 4 hour segment; and
 - (iii) provides a flow rate not less than that achieved with the following formula: , where—
 - (A) Q = the required air flow rate (L/s); and
 - (B) A = the total area of the sole-occupancy unit of a Class 2 or Class 4 part of a building (m²); and
 - (C) N = the number of bedrooms in the sole-occupancy unit of a Class 2 or Class 4 part of a building; and
 - (D) p = the fraction of time within each 4 hour segment that the system is operational; and
 - (b) any space with a solid-fuel burning combustion appliance must be ventilated with permanent openings directly to outside with a free area of not less than half of the cross-sectional area of the appliance's flue; and
 - (c) any space with a gas-fueled combustion appliance must be ventilated in accordance with—
 - (i) clause 6.4 of AS/NZS 5601.1; and
 - (ii) clause 6.4.5 of AS/NZS 5601.1.
- (3) For the purposes of (2)(c), the volume of the space is considered to be 1 m³ for determining ventilation requirements.

JIV5	Verification using a reference building for a Class 2 sole-occupancy unit	
Noted	(1) Compliance with JIP2 is verified when each Class 2 sole-occupancy unit of a proposed building— (a) in climate zones 3, 4, 5, 6, 7 and 8, has a heating load less than or equal to— (i) that of a reference building; and (ii) 120% of JIP2(1); and (b) in climate zones 1, 2, 3, 4 and 5, has a cooling load less than or equal to— (i) that of a reference building; and (ii) 120% of JIP2(2); and (c) complies with the additional requirements in Specifications 33 and 45 as applicable.	This clause is for informational purposes only, and no additional action is required.

(2) Compliance with JIP3 is determined when the energy value of the domestic services, including all centralised domestic services infrastructure, of a proposed building is less than that of a reference building when—

(a) each sole-occupancy unit of a reference building has—

(i) a 3-star ducted air-to-air heat pump, rated under the 2019 GEMS determination, heating all spaces that are provided with heating; and

(ii) a 3-star ducted heat pump, rated under the 2019 GEMS determination, cooling all spaces that are provided with cooling; and

(iii) a 5-star instantaneous gas water heater, rated under the 2017 GEMS determination, providing all domestic heated water; and

(iv) a lighting power density of 4 W/m² serving all internal spaces that are provided with artificial lighting; and

(b) the proposed building and a reference building comply with the additional requirements in Specifications 33 and 45 as applicable.

(3) The calculation method used for (1) and (2) must—

(a) comply with ANSI/ASHRAE Standard 140; and

(b) not be house energy rating software.

Part J2 – Energy Efficiency

Clause	Reference	Comment
NSW J2D2	Application of Section J	
Noted	(1) For a Class 3 and 5 to 9 building, Performance Requirement NSW JIP1 is satisfied by complying with— (a) Part J4, for the building fabric; and (b) Part J5, for building sealing; and (c) Part J6, for air-conditioning and ventilation; and (d) Part J7, for artificial lighting and power; and (e) Part J8, for heated water supply and swimming pool and spa pool plant; and (f) J9D3, for facilities for energy monitoring. (2) For a sole-occupancy unit of a Class 2 building or a Class 4 part of a building, Performance Requirement NSW JIP5 is satisfied by complying with— (a) J3D5 and J3D6, for thermal breaks; and (b) J4D3, for general thermal construction; and	This clause is for informational purposes only, and no additional action is required.

- (c) J3D10(3), J3D10(5) and J3D10(6), for floor edge insulation.
- (3) For a Class 2 building or a Class 4 part of a building, Performance Requirement NSW JIP6 is satisfied by complying with Part J5 for building sealing.
- (4) For a Class 2 building or a Class 4 part of a building, Performance Requirement NSW JIP7 is satisfied by complying with—
- (a) Part J6, for air-conditioning and ventilation; and
- (b) J8D2, for heated water supply; and
- (c) J9D3, for facilities for energy monitoring.
- (5) For a Class 2 to 9 building, Performance Requirement NSW JIP4 is satisfied by complying with J9D4 and J9D5.

Part J3 – Elemental provisions for a sole-occupancy unit of a Class 2 building or Class 4 part of a building.

Clause	Reference	Comment
J3D2	Application of Part	
Noted	The Deemed-to-Satisfy Provisions of this Part apply to building elements forming the envelope of a Class 2 to 9 building other than J3D3(5), J3D4, J3D5, J3D6 and J3D7(1) which do not apply to a Class 2 sole-occupancy unit or a Class 4 part of a building.	This clause is for informational purposes only, and no additional action is required.
J3D6	Wall thermal breaks of a sole-occupancy unit of a Class 2 building or a Class 4 part of a building	
CRA	(1) A metal-framed wall that forms part of the building envelope must have a thermal break, consisting of a material with an R-Value of not less than R0.2, installed at all points of contact between the external cladding and the metal frame if the wall— (a) does not have a wall lining or has a wall lining that is fixed directly to the same metal frame; and (b) is clad with weatherboards, fibre-cement or the like, or metal sheeting fixed to a metal frame. (2) The requirements of (1) do not apply to walls constructed using insulated sandwich panels.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.
NSW J3D10	Floors of a sole-occupancy unit of a Class 2 building or a Class 4 part of a building	
CRA	NSW (1) This clause does not apply in NSW. (2) This clause does not apply in NSW. (3) A concrete slab-on-ground with an in-slab or in-screed heating or cooling system must have insulation with an RValue at least 1.0 installed around the vertical edge of its perimeter. (4) This clause does not apply in NSW.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.

- (5) Insulation required by (3), (4)(a)(i) and (4)(b)(i) must—
 - (a) be water resistant; and
 - (b) be continuous from the adjacent finished ground level—
 - (i) to a depth of not less than 300 mm; or
 - (ii) for at least the full depth of the vertical edge of the concrete slab-on-ground.
- (6) The requirements of (3) do not apply to an in-screed heating or cooling system used solely in a bathroom, amenity area or the like

Part J4 – Building Fabric		
Clause	Reference	Comment
J4D2	Application of Part	
Noted	The Deemed-to-Satisfy Provisions of this Part apply to building elements forming the envelope of a Class 2 to 9 building other than J4D3(5), J4D4, J4D5, J4D6 and J4D7 which do not apply to a Class 2 sole-occupancy unit or a Class 4 part of a building.	This clause is for informational purposes only, and no additional action is required.
NSW J4D3	Thermal construction – general	
CRA	(1) Where required, insulation must comply with AS/NZS 4859.1 and be installed so that it— (a) 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 (b) forms a continuous barrier with ceilings, walls, bulkheads, floors or the like that inherently contribute to the thermal barrier; and (c) does not affect the safe or effective operation of a service or fitting. (2) Where required, reflective insulation must be installed with— (a) the necessary airspace to achieve the required R-Value between a reflective side of the reflective insulation and a building lining or cladding; and (b) the reflective insulation closely fitted against any penetration, door or window opening; and (c) the reflective insulation adequately supported by framing members; and (d) each adjoining sheet of roll membrane being— (i) overlapped not less than 50 mm; or (ii) taped together. (3) Where required, bulk insulation must be installed so that— (a) 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	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.

(b) in a ceiling, where there is no bulk insulation or reflective insulation in the wall beneath, it overlaps the wall by not less than 50 mm.

(4) Roof, ceiling, wall and floor materials, and associated surfaces are deemed to have the thermal properties listed in Specification 36.

(5) The required Total R-Value and Total System U-Value, including allowance for thermal bridging, must be—

(a) calculated in accordance with AS/NZS 4859.2 for a roof or floor; or

(b) determined in accordance with Specification 37 for wall-glazing construction; or

(c) determined in accordance with Specification 39 or Section 3.5 of CIBSE Guide A for soil or sub-floor spaces.

J4D4	Roof and ceiling construction	
CRA	(1) A roof or ceiling must achieve a Total R-Value greater than or equal to— (a) in climate zones 1, 2, 3, 4 and 5, R3.7 for a downward direction of heat flow; and (b) in climate zone 6, R3.2 for a downward direction of heat flow; and (c) in climate zone 7, R3.7 for an upward direction of heat flow; and (d) in climate zone 8, R4.8 for an upward direction of heat flow. (2) In climate zones 1, 2, 3, 4, 5, 6 and 7, the solar absorptance of the upper surface of a roof must be not more than 0.45.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.
J4D5	Roof lights	
N/A	Roof lights must have— (a) a total area of not more than 5% of the floor area of the room or space served; and (b) transparent and translucent elements, including any imperforate ceiling diffuser, with a combined performance of— (i) for Total system SHGC, in accordance with Table J4D5; and (ii) for Total system U-Value, not more than U3.9.	Not applicable – this clause is not applicable to this project. No action required. No roof lights are proposed.
J4D6	Walls and glazing	
CRA	(1) The Total System U-Value of wall-glazing construction, including wall-glazing construction which wholly or partly forms the envelope internally, must not be greater than— (a) for a Class 5, 6, 7, 8 or 9b building or a Class 9a building other than a ward area, U2.0; and (b) for a Class 3 or 9c building or a Class 9a ward area— (i) in climate zones 1, 3, 4, 6 or 7, U1.1; or	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.

