BUILDING CODE OF AUSTRALIA 2019
COMPLIANCE ASSESSMENT REPORT

MIXED USE DEVELOPMENT

167 NORTHUMBERLAND STREET, LIVERPOOL

DATE ► 5/02/2020

REPORT NO. ► PROJECT 1423-195 REV #

PREPARED FOR ► MERITON

PREPARED BY ► AE&D

AEDGROUP

Innovation & expertise in building regulations

CONTENTS

REVISION STATUS				
REVISION	**DATE**	**STATUS**	**WRITTEN**	**CHECKED**
Rev 0.0	26/2/20	Final	AW	NH

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1.0 EXECUTIVE SUMMARY AND RECOMMENDATIONS

This report provides a Building Code of Australia (BCA) 2019 assessment of the proposed mixed use development to be located at 167 Northumberland Street Liverpool.

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

1.1 Recommendations

The following table lists the non-compliances identified with the Deemed-to-Satisfy Provisions of the BCA which should be addressed either by design amendments, additional information **OR** by way of an Alternative Solution:

BCA Clause / NOTES	Deemed-to-Satisfy Provision to be addressed / NOTES
C1.1 – Type of construction required and Specification C1.1	**Compliance issue(s):** **The level 4 plan indicates skylights located less than 3m from the side boundary and the adjoining openings in the residential SOU's, contrary to Clause 3.6 of Spec C3.6:**  ***Further, the ground floor commercial waste room, clean linen room, and the MS waste holding room is to be suitably fire separated from the remainder of the storey with compliant FRL's unless further addressed by a Fire Engineered Performance Solution.*** ***It is recommended that this is addressed by a Fire Engineered Performance Solution.***
D1.9 – Non-combustible construction	**Further detail needed at CC Stage:** **The provided Façade material schedule indicates powder coated metal for the external cladding. The exact product and product specification proposed for the external cladding is to be indicated, and a test certificate provided confirming the product as passing an AS 1530.1-1994 test. Alternatively, a current and valid**

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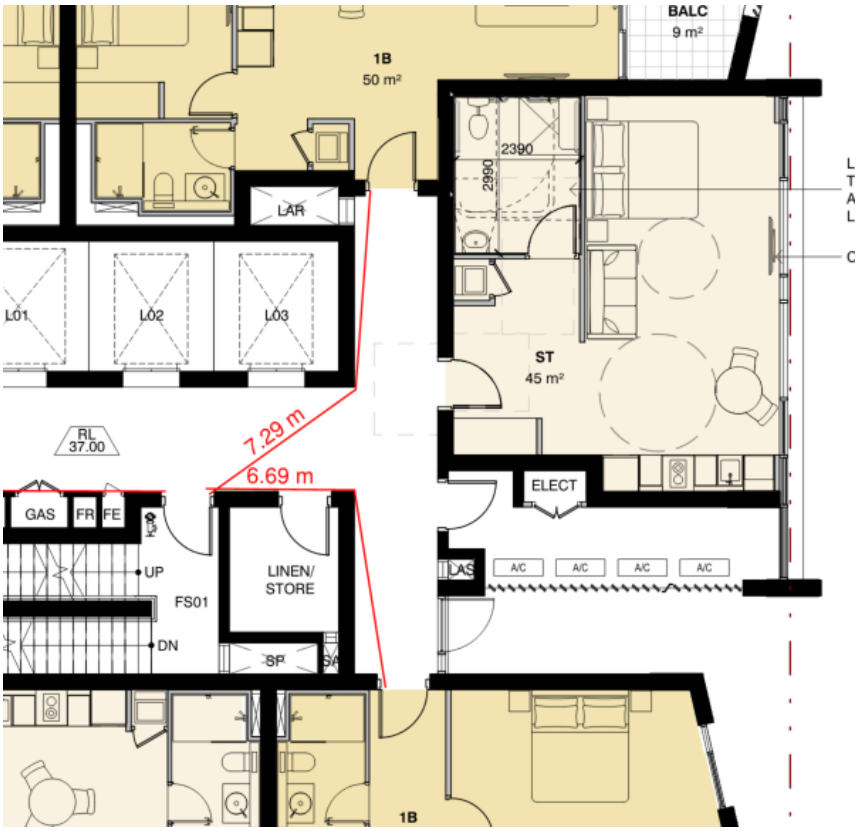
BCA Clause / NOTES	Deemed-to-Satisfy Provision to be addressed / NOTES
	Codemark certificate should be provided for the product. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
C1.14 – Ancillary Elements	**<u>Further detail needed at CC Stage:</u>** **The provided Façade material schedule indicates powder coated metal for the ancillary elements. The exact product and product specification proposed for the external cladding is to be indicated, and a test certificate provided confirming the product as passing an AS 1530.1-1994 test. Alternatively, a current and Valid Codemark certificate should be provided for the product.** ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
D1.2 – Number of exits required	**<u>Compliance issue(s):</u>** **The following rooms have not been provided with 2 exits contrary to this Clause:** • **Level G – Gas meter room & Commercial lobby** • **Level P2 - The Fire Hydrant Pump Room.** • **Level 3 – Hot water plant room** ***It is recommended that this is addressed by a Fire Engineered Performance Solution.***
D1.4 Exit travel distances	**<u>Compliance issue(s):</u>** • **Level 4 – Eastern SOU: Travel distance to an exit or a point of choice exceeds 6m (maximum being 8m).** 

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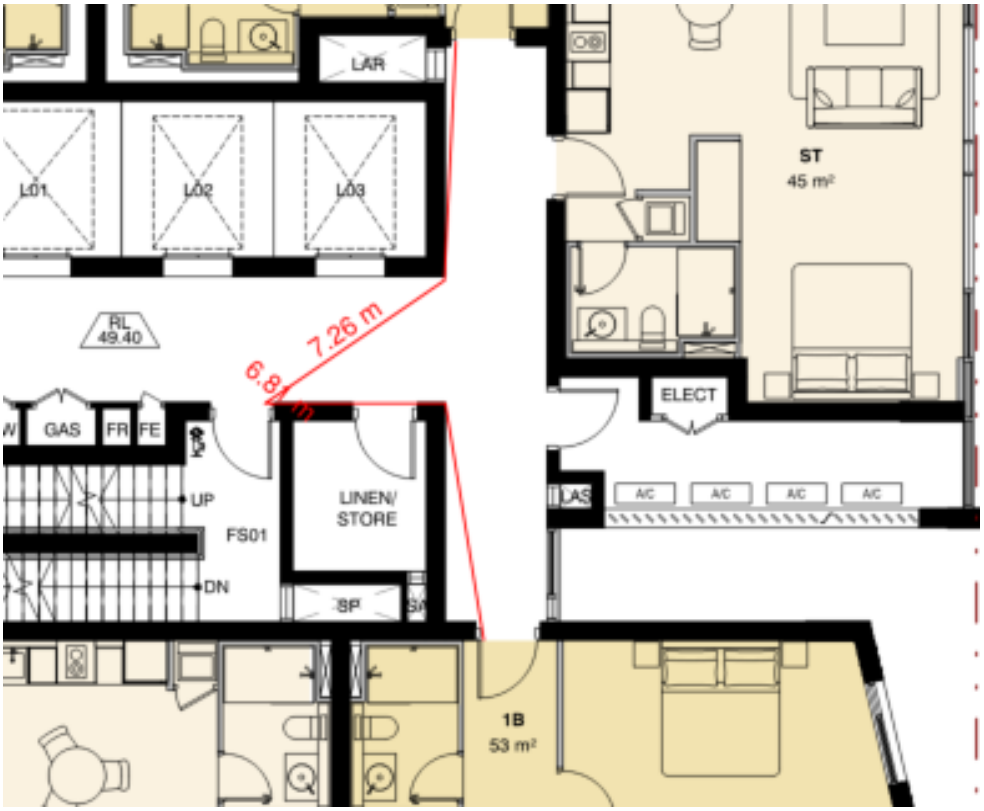
BCA Clause / NOTES	Deemed-to-Satisfy Provision to be addressed / NOTES

- **Level 5-7 – Eastern SOUs: Travel distance to an exit or a point of choice exceeds 6m (maximum being 8m).**

- **Level 8 – Eastern SOUs: Travel distance to an exit or a point of choice exceeds 6m (maximum being 8m).**



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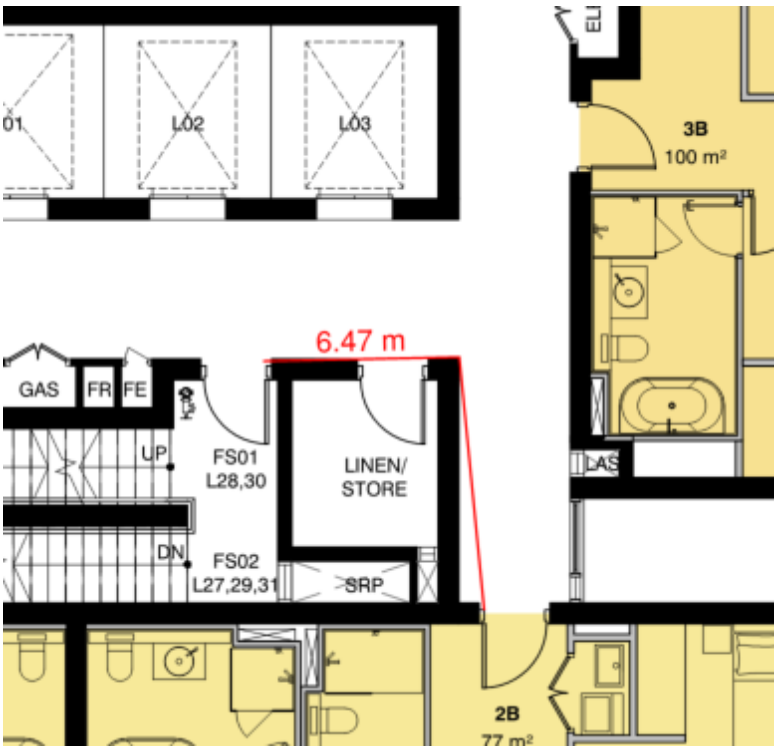
BCA Clause / NOTES	Deemed-to-Satisfy Provision to be addressed / NOTES

- **Level 9 to 26 – Eastern SOUs: Travel distance to an exit or a point of choice exceeds 6m (maximum being 8m).**

- **Level 27 to 31 – Eastern SOU: Travel distance to an exit or a point of choice exceeds 6m (maximum being 7m).**



Either update plans to reflect DtS compliance or a performance solution is to be developed by a Fire Engineer for all the above issues.

Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification.

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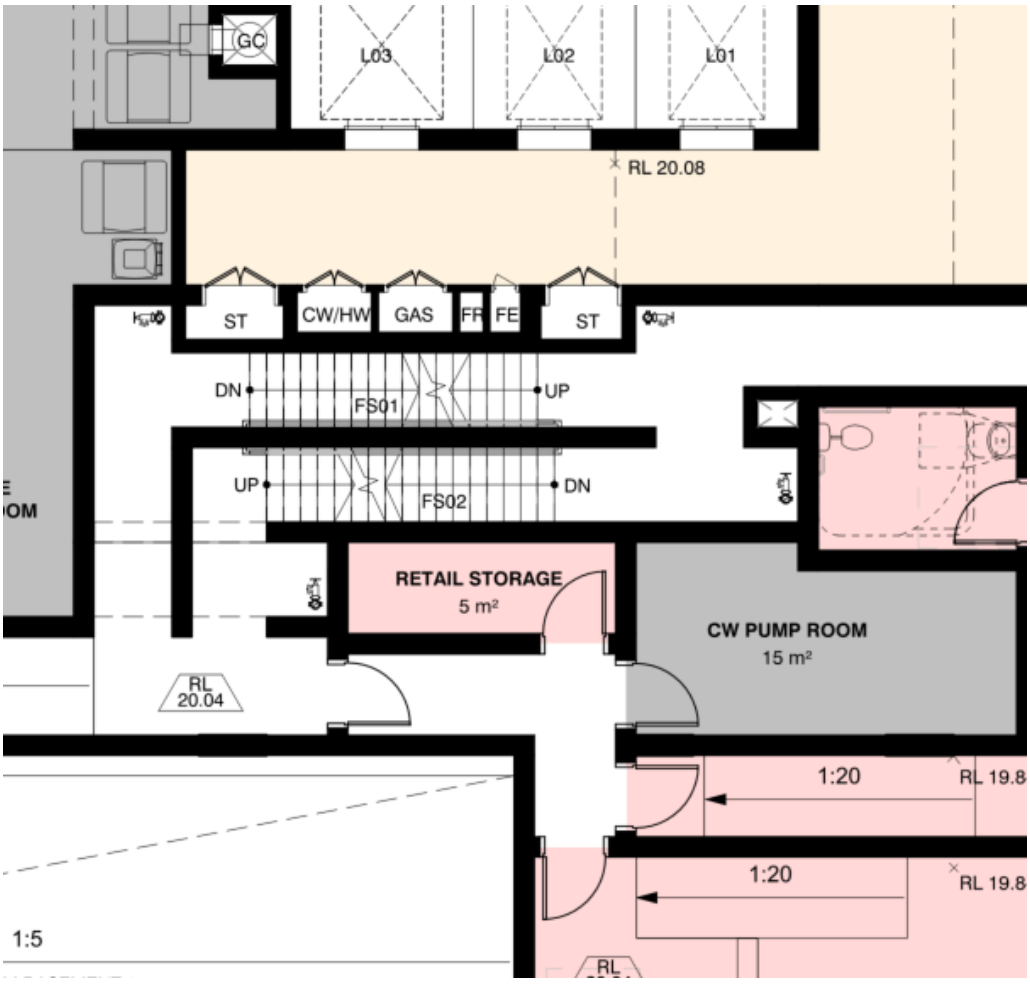
BCA Clause / NOTES	Deemed-to-Satisfy Provision to be addressed / NOTES
D1.7 Travel via fire-isolated exits	**Compliance issue(s) relevant to D1.7(a)** • **Level 2 – The Commercial/Recreation tenancy opens directly into the FS03.** • **Level 3 – The hot water plant room opens directly into the FS02.** **Compliance issue(s) relevant to D1.7(b)** • **Discharge from FS03 and FS03 on ground level, is below a covered area that is not open for at least 1/3 the perimeter.** ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification.***
D2.4 Separation of rising and descending stair flights	**Compliance issue(s)** • **There is a connection between the flights rising from the basement and the flight descending from the storey above on the ground level.**  ***It is recommended that this is addressed by a Fire Engineered Performance Solution***

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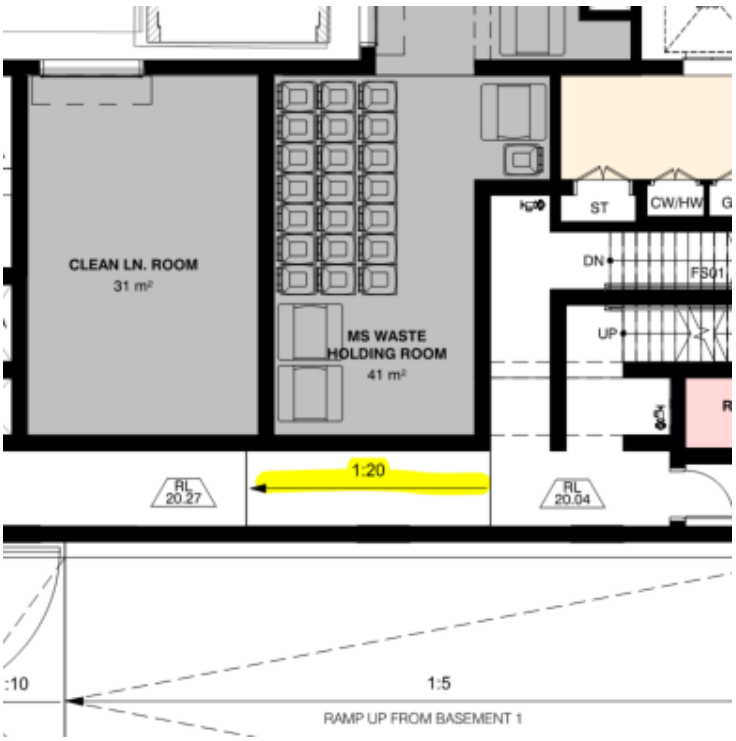
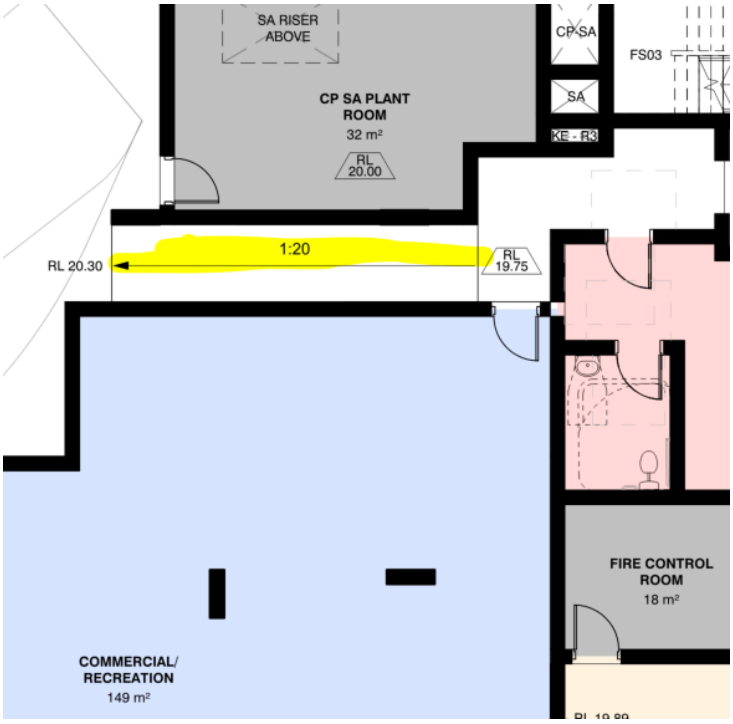
BCA Clause / NOTES	Deemed-to-Satisfy Provision to be addressed / NOTES
D2.17 Handrails	**Compliance issues** • **The Ground floor fire-isolated passageway ramp is required to be detailed with handrails in accordance with this clause.**  • **The Ground floor ramp adjacent the plant room is required to be detailed with handrails in accordance with this clause (and accessible features – see separate access report).**  ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification.***

