BUILDING CODE OF AUSTRALIA
COMPLIANCE ASSESSMENT REPORT

RESIDENTIAL APARTMENT BUILDING WITH ASSOCIATED BASEMENT CAR PARKING

1 – 7 ANDERSON AVENUE LIVERPOOL & 12 ALAMEIN AVENUE LIVERPOOL

DATE ► 13/11/2019

REPORT NO. ► PROJECT 9762 - REV 2.0(R)

PREPARED FOR ► BCL2 LIMITED

PREPARED BY ► AE&D

AEDGROUP

Innovation & expertise in building regulations

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1.0 EXECUTIVE SUMMARY AND RECOMMENDATIONS

This report provides a Building Code of Australia (BCA) 2019 assessment of a new residential apartment building with associated carparking, to be located at 1 – 7 Anderson Avenue, Liverpool & 12 Alamein Avenue, 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 is a list of Deemed-to-Satisfy Provisions that should be addressed either by design amendments, additional information **OR** by way of an Alternative Solution:

BCA Clause	Deemed-to-Satisfy Provision to be addressed
D1.7 Travel via Fire Isolated Stairs	**Preliminary plans identify that at the point of discharge from the fire isolated stairways (building A, building B & building C) necessitate passing within 6m of openings within the external walls when measured horizontally at right angles to the path of travel and plans do not identify how those opens are to be protected in accordance with Clause D1.7(c). Amended plans are to be provided demonstrating compliance at CC stage.**

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2.0 INTRODUCTION

This report provides a Building Code of Australia (BCA) 2019 assessment of a new residential apartment building with associated carparking, to be located at 1 – 9 Anderson Avenue, Liverpool & 12 Alamein Avenue, Liverpool.

This report provides a BCA assessment table in Section 3.0 that summarises the identified non-compliance matters and offers specific 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 C – "Fire Resistance", Section D – "Access & Egress", Section E – "Services & Equipment", Section F "Health and Amenity" and Section J "Energy Efficiency"

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

- Architectural plans prepared by Kennedy Associates Architects – Project 1846, Drawing Numbers:

Drawing Title	Drawing No.	Revision	Dated
COVER PAGE	DA 00A	A	11/11/19
PROPOSED SITE PLAN	DA 06A	A	11/11/19
PROPOSED LEVEL -02	DA 07A	A	11/11/19
PROPOSED LEVEL -01	DA 08A	A	11/11/19
PROPOSED LEVEL 00	DA 09A	A	11/11/19
PROPOSED LEVEL 01	DA 10A	A	11/11/19
PROPOSED LEVEL 02	DA 11A	A	11/11/19
PROPOSED LEVEL 03	DA 12A	A	11/11/19
PROPOSED LEVEL 04	DA 13A	A	11/11/19
PROPOSED ROOF LEVEL	DA 14A	A	11/11/19
ANDERSON AVENUE ELEVATION	DA 15A	A	11/11/19
ALAMEIN AVENUE ELEVATION	DA 16A	A	11/11/19
HILLIER STREET ELEVATION	DA 17A	A	11/11/19
NORTH ELEVATION	DA 18A	A	11/11/19
LONG SECTION A	DA 19A	A	11/11/19
CROSS SECTION B	DA 20A	A	11/11/19
CROSS SECTION C	DA 21A	A	11/11/19
CROSS SECTION D	DA 22A	A	11/11/19

- 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

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2.3 Limitations of the Report

This report does not assess the following:

- Access and facilities for people with disabilities is addressed however compliance with Disability Discrimination Act 1992 (DDA) is outside the scope of this report. It should be noted that BCA compliance does not necessarily meet the requirements of the Disability Discrimination Act (DDA).
- 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)
- Sections G, H or I of the BCA are not considered.
- 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 not been carried out
- This assessment excludes BCA clauses D3.0-3.12 (Inclusive), F2.4 and E3.6. Refer to separate access consultant's report.
- 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.

3.0 BCA ASSESSMENT DATA

The following data is provided in respect to review of the building under the Building Code of Australia 2019 in respect to the compliance assessment of a new residential apartment building with associated carparking, to be located at 1 – 9 Anderson Avenue, Liverpool & 12 Alamein Avenue, Liverpool.

BCA Building Classifications:	Class 2 – Residential Class 7a – Carpark Class 7b – Storage* (*note: A6.0(1) applies)
Building rise in storeys:	6 (determined in accordance with C1.2 of the BCA).
Type of Construction:	A (determined in accordance with C1.1 of the BCA)
General Floor area limitations:	Class 7a – 5000m^2 & 30000m^3
Effective Height (m):	RL28.9 – RL12.45 = 16.45m
Climate Zone (Thermal Design)	6 (determined in accordance with Table 2)

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3.1 Location of Fire Source features

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

In this instance the following setbacks are determined in respect to the fire source features applicable to the building

- North – Boundary to Residential
- South – Far side of road, formally known as Anderson Avenue
- East – Far side of road, formally known as Hillier Road
- West – Far side of road, formally known as Alamein Avenue

3.2 Summary of Fire Services Required

Summarised below are also the likely fire services required for the building:

