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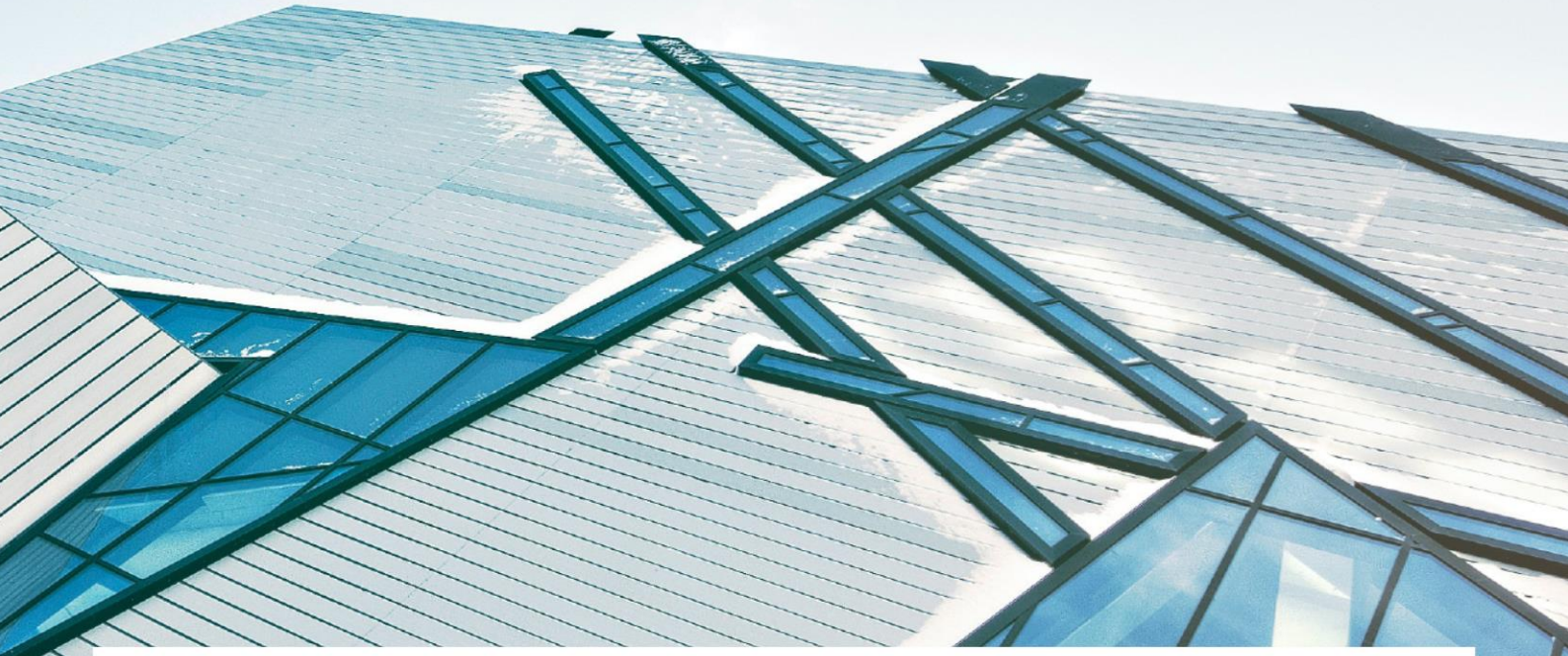
bca + fire + access + defects



Project
324 Hume Hwy, Bankstown NSW 2200

Report
BCA Assessment Report

Client
O and E Developments
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Reference
18662-BCA & Access-1

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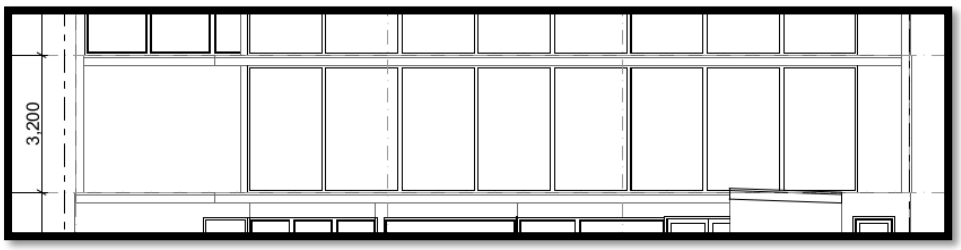
1. Executive Summary

This report provides a Building Code of Australia (BCA) 2019 Amendment 1 assessment for the architectural plans prepared for the Childcare Development located at 324 Hume Hwy, Bankstown NSW 2200.

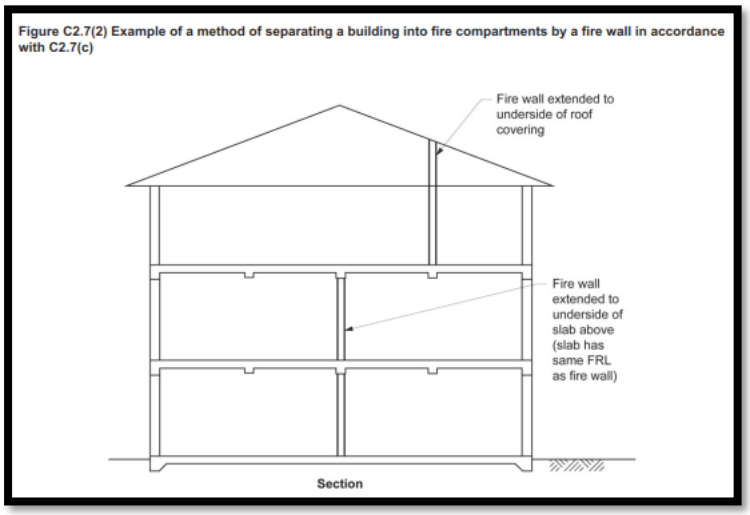
The primary purpose of this report is to identify the non-compliance matters contained in the design against the current Deemed-to-Satisfy (DTS) Provisions of the BCA and to provide compliance recommendations to overcome all non-compliances identified.

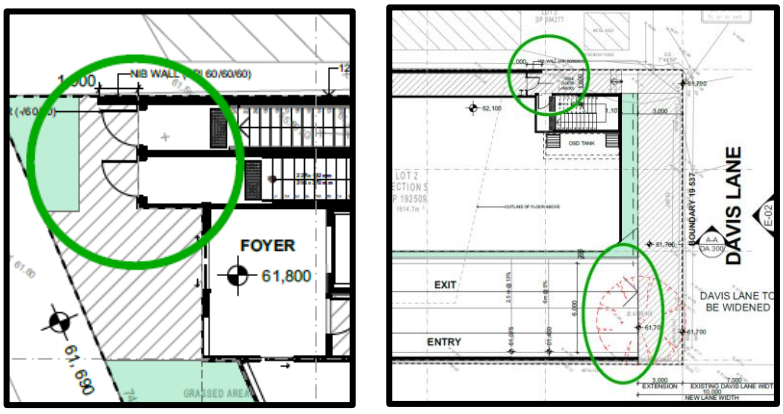
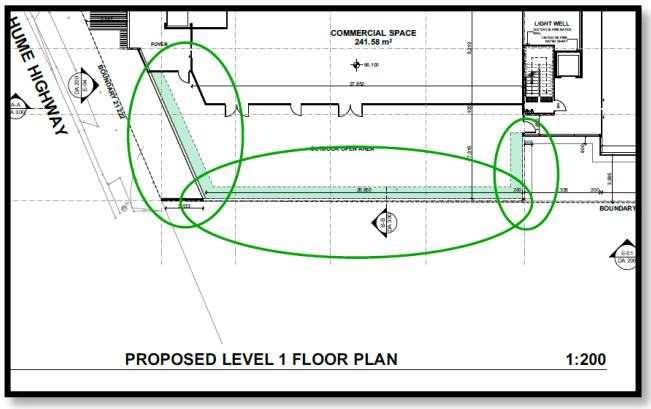
This report provides a BCA assessment table that summarises the identified non-compliance matters and offers specific recommendations for basement levels and ground floor.

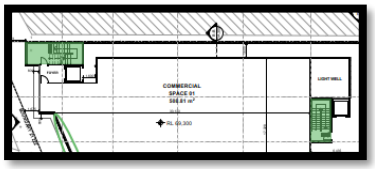
1.1. Summary of Assessment

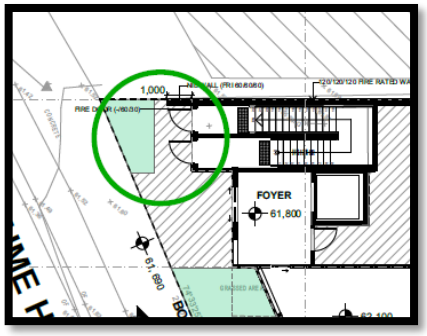
BCA Clause	Considerations
C1.1	1. **Riser/Shaft** to be enclosed by 120/ 90/ 90 rated shaft (unless housing emergency equipment or main services then 120/120/120 FRL). The shaft must be bound from the remainer of the building. 2. **Slab edge and facade junction** - The current Slab edge construction detail to demonstrate DTS compliant fire separation provided between storeys (C1.1, C2.7, C2.8, C2.9). ***Provide design documentation and specifications at CC Stage.*** 
C1.9	1. All External Cladding is required to comply with C1.9 and the matierial to be deemed NOT Combustible via AS1530.1 test report. 2. Note: Acrylic render is not deemed non-combustible. 3. Note: No timber/combustible bracing permitted. 4. Insulation to be tested and deemed non-combustible. 5. Any shelf angles to be tested and deemed non-combustible. 6. Sarking permitted which is not to exceed 1mm in thickness and have a Flammability Index not greater than 5. 7. Pre-finished metal sheeting permitted - 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. ***This is to be verified via an AS1530.1 test report at CC Stage. Provide design documentation and specifications at CC Stage.***
C1.10	All Fire Hazard properties of Floor linings and floor coverings, Wall linings and ceiling linings, Air-handling ductwork, Lift cars, non-required non fire isolated stairways or pedestrian ramps subject to Specification D1.12, Sarking type materials, Attachments to floors, ceilings, internal walls and the internal linings of external walls, other materials including insulation materials other than sarking type materials are to achieve compliance with C1.10, and Spec C.10. This includes outdoor occupiable areas such as the communal areas under G6. ***Provide design documentation and specifications at CC Stage. Compliance readily achievable.***

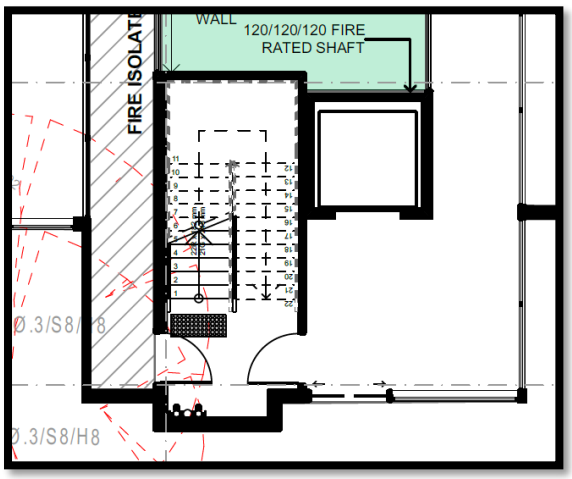
BCA Clause	Considerations
C1.14	1. An ancillary element must not be fixed, installed, or attached to the internal parts or external face of an external wall that is required to be non-combustible. This includes Balcony Formwork, Balcony shutters, privacy screens, awnings etc. 2. **Fixed to the External face of external walls -** Signage, Acoustics Barrier, Privacy Screen, egress pathway attached, acrylic liners, are all attachments to the external wall which are required to be non-combustible 3. **Internal Face Of External Walls** - Joinery / elements are proposed to be fixed to the internal face of external walls which are required to be non-combustible (stairs, rails, architrave, skirting, bathroom joinery, storage, cupboards, kitchen joinery, timber skirting, pex pipes, plastic packers, screening etc.) **EBS recommends a fire engineered solutionsto address any DtS non-compliance at CC Stage or should BCA 2022 be applicable, a concession is applicable.** 4. Any Fire rated pair coil (i.e., fire retardant insulation) attached to the external wall (inside or outside).
C2.2	*The size of any fire compartment in a Class 5, 6, 7, 8 or 9 building must not exceed the relevant maximum floor area and maximum volume set out in Table C2.2 & C2.5, except as permitted in C2.3. Currently the proposed building exceeds the maximum size prescribed under C2.2.* ***Refer to Part 3.4 of this report for calculations.*** • **Maximum allowable floor area = 6,639m^2** • **Proposed Total Floor Area = 6,932 m^2** 1) ***Option A:*** *The building is compartmentalized via fire walls into separate fire compartments complying with the permitted floor area and volume permitted under Type A construction. Plans demonstrating compliance to be provided. Refer to clause C2.7 and C2.9 of this report.* • *A fire compartment contains walls, floors and the like creating a compartment (or "box") of any shape used to limit the spread of fire to another compartment or part of a building.* • *If any floor has an opening for an open stairway or escalator, a fire could spread through the opening—that floor would not form the boundary of a fire compartment.* • *If there are no distinct fire barriers erected, then the whole building forms a fire compartment.* 2) ***Option B****:* Dt*S departure to be confirmed noting changes to architectural layout. Discussions to be held with a registered Fire Engineer in order to develop a Performance Based Solution addressing the compartmentation departure.*

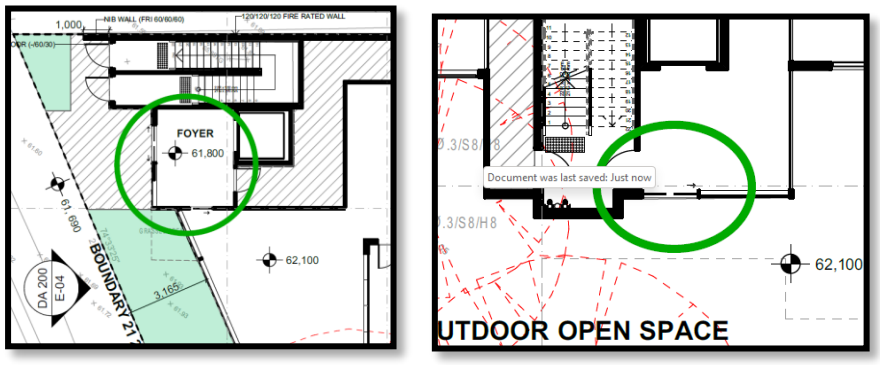
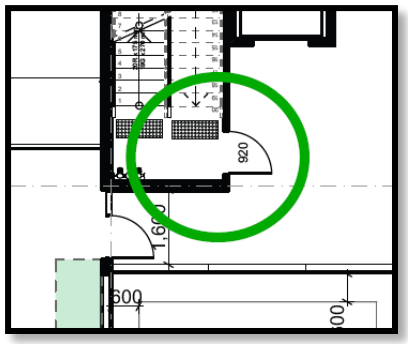
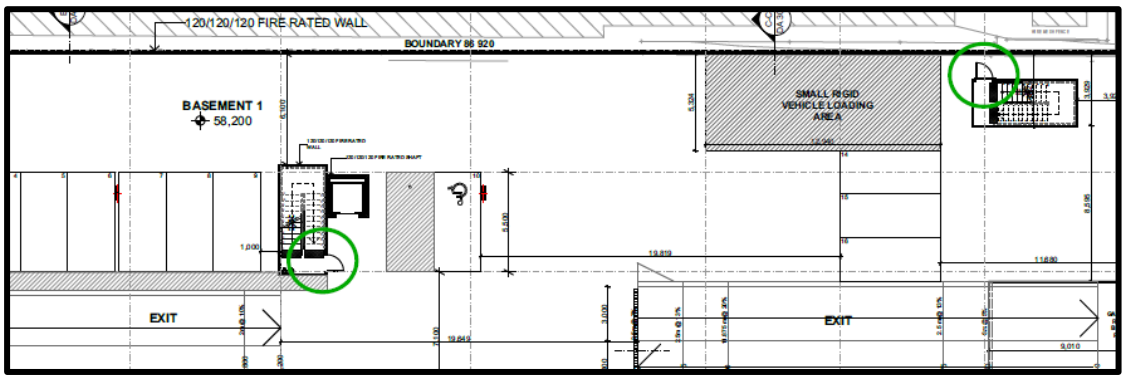
<table>
<tr><th>BCA Clause</th><th>Considerations</th></tr>
<tr><td>C2.7</td><td>Separation of fire compartments
A part of a building separated from the remainder of the building by a fire wall may be treated as a separate fire compartment if it is constructed in accordance with (C2.7(a)) and the fire wall extends to the underside of a floor having an FRL required for a fire wall; or the roof covering.
 
</td></tr>
<tr><td>C2.8</td><td>Separation of classifications in the same storey
There are two options to stop a fire spreading from one classification to another classification on the same storey: use the highest of the two fire-resistance levels (FRLs) required for each building element in that storey or place a fire wall between the two different classifications. Type A construction the FRL is the higher of that specified in Table 3.
<table>
<tr><th>BCA Class</th><th>FRL
(Table 3 of Spec C1.1)</th></tr>
<tr><td>Class 5, 7a and 9</td><td>120/120/120</td></tr>
</table></td></tr>
<tr><td>C2.9</td><td>Separation of classifications in different storeys
Type A construction - the floor between the adjoining parts must have an FRL of not less than that prescribed in Specification C1.1 for the classification of the lower storey.
<table>
<tr><th>BCA Class</th><th>FRL
(Table 3 of Spec C1.1)</th></tr>
<tr><td>Class 5, 7a and 9</td><td>120/120/120</td></tr>
</table></td></tr>
<tr><td>C2.10</td><td>• The lift must be separated from the remainder of the building by enclosure in a shaft in which the walls have FRL; Loadbearing = 120/120/120; non-loadbearing= -/120/120
• Openings for lift landing doors and services must be protected in accordance with the Deemed-to-Satisfy Provisions of Part C3. – See C3.10</td></tr>
<tr><td>C2.12</td><td>1. Equipment must be separated by FRL not less than 120/120/120 and a self-closing fire door having an FRL of not less than –/120/30.
(i) lift motors and lift control panels; 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. emergency generators used to sustain emergency equipment operating in the emergency mode.
2. On-site fire pumps must comply with the requirements of AS 2419.1. FRL not less than 120/120/120 and a self-closing fire door having an FRL of not less than –/120/30. See E1.3</td></tr>
</table>

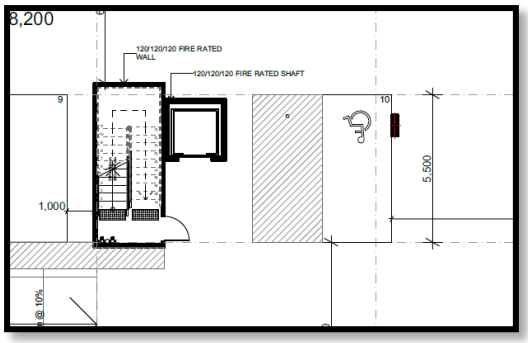
BCA Clause	Considerations
C2.13	1. A main switchboard must be separated by FRL not less than 120/120/120 and a self-closing fire door having an FRL of not less than –/120/30. 2. The electrical conductors referred to in C2.13(c) must comply with the appropriate sections of AS/NZS 3013—Wiring installations—Wiring systems for specific applications or be protected by fire rated construction with an FRL of 120/120/120. 3. C2.13(d) therefore requires the emergency equipment to be segregated from the other equipment in all switchboards by metal partitions designed to prevent the spread of any fault from the non-emergency equipment to the emergency equipment. 4. Confirmation required for sprinkler provisions within the Main Switch Room otherwise a Performance Solution should be explored to omit sprinkler requirements (detection to be provided in lieu).
C3.2	Openings [highlighted below] *in an external wall that is required to have an FRL* must be protected in accordance with C3.4 or addressed via Fire Engineering. • Doors required to be protected should be a fire doors –/60/30 that is self-closing. **Ground Floor**  **First Floor**  ***Architectural details to fully detail the wall types and FRL of 120/120/120 at CC stage or obtain a fire engineered solutions to address any DtS non-compliance at CC Stage.***
C3.3	The distance between parts of external walls and any openings within them in different fire compartments separated by a fire wall must a minimum FRL not less than 60/60/60 (unless C1.1 requires a higher FRL, the higher applies) and openings protected in accordance with C3.4. This will be dependant on the fire compartmentation. ***Provide design documentation and specifications at CC Stage. Compliance readily achievable***

BCA Clause	Considerations
C3.5	Any Doors through a Fire wall are required to be -/120/30/ self closing fire door.
C3.8	Doorways that open to fire-isolated stairways must be protected by –/60/30 fire doors that are self-closing – *See D1.3 for required Fire Isolated Stairs.*
C3.10	• **Lift Doorways** — Lift Shaft entrance doorway to that shaft must be protected by -/60/– fire doors that comply with AS 1735.11; and are set to remain closed except when discharging or receiving passengers, goods or vehicles. • **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 35 000 mm2 in area.
C3.12	Note: Services may be within a fire resisting shaft OR protected in accordance with C3.15.
C3.15	Service penetrations are to be suitably fire stopped in accordance with a tested system and manufacturers specifications and recommendations.
D1.2	**Class 5, 6, 7, 8 or 9 building** - not less than 2 exits must be provided from the following • Ground Floor – Reconfiguration of ground floor 'fire-isolated passageway' required. **Access to exits** — Without passing through another sole-occupancy unit every occupant of a storey or part of a storey must have access to at least 2 exits if 2 or more exits are required. The Floor plans do not detail internal walls, rooms, corridors and pathways etc to determine access to exits. ***Provide design documentation and specifications at CC Stage. Compliance readily achievable*** ***EBS recommend fire engineered solutions to address any DtS non-compliance at CC Stage.***
D1.3	Class 5, 6, 7, 8 or 9 buildings — Every stairway or ramp serving as a required exit must be fire-isolated unless it connects, passes through, or passes by not more than 2 consecutive storeys. • ***These stairs are required to be Fire Isolated (connects more than 2 storeys) currently 5x storeys. All the stairs are currently designed as non-fire isolated exits.***   ***Please note if a pump room is provided in the Basement, access will need to be via an airlock via fire isolated stairs in anycase (see E1.3).***

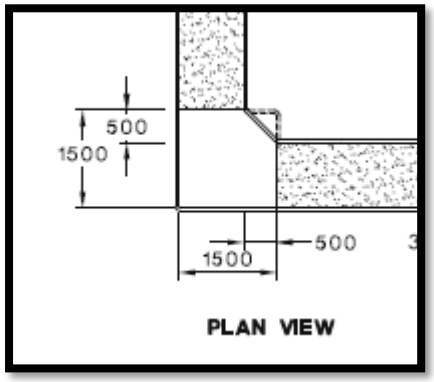
BCA Clause	Considerations
D1.4	**Exit travel distances** • Exit Travel distance of up to 36m to a single exit, in lieu of 20m from level 1 commercial. This may be too excessive for a performance solution and therefore I recommend that a new secondary exit is introduced to serve level 1 and 2 commercial space to discharge to Davis Lane. • Exit Travel distance of up to 47m to a single exit, in lieu of 20m from level 1 and 2 lift lobby corridor. I recommend that an internal connection to existing stairway is provided to discharge to open space for DtS compliant travel distances • Commerical Space 2 is provided with a travel distance of 41m in lieu of 20m to a single exit. • Common Area Lift - Exit Travel distance of up to 47m to a single exit, in lieu of 20m from level 1 and 2 lift lobby corridor. Provide internal connection to existing stairway to discharge to open space for DtS compliant travel distances • Commercial space 1 - Exit Travel distance of up to 37m to a single exit, in lieu of 20m from level 2 commercial space. Provide internal connection to central stairway for DtS compliant travel distances
D1.7	*All stairways must be designed as fire-isolated stairways as such assessment against D1.7 is to be undertaken subject to updated design details.* 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 public corridor, public lobby 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 to a road or open space. 3. Where a path of travel from the point of discharge of a fire-isolated exit necessitates passing within 6 m of any part of an external wall of the same building, measured horizontally at right angles to the path of travel, that part of the wall must have an FRL of not less than 60/60/60; any openings protected internally in accordance with C3.4, 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 smoke lobby in accordance with D2.6 must be provided; or the exit must be pressurised in accordance with AS 1668.1.
D1.10	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. The egress stair (Grid I/3) in the basements should be provided with suitable barrier – whilst maintaining path of travel clearance. 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 thanthe minimum width of the required exit; ➢ The path of travel to the road on the Ground Floor is required to be 1.0 metres. 

BCA Clause	Considerations
D2.4	If a stairway serving as an exit is required to be fire-isolated Separation of rising and descending stair flights is to be provided – Currently all stairs are required to be Fire isolated under D1.3 thus Separation is not provided. There is a direct connection between the flight from basement and flight from first floor. ***EBS recommend design change or fire engineered solutions to address DtS non-compliance at CC Stage.*** 
D2.12	The exits on the GF discharge onto the roof of the basement and as such the roof is to maintain an FRL of 120/120/120. In addition, clause D2.12 states that there must be NO openings with 3m of the path of travel of persons using the exit to reach a road of open space. This is to be addressed via a Performance Based Solution. ***EBS recommend fire engineered solutions to address DtS non-compliance at CC Stage.***
D2.15	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 the door opens to open space, external stair landing or external balcony and door sill is not more than 190 mm.
D2.16	**Balustrades** - A continuous barrier must be provided along the side of a roof, a stairway or ramp; a floor, corridor, hallway, balcony, deck, verandah, mezzanine, access bridge or the like; any delineated path of access to a building. **Balconies situated more than 4 m above the surface beneath** – Barrier must not have any horizontal or near horizontal elements between 150 mm and 760 mm above the floor.
D2.17	**Non-Fire Isolated Stairway & Handrails** are to comply with Clause 11 & 12 of AS1428.1 – 2009 including: (unless exempt under D3.4) • Landings - 1.2m (straight) 1.5mx1.5m (90 degree), 1.54m x 2.07m (180 degree) • Handrails either side. • Opaque risers • Stair nosings • TGSIs shall be installed in accordance with AS 1428.4.1. • One tread width offset. Currently not provided • Handrail Extension & Terminations at top and bottom. • Consistent Handrail & height of 865mm-1000mm max • Handrail clearances • Handrails and balustrades shall not encroach into required circulation spaces **Fire Isolated Stairway & Handrails** are to comply with Clause 11.1 (f) & (g) & 12 of AS1428.1 – 2009 including: • Landings - 1.2m (straight), 1.54m x 2.07m (180 degree) • Nosings

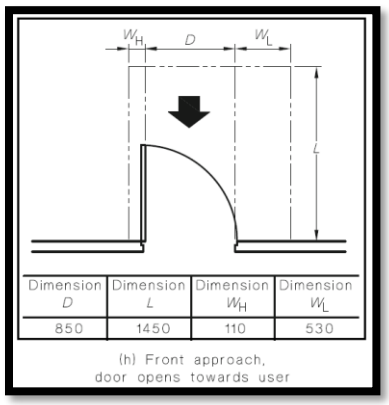
BCA Clause	Considerations
	• Luminance contrast • Handrails and balustrades shall not encroach into required circulation spaces • Handrail clearances • One tread width offset. Currently not provided • Handrail Extension & Terminations at top and bottom. • Consistent Handrail & height of 865mm-1000mm max
D2.19	Sliding door as required exit must leads directly to a road or open space and the door is able to be opened manually under a force of not more than 110 N. 
D2.20	A swinging door in a required exit or forming part of a required exit must not encroach at any part of its swing by more than 500 mm on the required width (including any landings) of a required stairway; or ramp; or passageway, if it is likely to impede the path of travel of the people already using the exit. The majority of doros show compliant clearances however some are shown to swing against the direction of travel. Consideration to this clause is to be made after redesign. A swinging door in a required exit or forming part of a required exit must swing in the direction of egress. Various exit doors are shown to swing against the direction of travel. All doors to be reswung on the drawings.  