- (ii) in climate zones 2 or 5, U2.0; or
- (iii) in climate zone 8, U0.9.
- (2) The Total System U-Value of display glazing must not be greater than U5.8.
- (3) The Total System U-Value of wall-glazing construction must be calculated in accordance with Specification 37.
- (4) Wall components of a wall-glazing construction must achieve a minimum Total R-Value of—
 - (a) where the wall is less than 80% of the area of the wall-glazing construction, R1.0; or
 - (b) where the wall is 80% or more of the area of the wall-glazing construction, the value specified in NSW Table J4D6a.
- (5) The solar admittance of externally facing wall-glazing construction, excluding wall-glazing construction which is wholly internal, must not be greater than—
 - (a) for a Class 5, 6, 7, 8 or 9b building or a Class 9a building other than a ward area, the values specified in Table J4D6b; and
 - (b) for a Class 3 or 9c building or a Class 9a ward area, the values specified in NSW Table J4D6c.
- (6) The solar admittance of a wall-glazing construction must be calculated in accordance with Specification 37.
- (7) The Total system SHGC of display glazing must not be greater than 0.81 divided by the applicable shading factor specified in S37C7.

Note: Refer to Tables J4D6a, b, and c directly from the BCA.

J4D7	Floors	
CRA	(1) A floor must achieve the Total R-Value specified in Table J4D7. (2) For the purposes of (1), a slab-on-ground that does not have an in-slab heating or cooling system is considered to achieve a Total R-Value of R2.0, except— (a) in climate zone 8; or (b) a Class 3, Class 9a ward area or Class 9b building in climate zone 7 that has a floor area to floor perimeter ratio of less than or equal to 2. (3) 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— (a) is a concrete slab-on-ground in climate zone 8; or (b) has an in-slab or in-screed heating or cooling system, except where used solely in a bathroom, amenity area or the like. (4) Insulation required by (3) for a concrete slab-on-ground must—	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.

- (a) be water resistant; and
- (b) be continuous from the adjacent finished ground level—
 - (i) to a depth not less than 300 mm; or
 - (ii) for the full depth of the vertical edge of the concrete slab-on-ground.

Note: Refer to Table J4D7 directly from the BCA.

Part J5 – Building Sealing		
Clause	Reference	Comment
NSW J5D2	Application of Part	
Noted	The Deemed-to-Satisfy Provisions of this Part apply to elements forming the envelope of a Class 2 to 9 building, other than— (a) a building in climate zones 1, 2, 3 and 5 where the only means of air-conditioning is by using an evaporative cooler; or (b) 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 (c) in a Class 3 or Class 5 to 9 building, a building or space where the mechanical ventilation required by Part F6 provides sufficient pressurisation to prevent infiltration; or (d) parts of buildings that cannot be fully enclosed.	This clause is for informational purposes only, and no additional action is required.
J5D4	Roof lights	
N/A	(1) A roof light must be sealed, or capable of being sealed, when serving— (a) a conditioned space; or (b) a habitable room in climate zones 4, 5, 6, 7 or 8. (2) A roof light required by (1) to be sealed, or capable of being sealed, must be constructed with— (a) an imperforate ceiling diffuser or the like installed at the ceiling or internal lining level; or (b) a weatherproof seal; or (c) a shutter system readily operated either manually, mechanically or electronically by the occupant.	Not applicable – this clause is not applicable to this project. No action required. No roof lights are proposed.
J5D5	Windows and doors	
CRA	(1) A door, openable window or the like must be sealed— (a) when forming part of the envelope; or (b) in climate zones 4, 5, 6, 7 or 8. (2) The requirements of (1) do not apply to—	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.

- (a) a window complying with AS 2047; or
- (b) a fire door or smoke door; or
- (c) a roller shutter door, roller shutter grille or other security door or device installed only for out-of-hours security.
- (3) A seal to restrict air infiltration—
 - (a) for the bottom edge of a door, must be a draft protection device; and
 - (b) for the other edges of a door or the edges of an openable window or other such opening, may be a foam or rubber compression strip, fibrous seal or the like.
- (4) An entrance to a building, if leading to a conditioned space must have an airlock, self-closing door, rapid roller door, revolving door or the like, other than—
 - (a) where the conditioned space has a floor area of not more than 50 m²; or
 - (b) where a café, restaurant, open front shop or the like has—
 - (i) a 3 m deep un-conditioned zone between the main entrance, including an open front, and the conditioned space; and
 - (ii) at all other entrances to the café, restaurant, open front shop or the like, self-closing doors.
- (5) A loading dock entrance, if leading to a conditioned space, must be fitted with a rapid roller door or the like.

J5D6	Exhaust fans	
CRA	An 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.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.
J5D7	Construction of ceilings, walls and floors	
CRA	(1) 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 (2)— (a) when forming part of the envelope; or (b) in climate zones 4, 5, 6, 7 or 8. (2) Construction required by (1) must be— (a) enclosed by internal lining systems that are close fitting at ceiling, wall and floor junctions; or (b) sealed at junctions and penetrations with— (i) close fitting architrave, skirting or cornice; or (ii) expanding foam, rubber compressible strip, caulking or the like.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.

(3) The requirements of (1) do not apply to openings, grilles or the like required for smoke hazard management.

J5D8	Evaporative coolers	
CRA	An evaporative cooler must be fitted with a self-closing damper or the like— (a) when serving a heated space; or (b) in climate zones 4, 5, 6, 7 or 8.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.
Part J6 – Air-conditioning and ventilation		
Clause	Reference	Comment
NSW J6D2	Application of Part	
Noted	(1) The Deemed-to-Satisfy Provisions of this Part do not apply to a Class 8 electricity network substation. (2) J6D10 does not apply to a Class 2 building or a Class 4 part of a building.	This clause is for informational purposes only, and no additional action is required.
J6D3	Air-conditioning system control	
CRA	(1) An air-conditioning system— (a) must be capable of being deactivated when the building or part of a building served by that system is not occupied; and (b) when serving more than one air-conditioning zone or area with different heating or cooling needs, must— (i) thermostatically control the temperature of each zone or area; and (ii) not control the temperature by mixing actively heated air and actively cooled air; and (iii) limit reheating to not more than— (A) for a fixed supply air rate, a 7.5 K rise in temperature; and (B) 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 (c) 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 airconditioning system is greater than or equal to the flow rates in Table J6D3; and (d) which contains more than one water heater, chiller or coil, must be capable of stopping the flow of water to those not operating; and	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.

- (e) 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
 - (f) 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
 - (g) 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
 - (h) must have a control dead band of not less than 2°C, except where a smaller range is required for specialised applications; and
 - (i) must be provided with balancing dampers and balancing valves, as required to meet the needs of the system at its maximum operating condition, that ensure the maximum design air or fluid flow is achieved but not exceeded by more than 15% above design at each—
 - (i) component; or
 - (ii) group of components operating under a common control in a system containing multiple components;and
 - (j) 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
 - (k) must have automatic variable temperature operation of heated water and chilled water circuits; and
 - (l) when deactivated, must close any motorised outdoor air or return air damper that is not otherwise being actively controlled.
- (2) 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.
- (3) Time switches — the following applies:
- (a) A time switch must be provided to control—
 - (i) an air-conditioning system of more than 2 kW_r; and
 - (ii) a heater of more than 1 kW_{heating} used for air-conditioning.
 - (b) The time switch must be capable of switching electric power on and off at variable pre-programmed times and on variable pre-programmed days.
 - (c) The requirements of (a) and (b) do not apply to—
 - (i) an air-conditioning system that serves—
 - (A) only one sole-occupancy unit in a Class 2, 3 or 9c building; or
 - (B) a Class 4 part of a building; or

(ii) a conditioned space where air-conditioning is needed for 24 hour continuous use.

J6D4	Mechanical ventilation system control	
CRA	(1) 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— (a) be capable of being deactivated when the building or part of the building served by that system is not occupied; and (b) when serving a conditioned space, except in periods when evaporative cooling is being used— (i) where specified in Table J6D4, have— (A) an energy reclaiming system that preconditions outdoor air at a minimum sensible heat transfer effectiveness of 60%; or (B) demand control ventilation in accordance with AS 1668.2 if appropriate to the application; and (ii) not exceed the minimum outdoor air quantity required by Part F6 by more than 20%, except where— (A) additional unconditioned outdoor air is supplied for free cooling; or (B) additional mechanical ventilation is needed to balance the required exhaust or process exhaust; or (C) an energy reclaiming system preconditions all the outdoor air; and (c) for an airflow of more than 1000 L/s, have a variable speed fan unless the downstream airflow is required by Part F6 to be constant. (2) 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. (3) Carpark exhaust systems — Carpark exhaust systems must have a control system in accordance with— (a) clause 4.11.2 of AS 1668.2; or (b) clause 4.11.3 of AS 1668.2. (4) Time switches — The following applies: (a) A time switch must be provided to a mechanical ventilation system with an air flow rate of more than 1000 L/s. (b) The time switch must be capable of switching electric power on and off at variable pre-programmed times and on variable pre-programmed days. (c) The requirements of (a) and (b) do not apply to— (i) a mechanical ventilation system that serves— (A) only one sole-occupancy unit in a Class 2, 3 or 9c building; or	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.

- (B) a Class 4 part of a building; or
(ii) a building where mechanical ventilation is needed for 24 hour occupancy
Note: Refer to Table J6D4 directly from the BCA.