- Fire hydrants are required to serve the building and be provided in accordance with BCA E1.3 and AS 2419.1-2005.
- A fire hose reel system complying with BCA E1.4 and AS 2441-2005 must be provided to serve the basement carpark only.
- Portable fire extinguishers complying with BCA E1.6 and AS2444-2001 must be provided within the residential common areas.
- Automatic smoke and fire detection provided throughout the Class 2 parts of the building in accordance with Part E2, BCA Specification E2.2a and AS/NZS 1670.1-2018, including common areas, stairways and within the units.
- An emergency lighting system must be installed throughout the basement carpark in accordance with BCA E4.2 of the BCA and AS 2293.1-2018.
- Exit signs must be installed throughout the basement carpark in accordance with BCA E4.5 and AS 2293.1-2018.
- Mechanical ventilation to the basement carpark in accordance with BCA Table E2.2a and AS 1668.1-2015 and AS 1668.2-2012
- Sprinkler system throughout the building in accordance with BCA E1.5 and AS2118.1-2017.

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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
SPECIFICATION A1.1 FIRE PROTECTED TIMBER					
Specification A1.1 has been introduced to allow fire-protective timber construction utilising a non-combustible fire protective covering for buildings not exceeding 25m which are sprinkler protected.					
2.1 General requirements			X		Requirements for fire protected timber
2.2 Massive Timber			X		Requirements for fire protected timber, where the timber is massive timber being an element not less than 75mm thick in each direction formed from chemically bonded laminated timber and includes- ❖ Cross Laminated timber (CLT) ❖ Laminated veneer lumber (LVL) ❖ Glue laminate timber (Glulam)
SECTION B STRUCTURE					
Part B1: Structural Provisions				X	❖ Structural engineer to provide structural drawings/details and accompanying structural design certificate to demonstrate that all building elements will comply with Section B of the BCA. ❖ Glazing must comply with AS1288-2006 and AS2047-2014. ❖ Termite control must comply with AS3660.1-2000 where any primary building elements are timber. ❖ If the building is in a flood hazard area it is required to comply with BCA clause B1.6. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification (and structural details)***
SECTION C FIRE RESISTANCE					
Part C1 - Fire Resistance & Stability					
C1.1 Type of Construction Required				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 wall or 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

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BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
					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. 3. External walls, common walls and the flooring and floor framing of lift pits must be non- combustible construction. 4. 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. 5. The walls to fire rated shafts must achieve the fire rating from both directions i.e. from inside and outside the shaft. 6. Roof: The roof of the building does not need an FRL, provided the roof covering is non-combustible (as per the concession in Clause 3.5 of Specification C1.1 of the BCA). 7. Bounding construction to residential units must comply with the fire rating requirements of table 3. 8. Floors: see clause C2.9. In addition floors require an FRL of 90/90/90 where between residential levels. *Note – Concessions under Specification E1.5a (sprinklered building) for Class 2 & 3 buildings with an effective height of not more than 25m with a rise in storeys of 4 or more.* ❖ *FRL's for non-loadbearing internal walls may be reduced to -/45/45 where a AS2118.1 or AS2118.4 sprinkler system installed.* ❖ *FRL's for non-loadbearing fire resisting lift and stair shafts may be reduced to -/60/15 where FPAA101D & FPAA101H sprinkler system* ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification (and structural details)***
C1.2 Calculation of Rise In Storeys			X		Refer to Section 2.0 of this report for further details
C1.3 Buildings of Multiple Classifications			X		In a building of multiple classifications, the type of construction required for the building is the most fire resisting Type resulting from the application of Table C1.1 on the basis that the classification applying to the top storey applies to all storeys.

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					Separate requirements apply to a Class 4 building.
C1.4 Mixed Types of Construction			X		A building may be of mixed Types of construction where it is separated in accordance with C2.7 and the type of construction is determined in accordance with C1.1 or C1.3.
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 building elements				X	(a) In a building *required* to be of Type A construction, the following building elements and their components must be *non-combustible*: (i) ***External walls* and *common walls*, including all components incorporated in them including the facade covering, framing and insulation**. (ii) The flooring and floor framing of lift pits. (iii) Non-*loadbearing internal walls* where they are *required* to be *fire-resisting*. (b) A shaft, being a lift, ventilating, pipe, garbage, or similar shaft that is not for the discharge of hot products of combustion, that is non-loadbearing, must be of non-combustible construction in— (i) a building *required* to be of Type A construction. (c) A *loadbearing internal wall* and a *loadbearing fire wall*, including those that are part of a *loadbearing shaft*, must comply with **Specification C1.1**. (d) The requirements of **(a)** and **(b)** do not apply to gaskets, caulking, sealants, termite management systems, glass including laminated glass, thermal