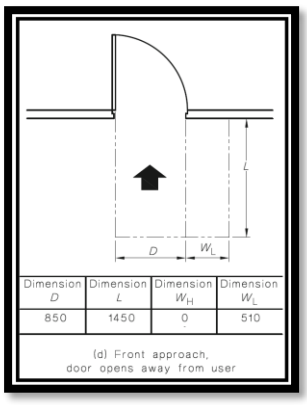
BCA Clause	Considerations
D2.24	• **Class 9b early childhood centre**- The window be designed such that any opening does not allow a 125 mm sphere to pass through (e.g., louvres). The window be fitted with a fixed or dynamic device that is capable of restricting the window opening so it does not allow a 125 mm sphere to pass through and is difficult for a young child to operate. The restricting device must be capable of resisting a 250 N force when directed against the window such as a casement window or in attempting to push a sliding window open. An internal screen with similar parameters may be installed. The window be fitted with an internal or external screen that does not allow a 125 mm sphere to pass through and which must resist a horizontal outward force of 250 N. If the openable part of a window is at least 1.7 m above the floor, no further protection is required. • **Other Windows** - A barrier with a height not less than 865 mm above the floor is required to an openable window where the floor below the window is 4 m or more above the surface beneath. A wall beneath an openable window can be considered as the barrier as long as it does not permit a 125 mm sphere to pass through it; and have any horizontal or near horizontal elements between 150 mm and 760 mm above the floor that facilitate climbing.
D3.1	1. **Continuous Accessible Path of Travel/ 1.0m clearance** – *See D1.6.* 2. **Accessible Car Parking Space** - Continuous Accessible Path of Travel is required to be provided from any accessible car parking space to the lift. Compliance readily achievable. Gradient no steeper than 1 in 40.  3. **Slip Resistance** - A continuous accessible path of travel and any circulation spaces shall have a slip-resistant surface. 4. **Construction tolerances for abutment of surfaces** - Abutment of surfaces shall have a smooth transition. Design transition shall be 0 mm. 5. **Grates** -Shall be circular openings shall be not greater than 13 mm in diameter or slotted openings shall be not greater than 13 mm wide and be oriented so that the long dimension is transverse to the dominant direction of travel. 6. **Walkways** – Shall be provided with a wall not less than 450 mm in height abutting the sides of the walkway (the building wall is sufficient for that part). 7. **Gradient** – Walkway gradient shall not be steeper than 1:20 8. **Landing** – Walkway shall have landings - no change in direction, the length shall be not less than 1200 mm at intervals - For walkway gradients of 1 in 20, at intervals no greater than 15 m. **Landing** - Where there is a change of direction not exceeding 90°, the landing shall be not less than 1500 mm. The internal corner shall be truncated for a minimum of 500 mm in both directions, as shown in Figure 25(B).

BCA Clause	Considerations

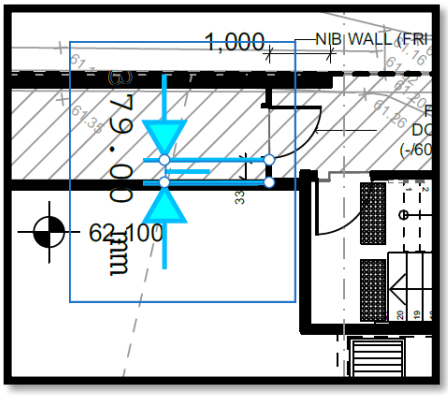


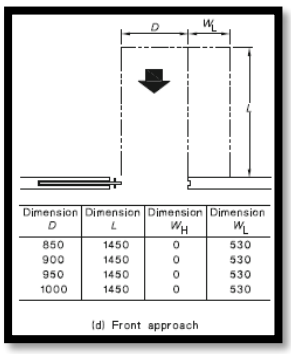
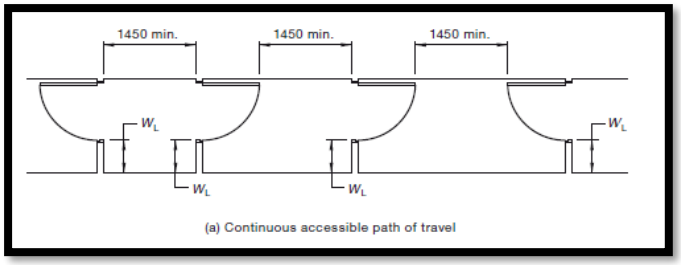
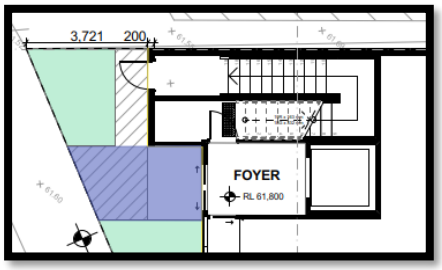
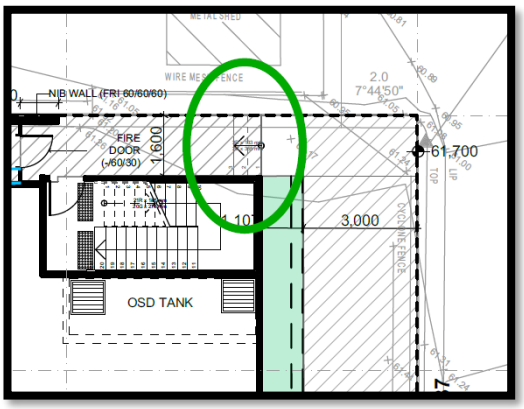
9. **Doors Widths–** one leaf to be 850mm clear and circulation space is to be provided inside and out.
10. **Fire Isolated Door** – to maintain 850mm clearance and be provided with circulation space on the outside.
11. **Non-Fire Isolated Stair** – to maintain 850mm clearance and be provided with circulation space on the inside and outside. One example below. This applies to all the non-fire isolated stairs.
12. **Circulation Space** - Circulation spaces shall be provided at every **doorway, gate, or similar entry way, on a continuous accessible path of travel**. Shall have a gradient and crossfall not steeper than 1 in 40. Doorway circulation spaces shall be used in combination to allow access through doorways in both directions, as shown in Figures 31 and 32.



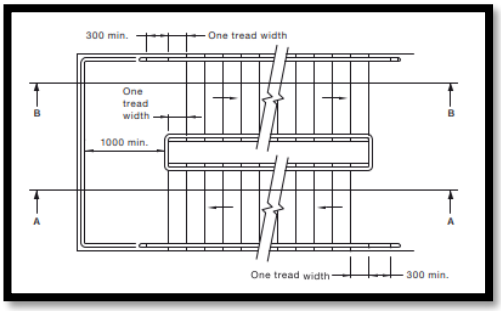


- The following require attention as there is no approach to the latch side on both sides of the door:



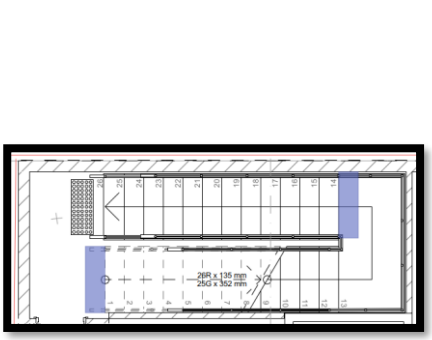
BCA Clause	Considerations
	13. **Cavity Sliding Door** - Where a sliding door is within the wall cavity, the circulation space at the doorway shall be not less than that given in the tables of Figure 32 for the appropriate clear opening width (D). Circulation space to be detailed on the plans for ALL the sliding doors (both ways).  (d) Front approach 14. Distance between successive doorways in passages in an accessible path of travel - The distance between doorways in vestibules, air locks and other similarly enclosed spaces shall be not less than 1450 mm.  (a) Continuous accessible path of travel
D3.2	1. An accessway must be provided to a building required to be accessible from the main points of a pedestrian entry at the allotment boundary. See D3.1 & D3.3 for compliance departures. A stair is provided to the Davis Lane pedestrian entrance. A ramp is required in lieu of a stair.   A pedestrian entrance which is not accessible must not be located more than 50 m from an accessible pedestrian entrance.
D3.3	***See D2.17*** 1. 1m clearance required between handrail and for the landing. Stair details to be updated reflecting landings, handrails, one terad depth, extensions, termination, clearances.

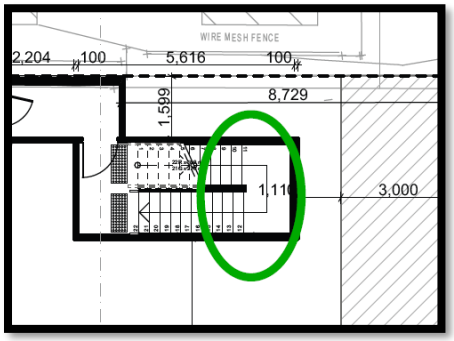
BCA Clause	Considerations

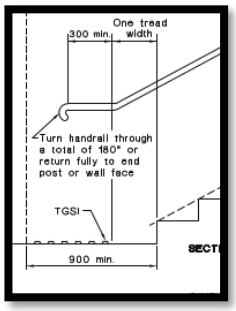


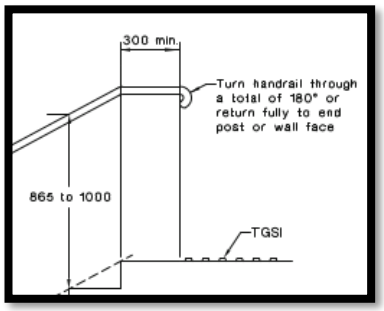
2. Handrails required to both sides of non-fire isolated stairs. Fire Isolated Stairs are to have handrail to one side. Both require handrail one tread depth, extension, and termination. ***Performance Solutions may be obtained at CC Stage for one tread depth and extensions.***

   A one tread off set is required at each landing to allow for the handrails to comply with the requirements of D2.17 and AS1428.1. This applies to all stairs.









Passing and Turning Space

1. Passing spaces complying with AS 1428.1 at maximum 20 m intervals on those parts of an accessway where a direct line of sight is not available;

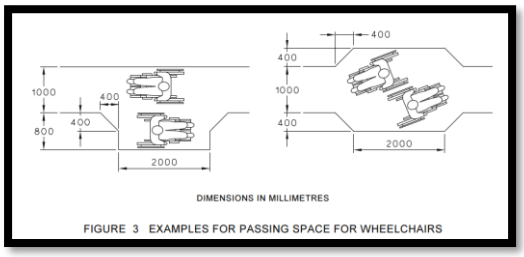
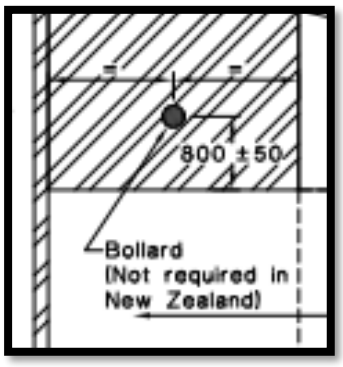
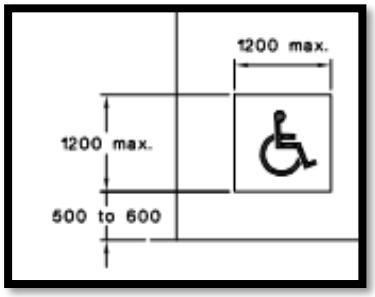


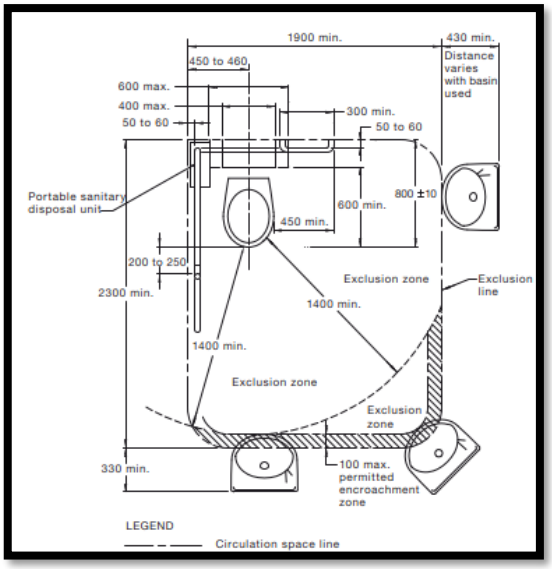
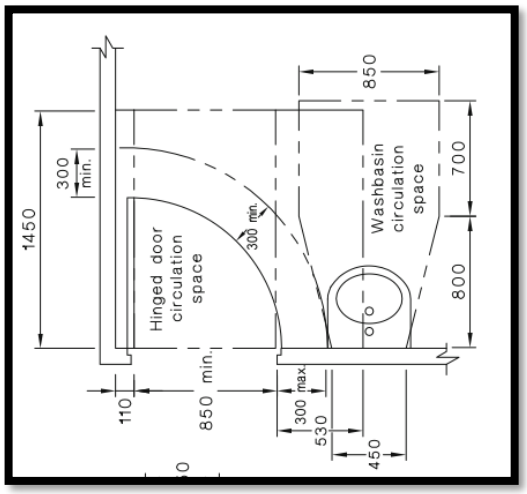
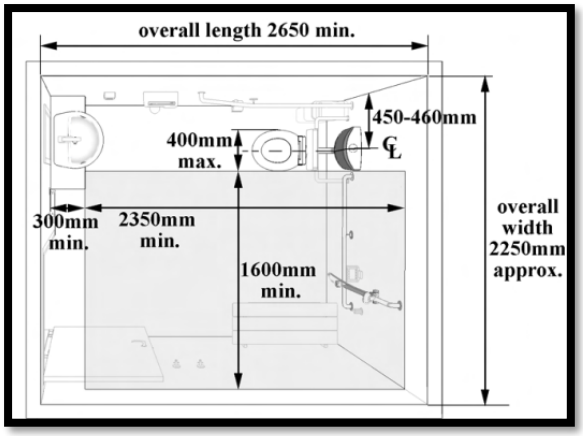
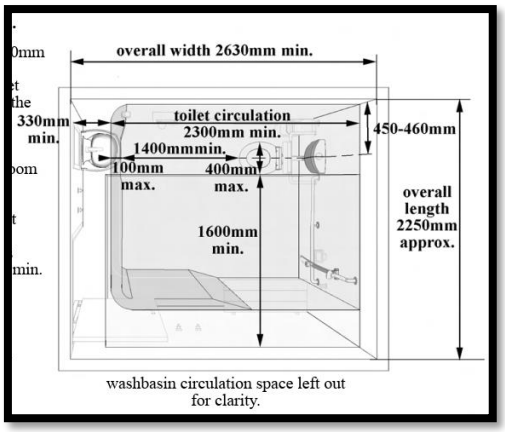
FIGURE 3 EXAMPLES FOR PASSING SPACE FOR WHEELCHAIRS

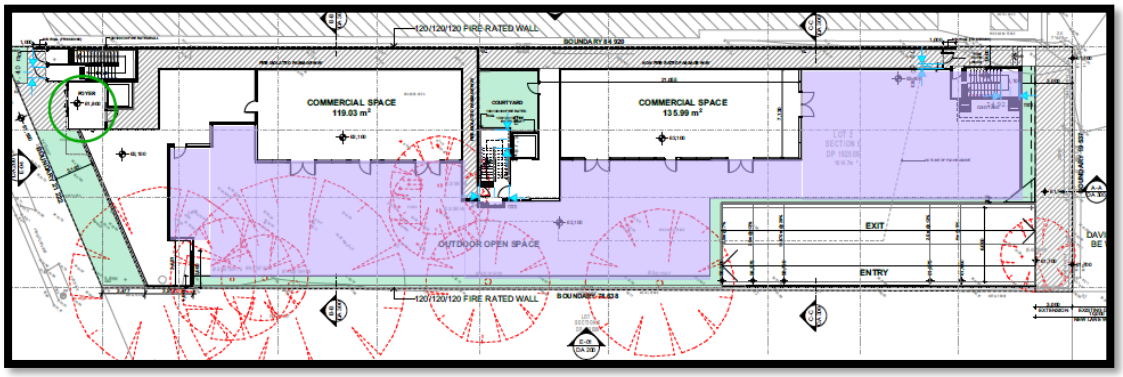
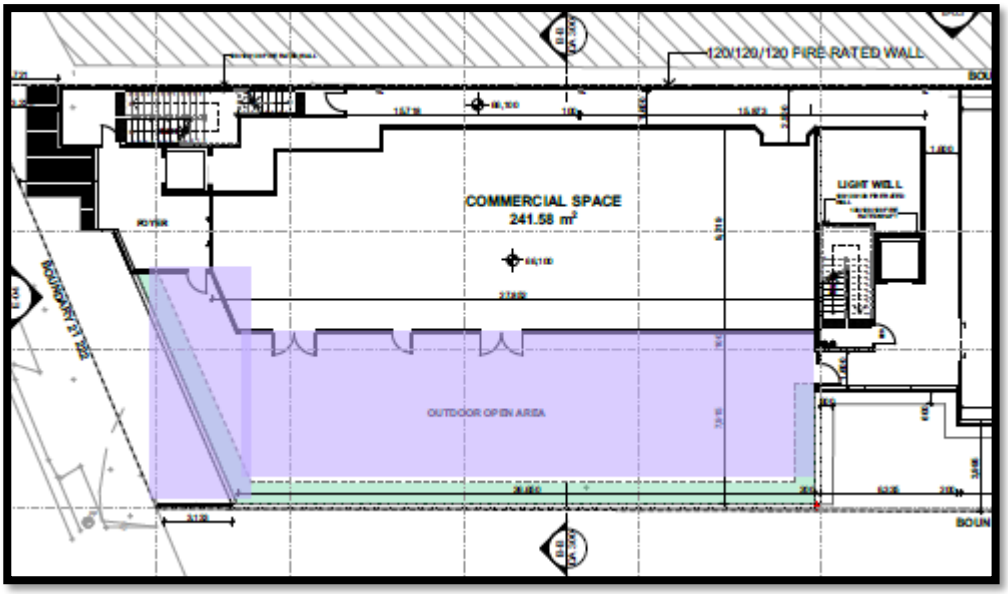
BCA Clause	Considerations
D3.5	On grade carpark is provided with 62 car parking spaces; Accessible carparking spaces is required to be provided in accordance with Table D3.5. 3x Accessible Car parking spaces are required. **Class 5, 7, 8** 1 space for every 100 carparking spaces or part thereof = 1x Accessible Car parking spaces 1. Bollard must be 750mm from front of shared space.  2. 2.5m head height clearance is required – this is to be clear of service pipes etc. 3. Line marking and Space deleiniation is required to comply. The following require specific attention: 
D3.8	Tactile ground surfaced indicators complying with AS/NZS 1428.4.1-2009 are to be provided. ❖ A stairway, other than a *fire-isolated stairway*; remove TGSI from any fire isolated stairs. ❖ *Where the distance of the landing is 3000 mm or more to the nearest nosing edge, the warning indicators shall be over a distance of 600mm–800mm.* ❖ *Where the distance of the landing is less than 3000 mm to the nearest nosing edge, the warning indicators shall be over a distance of 300–400mm.*
E1.3	A fire hydrant system must be provided to serve a building having a total floor area greater than 500 m2. *The building must be served by a Hydrant system where the building has a total floor area greater than 500sqm. Hydrant system to be provided to the building – design details to be provided*
E1.4	E1.4 does not apply to a Class 5 building Fire hose reels system to be provided complying with E1.4 and AS 2.441. • 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.

BCA Clause	Considerations
	• 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. Where system coverage is not achieved by compliance with (i) and (ii), additional fire hose reels may be located in paths of travel to an exit to achieve the required coverage.
E1.6	Portable fire extinguishers must be as listed in Table E1.6. • To cover Class AE or E fire risks associated with emergency services switchboards. • To cover Class F fire risks involving cooking oils and fats in kitchens. • 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 not provided with fire hose reels (excluding open-deck carparks). • To cover Class A fire risks in classrooms and associated corridors in primary and secondary schools not provided with fire hose reels. • To cover Class A fire risks associated with a Class 2, 3 or 5 building or Class 4 part of a building.
E2.2	• The building must be provided with an automatic smoke detection and alarm system complying with Specification E2.2a. • 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 except that— • fans with metal blades suitable for operation at normal temperature may be used; and the electrical power and control cabling need not be fire rated.
NSW Table E2.2b Specific provisions	**Automatic shutdown**: The building must be provided with automatic shutdown of any air-handling system (other than non-ducted individual room units with a capacity not more than 1000 L/s and miscellaneous exhaust air systems installed in accordance with Sections 5 and 6 of AS 1668.1) which does not form part of the smoke hazard management system, on the activation of— (i) smoke detectors installed complying with Clause 6 of Specification E2.2a; and any other installed fire detection and alarm system, including a sprinkler system (other than a FPAA101D or FPAA101H system) complying with Specification E1.5.
E4.9	An emergency warning and intercom system complying where applicable with AS 1670.4 must be installed in a Class 9b building used as a theatre, public hall, or the like, having a rise in storeys of more than 2.
F1.0	Performance Requirement FP1.4, for the prevention of the penetration of water through external walls, must be complied with. There are no Deemed-to-Satisfy Provisions for this Performance Requirement in respect of external walls. Performance Solution must be obtained at CC Stage.

BCA Clause	Considerations

F2.3
 	
Table F2.3
	Ground Floor requires
	• Initial review calculated 26 occupants on the Ground Floor based on office use of 10m2 per person as per D1.13.
	• *Based on the initial calculation the following are requried:*
	  ○ *1x Accessible unisex sanitary facility*
	  ○ *1 Male WC + 1x washbasins*
	  ○ *1x Female wc + 1 female washbasins.*
	  ○ *Note the accessible toilet has been counted once for each sex.*
	
	First Floor requires
	• Initial review calculated 66 occupants on the Ground Floor based on office use of 10m2 per person as per D1.13.
	• *Based on the initial calculation the following are requried:*
	  ○ *1x Accessible unisex sanitary facility*
	  ○ *1 Male WC + 2 urinals + 1x washbasins*
	  ○ *2x Female wc + 1 female washbasins.*
	  ○ *Note the accessible toilet has been counted once for each sex.*
	
	Second Floor requires
	• Initial review calculated 92 occupants based on office use of 10m2 per person as per D1.13.
	• *Based on the initial calculation the following are required to the childcare:*
	  ○ *1x Accessible unisex sanitary facility*
	  ○ *2x Male WC + 3 urinals + 1x washbasins*
	  ○ *2x Female wc + 2 female washbasins.*
	  ○ *Note the accessible toilet has been counted once for each sex.*
	
	D1.13(c)—where there is limited public access, a statement from the building owner as to the number of occupants who will use the building can be provided.
	
	No toilets are currently shown. To be further calculated and allocated at CC stage once the use of the lot is determined. At least one accessible bathroom per floor is required in the base building design.