J6D5	Fans and duct systems	
CRA	(1) Fans, ductwork and duct components that form part of an air-conditioning system or mechanical ventilation system must— (a) separately comply with (2), (3), (4) and (5); or (b) achieve a fan motor input power per unit of flowrate lower than the fan motor input power per unit of flowrate achieved when applying (2), (3), (4) and (5) together. (2) Fans: (a) Fans in systems that have a static pressure of not more than 200 Pa must have an efficiency at the full load operating point not less than the efficiency calculated with the following formula: $n_{min} = 0.13 \times \ln(p) - 0.3$ (a) In the formula at (a)— (i) n_{min} = the minimum required system static efficiency for installation type A or C or the minimum required system total efficiency installation type B or D; and (ii) p = the static pressure of the system (Pa); and (iii) $\ln$ = natural logarithm. (b) Fans in systems that have a static pressure above 200 Pa must have an efficiency at the full load operating point not less than the efficiency calculated with the following formula: $n_{min} = 0.85 \times (a \times \ln(P) - b + N) / 100$ (c) In the formula at (c) — (i) n_{min} = the minimum required system static efficiency for installation type A or C or the minimum required system total efficiency installation type B or D; and (ii) p = the motor input power of the fan; and (iii) N = the minimum performance grade obtained from Table J6D5a; and (iv) a = regression coefficient a, obtained from Table J6D5b; and (v) b = regression coefficient b, obtained from Table J6D5c; and (vi) $\ln$ = natural logarithm. (d) The requirements of (a), (b), (c) and (d) do not apply to fans that need to be explosion proof. (3) Ductwork:	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.

- (a) The pressure drop in the index run across all straight sections of rigid ductwork and all sections of flexible ductwork must not exceed 1 Pa/m when averaged over the entire length of straight rigid duct and flexible duct. The pressure drop of flexible ductwork sections may be calculated as if the flexible ductwork is laid straight.
- (b) Flexible ductwork must not account for more than 6 m in length in any duct run.
- (c) The upstream connection to ductwork bends, elbows and tees in the index run must have an equivalent diameter to the connected duct.
- (d) Turning vanes must be included in all rigid ductwork elbows of 90° or more acute than 90° in the index run except where—
 - (i) the inclusion of turning vanes presents a fouling risk; or
 - (ii) a long radius bend in accordance with AS 4254.2 is used.
- (4) Ductwork components in the index run:
 - (a) The pressure drop across a coil must not exceed the value specified in Table J6D5d.
 - (b) A high efficiency particulate arrestance (HEPA) air filter must not exceed the higher of—
 - (i) a pressure drop of 200 Pa when clean; or
 - (ii) the filter design pressure drop when clean at an air velocity of 1.5 m/s.
 - (c) Any other air filter must not exceed—
 - (i) the pressure drop specified in Table J6D5e when clean; or
 - (ii) the filter design pressure drop when clean at an air velocity of 2.5 m/s.
 - (d) The pressure drop across intake louvres must not exceed the higher of—
 - (i) for single stage louvres, 30 Pa; and
 - (ii) for two stage louvres, 60 Pa; and
 - (iii) for acoustic louvres, 50 Pa; and
 - (iv) for other non-weatherproof louvres, 30 Pa.
 - (e) The pressure drop across a variable air volume box, with the damper in the fully open position, must not exceed—
 - (i) for units with electric reheat, 100 Pa; and
 - (ii) for other units, 25 Pa not including coil pressure losses.
 - (f) Rooftop cowls must not exceed a pressure drop of 30 Pa.
 - (g) Attenuators must not exceed a pressure drop of 40 Pa.
 - (h) Fire dampers must not exceed a pressure drop of 15 Pa when open.

- (i) Balancing and control dampers in the index run must not exceed a pressure drop of 25 Pa when in the fully open position.
- (j) Supply air diffusers and grilles must not exceed a pressure drop of 40 Pa.
- (k) Exhaust grilles must not exceed a pressure drop of 30 Pa.
- (l) Transfer ducts must not exceed a pressure drop of 12 Pa.
- (m) Door grilles must not exceed a pressure drop of 12 Pa.
- (n) Active chilled beams must not exceed a pressure drop of 150 Pa.
- (5) The requirements of (1), (2), (3) and (4) do not apply to—
 - (a) fans in unducted air-conditioning systems with a supply air capacity of less than 1000 L/s; and
 - (b) smoke spill fans, except where also used for air-conditioning or ventilation; and
 - (c) the power for process-related components; and
 - (d) kitchen exhaust systems

Note: Refer to Tables J6D5a, b, c, d & e directly from the BCA.

J6D6	Ductwork insulation	
CRA	(1) Ductwork and fittings in an air-conditioning system must be provided with insulation— (a) complying with AS/NZS 4859.1; and (b) having an insulation R-Value greater than or equal to— (i) for flexible ductwork, 1.0; or (ii) for cushion boxes, that of the connecting ductwork; or (iii) that specified in Table J6D6. (2) Insulation must— (a) be protected against the effects of weather and sunlight; and (b) be installed so that it— (i) abuts adjoining insulation to form a continuous barrier; and (ii) maintains its position and thickness, other than at flanges and supports; and (c) when conveying cooled air— (i) be protected by a vapour barrier on the outside of the insulation; and (ii) where the vapour barrier is a membrane, be installed so that adjoining sheets of the membrane— (A) overlap by at least 50 mm; and (B) are bonded or taped together. (3) The requirements of (1) do not apply to— (a) ductwork and fittings located within the only or last room served by the system; or	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.

- (b) fittings that form part of the interface with the conditioned space; or
- (c) return air ductwork in, or passing through, a conditioned space; or
- (d) ductwork for outdoor air and exhaust air associated with an air-conditioning system; or
- (e) the floor of an in-situ air-handling unit; or
- (f) packaged air conditioners, split systems, and variable refrigerant flow air-conditioning equipment complying with MEPS; or
- (g) flexible fan connections.
- (4) For the purposes of (1), (2) and (3), fittings—
- (a) include non-active components of a ductwork system such as cushion boxes; and
- (b) exclude active components such as air-handling unit components.

Note: Refer to Table J6D6 directly from the BCA.

J6D7	Ductwork ceiling	
CRA	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.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.
J6D8	Pump systems	
CRA	(1) General – Pumps and pipework that form part of an air-conditioning system must either— (a) separately comply with (2), (3) and (4); or (b) achieve a pump motor power per unit of flowrate lower than the pump motor power per unit of flowrate achieved when applying (2), (3) and (4) together. (2) Circulator pumps – A glandless impeller pump, with a rated hydraulic power output of less than 2.5 kW and that is used in closed loop systems must have an energy efficiency index (EEI) not more than 0.27 calculated in accordance with European Union Commission Regulation No. 622/2012. (3) Other pumps – Pumps that are in accordance with Articles 1 and 2 of European Union Commission Regulation No. 547/2012 must have a minimum efficiency index (MEI) of 0.4 or more when calculated in accordance with European Union Commission Regulation No. 547/2012. (4) Pipework – Straight segments of pipework along the index run, forming part of an air-conditioning system— (a) in pipework systems that do not have branches and have the same flow rate throughout the entire pipe network, must achieve an average pressure drop of not more than— (i) for constant speed systems, the values nominated in Table J6D8a; or	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.

- (ii) for variable speed systems, the values nominated in Table J6D8b; or
- (b) in any other pipework system, must achieve an average pressure drop of not more than—
- (i) for constant speed systems, the values nominated in Table J6D8c; or
- (ii) for variable speed systems, the values nominated in Table J6D8d.
- (5) The requirements of (4) do not apply—
- (a) to valves and fittings; or
- (b) where the smallest pipe size compliant with (4) results in a velocity of 0.7 m/s or less at design flow.

Note: Refer to Tables J6D8a, b, c & d directly from the BCA

J6D9	Pipework insulation	
CRA	(1) 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— (a) complying with AS/NZS 4859.1; and (b) for piping of heating and cooling fluids, having an insulation R-Value in accordance with Table J6D9a; and (c) for vessels, heat exchangers or tanks, having an insulation R-Value in accordance with Table J6D9b; and (d) 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. (2) Insulation must— (a) be protected against the effects of weather and sunlight; and (b) be able to withstand the temperatures within the piping, vessel, heat exchanger or tank. (3) 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. (4) The requirements of (1) and (2) do not apply to piping, vessels or heat exchangers— (a) 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 (b) encased within a concrete slab or panel which is part of a heating or cooling system; or (c) supplied as an integral part of a chiller, boiler or unitary air-conditioner complying with the requirements of J6D10, J6D11 and J6D12; or (d) inside an air-handling unit, fan-coil unit, or the like. (5) For the purposes of (1), (2), (3) and (4)—	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.

- (a) heating fluids include refrigerant, heated water, steam and condensate; and
- (b) cooling fluids include refrigerant, chilled water, brines and glycol mixtures, but do not include condenser cooling water.

Note: Refer to Tables J6D9a & b directly from the BCA

NSW J6D10	Space heating	
CRA	(1) A heater used for air-conditioning or as part of an air-conditioning system must be— (a) a solar heater; or (b) a gas heater; or (c) a heat pump heater; or (d) a heater using reclaimed heat from another process such as reject heat from a refrigeration plant; or (e) an electric heater if— (i) the heating capacity is not more than— (A) 10 W/m² of the floor area of the conditioned space in climate zone 1; or (B) 40 W/m² of the floor area of the conditioned space in climate zone 2; or (C) the value specified in Table J6D10 where reticulated gas is not available at the allotment boundary; or (ii) 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 (iii) the in-duct heater complies with J6D3(1)(b)(iii); or (f) any combination of (a) to (e). (2) An electric heater may be used for heating a bathroom in a Class 3, 9a or 9c building if the heating capacity is not more than 1.2 kW and the heater has a timer. (3) A fixed heating or cooling appliance that moderates the temperature of an outdoor space must be configured to automatically shut down when— (a) there are no occupants in the space served; or (b) a period of one hour has elapsed since the last activation of the heater; or (c) the space served has reached the design temperature. (4) A gas water heater, that is used as part of an air-conditioning system, must— (a) if rated to consume 500 MJ/hour of gas or less, achieve a minimum gross thermal efficiency of 86%; or (b) if rated to consume more than 500 MJ/hour of gas, achieve a minimum gross thermal efficiency of 90%.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.
Note: Refer to Table J6D10 directly from the BCA.		