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BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
					breaks associated with glazing systems, damp-proof courses. (e) The following materials may be used wherever a *non-combustible* material is *required*: (i) Plasterboard. (ii) Perforated gypsum lath with a normal paper finish. (iii) Fibrous-plaster sheet. (iv) Fibre-reinforced cement sheeting. (v) Pre-finished metal sheeting having a *combustible* surface finish not exceeding 1 mm thickness and where the *Spread-of-Flame Index* of the product is not greater than 0. (vi) Sarking type materials that do not exceed 1mm in thickness and have a Flammability Index not greater than 5. (vii) Bonded laminated materials where— (A) each lamina, including any core, is *non-combustible*; and (B) each adhesive layer does not exceed 1 mm in thickness and the total thickness of the adhesive layers does not exceed 2mm; and (C) the *Spread-of-Flame Index* and the *Smoke-Developed Index* of the bonded laminated material as a whole do not exceed 0 and 3 respectively. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
C1.10 Fire Hazard Properties				X	(a) The fire hazard properties of the following internal linings, materials and assemblies must comply with Specification C1.10 by way of test reports / certificates provided from a *registered testing authority* (within the meaning of the BCA): (i) Floor linings and floor coverings. (ii) Wall linings and ceiling linings. (iii) Air-handling ductwork. (iv) Lift cars. (v) Escalators, moving walkways and non required non fire isolated stairways or pedestrian ramps subject to Specification D1.12. (vi) Sarking type materials.

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BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
					(vii) Attachments to floors, ceilings, internal walls and the internal linings of external walls. (viii) Other materials including insulation materials other than sarking type materials. (a) NSW: Paint or fire -retardant coatings must not be used in order to make a material comply with the required fire hazard property, except in respect to a material referred to in NSW Specifications C1.10, NSW Table 4 and to which Notes 4 and 5 are applicable. (b) The requirement s of (a) do not apply to a material or assembly if it is – (i) plaster, cement render, concrete, terrazzo, ceramic tile or the like; or (ii) a fire protective covering; or (iii) a timber framed window; or (iv) a solid timber handrail or skirting; or (v) a timber-faced door; or (vi) an electrical switch, socket-outlet, cover plate or the like; or (vii) a material used – (A) a roof insulating material applied in continuous contact with a substrate; or (B) an adhesive; or (C) a damp-proof course, flashing, caulking, sealing, ground moisture barrier or the like; or (viii) a paint, varnish, lacquer or similar finish, other than nitro-cellulose lacquer; or (ix) a clear or translucent roof light of glass fibre-reinforced polyester if – (A) the roof in which is is installed forms part of a single storey building required to be Type C construction; and (B) the material is used as part of the roof covering; and (C) it is no closer than 1.5m from another roof light of the same type; and (D) each roof light is not more than 14m² in area; and (E) the area of the roof lights per 70m² of roof surface is not more than 14m² in area; or (x) a face plate or neck adaptor of supply and return air outlets of an air handling system; or

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					(xi) a face plate or diffuser plate of light fitting and emergency exit signs and associated electrical wiring and electrical components; or (xii) a joinery unit, cupboard, shelving or the like; or (xiii) NSW: an attached non-building fixture and fitting such as – (A) A curtain, blind, or similar décor, other than- (aa) a proscenium curtain required by Specification H1.3; or. (bb) in a Class 9b building used as an entertainment venue, a material that is regulated under NSW Table 4; and (B) A whiteboard, window treatment or the like; or (xiv) Timber treads, risers, landings and associated supporting framework installed in accordance with D2.25 where the Spread-of-Flame Index and the Smoke-Developed Index of the timber does not exceed 9 and respectively; or (xv) Any other material that does not significantly increase the hazards of the fire. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
C1.11 Performance of External Walls in Fire			X		Concrete external walls that could collapse as complete panels (e.g. tilt-up and pre-cast concrete), in a building having a rise in storeys of not more than 2, must comply with Specification C1.11.
C1.13 Fire protected timber: concession			X		Not applicable

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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 grill not more than 2m² in an 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 – (1) Achieves a group number 1 or 2; and (2) Does not extend beyond one storey; and (3) Does not extend beyond one fire compartment; and (4) Is separated vertically from other signs permitted under (h) by at least 2 storeys. (i) An awning, sunshade, canopy , blind or shading hood other than one provided under (a) that – (1) Meets the requirements of Table 4 of Specification C1.10 as an internal element; and (2) Serves a storey - (A) At ground level; or (B) Immediately above a storey at ground level ; and (3) Does not serve an exit, where it would render the exit unusable in a fire. (j) A part of a security, intercom or announcement system. (k) Wiring. (l) A paint, lacquer or similar finish, (m) A gasket, caulking, sealant or adhesive directly associated with (a) to (k). ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***