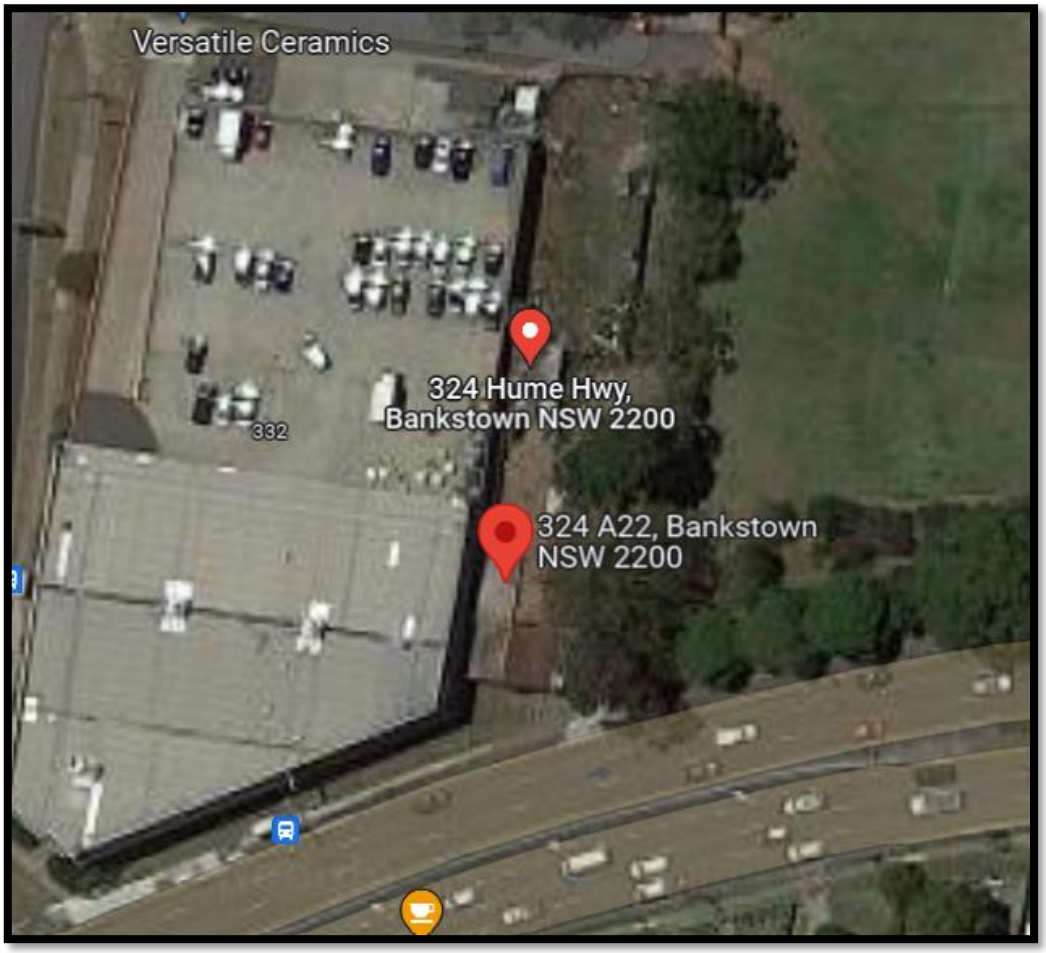
BCA Clause	Considerations
F2.4	Accessible Unisex Sanitary compartment Compliant Circulation space to be provided   Accessible Unisex Sanitary Compartment – ***with shower***  
F2.6	• **A urinal may be—**an individual stall or wall-hung urinal; or each 600 mm length of a continuous urinal trough; or a closet pan used in place of a urinal. • **A washbasin may be—**an individual basin; or a part of a hand washing trough served by a single water tap.
F4.8 F4.9	Sanitary compartments must not open directly into a kitchen or pantry, a room used for public assembly, the workplace. This must be entered into via an airlock 1.1 m2 and fitted with self- closing doors or be mechanically exhaust ventilation and the door adequately screened from view**.**
F4.11	Carpark must have a system of mechanical ventilation complying with AS 1668.2; or a system of natural ventilation complying with Section 4 of AS 1668.4.
F4.12	Kitchen must be provided with a kitchen exhaust hood complying with AS 1668.1 and AS 1668.2
NSW G1.101	A safe manner for cleaning of windows located 3 or more storeys above ground level must be provided, and compliance is achieved where: (a) The windows can be cleaned wholly from within the building; or (b) Via a method complying with the Work Health and Safety Act 2011 and regulations made under that Act. ***Provide design documentation and specifications at CC Stage***

BCA Clause	Considerations
Part G3 Atrium construction	Atrium means a space within a building that connects 2 or more storeys and— is enclosed at the top by a floor or roof (including a glazed roof structure); The lightwell connects more then 2 storeys and may constitue an atrium. Enure the lightwell is not enclosed at the top storey any any glazing or roofing. Alternatively the atrium can connect 3 storeys if the building is AS2118.1 sprinkler protected and one of those storeys is situated at a level at which there is direct egress to a road or open space (Ground Floor).
G6	The DTS provisions of this part apply to buildings containing an outdoor are in addition to the other DTS provisions of the BCA. It does not apply to such areas within a sole occupancy unit. *Note – occupiable outdoor area is a defined as a space on a roof, balcony, or similar part of a building that is open to the sky; and to which access is provided, other than access only for maintenance; and that is not open space or directly connected to open space.* *Open space means a space on the allotment, or a roof or similar part of a building adequately protected from fire, open to the sky and connected directly with a public road.*  

BCA Clause	Considerations
	(a) A lining, material or assembly in an occupiable area must comply with C1.10 as for an internal element. (b) The following fire hazard properties of a lining, material, or assembly in an occupiable are not required to comply with C1.10: (i) Average specific extinction area. (ii) Smoke-development Index. (iii) Smoke development rate. (iv) Smoke growth rate index.
	1. For the purposes of DTS provisions of C2.7, C2.8 and C2.9, a reference to a storey includes an occupiable outdoor area, however a fire wall cannot be used to separate an occupiable area into different fire compartments. 2. For the purposes of the DTS provisions of Part D1, a reference to a storey or room includes an occupiable outdoor area. 3. For the purposes of the DTS provisions of Part D2, a reference to a storey includes an occupiable outdoor area. 4. For the purposes of the DTS provisions of Part E1, a reference to a storey includes an occupiable outdoor area. 5. For the purposes of the Deemed-to-Satisfy Provisions of Part E3, a reference to a storey includes an occupiable outdoor area. 6. For the purposes of the Deemed-to-Satisfy Provisions of Part E4, a reference to a storey includes an occupiable outdoor area. For the purposes of the Deemed-to-Satisfy Provisions of F4.4, F4.8 and F4.9, a reference to a room includes an occupiable outdoor area.

2. Introduction

The commercial lot, the subject of this report, is located at 21 Chamberlain Rd, Padstow NSW 2211. The proposed building is a multi-storey Childcare development.



Site location map (Source: Google maps)

2.1. Report Purpose

The purpose of this report is to assess the current design proposal against the Deemed-to-Satisfy Provisions of BCA 2019 (Amendment 1), and to clearly outline those areas (if any) where compliance is not achieved, where areas may warrant redesign to achieve strict BCA compliance or where areas may be able to be assessed against the relevant performance criteria of BCA 2019 (Amendment 1). Such assessment against relevant performance criteria will need to be addressed by means of a separate Performance Based Fire Safety Engineered Assessment Report to be prepared under separate cover..

2.2. Building Code of Australia

This report is based on the Deemed-to-Satisfy Provisions of the National Construction Code Series Volume 1 – Building Code of Australia, 2019 Amendment 1 Edition (BCA) incorporating the State variations where applicable. Please note that the version of the BCA applicable to new building works is the version applicable at the time of the lodgement of the Construction Certificate application to the Accredited Certifying Authority. The BCA is updated generally on a three-yearly cycle, starting from the 1st of May 2016.

2.3. Referenced Documents

- The Building Code of Australia 2019 Amendment 1 prepared by the Australian Building Codes Board.
- The Guide to the BCA 2019 Amendment 1, prepared by the Australian Building Codes Board.

> Architectural plans:

Drawing Number	Revision	Dated	Drawing Title	Prepared By
DA 001	Rev G	21.11.2022	COVER PAGE	FLDC ARCHITECTS
DA 100	Rev G	21.11.2022	SITE/ROOF PLAN	FLDC ARCHITECTS
DA 101	Rev G	21.11.2022	BASEMENT 2 FLOOR PLAN	FLDC ARCHITECTS
DA 102	Rev G	21.11.2022	BASEMENT 1 FLOOR PLAN	FLDC ARCHITECTS
DA 103	Rev G	21.11.2022	GROUND FLOOR PLAN	FLDC ARCHITECTS
DA 104	Rev G	21.11.2022	LEVEL 1 FLOOR PLAN	FLDC ARCHITECTS
DA 105	Rev G	21.11.2022	LEVEL 2 FLOOR PLAN	FLDC ARCHITECTS
DA 200	Rev G	21.11.2022	PROPOSED ELEVATIONS	FLDC ARCHITECTS
DA 300	Rev G	21.11.2022	PROPOSED SECTIONS	FLDC ARCHITECTS
DA 301	Rev G	21.11.2022	DRIVEWAY SECTIONS	FLDC ARCHITECTS

2.4. Limitations and Exclusions

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

a) Destructive investigation and identification of any aluminium composite panelling.
b) the structural adequacy or design of the building;
c) the inherent derived fire-resistance ratings of any existing structural elements of the building (unless specifically referred to); and
d) the design basis and/or operating capabilities of any existing or proposed electrical, mechanical or hydraulic fire protection services.
e) protection of openable windows under BCA Clause D2.24 within the units; and
f) the swimming pool barrier fencing.
g) Access and facilities for people with disabilities is not addressed. Compliance with Disability Discrimination Act 1992 (DDA) is outside the scope of this report. It should be noted that BCA compliance does not necessarily meet the requirements of the Disability Discrimination Act (DDA).
h) Reporting on hazardous materials, OH&S matters, or site contamination
i) Assessment of any structural elements or geotechnical matters relating to the building, including any structural or other assessment of the existing fire-resistant levels of the building.
j) Assessment of plumbing and drainage installations, including stormwater.
k) Assessment of mechanical plant operations, electrical systems, or security systems
l) Heritage significance
m) Consideration of energy or water authority requirements
n) Environmental or planning issues.
o) Pest inspection or assessment building damage caused by pests (general/visual pest invasion or damage will be reported, however invasive or intrusive inspections have not been carried out)
p) Other Sections of the BCA are not considered.
q) Provision of any construction approvals or certification under Part 4A or Part 5 or Part 6 of the Environmental Planning & Assessment Act 1979.
r) Glazing, shading, lighting calculations and the like required by Section J of the BCA not been carried out.
s) Section J of the BCA not been carried out. Refer to a separate report prepared by an energy efficiency consultant.
t) This assessment excludes BCA clauses D3.0-3.12 (Inclusive), E3.6 and F2.4. Refer to separate access consultant's report.

u) BCA 2019 Amendment 1 does not directly specify slip-resistance classification(s) for all accessible paths of travel; however, we highlight the need under AS 1428.1-2009 for all accessible paths of travel to have a slip-resistant surface. We recommend you should seek surface finish advice from an independent specialist slip safety consultant.

This report does not include, or imply compliance with:

a) the National Construction Code – Plumbing Code of Australia Volume 3;
b) Sections B, D3, F, G, H, I or J of the BCA.
c) the Disability Discrimination Act;
d) Demolition Standards not referred to by the BCA;
e) Work Health and Safety Act;
f) Construction Safety Act;
g) the Swimming Pools Act;
h) Requirements of other Regulatory Authorities including, but not limited to, Telstra, NBN Co, Telecommunications Supply Authority, Water Supply Authority, Electricity Supply Authority, Work Cover, Roads and Maritime Services (RMS), Roads and Transport Authority, Local Council, ARTC, Department of Planning and the like; and
i) Conditions of Development Consent.

Please note that this report is not a tender specification and is not to be used for tendering purposes.

3. Building Description

The following data is provided in respect to review of the building under the Building Code of Australia 2019 Amendment 1 in respect to the compliance assessment of the proposal, to be located at 324 Hume Hwy, Bankstown NSW 2200.

3.1. Building Classifications

The buildings have been classified as follows.

Class	Level	Description
5	Level 2	Commcerial Space
9b	Ground Level and Level 1	Childcare and ancially office, kitchen, laundry and the like. Fitness Centre
7a	Basement 1 Basement 2	Car park, storage, plant rooms and services facilities.

3.2. Rise in Storeys (Clause C1.2)

The building has a rise is storeys of Three (4) based on a desktop assessment.

3.3. Type of Construction (Table C1.1)

The building is to be of Type A Construction; the most fire resisting.

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

Floor Areas

- Basement 1 = approx.. 1572sqm
- Basement 2 = approx.. 1572sqm
- Ground Floor = approx.. 1488sqm
- First Floor = approx.. 1150sqm
- Second Floor = approx.. 1150sqm
- Total = 6,932 m2

To determine if such a building complies with Table C2.2, the following calculations are necessary:

- Class 5 = 3788sqm/6,932sqm = (54.65%)
    - Maximum area of Class 5 allowed by Table C2.2 = 8000 m2
    - The percentage of Class 5 is 54.65% = 54.65% of 8000 m2 = **4372m2**
- Class 7a = 3,144sqm/6,932sqm (45.35%)
    - Maximum area of Class 7a allowed by Table C2.2 = 5000 m2
    - The percentage of Class 7a is 45.35% = 45.35% of 5000 m2 = **2267m2**

Maximum allowable floor area = 4372 + 2267 = 6,639m2

The building is subject to maximum floor area and volume limits of:-

Class 5	Maximum Floor Area	8,000m^2
	Maximum Volume	48,000m^3

Class 7a	Maximum Floor Area	5, 000 m^2
	Maximum Volume	30, 000 m^3

3.5. Effective Height

The building has an effective height not greater than 12 metres [circa 10.3m]. This is based on a desktop assessment only.

The BCA 2019 Amendment 1 definition is as follows:

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

4. BCA ASSESSMENT

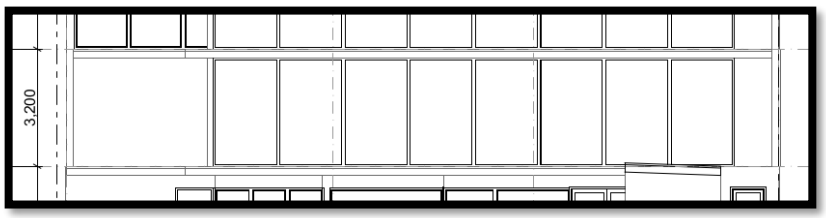
The following assessment will provide an overview of compliance with the BCA and identify issues that require attention.

All Deemed-to-Satisfy clauses that are applicable to the subject building have been referred to below, including a comment adjacent to each clause of the proposal's ability to satisfy each respective clause.

The abbreviations outlined below have been used in the following tables:

N/A or Informational	The Deemed-to-Satisfy clause does not apply to the subject Building or is informational.
Complies	The relevant provisions of the Deemed-to-Satisfy clause appear to have been generally satisfied.
DNC	Does Not Comply.
CR 'Compliance Required'	It is considered that therewas not sufficient information included in the documentation to accurately determine strict compliance with the individual clause requirements. Further information is necessary to determine the compliance potential of the building design.
PS	Performance Solution with respect to this Deemed-to-Satisfy Provision is necessary to satisfy the relevant Performance Requirements.

Clause	Status	Comments
SECTION B - STRUCTURE		
Part B1 Structural Provisions	CR	The building or structure, during construction and use, with appropriate degrees of reliability, must— a) perform adequately under all reasonably expected design actions; and b) withstand extreme or frequently repeated design actions; and c) be designed to sustain local damage, with the structural system as a whole remaining stable and not being damaged to an extent disproportionate to the original local damage; and d) avoid causing damage to other properties, by resisting the actions to which it may reasonably expect to be subjected. The structural resistance of materials and forms of construction must be determined using five percentile characteristic material properties with appropriate allowance for— a) known construction activities; and b) type of material; and c) characteristics of the site; and d) the degree of accuracy inherent in the methods used to assess the structural behaviour; and e) action effects arising from the differential settlement of foundations, and from restrained dimensional changes due to temperature, moisture, shrinkage, creep and similar effects. Any glass installations that are at risk of being subjected to human impact must have glazing that—

Clause	Status	Comments
		a) if broken on impact, will break in a way that is not likely to cause injury to people; and b) resists a reasonably foreseeable human impact without breaking; and c) is protected or marked in a way that will reduce the likelihood of human impact. ***Detailed compliance with this clause must be incorporated at CC Stage (and structural details)***
SECTION C - FIRE RESISTANCE		
Part C1 Fire Resistance & Stability		
C1.1 Spec C1.1 Type of Construction Required	CR	1. **Carpark** is to be separated from the ground floor area by a 120/120/120 FIRE WALL. 2. **Floor –** see C2.9 to be separate by 120/120/120 FRL floors. 3. **Opening within a Fire Wall** - C2.7(a)(ii) requires all openings in fire walls to not reduce the required FRL of Spec C1.1 for the fire wall (120/120/120). 4. **Lift Shaft**– Lift Shaft to be enclosed by 120/120/120 rated shaft. The shaft must be bound from the remainer of the building. 5. **Riser/Shaft** to be enclosed by 120/ 90/ 90 rated shaft (unless housing emergency equipment or main services then 120/120/120 FRL). The shaft must be bound from the remainer of the building. 6. **Slab edge and façade junction** - The current Slab edge construction detail to demonstrate DTS compliant fire separation provided between storeys (C1.1, C2.7, C2.8, C2.9).  7. **Fin Walls** - "fin walls' obstructing the straight line between openings and the fire source feature, must have an FRL of not less than 30/-/- and be neither transparent nor translucent. 8. **Shelf Angles** -If shelf angles are proposed to be used within the external wall for support, they are required to be fire rated if the external wall depends upon direct vertical or lateral support from the shelf angle. 9. **Slab Is Set Down** - Where slab is set down (e.g., 20mm) the FRL's may not achieve the required FRL in accordance with C1.1 & Spec C1.1; Locations as such, are to be deemed necessary by Structural Engineer. Compliance to be achieved via DTS or Performance Based Solution. 10. **Fire Rating -** This fire rating is required in two directions. The walls to fire rated shafts must achieve the fire rating from both directions i.e., from inside and outside.

Clause	Status	Comments

11. **Internal Walls** - any internal wall required to have an FRL with respect to integrity and insulation must extend to the underside of the floor next above; or the underside of a roof complying with Table 3; or if under Clause 3.5 the roof is not required to comply with Table 3, the underside of the non-combustible roof covering and, except for roof battens with dimensions of 75 mm x 50 mm or less or sarking-type material, must not be crossed by timber or other combustible building elements.
12. **Loadbearing Internal Wall and A Loadbearing Fire Wall** - a loadbearing internal wall and a loadbearing fire wall (including those that are part of a loadbearing shaft) must be constructed from concrete; or masonry; or any combination of them.
13. **Columns** - the FRLs specified in Table 3 for an external column apply also to those parts of an internal column that face and are within 1.5 m of a window and are exposed through that window to a fire-source feature.
14. **Roof: Concession** - A roof need not comply with Table 3 if its covering is non-combustible and the ceiling immediately below the roof has a resistance to the incipient spread of fire to the roof space of not less than 60 minutes.
15. **Internal columns and walls: Concession** - For a building with an effective height of not more than 25 m and having a roof without an FRL in accordance with Clause 3.5, in the storey immediately below that roof, internal columns other than those referred to in Clause 3.1(f) and internal walls other than fire walls and shaft walls may have FRL 60/60/60.

Building element	*Class of building — FRL: (in minutes) Structural adequacy/Integrity/Insulation*
Class 5, 7a or 9	
EXTERNAL WALL (Including any column and other building element incorporated within it) or other external building element, where the distance from any fire-source feature to which it is exposed is—	
For loadbearing parts—	
less than 1.5 m	120/120/120
1.5 to less than 3 m	120/ 90/ 90
3 m or more	120/ 60/ 30
For non-loadbearing parts—	
less than 1.5 m	–/120/120
1.5 to less than 3 m	–/ 90/ 90
EXTERNAL COLUMN not incorporated in an external wall—Loadbearing columns	
120/–/–	
COMMON WALLS and FIRE WALLS—	120/120/120
INTERNAL WALLS—	
Fire-resisting lift and stair shafts—	
Loadbearing	120/120/120
Non-loadbearing	–/120/120
Bounding public corridors, public lobbies and the like— Loadbearing	
120/–/–	
Ventilating, pipe, garbage, and like shafts not used for the discharge of hot products of combustion—	
Loadbearing	120/ 90/ 90

Clause	Status	Comments

Non-loadbearing	–/ 90/ 90
OTHER LOADBEARING INTERNAL WALLS, INTERNAL BEAMS, TRUSSES, and COLUMNS—	
120/–/–	
FLOORS	120/120/120
ROOFS	120/ 60/ 30

1. **Exposure to fire-source features**
   (a) 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—
      (i) has an FRL of not less than 30/–/–; and
      (ii) is neither transparent nor translucent.
   (b) A part of a building element is not exposed to a fire-source feature if the fire-source feature is—
      (i) 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
      (ii) 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.
   (c) If various distances apply for different parts of a building element—
      (i) the entire element must have the FRL applicable to that part having the least distance between itself and the relevant fire-source feature; or
      (ii) each part of the element must have the FRL applicable according to its individual distance from the relevant fire-source feature,
   but this provision does not override or permit any exemption from Clause 2.2.
2. **Fire protection for a support of another part**
   (a) 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 (b), must—
      (i) have an FRL not less
      (ii) than that required by other provisions of this Specification; and
      (iii) 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—
         (A) for the supporting part itself; and
         (B) for the part it supports; and
      (iii) be non-combustible—
         (A) if required by other provisions of this Specification; or
         (B) if the part it supports is required to be non-combustible.
   (b) The following building elements need not comply with (a)(ii) and (a)(iii)(B):
      (i) An element providing lateral support to an external wall complying with Clause 5.1(b) or C1.11.
      (ii) An element providing support within a carpark and complying with Clause 3.9, 4.2 or 5.2.
      (iii) A roof providing lateral support in a building—
         (A) of Type A construction if it complies with Clause 3.5(a), (b) or (d); and
         (B) of Type B and C construction.
      (iv) A column providing lateral support to a wall where the column complies with Clause 2.5(a) and (b).
      (v) 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.
3. **Lintels**
   A lintel must have the FRL required for the part of the building in which it is situated, unless it does not contribute to the support of a fire door, fire window or fire shutter, and—
   (a) it spans an opening in—
      (i) a wall of a building containing only one storey; or
      (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.
4. 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.

General concessions

(a) **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:
      - ❖ Hot water or other water tanks.
      - ❖ Ventilating ductwork, ventilating fans and their motors.
      - ❖ Air-conditioning chillers.
      - ❖ Window cleaning equipment.
      - ❖ Other service units that are non-combustible and do not contain flammable or combustible liquids or gases.

(b) **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.
   - ***Curtain wall*** *means a non-loadbearing external wall that is not a panel wall.*

Clause	Status	Comments
• ***Panel wall*** *means a non-loadbearing external wall, in frame or similar construction, that is wholly supported at each storey.* (c) **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 Tables 3, 4 and 5 if— (i) it does not form part of the only path of travel to a required exit from the building; and (ii) in Type A construction— A) it is situated not more than 2 storeys above the lowest storey providing direct egress to a road or open space: and B) any supporting columns are of non-combustible construction. (d) **Enclosure of shafts** 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, except that these provisions need not apply to— (i) the top of a shaft extending beyond the roof covering, other than one enclosing a fire-isolated stairway or ramp; or (ii) the bottom of a shaft if it is non-combustible and laid directly on the ground.		
Type A Fire-Resisting Construction 1. Each building element listed in Table 3 and any beam or column incorporated in it, must have an FRL not less than that listed in the Table for the particular Class of building concerned. 2. The walls must achieve the fire rating from both directions i.e. from inside and outside. 3. **Internal wall:** The internal wall required to have an FRL with respect to integrity and insulation must extend to; • the underside of the floor next above; or • the underside of a roof complying with Table 3; or • if under Clause 3.5 the roof is not required to comply with Table 3, the underside of the non-combustible roof covering and, except for roof battens with dimensions of 75 mm x 50 mm or less orsarking-type material, must not be crossed by timber or other combustible building elements; or • 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. 4. **Loadbearing internal Wall/Loadbering Fire Wall**: (including those that are part of a loadbearing shaft) must be constructed from concrete or masonry. There is no proposed Fire protected timber in the development. 5. **Column:** the FRLs specified in Table 3 for an external column apply also to those parts of an internal column that face and are within 1.5 m of a window and are exposed through that window to a fire-source feature. 6. **3.3 Floor loading of Class 5 and 9b buildings: Concession** - If a floor in a Class 5 or 9b building is designed for a live load not exceeding 3 kPa— • the floor next above (including floor beams) may have an FRL of 90/90/90; or • the roof, if that is next above (including roof beams) may have an FRL of 90/60/30. 7. **3.4 Roof superimposed on concrete slab:** Concession A roof superimposed on a concrete slab roof need not comply with Clause 3.1 as to fire-resisting construction if— the superimposed roof and any construction between it and the concrete slab roof are non-combustible throughout; and the concrete slab roof complies with Table 3. 8. **3.5 Roof: Concession -** A roof need not comply with Table 3 if its covering is non-combustible and the building has a rise in storeys of 3 or less 9. **3.6 Roof lights** - If a roof is required to have an FRL or its covering is required to be non-combustible, roof lights or the like installed in that roof must have an aggregate area of not more than 20% of the roof surface; and • be not less than 3 m from any boundary of the allotment other than the boundary with a road or public place; • and wall and any openings in that part of the wall for 6 m vertically above the roof light or the like are protected in accordance with C3.4; • and any roof light or the like in an adjoining sole-occupancy unit if the walls bounding the unit are required to have an FRL; • and any roof light or the like in an adjoining fire-separated section of the building. 10. **3.7 Internal columns and walls: Concession** - For a building with an effective height of not more than 25 m and having a roof without an FRL in accordance with Clause 3.5, in the storey immediately below that roof, internal columns other than those referred to in Clause 3.1(f) and internal walls other than fire walls and shaft walls may have with rise in storeys not exceeding 3: no FRL.		
C1.2 Calculation of Rise In Storeys	Info	Refer to section 3.2 of this report
C1.3 Buildings of Multiple Classifications	CR	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 C1.1 on the basis that the classification applying to the top storey applies to all storeys.
C1.4 - Mixed Types of Construction	CR	A building may be of mixed Types of construction where it is separated in accordance with C2.7 and the type of construction is determined in accordance with C1.1 or C1.3. The only circumstance in which the Deemed-to-Satisfy Provisions allow a building to be of different types of construction is when the types are separated from one another by a fire wall as described in C2.7(b).

Clause	Status	Comments
C1.5 - Two Storey Class 2, 3 or 9c buildings	N/A	Not Applicable
C1.6 - Class 4 Parts	N/A	Not Applicable
C1.7 - Open Spectator Stands	N/A	Not Applicable
C1.8 - Lightweight Construction	CR	Where it is proposed to use *lightweight construction* (within the meaning of the BCA) this must comply with Specification C1.8 if it is used in a wall system— (i) that is required to have an FRL; or (ii) for a lift shaft, stair shaft or service shaft or an external wall bounding a public corridor including a non-fire-isolated passageway or non-fire-isolated ramp. If lightweight construction is used for the fire-resisting covering of a steel column or the like, and if — (i) the covering is not in continuous contact with the column, then the void must be filled solid, to a height of not less than 1.2 m above the floor to prevent indenting: and (ii) the column is liable to be damaged from the movement of vehicles, materials or equipment, then the covering must be protected by steel or other suitable material. ***Detailed compliance with this clause must be incorporated into the CC plans & specs***

Specification C1.8 - Structural tests for lightweight construction

- This Specification describes tests to be applied to and criteria to be satisfied by a wall system of lightweight construction.
- A wall system need not be tested in accordance with this Specification for static pressure or impact if it is designed and constructed in accordance with the Deemed-to-Satisfy Provisions of Section B to resist the appropriate pressures and impacts defined in this Specification.

3.1 Walls of certain Class 9b buildings

Lightweight construction forming—

(a) a wall of a lift shaft and stair shaft; and

(b) an external and internal wall bounding a public corridor, public lobby or the like, including a fire-isolated and non-fire-isolated passageway or ramp, in a spectator stand, sports stadium, cinema or theatre, railway or bus station or airport terminal, must be subjected to the following tests and must fulfil the following criteria:

(i) The materials tests of Clause 5(a) and the criteria of Clause 6(a).

(ii) A static test by the imposition of a uniformly distributed load of 1.0 kPa (or its equivalent) in accordance with Clause 5(b) and the damage and deflection criteria of Clauses 6(b) and (c) respectively.

(iii) A dynamic test by the fall of the impact bag through a height of 350 mm in accordance with Clause 5(c) and the damage and deflection criteria of Clauses 6(b) and (d) respectively.

(iv) The surface indentation test of Clause 5(d) and the surface indentation criterion of Clause 6(e).

3.2 Walls of shafts and fire-isolated exits generally

Clause	Status	Comments

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:

(a) The materials tests of Clause 5(a) and the criteria of Clause 6(a).

(b) A static test by the imposition of a uniformly distributed load of 0.35 kPa (or its equivalent) in accordance with Clause 5(b) and the damage and deflection criteria of Clauses 6(b) and (c) respectively.

(c) A dynamic test by the fall of the impact bag through a height of 150 mm in accordance with Clause 5(c) and the damage and deflection criteria of Clauses 6(b) and (d) respectively.

(d) The surface indentation test of Clause 5(d) and the surface indentation criterion of Clause 6(e).