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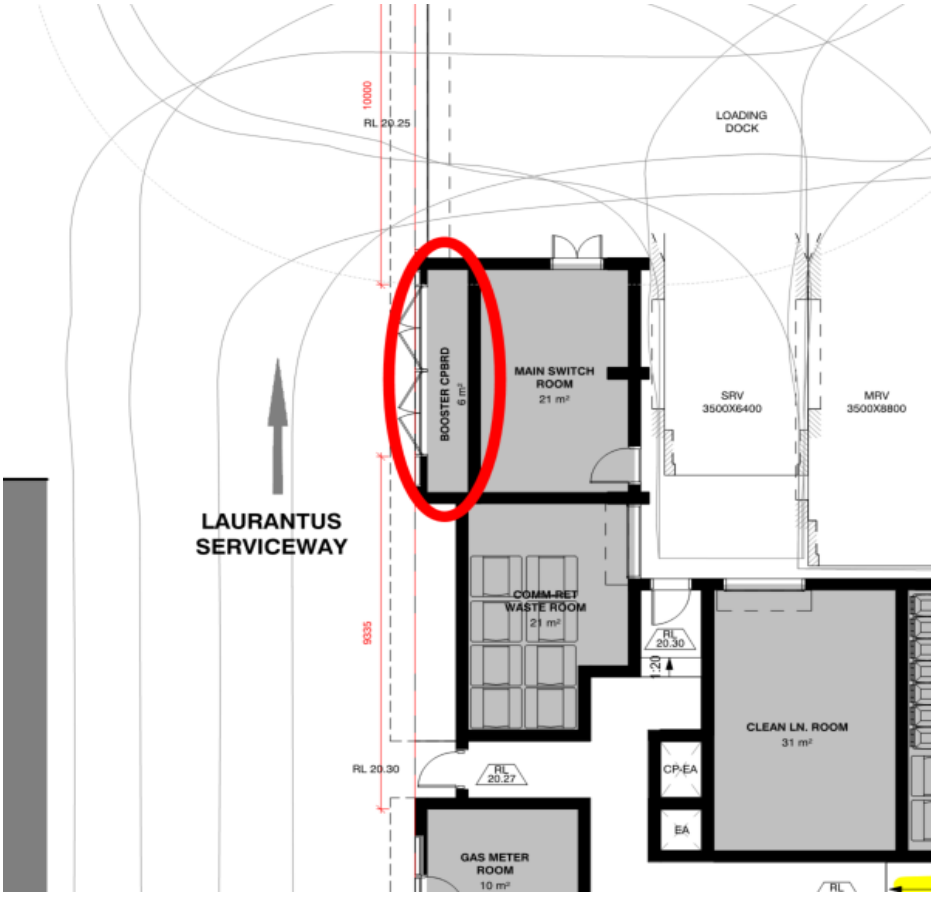
BCA Clause / NOTES	Deemed-to-Satisfy Provision to be addressed / NOTES
E1.3 Fire Hydrants	**DTS non-compliance** **Fire Hydrant Booster – The hydrant booster location in the rear laneway is not compliant in that:** *A fire brigade booster assembly shall be located—* *(a) within or affixed to the facade of the building containing the principal pedestrian entrance and is not more than 20 m from the principal pedestrian entrance;* *(b) within or affixed to the facade of the building containing the principal pedestrian entrance, and identified by a visual warning device (VWD) strobe in accordance with the requirements of Clause 7.3.2;*  ***It is recommended that the above non-compliance be addressed via a performance solution.*** ***Full Hydraulic Services Design Certification and associated plans indicating the provision of a hydrant ring main must be incorporated into the construction certificate specification for assessment at CC stage.***
E1.4 Fire Hose Reels	**DTS non-compliance** **The fire hose reels serving levels containing classes other than 3 and 5 are required to be detailed on the architectural plan at CC stage.** ***Hydraulic Services Design Certification and associated plans must be incorporated into the construction certificate specification***

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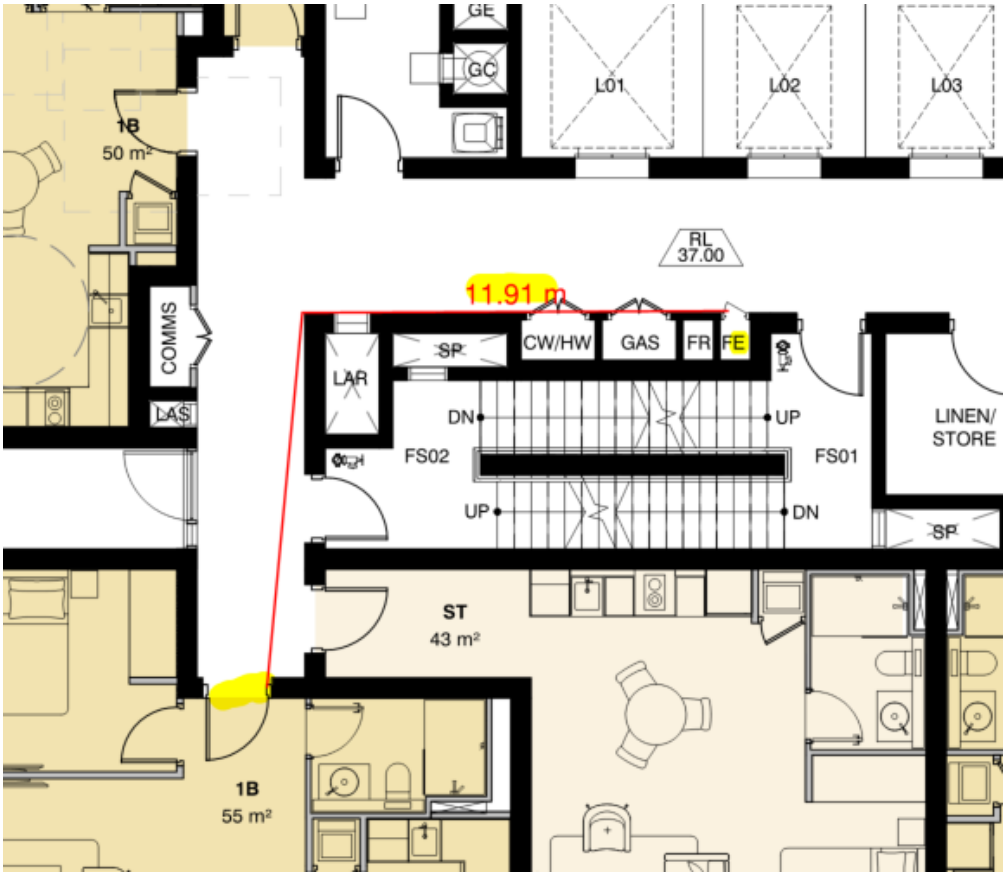
BCA Clause / NOTES	Deemed-to-Satisfy Provision to be addressed / NOTES
E1.5 Sprinklers	**DTS non-compliance** **The sprinkler valve room in accordance with Spec E1.5 is required to be detailed.** ***Full Hydraulic Services Design Certification and details must be incorporated into the construction certificate specification.***
E1.6 Portable fire extinguishers	**DTS non-compliance** **The location of the proposed portable fire extinguishers is greater than the required 10m from the SOU entry door to the south-western SOU entry doors on the residential levels as below shown:**  Level 4

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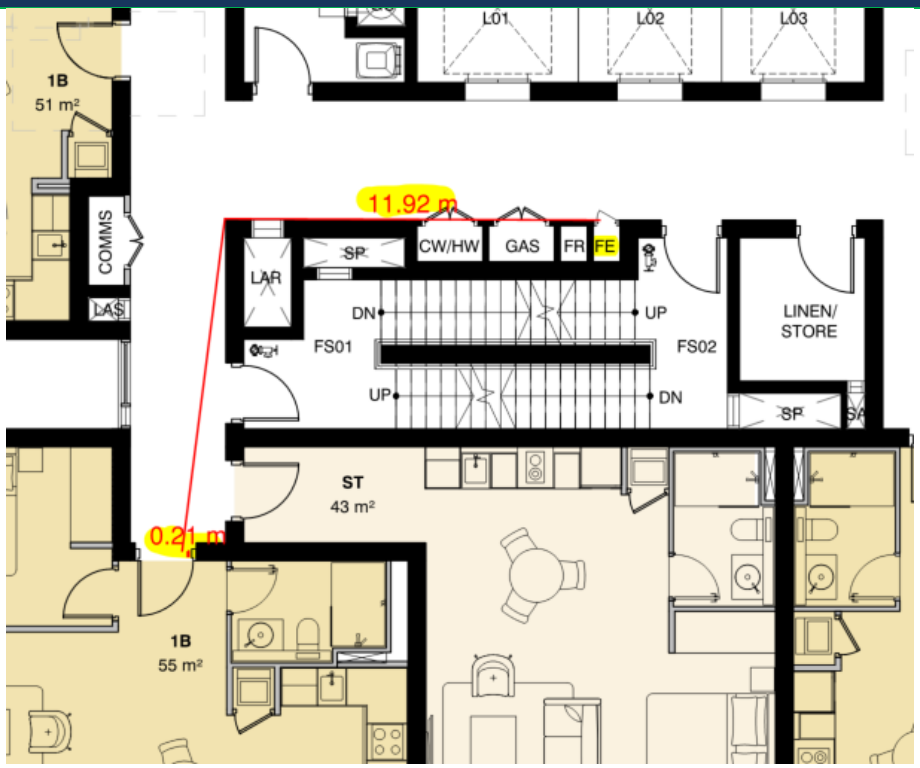
BCA Clause / NOTES	Deemed-to-Satisfy Provision to be addressed / NOTES



Level 5-7

Level 8

Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification including the proposed location of the extinguishers to serve the portions of the building other than the Class 3 portions.

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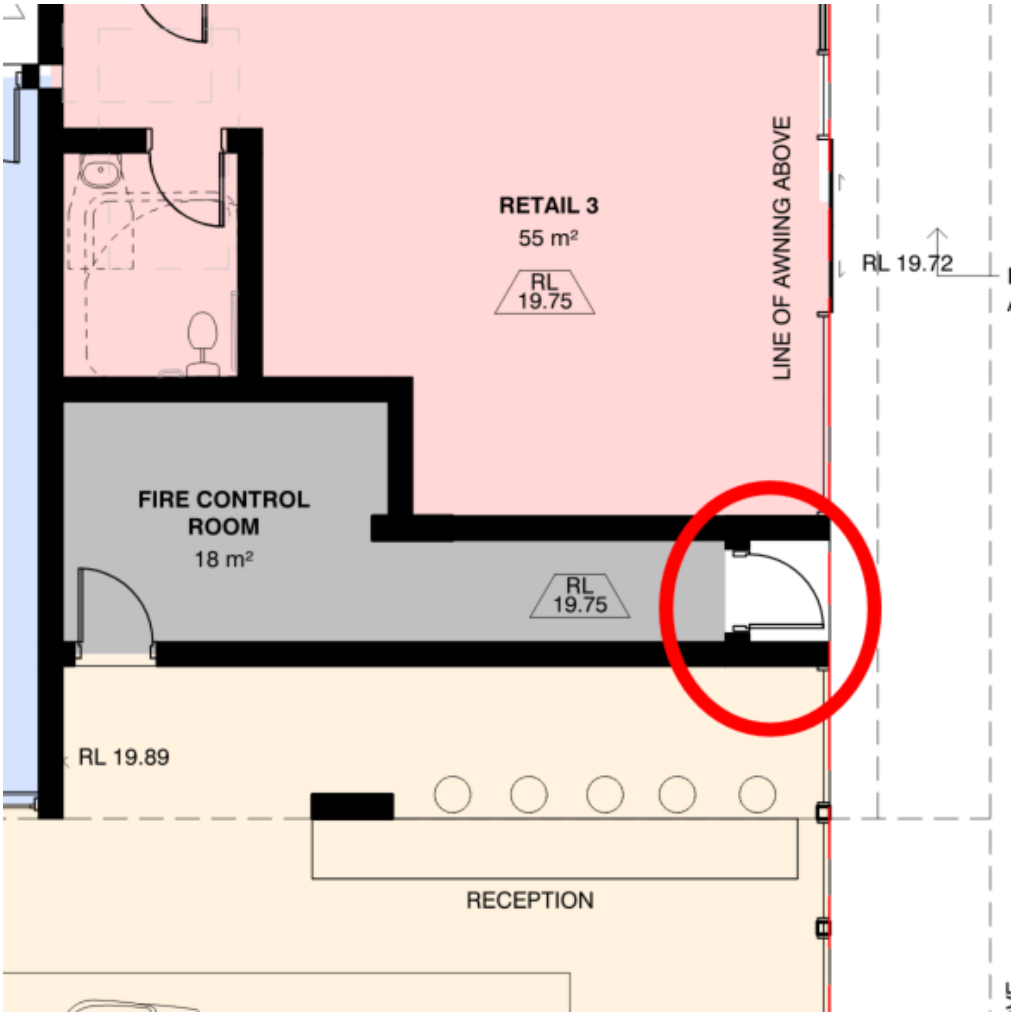
BCA Clause / NOTES	Deemed-to-Satisfy Provision to be addressed / NOTES
E1.8 Fire Control Centre	**DTS non-compliance** **The fire control room has a door that does not open inward (towards the fire control centre). Re-swing door to achieve compliance.**  ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
E2.2 General Requirements	**General smoke hazard management requirements** 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) be designed and installed to operate as a smoke control system in accordance with AS/NZS 1668.1-2015; 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 4.10 of AS/NZS 1668.1-2015; and for the purposes of this provision, each sole-occupancy unit in a Class 3 building is treated as a separate fire compartment.

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BCA Clause / NOTES	Deemed-to-Satisfy Provision to be addressed / NOTES
	Miscellaneous air-handling systems covered by Sections 5 and 11 of AS/NZS 1668.1-2015 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 that Section of the Standard. A smoke detection system must be installed in accordance with Clause 5 of Specification E2.2a to operate systems provided for zone smoke control / automatic air pressurization for fire-isolated exits. Note: Smoke alarms in sole occupancy units now required to be interconnected. **Fire isolated exits** All fire stairs must be provided with automatic stair pressurisation system as per AS 1668.1-2015. **Note**: The Fire Refuge serving the Childcare Centre will also likely require pressurization following liaison with Fire and Rescue NSW and Council. Further, it is considered that under E2.3 of the BCA this measure is required. Further advice should be obtained from a suitably qualified Fire Safety Engineer in this regard. **Class 7a (carpark)** Carparks are required to be provided with a smoke detection system complying with AS 1670.1 – 2018. The Class 7a building parts must be provided with a mechanical ventilation system in accordance with AS 1668.2-2012 must comply with clause 5.5 of AS/NZS 1668.1-2015 except that fans with metal blades for operation at normal temperatures may be used, and the electrical power and control cabling need not be fire rated. **Class 3 parts** An **Automatic Smoke Detection and Alarm System** must be installed throughout the Class 3 parts of the building (sole-occupancy units, public corridors / lobbies, etc) complying with Clause 2 of Specification E2.2a. Clause 2 of Specification E2.2a provides options for the installation of an automatic smoke detection and alarm system. The Class 3 parts must be provided with: • a smoke detection system (and building occupant warning system) complying with Clause 4 of Specification E2.2a; or • a combination of a smoke alarm system complying with Clause 3 within sole-occupancy units and a smoke detection system (and building occupant warning system) complying with Clause 4 in areas not within the sole-occupancy units. A smoke alarm system would need to comply with AS 3786-2014 and a smoke detection system (including a **Building Occupant Warning System**) would need to comply with AS 1670.1-2015. A building occupant warning system, complying with Clause 6 of Specification E2.2a is also required including throughout the car park area. Detection must also be provided to other internal spaces located within the class 3 parts other than SOUs in accordance with AS 1670.1-2015 and must be connected to activate a BOWS in accordance with clause 6 of Spec E2.2a. **Zone Smoke Control** Class 5, 6 & 9b parts must be provided with a zone smoke control system in accordance with AS/NZS 1668.1-2015. **Alternatively discuss with the fire engineer to omit zone smoke control under a Performance Solution.** **Automatic shutdown of air handling** The early childhood centre and swimming pool and childcare (class 9b parts) 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 11 of AS/NZS 1668.1-2015) which does not form part of the smoke hazard management system, on the activation

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	of– (i) smoke detectors installed complying with Clause 5 of Specification E2.2a; and (ii) any other installed fire detection and alarm system, including a sprinkler system complying with Specification E1.5. ***Appropriate Design Certification must be incorporated into the construction certificate specification***
F2.3 – Facilities in Class 2-9 buildings.	**Compliance issue(s):** ***To be able to calculate the number of sanitary facilities required pursuant to Table F2.3 an approximate occupancy load is required to be provided for the staff and occupants to be associated with the class 5, 6 and 9b childcare portion. This is to be submitted with the application for CC.*** ***Further, insufficient detail has been provided for the childcare centre on level 3 to enable an accurate assessment on the level of compliance, particularly clarification on how any room containing 0 -2 year old's can be supervised from the kitchen is required, noting that all parts of this room cannot be viewed from the kitchen.*** ***It is recommended that further details be provided at CC stage demonstrating compliance with this clause.*** ***Additionally the proposed use is required as sanitary facilities requirements are more onerous for restaurants, cafes and bars (if proposed).***
F4.2 – Methods and extent of natural lighting	***Compliance issue:*** ▪ ***Provide confirmation that sills of 50% of windows in childcare children's rooms are located not more than 500mm above the floor level.*** ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification.***
F4.8 – Restriction of position of water closets and urinals	***Compliance issue:*** ▪ ***Sanitary compartments open directly into Playroom's 1, 2, 3 & 4.***

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2.0 INTRODUCTION

This report provides a Building Code of Australia (BCA) 2019 assessment of the proposed mixed-use development to be located at 167 Northumberland Street Liverpool.