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Part C2 - Compartmentation & Separation					
C2.1 Application of Part			X		C2.2, C2.3 and C2.4 do not apply to a carpark provided with a sprinkler system (other than a FPAA101D or FPAA101H system complying with Specification E1.5, an open-deck carpark or an open spectator stand.
C2.2 General Floor Area & Volume Limitations	X				The size of any fire compartment or atrium in a Class 5, 6, 7, 8 or 9 building must not exceed the relevant maximum floor area and maximum volume set out in Table C2.2 & C2.5, except as permitted in C2.3. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
C2.6 Vertical Separation of openings in external walls				X	(a) In a building of Type A construction, any part of a window or other opening in an external wall is above another opening in the storey next below and its vertical projection falls no further than 450mm outside the lower opening (measured horizonally), the openings must be separated by – (i) A spandrel which – (A) Is not less than 900mm in height; and (B) Extends not less than 600mm above the upper surface of the intervening floor; and (C) Is of non combustible material having an FRL on not less 60/60/60; or (ii) Part of a curtain wall or panel wall that complies with (i); or (iii) Construction that complies with (i) behind a curtain wall and has any gaps packed with non-combustible material that will withstand thermal expansion and structural movement of the walling without the loss of seal against fire and smoke; or (iv) A slab or other horizontal construction that – (A) Projects outwards from the external face of the wall not less than 1100mm; and (B) Extends along the wall not less than 450mm beyond the openings concerned; and (C) Is non-combustible and has an FRL of not less than 60/60/60. **Design Requirements:** **Confirmation from the Architect identified that the building is to be sprinkler protected, however in the likely event where AS2118.1-2017 is not provided and where a FPAA101D or FPAA101H sprinkler system is provided the following applies. Preliminary plans identify external walls with windows above another opening in the next storey below and it's not provided with an appropriate spandrel or slab or other horizontal construction where required by this clause. Clarification should be provided at CC stage**

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					to determine the type of sprinkler system to ensure compliance with this Clause. Anderson Avenue Elevation  North Elevation  (b) The requirements of (a) do not apply to – (i) An open-deck carpark ;or (ii) A building which has a sprinkler system (other than a FPAA101D or FPAA101H system) complying with Specification E1.5 installed throughout; or (iii) Openings within the same stairway; or (iv) Openings in external walls where the floor separating the storeys does not require an FRL with respect to integrity and insulation. (c) For the purposes of C2.6, window or other opening means that part of the external wall of a building that does not have an FRL of 60/60/60 or greater. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
C2.7 Separation by Fire Walls			X		Not applicable
C2.8 Separation of Classifications in the same storey				X	In a building containing different classifications located alongside one other in the same storey - (a) each building element in that storey must have the higher FRL prescribed in Specification C1.1 for that element for the classifications concerned; or (b) the parts must be separated in that storey by a fire wall having – (i) the higher FRL prescribed in Table 3; or (ii) the FRL prescribed in Table 5, Specification C1.1, for that element for the Type of construction and classification concerned; or (c) where one part is a carpark complying with Table 3.9 of Specification C1.1, the parts may be

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					separated by a fire wall complying with the appropriate table. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
C2.9 Separation of Classifications in different storeys				X	If parts of different classification are situated one above the other in adjoining storeys they must be separated as follows – (a) Type A construction - the floor between the adjoining parts must have an FRL of not less than that prescribed in Specification C1.1 for the classification of the lower storey. **BCA Class** / **FRL *(Table 3 of Spec C1.1)*** Class 2 – 90/90/90 Class 7a – 120/120/120 **Alternatively, the FRLs required above may be addressed (subject to fire engineer's confirmation) under a performance-based solution prepared by a suitably qualified fire safety engineer at CC stage.** ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
C2.10 Separation of lifts shafts				X	(a) Any lift connecting more than 2 storeys, or more than 3 storeys where the building is sprinkler protected must be separated from the remainder of the building by enclosure in a shaft in which – (i) For Type A construction – the walls have the FRL prescribed by Specification C1.1. (b) An emergency lift must be contained within a fire resisting shaft having an FRL not less than 120/120/120. (c) 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				Complies
C2.12 Separation of Equipment				X	(a) Equipment other than that described in (b) and (c) must be separated from the remainder of the building with construction complying with (d), if that equipment comprises – (i) lift motors and lift control panels or

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					(ii) Emergency generators used to sustain emergency equipment operating in the emergency mode; or (iii) Central smoke control plant; or (iv) Boilers; or (v) A battery system installed in that building that has a total voltage of 12 volts or more and a storage capacity of 200kWh or more. (b) Equipment need not be separated in accordance with (a) if the equipment comprises- (i) Smoke control exhaust fans located in the air stream which are constructed for high temperature operation in accordance with Specification E2.2b; or (ii) Stair pressurizing equipment installed in compliance with AS 1668.1; or (iii) A lift installation without a machine room; or (iv) Equipment otherwise adequately separated from the remainder of the building. (c) Separation of onsite fire pumps must comply with the requirements of AS2419.1. (d) Separating construction must have – (i) Except as provided by (ii) – (A) An FRL is required by Specification C1.1, but not less than 120/120/120; and (B) Any doorway protected with a -/120/30 self-closing fire door; or (ii) When separating a lift shaft and lift motor room, an FRL not less than 120/-/-. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification.***
C2.13 Electrical Supply				X	(a) An electricity sub-station must be separated from the building in accordance with the Energy Authority Requirements (i.e. Ausgrid). (b) A main switchboard located within the building (and which sustains emergency equipment operating in the emergency mode) must – (i) be separated from any other part of the building by construction having an FRL of not less than 120/120/120; and (ii) have any doorway in that construction protected with a self-closing fire door having an FRL of not less than –/120/30. (c) Electrical conductors located within the building that supply –