J6D11	Refrigerant chillers	
CRA	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 J6D11a or Table J6D11b when determined in accordance with AHRI 551/591. Note: Refer to Tables J6D11a & b directly from the BCA.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.
J6D12	Unitary air-conditioning equipment	
CRA	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 kW _r — (a) where water cooled, have a minimum energy efficiency ratio of 4.0 $W_r/W_{input\ power}$ 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 $W_r/W_{input\ power}$ 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.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.
J6D13	Heat rejection equipment	
CRA	(1) The motor rated power of a fan in a cooling tower, closed circuit cooler or evaporative condenser must not exceed the allowances in Table J6D13. (2) 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— (a) a refrigerant chiller in an air-conditioning system that complies with the energy efficiency ratios in J6D11; or (b) packaged air-conditioners, split systems, and variable refrigerant flow air-conditioning equipment that complies with the energy efficiency ratios in J6D12. Note: Refer to Table J6D13 directly from the BCA.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.

Part J7 – Artificial lighting and power

Clause	Reference	Comment
NSW J7D2	Application part	
Noted	(1) The Deemed-to-Satisfy Provisions of this Part do not apply to a Class 2 building or a Class 4 part of a building. (2) J7D3, J7D4 and J7D6(1)(b) do not apply to a Class 8 electricity network substation.	This clause is for informational purposes only, and no additional action is required.

NSW J7D3	Artificial lighting	
CRA	(1) This subclause does not apply in NSW. NSW J7D3(2) (2) In a Class 3 or Class 5 to 9 building— (a) 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 J7D3a; and (b) the aggregate design illumination power load in (a) is the sum of the design illumination power loads in each of the spaces served; and (c) where there are multiple lighting systems serving the same space, the design illumination power load for (b) is— (i) the total illumination power load of all systems; or (ii) where a control system permits only one system to operate at a time based on the highest illumination power load; or determined by the formula— $[H \times T/2 - P \times (100 - T/2)] / 100$ (d) In the formula at (c)(ii)— (i) H = the highest illumination power load; and (ii) T = the time for which the maximum illumination power load will occur, expressed as a percentage; and (iii) P = the predominant illumination power load. (3) The requirements of (1) and (2) do not apply to the following: (a) Emergency lighting provided in accordance with Part E4. (b) Signage, display lighting within cabinets and display cases that are fixed in place. (c) Lighting for accommodation within the residential part of a detention centre. (d) A heater where the heater also emits light, such as in bathrooms. (e) Lighting of a specialist process nature such as in a surgical operating theatre, fume cupboard or clean workstation. (f) Lighting of performances such as theatrical or sporting. (g) 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. (h) Lighting installed solely to provide photosynthetically active radiation for indoor plant growth on green walls and the like. (4) For the purposes of Table J7D3b, the following control devices must comply with Specification 40:	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.

- (a) Lighting timers.
- (b) Motion detectors.
- (c) Daylight sensors and dynamic lighting control devices.

Note: Refer to Table J7D3a, b & c directly from the BCA.

NSW J7D4	Interior artificial lighting and power control	
CRA	(1) All artificial lighting of a room or space must be individually operated by— (a) a switch; or (b) other control device; or (c) a combination of (a) and (b). (2) An occupant activated device, such as a room security device, a motion detector in accordance with Specification 40, 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. (3) An artificial lighting switch or other control device in (1) must— (a) if an artificial lighting switch, be located in a visible and easily accessed position— (i) in the room or space being switched; or (ii) in an adjacent room or space from where 90% of the lighting being switched is visible; and (b) for other than a single functional space such as an auditorium, theatre, swimming pool, sporting stadium or warehouse— (i) if in a Class 5 building or a Class 8 laboratory, not operate lighting for an area of more than 250 m²; or (ii) if in a Class 3, 6, 7, 8 (other than a laboratory) or 9 building, not operate lighting for an area of more than— (A) 250 m² for a space of not more than 2000 m²; or (B) 1000 m² for a space of more than 2000 m². (4) 95% of the light fittings in a building or storey of a building, other than a Class 3 building of more than 250 m² must be controlled by— (a) a time switch in accordance with Specification 40; or (b) an occupant sensing device such as— (i) a security key card reader that registers a person entering and leaving the building; or (ii) a motion detector in accordance with Specification 40.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.

(5) In a Class 5, 6 or 8 building of more than 250 m², 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—

- (a) the room containing the natural lighting zone is less than 20 m²; or
- (b) the room's natural lighting zone contains less than 4 luminaires; or
- (c) 70% or more of the luminaires in the room are in the natural lighting zone.

(6) Artificial lighting in a fire-isolated stairway, fire-isolated passageway or fire-isolated ramp, must be controlled by a motion detector in accordance with Specification 40.

(7) Artificial lighting in a foyer, corridor and other circulation spaces—

- (a) of more than 250 W within a single zone; and
- (b) adjacent to windows,

must be controlled by a daylight sensor and dynamic lighting control device in accordance with Specification 40.

(8) 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 40.

(9) The requirements of (1), (2), (3), (4), (5), (6), (7) and (8) do not apply to the following:

- (a) Emergency lighting in accordance with Part E4.
- (b) 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.

(10) The requirements of (4) do not apply to the following:

- (a) Artificial lighting in a space where the sudden loss of artificial lighting would cause an unsafe situation such as—
 - (i) in a patient care area in a Class 9a building or in a Class 9c building; or
 - (ii) a plant room or lift motor room; or
 - (iii) a workshop where power tools are used.
- (b) A heater where the heater also emits light, such as in bathrooms.

J7D5	Interior decorative and display lighting
CRA	(1) Interior decorative and display lighting, such as for a foyer mural or art display, must be controlled— (a) separately from other artificial lighting; and (b) 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 Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.

- (c) by a time switch in accordance with Specification 40 where the display lighting exceeds 1 kW.
(2) Window display lighting must be controlled separately from other display lighting.

J7D6	Exterior artificial lighting	
CRA	(1) Exterior artificial lighting attached to or directed at the facade of a building, must— (a) be controlled by— (i) a daylight sensor; or (ii) 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 (b) when the total lighting load exceeds 100 W— (i) use LED luminaires for 90% of the total lighting load; or (ii) be controlled by a motion detector in accordance with Specification 40; or (iii) when used for decorative purposes, such as façade lighting or signage lighting, have a separate time switch in accordance with Specification 40. (2) The requirements of (1)(b) do not apply to the following: (a) Emergency lighting in accordance with Part E4. (b) Lighting around a detention centre.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.
J7D7	Boiling water and chilled water storage units	
CRA	Power supply to a boiling water or chilled water storage unit must be controlled by a time switch in accordance with Specification 40.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.
J7D8	Lifts	
CRA	Lifts must— (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 J7D8a; and (c) achieve— (i) the energy efficiency class in Table J7D8b; or (ii) if a dedicated goods lift, energy efficiency class D in accordance with ISO 25745-2. Note: Refer to Table J7D8a & b directly from the BCA.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.

Part J8 – Heated water supply and swimming pool and spa pool plant		
Clause	Reference	Comment
J8D2	Heated water supply	
CRA	A heated water supply system for food preparation and sanitary purposes must be designed and installed in accordance with Part B2 of NCC Volume Three – Plumbing Code of Australia.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.
NSW J8D3	Swimming pool heating and pumping	
CRA	(1) Heating for a swimming pool must be by— (a) a solar heater; or (b) a heater using reclaimed heat from another process such as reject heat from a refrigeration plant; or (c) a geothermal heater; or (d) a gas heater that— (i) if rated to consume 500 MJ/hour or less, achieves a minimum gross thermal efficiency of 86%; or (ii) if rated to consume more than 500 MJ/hour, achieves a minimum gross thermal efficiency of 90%; or (e) a heat pump; or (f) a combination of (a) to (e). (2) Where some or all of the heating required by (1) is by a gas heater or a heat pump, the swimming pool must have— (a) a cover with a minimum R-Value of 0.05; and (b) a time switch to control the operation of the heater. (3) A time switch must be provided to control the operation of a circulation pump for a swimming pool. (4) Where required, a time switch must be capable of switching electric power on and off at variable pre-programmed times and on variable pre-programmed days. (5) Pipework carrying heated or chilled water for a swimming pool must comply with the insulation requirements of J6D9. (6) For the purpose of J8D3, a swimming pool does not include a spa pool.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary.

Part J9 – Energy monitoring and on-site distributes energy resources		
Clause	Reference	Comment
J9D2	Application part	
Noted	The Deemed-to-Satisfy Provisions of this Part do not apply— (a) within a sole-occupancy unit of a Class 2 building or a Class 4 part of a building; or (b) to a Class 8 electricity network substation.	This clause is for informational purposes only, and no additional action is required.
J9D3	Facilities for energy monitoring	
CRA	(1) A building or sole-occupancy unit with a floor area of more than 500 m² must have energy meters configured to record the time-of-use consumption of gas and electricity. (2) A building with a floor area of more than 2500 m² must have energy meters configured to enable individual time-of-use energy data recording, in accordance with (3), of— (a) air-conditioning plant including, where appropriate, heating plant, cooling plant and air handling fans; and (b) artificial lighting; and (c) appliance power; and (d) central hot water supply; and (e) internal transport devices including lifts, escalators and moving walkways where there is more than one serving the building; and (f) on-site renewable energy equipment; and (g) on-site electric vehicle charging equipment; and (h) on-site battery systems; and (i) other ancillary plant. (3) Energy meters required by (2) must be interlinked by a communication system that collates the time-of-use energy data to a single interface monitoring system where it can be stored, analysed and reviewed. (4) The provisions of (2) do not apply to energy meters serving— (a) a Class 2 building where the total floor area of the common areas is less than 500 m²; or (b) individual sole-occupancy units with a floor area of less than 2 500 m².	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary. The building has a floor area over 500m²; thus, energy monitoring device is required.