This report provides a BCA assessment table in Section 4.0 that summarises the identified non-compliance matters and offers recommendations.

2.1 Basis of Report

The key basis of this report is to address compliance with the Building Code of Australia (BCA) 2019. The scope of services is limited to Sections B – "Structural Provisions", Sections C – "Fire Resistance", Section D – "Access & Egress", Section E – "Services & Equipment", Section F "Health and Amenity" and Section J "Energy Efficiency" except where specific parts of the BCA are excluded under Section 2.3 'Limitations of the Report'

This report is based on a desktop assessment of the proposed plans, with specific reference to the following:

- Architectural plans prepared by PTW, Drawing Numbers:

Drawing Title	Drawing No.	Revision No.	Date
Level P2	DA-10-0080	A	21/2/20
Level P1	DA-10-0090	A	21/2/20
Level G	DA-10-1000	A	21/2/20
Level 1	DA-10-1100	A	21/2/20
Level 2	DA-10-1200	A	21/2/20
Level 3	DA-10-1300	A	21/2/20
Level 4	DA-10-1400	A	21/2/20
Level 5 - 7	DA-10-1500	A	21/2/20
Level 8	DA-10-1800	A	21/2/20
Level 9-26	DA-10-1900	A	21/2/20
Level 27-31	DA-10-3700	A	21/2/20
Roof	DA-10-4200	A	21/2/20
East Elevation	DA-20-0100	A	21/2/20
South Elevation	DA-20-0200	A	21/2/20
West Elevation	DA-20-0300	A	21/2/20
North Elevation	DA-20-0400	A	21/2/20
North-South Section	DA-30-0200	A	21/2/20
East-West Section	DA-30-0300	A	21/2/20
Façade Material and Finishes	DA-50-0100	A	21/2/20

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

2.2 Purpose of the Report

The purpose of this report is to assess the following:

- Assessment under the current Building Code of Australia 2019 and list any departures from the BCA 2019.
- Provide recommendations to address identified non-compliances, and/or identify potential alternative solutions.

2.3 Limitations of the Report

- Disability Discrimination Act 1992 (DDA) is outside the scope of this report.
- Reporting on hazardous materials, OH&S matters or site contamination
- 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
- Consideration of any fire services operations (including hydraulic, electrical or other systems)
- Assessment of plumbing and drainage installations, including stormwater
- Assessment of mechanical plant operations, electrical systems or security systems
- Heritage significance
- Consideration of energy or water authority requirements
- Consideration of Council's local planning policies
- Environmental or planning issues
- Requirements of statutory authorities
- 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 be carried out)
- Provision of any construction approvals or certification under Part 4A or Part 5 of the Environmental Planning & Assessment Act 1979.
- Glazing, shading, lighting calculations and the like required by Section J of the BCA have not been carried out.
- The BCA 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 the client seeks surface finish advice from an independent specialist slip safety consultant.
- This report does not assess the requirements of adaptable housing under AS 4299.
- This report does not assess the requirements of State Environmental Planning Policy No 65—Design Quality of Residential Flat Development.
- This assessment excludes BCA clauses D3.0-3.12 (Inclusive), F2.4 and E3.6. Refer to separate access consultant's report.
- Sections G & H of the BCA are not considered.

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3.0 BCA ASSESSMENT DATA

The following BCA assessment data is provided in respect to the proposed mixed-use development to be located at 167 Northumberland Street Liverpool. Please read the important notes below before progressing any further.

BCA Building Classification(s):	Basement 2: Class 7a (carpark) & 7b (storage) Basement 1: Class 7a (carpark) Ground Floor: Class 3 (Residential lobbies), Class 5 (office), Class 6 (retail), Class 7b (storage). Level 1: Class 5 (offices) Level 2: Class 5 (offices), Class 9b (pool/recreation area) Level 3: Class 9b (childcare) Level 4 - 31: Class 3 (Serviced apartment SOUs)
Building Rise In Storeys (RIS):	32 (Roof not counted in RIS & determined in accordance with C1.2 of the BCA).
Type of Construction:	A (determined in accordance with C1.1 of the BCA)
Effective Height (m):	**100.4m** (120.7m- 20.3m)
Climate Zone:	Zone 4 (determined in accordance with ABCB Climate Map, dated Sept, 2019)

3.1 Summary of Fire Services Required

Summarised below are the BCA deemed to satisfy fire services required for the building which has an effective height of more than 50m:

- Fire hydrants are required to serve all areas and be provided in accordance with BCA E1.3 and AS 2419.1-2005 as applicable to a building exceeding 50m in effective height.
- A fire hose reel system complying with BCA E1.4 and AS 2441-2005 must be provided to serve all areas other than class 3 SOUs. Note: FHR's no longer required to serve a Class 3 building, however additional fire extinguishers are required in all class 3 parts.
- A sprinkler system throughout all parts of the building complying with E1.5 and AS 2118.1-2017 and the Fire Engineering Report
- Portable fire extinguishers must be provided in accordance with BCA E1.6 & Table E1.6 and must be selected, located and distributed in accordance with Sections 1, 2, 3 and 4 of AS 2444-2001.
- A fire control room (FCR) must be provided in accordance with BCA E1.8 and Clauses 2 to 12 of BCA Specification E1.8. The FCR must be fire rated from the remainder of the building by construction achieving FRL of 120/120/120, and have two access points.
- Automatic smoke and fire detection to be provided throughout the building in accordance with Part E2 and BCA Specification E2.2a. and AS 1670.1-2018
- Automatic air pressurisation to fire isolated stairs and the fire control room in accordance with BCA E2.2, E1.8 and AS/NZS 1668.1 – 2015.

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- A zone smoke control system must be provided to the Class 5,6 and 9b building parts in accordance with Part E2 and BCA Specification E2.2a. and AS 1670.1-2015, unless omitted through fire engineering.
- An Emergency Warning and Intercom System (EWIS) complying with BCA E4.2 and AS 1670.4-2015 must be installed throughout the whole building
- An emergency lighting system must be installed throughout the building in accordance with BCA E4.2 of the BCA and AS 2293.1-2005.
- Exit signs must be installed throughout the building in accordance with BCA E4.5 and AS 2293.1-2005.
- Mechanical ventilation to the basement carpark in accordance with BCA Table E2.2a and AS 1668.1 - 2015 and AS 1668.2 – 2012, incorporating metal fans.
- Signage to be provided exits in accordance with D2.23 and Clause 183 of *Environmental Planning & Assessment Regulation* 2000.
- Emergency lifts must be provided in accordance with BCA E3.4 and C2.10.
- Stretcher facility and fire service controls in the lift must be provided in accordance with BCA E3.2 and E3.7.

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4.0 BCA ASSESSMENT SUMMARY

The following table details the BCA compliance of the assessed design.

BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
SECTION B: STRUCTURAL PROVISIONS					
B1.1 Resistance to actions & B1.2 Determination of individual loads				X	The structural engineer is required to provide structural drawings/details and accompanying structural design certification to demonstrate that the building and its elements will withstand the combination of loads and other actions in accordance with the requirements of this clause. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification (and structural details)***
B1.3			X		This clause has been deleted.
B1.4 Determination of structural resistance of materials and forms of construction				X	The structural resistance of the materials and forms of construction must be certified by the structural engineer as having been designed to the relevant Australian Standards as listed under this clause. All glazing assemblies must be designed to comply with the requirements of AS 1288-2006 and AS 2047-2014. Termite risk management must be provided in accordance with AS 3660.1-2014 and B1.4(i)(ii) where primary building elements i.e. timber are subject to attack by termites. Notwithstanding, Clause B1.4(i)(i) deems several specified primary building elements as not being subject to termite attack. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification (and structural details)***
B1.5 Structural software			X		Refer to the clause for information.
B1.6 Construction of buildings in flood hazard areas				X	Consult with the local Council to determine whether the building is located in a flood hazard area prior to the issue of the design approval. Where the building has been identified to be situated in a flood hazard area it must then comply with the ABCB Standard for Construction of Buildings in Flood Hazard Areas. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification (and structural details)***
SECTION C FIRE RESISTANCE					

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BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
Part C1 **Fire Resistance & Stability**					
C1.1 Type of construction required & Specification C1.1 Fire-resisting construction				X	Refer to Spec C1.1 and Attachment B for Schedule of FRLs for Type A Construction. These are to be certified by the architect and structural engineer as having been met, based on the proposed design. Please note that specification C1.1 also requires design compliance with the following: 1. Where a combustible material is used as a finish or lining to a roof, or sunscreen, or awning, to a building element required to have an FRL the material must be exempted or comply with the fire hazard properties prescribed under C1.10 and must not otherwise constitute an undue risk of fire spread via the façade of the building or compromise egress from the building. This includes any aluminum panels which where containing plastic strengthening elements would not be non-combustible. 2. Fire isolated shafts are required to be enclosed at the top and bottom of the shaft with fire rated construction as per specification C1.1. This fire rating is required in two directions. This applies to the compactor rooms as well as the fan rooms on basement level 2 as they connect to shafts rising through the building. Any garbage room being the base of any garbage chute must be fire rated to the FRL required for the class in which it is located. 3. The walls to fire rated shafts must achieve the fire rating from both directions i.e. from inside and outside the shaft. 4. Loadbearing internal walls must be of concrete or masonry. 5. Internal lightweight walls to be fire rated, as well as non-load bearing lift, ventilating, pipe, garbage or similar shaft wall must be of non-combustible construction. 6. Internal walls required to have an FRL with respect to integrity and insulation must extend to – 7. the underside of the floor next above; or a) the underside of a roof complying with Table 3; or b) 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; or c) 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. 8. Roof: The roof of the building does not need an FRL,

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					provided the roof covering is non-combustible (as per the concession in Clause 3.5 of Specification C1.1 of the BCA). 9. Bounding construction to residential units must comply with the fire rating requirements of table 3. 10. Floors: Floor between residential units must not be less than 90/90/90 FRL and for all other floors refer to clause C2.9. 11. Any proposed rooflights or the like must comply with the requirements of BCA Clause 3.6 of Spec C3.6. **<u>Compliance issue(s):</u>** **The level 4 plan indicates skylights located less than 3m from the side boundary and the adjoining openings in the residential SOU's, contrary to Clause 3.6 of Spec C3.6:**  ***Further, the ground floor commercial waste room, clean linen room, and the MS waste holding room is to be suitably fire separated from the remainder of the storey with compliant FRL's unless further addressed by a Fire Engineered Performance Solution.*** ***It is recommended that this is addressed by a Fire Engineered Performance Solution.***
C1.2 Calculation of rise in storeys			X		Refer to Section 3.0 of this report for further details.
C1.3 Buildings of multiple classifications			X		The building is required to be of Type A Construction under this clause.

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C1.4 Mixed types of construction			X		The building is required to be of Type A Construction throughout.
C1.5 Two storey class 2, 3 or 9 buildings			X		Not applicable. Subject building exceeds a RIS of 2.
C1.6 Class 4 parts of buildings			X		Not applicable. There are no Class 4 parts proposed to this development.
C1.7 Open spectator stands and indoor sports stadiums			X		Not applicable. There are no spectator stands or indoor sports stadiums proposed to this development.
C1.8 Lightweight construction				X	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. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
C1.9 Non-combustible construction				X	• In a building required to be of Type A construction, the following building elements and their components must be non-combustible: - External walls and common walls, including all components incorporated in them including the façade covering, framing and insulation - The flooring and floor framing of lift pits - Non-loadbearing internal walls where they are required to be fire-resisting. • A shaft, being a lift, ventilating, pipe, garbage, or similar shaft that is not for the discharge of hot products of

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					combustion, that is non-loadbearing, must be of non-combustible construction in a building required to be of Type A construction; • A loadbearing internal wall and a loadbearing fire wall, including those that are part of a loadbearing shaft, must comply with Specification C1.1. • The requirements of (a) and (b) do not apply to gaskets, caulking, sealants and damp-proof courses. • The following materials may be used wherever a non-combustible material is required: - Plasterboard. - Perforated gypsum lath with a normal paper finish. - Fibrous-plaster sheet. - Fibre-reinforced cement sheeting. - 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. - Bonded laminated materials where— ○ each lamina, including any core, is non-combustible; and ○ each adhesive layer does not exceed 1 mm in thickness and the total thickness of the adhesive layers does not exceed 2 mm; and ○ 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. **Further detail needed at CC Stage:** **The provided Façade material schedule indicates powder coated metal for the external cladding. The exact product and product specification proposed for the external cladding is to be indicated, and a test certificate provided confirming the product as passing an AS 1530.1-1994 test. Alternatively, a current and valid Codemark certificate should be provided for the product.** ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
C1.10 Fire hazard properties				X	The fire hazard properties of the following 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. (iii) Air-handling ductwork.

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					(iv) Lift cars. (v) sarking-type materials (vi) Attachments to floors, ceilings, internal walls and the internal linings of external walls. (vii) Other materials including insulation materials other than sarking-type materials. Except that: 1. Paint or fire-retardant coatings must not be used to achieve compliance with the required fire hazard properties; and 2. The requirements of this clause are exempted to the martials and assemblies listed under C1.10(c)(i) to (xiv) ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
C1.11 Performance of External Walls in Fire			X		Not applicable. Rise in storeys is greater than 2.
C1.12 ****			X		Clause deleted.
C1.13 Fire-protected timber: Concession			X		Not applicable. Building exceeds 25m effective height.
C1.14 Ancillary elements				X	An ancillary element must not be fixed, installed or attached to the internal parts or external face of an external wall that is required to be non-combustible unless it is one of the following: (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 grille not more than 2 m² in area associated with a building service. (e) An electrical switch, socket-outlet, cover plate or the like. (f) A light fitting. (g) A required sign. (h) A sign other than one provided under (a) or (g) that— (i) achieves a group number of 1 or 2; and (ii) does not extend beyond one storey; and

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BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
					(iii) does not extend beyond one fire compartment; and (iv) is separated vertically from other signs permitted under (h) by at least 2 storeys. (i) An awning, sunshade, canopy, blind or shading hood other one provided under (a) that— (i) meets the requirements of Table 4 of Specification C1.10 as for an internal element; and (ii) serves a storey— (A) at ground level; or (B) immediately above a storey at ground level; and (iii) does not serve an exit, where it would render the exit unusable in a fire. (j) A part of a security, intercom or announcement system. (k) Wiring. (l) A paint, lacquer or a similar finish. (m) A gasket, caulking, sealant or adhesive directly associated with (a) to (k). **Further detail needed at CC Stage:** **The provided Façade material schedule indicates powder coated metal for the ancillary elements. The exact product and product specification proposed for the external cladding is to be indicated, and a test certificate provided confirming the product as passing an AS 1530.1-1994 test. Alternatively, a current and Valid Codemark certificate should be provided for the product.** ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
Part C2 **Compartmentation & Separation**					
C2.1 Application of part			X		The requirements of C2.2, C2.3 and C2.4 do not apply to the carpark sections as they are provided with a sprinkler system.
C2.2 General floor area & volume limitations	X				There are no fire compartments exceeding the volume and floor area limitations of this clause.
C2.3 Large isolated buildings			X		Not applicable. The building has not been considered a large isolated building.
C2.4 Requirements for open			X		Not applicable. The building is not considered a large isolated building.

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BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
spaces and vehicular access					
C2.5 Class 9a & 9c Buildings			X		Not applicable. There is no class 9a or 9c proposed to this development.
C2.6 Vertical Separation of openings in external walls			X		The building is to be sprinkler protected throughout and therefore the requirements for vertical separation do not apply.
C2.7 Separation by fire walls				X	(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, 4.2 and 5.2 of Specification C1.1 permit a lower FRL on the carpark side. (ii) Any openings in a 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. (iii) 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. (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 purposes of the Deemed-to-Satisfy Provisions of Sections C, D and 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. (ii) The fire wall is carried through to the underside of the roof covering. (iii) 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 6 m above the covering of the lower roof; or (B) the lower roof if it has an FRL not less than that of the fire wall and no openings closer than 3 m to any wall above the lower roof; or (C) the lower roof if its covering is non-combustible and the lower part has a sprinkler 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

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					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 (ii) the roof covering. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
C2.8 Separation of classifications in the same storey				X	A storey containing different classifications located alongside one another must satisfy one of the following requirements: • Each building element in that storey must have the higher FRL prescribed in Spec C1.1 for that element for the classifications concerned; or • The different classifications must be separated in that storey by a fire wall having the higher FRL prescribed in Table 3 of Spec C1.1 for the class concerned. The above will apply to the following - • **Ground Level** – Class 3, 5, 6, 7a and 7b; and • **Level 2**– Class 5 and 9b **Alternatively, a fire engineered solution may be sought to reduce FRLs between classes.** ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification.***
C2.9 Separation of Classifications in different stories				X	Fire separation is required between parts of a building which are of a different classification, when situated one above the other. The level (FRL) of fire protection required to the storey above is determined by BCA Table 3 of Specification C1.1 corresponding with the building classification of the lower storey. An excerpt from Table 3 has been produced below: **BCA Class** / **FRL** ***(Table 3 of Spec C1.1)*** Class 3 — 90/90/90 Class 5, 7a and 9 — 120/120/120 Class 6 — 180/180/180 Class 7b — 240/240/240 **Alternatively, the FRLs required above may be reduced (subject to fire engineer's confirmation) under a Performance Solution prepared by a fire safety engineer.** ***Details demonstrating compliance with this clause***

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					must be incorporated into the construction certificate plans / specification
C2.10 Separation of lifts shafts				X	All lifts must be fire separated from the remainder of the building by enclosure in a fire rated shaft which achieves an FRL of not less than that prescribed under Table 3 of Specification C1.1 for the building classification in which the lift shaft passes through. An emergency lift must be contained within a fire-resisting shaft having an FRL of not less than 120/120/120. Openings for lift landing doors and services must be protected in accordance with the DTS provisions of Part C3. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
C2.11 Stairways and lifts in one shaft	X				There are no stairways located in the same shaft as a lift.
C2.12 Separation of Equipment				X	The following equipment must be fire separated from the remaining parts of the building via construction achieving an FRL of not less than 120/120/120 and any access doorway must be fitted with a self-closing fire door having an FRL of not less than -/120/30: • Lift motors and lift control panels (except that when separating a lift shaft from a lift motor room, an FRL of not less than 120/-/- is required); • Emergency generators used to sustain emergency equipment operating in the emergency mode; • Central smoke control plant; • Boilers; • a battery or batteries installed in the building that have a voltage exceeding 24 volts and a capacity exceeding 10 ampere hours; ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification.***
C2.13 Electrical supply system				X	Any proposed substation located within the building must be separated as follows or as per Ausgrid requirements – (i) be separated from any other part of the building by construction having an FRL of not less than 120/120/120; and (ii) have the doorway in that construction protected with a self-closing fire door having an FRL of not less than –/120/30.