3.3 Additional requirements for lift shafts

(a) In addition to the requirements of Clauses 3.1 and 3.2, 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—

(i) where the lift car speed is 7 m/s or less — 106 cycles of a uniformly distributed load between 0 and 0.2 kPa (or its equivalent); or

(ii) where the lift car speed is greater than 7 m/s — 106 cycles of a uniformly distributed load between 0 and 0.35 kPa (or its equivalent) in accordance with Clause 5(e) and must fulfil the damage criteria of Clause 6(b).

(b) The wall system must be subjected to the static test in accordance with Clause 3.2(b) after the successful.

3.4 Walls generally

An external and internal wall of lightweight construction that is required to be fire-resisting, other than one covered by Clauses 3.1, 3.2 or 3.3, must be subjected to the following tests and must fulfil the following criteria:

(a) The materials tests of Clause 5(a) and the criteria of Clause 6(a).

(b) A static test by the imposition of a uniformly distributed load of 0.25 kPa (or its equivalent) in accordance with Clause 5(b) and the damage and deflection criteria of Clauses 6(b) and (c) respectively.

(c) A dynamic test by fall of the impact bag through a height of 100 mm in accordance with Clause 5(c) and the damage and deflection criteria of Clauses 6(b) and (d) respectively.

(d) The surface indentation test of Clause 5(d) and the surface indentation criterion of Clause 6(e).

C1.9 - non-combustible building elements	CR	Building elements required to be non-combustible, concrete, masonry, or fire-protected timber in a building of Type A construction.

External wall	Non-combustible
Common wall	Non-combustible
Floor and floor framing of lift pit	Non-combustible
All loadbearing internal walls (including those of shafts)	Concrete, masonry
Loadbearing fire walls	Concrete, masonry
Non-loadbearing walls required to be fire-resistant	Non-combustible
Non-loadbearing lift, ventilation, pipe, garbage and like shafts which do not discharge hot products of combustion	Non-combustible

(a) In a building *required* to be of Type A or B construction, the following building elements and their components must be *non-combustible*:

(i) External walls and common walls, including all components incorporated in them including the facade covering, framing and insulation.

Clause	Status	Comments
		(ii) The flooring and floor framing of lift pits. (iii) Non-loadbearing internal walls where they are required to be fire-resisting. (b) A shaft, being a lift, ventilating, pipe, garbage, or similar shaft that is not for the discharge of hot products of combustion, that is non-loadbearing, must be of non-combustible construction in— (i) a building *required* to be of Type A construction; and (c) A *loadbearing internal wall* and a *loadbearing fire wall*, including those that are part of a *loadbearing shaft*, must comply with **Specification C1.1**. (d) The requirements of **(a)** and **(b)** do not apply to gaskets, caulking, sealants, termite management systems, glass including laminated glass, thermal breaks associated with glazing systems, damp-proof courses. (e) The following materials may be used wherever a *non-combustible* material is *required*: (i) Plasterboard. (ii) Perforated gypsum lath with a normal paper finish. (iii) Fibrous-plaster sheet. (iv) Fibre-reinforced cement sheeting. (v) Pre-finished metal sheeting having a *combustible* surface finish not exceeding 1 mm thickness and where the *Spread-of-Flame Index* of the product is not greater than 0. **(vi) Sarking type materials that do not exceed 1mm in thickness and have a Flammability Index not greater than 5.** (vii) Bonded laminated materials where— (A) each lamina, including any core, is *non-combustible*; and (B) each adhesive layer does not exceed 1 mm in thickness and the total thickness of the adhesive layers does not exceed 2mm; and (C) the *Spread-of-Flame Index* and the *Smoke-Developed Index* of the bonded laminated material as a whole do not exceed 0 and 3 respectively. ***Details demonstrating compliance to be provided at CC Stage.***
C1.10 - Fire Hazard Properties	CR	(a) The fire hazard properties of the following internal linings, materials and assemblies must comply with Specification C1.10 by way of test reports / certificates provided from a *registered testing authority* (within the meaning of the BCA): (i) Floor linings and floor coverings. (ii) Wall linings and ceiling linings.

Clause	Status	Comments
		(iii) Air-handling ductwork. (iv) Lift cars. (v) NSW C1.10(a)(v) -In a Class 9b building used as an entertainment venue , a material used to cover closed back upholstered seats; and a public hall or the like a proscenium curtain required by Specification H1.3. (vi) Escalators, moving walkways and non required non fire isolated stairways or pedestrian ramps subject to Specification D1.12. (vii) Sarking type materials. (viii) Attachments to floors, ceilings, internal walls and the internal linings of external walls. (ix) Other materials including insulation materials other than sarking type materials. (b) **NSW**: Paint or fire -retardant coatings must not be used in order to make a material comply with the required fire hazard property, except in respect to a material referred to in NSW Specifications C1.10, NSW Table 4 and to which Notes 4 and 5 are applicable. (c) The requirement s of (a) do not apply to a material or assembly if it is – (i) plaster, cement render, concrete, terrazzo, ceramic tile or the like; or (ii) a fire protective covering; or (iii) a timber framed window; or (iv) a solid timber handrail or skirting; or (v) a timber-faced door; or (vi) an electrical switch, socket-outlet, cover plate or the like; or (vii) a material used – (A) a roof insulating material applied in continuous contact with a substrate; or (B) an adhesive; or (C) a damp-proof course, flashing, caulking, sealing, ground moisture barrier or the like; or (viii) a paint, varnish, lacquer or similar finish, other than nitro-cellulose lacquer; or (ix) a clear or translucent roof light of glass fibre-reinforced polyester if – (A) the roof in which is is installed forms part of a single storey building required to be Type C construction; and (B) the material is used as part of the roof covering; and

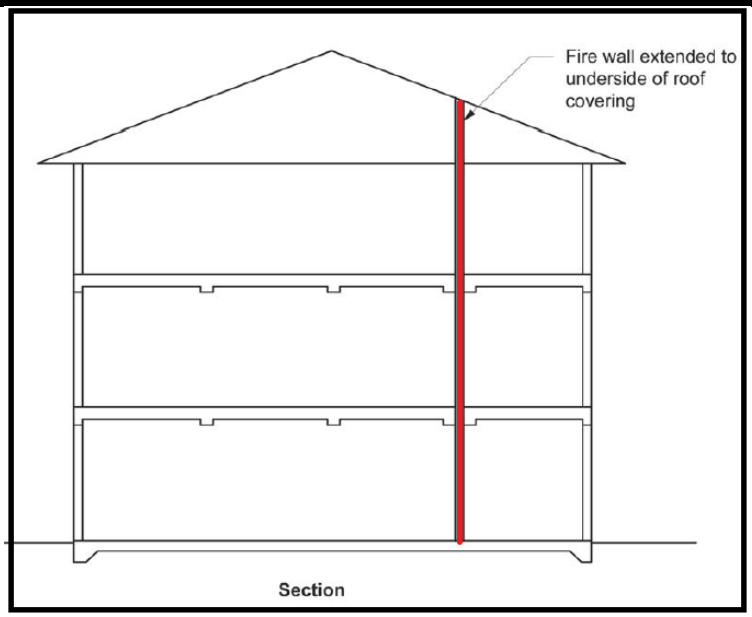
Clause	Status	Comments
		(C) it is no closer than 1.5m from another roof light of the same type; and (D) each roof light is not more than 14m² in area; and (E) the area of the roof lights per 70m² of roof surface is not more than 14m² in area; or (x) a face plate or neck adaptor of supply and return air outlets of an air handling system; or (xi) a face plate or diffuser plate of light fitting and emergency exit signs and associated electrical wiring and electrical components; or (xii) a joinery unit, cupboard, shelving or the like; or (xiii) NSW: an attached non-building fixture and fitting such as – (A) A curtain, blind, or similar décor, other than- (B) A whiteboard, window treatment or the like; or (xiv) Timber treads, risers, landings and associated supporting framework installed in accordance with D2.25 where the Spread-of-Flame Index and the Smoke-Developed Index of the timber does not exceed 9 and respectively; or (xv) Any other material that does not significantly increase the hazards of the fire. ***Details demonstrating compliance to be provided at CC Stage.***
C1.11 - Performance of External Walls in Fire	Info	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 C1.11.
C1.12 - Combustible materials	N/A	Deleted
C1.13 - Fire protected timber: concession	N/A	Not Applicable
C1.14 - Ancillary elements	CR	All *ancillary element* must not be fixed, installed or attached to the internal parts or external face of an *external wall* that is *required* to be *non-combustible* unless it is one of the following: (a) An ancillary element that is non-combustible. (b) A gutter, downpipe or other plumbing fixture or fitting. (c) A flashing. (d) A grate or grill not more than 2m² in an area associated with a building service. (e) An electrical switch, socket outlet, cover plate or the like.

Clause	Status	Comments
		(f) A light fitting. (g) A *required* sign. (h) A sign other than one provided under (a) or (g) that – (1) Achieves a group number 1 or 2; and (2) Does not extend beyond one storey; and (3) Does not extend beyond one fire compartment; and (4) 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 – (1) Meets the requirements of Table 4 of Specification C1.10 as an internal element; and (2) Serves a storey - (A) At ground level; or (B) Immediately above a storey at ground level ; and (3) 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) A paint, lacquer or similar finish, (m) A gasket, caulking, sealant or adhesive directly associated with (a) to (k). ***Details demonstrating compliance to be provided at CC Stage.***
Part C2 - Compartmentation & Separation.		
C2.1 - Application of Part	Info	C2.2, C2.3 and C2.4 do not apply to a carpark provided with a sprinkler system (other than a FPAA101D or FPAA101H system complying with Specification E1.5, an open-deck carpark or an open spectator stand.
C2.2 - General Floor Area & Volume Limitations	DNC	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 and maximum volume set out in Table C2.2 & C2.5, except as permitted in C2.3. Fire compartment means— the Deemed-to-Satisfy Provisions — any part of a building separated from the remainder by walls and/or floors each having an FRL not less than that required for a fire wall for that type of construction and where all openings in the separating construction are protected in accordance with the Deemed-to-Satisfy Provisions of the relevant Part. ***Refer to Part 3.4 of this report for calculations.*** • **Maximum allowable floor area = 6,637.4m^2**

Clause	Status	Comments
		• **Proposed Total Floor Area = 6,932 m²** 3) ***Option A:*** *The building is compartmentalized via fire walls into separate fire compartments complying with the permitted floor area and volume permitted under Type A construction. Plans demonstrating compliance to be provided. Refer to clause C2.7 and C2.9 of this report.* • *A fire compartment contains walls, floors and the like creating a compartment (or "box") of any shape used to limit the spread of fire to another compartment or part of a building.* • *If any floor has an opening for an open stairway or escalator, a fire could spread through the opening—that floor would not form the boundary of a fire compartment.* • *If there are no distinct fire barriers erected, then the whole building forms a fire compartment.* 4) ***Option B****:* D*tS departure to be confirmed noting changes to architectural layout. Discussions to be held with a registered Fire Engineer in order to develop a Performance Based Solution addressing the compartmentation departure.*
C2.3 - Large Isolated Buildings	N/A	Not Applicable
C2.4 - Requirements for Open Space	N/A	Not Applicable
C2.5 - Class 9a & 9c Buildings	N/A	Not Applicable
C2.6 - Vertical Separation of openings in external walls	CR	(a) 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 450mm outside the lower opening (measured horizonally), the openings must be separated by – (i) A spandrel which – (A) Is not less than 900mm in height; and (B) Extends not less than 600mm above the upper surface of the intervening floor; and (C) Is of noncombustible material having an FRL on not less 60/60/60; or (ii) Part of a curtain wall or panel wall that complies with (i); or i. Construction that complies with (i) behind a curtain wall and has any gaps packed with non-combustible material that will withstand thermal expansion and structural movement of the walling without the loss of seal against fire and smoke; or (iii) A slab or other horizontal construction that –

Clause	Status	Comments
		i. Projects outwards from the external face of the wall not less than 1100mm; and ii. Extends along the wall not less than 450mm beyond the openings concerned; and iii. Is non-combustible and has an FRL of not less than 60/60/60. (b) The requirements of (a) do not apply to – i. An open-deck carpark; or ii. A building which has a sprinkler system (other than a FPAA101D or FPAA101H system) complying with Specification E1.5 installed throughout; or iii. Openings within the same stairway; or iv. Openings in external walls where the floor separating the storeys does not require an FRL with respect to integrity and insulation. (c) For the purposes of C2.6, 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. ***Details demonstrating compliance to be provided at CC Stage.***
C2.7 - Separation by Fire Walls	CR	(a) **Construction** – a fire wall must be constructed in accordance with the following: (i) The fire wall has the relevant FRL prescribed by Specification C1.1 for each of the adjoining parts, and if these are different, the greater FRL; except where Tables 3.9, of Specification C1.1 permit a lower FRL on the carpark side. i. Any openings in the fire wall must not reduce the FRL required by SpecificationC1.1 for the fire wall, except where permitted by the Deemed-to-Satisfy Provisions of Part C3. ii. 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. **Example of method of separating a building by a fire wall in accordance with C2.7(b)(ii)**

Clause	Status	Comments



(b) **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 DTS provisions of Sections C, D & E if it is constructed in accordance with (a) and the following:

(i) 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.

i. The fire wall is carried through to the underside of the roof covering.

ii. 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 –

(A) The covering of the higher roof, or not less than 6m above the covering of the lower roof; or

i. The lower roof if it has an FRL not less than that of a fire wall and no openings closer than 3m to any wall above the lower roof; or

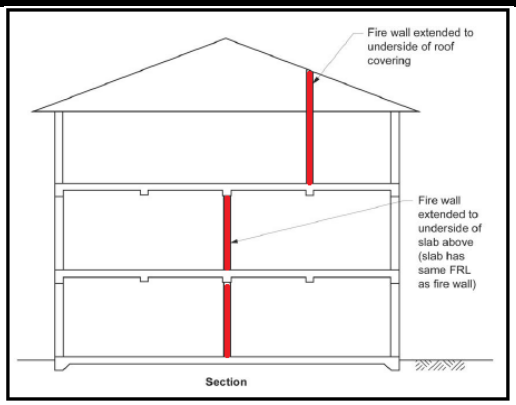
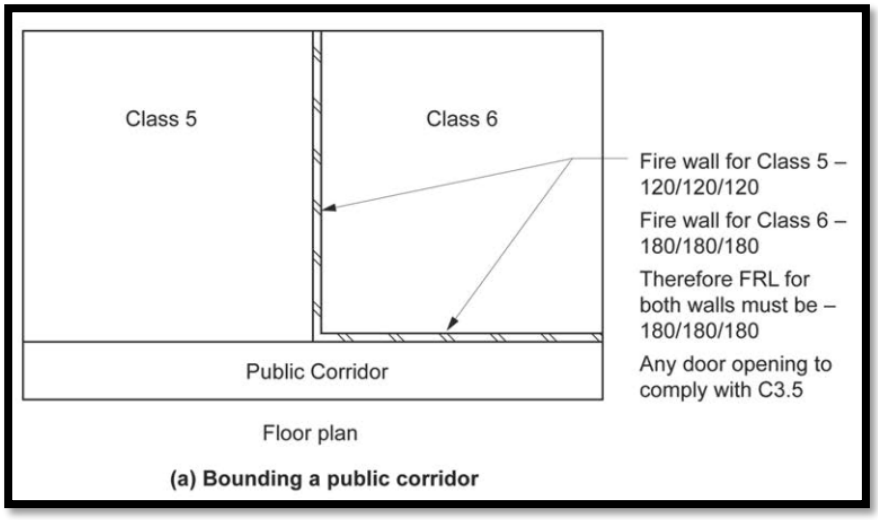
ii. The lower roof if its covering is non combustible and the lower part has a sprinkler system (other than a FPAA101D or FPAA101H system complying with Specification E1.5.

(c) **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 –

(i) A floor having an FRL required for a fire wall; or

i. The roof covering.

Figure C2.7(2) Example of a method of separating a building into fire compartments by a fire wall in accordance with C2.7(c)

Clause	Status	Comments
		 ***Details demonstrating compliance to be provided at CC Stage.***
C2.8 - Separation of Classifications in the same storey	CR	With differing FRLs, it is important that a fire in one classification does not cause the failure of building elements in any other classification. In this instance the class 5 to the class 6 on ground floor. There are two options to stop a fire spreading from one classification to another classification on the same storey: 1. use the highest of the two fire-resistance levels (FRLs) required for each building element in that storey 2. Place a fire wall between the two different classifications. The fire wall must be the higher FRL. If a doorway is located in the fire wall, it must comply with C3.5. Example from Guide  In a building containing different classifications located alongside one other in the same storey - (a) each building element in that storey must have the higher FRL prescribed in Specification C1.1 for that element for the classifications concerned; or (b) the parts must be separated in that storey by a fire wall having –

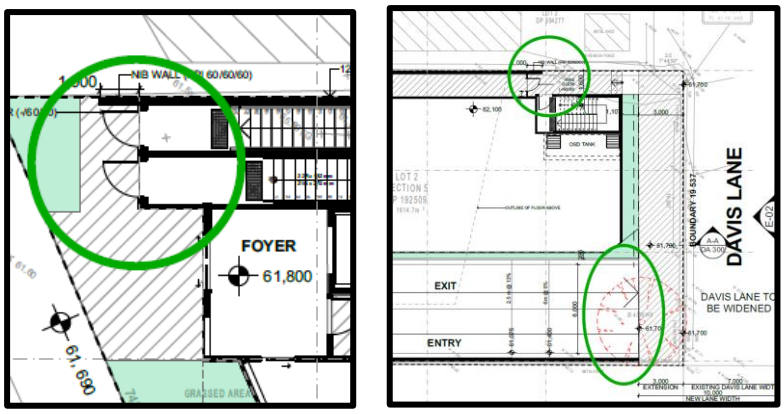
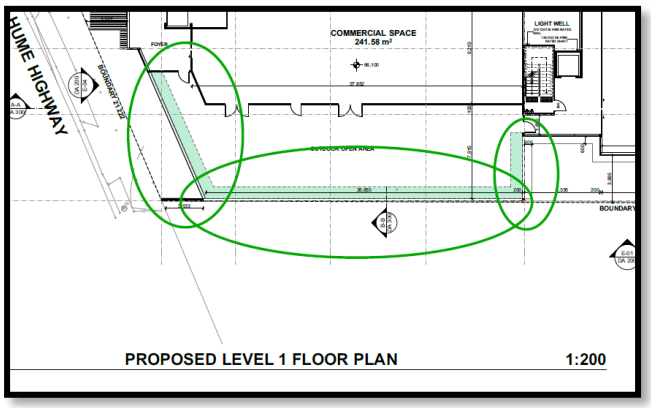
<table>
<tr><th>Clause</th><th>Status</th><th>Comments</th></tr>
<tr><td></td><td></td><td>(i) the higher FRL prescribed in Table 3; or
<table>
<tr><th>BCA Class</th><th>FRL
(Table 3 of Spec C1.1)</th></tr>
<tr><td>Class 5, 7, 9b</td><td>120/120/120</td></tr>
</table>
Detailed compliance with this clause must be incorporated at CC Stage</td></tr>
<tr><td>C2.9 - Separation of Classifications in different storeys</td><td>CR</td><td>The aim of C2.9 is for the fire load of a storey to determine the fire protection of the floor above it. A fire on one storey will affect the storey above to a greater degree than any storey below.

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 C1.1 for the classification of the lower storey.
<table>
<tr><th>BCA Class</th><th>FRL
(Table 3 of Spec C1.1)</th></tr>
<tr><td>Class 5, 7, 9b</td><td>120/120/120</td></tr>
</table>
Detailed compliance with this clause must be incorporated at CC Stage</td></tr>
<tr><td>C2.10 - Separation of lifts shafts</td><td>CR</td><td>(a) Any lift connecting more than 2 storeys, or more than 3 storeys where the building is sprinkler protected must be separated from the remainder of the building by enclosure in a shaft in which –
i. For Type A construction – the walls have the FRL prescribed by Specification C1.1; and
(b) …
(c) …
(d) Openings for lift landing doors and services must be protected in accordance with the DTS provisions of Part C3.
Detailed compliance with this clause must be incorporated at CC Stage</td></tr>
<tr><td>C2.11 - Stairways and lifts in one shaft</td><td>CR</td><td>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.</td></tr>
<tr><td>C2.12 - Separation of Equipment</td><td>CR</td><td>(a) Equipment other than that described in (b) and (c) must be separated from the remainder of the building with construction complying with (d), if that equipment comprises –
(i) lift motors and lift control panels or
i. Emergency generators used to sustain emergency equipment operating in the emergency mode; or
ii. Central smoke control plant; or
iii. Boilers; or
iv. A battery system installed in that building that has a total voltage of 12 volts or more and a storage capacity of 200kWh or more.</td></tr>
</table>

Clause	Status	Comments
		(b) Equipment need not be separated in accordance with (a) if the equipment comprises- (i) Smoke control exhaust fans located in the air stream which are constructed for high temperature operation in accordance with Specification E2.2b; or i. Stair pressurizing equipment installed in compliance with AS 1668.1; or ii. A lift installation without a machine room; or iii. Equipment otherwise adequately separated from the remainder of the building. (c) Separation of onsite fire pumps must comply with the requirements of AS2419.1. (d) Separating construction must have – (i) Except as provided by (ii) – (A) An FRL is required by Specification C1.1, but not less than 120/120/120; and (B) Any doorway protected with a -/120/30 self-closing fire door; or i. When separating a lift shaft and lift motor room, an FRL not less than 120/-/-. ***Detailed compliance with this clause must be incorporated at CC Stage***
C2.13 Electrical Supply	CR	(a) An electricity sub-station must be separated from the building in accordance with the Energy Authority Requirements (i.e. Ausgrid). *Sub-station is not detailed on the plans.* (b) A main switchboard located within the building (and which sustains emergency equipment operating in the emergency mode) must – (i) be separated from any other part of the building by construction having an FRL of not less than 120/120/120; and i. have any doorway in that construction protected with a self-closing fire door having an FRL of not less than –/120/30. (c) Electrical conductors located within the building that supply – (i) a substation located within the building which supplies a main switchboard covered by (b); or i. a main switchboard covered by (b), must— ii. have a classification in accordance with AS/NZS 3013-2005 of not less than— (A) if located in a position that could be subject to damage by motor vehicles — WS53W; or (B) otherwise — WS52W; or

Clause	Status	Comments
		iii. be enclosed or otherwise protected by construction having an FRL of not less than 120/120/120 (d) 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. (e) For the purposes of (d), emergency equipment includes but it is not limited to – (i) Fire hydrant booster pumps i. Pumps for automatic sprinkler systems, water spray, chemical fluid suppression systems or the like. ii. Pumps for fire hose reels where such pumps and fire hose reels form the sole means of fire protection in the building. iii. Air handling systems designed to exhaust and control the spread of fire and smoke. iv. Emergency lifts. v. Control and indicating equipment. vi. Emergency warning and intercom systems (EWIS). Confirmation required for sprinkler provisions within the Main Switch Room otherwise a Performance Solution should be explored to omit sprinkler requirements (detection to be provided in lieu). ***compliance with this clause must be incorporated at CC Stage***
C2.14 Public corridors in Class 2 & 3 Buildings	NA	Not Appilicable

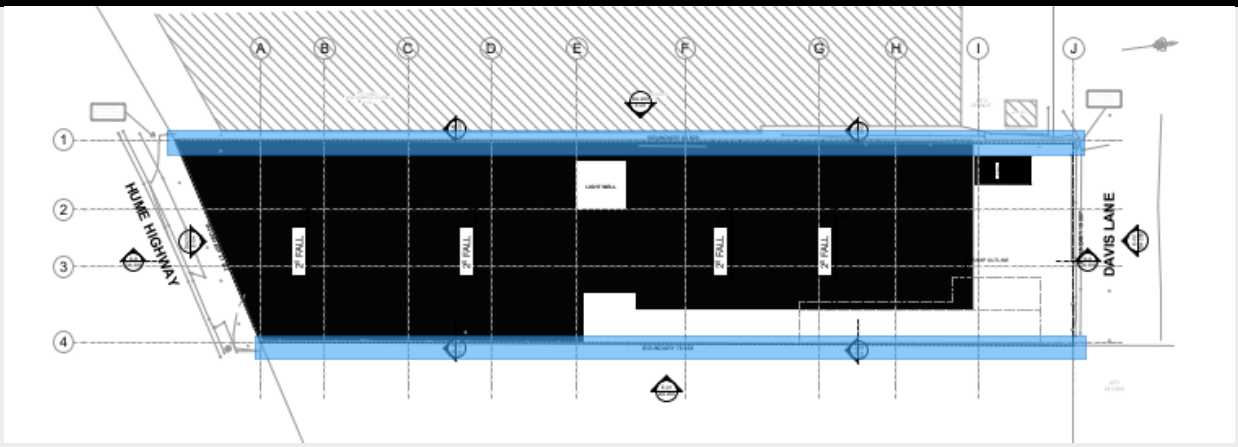
Clause	Status	Comments
Part C3 - Protection of Openings		
C3.1 Application of Part	Info	(a) The DTS provisions of this Part do not apply to- (i) Control joints, weep holes and the like in external walls of masonry construction and joints between panels in external walls of pre -cast concrete panel construction if, in all cases they are not larger than necessary for the purpose; and i. Non-combustible ventilators for subfloor or cavity ventilation, if each does not exceed 45000m in face area and spaced not less than 2m from any other ventilator in the same wall; and ii. Openings in the vertical plane formed between building elements at the construction edge or perimeter of a balcony or verandah, colonnade, terrace, or the like and iii. In a carpark – (A) Service penetrations through; and (B) Openings formed by a vehicle ramp in, a floor other than a floor that separates a part not uses as a carpark, providing the connected floors comply as a single fire compartment for the purposes of all other requirements of the DTS provisions of Sections C, D & E. (b) For the purposes of DTS provisions of this Part, openings in building elements required to be fire resisting include doorways, windows (including any associated fanlight), infill panels and fixed or openable glazed areas that do not have the required FRL. For the purposes of the DTS provisions of this part, openings other than those covered under (a)(iii), between building elements such as columns, beams and the like, in the plane formed at the construction edge of the perimeter of the building, are deemed to openings in the external wall.
C3.2 Protection of openings in external walls	DNC	(a) Openings in an external wall that is required to have an FRL must be protected in accordance with C3.4: (i) if the distance between the opening and the fire-source feature is less than 3 m from a side or rear boundary; or i. less than 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 ii. less than 6 m from another building on the allotment that is not Class 10; If wall wetting sprinklers are to be used they are to be located externally. (b) if required to be protected under (a), 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.