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					(i) a substation located within the building which supplies a main switchboard covered by (b); or (ii) a main switchboard covered by (b), 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 (d) where emergency equipment is required in a building, all switchboards in the electrical installation, which sustain the electricity supply to the emergency equipment, must be constructed so that emergency equipment switchgear is separated from non-emergency equipment switchgear by metal partitions designed to minimise the spread of a fault from the non-emergency equipment switchgear. (e) For the purposes of (d), emergency equipment includes but it is not limited to – (i) Fire hydrant booster pumps (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) Emergency warning and intercom systems (EWIS). ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
C2.14 Public corridors in Class 2 Buildings	X				Complies
Part C3 - Protection of Openings					
C3.1 Application of Part			X		(a) The DTS provisions of this Part do not apply to- (i) Control joints, weep holes and the like in external walls of masonry construction and

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

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					(b) if required to be protected under (a), not occupy more than 1/3 of the area of the external wall of the storey in which it is located unless they are in a Class 9b building used as an open spectator stand. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
C3.3 Separation of external walls and associated openings in different fire compartments			X		Not applicable
C3.4 Acceptable Methods of Protection			X		(a) Where protection is required to doorways and windows and other openings they must be protected as follows: (i) Doorways ❖ Internal or external wall wetting sprinklers as appropriate used with doors that are self-closing or automatic closing; or ❖ -/60/30 fire doors that are self-closing or automatic closing (ii) Windows ❖ Internal or external wall wetting sprinklers as appropriate used with windows that are automatic closing or permanently fixed in the closed position or; ❖ -/60- fire windows that are automatic closing or permanently fixed in the closed position or ❖ -/60- automatic closing fire shutters. (iii) Other openings – ❖ Excluding voids – internal or external wall wetting sprinklers as appropriate or ❖ Construction having a FRL not less than -/60/-. (b) Fire doors, fire windows and fire shutters must comply with Specification C3.4.
C3.5 Doorways in Fire Walls			X		Not applicable
C3.6 Sliding Fire Doors			X		Not applicable
C3.7 Protection of Doorways in horizontal exits			X		Not applicable
C3.8				X	(a) Doorways that open into fire-isolated stairways, fire-isolated passageways or fire isolated ramps,

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Openings in fire isolated exits					and are not doorways opening to a road or open space, must be protected by -/60/30 fire doors that are self-closing, or automatic closing in accordance with (b) and (c). (i) The automatic-closing operation must be initiated by the activation of a smoke detector, or any other detector deemed suitable in accordance with AS1670.1 if smoke detectors are unsuitable in the atmosphere, installed in accordance with AS1670.1 and located on each side of the fire wall not more than 1.5m horizontal distance from the approach side of the doorway. (ii) Where any other required suitable fire alarm system, including a sprinkler system (other than a FPAA101D) complying with Specification E1.5, is installed in the building, activation of the system in either fire compartment separated by the fire wall must also initiate the automatic closing operation. (b) A window in an external wall of a fire isolated stairway, fire isolated passageway or fire isolated ramp must be protected in accordance with C3.4 if it is within 6m of, and exposed to, a window or other opening in a wall of the same building, other than in the same fire-isolated enclosure. *Note – Concessions under Specification E1.5a (sprinklered building) for Class 2 & 3 buildings with an effective height of not more than 25m with a rise in storeys of 4 or more.* ❖ *FRL's to fire doors reduced to -/30/30 where a AS2118.1 or AS2118.4 sprinkler system installed.* ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
C3.9 Service Penetrations in fire-isolated exits				X	Fire-isolated exits must not be penetrated by any services **other** than – (a) electrical wiring permitted by D2.7(e) to be installed in the exit; or (b) ducting associated with a pressurisation system if it – (i) is constructed of material having an FRL of not less than -/120/60 where it passes through any other part of the building; and (ii) Does not open into any other part of the building; or (c) Water supply pipes for fire services. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***

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C3.10 Openings in Fire isolated lift shafts				X	(a) Doorways – if a lift shaft is required to be fire isolated, an entrance doorway to that shaft must be protected by -/60/- fire doors that- (i) comply with AS 1735.11, and (ii) are set to remain closed except when discharging or receiving, passengers, goods or vehicles. (b) Lift indicator panels – A lift call panel, indicator panel or other panel in the wall of a fire-isolated lift shaft must be backed by construction having an FRL of not less than -/60/60 if it exceeds 35,000mm² in area. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
C3.11 Bounding Construction				X	The doorways between sole occupancy units and the public lobbies and any common rooms and the public lobbies (class 2 parts) must be protected by self or automatic closing -/60/30 fire doors (for Type A construction). *Note – Concessions under Specification E1.5a (sprinklered building) for Class 2 buildings with an effective height of not more than 25m with a rise in storeys of 4 or more.* ❖ *FRL's to fire doors reduced to -/30/30 where a AS2118.1 or AS2118.4 sprinkler system installed.* ***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 Openings in Shafts				X	In a building of Type A construction, an opening in a wall providing access to a ventilating, pipe, garbage or other service shaft must be fire protected in accordance with this clause. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
C3.15 Openings for Service Installations				X	Where services pass through an element which is required to achieve a FRL (other than an external wall or roof), the service must be fire stopped by a tested system or Specification C3.15. *Note – Concessions under Specification E1.5a (sprinklered building) for Class 2 buildings with an effective height of not more than 25m with a rise in storeys of 4 or more.*