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					Any proposed 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 (ii) have any doorway in that construction protected with a self-closing fire door having an FRL of not less than –/120/30. Electrical conductors located within the building which supply – (i) a substation located within the building which supplies a main switchboard covered above; or (ii) a main switchboard covered above, must— (iii) 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 (iv) be enclosed or otherwise protected by construction having an FRL of not less than 120/120/120 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. Emergency equipment includes but it is not limited to – (i) Fire hydrant booster pumps (ii) Pumps for automatic sprinkler systems, water spray, chemical fluid suppression systems or the like. (iii) Pumps for fire hose reels where such pumps and fire hose reels form the sole means of fire protection in the building. (iv) Air handling systems designed to exhaust and control the spread of fire and smoke. (v) Emergency lifts. (vi) Control and indicating equipment. (vii) Sound systems and intercom systems for emergency purposes. ***Details of the proposed method of separating the***

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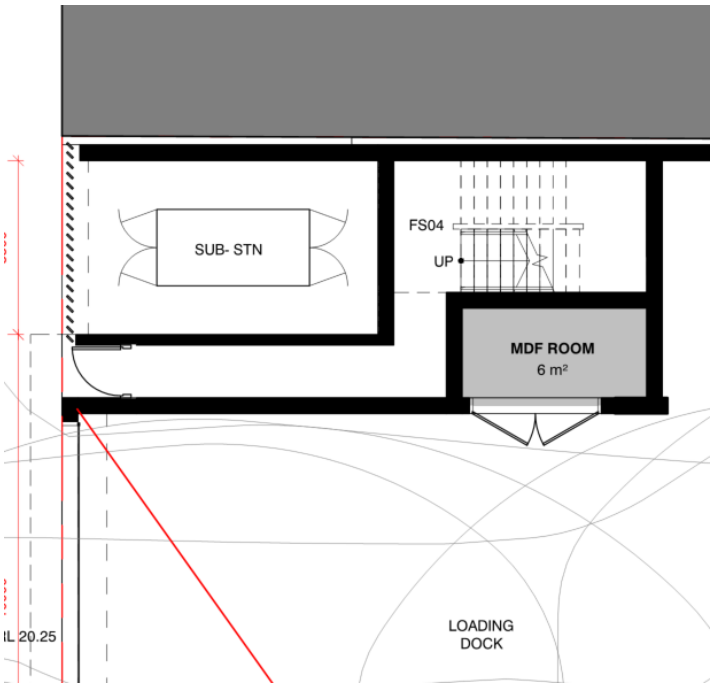
					proposed sub-station shall be provided at CC stage.  ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification.***
C2.14 Public corridors in Class 2 & 3 Buildings	X				In the Class 2 building parts, the public corridors, if more than 40 m in length, must be divided at intervals of not more than 40 m with smoke-proof walls complying with Clause 2 of Specification C2.5. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
Part C3 **Protection of Openings**					
C3.2 Protection of openings in external walls	X				Openings in the external walls required to have an FRL must be protected in accordance with C3.4: • if the distance between the opening and the fire-source feature is less than 3 m from a side or rear boundary; or • 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. **Ground floor to Level 3 window openings are greater than 3m from the side boundary.** ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***

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C3.3 Separation of external walls and associated openings in different fire compartments				X	The distance between parts of external walls and any openings within them in different fire compartments (part of the building separated from the rest by fire walls) 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. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification.***
C3.4 Acceptable Methods of Protection				X	Any protection required by C3.2 and C3.3 must accord with the following: <u>Doorways:</u> (i) Internal or external wall-wetting sprinklers as appropriate used with doors that are self-closing; or (ii) –/60/30 fire doors that are self-closing. <u>Windows:</u> (i) Internal or external wall-wetting sprinklers as appropriate used with windows that are automatic closing or permanently fixed in the closed position; or (ii) –60/– fire windows that are automatically closing or permanently fixed in the closed position; or (iii) –/60/– automatic closing fire shutters. <u>Other openings:</u> (i) Excluding voids – internal or external wall-wetting sprinklers; or (ii) Construction having an FRL not less than –/60/– Fire doors, fire windows and fire shutters must comply with BCA Specification C3.4. **Any openings identified in C3.2 must comply with the above.**
C3.5 Doorways in Fire Walls				X	Doorways in firewalls are required to have an integrity rating equivalent to the firewall in which they are located in and a minimum of 30 minutes for insulation e.g. a two-hour fire wall would require a -/120/30 fire door. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
C3.6 Sliding Fire Doors			X		Not applicable.
C3.7 Protection of Doorways in				X	A doorway that is part of a horizontal exit must incorporate self or auto closing fire rated doors.

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horizontal exits					***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
C3.8 Openings in fire isolated exits				X	Doors to fire stairs must be self or auto closing -/60/30 fire doors. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
C3.9 Service Penetrations in fire-isolated exits				X	The fire isolated exits are not to be penetrated by any services **other** than water supply pipes for fire services OR electrical wiring associated with: • a lighting, detection, or pressurization system serving the exit; or • a security, surveillance or management system serving the exit; or • an intercommunication system or an audible or visual alarm system in accordance with D2.22 (it is noted that re-entry from fire-isolated exits will not be required); or • the monitoring of hydrant or sprinkler isolating valves ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
C3.10 Openings in Fire isolated lift shafts				X	• Lifts landing doors are required to be fire doors with an FRL of -/60/- that comply with AS 1735.11-1986, and be set to remain closed except when discharging or receiving, passengers, goods or vehicles. • Lift indicator panels must also be fire rated in accordance with this clause. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
C3.11 Bounding Construction: Class 2 & 3 buildings and Class 4 parts				X	The doorways between the class 2 sole occupancy units and the public lobbies and any common rooms and the public lobbies (class 2 parts) must be protected by self–closing -/60/30 fire doors. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
C3.12 Openings in floors and ceilings for services				X	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. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
C3.13				X	In a building of Type A construction, an opening in a wall

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Openings in shafts					providing access to a ventilating, pipe, garbage or other service shaft must be protected by— • if it is in a sanitary compartment — a door or panel which, together with its frame, is noncombustible or has an FRL of not less than –/30/30; or • a self-closing –/60/30 fire door or hopper; or • an access panel having an FRL of not less than –/60/30; or • if the shaft is a garbage shaft — a door or hopper of non-combustible construction. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
C3.14 ****					This clause has been deleted.
C3.15 Opening for service Installations				X	Where services are required to pass through an element which is required to achieve an FRL (other than an external wall or roof), the service must be fire protected in accordance with: • Tested system; or • In the case of ventilating or air-conditioning ducts or equipment, the installation is in accordance with AS 1668.1-1998; or • Specification C3.15. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
C3.16 Construction Joints				X	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 1530.4-2005 to achieve the required FRL. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
C3.17 Columns protected in lightweight construction to achieve an FRL				X	Any column proposed to be protected by lightweight construction to achieve an FRL which passes through a building element that is required to have an FRL or a resistance to the incipient spread of fire, must be installed using a method and materials identical with a prototype assembly of the construction which has achieved the required FRL or resistance to the incipient spread of fire. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate***

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BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
					plans / specification
SECTION D **ACCESS & EGRESS**					
Part D1 **Provision for Escape**					
D1.1 Application of Part			X		The Deemed-to-Satisfy Provisions of this Part do not apply to the internal parts of the class 2 sole-occupancy units.
D1.2 Number of exits required		X			As the building has an effective height of more than 25 metres, not less than 2 exits must be provided from each storey and 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. **Compliance issue(s):** **The following rooms have not been provided with 2 exits contrary to this Clause:** • **Level G – Gas meter room & Commercial lobby** • **Level P2 - The Fire Hydrant Pump Room.** • **Level 3 – Hot water plant room** ***It is recommended that this is addressed by a Fire Engineered Performance Solution.***
D1.3 When fire isolated stairways and ramps are required	X				All stairs serving as required exits are indicated as being fire-isolated.
D1.4 Exit travel distances		X			**Class 3 building parts —** (i) The entrance doorway of any sole-occupancy unit must be not more than— (A) 6 m from an exit or from a point from which travel in different directions to 2 exits is available; or (B) 20 m from a single exit serving the storey at the level of egress to a road or open space; and (ii) no point on the floor of a room which is not in a sole-occupancy unit must be more than 20 m from an exit or from a point at which travel in different directions to 2 exits is available. **Compliance issue(s):** • **Level 4 – Eastern SOU: Travel distance to an exit or a point of choice exceeds 6m (maximum being 8m).**

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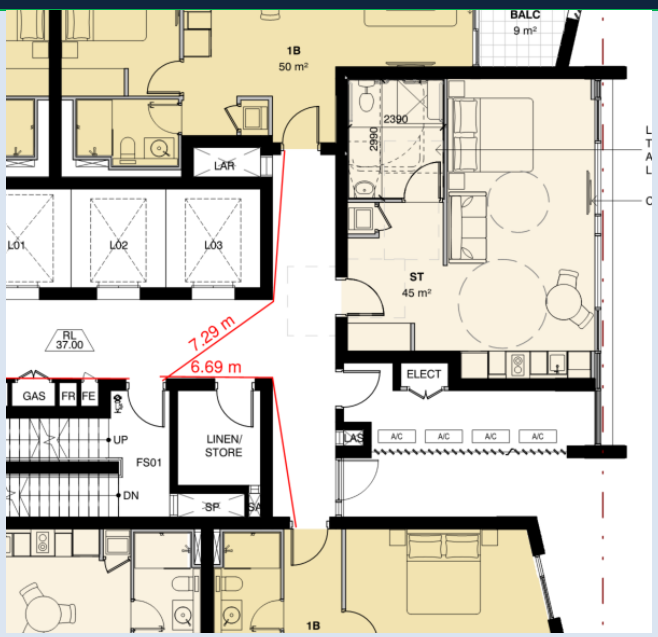
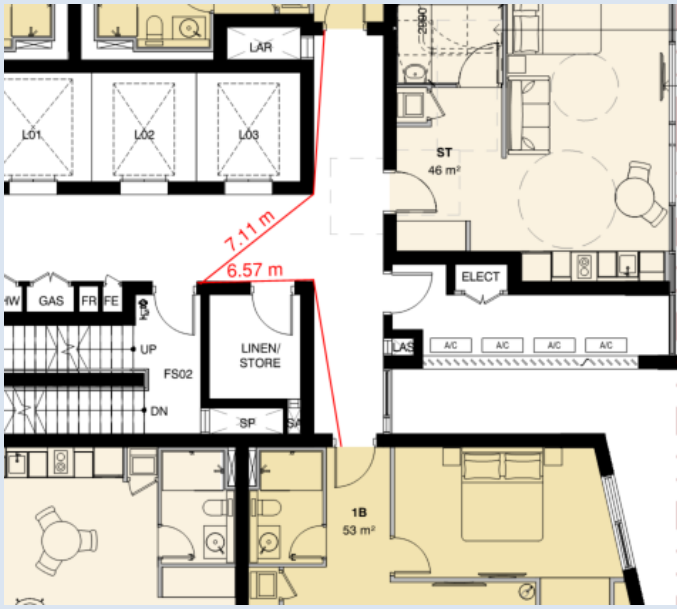
BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
					 • **Level 5-7 – Eastern SOUs: Travel distance to an exit or a point of choice exceeds 6m (maximum being 8m).**  • **Level 8 – Eastern SOUs: Travel distance to an exit or a point of choice exceeds 6m (maximum being 8m).**

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					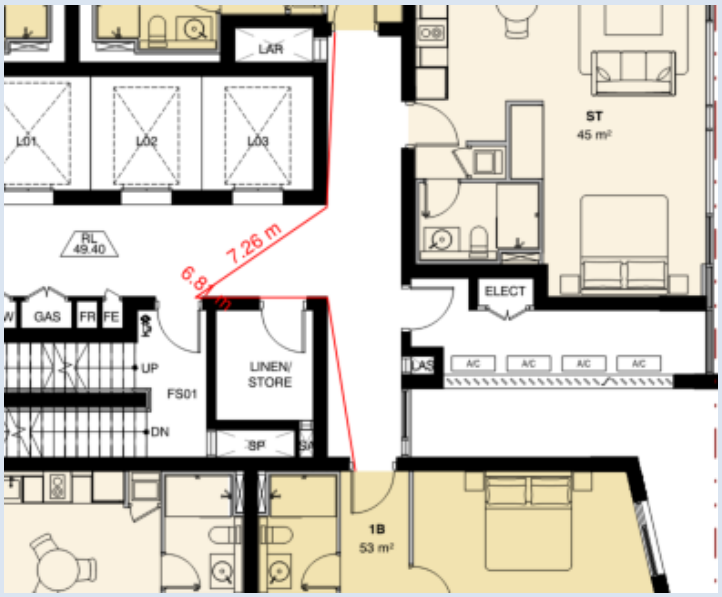 • **Level 9 to 26 – Eastern SOUs: Travel distance to an exit or a point of choice exceeds 6m (maximum being 8m).**  • **Level 27 to 31 – Eastern SOU: Travel distance to an exit or a point of choice exceeds 6m (maximum being 7m).**

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					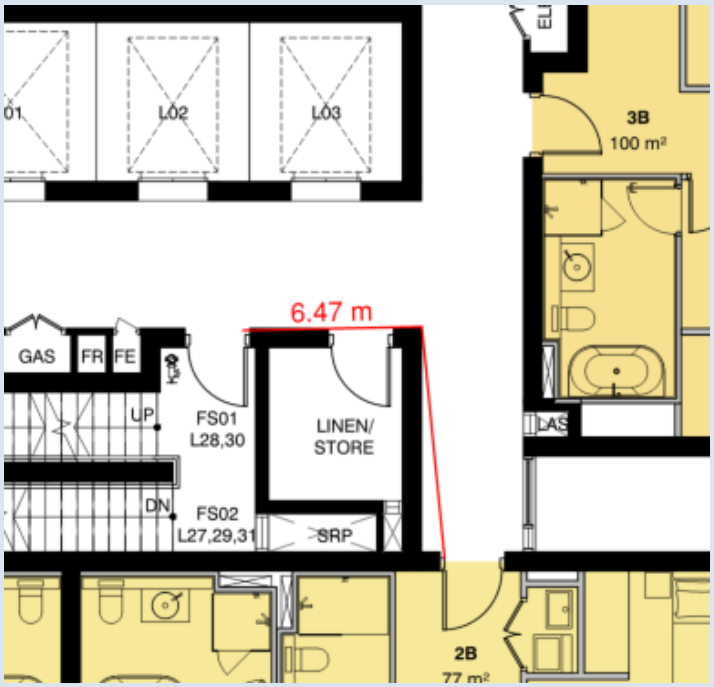 **Either update plans to reflect DtS compliance or a performance solution is to be developed by a Fire Engineer for all the above issues.** ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification.***
D1.5 Distance between alternative exits	X				Exits that are required as alternative means of egress must be— (a) distributed as uniformly as practicable within or around the storey served and in positions where unobstructed access to at least 2 exits is readily available from all points on the floor including lift lobby areas; and (b) not less than 9 m apart; and (c) not more than— (i) in a Class 3 — 45 m apart; or (ii) 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. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
D1.6 Dimensions of exits and paths of travel to exits				X	In a required exit or path of travel to an exit — • The unobstructed height throughout must be not less than 2 m, except the unobstructed height of any doorway may be reduced to not less than 1980 mm. • The unobstructed width of each exit or path of travel to

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BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
					an exit, except for doorways, must be not less than 1m. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
D1.7 Travel via fire-isolated exits		X			D1.7(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. **Compliance issue(s) relevant to D1.7(a)** • **Level 2 – The Commercial/Recreation tenancy opens directly into the FS03.** • **Level 3 – The hot water plant room opens directly into the FS02.** D1.7(b) 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— (A) 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 (B) 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— (A) (A) adjoins a road or open space; (B) and is open for at least 1/3 of its perimeter; and (C) has an unobstructed clear height throughout, including the perimeter openings, of not less than 3 m; and (D) provides an unimpeded path of travel from the point of discharge to the road or open space of not more than 6 m. **Compliance issue(s) relevant to D1.7(b)** • **Discharge from FS03 and FS03, is below a covered area that is not open for at least 1/3 the perimeter.** ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification.***

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BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
D1.8 External stairways or ramps in lieu of fire isolated exits			X		Not applicable.
D1.9 Travel by non-fire-isolated stairways or ramps				X	The non-fire-isolated stairways 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. In a Class 3 part, the distance between the doorway of a sole occupancy unit and the point of egress to a road or open space by way of a stairway or ramp that is not fire-isolated and is required to serve the sole-occupancy unit must not exceed 60 m. In a Class 7a 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. In a Class 3 a required non-fire-isolated stairway or non-fire-isolated ramp must discharge at a point not more than— (i) 15 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 (ii) 30 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. In a Class 7a building, a required non-fire-isolated stairway or non-fire-isolated ramp must discharge at a point not more than— (i) 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 (ii) 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. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
D1.10 Discharge from exits				X	• An exit must not be blocked at the point of discharge and where necessary, suitable barriers must be provided to prevent vehicles from blocking the exit, or access to it. • If a required exit leads to an open space, the path of travel to the road must have an unobstructed width throughout of not less than 1 m, • If an exit discharges to open space that is at a different