Clause	Status	Comments
		Openings [highlighted below] *in an external wall that is required to have an FRL* must be protected in accordance with C3.4 or addressed via Fire Engineering. • Doors required to be protected should be a fire doors –/60/30 that is self-closing. **Ground Floor**  **First Floor**  ***Architectural details to fully detail the wall types and FRL of 120/120/120 at CC stage or obtain a fire engineered solutions to address any DtS non-compliance at CC Stage.***

Fire Source Feature means—

- ***the far boundary of a road, river, lake or the like adjoining the allotment; or***
- ***a side or rear boundary of the allotment; or***
- ***an external wall of another building on the allotment which is not a Class 10 building.***

The potential fire *source features* to be considered for this building are the external wall of another building on the allotment which is not a Class 10 building, the side or rear of the allotment boundary or the far side of the road (blue);

<table>
<tr><th>Clause</th><th>Status</th><th>Comments</th></tr>
<tr><td colspan="3"> 
</td></tr>
<tr><td>C3.3
Separation of external walls and associated openings in different fire compartments</td><td>CR</td><td>The distance between parts of external walls and any openings within them in different fire compartments separated by a fire wall must not be less than that set out in Table C3.3, unless—
(a) those parts of each wall have an FRL not less than 60/60/60; and
(b) any openings protected in accordance with C3.4.
Table C3.3 Distance between external walls and associated openings in different fire compartments
<table>
<tr><th>Angle between walls</th><th>Minimum distance (m)</th></tr>
<tr><td>0° (walls opposite)</td><td>6</td></tr>
<tr><td>more than 0° to 45°</td><td>5</td></tr>
<tr><td>more than 45° to 90°</td><td>4</td></tr>
<tr><td>more than 90° to 135°</td><td>3</td></tr>
<tr><td>more than 135° to less than 180°</td><td>2</td></tr>
<tr><td>180° or more</td><td>Nil</td></tr>
</table></td></tr>
<tr><td>C3.4
Acceptable Methods of Protection</td><td>CR</td><td>(a) Where protection is required to doorways and windows and other openings they must be protected as follows:
(i) Doorways
❖ Internal or external wall wetting sprinklers as appropriate used with doors that are self-closing or automatic closing; or
❖ -/60/30 fire doors that are self-closing or automatic closing
(ii) Windows
❖ Internal or external wall wetting sprinklers as appropriate used with windows that are automatic closing or permanently fixed in the closed position or;
❖ -/60- fire windows that are automatic closing or permanently fixed in the closed position or
❖ -/60- automatic closing fire shutters.
(iii) Other openings –
❖ Excluding voids – internal or external wall wetting sprinklers as appropriate or
❖ Construction having a FRL not less than -/60/-.
Fire doors, fire windows and fire shutters must comply with Specification C3.4.
Detailed compliance with this clause must be incorporated at CC Stage</td></tr>
</table>

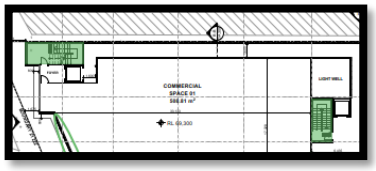
Clause	Status	Comments
C3.5 Doorways in Fire Walls	CR	(a) The aggregate width of openings for doorways in a fire wall, which are not part of a horizontal exit, must not exceed ½ the length of the fire wall, and each doorway must be protected by – (iii) A single fire door or fire shutter which has an FRL of not less than that required by Specification C1.1 for the fire wall except that each door or shutter must have an insulation level of at least 30. (b) A fire door or fire shutter required by (a)(i), (ii) or (iii) must be self-closing, or automatic closing in accordance with (c) & (d). (c) The automatic closing operation required by (b) must be initiated by the activation of a smoke detector, or any other detector deemed suitable in accordance with AS1670.1 if smoke detectors are unsuitable in the atmosphere, installed in accordance with AS1670.1 and located on each side of the fire wall not more than 1.5m horizontal distance from the opening. (d) Where any other required suitable fire alarm system, including a sprinkler system (other than a FPAA101D) complying with Specification E1.5, 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. ***Detailed compliance with this clause must be incorporated at CC Stage***
C3.6 Sliding Fire Doors	NA	Not Applicable - no sliding Fire Doors details on the plans.
C3.7 Protection of Doorways in horizontal exits	NA	Not Applicable
C3.8 Openings in fire isolated exits	CR	(a) Doorways that open into 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 (b) and (c). (ii) The automatic-closing operation must be initiated by the activation of a smoke detector, or any other detector deemed suitable in accordance with AS1670.1 if smoke detectors are unsuitable in the atmosphere, installed in accordance with AS1670.1 and located on each side of the fire wall not more than 1.5m horizontal distance from the approach side of the doorway. (iii) Where any other required suitable fire alarm system, including a sprinkler system (other than a FPAA101D) complying with Specification E1.5, 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. (b) A window in an external wall of a fire isolated stairway, fire isolated passageway or fire isolated ramp must be protected in accordance

Clause	Status	Comments
		with C3.4 if it is within 6m of, and exposed to, a window or other opening in a wall of the same building, other than in the same fire-isolated enclosure. ***Provide design documentation and specifications at CC Stage***
C3.9 Service Penetrations in fire-isolated exits	CR	Fire-isolated exits must not be penetrated by any services **other** than; (a) electrical wiring permitted by D2.7(e) to be installed in the exit; or (b) ducting associated with a pressurisation system if it – (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) Water supply pipes for fire services. ***Provide design documentation and specifications at CC Stage***
C3.10 Openings in Fire isolated lift shafts	CR	(a) 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- (i) comply with AS 1735.11, and (ii) are set to remain closed except when discharging or receiving, passengers, goods or vehicles. (b) 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 35,000mm² in area. ***Provide design documentation and specifications at CC Stage***
C3.11 Bounding Construction	N/A	Not Applicable
C3.12 Openings in floors and ceilings for services	CR	Where services pass through a floor which is required to achieve a FRL or a ceiling required to have a RISF, the service must be enclosed within a fire resisting shaft or fire protected in accordance with Clause C3.15. The performance of a fire resisting element may be compromised if service penetrations are not adequately protected. The method of protection should ensure the fire resisting capabilities of the element being penetrated is maintained. ***Detailed compliance with this clause must be incorporated at CC Stage***
C3.13 Openings in Shafts	CR	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

Clause	Status	Comments
		d) if the shaft is a garbage shaft — a door or hopper of non-combustible construction. ***Detailed compliance with this clause must be incorporated at CC Stage***
C3.15 Openings for Service Installations	CR	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, that installation must comply with any one of the following: a) Tested systems (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 (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 Schedule 5. 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 C3.15 (i) The service is a pipe system comprised entirely of metal (excluding pipe seals or the like) and is installed in accordance with Specification C3.15 and it—

Clause	Status	Comments
		(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 C3.15 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 C1.1 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 C3.15 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 C3.15. ***Detailed compliance with this clause must be incorporated at CC Stage***
C3.16 Construction Joints	CR	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 identical with a prototype tested in accordance with AS 1530.4 to achieve the required FRL. The requirements above do not apply where joints, spaces and the like between fire protected timber elements are provided with cavity barriers in accordance with Specification C1.13. ***Detailed compliance with this clause must be incorporated at CC Stage***
C3.17 Columns protected in lightweight construction to achieve an FRL	CR	Any 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 construction which has achieved the required FRL or resistance to the incipient spread of fire. ***Detailed compliance with this clause must be incorporated at CC Stage***

Clause	Status	Comments
SECTION D - ACCESS & EGRESS		
Part D1 - Provision for Escape		
D1.1 Application of Part	Info	The DTS provisions of this Part do not apply to the internal parts of a sole occupancy unit in a Class 2 or 3 building or Class 4 part of a building.
D1.2 Number of Exits required	DNC	(a) **All buildings** — Every building must have at least one exit from each storey. (b) **…** (c) **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— (iii) the floor area of the storey is not more than 50 m2; and i. the distance of travel from any point on the floor to a single exit is not more than 20 m. (d) **Class 9 buildings** — In addition to any horizontal exit, not less than 2 exits must be provided from the following: (i) Each storey in a Class 9b building used as an early childhood centre. (ii) Any storey or mezzanine that accommodates more than 50 persons, calculated under D1.13. (e) … (f) … (g) **Access to exits** — Without passing through another sole-occupancy unit every occupant of a storey or part of a storey must have access to— (i) an exit; or (ii) at least 2 exits, if 2 or more exits are required. **Class 5, 6, 7, 8 or 9 building** - not less than 2 exits must be provided from the following • Ground Floor – Reconfiguration of ground floor 'fire-isolated passageway' required. **Access to exits** — Without passing through another sole-occupancy unit every occupant of a storey or part of a storey must have access to at least 2 exits if 2 or more exits are required. The Floor plans do not detail internal walls, rooms, corridors and pathways etc to determine access to exits. ***Provide design documentation and specifications at CC Stage. Compliance readily achievable*** ***EBS recommend fire engineered solutions to address any DtS non-compliance at CC Stage.***

Clause	Status	Comments
D1.3 When Fire Isolated exits are required	DNC	**Class 5, 6, 7, 8 or 9 buildings** — Every stairway or ramp serving as a required exit must be fire-isolated unless (iii) in any other case, it connects, passes through or passes by not more than 2 consecutive storeys and one extra storey of any classification may be included if— (A) the building has a sprinkler system (other than a FPAA101D system) complying with Specification E1.5 installed throughout; or (B) the required exit does not provide access to or egress for, and is separated from, the extra storey by construction having— (aa) an FRL of –/60/60, if non-loadbearing; and (bb) an FRL of 90/90/90 for Type A construction (cc) no opening that could permit the passage of fire or smoke. Class 5, 6, 7, 8 or 9 buildings — Every stairway or ramp serving as a required exit must be fire-isolated unless it connects, passes through, or passes by not more than 2 consecutive storeys. • ***These stairs are required to be Fire Isolated (connects more than 2 storeys) currently 5x storeys. All the stairs are currently designed as non-fire isolated exits.***   ***Please note if a pump room is provided in the Basement, access will need to be via an airlock via fire isolated stairs in anycase (see E1.3).***
D1.4 Exit Travel Distances	DNC	**Class 5, 6, 7, 8 or 9 buildings** — Subject to (d), (e) and (f)— (i) 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 i. 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. **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— (i) 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

Clause	Status	Comments
		(ii) 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 (iii) 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. **Exit travel distances** • Exit Travel distance of up to 36m to a single exit, in lieu of 20m from level 1 commercial. This may be too excessive for a performance solution and therefore I recommend that a new secondary exit is introduced to serve level 1 and 2 commercial space to discharge to Davis Lane. • Exit Travel distance of up to 47m to a single exit, in lieu of 20m from level 1 and 2 lift lobby corridor. I recommend that an internal connection to existing stairway is provided to discharge to open space for DtS compliant travel distances • Commerical Space 2 is provided with a travel distance of 41m in lieu of 20m to a single exit. • Common Area Lift - Exit Travel distance of up to 47m to a single exit, in lieu of 20m from level 1 and 2 lift lobby corridor. Provide internal connection to existing stairway to discharge to open space for DtS compliant travel distances • Commercial space 1 - Exit Travel distance of up to 37m to a single exit, in lieu of 20m from level 2 commercial space. Provide internal connection to central stairway for DtS compliant travel distances
D1.5 Distance Between Alternative Exits	CR	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— 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. ***Provide design documentation and specifications at CC Stage***
D1.6 Dimensions of Exits and paths of Travel to Exits	CR	**Population according to Table D.13** • Basement 1 = (30 car spaces/5 per car) = 150 occupants • Basement 2 = (25 car spaces/5 per car) = 125 occupants • Ground Floor = (540sqm/10sqm) = 54 occupants • First Floor = (665sqm/10sqm) = 65 occupants • Second Floor = (920sqm/10sqm) = 92 occupants **Buildings accommodating up to 200 people** • 1 metre for 0 to 100 people; • 1.25 metres for 101 to 125 people; • 1.5 metres for 126 to 150 people; • 1.75 metres for 151 to 175 people; and

Clause	Status	Comments
		• 2 metres for 176 to 200 people. **Storeys accommodating more than 200 people** • 2.5 metres for 201 to 260 people; • 3 metres for 261 to 320 people; • 3.5 metres for 321 to 380 people; In a required exit or path of travel to an exit— (a) 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; and (i) the unobstructed width of each exit or path of travel to an exit, except for doorways, must be not less than—1 m; (b) if the storey or mezzanine accommodates more than 100 persons but not more than 200 persons, the aggregate unobstructed width, except for doorways, must be not less than—1 m plus 250 mm for each 25 persons (or part) in excess of 100; or (c) if the storey or mezzanine accommodates more than 200 persons, the aggregate unobstructed width, except for doorways, must be increased to— (i) 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 (ii) in any other case, 2 m plus 500 mm for every 75 persons (or part) in excess of 200; and (d) …. (e) the unobstructed width of a doorway must be not less than— (i) … (ii) … (iii) the unobstructed width of each exit provided to comply with (b), (c), (d) or (e), minus 250 mm; or i. … ii. in any other case except where it opens to a sanitary compartment or bathroom — 750 mm wide; and (f) 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 (b)(ii) or (f)(i); and (g) the required width of a stairway or ramp must— (i) be measured clear of all obstructions such as handrails, projecting parts of balustrades or other 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.

Clause	Status	Comments
		(h) to determine the aggregate unobstructed width, the number of persons accommodated must be calculated according to D1.13.
D1.7 Travel via Fire Isolated Stairs	CR	(a) 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— (i) a public corridor, public lobby or the like; or (ii) a sole-occupancy unit occupying all of a storey; or (iii) a sanitary compartment, airlock or the like. (d) 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— (i) to a road or open space; or (ii) to a point— (C) 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 2/3 of its perimeter; and (D) from which an unimpeded path of travel, not further than 20 m, is available to a road or open space; or (iii) into a covered area that— (E) adjoins a road or open space; (F) and is open for at least 1/3 of its perimeter; and (G) has an unobstructed clear height throughout, including the perimeter openings, of not less than 3 m; and (H) provides an unimpeded path of travel from the point of discharge to the road or open space of not more than 6 m. (e) Where a path of travel from the point of discharge of a fire-isolated exit necessitates passing within 6 m of any part of an external wall of the same building, measured horizontally at right angles to the path of travel, 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 C3.4, 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. (f) 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— (i) a smoke lobby in accordance with D2.6 must be provided; or (ii) the exit must be pressurised in accordance with AS/NZS 1668.1. (g) A ramp must be provided at any change in level less than 600 mm in a fire-isolated passageway in a Class 9 building.

Clause	Status	Comments
		Provide design documentation and specifications at CC Stage
D1.8 External Stairways or ramps in lieu of Fire Isolated Stairs	N/A	Not Applicable
D1.9 Travel by non-fire-isolated stairs	CR	(a) A non-fire-isolated stairway or non-fire-isolated ramp serving as a required exit must provide a continuous means of travel by its own flights and landings from every storey served to the level at which egress to a road or open space is provided. (b) … (c) In a Class 5, 6, 7, 8 or 9 building, the distance from any point on a floor to a point of egress to a road or open space by way of a required non-fire-isolated stairway or non-fire-isolated ramp must not exceed 80 m. (d) … (e) In a Class 5 to 8 or 9b building, a required non-fire-isolated stairway or non-fire-isolated ramp must discharge at a point not more than— (iii) 20 m from a doorway providing egress to a road or open space or from a fire isolated passageway leading to a road or open space; or (iv) 40 m from one of 2 such doorways or passageways if travel to each of them from the non-fire-isolated stairway or non-fire-isolated ramp is in opposite or approximately opposite directions. ***Provide design documentation and specifications at CC Stage***
D1.10 Discharge from Exits	DNC	(a) 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. (b) If a required exit leads to an open space, the path of travel to the road must have an unobstructed width throughout of not less than— (i) the minimum width of the required exit; (ii) or 1 m, whichever is the greater. (c) If an exit discharges to open space that is at a different level than the public road to which it is connected, the path of travel to the road must be by— (i) a ramp or other incline having a gradient not steeper than 1:8 at any part, or not steeper than 1:14 if required by the Deemed-to-Satisfy Provisions of Part D3; or (ii) except if the exit is from a Class 9a building, a stairway complying with the Deemed-to-Satisfy Provisions of the BCA. (d) The discharge point of alternative exits must be located as far apart as practical.

Clause	Status	Comments
		(e) … (f) … (g) The number of persons accommodated must be calculated according to D1.13. ***Provide design documentation and specifications at CC Stage***
D1.11 Horizontal Exits	N/A	Not Applicable
D1.12 Non-required stairways, ramps or escalators	Info	An escalator, moving walkway or non-required non-fire-isolated stairway or pedestrian ramp— (a) must not be used between storeys in— (i) a patient care area in a Class 9a health-care building; or (ii) a resident use area in a Class 9c aged care building; and (b) may connect any number of storeys if it is— (i) in an open spectator stand or indoor sports stadium; (ii) or in a carpark or an atrium; (iii) or outside a building; or (iv) in a Class 5 or 6 building that is sprinklered throughout, where the escalator, walkway, stairway or ramp complies with Specification D1.12; and (c) except where permitted in (b) must not connect more than— (i) 3 storeys if each of those storeys is provided with a sprinkler protection system (other than a FPAA101D system) complying with Specification E1.5 throughout; or (ii) 2 storeys, provided that in each case, those storeys must be consecutive, and one of those storeys is situated at a level at which there is direct egress to a road or open space; and (d) except where permitted in (b) or (c), must not connect, directly or indirectly, more than 2 storeys at any level in a Class 5, 6, 7, 8 or 9 building and those storeys must be consecutive.
D1.13 Number of Persons accommodated Note NSW Table D1.13 Area per person according to use	Info	For the purpose 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 D1.13 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

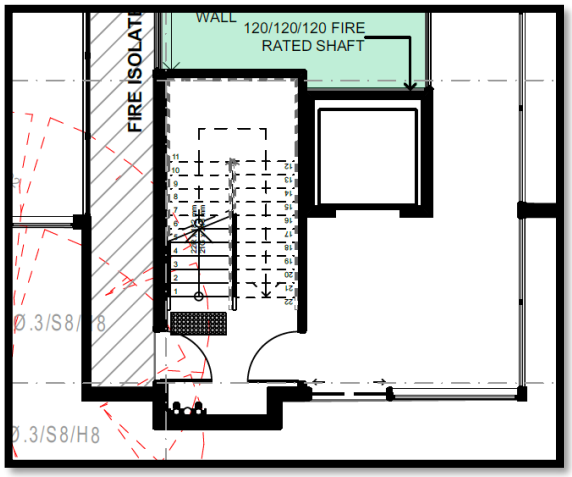
Clause	Status	Comments

		(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.
		Population according to Table D.13
		• Basement 1 = approx.. 1572sqm (30 car spaces/5 per car) = 150
		• Basement 2 = approx.. 1572sqm (25 car spaces/5 per car) = 125
		• Ground Floor = approx.. 1488sqm (540sqm/4sqm) = 135
		• First Floor = approx.. 1150sqm
		  ○ Childcare = 334sqm/4sqm) = 84
		  ○ Fitness = 638sqm/ 3sqm) = 213
		• Second Floor = approx.. 1150sqm
		  ○ Commercial 1 (533sqm/10sqm) = 54
		  ○ Commercial 2 (445sqm/10sqm) = 45

D1.14 Measurement of Distances	Info	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.
D1.15 Method of Measurement	Info	The following rules apply: (a) In the case of a room that is not a sole occupancy unit in a Class 2 or 3 building or Class 4 part of a building, the distance includes the straight-line measurement from any point of the floor of the room to the nearest part of the doorway leading from it, together with the distance from the part of the doorway to the single required exit or point from which travel in different directions to 2 required exits is available. (b) Subject to (d), the distance from the doorway of a sole occupancy unit in a Class 2 or 3 building is measured in a straight line to the nearest part of the required single exit or point from which travel in different directions to 2 required exits is available. (c) Subject to (d), the distance between exits is measured in a straight line between the nearest parts of those exits. (d) Only the shortest distance is taken along a corridor, hallway, external balcony or other path of travel that curves or changes direction. (e) If more than one corridor, hallway, or other internal path of travel connects required exits, for the purposes of D1.5(c) the measurement is along the path of travel through the point at which travel in different directions to those exits is available, as determined in accordance with D1.4.

Clause	Status	Comments
		(f) If a wall (including a demountable internal wall) that does not bound – (i) A room; or i. A corridor, hallway or the like, causes a change in direction in proceeding to a required exit, the distance is measured along the path of travel past the wall. ii. If permanent fixed seating is provided, the distance is measured along the path of travel between the rows of seats. In the case of a non-fire isolated stairway or non-fire isolated ramp, the distance is measured along a line connecting the nosings of the treads, along the slope of the ramp, together with the distance connecting those lines across any intermediate landing.
D1.16 Plant Rooms and lift Motor Rooms: Concession	N/A	Not applicable.
D1.17 Access to lift pits	CR	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 D1.6, 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 compressed buffer. (iii) Access to the doorway must be by a stairway complying with AS 1657. (iv) In lieu of D2.21, 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 PROHIBITED – KEEP CLEAR AT ALL TIMES”**

Clause	Status	Comments
D1.18 Egress from early childhood centres	CR	a) Every part of a Class 9b early childhood centre must be wholly within a storey that provides direct egress to a road or open space. b) The requirements of (a) do not apply in a building with a rise in storeys of not more than 2, where the Class 9b early childhood centre is the only use in that building. ***D1.18(a) recognises the difficulties associated with evacuation of early childhood centres.*** ***Should an early childhood centre be proposed within a storey that does not meet the requirements of D1.18(a), a Performance Solution is to be used to demonstrate compliance with the relevant Performance Requirements.***
Part D2 - Construction of Exits		
D2.1 Application of Part	Informational	Except for D2.13, D2.14 (a), D2.16, D2.17(d), D2.17(e) and D2.18, the Deemed-to-Satisfy Provisions of this Part do not apply to the internal parts of the Class 2 sole-occupancy units.
D2.2 Fire-Isolated stairways and ramps	CR	A stairway or ramp (including any landings) that is required to be in 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. ***Provide design documentation and specifications at CC Stage (and structural details)***
D2.3 Non-fire Isolated stairways and ramps	CR	In a building having a rise in storeys of more than 2, required stairs and ramps (including any landings and any supporting building elements) which are not required to be within a fire resisting shaft, must be constructed according to D2.2, or only of - (a) reinforced or prestressed concrete; or (b) steel in no part less than 6 mm thick; or (c) timber that— (i) has a finished thickness of not less than 44 mm; and (ii) has an average density of not less than 800 kg/m3 at a moisture content of 12%; and (iii) has not been joined by means of glue unless it has been laminated and glued with resorcinol formaldehyde or resorcinol phenol formaldehyde glue". ***Provide design documentation and specifications at CC Stage***
D2.4 Separation of Rising and Descending Stairs	DNC	If a stairway serving as a required 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

Clause	Status	Comments
		(b) Any construction that separates or is common to the rising and descending flights must be- (iii) Non-combustible; and (iv) Smoke proof in accordance with Clause 2 of Specification C2.5. ***Provide design documentation and specifications at CC Stage*** Currently all stairs are required to be Fire isolated under D1.3 thus Separation is not provided. There is a direct connection between the flight from basement and flight from first floor. ***EBS recommend design change or fire engineered solutions to address DtS non-compliance at CC Stage.*** 
D2.5 Open Access ramps and balconies	N/A	Not Applicable
D2.6 Smoke Lobbies	N/A	Not Applicable
D2.7 Installations in Exits and Paths of Travel	CR	*Paths of travel within a building must continue to provide safe evacuation during an emergency. To achieve this, D2.7 restricts the installation of certain services in fire-isolated exits, non-fire-isolated exits, and certain paths of travel to exits.* *D2.7 should be read in conjunction with C3.9, which lists the services that may penetrate fire-isolated exits.* 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**. ❖ *D2.7(a) prohibits access to services (apart from fire-fighting and detection equipment) from within a fire-isolated exit because they are a potential source of smoke or fire.* ❖ *Doors to service enclosures, if left open, could also hamper evacuation.*

Clause	Status	Comments
		❖ *The prohibition also means that maintenance equipment will not be placed within the enclosure.* 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. ❖ *D2.7(b) prohibits any chute or duct carrying products of combustion from a boiler, incinerator fireplace or the like from being installed in:* ○ *any required exit (i.e. both fire-isolated exits and non-fire-isolated exits); and* ○ *any corridor, hallway, lobby or the like leading to a required exit (i.e. it does not apply to other paths of travel to an exit).* ❖ *An opening from a chute or duct that forms part of a smoke hazard management system is permitted.* Gas or other fuel services must not be installed in a required exit ❖ *D2.7(c)prohibits the installation of any gas or other fuel service in a required exit (i.e. both fire-isolated exits and non-fire isolated exits). This prohibition does not apply to a path of travel to an exit.* Services or equipment comprising – (i) Electricity meters, distribution boards or cuts; or (ii) Central telecommunications distribution boards or equipment; or (iii) Electrical motors or other motors service equipment in the building, May be installed in – • A required exit, except for fire-isolated exits specified in (a); or • In any corridor, hallway, lobby or the like leading to a required exit, • If the services or equipment are enclosed by non-combustible construction or a fire-protective covering with doorways or openings suitably sealed against smoke spreading from the enclosure ❖ *Under specified conditions, D2.7(d) allows certain electrical and communication services to be located in:* ❖ *D2.7(d)(iv)—any required non-fire-isolated exit (installation in required fire-isolated exits is effectively prohibited by the reference to D2.7(a)); and* ❖ *D2.7(d)(v)—any corridor, hallway, lobby or the like leading to a required exit (i.e. it does not apply to other paths of travel to an exit).* Electrical wiring may be installed in a fire-isolated exit if the wiring is associated with;

Clause	Status	Comments
		(i) A lighting, detection, or pressurization system serving the exit; or (ii) A security, surveillance or management system serving the exit; or (iii) An intercommunication system or an audible or visual alarm system in accordance with D2.22; or (iv) The monitoring of hydrant or sprinkler isolating valves. ❖ *D2.7(e) allows electrical wiring to be installed within a fire-isolated exit if the wiring is associated with specified equipment and systems serving the exit or systems used for alarms and monitoring of fire safety systems.* ***Provide design documentation and specifications at CC Stage***
D2.8 Enclosure of Space Under Stairs and ramps	Info	The space under the fire-isolated stairways within a shaft must not be enclosed to form a cupboard or similar enclosed space. Any space under a non-fire-isolated stair must be enclosed in 60-minute fire rated construction, and any access doorway to the enclosed space is fitted with a self-closing -/60/30 fire door.
D2.9 Width of Stairs	Info	A required stairway or ramp that exceeds 2 m in width is counted as having a width of only 2 m unless it is divided by a handrail or barrier continuous between landings and each division has a width of not more than 2 m.
D2.10 Pedestrian Ramps	CR	(a) … (b) A ramp serving as a required exit must – (i) Where the ramp is also serving as an accessible ramp under Part D3, be in accordance with AS1428.1; or (ii) In any other case, have a gradient not steeper than 1:8. (c) The floor surface of a ramp must have a slip-resistance classification not less than that listed in Table D2.14 when tested in accordance with AS4586. ***Provide design documentation and specifications at CC Stage***
D2.11 Fire-Isolated Passageways	N/A	Not Applicable
D2.12 Roof as Open Space	CR	If an exit discharges to the roof of a building the roof must – • Have an FRL not less than 120/120/120; and • Not have any roof lights or other openings with 3m of the path of travel of persons using the exit to reach a road or open space. *Exits must provide egress to a road or an open space. D2.12 applies where the open space is provided by a roof. To maximise the safety of people who must use a roof as the point of discharge from an exit, such a roof is required:* *D2.12(a)—to have an FRL sufficient to protect people on the roof from fire below during evacuation from the building; and* *D2.12(b)—not to have any openings within three metres of the path of travel to the portion of the roof being used as open space, and from that*

Clause	Status	Comments
		portion to a road. This protects a person passing such openings from being affected by a fire on the other side of such openings. *Once on the roof, a safe path of travel must be provided to a road. See D1.10.* ***Provide design documentation and specifications at CC Stage*** The exits on the GF discharge onto the roof of the basement and as such the roof is to maintain an FRL of 120/120/120. In addition, clause D2.12 states that there must be NO openings with 3m of the path of travel of persons using the exit to reach a road of open space. This is to be addressed via a Performance Based Solution. ***EBS recommend fire engineered solutions to address DtS non-compliance at CC Stage.***
D2.13 Goings & Risers	CR	a) A stairway must have— (i) not more than 18 and not less than 2 risers in each flight (ii) going (G), riser (R) and quantity (2R + G) in accordance with Table D2.13, except as permitted by (b) and (c); and (iii) constant goings and risers throughout each flight, except as permitted by (b) and (c), and the dimensions of goings (G) and risers (R) in accordance with (a)(ii) are considered constant if the variation between; A. adjacent risers, or between adjacent goings, is no greater than 5 mm; and B. the largest and smallest riser within a flight, or the largest and smallest going within a flight, does not exceed 10 mm; and (iv) risers which do not have any openings that would allow a 125 mm sphere to pass through between the treads; and (v) treads which have— A. a surface with a slip-resistance classification not less than that listed in Table D2.14 when tested in accordance with AS 4586; or B. a nosing strip with a slip-resistance classification not less than that listed in Table D2.14 when tested in accordance with AS 4586; and (vi) 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 (vii) in the case of a required stairway, no winders in lieu of a landing. b) In the case of a **non-required stairway**— (i) the stairway must have—

<table>
<tr><th>Clause</th><th>Status</th><th>Comments</th></tr>
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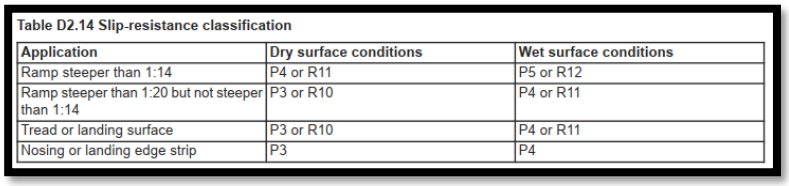
A. not more than 3 winders in lieu of a quarter landing; and
B. not more than 6 winders in lieu of a half landing; and
(ii) the going of all straight treads must be constant throughout the same flight and the dimensions of goings (G) is considered constant if the variation between
A. adjacent goings, is no greater than 5 mm; and
B. the largest and smallest going within a flight, does not exceed 10 mm; and
(iii) 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.
c) Where a stairway discharges to a sloping public walkway or public road—
(i) the riser (R) may be reduced to account for the slope of the walkway or road; and
(ii) the quantity (2R+G) may vary at that location.