J9D4	Facilities for electric vehicle charging equipment	
CRA	(1) Subject to (2), a carpark associated with a Class 2, 3, 5, 6, 7b, 8 or 9 building must be provided with electrical distribution boards dedicated to electric vehicle charging— (a) in accordance with Table J9D4 in each storey of the carpark; and (b) labelled to indicate use for electric vehicle charging equipment. (2) Electrical distribution boards dedicated to serving electric vehicle charging in a carpark must— (a) be fitted with a charging control system with the ability to manage and schedule charging of electric vehicles in response to total building demand; and (b) when associated with a Class 2 building, have capacity for each circuit to support an electric vehicle charger able to deliver a minimum of 12 kWh from 11:00 pm to 7:00 am daily; and (c) when associated with a Class 5 to 9 building, have capacity for each circuit to support an electric vehicle charger able to deliver a minimum of 12 kWh from 9:00 am to 5:00 pm daily; and (d) when associated with a Class 3 building, have capacity for each circuit to support an electric vehicle charger able to deliver a minimum of 48 kWh from 11:00 pm to 7:00 am daily; and (e) be sized to support the future installation of a 7 kW (32 A) type 2 electric vehicle charger in— (i) 100% of the car parking spaces associated with a Class 2 building; or (ii) 10% of car parking spaces associated with a Class 5 or 6 building; or (iii) 20% of car parking spaces associated with a Class 3, 7b, 8 or 9 building; and (f) contain space of at least 36 mm width of DIN rail per outgoing circuit for individual sub-circuit electricity metering to record electricity use of electric vehicle charging equipment; and (g) be labelled to indicate the use of the space required by (f) is for the future installation of metering equipment.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary. Care is to be taken with the potential distribution boards upgrade due to the required provisions for future electric charging stations (100% car spaces). ESD Consultant to assess and confirm compliance.
J9D5	Facilities for solar photovoltaic and battery systems	
CRA	(1) The main electrical switchboard of a building must— (a) contain at least two empty three-phase circuit breaker slots and four DIN rail spaces labelled to indicate the use of each space for— (i) a solar photovoltaic system; and (ii) a battery system; and (b) be sized to accommodate the installation of solar photovoltaic panels producing their maximum electrical output on at least 20% of the building roof area.	Compliance required – Design aligns with DTS provisions. Compliance is achievable, subject to specialist confirmation where necessary. Ensure the roof remains capable to accommodate 20% minimum roof area for photo voltaic panels (solar panels) ESD Consultant to assess and confirm compliance.

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- (2) At least 20% of the roof area of a building must be left clear for the installation of solar photovoltaic panels, except for buildings—
- (a) with installed solar photovoltaic panels on—
 - (i) at least 20% of the roof area; or
 - (ii) an equivalent generation capacity elsewhere on-site; or
 - (b) where 100% of the roof area is shaded for more than 70% of daylight hours; or
 - (c) with a roof area of not more than 55 m² (c); or
 - (d) where more than 50% of the roof area is used as a terrace, carpark, roof garden, roof light or the like.
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End of table

Addendum B:

REVIEWED DOCUMENTATION

Reviewed Documentation

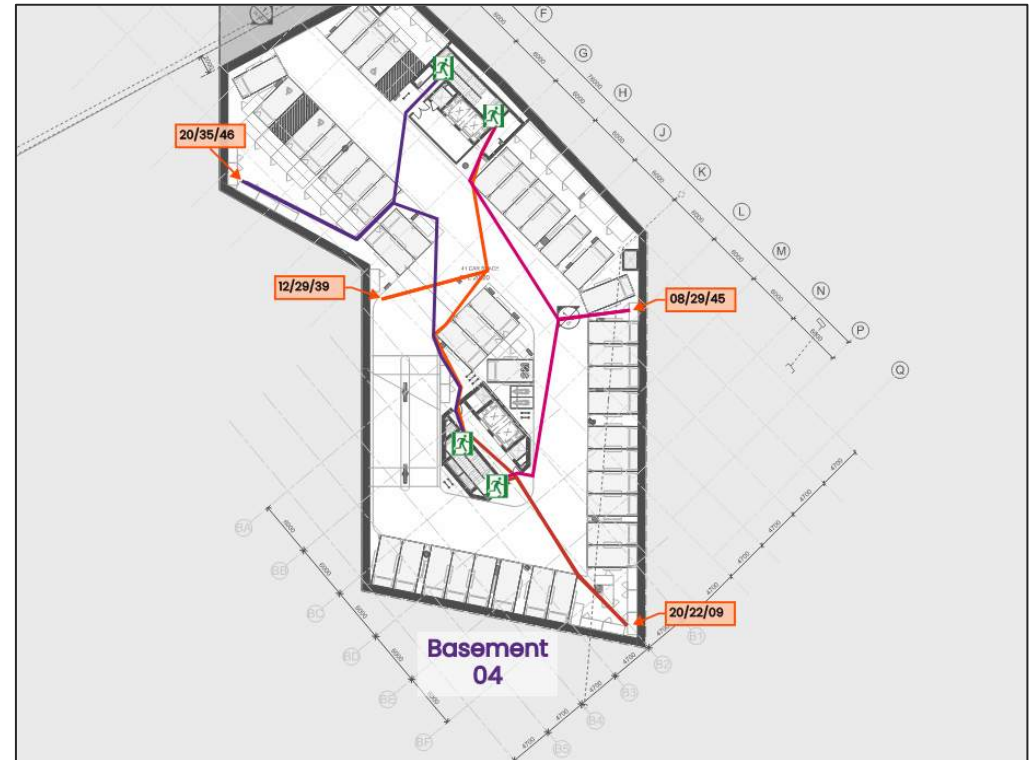
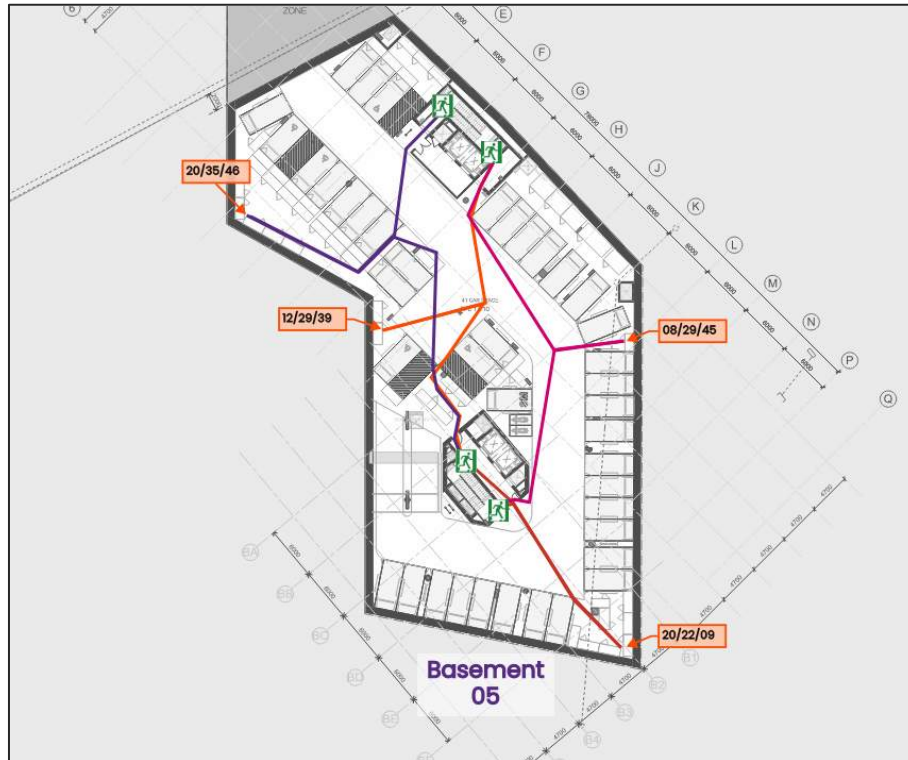
This assessment report is construed based on the following reviewed documentation prepared by SJB, project number 6419, dated 03/03/2026.