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					❖ *service penetrations through internal non loadbearing and shafts may be reduced to -/45/15/ where a AS2118.1 or AS2118.4 sprinkler system installed.* ❖ *service penetrations through non-loadbearing internal walls and shafts may be reduced to -/60/15 where FPAA101D & FPAA101H sprinkler system installed.* ***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 to achieve the required FRL. The requirements above do not apply where joints, spaces and the like between fire protected timber elements are provided with cavity barriers in accordance with Specification C1.13. ***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 protected by lightweight construction to achieve an FRL which passes through a building element that is required to have an FRL or a resistance to the incipient spread of fire, must be installed using a method and materials identical with a prototype assembly of construction which has achieved the required FRL or resistance to the incipient spread of fire. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
SECTION D ACCESS & EGRESS					
Part D1 - Provision for Escape					
D1.1 Application of Part			X		The DTS provisions of this Part do not apply to the internal parts of a sole occupancy unit in a Class 2 building.
D1.2 Number of Exits required				X	Plans notate compliance is readily achievable. (a) **All buildings** — Every building must have at least one exit from each storey. (b) **Class 2 to 8 buildings** — In addition to any horizontal exit, not less than 2 exits must be provided from the following: (i) Each storey if the building has an effective height of more than 25 m.

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					(c) **Access to exits** — Without passing through another sole-occupancy unit every occupant of a storey or part of a storey must have access to— (i) an exit; or (ii) at least 2 exits, if 2 or more exits are required. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
D1.3 When Fire Isolated exits are required				X	Design Requirements: (d) **Class 2 buildings** — Every stairway or ramp serving as a required exit must be fire-isolated unless it connects, passes through or passes by not more than— (iii) 3 consecutive storeys in a Class 2 building; (iv) or 2 consecutive storeys in a Class 3 building, and one extra storey of any classification may be included if— (v) it is only for the accommodation of motor vehicles or for other ancillary purposes; or (vi) the building has a sprinkler system (other than a FPAA101D system) complying with Specification E1.5 installed throughout; or (vii) the required exit does not provide access to or egress for, and is separated from, the extra storey by construction having— (A) an FRL of –/60/60, if non-loadbearing; & (B) an FRL of 90/90/90, if loadbearing; & (C) no opening that could permit the passage of fire or smoke.
				X	Design Requirements: (b) **Class 7 buildings** — Every stairway or ramp serving as a required exit must be fire-isolated unless— (viii) in any other case, it connects, passes through or passes by not more than 2 consecutive storeys and one extra storey of any classification may be included if— (D) the building has a sprinkler system (other than a FPAA101D system) complying with Specification E1.5 installed throughout; or (E) the required exit does not provide access to or egress for, and is separated from, the extra storey by construction having— (bb)an FRL of –/60/60, if non-loadbearing; and

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					(cc) an FRL of 90/90/90 for Type A construction or 60/60/60 for Type B or C construction, if loadbearing; and (dd) no opening that could permit the passage of fire or smoke. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
D1.4 Exit Travel Distances	X			X	**Preliminary plans indicate that the building will be required to be sprinkler protected according the sprinkler concessions apply.** <u>Design Requirements:</u> (a) Class 2 buildings— (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 *Note – except in a residential care building, the maximum distance of travel, may be increased from 6m to 12m under Specification E1.5a (AS 2118.1, AS 2118.4, FPAA101D or FPAA101H sprinkler system) in buildings with an effective height of not more than 25m with rise in storeys of 4 or more.* (B) 20 m from a single exit serving the storey at the level of egress to a road or open space; and *Note – the maximum distance of travel from a single exit serving the storey at the level of egress to the road or open space may be increased from 20m to 30m under Specification E1.5a (AS2118.1, AS2118.4, FPAA101D or FPAA101H sprinkler system) in buildings with an effective height of not more than 25m with rise in storeys of 4 or more.* (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. <u>Design Requirements;</u> (b) **Class 7 buildings** — (i) no point on a floor must be more than 20 m from an exit, or a point from which travel in different directions to 2 exits is available, in which case the maximum distance to one of those exits must not exceed 40 m. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***

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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 2 or 3 building — 45 m apart; or *Note – the maximum distance between alternative exits may be increased from 45m to 60m under Specification E1.5a (AS 2188.1, AS2118.4, FPAA101D or FPAA101H sprinkler system) in buildings with an effective height of not more than 25m with rise in storeys of 4 or more.* (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 X	**Plans identify storage cages to be located on the basement levels that maintain circa 500mm where a 1m width minimum should be provided. Amended plans are to be provided at CC stage demonstrating compliance.** *Note: doors should also be notated on plans.* Design Requirements: In a required exit or path of travel to an exit— (a) the unobstructed height throughout must be not less than 2 m, except the unobstructed height of any doorway may be reduced to not less than 1980 mm; and (i) the unobstructed width of each exit or path of travel to an exit, except for doorways, must be not less than—1 m. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
D1.7 Travel via Fire Isolated Stairs	X				Design Requirements: (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