<table>
<tr><th colspan="3">Table D2.14 Slip-resistance classification</th></tr>
<tr><th>Application</th><th>Dry surface conditions</th><th>Wet surface conditions</th></tr>
<tr><td>Ramp steeper than 1:14</td><td>P4 or R11</td><td>P5 or R12</td></tr>
<tr><td>Ramp steeper than 1:20 but not steeper than 1:14</td><td>P3 or R10</td><td>P4 or R11</td></tr>
<tr><td>Tread or landing surface</td><td>P3 or R10</td><td>P4 or R11</td></tr>
<tr><td>Nosing or landing edge strip</td><td>P3</td><td>P4</td></tr>
</table>

Notes to Table D2.13:
1. Private stairways are—
a) stairway in a sole-occupancy unit in a Class 2 building; and
b) In any building, stairways which are not part of a required exit and to which the public do not normally have access.
2. Going and riser dimensions must be measured in accordance with Figure D2.13.
3. The going in tapered treads (except winders in lieu of a quarter or half landing) in a curved or spiral stairway is measured—
a) 270 mm in from the outer side of the unobstructed width of the stairway if the stairway is less than 1 m wide (applicable to a non-required stairway only); and
b) 270 mm from each side of the unobstructed width of the stairway if the stairway is 1 m wide or more.
Provide design documentation and specifications at CC Stage
</td></tr>
<tr><td>D2.14
Landings</td><td>CR</td><td>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 –</td></tr>
</table>

<table>
<tr><th>Clause</th><th>Status</th><th>Comments</th></tr>
<tr><td></td><td></td><td>
(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 D2.14 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 D2.14 when tested in accordance with AS4586, where the edge leads to a flight below; and

Table D2.14 Slip-resistance classification
<table>
<tr><th>Application</th><th>Dry surface conditions</th><th>Wet surface conditions</th></tr>
<tr><td>Ramp steeper than 1:14</td><td>P4 or R11</td><td>P5 or R12</td></tr>
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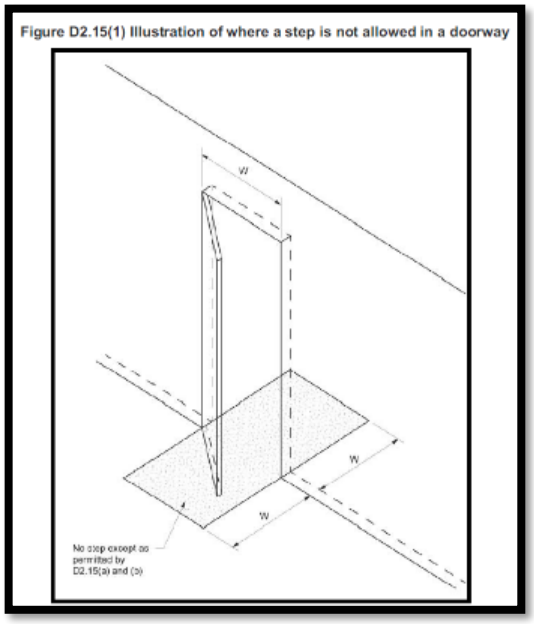
<tr><td>Nosing or landing edge strip</td><td>P3</td><td>P4</td></tr>
</table>

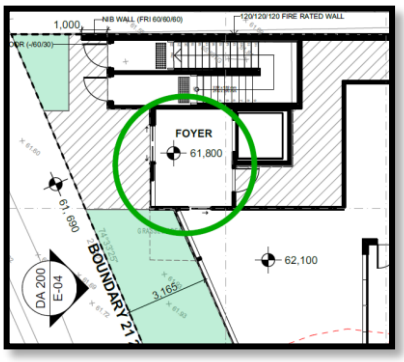
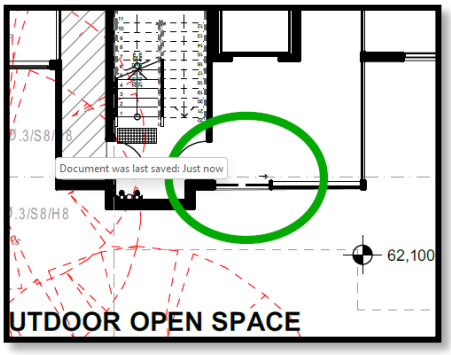
Provide design documentation and specifications at CC Stage
</td></tr>
<tr><td>D2.15 Thresholds</td><td>CR</td><td>
The threshold of a doorway must not incorporate a step or ramp at any point closer to the doorway than the width of the door leaf unless—
a) …
b) …
c) in a building required to be accessible by Part D3, 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.

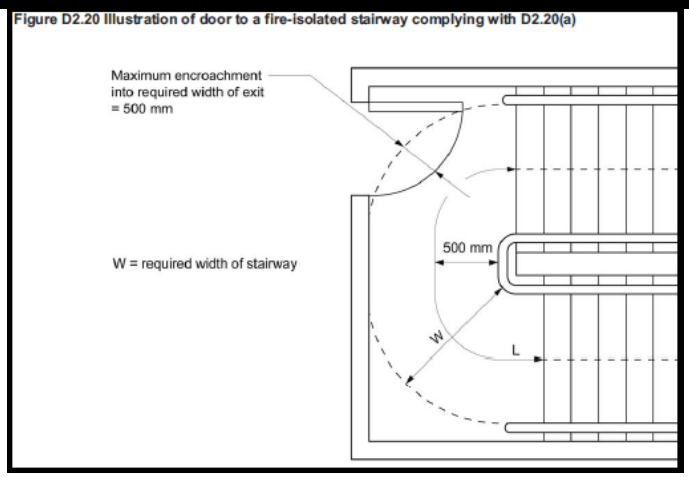
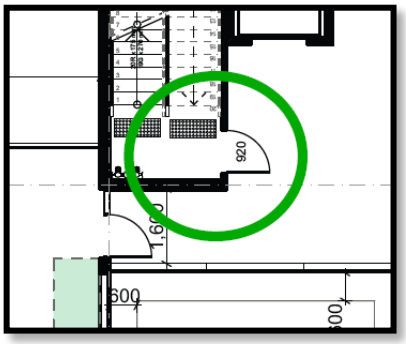
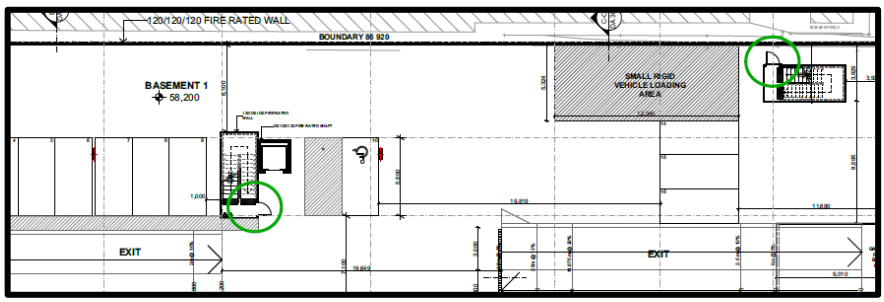
NSW D2.15 Thresholds
d) …
e) in other cases—
(i) the doorway opens to a road or open space, external stair landing or external balcony; and
(ii) the door sill is not more than 190 mm above the finished surface of the ground, balcony, or the like, to which the doorway opens.
</td></tr>
</table>

Clause	Status	Comments
		 ***Provide design documentation and specifications at CC Stage***
D2.16 Balustrades and other Barriers Note NSW D2.16	CR	A continuous barrier (balustrade) must be provided to a roof to which general access is provided, stairs and balconies, driveway ramps etc. where there is a fall of more than 1m. Balustrade construction to comply with Table D2.16a. **1. Barrier heights** **Location** / **Minimum height** (a) Stairways or ramps with a gradient of 1:20 or steeper. — 865 mm (b) 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. — 1 m; or 700 mm and a horizontal projection that extends not less than 1 m outwards from the top of the barrier; or in a Class 9b building used as an *entertainment venue*, the height prescribed for guardrails in NSW H101.14.2 and NSW H102.9. (d) In a Class 9b building used as an *entertainment venue*— (i) stairways or ramps; and (ii) the floor of any access path, balcony, landing or the like. — 1 m when provided inside the building; and 1200 mm when provided externally to the building. (e) In all other locations. — 1 m. *Notes* 1. *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.* 2. *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* **2. Barrier openings**

Clause	Status	Comments
		<table><tr><th colspan="2">Location</th><th>Maximum opening</th></tr><tr><td>(a)</td><td>Fire-isolated stairways, fire-isolated ramps and other areas used primarily for emergency purposes, excluding— (i) external stairways; and (ii) external ramps.</td><td>A 300 mm sphere must not be able to pass through any opening; or where rails are used—</td></tr><tr><td>(b)</td><td>Class 7 (other than carparks) and Class 8 buildings.</td><td>(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.</td></tr><tr><td>(c)</td><td>In all other locations.</td><td>A 125 mm sphere must not be able to pass through any opening.</td></tr></table> *Note: 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.* **3. Barrier climbability** <table><tr><th colspan="2">Location</th><th>Requirement</th></tr><tr><td>(a)</td><td>Fire-isolated stairways, fire-isolated ramps and other areas used primarily for emergency purposes, excluding— (i) external stairways; and (ii) external ramps.</td><td>No requirement.</td></tr><tr><td>(b)</td><td>Class 7 (other than carparks) and Class 8 buildings.</td><td></td></tr><tr><td>(c)</td><td>For floors more than 4 m above the surface beneath in all other locations.</td><td>Any horizontal or near horizontal elements between 150 mm and 760 mm above the floor must not facilitate climbing.</td></tr></table> ***Provide design documentation and specifications at CC Stage***
D2.17 Handrails	DNC	***Handrails to be installed in strict accordance with the requirements of BCA Clause D2.17, D3.3, and AS 1428.1-2009.*** (a) Except for handrails referred to in D2.18, handrails must be— (i) located along at least one side of the ramp or flight; and i. located along each side if the total width of the stairway or ramp is 2 m or more; and ii. ….. (ii) in any other case, fixed at a height of not less than 865 mm measured above the nosings of stair treads and the floor surface of the ramp, landing, or the like; and (iii) continuous between stair flight landings and have no obstruction on or above them that will tend to break a hand-hold; and (iv) in a required exit serving an area required to be accessible, 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 (a)(iii)(B). (b) … (c) Handrails required to assist people with a disability must be provided in accordance with D3.3. ***Provide design documentation and specifications at CC Stage***

Clause	Status	Comments
D2.18 Fixed Platforms, walkways and ladders	N/A	Not applicable.
D2.19 Doorways & Doors	DNC	(a) …. (b) 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 – (i) Must not be fitted with a revolving door; and (ii) Must not be fitted with a roller shutter or tilt-up door unless – (A) It serves a Class 6, 7 or 8 building or part with a floor area not more than 200m^2; and (B) The doorway is the only required exit from the building or part; and (C) It is held in the open position while the building or part is lawfully occupied; and i. Must not be fitted with a sliding door unless – (A) It leads directly to a road or open space; and (B) The door is able to be opened manually under a force of not more than 110 N; and ii. If fitted with a door which is power-operated – (A) 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 (B) 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. (c) 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 (b), must be able to open manually under a force of not more than 110 N if there is a malfunction or failure of the power source. ***Provide design documentation and specifications at CC Stage*** Sliding door as required exit must leads directly to a road or open space and the door is able to be opened manually under a force of not more than 110 N.

Clause	Status	Comments
		 
D2.20 Swinging Doors	DNC	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 500mm of the required width (including any landings) of a required – (A) Stairway; or (B) Ramp; or (C) Passageway, – If it is likely to impede the path of travel of the people already using the exit; and i. When fully open, by more than 100 mm on the required width of the required exit, and The measurement of encroachment in each case is to include door handles or other furniture or attachments to the door; 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.

Clause	Status	Comments
		Figure D2.20 Illustration of door to a fire-isolated stairway complying with D2.20(a)  ***Provide design documentation and specifications at CC Stage*** A swinging door in a required exit or forming part of a required exit must swing in the direction of egress. Various exit doors are shown to swing against the direction of travel. All doors to be reswung on the drawings.  
D2.21 Operation of Latch	CR	(a) 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 – (i) A single hand downward action or pushing action on a single device which is located between 900mm and 1.1 m from the floor and if serving an area required to be accessible by Part D3 – (A) be such that the hand of a person who cannot grip will not slip from the handle during the operation of the latch; and (B) have a clearance between the handle and the back plate or door face at the center grip section of the handle of not less than 35mm and not more than 45mm; or

Clause	Status	Comments
		(ii) a single hand pushing action on a single device which is located between 900mm and 1.2m from the door; and (iii) where the latch operation device referred to in (ii) is not located on the door leaf itself – (A) manual controls to power operated doors must be at least 25mm wide, proud of the surrounding surface and located – (aa) not less than 500mm from an internal corner; and (bb) for a hinged door, between 1m and 2m from the door leaf in any position; and (cc) for a sliding door, within 2m of the doorway and clear of a surface mounted door in the open position. (B) Braille and tactile signage complying with Clause 3 and 6 of Specification D3.6 must identify the latch operation device. (h) The requirements of (a) do not apply to a door that – (i) Serves a vault, strong-room, sanitary compartment, or the like; or (ii) Serves only, or is within – (A) … (B) … (C) A sole occupancy unit with a floor area not more than 200m² in a Class 5, 6, 7 or 8 building; or (D) A space which is otherwise inaccessible to persons at all times when the door is locked; or (iii) Serves – (A) … (B) The secure parts of early childhood centre or the like; and it can be immediately unlocked – (C) By operating a fail-safe control switch, not contained within the protective enclosure, to actuate a device to unlock the door; or (D) 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; or i. Is fitted with a fail-safe device which automatically unlocks the door upon the activation of any sprinkler system (other than a FPAA101D system) complying with Specification E1.5, or smoke , or any other detector system deemed suitable in accordance with

Clause	Status	Comments
		AS1670.1 installed throughout the building, and is readily operable when unlocked; or ***Provide design documentation and specifications at CC Stage***
D2.22 Re-entry from Fire isolated exits	N/A	Not applicable.
D2.23 Signs on Doors	Info	(a) 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— (i) a required— (A) 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 (B) smoke door, 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, on either the wall adjacent to the doorway or both sides of the door; and i. a— (A) fire door forming part of a horizontal exit; and (B) smoke door that swings in both directions; and (C) door leading from a fire isolated exit to a road or open space, on each side of the door. (b) A sign referred to in (a) must be in capital letters not less than 20 mm high in a colour contrasting with the background and state— (i) for an automatic door held open by an automatic hold-open device— "FIRE SAFETY DOOR—DO NOT OBSTRUCT"; or (ii) for a self-closing door— "FIRE SAFETY DOOR DO NOT OBSTRUCT DO NOT KEEP OPEN"; or (iii) for a door discharging from a fire-isolated exit— "FIRE SAFETY DOOR—DO NOT OBSTRUCT". ***Provide design documentation and specifications at CC Stage***

Clause	Status	Comments
D2.24 Protection of openable windows	CR	(a) A window opening must be provided with protection, if the floor below the window is 2 m or more above the surface beneath in— (i) … (ii) a Class 9b early childhood centre. (b) Where the lowest level of the window opening is less than 1.7 m above the floor, a window opening covered by (a) must comply with the following: (i) The openable portion of the window must be protected with— (A) a device capable of restricting the window opening; or (B) a screen with secure fittings. i. A device or screen required by (i) must— (A) not permit a 125 mm sphere to pass through the window opening or screen; and (B) resist an outward horizontal action of 250 N against the— (dd) window restrained by a device; or (ee) screen protecting the opening; and i. have a child resistant release mechanism if the screen or device is able to be removed, unlocked or overridden. (c) A barrier with a height not less than 865 mm above the floor is required to an openable window— (i) in addition to window protection, when a child resistant release mechanism is required by (b)(ii)(C); and (ii) where the floor below the window is 4 m or more above the surface beneath if the window is not covered by (a). (d) A barrier covered by (c) except for (e) must not— (i) permit a 125 mm sphere to pass through it; and (ii) have any horizontal or near horizontal elements between 150 mm and 760 mm above the floor that facilitate climbing. (e) A barrier required by (c) to an openable window in— (i) fire-isolated stairways, fire-isolated ramps and other areas used primarily for emergency purposes, excluding external stairways and external ramps; and (ii) Class 7 (other than carparks) and Class 8 buildings and parts of buildings containing those classes, must not permit a 300 mm sphere to pass through it. ***Provide design documentation and specifications at CC Stage***

Clause	Status	Comments
D2.25 Timber stairways concession	CR	(a) Notwithstanding D2.2(a), timber treads, risers, landings and associated supporting framework which – (i) has a finished thickness of not less than 44mm: and (ii) has an average density of not less than 800kg/m3 at a moisture content of 12%, may be used within a required fire isolated stairway or fire isolated passageway constructed from fire-protected timber in accordance with C1.13 subject to – (iii) the building being protected throughout by a sprinkler system complying with specification E1.5 which extends to within the fire isolated enclosure; and (iv) fire protection being provided to the underside of stair flights and landings located immediately above a landing level which- (A) is at or near the level of egress: or (B) provides direct access to a carpark. (i) Fire protection required by (a) must be not less than one layer of 13mm fire protective grade plasterboard fixed in accordance with the system requirements for a fire protective covering. ***Provide design documentation and specifications at CC Stage***
Part D3 - Access for People with Disabilities		
D3.1 General building access requirements	DNC	Buildings and parts of buildings must be accessible as required by Table D3.1, unless exempted by D3.4. **Class 5** — To and within all areas normally used by the occupants. **Class 9b** *Schools* and *early childhood centres*; An *assembly building* not being a *school* or an *early childhood centre* — To and within all areas normally used by the occupants. To wheelchair seating spaces provided in accordance with D3.9. To and within all other areas normally used by the occupants, except that access need not be provided to tiers or platforms of seating areas that do not contain wheelchair seating spaces. **Class 7a** — To and within any level containing *accessible* carparking
D3.2 Access to buildings	DNC	(a) An accessway must be provided to a building required to be accessible— (i) from the main points of a pedestrian entry at the allotment boundary; and (ii) from another accessible building connected by a pedestrian link; and (iii) from any required accessible carparking space on the allotment. (b) In a building required to be accessible, an accessway must be provided through the principal pedestrian entrance,and— (i) through not less than 50% of all pedestrian entrances including the principal pedestrian entrance; and

Clause	Status	Comments
		(ii) in a building with a total floor area more than 500 m2, a pedestrian entrance which is not accessible must not be located more than 50 m from an accessible pedestrian entrance, except for pedestrian entrances serving only areas exempted by D3.4. (c) Where a pedestrian entrance required to be accessible has multiple doorways— (i) if the pedestrian entrance consists of not more than 3 doorways — not less than 1 of those doorways must be accessible; and (ii) if a pedestrian entrance consists of more than 3 doorways — not less than 50% of those doorways must beaccessible. (d) For the purposes of (c)— (i) an accessible pedestrian entrance with multiple doorways is considered to be one pedestrian entrance where— A) all doorways serve the same part or parts of the building; and B) the distance between each doorway is not more than the width of the widest doorway at that pedestrian entrance (see Figure D3.2); and (ii) a doorway is considered to be the clear, unobstructed opening created by the opening of one or more door leaves (see Figure D3.2). (d) Where a doorway on an accessway has multiple leaves, (except an automatic opening door) one of those leaves must have a clear opening width of not less than 850 mm in accordance with AS 1428.1.
D3.3 Parts of buildings to be accessible	DNC	In a building required to be accessible— (a) every ramp and stairway, except for ramps and stairways in areas exempted by D3.4, must comply with— (i) for a ramp, except a fire-isolated ramp, clause 10 of AS 1428.1; and (ii) for a stairway, except a fire-isolated stairway, clause 11 of AS 1428.1; and (iii) for a fire-isolated stairway, clause 11.1(f) and (g) of AS 1428.1; and (b) every passenger lift must comply with E3.6; and (c) accessways must have— (i) passing spaces complying with AS 1428.1 at maximum 20 m intervals on those parts of an accessway where a direct line of sight is not available; and (ii) turning spaces complying with AS 1428.1— A) within 2 m of the end of accessways where it is not possible to continue travelling along the accessway; and B) at maximum 20 m intervals along the accessway; and (d) an intersection of accessways satisfies the spatial requirements for a passing and turning space; and (e) a passing space may serve as a turning space; and

Clause	Status	Comments
		(f) a ramp complying with AS 1428.1 or a passenger lift need not be provided to serve a storey or level other than the entrance storey in a Class 5, 6, 7b or 8 building— (i) containing not more than 3 storeys; and (ii) with a floor area for each storey, excluding the entrance storey, of not more than 200 m2; and (g) clause 7.4.1(a) of AS 1428.1 does not apply and is replaced with 'the pile height or pile thickness shall not exceed (h) 11 mm and the carpet backing thickness shall not exceed 4 mm'; and (i) the carpet pile height or pile thickness dimension, carpet backing thickness dimension and their combined dimension shown in Figure 8 of AS 1428.1 do not apply and are replaced with 11 mm, 4 mm and 15 mm respectively.
D3.4 Exemptions	Info	The following areas are not required to be accessible: (a) An area where access would be inappropriate because of the particular purpose for which the area is used. (b) An area that would pose a health or safety risk for people with a disability. (c) Any path of travel providing access only to an area exempted by (a) or (b).
D3.5 Accessible carparking	CR	Accessible carparking spaces— (a) subject to (b), must be provided in accordance with Table D3.5 in— (i) a Class 7a building required to be accessible; and (ii) a carparking area on the same allotment as a building required to be accessible; and (b) need not be provided in a Class 7a building or a carparking area where a parking service is provided and directaccess to any of the carparking spaces is not available to the public; and (c) subject to (d), must comply with AS/NZS 2890.6; and (d) (d) need not be identified with signage where there is a total of not more than 5 carparking spaces, so as to restrict theuse of the carparking space only for people with a disability.  Class 5, 7, 8 or 9c — 1 space for every 100 carparking spaces or part thereof.  Class 9b (a) *School* (b) Other *assembly building*— — 1 space for every 100 carparking spaces or part thereof.
D3.6 Signage	CR	Signage shall be installed in this project as necessary, but shall include as a minimum: • braille and tactile signage incorporating the international symbol of access or deafness, must identify each sanitary facility and space with hearing augmentation system; and

Clause	Status	Comments
		• identify each door required by Clause E4.5 to be provided with an exit sign and state **"Exit"** and **"Level"** followed by the floor number. • signage incorporating the international symbol of access or deafness, must be provided within a room containing a hearing augmentation system identifying the hearing augmentation type, area covered and location of receivers. • signage in accordance with AS1428.1 must be provided for accessible unisex sanitary facilities to identify left or right-handed use. • signage to ambulant accessible facility must be on the door of the facility. • directional signage where a pedestrian entrance is not accessible, • directional signage where a bank of sanitary facilities are not provided with an accessible sanitary facility.
D3.7 Hearing augmentation	N/A	Not Applicable
D3.8 Tactile ground surface indicators (TGSI)	CR	Provision of tactile ground surfaced indicators complying with AS/NZS 1428.4.1-2009 to be provided. (i) a stairway, other than a *fire-isolated stairway*; and (ii) a ramp other than a *fire-isolated ramp*, step ramp, kerb ramp or *swimming pool* ramp; and (iii) in the absence of a suitable barrier— A. an overhead obstruction less than 2 m above floor level, other than a doorway; and B. an *accessway* meeting a vehicular way adjacent to any pedestrian entrance to a building, excluding a pedestrian entrance serving an area referred to in D3.4, if there is no kerb or kerb ramp at that point, except for areas exempted by D3.4. ❖ Tactile ground surface indicators *required* by (a) must comply with sections 1 and 2 of AS/NZS 1428.4.1. ******* ❖ *Where the distance of the landing is 3000 mm or more to the nearest nosing edge, the warning indicators shall be over a distance of 600mm–800mm.* ❖ *Where the distance of the landing is less than 3000 mm to the nearest nosing edge, the warning indicators shall be over a distance of 300–400mm.*
D3.9 Wheelchair seating spaces in Class 9b assembly buildings	N/A	Not Applicable
D3.10 Swimming pools	N/A	Not Applicable