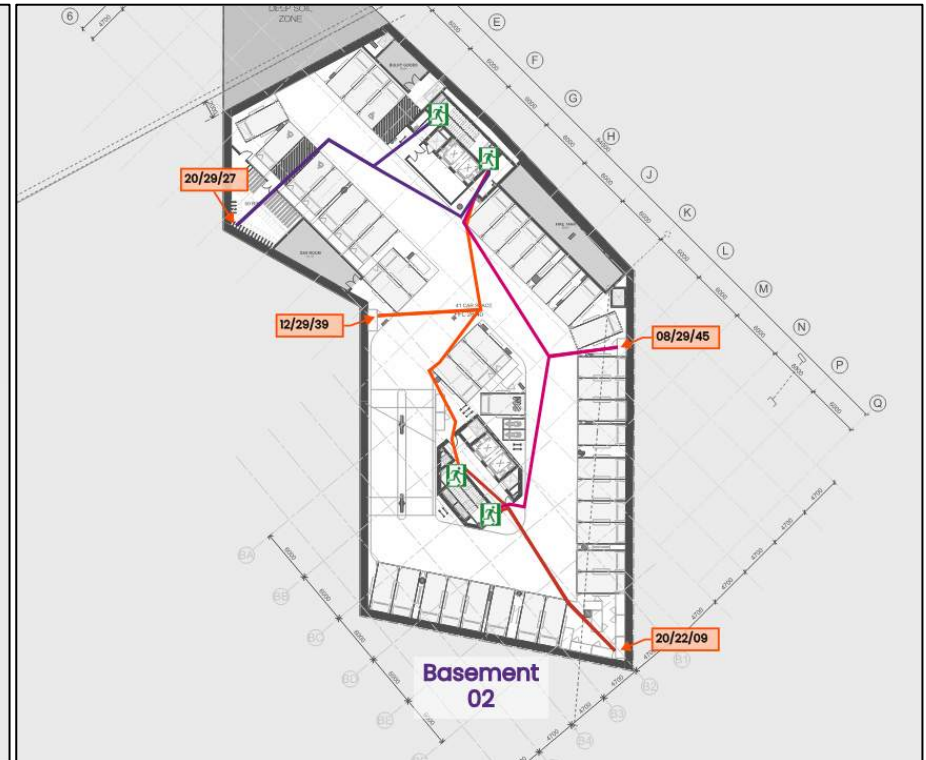
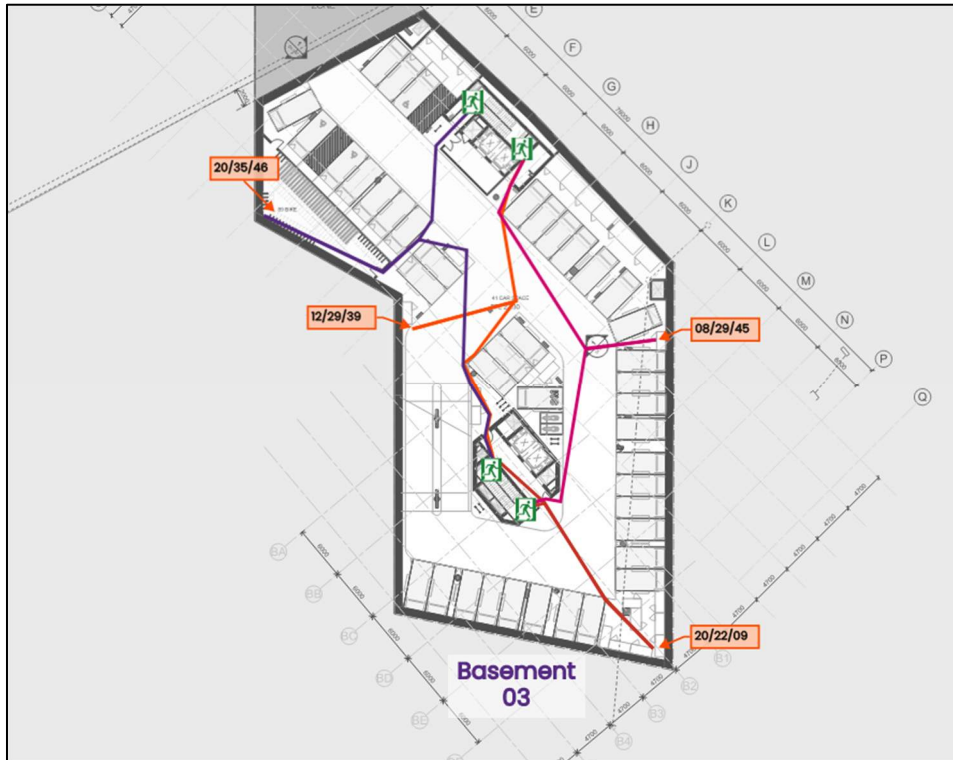
Description	Drawing No.	Revision	Date
Site plan – proposed context	DA-0202	4	03/03/2026
3D Overall Axonometric – sheet 1	DA-0801	3	03/03/2026
Floor plan – basement 5	DA-1001	8	03/03/2026
Floor plan – basement 4	DA-1002	8	03/03/2026
Floor plan – basement 3	DA-1003	8	03/03/2026
Floor plan – basement 2	DA-1004	8	03/03/2026
Floor plan – basement 1	DA-1005	8	03/03/2026
Floor plan – level 00 – ground	DA-1006	9	03/03/2026
Floor plan – level 01	DA-1007	9	03/03/2026
Floor plan – level 02	DA-1008	9	03/03/2026
Floor plan – level 03	DA-1009	9	03/03/2026
Floor plan – level 04	DA-1010	9	03/03/2026
Floor plan – level 05	DA-1011	8	03/03/2026
Floor plan – level 06	DA-1012	9	03/03/2026
Floor plan – level 07	DA-1013	9	03/03/2026
Floor plan – level 08 to 14	DA-1014	5	03/03/2026
Floor plan – level 15	DA-1021	5	03/03/2026
Floor plan – level 16 to 20	DA-1022	5	03/03/2026
Floor plan – level 21 to 22	DA-1027	6	03/03/2026
Floor plan – level 23	DA-1029	6	03/03/2026

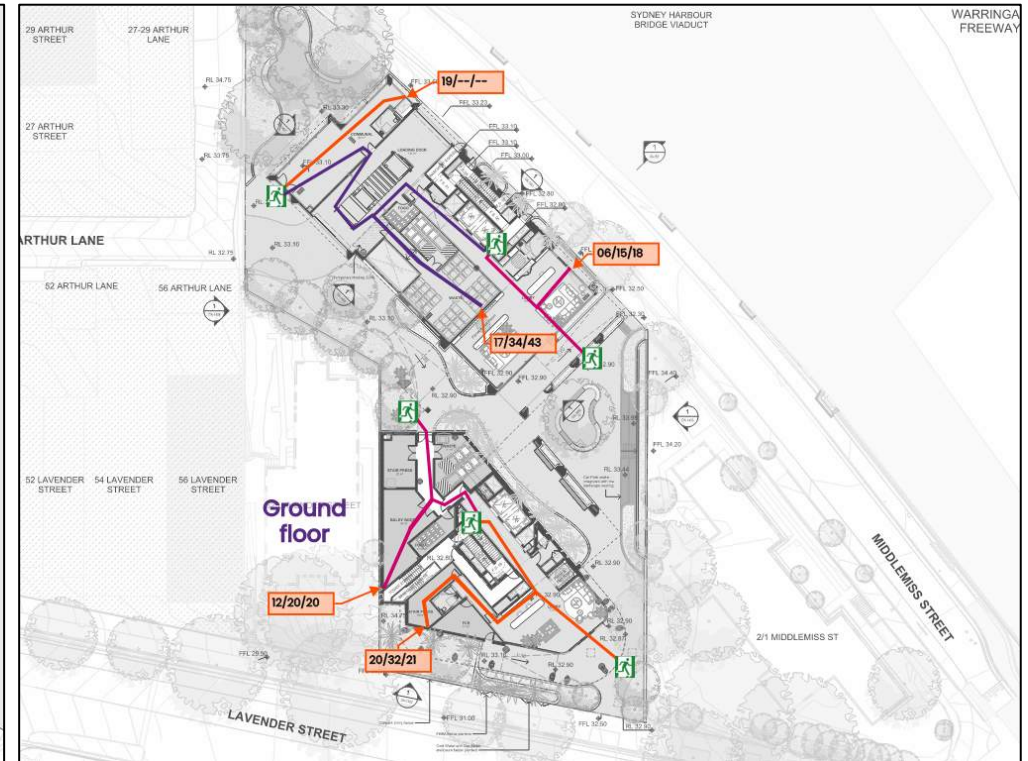
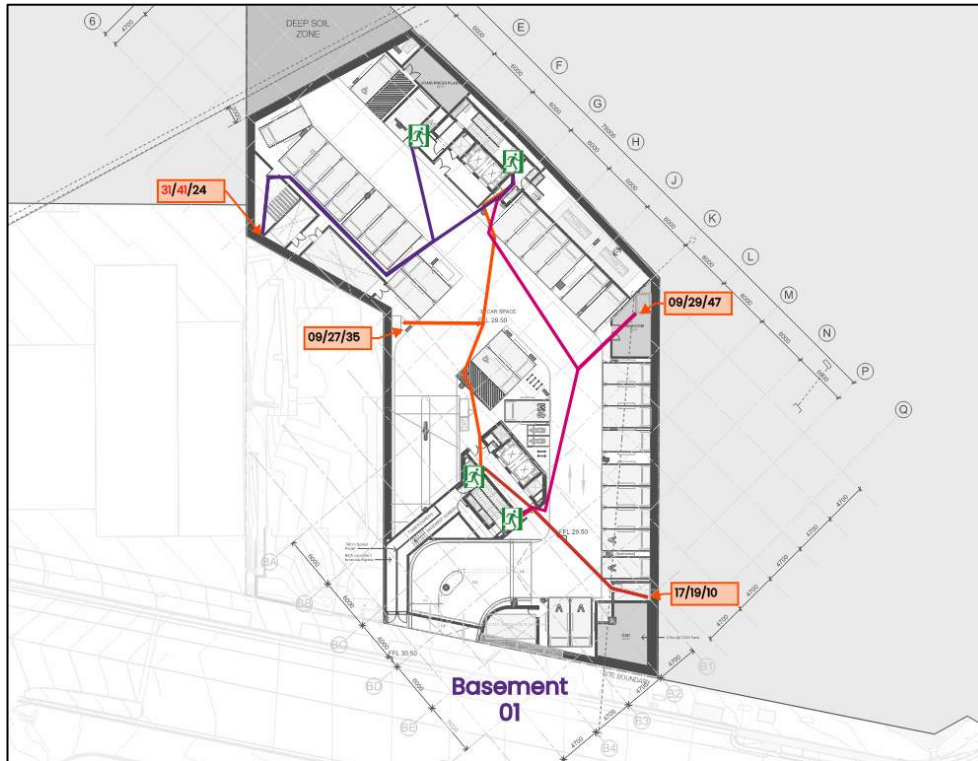
Floor plan – level 24 to 31	DA-1030	6	03/03/2026
Floor plan – level 32	DA-1038	7	03/03/2026
Elevations – north	DA-1401	4	03/03/2026
Elevations – south	DA-1402	4	03/03/2026
Elevations – east	DA-1403	4	03/03/2026
Elevations – west	DA-1404	4	03/03/2026
Elevations – south (building a)	DA-1405	4	03/03/2026
Elevations – east (building a)	DA-1406	4	03/03/2026
Elevations – west (building a)	DA-1407	4	03/03/2026
Building section a	DA-1501	3	03/03/2026
Building section b	DA-1502	3	03/03/2026
Building section c	DA-1503	3	03/03/2026
Wall sections – sheet 1	DA-1701	4	03/03/2026
Wall sections – sheet 2	DA-1702	4	03/03/2026