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					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. • The discharge point of alternative exits must be located as far apart as practical. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
D1.11 Horizontal exits			X		There are no horizontal exits used or explicitly proposed on plans.
D1.12 Non-required stairways, ramps or escalators			X		Not applicable
D1.13 Number of Persons Accommodated Note NSW Table D1.13 Area per person according to use			X		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 (ii) service ducts and the like, sanitary compartments or other ancillary uses; or (iii) reference to the seating capacity in an assembly building or room; or (iv) any other suitable means of assessing its capacity. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification. Further analysis on the extent of compliance to be provided once details on the proposed tenancy uses are provided. DTS compliance readily achievable based on submitted plans.***
D1.14 Measurement of Distances			X		Informational. 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

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BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
					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			X		Informational clause only
D1.16 Plant Rooms and lift Motor Rooms: Concession				X	a) A ladder may be used in lieu of a stairway to provide egress from— (i) a plant room with a floor area of not more than 100 m^2; or (ii) all but one point of egress from a plant room, a lift machine room or a Class 8 electricity network substation with a floor area of not more than 200 m2. (b) A ladder permitted under (a)— (i) may form part of an exit provided that in the case of a fire-isolated stairway it is contained within the shaft; or (ii) may discharge within a storey in which case it must be considered as forming part of the path of travel; and (iii) for a plant room or a Class 8 electricity network substation, must comply with AS 1657; and (iv) for a lift machine room, where access is provided from within a machine room to a secondary floor, a fixed rung type ladder complying with AS 1657 may be used, provided that— (A) the height between the floors is not more than 2800 mm; and (B) the ladder is inclined at an angle to the horizontal not less than 65 degrees nor more than 75 degrees; and (C) the distance between the front face of the ladder and any adjacent obstruction is not less than— (aa) 960 mm, where the ladder is inclined 65 degrees to the horizontal; or (bb) 760 mm, where the ladder is inclined 75 degrees to the horizontal; or (cc) a distance that is determined by interpolating the values in (aa) and (bb), where the ladder is inclined at any angle between 65 degrees and 75 degrees to the horizontal; and (D) a clear space not less than 600 mm exists between the foot of the ladder and any equipment. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate***

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BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
					plans / specification
D1.17 Access to lift pits				X	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" ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
Part D2 **Construction of Exits**					
D2.1 Application of Part			X		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 3 sole-occupancy units.
D2.2 Fire-isolated stairways and ramps				X	The fire isolated stairways must be constructed of non-combustible materials and constructed so that if there is local failure it will not cause structural damage to, or impair the fire-resistance of the shaft. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification (and structural details)***
D2.3 Non-fire Isolated				X	The non-fire isolated stairways must be constructed according to D2.2, or only of-

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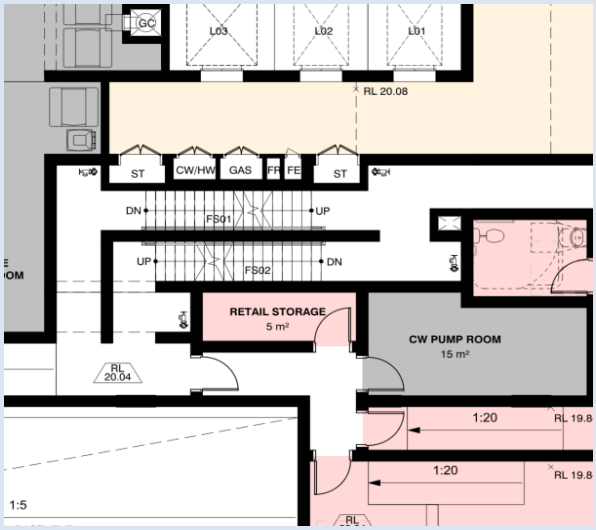
stairways and ramps					(a) reinforced or prestressed concrete; or (b) steel in no part less than 6 mm thick; or (c) timber that— (i) has a finished thickness of not less than 44 mm; and (ii) has an average density of not less than 800 kg/m3 at a moisture content of 12%; and (iii) has not been joined by means of glue unless it has been laminated and glued with resorcinol formaldehyde or resorcinol phenol formaldehyde glue". ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
D2.4 Separation of rising and descending stair flights		X			If a stairway serving as an exit is required to be fire-isolated— (a) there must be no direct connection between— (i) a flight rising from a storey below the lowest level of access to a road or open space; and (ii) a flight descending from a storey above that level; and (b) any construction that separates or is common to the rising and descending flights must be— (i) non-combustible; and (ii) smoke proof in accordance with Clause 2 of Specification C2.5. **Compliance issue(s)** • **There is a connection between the flights rising from the basement and the flight descending from the storey above on the ground level.**  ***It is recommended that this is addressed by a Fire Engineered Performance Solution.***

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BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
D2.5 Open access ramps and balconies			X		Not applicable
D2.6 Smoke lobbies			X		Not applicable
D2.7 Installations in exits and paths of travel				X	In this building – • 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. • Gas or other fuel services must not be installed in a required exit • Services or equipment comprising of electricity meters, distribution boards, telecommunications distribution boards or equipment, electrical motors or other motors located within the path of travel to an exit must be enclosed with non-combustible construction or a fire protective covering with doorways suitably sealed against smoke spread from the enclosure. • Electrical wiring may be installed in a fire isolated exit, but only where associated with a lighting, detection, pressurisation, security, surveillance, intercommunication, or hydraulic fire services monitoring valves. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
D2.8 Enclosure of space under stairs and ramps				X	The space under any fire-isolated stairway 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. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
D2.9 Width of required stairways and ramps			X		Not applicable
D2.10 Pedestrian Ramps				X	All pedestrian ramps are to have a non-slip finish complying with AS 4586-2013 Slip resistance classification of new pedestrian surface materials and be not less than 1 in 8 or if required to be traversed by persons with a disability must have the gradients required by Part D3 (refer to separate access report). ***Details demonstrating compliance with this clause must be incorporated into the construction certificate***

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					plans / specification
D2.11 Fire-Isolated Passageways			X		Fire isolated stairways required to comply with this Clause. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
D2.12 Roof as Open Space			X		Not applicable
D2.13 Goings & Risers				X	The stairway treads and risers must comply in accordance with Table D2.13 - • The goings would need to be between 250mm and 355mm; and • the risers must be between 115mm high and 190mm high; and • The stair going to riser ratio (2R + G) must be within the range of 700-550mm. • The goings and risers must be (constant) uniform throughout each flight and each tread must have a non-slip finish or an adequate non-skid strip near the edge of the nosing's. • Treads must have a surface with a slip-resistant classification not less than that listed in Table D2.14 when tested in accordance with *AS 4586-2013 Slip resistance classification of new pedestrian surface materials.* • BCA 2019 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. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
D2.14 Landings				X	Landings must not be less than 750mm long and have a slip-resistant classification not less than that listed in Table D2.14 when tested in accordance with *AS 4586-2013 Slip resistance classification of new pedestrian surface materials.* BCA 2019 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. ***Details demonstrating compliance with this clause***

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					must be incorporated into the construction certificate plans / specification
D2.15 Thresholds		X			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 leaves unless the doorway is in a building required to be accessible by Part D3, and in which case the doorway opens to a road or open space and is provided with a threshold ramp or step ramp in accordance with AS 1428.1. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
D2.16 Balustrades and other Barriers				X	In this building – • A continuous barrier must be provided to the fire stairs, balconies and roof (where public access is provided) if the trafficable surface is 1m or more above the surface beneath; • A barrier provided to a stairway must have a minimum height of not less than 865mm; • A barrier provided to the balconies, stair landings and roof must not be less than 1m high (note transition zone requirements between stair flight and landing); ***Note*** *– The above barrier heights are measured vertically from the surface beneath i.e. where the barrier sits above a balcony hob, the 1m vertical measurement would be taken from the level of the hob.* • A barrier provided to a fire stair must not contain openings greater than 300mm or where rails are used, the maximum opening permissible is a 150mm between the nosing line of the stair treads and the rail and the opening thereafter between the rails must not be more than 460mm; • A barrier provided to a balcony or roof must not contain any openings greater than 125mm; • Where a fall of 4m or more occurs, barriers provided to the balconies or roof must not consist of any horizontal or near horizontal elements between 150-760mm above the surface beneath to facilitate climbing. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
D2.17 Handrails		X			In this building – • All fire stairs must be provided with a handrail to at least one side of the stair flight; • Handrail must be fixed at a height of not less than 865mm when measured above the nosings of the stair treads, landing or the like; • Handrails must be continuous between stair flight

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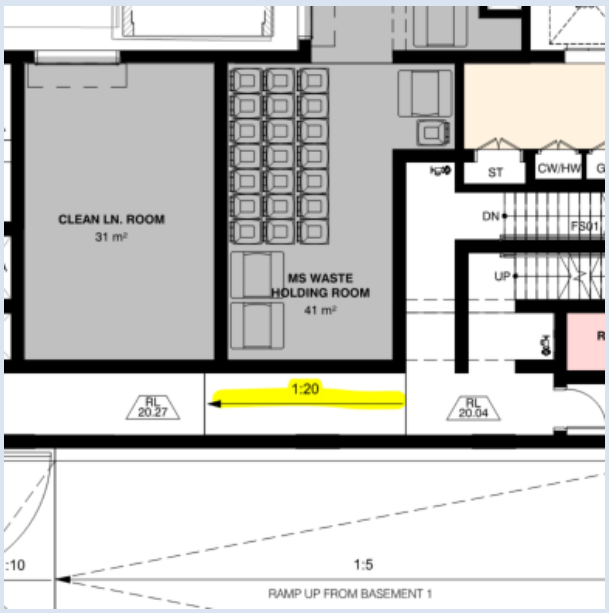
BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS

landings and have no obstruction on or above them that will tend to break a hand hold; and

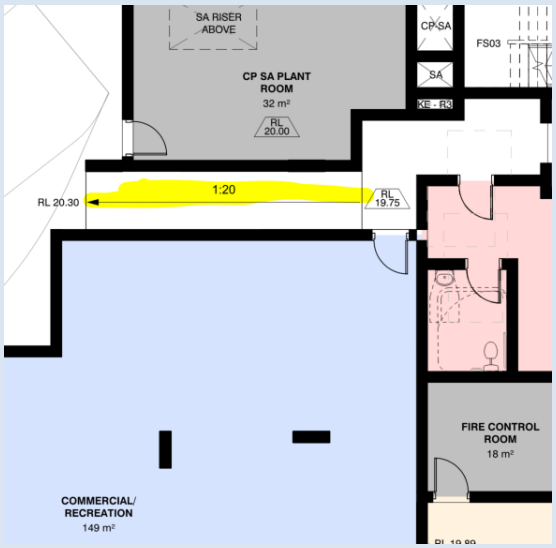
- The handrails to the required exits must be designed and constructed to comply with Clause 12 of AS 1428.1-2009.

Compliance issues

- **The Ground floor fire-isolated passageway ramp is required to be detailed with handrails in accordance with this clause.**



- **The Ground floor ramp adjacent the plant room is required to be detailed with handrails in accordance with this clause (and accessible features – see separate access report).**



Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification.

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BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
D2.18 Fixed Platforms, walkways and ladders				X	Plant areas may be accessed via stairs and ladders compliant with AS 1657-2013. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification.***
D2.19 Doorways & Doors				X	Any proposed sliding exit doors must be openable manually under a force of not more than 110N and if the doors are power operated they must be capable of being opened 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. ***Details demonstrating compliance with this clause particularly for the sliding doors located on the ground level must be incorporated into the construction certificate plans / specification.***
D2.20 Swinging Doors				X	Doors in a required exit or forming part of a required exit must swing in the direction of travel unless serving a building part with a floor area not more than 200m^2, it is the only required exit from the building part and it is fitted with a device for holding it in the open position. A door in a required exit or forming part of a required exit must not encroach at any part of its swing by more than 500mm on the required width of a required stairway, ramp or passageway. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification.***
D2.21 Operation of Latch				X	All doors in a required exit or forming part of a required exit AND doors in a path of travel to a required exit must be readily openable without a key from the side that faces a person seeking egress, by 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 C. a single hand pushing action on a single device which is located between 900mm and 1.2m from the door. The above requirements do not apply to doors that serve only or is within a: - Class 3 SOUs; - A space which is otherwise inaccessible to persons

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					at all times when the door is locked. - Doors on auto unlock on activation of a fire alarm. - Class 5 and 6 SOUs less than 200m^2. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
D2.22 Re-entry from Fire isolated exits				X	Re-entry from the fire stairs must be provided as per the requirements of this clause. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
D2.23 Signs on Doors				X	Signs are to be installed on the doors into and out of the fire-isolated stair, horizontal exits and smoke doors to alert persons that the operation of these doors is not to be impaired in accordance with the requirements of this clause. In addition, signage in accordance with Clause 183 of the EP&A Reg (EPAR) 2000 is required to be installed in conspicuous locations adjacent to doorways providing access to fire-isolated exits. The installation requirements are stipulated under Clause 183 of the EPAR 2000. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
D2.24 Protection of openable windows				X	**Class 3 (Bedrooms)** A window opening in a bedroom of a class 3 SOU must be provided with protection if: • the level of the floor outside the window is below 2m or more; and • the lowest level of the window opening is less than 1.7m above the inside floor level. A window required to be protected must comply with any of the following methods: 1. The window is designed such that any opening does not allow a 125mm sphere to pass through (E.g. louvres); or 2. The window is fitted with a fixed or dynamic device that is capable of restricting the window opening so it does not allow a 125mm 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; or 3. The window is fitted with an internal or external

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					screen that does not permit a 125 mm sphere to pass through and is capable of resisting an outward horizontal force of 250 N against the window restrained by a device or screen protecting the opening. The device or screen protection referred above (Points 2 and 3) must also have a child resistant release mechanism if the screen or device is capable of being removed, unlocked or overridden. **<u>Class 3 (other than bedrooms) and in any other area</u>** Where the window is required to have a child release mechanism to be installed and where an openable window, in any location, is 4m or more above the external surface beneath, a barrier with a height not less than 865 mm above the floor would also be required. The barrier must not permit a 125mm sphere to pass through it and not have any horizontal or near horizontal elements between 150mm and 760mm above the floor that would facilitate climbing. **Details demonstrating compliance with this clause must be provided prior to the issue of the Construction Certificate.**
D2.25 Timber stairways Concession				X	Any proposed timber treads, risers, landings and associated supporting framework may be used in fire stairs or fire isolated passageways constructed from fire-protective timber in accordance with C1.13 subject to the requirements of this clause relevant to timber thickness and density as well as sprinkler requirements inside the fire stairs / passageways and fire protection requirements to the underside of stair flights and landings. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
SECTION E SERVICES & EQUIPMENT					
Part E1 Fire Fighting Equipment					
E1.3 Fire Hydrants		X			(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 – (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,

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					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 (B) Where a sprinkler system is installed throughout a building in accordance with AS 2118.1, AS 2118.4, AS 2118.6, FPAA101H or FPAA101D the fire hydrant booster protection requirements of Clause 7.3(c)(ii) and 7.3(d)(iii) of AS 2419.1 do not apply, and (C) A fire hydrant booster assembly may be located between 3.5m 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 (ii) 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 the whole of the sole occupancy unit. **DTS non-compliance** **Fire Hydrant Booster – The hydrant booster location in the rear laneway is not compliant in that:** *A fire brigade booster assembly shall be located—* *(a) within or affixed to the facade of the building containing the principal pedestrian entrance and is not more than 20 m from the principal pedestrian*

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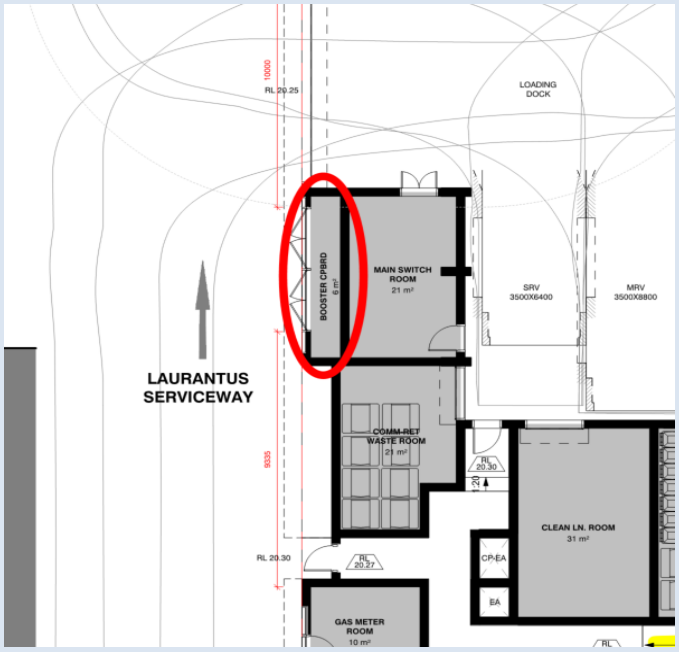
					entrance; *(b) within or affixed to the facade of the building containing the principal pedestrian entrance, and identified by a visual warning device (VWD) strobe in accordance with the requirements of Clause 7.3.2;*  ***It is recommended that the above non-compliance be addressed via a performance solution.*** ***Full Hydraulic Services Design Certification and associated plans indicating the provision of a hydrant ring main must be incorporated into the construction certificate specification for assessment at CC stage.***
E1.4 Fire Hose Reels		X			(a) E1.4 does not apply to – (iii) A Class 2, 3 or 5 building or Class 4 part of a building; or (b) A fire hose reel system must be provided – (iv) to serve the whole building where one or more internal fire hydrants area installed; or (v) 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 – (vi) Have hose reels installed in accordance with AS 2441; and (vii) 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

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BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
					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. (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: (viii) 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. (ix) 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. (x) 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 (xi) 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 (xii) Doorways in walls referred to in C2.12 or C2.13 separating equipment or electrical supply systems; and (xiii) 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. **DTS non-compliance** **The fire hose reels serving levels containing classes other than 3 and 5 are required to be detailed on the architectural plan at CC stage.** ***Hydraulic Services Design Certification and associated***