Clause	Status	Comments
D3.11 Ramps	CR	• Any proposed ramps are not rise more than 3.6m nor have landing crossovers occur. • On an accessway, a series of connected ramps must not have a combined vertical rise of more than 3.6 m; and a landing for a step ramp must not overlap a landing for another step ramp or ramp. • No overlapping landings at step ramps to occur. • The ramp must comply with the requirements specified in AS1428.1 including a maximum gradient, landings, TGSIs, handrails and kerbing, as appropriate for the type of ramp. • A ramp cannot be used on an accessway to connect one level to another if the vertical rise is greater than 3.6 metres. • This is to ensure that the ramp does not cause undue fatigue for a user to the point where the ramp becomes unusable. Where a ramp is installed on a path of travel used solely for servicing an area exempted under D3.4 the requirements of AS1428.1 are not mandatory.
D3.12 Glazing on an accessway	CR	• Any such glazing on an accessway must be clearly marked in accordance with AS 1428.1-2009. • Where there is no chair rail, handrail, or transom, all frameless or fully glazed doors, sidelights, including any glazing capable of being mistaken for a doorway or opening, shall be clearly marked for their full width with a solid contrasting line. • The contrasting line shall be not less than 75mm wide and shall extend across the full width the glazing panel. The lower edge of the contrasting line shall be located between 900mm and 1000mm above the plane of the finished floor level. • Any contrasting line on the glazing shall provide a minimum of 30% luminance contrast when viewed against the floor surface or surfaces within 2m of the glazing on the opposite side. • This provision requires there to be a contrasting strip, chair rail, handrail, or transom across all frameless or fully glazed doorways and surrounding glazing capable of being mistaken for an opening. • The purpose of this requirement is to assist a person who has a vision impairment to be able to identify the presence of the glazing and avoid injury caused by contact with the glazing. A contrasting strip with a series of dots, unconnected patterns or shapes that do not provide high levels of contrast would not meet the requirements of this provision.
SECTION E- SERVICES & EQUIPMENT		
Part E1 - Fire Fighting Equipment		
E1.3 Fire Hydrants	CR	(a) A hydrant system must be provided to serve a building – (i) Having a total floor area greater than 500m²; and (ii) Where a fire brigade station is –

Clause	Status	Comments
		(A) No more than 50 km from the building as measured along roads; and (B) Equipped with equipment capable of utilising a fire hydrant. (b) The fire hydrant system- (i) Must be installed in accordance with AS2419.1, except – (A) A Class 8 electricity network station need not comply with clause 4.2 of AS 2419.1 if – (aa) it cannot be connected to town main supply; and (bb) one-hour water storage is provided for fire-fighting; and i. Where a sprinkler system is installed throughout a building in accordance with AS 2118.1, AS 2118.4, AS 2118.6, FPAA101H or FPAA101D the fire hydrant booster protection requirements of Clause 7.3(c)(ii) and 7.3(d)(iii) of AS 2419.1 do not apply, and ii. A fire hydrant booster assembly may be located between 3.5m and 10m of the building, and need not comply with Clause 7.3(d)(iii) of AS 2419.1 where the assembly is protected by an adjacent fire rated freestanding wall that – (aa) achieves an FRL of not less than 90/90/90; and (bb) extends not less than 1m each side of the outermost fire hydrant booster risers within the assembly and is not less than 3m wide; and (cc) extends to a height of not less than 2m above finished ground level; and i. 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 may be served by a single fire hydrant located at the level of egress from the 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.

3.2.2 External fire hydrants

3.2.2.1 General

External on-site fire hydrants (see Figure 3.2.2.1), including feed and attack fire hydrants, shall be above ground, have two outlets each individually valve controlled. Such external fire hydrants may be used to protect portions of a building, up to one level below and levels above the access level, subject to the limitation defined in Clause 3.2.1, from the fire hydrant or relevant pumping appliance hardstand location (see Figure 3.2.2.2(g)).

Where vandalism is possible, either an oval spindle in accordance with AS 2419.2 or other locking device shall be provided in lieu of a handwheel. Any such device shall meet the requirements of the local fire brigade.

Clause	Status	Comments

Fire hydrants incorporated in a booster assembly may be considered as external (feed) fire hydrants provided they comply with the requirements of this Standard for flow, pressure and location.

Street fire hydrants may be considered as external (feed) fire hydrants to provide total or partial coverage provided they comply with the requirements of this Standard for flow, pressure and location, with either a single or double outlet fire hydrant being acceptable in this case.

Street fire hydrants may not be used to provide coverage where a fire brigade booster assembly is incorporated in the system.

NOTE: Where street fire hydrants are to be used in the design, consideration should be given to their location to enable safe fire brigade access and hose laying.

When measuring the length of laid hose from a fire brigade pumping appliance, the appliance shall, for calculation purposes, not be located closer than 10 m to the building it is protecting.

3.2.3 Internal fire hydrants

3.2.3.1 General

Internal fire hydrants shall be provided to protect the whole building or those parts of the building not able to be protected by external fire hydrants. Each internal fire hydrant shall have a single valve-controlled outlet and attack hydrant performance. Internal fire hydrants shall cover only the level on which they are located.

All points on a floor shall be within reach of a 10 m hose stream issuing from a nozzle at the end of a 30 m length of hose laid on floor connected to the fire hydrant outlet.

The hose shall extend a minimum length of 1 m into the area to which the fire hydrant is providing coverage.

3.2.3.2 Location

Internal fire hydrants shall be located as follows:

(a) For fire-isolated exits —

- (i) in each required fire-isolated exit at each storey; or
- (ii) in each required fire-isolated exit at each storey, other than ground level, one level below ground, and one or more levels above ground level if coverage is provided by on-site external fire hydrants, regardless of the number of fire hydrants needed to provide coverage (see Figure 3.2.2.2(g)).

(b) For required non-fire-isolated exits —

- (i) within 4 m of the required exit;
- (ii) at each level or at the lowest level provided coverage of all levels is achieved; and
- (iii) fire hydrant outlets need not be located adjacent to each required non fire-isolated exit provided coverage can be achieved by fire hydrants located elsewhere, e.g. within a required fire-isolated exit or external fire hydrants.

3.2.4 Roof fire hydrants

Enclosed roof top plant rooms (excluding lift machine rooms) greater than 250 m2 floor area shall be served by fire hydrants in accordance with Clause 3.2.3.

3.3 OPEN YARD PROTECTION

Fire hydrants shall be provided and located so that every part of all storage, production equipment and plant in the protected area is within reach of a 10 m hose stream issuing from a nozzle at the end of a 60 m length of hose connected to a fire hydrant outlet.

Where any part of the fire hydrant pipework is situated above ground and within 150 m any structure in the protected area, fire hydrants shall be placed not more than 60 m apart along the pipework.

The number of fire hydrant outlets required to discharge simultaneously for protected open yards shall be determined in accordance with Table 3.3 at a flow rate and pressure accordance with Table 2.2 and Table 2.3.

Suitable additional provisions shall be made where special problems of firefighting could arise because of the nature or quantity of materials stored, displayed or used in a yard.

3.5.1 Accessibility

Fire hydrants shall be installed in accordance with the following:

(a) The centre-line of the fire hydrant outlet shall be not less than 750 mm and not more than 1200 mm above the ground, floor or platform.

(b) The valve outlet shall be—

(i) facing away from the wall immediately behind, if any; and

(ii) horizontal or sloping not more than 35° below the horizontal (see Figure 3.5.1 (a)).

(c) A clearance of 1000 mm shall be provided directly in front of the fire hydrant outlet for the connection and laying of hose (see Figure 3.5.1(a)).

3.5.2 Clearance

For a fully open fire hydrant valve, there shall be not less than 100 mm clearance around the valve handwheel. Fire hydrant valves shall be installed with a clearance around the outlet of not less than 300 mm through an arc of 225º to facilitate hose coupling (see Figure 3.5.1 (a)).

Clause	Status	Comments

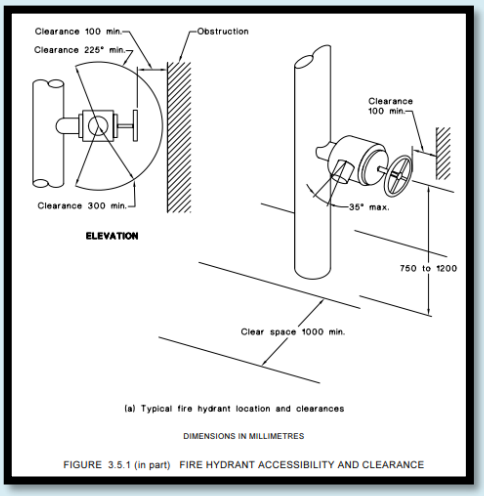


FIGURE 3.5.1 (in part) FIRE HYDRANT ACCESSIBILITY AND CLEARANCE

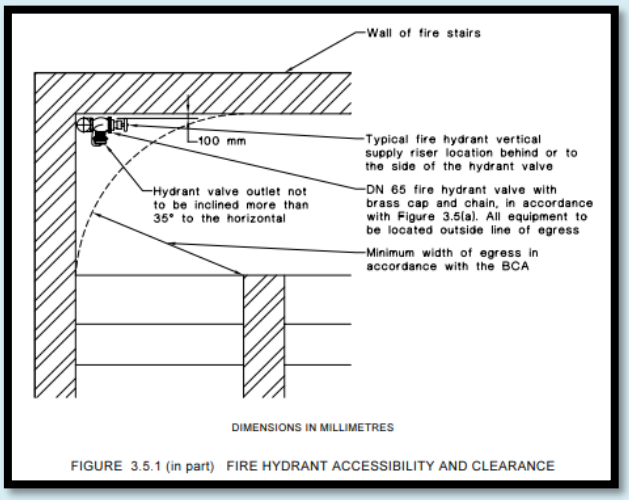


FIGURE 3.5.1 (in part) FIRE HYDRANT ACCESSIBILITY AND CLEARANCE

6.1 GENERAL

Pumpsets shall be installed to meet the hydrant flow and pressure requirements of this Standard and shall comply with AS 2941.

6.2 PUMPSET CONFIGURATIONS

On-site pumpsets provided to achieve the hydrant flow and pressure requirements of this Standard shall comprise—
(a) two pumps comprising—
- (i) one driven by an electric motor, the other by a compression ignition engine; or
- (ii) both driven by compression ignition engines; or
- (iii) both driven by an electric motor at least one of which is supplied by an automatic start emergency power generator.

(b) three pumps driven by compression ignition engines, any two of which will meet the duty requirements: or
(c) two pumps driven by electric motors connected to completely independent power sources.
(d) if connected to a reticulated water supply and installed in a building not greater than 25 m in effective height, one pump driven by —
- (i) a compression ignition engine.
- (ii) an electric motor supplied from an emergency power generator; or
- (iii) an electric motor connected to two completely independent power sources through an automatic changeover facility.

6.3 ELECTRIC DRIVER ISOLATING SWITCHES
Switches in circuits supplying the driver shall be locked 'ON' and clearly labelled '**FIRE HYDRANT PUMP—DO NOT SWITCH OFF'.** NOTE: This requirement does not apply to the separate main switches provided in accordance with AS/NZS 3000 (see Appendix G)

6.4 PUMPROOM
Fixed on-site pumpsets and associated equipment shall be contained in a weatherproof room and be—
a) secure to prevent the entry of unauthorized persons.
b) adequately ventilated for the aspiration and cooling of pump drivers.
c) heated, where necessary, to prevent freezing and facilitate the cold start of compression ignition drivers.
d) identified by appropriate signs and other visual and audible aids, so that the room and its entrance can be readily located by the attending fire brigade; and
e) constructed with a minimum 2.1 m high internal clearance with adequate space for pump maintenance and replacement.

6.4.2 INTERNAL PUMPROOMS

Pumprooms located within a building shall have—
a) a door opening to a road or open space, or a door opening to fire-isolated passage or stair which leads to a road or open space; and
b) except where the building is sprinkler protected in accordance with AS 2118.1, enclosing walls with an FRL not less than that prescribed by the BCA for a firewall for the particular building classification served by the fire hydrant system.

7.1 GENERAL

Fire brigade booster assemblies fitted to fire hydrant systems shall conform to the requirements of AS 2419.3 and the hose couplings shall be compatible with those used by the fire brigade serving the area. Where the assembly is located in a cabinet, it shall be weatherproof.

7.2 WHEN A BOOSTER ASSEMBLY IS REQUIRED
A fire brigade booster assembly shall be fitted to each fire hydrant system where—
- a) internal fire hydrants are installed.
- b) external on-site fire hydrants are installed more than 20 m from a fire brigade pumping appliance hardstand.
- c) more than 6 external on-site above ground fire hydrants are installed.

Clause	Status	Comments

d) a pumpset is installed.
e) on-site storage tanks are installed; or
f) more than one external on-site fire hydrant is required to serve a building where the floor area of any fire compartment is greater than 2000 m2.

7.3 LOCATION

Fire brigade booster assemblies shall be located so that they meet the following requirements:

a) They are readily accessible to firefighters.
b) They are operable by fire brigade pumping appliances located within 8 m.
c) If within, or affixed to, the external wall of the building, the booster shall be—
   (i) within sight of the main entrance to the building; and
   (ii) separated from the building by a construction with a fire resistance rating of not less than FRL 90/90/90 for a distance of not less than 2 m each side of and 3 m above the upper hose connections in the booster assembly
   NOTE: An example of a booster assembly within the external wall of a building is shown in Figure 7.3.1.
d) If remote from the building, the booster shall be—
   (i) at the boundary of the site and be within sight of the main entrance of the building.
   (ii) adjacent to the principal vehicular access to the site; and
   (iii) located not less than 10 m from the external wall of any building served
   (iv) NOTE: An example of a booster assembly remote from a building is shown in Figure 7.3. 2..
e) The booster enclosure shall only contain firefighting pipework and equipment.
f) In a position not less than 10 m from any high voltage main electrical distribution equipment such as transformers and distribution boards, and from liquefied petroleum gas and other combustible storage.
g) In a position so that the booster assembly is not obstructed or obscured by obstacles, stored goods, vehicles, vegetation, etc.

C7.3 The location of the fire brigade booster assembly should be chosen so as to afford maximum accessibly for and protection of firefighting personnel. It should ideally be located within sight of the main entrance of the building. Specific requirements for the booster location should be discussed with the relevant fire brigade.

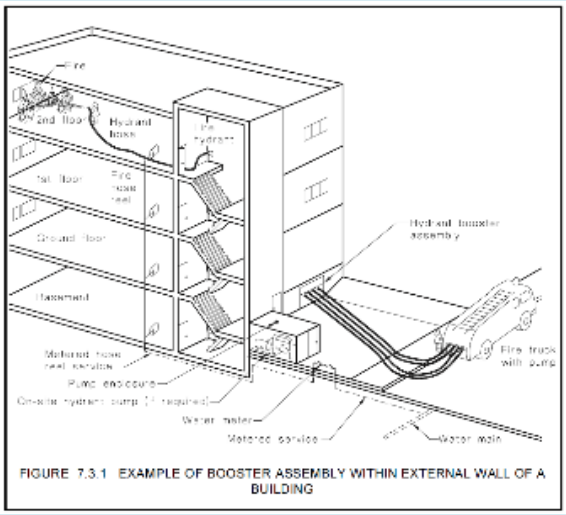


FIGURE 7.3.1 EXAMPLE OF BOOSTER ASSEMBLY WITHIN EXTERNAL WALL OF A BUILDING

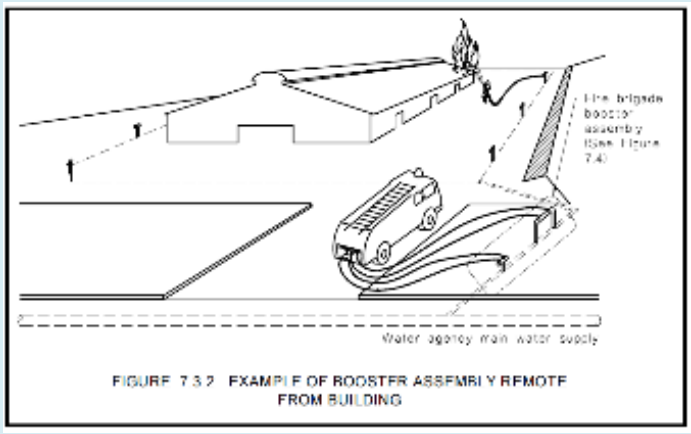


FIGURE 7.3.2 EXAMPLE OF BOOSTER ASSEMBLY REMOTE FROM BUILDING

7.4 FIRE BRIGADE BOOSTER ASSEMBLY ARRANGEMENT

Feed fire hydrants shall be installed on-site adjacent to booster inlet connections within the following limitations:

a) The centre distance between any feed fire hydrant and the closest fire brigade booster inlet shall be not less than 450 mm and not more than 5 m.
   – NOTE: Typical booster arrangements are shown in Figure 7.4.
b) The position of feed fire hydrant and fire brigade booster inlet connections shall be such that, when all inlets and outlets have hoses connected, one hose shall not cause interference with another hose (see Figure 7.4).
c) The height of the feed fire hydrant outlets and the fire brigade booster inlet connections shall be not less than 750 mm or more than 1200 mm above the floor or standing surface in front of the fire brigade booster assembly.

Where external water storage facilities at ground level are provided, suction points may be provided in lieu of the feed fire hydrants, in accordance with Clause 5.4, where the make-up flow rate to the tank is insufficient for firefighting purposes. The suction points shall be within 10 m of the booster inlet connection(s).
Where boosters or feed fire hydrants are installed in a cabinet or recess, the front face of all connections shall be within 150 mm of the front face of the cabinet or recess.

Clause	Status	Comments
The number of booster inlet connections required shall be calculated for a maximum rate of 10 L/s each to meet the system design requirements subject to a minimum of 2 inlets. Where hydrant systems are combined with any other system, additional fire hydrants and inlets shall be provided to accommodate the additional flow requirements. The number of installed feed fire hydrant outlets for the fire brigade booster assembly shall be equal to the number of fire brigade booster assembly inlets. Where more than 8 fire brigade booster assembly inlets are required for a system, additional fire hydrant booster facilities shall be provided to suit. Where more than one fire brigade booster assembly is installed, or more than four booster inlets are provided, the booster assembly shall be so arranged to allow multiple fire brigade pumping appliance access. Booster assemblies shall permit a fire main to be pressurized without recourse to the manual operation of isolating valves and shall be arranged generally in accordance with Figure 7.4. NOTE: Where a backflow prevention device is required by the water agency, the booster arrangement may be modified in accordance with Figure 9.4. Where the head of water present at the booster inlets, due to the system configuration or additional water supplies, can at any time be greater than 50 kPa, additional valves shall be installed to isolate the booster inlets. Where there is a town main supply to the fire hydrant system, there shall be a full flow nonreturn valve and an isolating valve installed above ground on the supply. The isolating valve shall be on the inlet, before the non-return valve. An arrow showing the direction of flow shall be welded or cast to the pipework adjacent to the booster (see Figure 7.4(b)). Caps, chains, bleed valves and ancillary fittings shall be as specified in AS 2419.3		
E1.4 Fire Hose Reels	CR	***Further details are to be provided to confirm hose reel coverage is achieved as per the requirements of AS2441-2005(Amendt 1) at CC Stage.*** (a) E1.4 does not apply to – (i) A Class 2, 3 or 5 building or Class 4 part of a building; or (ii) A Class 8 electricity network substation; or (iii) A Class 9c building; or (iv) Classrooms and associated corridors in a primary or a secondary school. (b) A fire hose reel system must be provided – (i) to serve the whole building where one or more internal fire hydrants area installed; or (ii) where internal fire hydrants are not installed, to serve any fire compartment with a floor area greater than 500m². (c) The fire hose reel system must – (i) Have hose reels installed in accordance with AS 2441; and (ii) Provide hose reels to serve only the storey in which they are located except a sole occupancy unit of not more than 2 storeys in a Class 6, 7, 8 and 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. (d) Fire hose reels must be located internally, externally or in combination, to achieve the system coverage as specified in AS2441.

Clause	Status	Comments
		(e) 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: (i) Fire hose reels must be located adjacent to an internal hydrant (other than one in 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. (ii) Fire hose reels must be located within 4m of an exit, except that a fire hose reel need not be located adjacent to every exit, provided system coverage can be achieved. (iii) Where system coverage is not achieved by compliance with (i) and (ii), additional fire hose reels may be located in paths of travel to an exit to achieve the required coverage. (f) Fire hose reels must be located so that the fire hose will not pass through doorways fitted with fire or smoke doors, except (i) Doorways in walls referred to in C2.5(a)(v) in a Class 9a building and C2.5(b)(iv) in a Class 9c building, separating ancillary use areas of high potential fire hazard; and (ii) Doorways in walls referred to in C2.12 or C2.13 separating equipment or electrical supply systems; and (iii) Doorways opening into shafts referred to in C3.13. (g) Where the normal water supply cannot achieve the flow and pressures required by AS 2441, or is unreliable – (h) A pump; or (i) Water storage facility; or (j) Both a pump and water storage facility, Must be installed to provide the minimum flor and pressures required by clause 6.1 of AS 2441.

10 LOCATION

(a) Each fire hose reel shall be located—

(a) along the normal paths of travel to an exit; and

(b) in a readily accessible position, in accordance with the requirements of the Building Code of Australia (BCA).

Fire hose reels shall not be located—

a) in positions where access could present a hazard to the potential user; or

b) in fire-isolated exits.

(c) Access to fire hose reels shall not be obstructed, e.g., from items such as furniture.

(d) Where a fire hose reel is installed in an external situation or an aggressive environment, it shall be protected by a cabinet or other suitable means.

10.2 System coverage

Where a fire hose reel system is required in a building it shall be suitable to allow the occupants to undertake initial fire suppression without being placed in any immediate danger.

The maximum coverage for a fire hose reel shall comply with the following requirements:

a) All points on a floor shall be within reach of a 4 m hose stream issuing from a nozzle at the end of the hose laid on floor. The hose length shall not exceed 36 m.

b) The distance from a hose reel to the nominated point shall be taken as the most direct laid-on-ground or floor route.

c) The location of internal walls, partitions, doorways, storage racking, and any other fixed obstructions, which would restrict normal hose coverage throughout the building or area to be protected, shall be considered when determining the number and location of fire hose reels.

– NOTE: In the case of car parks, the coverage is based on the arc of hose length +4 m.

e) The coverage shall be in compliance with the requirements stipulated in the BCA

<table>
<tr><th>Clause</th><th>Status</th><th>Comments</th></tr>
<tr><td>E1.5
Sprinklers</td><td>N/A</td><td>Not Applicable</td></tr>
<tr><td>E1.6
Portable Fire Extinguishers</td><td>CR</td><td>(a) Portable fire extinguishers must be –
(i) Provided as listed in Table E1.6;
(ii) For a Class 2, 3, or 5 building or Class 4 part of a building, provided –
(A) 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
(B) Where internal fire hydrants are not installed, to serve any fire compartment with a floor area greater than 500m², and for the purpose 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
i. Subject (b), selected, located and distributed in accordance with Sections 1, 2, 3 and 4 of AS 2444.

Table E1.6 Requirements for extinguishers
<table>
<tr><th>Occupancy class</th><th>Risk class (as defined in AS 2444)</th></tr>
<tr><td>General provisions—Class 2 to 9 buildings (except within sole-occupancy units of a Class 9c building).</td><td>(a) To cover Class AE or E fire risks associated with emergency services switchboards.Note 1
(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).
(d) To cover Class A fire risks in normally occupied fire compartments less than 500 m² 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.</td></tr>
<tr><td>Specific provisions (in addition to general provisions)—
(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) Class 9c building.</td><td>To cover Class A and E fire risks.Note 2</td></tr>
</table>
Notes to Table E1.6:
1. For the purposes of this Table, an emergency services switchboard is one which sustains emergency equipment operating in the emergency mode.
2. A Class E fire extinguisher need only be located at each nurses' station, supervisors' station or the like.
3. Additional extinguishers may be required to cover fire risks in relation to special hazards provided for in E1.10.
4. 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.</td></tr>
<tr><td>E1.8
Fire Control Centre</td><td>N/A</td><td>Not applicable.</td></tr>
<tr><td>E1.9
Fire Precautions during construction</td><td>CR</td><td>– In a building under construction –
(a) not less than one portable 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 / temporary exit; and
(b) After the building has reach an effective height of 12m –</td></tr>
</table>

Clause	Status	Comments
		(i) the required fire hydrants and fire hose reels must be operational on all floor / roof covered storeys, except for the 2 uppermost storeys; and (ii) Any required booster connections must be installed.
E1.10 - Provision for Special Hazards	Info	Suitable additional provisions must be made if special problems of firefighting could arise because (a) of 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.
Part E2 - Smoke Hazard Management		
E2.2 Table E2.2a Table E2.2b NSW E2.2	CR	**General smoke hazard management requirements** (a) A building must comply with Table E2.2a as applicable to Class 2 to 9 buildings and Table E2.2b as applicable to Class 6 and 9b buildings such that each separate part complies with the relevant provisions for the classification. (b) An air-handling system which does not form part of a smoke hazard management system in accordance with Table E2.2a or Table E2.2b and which recycles air from one fire compartment to another fire compartment or operates in a manner that may unduly contribute to the spread of smoke from one fire compartment to another fire compartment (such as lobby air supply) must— (i) (i) be designed and installed to operate as a smoke control system in accordance with AS/NZS 1668.1; or (ii) (A) incorporate smoke dampers where the air-handling ducts penetrate any elements separating the fire compartments served; and (B) be 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; and for the purposes of this provision, each sole-occupancy unit in a Class 2 or 3 building is treated as a separate fire compartment. (c) 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 the Section of the Standard.
E2.3	Info	Additional smoke hazard management measures that may be necessary due to the special characteristics, function, storage requirements, or mix of classifications, not addressed in Tables E2.2a and E2.2b.