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					(iii) a sanitary compartment, airlock or the like. Design Requirements: (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) 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:** **Preliminary plans identify that at the point of discharge from the fire isolated stairways (building A, building B & building C) necessitate passing within 6m of openings within the external walls when measured horizontally at right angles to the path of travel and plans do not identify how those opens are to be protected in accordance with Clause D1.7(c). Amended plans are to be provided demonstrating compliance at CC stage.** Design Requirements: (c) Where a path of travel from the point of discharge of a fire-isolated exit necessitates passing within 6 m of any part of an external wall of the same building, measured horizontally at right angles to the path of travel, that part of the wall must have— (i) an FRL of not less than 60/60/60; and (ii) any openings protected internally in accordance with C3.4, for a distance of 3 m above or below, as appropriate, the level of the path of travel, or

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					for the height of the wall, whichever is the lesser. (d) If more than 2 access doorways, not from a sanitary compartment or the like, open to a required fire-isolated exit in the same storey— (i) a smoke lobby in accordance with D2.6 must be provided; or (ii) the exit must be pressurised in accordance with AS/NZS 1668.1. (e) A ramp must be provided at any change in level less than 600 mm in a fire-isolated passageway in a Class 9 building. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
D1.8 External Stairways or ramps in lieu of Fire Isolated Stairs			X		Not applicable
D1.9 Travel by non-fire-isolated stairs			X		Not applicable.
D1.10 Discharge from Exits				X	(a) An exit must not be blocked at the point of discharge and where necessary, suitable barriers must be provided to prevent vehicles from blocking the exit, or access to it. (b) If a required exit leads to an open space, the path of travel to the road must have an unobstructed width throughout of not less than— (i) the minimum width of the required exit; (ii) or 1 m. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
D1.11 Horizontal Exits			X		Not applicable
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		For the purpose of the Deemed-to-Satisfy provisions, the number of persons accommodated in a storey, room or mezzanine must be determined with consideration to the purpose for which it is used and the layout of the floor area by— (a) calculating the sum of the numbers obtained by dividing the floor area of each part of the storey by the number of square metres per person listed in

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					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 (b) reference to the seating capacity in an assembly building or room; or (c) any other suitable means of assessing its capacity. *Refer NSW Table D1.13 to calculate area per person according to use.* ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
D1.14 Measurement of Distances			X		The nearest part of an exit means in the case of— (a) a fire-isolated stairway, fire-isolated passageway, or fire-isolated ramp, the nearest part of the doorway providing access to them; and (b) a non-fire-isolated stairway, the nearest part of the nearest riser; and (c) a non-fire-isolated ramp, the nearest part of the junction of the floor of the ramp and the floor of the storey; and (d) a doorway opening to a road or open space, the nearest part of the doorway; and (e) a horizontal exit, the nearest part of the doorway. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
D1.15 Method of Measurement			X		The following rules apply: (a) In the case of a room that is not a sole occupancy unit in a Class 2 or 3 building or Class 4 part of a building, the distance includes the straight-line measurement from any point of the floor of the room to the nearest part of the doorway leading from it, together with the distance from the part of the doorway to the single required exit or point from which travel in different directions to 2 required exits is available. (b) Subject to (d), the distance from the doorway of a sole occupancy unit in a Class 2 or 3 building is measured in a straight line to the nearest part of the required single exit or point from which travel in different directions to 2 required exits is available. (c) Subject to (d), the distance between exits is measured in a straight line between the nearest parts of those exits.

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					(d) Only the shortest distance is taken along a corridor, hallway, external balcony or other path of travel that curves or changes direction. (e) If more than one corridor, hallway, or other internal path of travel connects required exits, for the purposes of D1.5(c) the measurement is along the path of travel through the point at which travel in different directions to those exits is available, as determined in accordance with D1.4. (f) If a wall (including a demountable internal wall) that does not bound – (i) A room; or (ii) A corridor, hallway or the like, causes a change in direction in proceeding to a required exit, the distance is measured along the path of travel past the wall. (iii) If permanent fixed seating is provided, the distance is measured along the path of travel between the rows of seats. (iv) In the case of a non-fire isolated stairway or non-fire isolated ramp, the distance is measured along a line connecting the nosing's of the treads, along the slope of the ramp, together with the distance connecting those lines across any intermediate landing.
D1.16 Plant Rooms and lift Motor Rooms: Concession			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

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					(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 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:

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					"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 2 sole-occupancy units.
D2.2 Fire-Isolated stairways and ramps				X	A stairway or ramp (including any landings) that is required to be in a fire resisting shaft must be constructed – (a) Of non-combustible materials; and (b) So that if there is local failure it will not cause structural damage to or impair the fire resistance of the shaft. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification (and structural details)***
D2.3 Non-fire Isolated stairways and ramps			X		Not applicable
D2.4 Separation of Rising and Descending Stairs				X	If a stairway serving as a required exit is required to be fire isolated – (a) There must be no direct connection between – (i) A flight rising from a storey below the lowest level of access to a road or open space; and (ii) A flight descending from a storey above that level ; and (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. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
D2.5 Open Access ramps and balconies			X		Open access ramps or balconies provided to meet the smoke hazard management requirements of Table E2.2a must have ventilation openings that satisfy the requirements of this clause.