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					plans must be incorporated into the construction certificate specification
E1.5 Sprinklers		X			A sprinkler system must - (k) Be installed in a building or part of a building when required by Table E1.5; and (l) Comply with Specification E1.5 and Specification E1.5a as applicable as summarised below – ❖ All Classes - Throughout the whole building if any part of the building has an effective height of more than 25m ❖ Class 2 & 3 (excluding residential aged care) – Throughout the whole building, including any part of another class, if any part of the building has a rise in storeys of 4 or more and an effective height of not more than 25m ❖ Class 7a carparks (other than open deck) – in fire compartments that accommodate more than 40 vehicles. **DTS non-compliance** **The sprinkler valve room in accordance with Spec E1.5 is required to be detailed.** ***Full Hydraulic Services Design Certification and details must be incorporated into the construction certificate specification***
E1.6 Portable Fire Extinguishers		X			(m) Portable fire extinguishers must be – (xiv) Provided as listed in Table E1.6; (xv) For a Class 2, 3, or 5 building or Class 4 part of a building, provided – (C) 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 (D) 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 (xvi) Subject (b), selected, located and distributed in accordance with Sections 1, 2, 3 and 4 of AS 2444. (n) Portable fire extinguishers provided in a Class 2 or 3 building or Class 4 part of a building must be – (xvii)An ABE type fire extinguisher; and (xviii) A minimum size of 2.5kg; and (xix) Distributed outside a sole occupancy unit –

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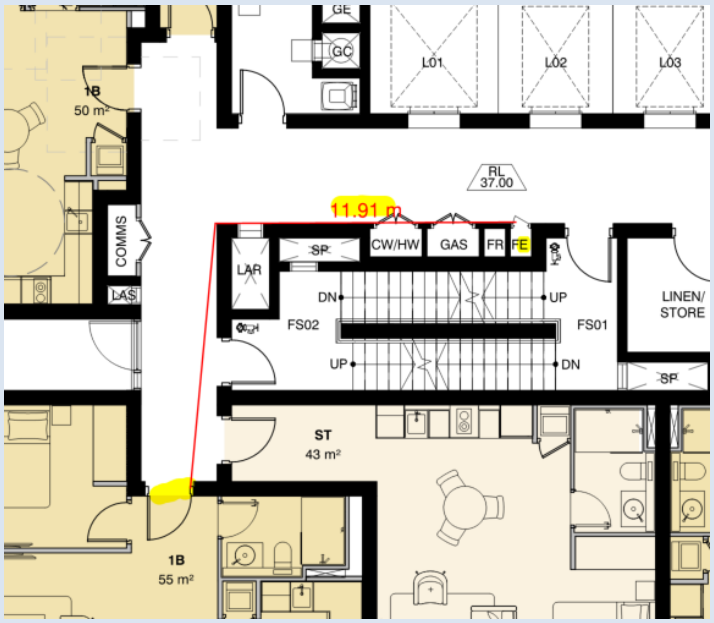
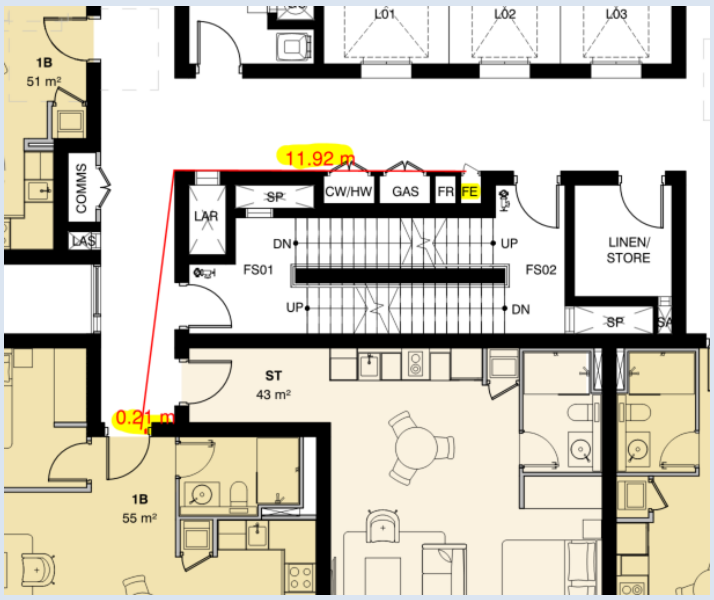
					(E) To serve only the storey on which they are located; and (xx) So that the travel distance from the entrance doorway of any sole occupancy unit to the nearest fire extinguisher is not more than 10m. **DTS non-compliance** **The location of the proposed portable fire extinguishers is greater than the required 10m from the SOU entry door to the south-western SOU entry doors on the residential levels as below shown typical:**  Level 4  Level 5-7

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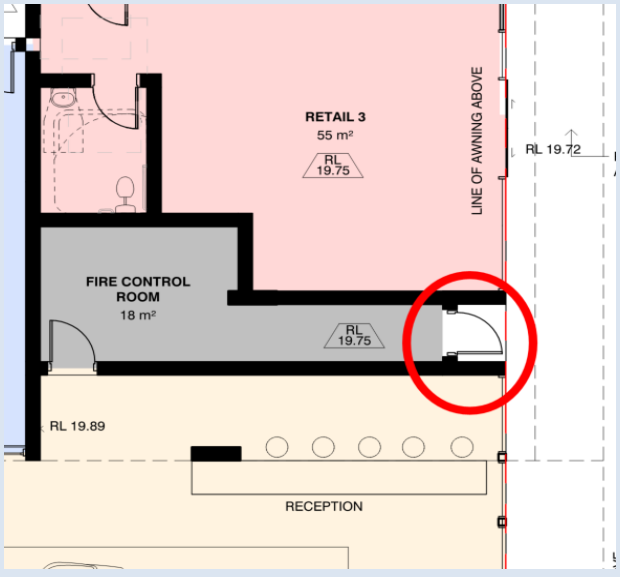
					 Level 8 ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification including the proposed location of the extinguishers to serve the portions of the building other than the Class 3 portions.***
E1.8 Fire Control Centre		X			A fire control room facility complying with Specification E1.8 must be provided for a building with an effective height of more than 50m. **DTS non-compliance** **The fire control room has a door that does not open inward (towards the fire control centre). Re-swing door to achieve compliance.**  ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***

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BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
E1.9 Fire Precautions during construction				X	Principal contractor to note: • During construction, 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 • After the building has reach an effective height of 12m, the required fire hydrants and fire hose reels must be operational on all floor / roof covered storeys, except for the 2 uppermost storeys; and • All required booster connections must be installed. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
E1.10 Provision for Special Hazards			X		Not applicable
Part E2 Smoke Hazard Management					
E2.2 General Requirements (inclusive of Table E2.2a / Table E2.2b & NSW amendments)		X			**<u>General smoke hazard management requirements</u>** 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) be designed and installed to operate as a smoke control system in accordance with AS/NZS 1668.1-2015; or (ii) (C) incorporate smoke dampers where the air-handling ducts penetrate any elements separating the fire compartments served; and (D) 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 4.10 of AS/NZS 1668.1-2015; and for the purposes of this provision, each sole-occupancy unit in a Class 3 building is treated as a separate fire compartment. Miscellaneous air-handling systems covered by Sections 5 and 11 of AS/NZS 1668.1-2015 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 that Section of the Standard. A smoke detection system must be installed in accordance with Clause 5 of Specification E2.2a to operate systems provided for zone smoke control / automatic air

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					pressurization for fire-isolated exits. Note: Smoke alarms in sole occupancy units now required to be interconnected. **Fire isolated exits** All fire stairs must be provided with automatic stair pressurisation system as per AS 1668.1-2015. **Note**: The Fire Refuge serving the Childcare Centre will also likely require pressurization following liaison with Fire and Rescue NSW and Council. Further, it is considered that under E2.3 of the BCA this measure is required. Further advice should be obtained from a suitably qualified Fire Safety Engineer in this regard. **Class 7a (carpark)** Carparks are required to be provided with a smoke detection system complying with AS 1670.1 – 2018. The Class 7a building parts must be provided with a mechanical ventilation system in accordance with AS 1668.2-2012 must comply with clause 5.5 of AS/NZS 1668.1-2015 except that fans with metal blades for operation at normal temperatures may be used, and the electrical power and control cabling need not be fire rated. **Class 3 parts** An **Automatic Smoke Detection and Alarm System** must be installed throughout the Class 3 parts of the building (sole-occupancy units, public corridors / lobbies, etc) complying with Clause 2 of Specification E2.2a. Clause 2 of Specification E2.2a provides options for the installation of an automatic smoke detection and alarm system. The Class 3 parts must be provided with: • a smoke detection system (and building occupant warning system) complying with Clause 4 of Specification E2.2a; or • a combination of a smoke alarm system complying with Clause 3 within sole-occupancy units and a smoke detection system (and building occupant warning system) complying with Clause 4 in areas not within the sole-occupancy units. A smoke alarm system would need to comply with AS 3786-2014 and a smoke detection system (including a **Building Occupant Warning System**) would need to comply with AS 1670.1-2015. A building occupant warning system, complying with Clause 6 of Specification E2.2a is also required including throughout the car park area. Detection must also be provided to other internal spaces located within the class 3 parts other than SOUs in accordance with AS 1670.1-2015 and must be connected to activate a BOWS in accordance with clause 6 of Spec E2.2a. **Zone Smoke Control**

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					Class 5, 6 & 9b parts must be provided with a zone smoke control system in accordance with AS/NZS 1668.1-2015. **Alternatively discuss with the fire engineer to omit zone smoke control under a Performance Solution.** **Automatic shutdown of air handling** The early childhood centre and swimming pool and childcare (class 9b parts) 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 11 of AS/NZS 1668.1-2015) which does not form part of the smoke hazard management system, on the activation of– (iii) smoke detectors installed complying with Clause 5 of Specification E2.2a; and (iv) any other installed fire detection and alarm system, including a sprinkler system complying with Specification E1.5. ***Appropriate Design Certification must be incorporated into the construction certificate specification***
E2.3 Provision for Special Hazards				X	The Fire Refuge serving the Childcare Centre will likely require pressurization following liaison with Fire and Rescue NSW and Council. Further, it is considered that under E2.3 of the BCA this measure is required. Further advice should be obtained from a suitably qualified Fire Safety Engineer in this regard.
Part E3 Lift Installations					
E3.1 Lift installations				X	The lifts in this building must be electric passenger lift installation or an electrohydraulic passenger lift installation and must comply with Specification E3.1 ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
E3.2 Stretcher Facility in Lifts				X	Each emergency lift must have the internal lift car dimensions capable of accommodating a raised stretcher facility which is not less than 600mm wide x 2000mm long x 1400mm high above floor level.

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					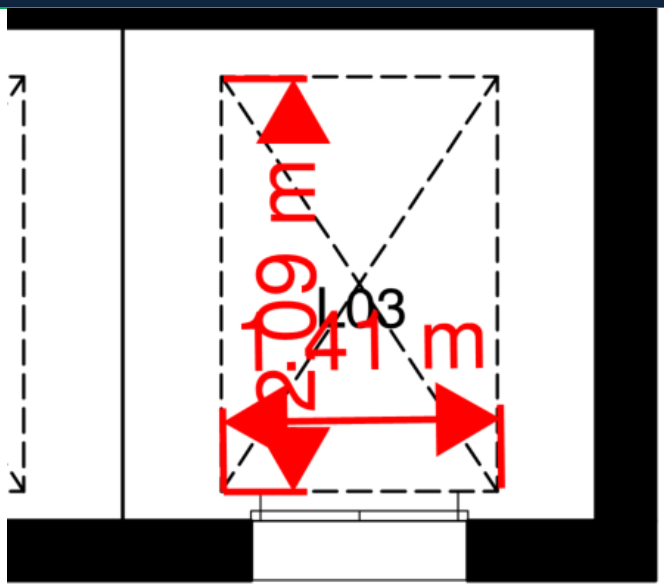 ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
E3.3 Warning Against the use of lifts in Fire				X	Warning signs indicating "**DO NOT USE LIFTS IF THERE IS A FIRE**" shall be displayed near every call button for a passenger lift or group of lifts throughout a building as per E3.3. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
E3.4 Emergency Lifts				X	All lifts serving the storeys above the effective height of 25m must be emergency lifts separated via a 2-hour fire rated wall and satisfying the requirements of this clause. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
E3.5 Landings				X	Access and egress to and from lift-well landings must comply with the Deemed-to-Satisfy Provisions of Section D. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
E3.7 Fire Service Controls				X	The lifts in this building must be provided with a: • fire service recall control switch complying with E3.9 (for a group of lifts or a single lift not in a group that serves the storey); and • lift car fire drive control switch complying with E3.10 for every lift. ***Details demonstrating compliance with this clause***

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					must be incorporated into the construction certificate plans / specification
E3.8 Aged Care Buildings			X		Not applicable.
E3.9 Fire service recall operation switch				X	The lifts in this building must be provided with fire service recall control switch relevant to the requirements of this clause. Lift contractor to document this requirement into the CC design. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
E3.10 Lift car fire service drive control switch				X	The lifts in this building must be provided with a fire service drive control switch as per the requirements of this clause. Lift contractor to document this requirement into the CC design. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
Part E4 Emergency Lighting, Exit Signs and Warning Systems					
E4.2 Emergency Lighting Requirements				X	Emergency lighting must be provided throughout relevant to the requirements of this clause. ***Electrical Design Certification must be incorporated into the construction certificate specification***
E4.3 Measurement of Distance			X		Noted. Informational clause only.
E4.4 Design and Operation of Emergency Lighting			X		The emergency lighting system must comply with AS 2293.1-2018.
E4.5 Exit Signs				X	Exit signs must be provided throughout relevant to the requirements of this clause. ***Electrical Design Certification must be incorporated into the construction certificate specification and exit sign locations must be illustrated on the architectural floor plans***
E4.6 Direction Signs (inclusive of NSW E4.6)				X	If an exit is not readily apparent to persons occupying or visiting the building, then directional exit signs must be installed in appropriate positions. ***Electrical Design Certification must be incorporated into the construction certificate specification and***

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BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
					directional exit sign locations must be illustrated on the architectural floor plans
E4.7 Class 2 & 3 Buildings & Class 4 Parts: Exemption			X		Exit doors in Class 3 parts need not comply with E4.5 provided every exit door is clearly and legibly labelled on the side remote from the exit with the word "EXIT" in capital letters 25mm high in a colour contrasting with that of the background or some other suitable method.
E4.8 Design & Operation of Exit Signs				X	Exit signs must comply with: • AS 2293.1-2018; or • For a photoluminescent exit sign, Specification E4.8. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
E4.9 Emergency Warning & Intercom System				X	A Emergency Warning & Intercom System complying with AS 1670.4-2015 must be installed throughout the building. ***Electrical Design Certification must be incorporated into the construction certificate specification***
SECTION F HEALTH & AMENITY					
Part F1 Damp & Weatherproofing					
F1.1 Stormwater Drainage				X	Stormwater drainage must comply with AS/NZS 3500.3-2015. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
F1.4 External above ground membranes				X	Any external above ground membranes must be waterproofed as per AS 4654 Parts 1 and 2-2012. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
F1.5 Roof coverings				X	Information clause relevant to the Australian Standards applicable to different types of roof coverings. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
F1.6 Sarking				X	Sarking-type materials used for weatherproofing must comply with AS/NZS 4200 Part 1 and 2-1994. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***

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F1.7 Waterproofing of wet area				X	Wet areas must be waterproofed in accordance with AS 3740-2010 and F1.7 of the BCA. ***NOTE – There must be no windows or part of a window located on the walls of shower area within 1.8m off the floor.*** ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
F1.9 Damp-proofing				X	Where a damp-proof course is required, it must consist of a material that complies with AS/NZS 2904-1995; or impervious termite shields in accordance with AS 3660.1-2014 ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
F1.10 Damp-proofing of floors on the ground				X	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). ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
F1.11 Provision of Floor Wastes				X	Bathrooms and laundries in Class 3 parts must be provided with a floor waste, and the floor of such areas must be graded to such floor waste. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
F1.12 Sub Floor Ventilation			X		Not applicable
F1.13 Glazed Assemblies				X	Refer to Part B1.