Clause	Status	Comments
Provision for Special Hazards		
Part E3 - Lift Installations		
E3.1 Lift installations	CR	An electric passenger lift installation and an electrohydraulic passenger lift installation must comply with Specification E3.1 ***Provide design documentation and specifications at CC Stage***
E3.2 Stretcher Facility in Lifts	NA	Not Applicable
E3.3 Warning Against the use of lifts in Fire	CR	Warning signs indicating "**DO NOT USE LIFTS IF THERE IS A FIRE**" shall be displayed near every call button for a passenger lift or group of lifts throughout a building as per E3.3. ***Provide design documentation and specifications at CC Stage***
E3.4 Emergency Lifts	NA	Not Applicable
E3.5 Landings	CR	Access and egress to and from lift-well landings must comply with the Deemed-to-Satisfy Provisions of Section D. ***Provide design documentation and specifications at CC Stage***
E3.6 Passenger lifts	CR	The proposed passenger lift shall have the following features. (i) Handrail complying with the mandatory handrail provisions of AS1735.12. (ii) Lift floor dimensions of not less than 1100 mm wide x 1400 mm deep (lifts which travel not more than 12 m) (iii) Minimum clear door opening complying with AS1735.12. (iv) Passenger protection system complying with AS1735.12. (v) Lift landing doors at the upper landing. (vi) Lift car and landing control buttons complying with AS1735.12, (vii) Lighting in accordance with AS1735.12. (viii) Lifts serving more than 2 Levels – ❖ Automatic audible information within the lift car to indicate the level each time the lift car stops. ❖ audible and visual indication at each lift landing to indicate the arrival of the lift car. ❖ audible information and audible indication are to be provided in a range of between 20-80dB(A) at a maximum frequency of 1500Hz. (ix) 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. The lifts shall be detail designed to ensure compliance with the above and AS1428.1. Consideration should be given to lift control buttons and the like (no less than 500mm from an internal corner). ***Provide design documentation and specifications at CC Stage***
E3.7 Fire Service Controls	NA	Not Applicable

Clause	Status	Comments
E3.8 Residential Care Buildings	NA	Not Applicable
E3.9 Fire service recall operation switch	NA	Not Applicable
E3.10 Lift car fire service drive control switch	NA	Not Applicable
Part E4 - Visibility in an Emergency, Exit signs and Warning Systems		
E4.2 Emergency Lighting Requirements	CR	Emergency lighting must be provided throughout the building relevant to the requirements of this clause. ***Electrical Design Certification must be incorporated into the construction certificate specification***
E4.3 Measurement of Distance	CR	Distances, other than vertical rise, must be measured along the shortest path of travel whether by straight lines, curves or a combination of both.
E4.4 Design and Operation of Emergency Lighting	CR	The emergency lighting system must comply with AS/NZS 2293.1-2018.
E4.5 Exit Signs	CR	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 i. 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 E4.2.
E4.6 Direction Signs (inclusive of NSW E4.6)	CR	If an exit is not readily apparent to persons occupying or visiting the building then directional exit signs must be installed in appropriate positions.
E4.7	NA	Not Applicable

Clause	Status	Comments
Class 2 & 3 Buildings & Class 4 Parts: Exemption		
E4.8 Design & Operation of Exit Signs	CR	Exit signs must comply with: (a) AS/NZS 2293.1-2018; or (b) For a photoluminescent exit sign, Specification E4.8.
E4.9 Emergency Warning & Intercom Systems	CR	An emergency warning and intercom system complying where applicable with AS 1670.4 must be installed— (e) in a Class 9b building— (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.
SECTION F - HEALTH & AMENITY		
Part F1 - Damp & Weatherproofing		
F1.0 Deemed -to-Satisfy Provisions	CR PS	a) Performance Requirement FP1.4, for the prevention of the penetration of water through external walls, must be complied with. b) Where a Deemed-to-Satisfy Solution is proposed, Performance Requirements FP1.1 to FP1.3 and FP1.5 to FP1.7 are satisfied by complying with F1.1 to F1.13. c) Where a Performance Solution is proposed, the relevant Performance Requirements must be determined in accordance with A2.2(3) and A2.4(3) as applicable. There are no Deemed -to Satisfy Provisions for this Performance Solution in respect to external walls. ***Performance Based Solution to be obtained at Construction Certificate Stage***
F1.1 Stormwater Drainage	CR	Stormwater drainage must comply with AS/NZS 3500.3-2018
F1.4 External above ground membranes	CR	Any external above ground membranes must be waterproofed as per AS 4654 Parts 1 and 2-2012.
F1.5 Roof coverings	CR	A roof must be covered with— (a) concrete roofing tiles complying with AS 2049 and fixed, except in cyclonic areas, in accordance with AS 2050, as appropriate; or (b) terracotta roofing tiles complying with AS 2049 and fixed, except in cyclonic areas, in accordance with AS 2050; or (c) cellulose cement corrugated sheeting complying with AS/NZS 2908.1 and installed in accordance with AS/NZS 1562.2; or

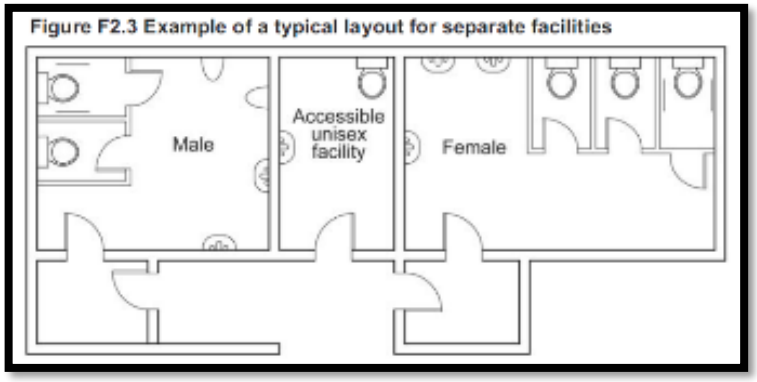
<table>
<tr><th>Clause</th><th>Status</th><th>Comments</th></tr>
<tr><td></td><td></td><td>(d) metal sheet roofing complying with AS 1562.1; or
(e) plastic sheet roofing designed and installed in accordance with AS/NZS 4256 Parts 1, 2, 3 and 5 and AS/NZS 1562.3; or
(f) Terracotta, fibre-cement and timber slates and shingles designed and installed to complying with AS 4597 except in cyclonic areas</td></tr>
<tr><td>F1.6
Sarking</td><td>CR</td><td>Sarking-type materials used for weatherproofing must comply with AS/NZS 4200.1 and AS 4200.2.</td></tr>
<tr><td>F1.7
Waterproofing of wet area</td><td>CR</td><td>Wet areas must be waterproofed in accordance with AS 3740-2010 and F1.7 & Table F1.7 of the BCA.</td></tr>
<tr><td>F1.9
Damp-proofing</td><td>CR</td><td>Where a damp-proof course is required, it must consist of a material that complies with AS/NZS 2904-1995; or impervious sheet material in accordance with AS 3660.1-2000</td></tr>
<tr><td>F1.10
Damp-proofing of floors on the ground</td><td>CR</td><td>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 2870-2011 (N/A to areas that do not require weatherproofing – refer specific clause exemptions).</td></tr>
<tr><td>F1.11
Provision of Floor Wastes</td><td>N/A</td><td>Not Applicable</td></tr>
<tr><td>F1.12
Sub Floor Ventilation</td><td>CR</td><td>Relevant to the ventilation of sub-floor spaces located between a suspended floor of a building and the ground.

Subfloor spaces must—
(i) be provided with openings in external walls and internal subfloor walls in accordance with Table F1.12 for the climatic zones given in Figure F1.12; and
(ii) have clearance between the ground surface and the underside of the lowest horizontal member in the subfloor in accordance with Table F1.12

Table F1.12 Subfloor openings and ground clearance
<table>
<tr><th>Climatic zone (see Figure F1.12)</th><th>Minimum aggregate subfloor ventilation openings without a membrane (mm^2/m of wall)</th><th>Minimum aggregate subfloor ventilation openings having the ground sealed with an impervious membrane (mm^2/m of wall)</th><th>Minimum ground clearance height where termite in-spection or manage-ment system is not required (mm)</th><th>Minimum ground clearance height where termite in-spection is required (mm) Note 1</th></tr>
<tr><td>A</td><td>2000</td><td>1000</td><td>150</td><td>400</td></tr>
<tr><td>B</td><td>4000</td><td>2000</td><td>150</td><td>400</td></tr>
<tr><td>C</td><td>8000</td><td>3000</td><td>150</td><td>400</td></tr>
</table>

Notes to Table F1.12:
1. 400 mm clearance required only where termite management systems are installed that need to be inspected (see B1.4).
2. On sloping sites, the 400 mm clearance required by (1) may be reduced to 150 mm within 2 m of external walls.
3. In situations where openings in external walls and internal subfloor walls are not able to be provided, additional measures must be provided to ensure that the overall level of ventilation of the subfloor space is maintained. This may include measures similar to those in</td></tr>
</table>

Clause	Status	Comments
		F1.12(e) i.e. providing durability class timbers, or having the ground sealed in the subfloor space with an impervious membrane**.**
F1.13 Glazed Assemblies	CR	Clause relevant to the provision of glazed assemblies within external walls in accordance with AS 2047. (a) Subject to (b) and (c), the following glazed assemblies in an external wall, must comply with AS 2047 requirements for resistance to water penetration: i. Windows. ii. Sliding and swinging glazed doors with a frame, including french and bi-fold doors with a frame. iii. Adjustable louvres. iv. Shopfronts. v. Window walls with one-piece framing. (b) The following buildings need not comply with (a): i. A Class 7 or 8 building where in the particular case there is no necessity for compliance. ii. 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. iii. An open spectator stand or open-deck carpark. (c) The following glazed assemblies need not comply with (a): i. All glazed assemblies not in an external wall. ii. Revolving doors. iii. Fixed louvres. iv. Skylights, roof lights and windows in other than the vertical plane. v. Sliding and swinging glazed doors without a frame. vi. Windows constructed on site and architectural one-off windows, which are not design tested in accordance with AS 2047. vii. Second-hand windows, re-used windows and recycled windows. viii. Heritage windows.
Part F2 - Sanitary & Other Facilities		
F2.1 Facilities in residential buildings	NA	Not Applicable
F2.2	Info	❖ The number of persons accommodated must be calculated according to D1.13 if it cannot be more accurately determined by other means.

Clause	Status	Comments
Calculation of number of occupants and fixtures		❖ Unless the premises are used predominantly by one sex, sanitary facilities must be provided on the basis of equal numbers of males and females. ❖ In calculating the number of sanitary facilities to be provided under F2.1 and F2.3, a unisex facility required for people with a disability may be counted once for each sex. ❖ For the purposes of this Part, a unisex facility comprises one closet pan, one washbasin and means for the disposal of sanitary towels.
F2.3 Facilities for Class 3 to 9 Buildings	FI	(a) Except where permitted by (b), (c), (f), F2.4(a) and F2.4(b), separate sanitary facilities for males and females must be provided for Class 3, 5, 6, 7, 8 or 9 buildings in accordance with Table F2.3. (b) If not more than 10 people are employed, a unisex facility may be provided instead of separate facilities for each sex. (c) If the majority of employees are of one sex, not more than 2 employees of the other sex may share toilet facilities if the facilities are separated by means of walls, partitions, and doors to afford privacy. (j) Example from guide  (d) Employees and the public may share the same facilities in a Class 6 and 9b building (other than a school or early childhood centre) provided the number of facilities provided is not less than the total number of facilities required for employees plus those required for the public. (e) Adequate means of disposal of sanitary towels must be provided in sanitary facilities for use by females. (f) … (g) … (h) A Class 9b early childhood centre must be provided with— (i) a kitchen or food preparation area with a kitchen sink, separate hand washing facilities, space for a refrigerator and space for cooking facilities, with— (ii) the facilities protected by a door or gate with child proof latches to prevent unsupervised access to the facilities by children younger than 5 years old; and

Clause	Status	Comments
		(iii) the ability to facilitate supervision of children from the facilities if the early childhood centre accommodates children younger than 2 years old; and (iv) one bath, shower, or shower-bath; and (v) if the centre accommodates children younger than 3 years old— (A) a laundry facility comprising a washtub and space in the same room for a washing machine; and (B) a bench type baby bath, which is within 1 m of the nappy change bench: and (C) a nappy changing bench which— (aa) is within 1 m of separate adult hand washing facilities and bench type baby bath: and (bb) must be not less than 0.9 ^{m2} in area and at a height of not less than 850 mm, but not more than 900 mm above the finished floor level; and (cc) must have a space not less than 800 mm high, 500 mm wide and 800 mm deep for the storage of steps; and (dd) is positioned to permit a staff member changing a nappy to have visibility of the play area at all times. i) Class 9b theatres and sporting venues must be provided with one shower for each 10 participants or part thereof. j) Not less than one washbasin must be provided where closet pans or urinals are provided.
F2.4 Facilities for People with Disabilities	CR	In a building required to be accessible— a) accessible unisex sanitary compartments must be provided in accessible parts of the building in accordance with Table F2.4(a); and b) accessible unisex showers must be provided in accordance with Table 2.4(b); and c) at each bank of toilets where there is one or more toilets in addition to an accessible unisex sanitary compartment at that bank of toilets, a sanitary compartment suitable for a person with an ambulant disability in accordance with AS 1428. 1 must be provided for use by males and females; and d) an accessible unisex sanitary compartment must contain a closet pan, washbasin, shelf or bench top and adequate means of disposal of sanitary products; and e) the circulation spaces, fixtures and fittings of all accessible sanitary facilities provided in accordance with Table F2.4(a) and Table F2.4(b) must comply with the requirements of AS 1428. 1; 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

Clause	Status	Comments
		h) where male sanitary facilities are provided at a separate location to female sanitary facilities, accessible unisex sanitary facilities are only required at one of those locations; and i) an accessible unisex sanitary compartment or an accessible unisex shower need not be provided on a storey or level that is not required by D3.3(f) to be provided with a passenger lift or ramp complying with AS 1428. 1. Class 5, 6, 7, 8 or 9 — except for within a *ward area* of a Class 9a *health-care building* | Where F2.3 requires closet pans— (a) 1 on every *storey* containing *sanitary compartments*; and (b) where a *storey* has more than 1 bank of *sanitary compartments* containing male and female *sanitary compartments*, at not less than 50% of those banks. Class 5, 6, 7, 8 or 9 — except for within a *ward area* of a Class 9a *health-care building* | Where F2.3 requires 1 or more showers, not less than 1 for every 10 showers or part thereof.
F2.5 Construction of Sanitary Compartments	CR	Other than in an early childhood centre, sanitary compartments must have: (a) Doors and partitions that separate adjacent compartments; and (b) the door to a fully enclosed sanitary compartment must open outwards, or slide, or be removable from outside of the compartment, unless there is a clear space of at least 1.2m between the closet pan within the compartment and the doorway. (c) 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.
F2.6 Interpretation: Urinals and washbasins	CR	(a) A urinal may be— (i) an individual stall or wall-hung urinal; or (ii) each 600 mm length of a continuous urinal trough; or (iii) a closet pan used in place of a urinal. (b) A washbasin may be— (i) an individual basin; or (ii) a part of a hand washing trough served by a single water tap.
F2.7 Microbial Control Note NSW F2.7 (Clause Deleted)	N/A	Clause Deleted in NSW.
F2.8 Waste Management	N/A	Not Applicable
F2.9	N/A	Not Applicable

Clause	Status	Comments
Accessible adult change facilities		
Part F3 - Room Sizes		
F3.1 Height of Rooms and other spaces	CR	The ceiling height must be not less than— (a) … (b) in a Class 5, 6, 7 or 8 building— (i) except as allowed in (ii) and (f) — 2.4 m; and (ii) a corridor, passageway, or the like — 2.1 m; and (c) … (d) in a Class 9b building— (i) a school classroom or other assembly building or part that accommodates not more than 100 persons — 2.4 m; and (ii) a theatre, public hall or other assembly building or part that accommodates more than 100 persons — 2.7 m; and (iii) a corridor— (A) that serves an assembly building or part that accommodates not more than 100 persons — 2.4 m; or (B) that serves an assembly building or part that accommodates more than 100 persons — 2.7 m; and (iv) the number of persons accommodated must be calculated according to D1.13; and (e) … (f) In any building— (i) a bathroom, shower room, sanitary compartment, airlock, tea preparation room, pantry, storeroom, garage, car parking area, or the like — 2.1 m; and (ii) a commercial kitchen— 2.4 m; and (iii) 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.
Part F4 - Light & Ventilation		
F4.1 Provision of natural light	CR	Natural lighting must be provided to Class 9b buildings – to all general-purpose classrooms in primary and secondary schools and all playrooms or the like for the use of children in an early childhood centre. ***Provide design documentation and specifications at CC Stage***
F4.2 Methods and extent of natural lighting	CR	(a) Required natural lighting must be provided by— (i) windows, excluding roof lights, that—

Clause	Status	Comments
		(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 (iii) a proportional combination of windows and roof lights required by (i) and (ii). (c) Class 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— (i) generally — 1 m; and (ii) … (iii) 50% of the square root of the exterior height of the wall in which the window is located, measured in metres from its sill. (d) … (e) 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.
F4.3 Natural light borrowed from adjoining room	N/A	Not Applicable
F4.4 Artificial lighting	CR	Information relevant to the provision of artificial lighting in accordance with AS/NZS 1680.0-2009 to specific building areas.
F4.5 Ventilation of Rooms	CR	All rooms to be provided with Clause F4.6 compliant natural ventilation **OR** a mechanical ventilation or air-conditioning system complying with AS 1668.2-2012.
F4.6 Natural Ventilation	CR	(a) Natural ventilation provided in accordance with F4.5(a) must consist of permanent openings, windows, doors or other devices which can be opened— (i) with ventilating area not less than 5% of the floor area of the room required to be ventilated; and (ii) open to— (A) a suitably sized court, or space open to the sky; or (B) an open verandah, carport, or the like; or (C) an adjoining room in accordance with F4.7.

Clause	Status	Comments
		(b) The requirements of (a)(i) do not apply to a Class 8 electricity network substation.
F4.7 Ventilation borrowed from adjoining room	CR	Natural ventilation to a room may come through a window, opening, ventilating 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) … (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.
F4.8 Restriction of position of water closets and urinals	CR	Sanitary compartments must not open directly into— • a kitchen or pantry; or • a public dining room or restaurant; or • a room used for public assembly (which is not an early childhood centre, primary school or open spectator stand); or • a workplace normally occupied by more than one person. ***Provide design documentation and specifications at CC Stage***
F4.9 Airlocks	CR	If a sanitary compartment is prohibited under F4.8 from opening directly to another room— • 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. ***Provide design documentation and specifications at CC Stage***
F4.11 Carparks	CR	Every storey of a carpark (except an open deck carpark) must have: a) a system of mechanical ventilation complying with AS1668.2-2012; or b) a system of natural ventilation complying with Section 4 of AS 1668.4-2012. ***Provide design documentation and specifications at CC Stage***

Clause	Status	Comments
F4.12 Kitchen local exhaust	CR	A commercial kitchen must be provided with a kitchen exhaust hood complying with AS 1668.1 and AS 1668.2 where— a) any cooking apparatus has— (i) a total maximum electrical power input exceeding 8 kW; or (ii) a total gas power input exceeding 29 MJ/h; or b) the total maximum power input to more than one apparatus exceeds— (i) 0.5 kW electrical power; or (ii) 1.8 MJ/hour gas per m2 of floor area of the room or enclosure. ***Provide design documentation and specifications at CC Stage***
Part F5 - Sound Transmission		
F5.1 Application of Part	N/A	Not Applicable
F5.2 Determination of airborne sound insulation ratings	N/A	Not Applicable
F5.3 Determination of impact sound insulation ratings	N/A	Not Applicable
F5.4 Sound Insulation of floors between units	N/A	Not Applicable
F5.5 Sound insulation of walls between units	N/A	Not Applicable
F5.6 Sound insulation rating of services	N/A	Not Applicable
F5.7 Sound isolation of pumps	N/A	Not Applicable

Clause	Status	Comments
Part F6 – Condensation Management		
F6.1 Application of Part	N/A	The Deemed-to-Satisfy Provisions of this Part only apply to a sole-occupancy unit of a Class 2 building and a Class 4 part of a building.
F6.2 Pliable building membrane	N/A	Not Applicable
F6.3 Flow rate and discharge of exhaust systems	N/A	Not Applicable
F6.4 Ventilation of roof spaces	N/A	Not Applicable
SECTION G - ANCILLIARY PROVISIONS		
Part G1 - Minor Structures and Components		
G1.1 Swimming Pools	N/A	Not Applicable
NSW G1.101 Provision for cleaning windows	CR	A safe manner for cleaning of windows located 3 or more storeys above ground level must be provided, and compliance is achieved where: (c) The windows can be cleaned wholly from within the building; or (d) Via a method complying with the Work Health and Safety Act 2011 and regulations made under that Act. ***Provide design documentation and specifications at CC Stage***
G1.2 Refrigeration chambers, strong-rooms and vaults	N/A	Not Applicable
G1.3 Outdoor play areas	CR	a) Any outdoor play space in a Class 9b early childhood centre must be enclosed on all sides with a barrier which complies with AS 1926.1. b) For the purposes of (a), AS 1926.1 is applied as if there is a swimming pool located outside the outdoor play space, so that the barrier restricts children from exiting the premises without the knowledge of staff in the centre. c) The requirements of (a) do not apply to a wall, including doors and windows, which form part of the Class 9b early childhood centre.
Part G2 - Boilers, Pressure Vessels, Heating Appliances, Fireplaces, Chimneys and Flues		
G2.2 Installation of appliances	CR	The installation of a stove, heater or similar appliance in a building must comply with:

Clause	Status	Comments
		❖ Domestic solid fuel burning appliances – Installation: AS/NZS 2918-2001; or ❖ Boilers and pressure vessels: specification G2.2 ***Provide design documentation and specifications at CC Stage***
G2.3 Open fire places	N/A	Not Applicable
G2.4 Incinerator rooms	N/A	Not Applicable
Part G3 - Atrium Construction		
G3.1 Application of Part	Info	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 FPAA101D or FPAA101H system) complying with Specification E1.5 throughout; and (ii) one of those storeys is situated at a level at which there is direct egress to a road or open space.
G3.2 Dimensions of atrium well	Info	An atrium well must have a width throughout the well that is able to contain a cylinder having a horizontal diameter of not less than 6 m.
G3.3 Separation of atrium by bounding walls	Info	An atrium must be separated from the remainder of the building at each storey by bounding walls set back not more than 3.5 m from the perimeter of the atrium well except in the case of the walls at no more than 3 consecutive storeys if— a) one of those storeys is at a level at which direct egress to a road or open space is provided; and b) (b) the sum of the floor areas of those storeys that are contained within the atrium is not more than the maximum area that is permitted in Table C2.2.
G3.4 Construction of bounding walls	Info	Bounding walls must— (a) have an FRL of not less than 60/60/60, and— (i) extend from the floor of the storey to the underside of the floor next above or to the underside of the roof; and (ii) have any door openings protected with self-closing or automatic –/60/30 fire doors; or (b) be constructed of fixed toughened safety glass, or wired safety glass in non-combustible frames, with— (i) any door openings fitted with a self-closing smoke door complying with Specification C3.4; and (ii) the walls and doors protected with wall-wetting systems in accordance with Specification G3.8; and (iii) (iii) a fire barrier with an FRL of not less than –/60/30 installed in any ceiling spaces above the wall.

Clause	Status	Comments
G3.5 Construction at balconies	Info	If a bounding wall separating an atrium from the remainder of the building is set back from the perimeter of the atrium well, a barrier that is imperforate and non-combustible, and not less than 1 m high must be provided.
G3.6 Separation at roof	Info	In an atrium— a) the roof must have the FRL prescribed in Table 3 of Specification C1.1; or b) the roof structure and membrane must be protected by a sprinkler system (other than a FPAA101D or FPAA101H system) complying with Specification E1.5.
G3.7 Means of egress	Info	All areas within an atrium must have access to at least 2 exits.
G3.8 Fire and smoke control systems	Info	Sprinkler systems, smoke control, fire detection and alarm systems, and emergency warning and intercom systems must be installed in compliance with Specification G3.8.
Part G4 - Construction in Alpine Areas		
G4.1 Application of Part	N/A	The DTS Provisions of this Part apply to any building constructed in an alpine area in addition to other DTS Provisions of the BCA.
G4.3 External doorways	N/A	Not Applicable
G4.4 Emergency lighting	N/A	Not Applicable
G4.5 External ramps	N/A	Not Applicable
G4.6 Discharge of exits	N/A	Not Applicable
G4.7 External trafficable structures	N/A	Not Applicable
G4.8 Fire-fighting services and equipment	N/A	Not Applicable
G4.9 Fire orders	N/A	Not Applicable
Part G5 - Construction in Bushfire Prone Areas		
G5.1 Application of Part	N/A	Not Applicable

Clause	Status	Comments
G5.2 Protection	N/A	Not Applicable
Part G6 - Occupiable Outdoor Areas		
G6.1 Application of Part	CR	The DTS provisions of this part apply to buildings containing an outdoor are in addition to the other DTS provisions of the BCA. It does not apply to such areas within a sole occupancy unit *Note – occupiable outdoor area is a defined as a space on a roof, balcony, or similar part of a building that is open to the sky; and to which access is provided, other than access only for maintenance; and that is not open space or directly connected to open space.* *Open space means a space on the allotment, or a roof or similar part of a building adequately protected from fire, open to the sky and connected directly with a public road.*
G6.2 Fire hazard properties	CR	(a) A lining, material or assembly in an occupiable area must comply with C1.10 as for an internal element. (b) The following fire hazard properties of a lining, material or assembly in an occupiable are not required to comply with C1.10: (i) Average specific extinction area. (ii) Smoke-development Index. (iii) Smoke development rate. (c) Smoke growth rate index. ***Provide design documentation and specifications at CC Stage***
G6.3 Fire separation	CR	For the purposes of DTS provisions of C2.7, C2.8 and C2.9, a reference to a storey includes an occupiable outdoor area, however a fire wall cannot be used to separate an occupiable area into different fire compartments.
G6.4 Provision for escape	CR	For the purposes of the DTS provisions of Part D1, a reference to a storey or room includes an occupiable outdoor area.
G6.5 Construction of exits	CR	For the purposes of the DTS provisions of Part D2, a reference to a storey includes an occupiable outdoor area.
G6.6 Firefighting equipment	CR	For the purposes of the DTS provisions of Part E1, a reference to a storey includes an occupiable outdoor area.

5. CONCLUSION

Assessment of the Architectural design documentation against the Deemed-to Satisfy Provisions of the Building Code of Australia, 2019 (BCA) has revealed some areas where compliance with the BCA may require further consideration and/or may involve assessment as Performance Based (Fire Engineered) Performance Solutions. Any Performance Solutions will be required to clearly indicate methodologies for achieving compliance with the relevant Performance Requirements.

Matthew Harriman
Director
EBS Consultants