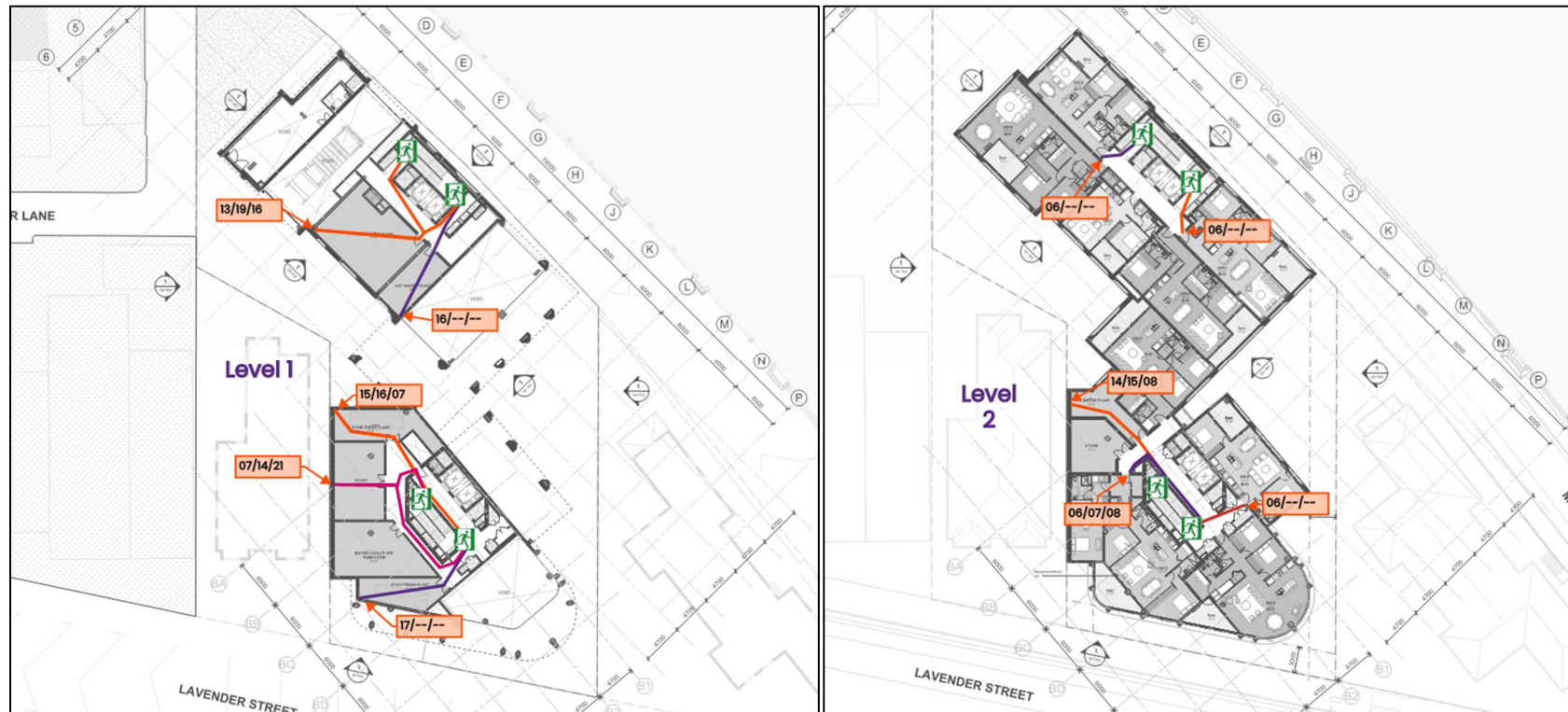
Addendum C: **IDENTIFIED EGRESS PATHS**

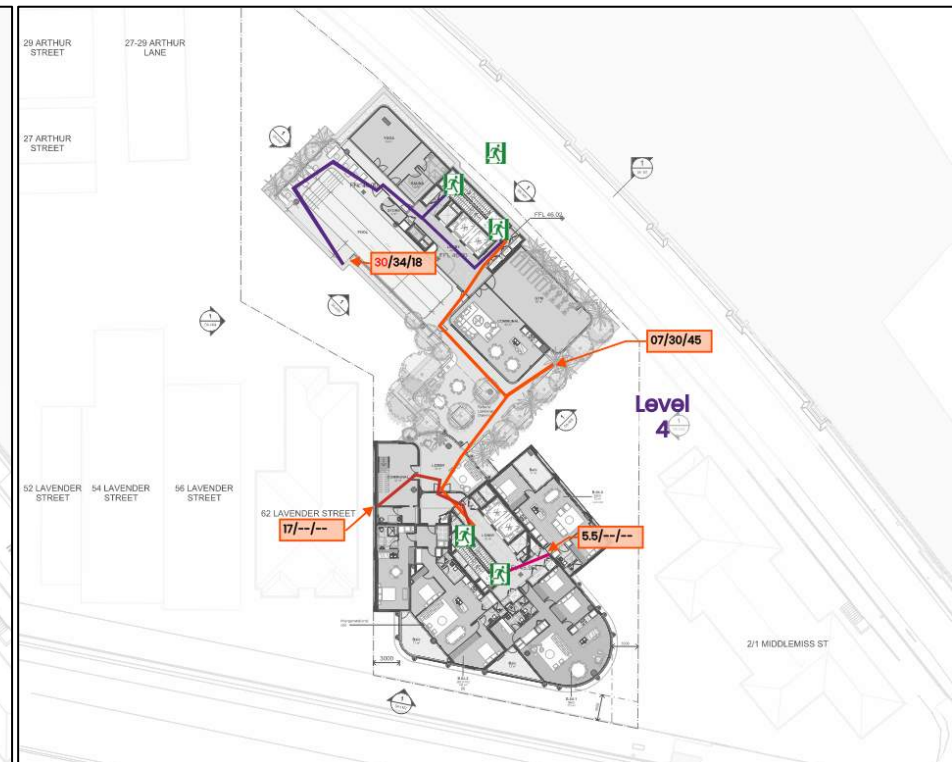
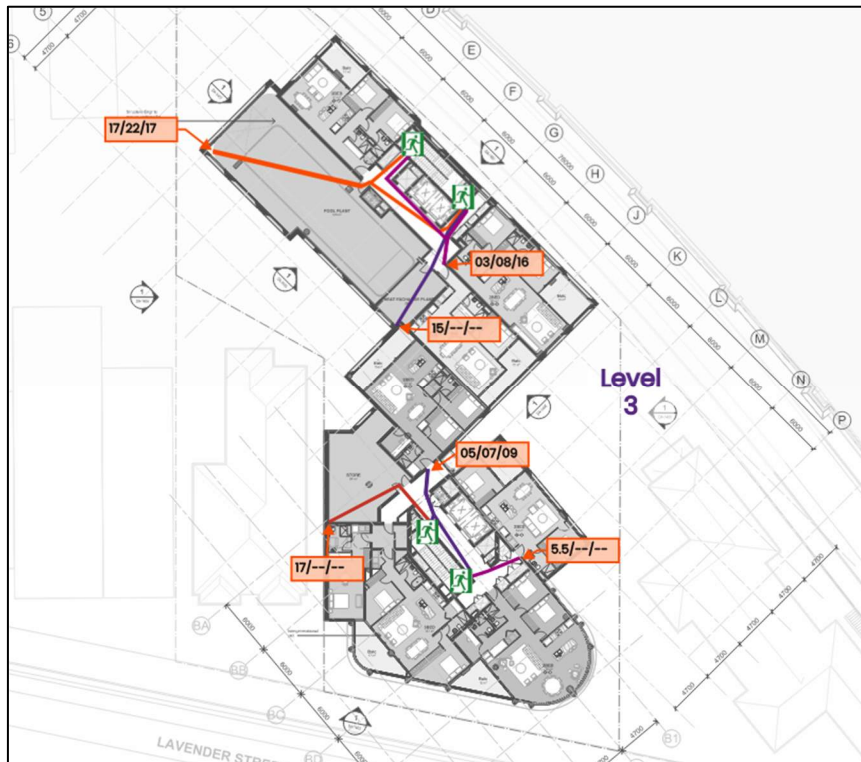
Nominated Exits and Associated Travel Distances