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Part F2 Sanitary & Other Facilities					
F2.1 Facilities in residential buildings				X	**Within each *Class 3 SOU* provide the following private facilities:** **Facilities required** / **Facilities provided** Kitchen sink and facilities for the preparation and cooking of food — Compliant A bath or shower — Compliant A closet pan and washbasin — Compliant ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
F2.2 Calculation of number of occupants and fixtures			X		Noted. Informational clause only.
F2.3 Facilities for Class 3 to 9 Buildings		X			Sanitary facilities must be provided for the Class 5, 6, 7 and 9 building parts in accordance with Table F2.3. ▪ 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. ▪ If not more than 10 people are employed, a unisex facility may be provided instead of separate facilities for each sex. ▪ If the majority of employees are of one sex, not more than 2 employees of the other sex may share toilet

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					facilities if the facilities are separated by means of walls, partitions and doors to afford privacy. ▪ 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. ▪ Adequate means of disposal of sanitary towels must be provided in sanitary facilities for use by females. A Class 9b early childhood centre must be provided with— ▪ a kitchen or food preparation area with a kitchen sink, separate hand washing facilities, space for a refrigerator and space for cooking facilities, with— ▪ 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 ▪ the ability to facilitate supervision of children from the facilities if the early childhood centre accommodates children younger than 2 years old; and ▪ one bath, shower or shower-bath; and ▪ if the centre accommodates children younger than 3 years old— ▪ a laundry facility comprising a washtub and space in the same room for a washing machine; and ▪ a bench type baby bath, which is within 1 m of the nappy change bench; and ▪ a nappy changing bench which— ▪ is within 1 m of separate adult hand washing facilities and bench type baby bath; and ▪ must be not less than 0.9 m^2 in area and at a height of not less than 850 mm, but not more than 900 mm above the finished floor level; and ▪ must have a space not less than 800 mm high, 500 mm wide and 800 mm deep for the storage of steps; and ▪ is positioned to permit a staff member changing a nappy to have visibility of the play area at all times. **Compliance issue(s):** ***To be able to calculate the number of sanitary facilities required pursuant to Table F2.3 an approximate occupancy load is required to be provided for the staff and occupants to be associated with the class 5, 6 and 9b childcare portion. This is to be submitted with the application for CC.*** ***Further, insufficient detail has been provided for the childcare centre on level 3 to enable an accurate assessment on the level of compliance, particularly***

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BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
					clarification on how any room containing 0 -2 year old's can be supervised from the kitchen is required, noting that all parts of this room cannot be viewed from the kitchen. ***It is recommended that further details be provided at CC stage demonstrating compliance with this clause.*** ***Additionally the proposed use is required as sanitary facilities requirements are more onerous for restaurants, cafes and bars (if proposed).***
F2.4 Accessible sanitary facilities			X		Not assessed in this report. Please refer the separate Access Report.
F2.5 Construction of Sanitary Compartments				X	Sanitary compartments must have: • Doors and partitions that separate adjacent compartments; and • 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. In the childcare, 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 900mm but not more than 1200mm above the floor level. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
F2.6 Interpretation: Urinals and washbasins			X		Informational clause relevant to urinal and washbasin design.
F2.7 Microbial Control Note NSW F2.7 (Clause Deleted)			X		N/A Clause Deleted in NSW.
F2.8 Waste Management			X		Not applicable
Part F3 Room Sizes					
F3.1 Height of Rooms and other spaces				X	The ceiling height must be not less than— **Class 2/3 —** • a kitchen, laundry, or the like — 2.1 m;

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BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
					• a corridor, passageway or the like — 2.1 m; • a habitable room excluding a kitchen — 2.4 m; **Class 5, 6 and 7 —** • Generally — 2.4 m; • a corridor, passageway, or the like — 2.1 m; and **Class 9b —** • if accommodates not more than 100 persons — 2.4 m; and • if accommodates more than 100 persons — 2.7 m; and • 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 **Everywhere else** • a bathroom, shower room, sanitary compartment, airlock, tea preparation room, pantry, store room, garage, car parking area, or the like — 2.1 m; and • a commercial kitchen — 2.4 m; and • 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. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
Part F4 Light & Ventilation					
F4.1 Provision of natural light				X	Natural lighting must be provided to **Class 3 buildings** — to all habitable rooms. Natural lighting must be provided to all playrooms or the like for the use of children in an **early childhood centre**. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
F4.2 Methods and extent of natural lighting				X	(o) Required natural lighting must be provided by— (xxi) windows, excluding roof lights, that— (F) 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

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BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
					(G) 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 (xxii)roof lights, that— (H) 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 (I) are open to the sky; or (xxiii) a proportional combination of windows and roof lights required by (i) and (ii). In a Class 9b early childhood centre, the sills of 50% of windows in children's rooms must be located not more than 500mm above the floor level. ***Compliance issue:*** ▪ ***Provide confirmation that sills of 50% of windows in children's rooms are located not more than 500mm above the floor level.*** ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
F4.3 Natural light borrowed from adjoining room				X	Natural lighting to a room in a Class 2/3 SOU, may come through a glazed panel or opening from an adjoining room (including an enclosed verandah) if— (i) both rooms are within the same sole-occupancy unit or the enclosed verandah is on common property; and (ii) the glazed panels or openings have an aggregate light transmitting area of not less than 10% of the floor area of the room to which it provides light (iii) the glazed panel or opening has an area of not less than 10% of the floor area of the room to which it provides light; and the adjoining room has— (A) windows, excluding roof lights, that— (aa) have an aggregate light transmitting area of not less than 10% of the combined floor areas of both rooms; and (bb) 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— (aa) have an aggregate light transmitting area of not less than 3% of the combined floor areas of both rooms; and (bb) are open to the sky; or (C) a proportional combination of windows and roof

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BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
					lights required by (A) and (B). The areas specified in (ii) and (iii) may be reduced as appropriate if direct natural light is provided from another source. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
F4.4 Artificial lighting				X	Artificial lighting must be provided to all areas required by this clause in accordance with AS 1680.0-2009. ***Electrical Design Certification must be incorporated into the construction certificate specification***
F4.5 and NSW F4.5(b) Ventilation of Rooms				X	All rooms must be provided with the following – (a) natural ventilation complying with Clause F4.6; or (b) a mechanical ventilation or air-conditioning system complying with AS 1668.2-2012. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
F4.6 Natural Ventilation				X	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 an aggregate opening or openable size 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. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
F4.7 Ventilation borrowed from adjoining room				X	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) in the Class 2/3 sole-occupancy units— (i) the room to be ventilated is not a sanitary compartment; and (ii) the window, opening, door or other device has a ventilating area of not less than 5% of the floor area of the room to be ventilated; and (iii) the adjoining room has a window, opening, door or other device with a ventilating area of not less than 5%

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					of the combined floor areas of both rooms. (b) in the Class 5, 6, 7 and 9b parts — (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 3.6m 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. The ventilating areas specified in (a) and (b) may be reduced as appropriate if direct natural ventilation is provided from another source. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
F4.8 Restriction of position of water closets and urinals		X			Rooms containing closet pans or urinals must not open directly into a workplace normally occupied by more than one person. ***Compliance issue:*** ▪ ***Sanitary compartments open directly into Playroom's 1, 2, 3 & 4.***
F4.9 Airlocks				X	If a room containing a closet pan or urinal is prohibited under F4.8 from opening directly to another room — (a) in a sole-occupancy unit in a Class 2/3 building part — (i) access must be by an airlock, hallway or other room; or (ii) the room containing the closet pan or urinal must be provided with mechanical exhaust ventilation; and (b) in a Class 5, 6, 7 or 9 building — (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 room containing the closet pan or urinal must be provided with mechanical exhaust ventilation and the doorway to the room adequately screened from view. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
F4.10 ****			X		This clause has been deleted.

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F4.11 Carparks				X	Every storey of carpark must have a system of mechanical ventilation complying with AS 1668.2-2012. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
F4.12 Kitchen local exhaust ventilation				X	Any proposed commercial kitchen must be provided with a kitchen exhaust hood complying with AS 1668.1-2015 and AS 1668.2-2012 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 gas, per m2 of floor area of the room or enclosure. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
Part F5 Sound Transmission					
F5.1 Application of Part				X	The provisions of this Part will apply to the Class 3 building parts.
F5.2 Determination of airborne sound insulation ratings				X	A form of construction required to have an airborne sound insulation rating must— (a) have the required value for weighted sound reduction index (Rw) or weighted sound reduction index with spectrum adaptation term (Rw + Ctr) determined in accordance with AS/NZS 1276.1 or ISO 717.1 using results from laboratory measurements; or (b) comply with Specification F5.2. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
F5.3 Determination of impact sound insulation ratings				X	A floor in a building required to have an impact sound insulation rating must— (i) have the required value for weighted normalised impact sound pressure level with spectrum adaptation term (Ln,w + CI) determined in accordance with AS/ISO 717.2 using results from laboratory measurements; or (ii) comply with Specification F5.2. A wall in a building required to have an impact sound insulation rating must be of ***discontinuous construction***.

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					Discontinuous construction means a wall having a minimum 20 mm cavity between 2 separate leaves, and (i) for masonry, where wall ties are required to connect leaves, the ties are of the resilient type; and (ii) for other than masonry, there is no mechanical linkage between leaves except at the periphery. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
F5.4 Sound Insulation of floors between units				X	A floor in a Class 2/3 building part must achieve an $R_w + C_{tr}$ (airborne) not less than 50, and an $L_{n,w}+C_l$ (impact) not more than 62, if separating: • SOU's; or • An SOU from a plant room, lift shaft, public corridor, public lobby or parts of a different classification. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
F5.5 Sound insulation of walls between units				X	A wall in a Class 2/3 building must— (i) have an Rw + Ctr (airborne) not less than 50, if it separates sole-occupancy units; and (ii) have an Rw (airborne) not less than 50, if it separates a sole-occupancy unit from a plant room, lift shaft, stairway, public corridor, public lobby or the like, or parts of a different classification; and (iii) comply with F5.3(b) if it separates— (A) a bathroom, sanitary compartment, laundry or kitchen in one sole-occupancy unit from a habitable room (other than a kitchen) in an adjoining unit; or (B) a sole-occupancy unit from a plant room or lift shaft. A door may be incorporated in a wall in a Class 2 or 3 building part that separates a sole occupancy unit from a stairway, public corridor, public lobby or the like, provided the door assembly has an Rw not less than 30. Where a wall required to have sound insulation has a floor above, the wall must continue to— (i) the underside of the floor above; or (ii) a ceiling that provides the sound insulation required for the wall. Where a wall required to have sound insulation has a roof above, the wall must continue to— (i) the underside of the roof above; or (ii) a ceiling that provides the sound insulation required for the wall.

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					Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification
F5.6 Sound insulation rating of internal services				X	Ducts and pipes must achieve an $R_w + C_{tr}$ (airborne) of no less than 40 if the adjacent room is habitable or 25 if non-habitable. If a storm water pipe passes through a SOU, it must be separated in accordance with this clause. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
F5.7 Sound isolation of pumps				X	A flexible coupling must be used at the point of connection between the service pipes in a building and any circulating or other pump. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
SECTION G ANCILLIARY PROVISIONS					
Part G1 Minor Structures and Components					
G1.1 Swimming Pools				X	The swimming pools associated with the Class 3 parts if they have a depth of water more than 300mm must have suitable barriers to restrict access by young children in accordance with AS 1926.1-2012 and AS 1926.2-2007. Child resistant doorsets must comply with Clause 2.7 of AS1926.1-2012 A water recirculation system in a swimming pool with a depth of water more than 300mm must comply with AS 1926.3-2010. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
NSW G1.101 Provision for cleaning windows				X	A safe manner for cleaning of windows located 3 or more storeys above ground level must be provided, and compliance is achieved where: • The windows can be cleaned wholly from within the building; or • Via a method complying with the Work Health and Safety Act 2011 and regulations made under that Act. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
G1.2 Refrigeration chambers,			X		Not applicable.

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strong-rooms and vaults					
G1.3 Outdoor play areas				X	Any outdoor play space in a Class 9b eraly childhood centre must be enclosed on all sides with a barrier which complies with AS 1926.1, to restrict children from exiting the premises without the knowledge of the staff These requirements do not apply to a wall, including doors & windows, which form part of the Class 9b early childhood centre. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
SECTION J - NATIONAL ENERGY EFFICIENCY PROVISIONS					
Part J0: Energy Efficiency					
J0.1 Application of Section J			X		Informational clause
J0.2 Heating and cooling loads of sole-occupancy units of a class 2 building or a class 4 part			X		The sole-occupancy units of a Class 2 building or a Class 4 part of a building must— (a) for reducing the heating or cooling loads— (i) collectively achieve an average energy rating of not less than 6 stars; and (ii) individually achieve an energy rating of not less than 5 stars, using house energy rating software; and (b) for general thermal construction, comply with J1.2; and (c) for thermal breaks, comply with J1.3(d) and J1.5(c); and (d) for compensating for a loss of ceiling insulation, comply with J1.3(c); and (e) for floor edge insulation, comply with J1.6(c) and J1.6(d); and (f) for building sealing, comply with Part J3.
J0.3 Ceiling fans			X		Ceiling fans required as part of compliance with J0.2(a), must— (a) be permanently installed; and (b) have a speed controller; and (c) serve the whole room, with the floor area that a single fan serves not exceeding— (i) 15 m2 if it has a blade rotation diameter of not less than 900 mm; and (ii) 25 m2 if it has a blade rotation diameter of not less than 1200 mm.
J0.4 Roof thermal breaks			X		For compliance with JO.2(c), a roof that – (a) Has metal roof sheet roofing fixed to metal purlins, metal rafters or metal battens; and

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					(b) Does not have a ceiling lining or has a ceiling lining fixed directly to those metal purlins, metal rafters or metal battens, must have a thermal break, consisting of a material with an R-Value of not less than R0.2, installed at all points of contact between the metal sheet roofing and its supporting metal purlins, metal rafters or metal battens.
J0.5 Wall thermal breaks			X		For compliance with J0.2(c), a wall that – (a) Does not have a wall lining or has a wall lining that is fixed directly to the same metal frame; and (b) Has lightweight external cladding such as weatherboards, fibre-cement or metal sheeting fixed to a metal frame, must have a thermal break, consisting of a material with an R-Value of not less than R0.2, installed at all points of contact between the external cladding and metal frame.
Part J1: Building Fabric					
J1.1 Application of Part				X	The DTS Provisions of this Part apply to building elements forming the envelope of Class 2 to 9 buildings.
J1.2 Thermal construction – general				X	Where required, insulation must be provided as per AS/NZS 4859.1-2002 and installed as per this clause. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate specification***
J1.3 Roof and ceiling construction				X	A roof or ceiling that is part of the envelope, other than a sole occupancy unit of a Class 2 building or Class 4 part of a building, must achieve the Total R-Value specified in Table J1.3a for the direction of heat flow, and must satisfy all requirements of this clause. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate specification***
J1.4 Roof lights			X		Roof lights including any shaft or diffuser forming part of the envelope, must comply with the thermal performance requirements of Table J1.4. Refer additional requirements relevant to satisfying Part F4. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate specification***
J1.5 Walls				X	Each part of a wall that is part of the envelope must satisfy one of the thermal performance options in Table J1.5, noting the specific exceptions of this clause relevant to doors, vents, penetrations, shutters, glazing, and an earth retaining wall or earth berm, in other than climate zone 8. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate specification***
J1.6 Floors				X	A floor that is part of the building's envelope must achieve the Total R-Value specified in Table J1.6, and must satisfy all requirements of this clause.
Part J2: Glazing					

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BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
J2.1 Application of Part				X	The DTS Provisions of this Part apply to building elements forming the envelope of Class 2 to 9 buildings, other than a sole occupancy unit of a class 2 building or Class 4 part of a building.
J2.4 Glazing				X	The glazing in each storey, including any mezzanine, must be assessed separately in accordance with the requirements of this clause, for: (a) Glazing in the external fabric facing each orientation; and (b) Glazing in the internal fabric, to ensure that the aggregate air-conditioning energy value attributable to the glazing does not exceed the allowance obtained by multiplying the façade area that is exposed to the conditioned space for the orientation by the energy index in Table J2.4a. ***Glazing calculations demonstrating compliance with this clause must be incorporated into the specification***
J2.5 Shading				X	Where required to comply with J2.4, shading must be provided in accordance with this clause. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
Part J3: Building Sealing					
J3.1 Application of Part				X	The requirements of this Part apply to elements forming the envelope of Class 2 to 9 buildings, other than: ❖ A building in a climate zones 1, 2, 3 and 5 where the only means of air-conditioning is by using an evaporative cooler; ❖ A permanent building opening necessary for the safe operation of a gas appliance; ❖ A building or part where mechanical ventilation required by Part F4 provides sufficient pressurization to prevent infiltration; ❖ Parts of buildings that cannot be fully enclosed.
J3.2 Chimney and flues			X		The chimney or flue of an open solid-fuel burning appliance must be provided with a damper or flap that can be closed to seal the chimney or flue. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
J3.3 Roof lights				X	Roof lights must be sealed, or capable of being sealed as per the requirements of this clause. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
J3.4 Window and doors				X	Seals to restrict air infiltration to windows and doors must be provided as required (note exceptions listed in J3.4 (b), and requirements for sealing of main entrance in J3.4 (d). ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans /***

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BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
					specification
J3.5 Exhaust fans				X	Miscellaneous exhaust fans must be fitted with self-closing dampers, where serving a conditioned space or a habitable room in climate zones 4, 5, 6, 7 or 8. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
J3.6 Construction of roofs, walls and floors				X	Roofs, ceilings, walls, floors and any openings such as a window frame, door frame, light frame or the like must be sealed in accordance with the requirements of this clause to minimise air leakage. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
J3.7 Evaporative coolers				X	An evaporative cooler must be fitted with a self-closing damper of the like when serving a heated space, or a habitable room or a public area of a building in climate zones 4, 5, 6, 7 or 8. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
Part J4: Blank					
Part J5: Air-conditioning and ventilation systems					
J5.1 Application of Part			X		The Deemed-to-Satisfy Provisions of this Part do not apply to a Class 8 electricity network substation.
J5.2 Air-conditioning systems				X	An air-conditioning unit or system must comply with J5.2(a) to J5.2(g). ***Mechanical Design certification must be submitted in support of the construction certificate application***
J5.3 Mechanical ventilation systems				X	Mechanical ventilation systems must comply with J5.3(a) to J5.3(c). ***Mechanical Design certification must be submitted in support of the construction certificate application***
J5.4 Miscellaneous exhaust systems				X	A miscellaneous exhaust system with an air flow rate of more than 1000 L/s that is associated with equipment having a variable demand such as a stove in a commercial kitchen or a chemical bath in a factory, must have the means for the operator to reduce the energy used (such as by a variable speed fan), and to stop the motor when it is not needed. Refer concessions contained in this clause. ***Mechanical Design certification must be submitted in support of the construction certificate application***
J5.5 Ductwork insulation			X		Ductwork and fittings in an air-conditioning system must be provided with insulation complying with AS/NZS 4859.1and an insulation R-Value as specified in this clause.