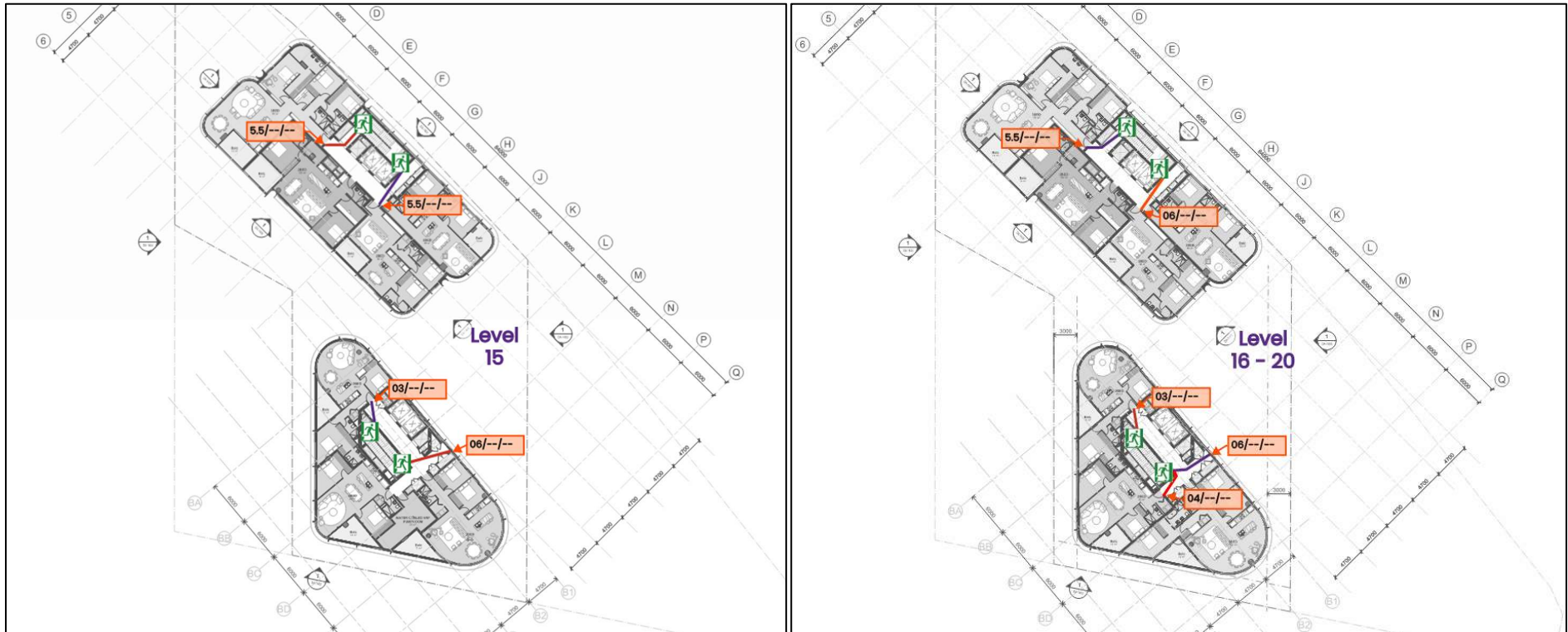


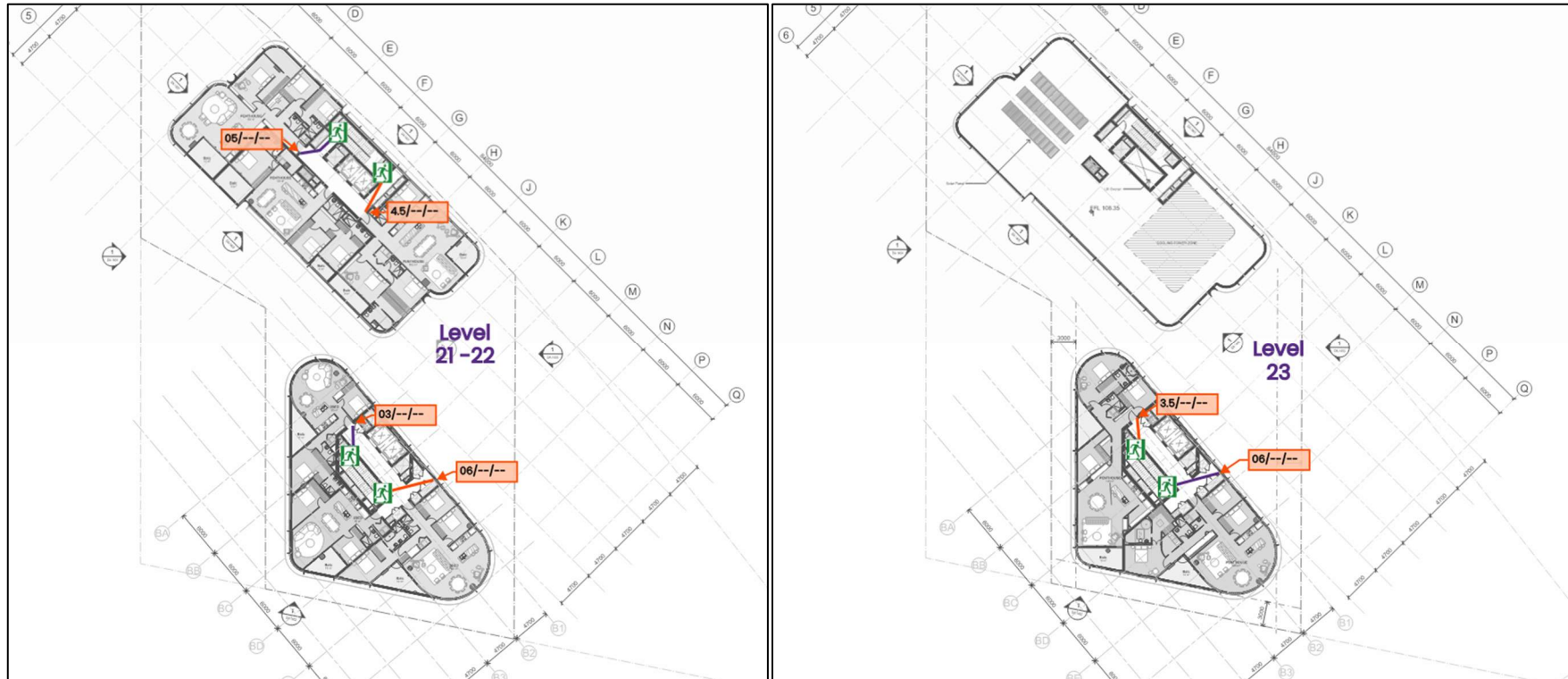


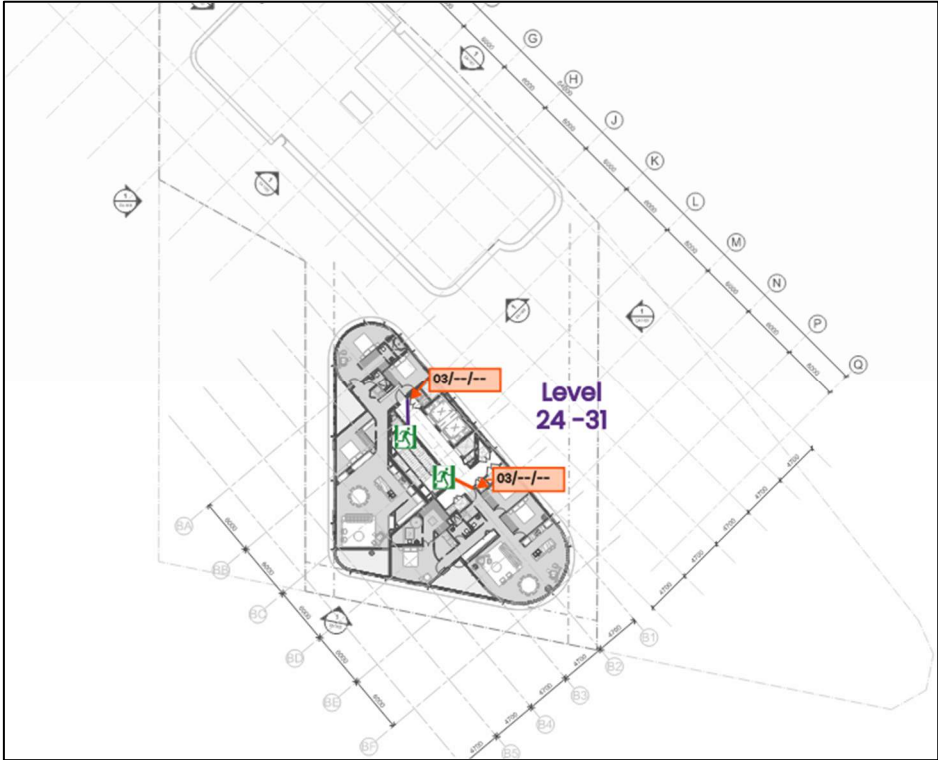












Addendum D:

STATEMENT OF COMPLIANCE

Statement of Compliance

New Crown Consulting have completed a detailed assessment of the subject proposed development, as indicated on the architectural drawings referenced in Addendum B of this report, against the relevant provisions of the BCA 2022 Amendment 2. The details of this assessment are specified in the Clause-by-Clause Assessment Table from Addendum A of this report.

Subject to this assessment, it is New Crown Consulting's professional opinion that the design of the proposed development complies, or is capable of complying, with the relevant provisions of the BCA 2022 Amendment 2 by means of DTS provisions or Performance Solutions.

Mauricio Vera
Managing Director
Building Surveyor
newcrown.com.au

"When I'm working on a problem, I never think about its beauty, I just think about how to solve the problem, but when I finish it, if the solution is not beautiful, I know it's wrong."

Richard Buckminster Fuller



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