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BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
J5.6 Ductwork sealing			X		Ductwork in an air-conditioning system with a capacity of 3000 L/s or greater, not located within the only or last room served by the system, must be sealed against air loss in accordance with the duct sealing requirements of AS 4254.1 and AS 4254.2 for the static pressure in the system.
J5.7 Pump systems			X		Pumps and pipework are form part of an air-conditioning system must comply with the requirements of this clause.
J5.8 Pipework insulation			X		Piping, vessels, heat exchangers and tanks containing heating or cooling fluid that are part of an air-conditioning system must be provided with insulation per the requirements of this clause.
J5.9 Space heating			X		A heater used for air-conditioning or as part of an air-conditioning system must be of a type specified in this clause.
J5.10 Refrigerant chillers			X		An air-conditioning system refrigerant chiller must comply with MEPS and the full load operation energy efficiency ratio and integrated part load energy efficiency ration in Table J5.10a or Table J5.10b when determined in accordance with AHRI 551/591.
J5.11 Unitary air-conditioning equipment			X		Unitary air-conditioning equipment including packaged air-conditioners, split system, and variable refrigerant flow systems must comply with MEPS and for a capacity greater than or equal to 65 kWr per the requirements of this clause.
J5.12 Heat rejection equipment			X		The motor rated power of a fan in a cooling tower, closed circuit cooler or evaporative condenser must not exceed the allowances in Table J5.12. The fan in an air cooled condenser must comply with the requirements of this clause.
Part J6: Artificial lighting and power					
J6.1 Application of Part					J6.2. J6.3 and J6.5(a)(ii) do not apply to a Class 8 electricity network substation.
J6.2 Artificial lighting				X	Artificial lighting must comply with J6.2(a), J6.2(b) and J6.2(c), relevant to maximum permitted illumination power loads. ***Electrical Design certification must be submitted in support of the construction certificate application***
J6.3 Interior artificial lighting and power control				X	Internal artificial lighting systems must be switched and zoned in accordance with the specific requirements of this clause. ***Electrical Design certification must be submitted in support of the construction certificate application***
J6.4 Interior decorative and display lighting				X	Interior decorative and display lighting, such as for a foyer mural or art display, must be controlled separately from other artificial lighting, and be switched in accordance with the specific requirements of this clause. ***Electrical Design certification must be submitted in support of the construction certificate application***
J6.5 Artificial lighting around				X	Artificial lighting around the perimeter of a building must be controlled by sensors or time switches in accordance with the specific requirements of this clause. Refer exclusions relevant to

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BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
the perimeter of a building					emergency lighting and lighting around detention centres. ***Electrical Design certification must be submitted in support of the construction certificate application***
J6.6 Boiling water and chilled water storage units				X	Power supply to boiling or chilled water storage units must be time switch controlled in accordance with Specification J6. ***Electrical Design certification must be submitted in support of the construction certificate application***
J6.7 Lifts					Lifts must – (a) Be configured to ensure artificial lighting and ventilation in the car are turned off when it is unused for 15 minutes and (b) Achieve the idle and standby energy performance level in Table 6.7a; and (c) Achieve – (i) The energy efficiency class in Table 6.7b; or (ii) If a dedicated goods lift, energy efficiency class D in accordance with ISO 25745-2.
J6.8 Escalators and moving walkways					Escalators and moving walkways must have the ability to slow to between 0.2m/s and 0.05 m/s when unused for more than 15 minutes.
Part J7: Hot water supply and swimming pool and spa pool plant					
J7.2 Hot water supply				X	A heated water supply system for food preparation and sanitary purposes must be designed and installed in accordance with Part B2 of NCC Volume Three — Plumbing Code of Australia. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
J7.3 Swimming pool heating and pumping				X	Heating for a swimming pool must be provided by one of the options listed within this clause, and must satisfy the specific requirements of this clause relevant to the provision of pool covers, and time switches. The requirements of this clause do not apply to a spa pool. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
J7.4 Spa pool heating and pumping				X	Heating for a spa pool that shares a water recirculation system with a swimming pool, must be by one of the energy source options listed within this clause, and must satisfy the specific requirements of this clause relevant to the provision of spa pool covers, a push button and time switch operation for the heater. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
Part J8: Access for maintenance and facilities for monitoring					

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BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
J8.1 Application of Part			X		The Deemed-to-Satisfy Provisions of this Part do not apply within a sole-occupancy unit of a Class 2 building or a Class 4 part of a building, or to a Class 8 electricity network substation.
J8.2 Access for maintenance			X		This Clause has been deleted
J8.3 Facilities for energy monitoring				X	The building must have facilities to record the consumption of gas and electricity as per clause J8.3(a). OR The building must have facilities to record individually the energy consumption of: ❖ air-conditioning plant including, where appropriate, heating plant, cooling plant and air handling fans; and ❖ artificial lighting; and ❖ appliance power; and ❖ central hot water supply; and ❖ internal transport devices including lifts, escalators and travelators where there is more than one serving the building; and ❖ other ancillary plant. *Noting J8.3(b) above does not apply to class 2 buildings with a floor area >2500m^2 and where the total floor area of the common areas of the class 2 is less than 500m^2* ***Details demonstrating compliance with this clause must be incorporated into the construction certificate specification***

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5.0 CONCLUSION

This report provides a Building Code of Australia 2019 assessment of the proposed mixed-use development to be located at 167 Northumberland Street Liverpool.

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

This report provided a BCA assessment table in Section 3.0 that summarises the identified non-compliance matters and offers specific recommendations that are also outlined in the Executive Summary.

Further, if compliance with the deemed-to-satisfy provisions is not achievable or desirable, Alternative Solutions could be further developed and verified by an appropriately qualified BCA Consultant or Fire Safety Engineer.

 **Prepared by:** Adam Whitehouse for AE&D	 **Reviewed and Approved by:** Nathan Halstead C10 Accredited Fire Engineer No: BPB0161 for AE&D

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6.0 ATTACHMENT A - INSPECTION & MAINTENANCE

6.1 Fire Safety Measures

The fire safety measures within the building must be maintained to ensure correct operation at all times the building is occupied. All fire fighting equipment should be tagged when tested/inspected and log books kept up-to-date for all smoke detection, warning systems and sprinkler systems (where installed).

An annual fire safety certificate must be submitted to the local consent authority and the NSW Fire Brigade each year indicating satisfactory performance of the fire safety measures contained within the building. The annual fire safety statement should be displayed in a prominent place within the building (ie. the main entry foyer)

The correct operation and maintenance of the buildings fire safety measures is critical in affording an adequate level of fire safety.

6.2 Good Housekeeping

The ongoing management of the building should ensure good housekeeping procedures. The following matters should be considered by building management:

- Ensure exits and paths of travel to exits remain unobstructed (in particular stairways)
- Avoid storage of materials in unoccupied areas
- Limit storage of flammable/combustible materials to designated and approved areas
- Prevent chocking open fire/smoke doors
- Prevent storage of materials that could hinder access to fire fighting equipment

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3. TYPE A FIRE-RESISTING CONSTRUCTION

3.1 Fire-resistance of building elements

In a building *required* to be of Type A construction—

(a) 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; and

(b) *external walls*, *common walls* and the flooring and floor framing of lift pits must be *non-combustible*; and

(c) any *internal wall required* to have an FRL with respect to *integrity* and *insulation* must extend to—

(i) the underside of the floor next above; or

(ii) the underside of a roof complying with Table 3; or

(iii) 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; or

(iv) a ceiling that is immediately below the roof and has a *resistance to the incipient spread of fire* to the roof space between the ceiling and the roof of not less than 60 minutes; and

(d) a *loadbearing internal wall* and a *loadbearing fire wall* (including those that are part of a *loadbearing shaft*) must be of concrete or masonry; and

(e) a non-*loadbearing*—

(i) internal wall required to be fire-resisting; and

(ii) lift, ventilating, pipe, garbage, or similar *shaft* that is not for the discharge of hot products of combustion, must be of *non-combustible* construction; and

(f) 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*.

Table 3 TYPE A CONSTRUCTION: FRL OF BUILDING ELEMENTS

Building element	Class of building — FRL: (in minutes) *Structural adequacy/Integrity/Insulation*			
	2, 3 or 4 part	5, 7a or 9	6	7b or 8
EXTERNAL WALL (including any column and other building element incorporated therein) or other external building element, where the distance from any *fire-source feature* to which it is exposed is—				
For *loadbearing* parts—				
less than 1.5 m	90/ 90/ 90	120/120/120	180/180/180	240/240/240
1.5 to less than 3 m	90/ 60/ 60	120/ 90/ 90	180/180/120	240/240/180
3 m or more	90/ 60/ 30	120/ 60/ 30	180/120/ 90	240/180/ 90
For non-*loadbearing* parts—				
less than 1.5 m	–/ 90/ 90	–/120/120	–/180/180	–/240/240
1.5 to less than 3 m	–/ 60/ 60	–/ 90/ 90	–/180/120	–/240/180
3 m or more	–/–/–	–/–/–	–/–/–	–/–/–
EXTERNAL COLUMN not incorporated in an *external wall*—				
For *loadbearing* columns—	90/–/–	120/–/–	180/–/–	240/–/–
For non-*loadbearing* columns—	–/–/–	–/–/–	–/–/–	–/–/–
COMMON WALLS and FIRE WALLS—	90/ 90/ 90	120/120/120	180/180/180	240/240/240

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Table 3 TYPE A CONSTRUCTION: FRL OF BUILDING ELEMENTS— continued

Building element	Class of building — FRL: (in minutes) *Structural adequacy/Integrity/Insulation*			
	2, 3 or 4 part	5, 7a or 9	6	7b or 8
INTERNAL WALLS—				
Fire-resisting lift and stair *shafts*—				
Loadbearing	90/ 90/ 90	120/120/120	180/120/120	240/120/120
Non-*loadbearing*	- / 90/ 90	- /120/120	- /120/120	- /120/120
Bounding *public corridors*, public lobbies and the like—				
Loadbearing	90/ 90/ 90	120/ - / -	180/ - / -	240/ - / -
Non-*loadbearing*	- / 60/ 60	- / - / -	- / - / -	- / - / -
Between or bounding *sole-occupancy units*—				
Loadbearing	90/ 90/ 90	120/ - / -	180/ - / -	240/ - / -
Non-*loadbearing*	- / 60/ 60	- / - / -	- / - / -	- / - / -
Ventilating, pipe, garbage, and like *shafts* not used for the discharge of hot products of combustion—				
Loadbearing	90/ 90/ 90	120/ 90/ 90	180/120/120	240/120/120
Non-*loadbearing*	- / 90/ 90	- / 90/ 90	- /120/120	- /120/120
OTHER LOADBEARING INTERNAL WALLS, INTERNAL BEAMS, TRUSSES and COLUMNS—	90/ - / -	120/ - / -	180/ - / -	240/ - / -
FLOORS	90/ 90/ 90	120/120/120	180/180/180	240/240/240
ROOFS	90/ 60/ 30	120/ 60/ 30	180/ 60/ 30	240/ 90/ 60

3.2 Concessions for floors A floor need not comply with Table 3 if—

(a) it is laid directly on the ground; or

(b) in a Class 2, 3, 5 or 9 building, the space below is not a *storey*, does not accommodate motor vehicles, is not a storage or work area, and is not used for any other ancillary purpose; or

(c) it is a timber *stage* floor in a Class 9b building laid over a floor having the *required* FRL and the space below the *stage* is not used as a dressing room, store room, or the like; or

(d) it is within a *sole-occupancy unit* in a Class 2 or 3 building or Class 4 part; or

(e) it is an open-access floor (for the accommodation of electrical and electronic services and the like) above a floor with the *required* FRL.

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—

(a) the floor next above (including floor beams) may have an FRL of 90/90/90; or

(b) the roof, if that is next above (including roof beams) may have an FRL of 90/60/30.

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—

(a) the superimposed roof and any construction between it and the concrete slab roof are *non-combustible* throughout; and

(b) the concrete slab roof complies with Table 3.

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3.5 Roof: Concession

A roof need not comply with Table 3 if its covering is *non-combustible* and the building—

(a) has a sprinkler system complying with Specification E1.5 installed throughout; or

(b) has a *rise in storeys* of 3 or less; or

(c) is of Class2 or 3; or

(d) has an *effective height* of not more than 25 m 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.

3.6 Rooflights

If a roof is *required* to have an FRL or its covering is *required* to be *non-combustible*, rooflights or the like installed in that roof must—

(a) have an aggregate area of not more than 20% of the roof surface; and

(b) be not less than 3 m from—

(i) any boundary of the allotment other than the boundary with a road or public place; and

(ii) any part of the building which projects above the roof unless that part has the FRL *required* of a *fire wall* and any openings in that part of the wall for 6 m vertically above the rooflight or the like are protected in accordance with C3.4; and

(iii) any rooflight or the like in an adjoining *sole-occupancy unit* if the walls bounding the unit are *required* to have an FRL; and

(iv) any rooflight or the like in an adjoining fire-separated section of the building; and

(c) if a ceiling with a *resistance to the incipient spread of fire* is *required*, be installed in a way that will maintain the level of protection provided by the ceiling to the roof space.

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—

(a) in a Class 2 or 3 building: FRL 60/60/60; or

(b) in a Class 5, 6, 7, 8 or 9 building—

(i) with *rise in storeys* exceeding 3: FRL 60/60/60

(ii) with *rise in storeys* not exceeding 3: no FRL.

3.8 Open spectator stands and indoor sports stadiums: Concession

In an open spectator stand or indoor sports stadium, the following building elements need not have the FRL specified in Table 3:

(a) The roof if it is non-combustible.

(b) Columns and loadbearing walls supporting only the roof if they are noncombustible.

(c) Any non-loadbearing part of an external wall less than 3 m—

(i) from any fire-source feature to which it is exposed if it has an FRL of not less than –/60/60 and is non-combustible; or

(ii) from an external wall of another open spectator stand if it is non-combustible.

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3.9 Carparks

(a) Notwithstanding Clause 3.1, a carpark may comply with Table 3.9 if it is an opendeck carpark or is protected with a sprinkler system complying with Specification E1.5 and is—

(i) a separate building; or

(ii) a part of a building—

(A) which only occupies part of a storey, and is separated from the remaining part by a fire wall; or

(B) which is located above or below another classification, and the floor separating the classifications complies with C2.9; or

(C) which is located above another Class 7 part of the building not used for carparking, and the floor separating the parts complies with Table 3 for a Class 7 part other than a carpark; or

(D) which is located below another Class 7 part of the building not used for carparking, and the floor separating the parts complies with Table 3.9.

(b) For the purposes of this Clause, a carpark—

(i) includes—

(A) an administration area associated with the functioning of the carpark; and

(B) where the carpark is sprinklered, is associated with a Class 2 or 3 building and provides carparking for separate sole-occupancy units, each carparking area with an area not greater than 10% of its floor area for purposes ancillary to the sole-occupancy units; but

(ii) excludes—

(A) except for (b)(i), any area of another classification, or other part of a Class 7 building not used for carparking; and

(B) a building or part of a building specifically intended for the parking of trucks, buses, vans and the like.

Table 3.9 REQUIREMENTS FOR CARPARKS

Building element	**FRL (not less than) *Structural adequacy/Integrity/Insulation*** **ESA/M (not greater than)**
Wall	
(a) *external wall*	
(i) less than 3 m from a *fire-source feature* to which it is exposed:	
Loadbearing	60/60/60
Non-*loadbearing*	–/60/60
(ii) 3 m or more from a *fire-source feature* to which it is exposed	–/–/–
(b) *internal wall*	
(i) *loadbearing*, other than one supporting only the roof (not used for carparking)	60/–/–
(ii) supporting only the roof (not used for carparking)	–/–/–
(iii) non-*loadbearing*	–/–/–
(c) *fire wall*	
(i) from the direction used as a *carpark*	60/60/60
(ii) from the direction not used as a *carpark*	as *required* by **Table 3**

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Column		
(a)	supporting only the roof (not used for carparking) and 3 m or more from a *fire-source feature* to which it is exposed	–/–/–
(b)	steel column, other than one covered by (a) and one that does not support a part of a building that is not used as a *carpark*	60/–/– or 26 m^2/tonne
(c)	any other column not covered by (a) or (b)	60/–/–
Beam		
(a)	steel floor beam in continuous contact with a concrete floor slab	60/–/– or 30 m^2/tonne

Table 3.9 REQUIREMENTS FOR CARPARKS — continued

Building element		**FRL (not less than) *Structural adequacy/Integrity/Insulation*** **ESA/M (not greater than)**
(b)	any other beam	60/–/–
Fire-resisting lift and stair shaft (within the *carpark* only)		60/60/60
Floor slab and vehicle ramp		60/60/60
Roof (not used for carparking)		–/–/–
Notes:		
1.	ESA/M means the ratio of exposed surface area to mass per unit length.	
2.	Refer to **Specification E1.5** for special requirements for a sprinkler system in a *carpark* complying with Table 3.9 and located within a multi-classified building.	

3.10 Class 2 and 3 buildings: Concession

(a) A Class 2 or 3 building having a rise in storeys of not more than 3 need not comply with Clauses 3.1(b), (d) and (e) of Specification C1.1 and the requirement of C2.6 for non-combustible material, if it is constructed using—

(i) timber framing throughout; or

(ii) non-combustible material throughout; or

(iii) a combination of (i) and (ii), provided—

(iv) * * * * *

(v) any insulation installed in the cavity of a wall required to have an FRL is noncombustible; and

(vi) the building is fitted with an automatic smoke alarm system complying with Specification E2.2a.

(b) A Class 2 or 3 building having a rise in storeys of not more than 4 may have the top three storeys constructed in accordance with (a) provided—

(i) the lowest storey is used solely for the purpose of parking motor vehicles or for some other ancillary purpose; and

(ii) the lowest storey is constructed of concrete or masonry including the floor between it and the Class 2 or 3 part of the building above; and

(iii) the lowest storey and the storey above are separated by construction having an FRL of not less than 90/90/90 with no openings or penetrations that would reduce the fire-resisting performance of that construction except that a doorway in that construction may be protected by a –/60/30 self-closing fire door.

(c) In a Class 2 or 3 building complying with (a) or (b) and fitted with a sprinkler system complying with Specification E1.5, any FRL criterion prescribed in Table 3—

(i) for any floor and any loadbearing wall, may be reduced to 60, except any FRL criterion of 90 for an external wall must be maintained when tested from the outside; and

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(ii) for any non-loadbearing internal wall, need not apply if—

(A) it is lined on each side with 13 mm standard grade plasterboard or similar non-combustible material; and

(B) it extends—

(aa) to the underside of the floor next above; or

(bb) to the underside of a ceiling with a resistance to the incipient spread of fire of 60 minutes; or

(cc) to the underside of a non-combustible roof covering; and

(C) any insulation installed in the cavity of the wall is non-combustible; and

(D) any construction joint, space or the like between the top of the wall and the floor, ceiling or roof is smoke sealed with intumescent putty or other suitable material; and

(E) any doorway in the wall is protected by a self-closing, tight fitting, solid core door not less than 35 mm thick.

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