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					Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification
D2.6 Smoke Lobbies			X		Not applicable – Plans do not identify smoke lobbies.
D2.7 Installations in Exits and Paths of Travel				X	(a) 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. (b) An opening to any chute or duct intended to convey hot products of combustion from a boiler, incinerator, fireplace or the like must not be located in any part of a required exit or any corridor, hallway, lobby or the like leading to a required exit. (c) Gas or other fuel services must not be installed in a required exit (d) Services or equipment comprising – (i) Electricity meters, distribution boards or cuts; or (ii) Central telecommunications distribution boards or equipment; or (iii) Electrical motors or other motors service equipment in the building, May be installed in – (iv) A required exit, except for fire-isolated exits specified in (a); or (v) In any corridor, hallway, lobby or the like leading to a required exit, If the services or equipment are enclosed by non-combustible construction or a fire-protective covering with doorways or openings suitably sealed against smoke spreading from the enclosure (e) Electrical wiring may be installed in a fire-isolated exit if the wiring is associated with; (i) A lighting, detection, or pressurization system serving the exit; or (ii) A security, surveillance or management system serving the exit; or (iii) An intercommunication system or an audible or visual alarm system in accordance with D2.22; or (iv) The monitoring of hydrant or sprinkler isolating valves.

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					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 the fire-isolated stairways within a shaft must not be enclosed to form a cupboard or similar enclosed space. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
D2.9 Width of Stairs			X		A required stairway or ramp that exceeds 2 m in width is counted as having a width of only 2 m unless it is divided by a handrail, balustrade or other barrier continuous between landings and each division has a width of not more than 2 m. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
D2.10 Pedestrian Ramps				X	(a) A fire isolated ramp may be substituted for a fire isolated stairway if the construction enclosing the ramp and the width and ceiling height comply with the requirements for a fire isolated stairway. (b) A ramp serving as a required exit must – (i) Where the ramp is also serving as an accessible ramp under Part D3, be in accordance with AS1428.1; or (ii) In any other case, have a gradient not steeper than 1:8. (c) The floor surface of a ramp must have a slip-resistance classification not less than that listed in Table D2.14 when tested in accordance with AS4586. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
D2.11 Fire-Isolated Passageways			X		(a) The enclosing construction of a fire isolated passageway must have an FRL when tested for a fire outside the passageway in another part of the building of – (i) If the passageway discharges from a fire isolated stairway or ramp – not less than that required for the stairway or ramp shaft; or (ii) In any other case – not less than 60/60/60. (b) Notwithstanding (a)(ii), the top of construction of a fire isolated passageway need not have an FRL if the walls of the fire rated passageway extend to the underside of – (i) A non-combustible roof covering; or (ii) A ceiling having a resistance to the incipient spread of fire of not less than 60 minutes

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					separating the roof space or ceiling space in all areas surrounding the passageway within the fire compartment. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
D2.12 Roof as Open Space		X			If an exit discharges to the roof of a building the roof must – (a) Have an FRL not less than 120/120/120; and (b) Not have any roof lights or other openings with 3m of the path of travel of persons using the exit to reach a road of open space. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
D2.13 Goings & Risers				X	Stairways to achieve compliance with this clause relevant to going and riser dimensions. Stairways to achieve constant risers & goings except where minor variations are permitted over flight as detailed in the clause. Treads must have a surface with a slip-resistant classification not less than that listed in Table D2.14 when tested in accordance with AS4586. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
D2.14 Landings				X	In a stairway (a) Landings having a maximum gradient of 1:50 may be used in any building to limit the number of risers in each flight and each landing must – (i) Be not less than 750 mm long, and where this involves a change in direction, the length is measured 500 mm from the inside edge of the landing; and (ii) Have – (A) A surface with a slip-resistance classification not less than that listed in Table D2.14 when tested in accordance with AS4586; or (B) A strip at the edge of the landing with a slip-resistance classification not less than that listed in Table D2.14 when tested in accordance with AS4586, where the edge leads to a flight below; and ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***

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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. In other cases if the doorway opens to a road or open space, external stair landing or external balcony; and the door sill is not more than 190mm above the finished surface of the ground, balcony or the like, to which the doorway opens. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
D2.16 Balustrades and other Barriers Note NSW D2.16				X	A continuous barrier (balustrade) must be provided to a roof to which general access is provided, stairs and balconies, driveway ramps etc. where there is a fall of more than 1m. Balustrade construction to comply with Table D2.16a. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
D2.17 Handrails				X	(a) Except for handrails referred to in D2.18, handrails must be— (i) located along at least one side of the ramp or flight; and (ii) located along each side if the total width of the stairway or ramp is 2 m or more; and (b) Handrails required to assist people with a disability must be provided in accordance with D3.3. (c) Handrails to a stairway or ramp within a sole-occupancy unit in a Class 2 or 3 building or Class 4 part of a building must— (i) be located along at least one side of the flight or ramp; and (ii) be located along the full length of the flight or ramp, except in the case where a handrail is associated with a barrier, the handrail may terminate where the barrier terminates; and (iii) have the top surface of the handrail not less than 865 mm vertically above the nosings of the stair treads or the floor surface of the ramp; and (iv) have no obstruction on or above them that will tend to break a handhold, except for newel posts, ball type stanchions, or the like. (d) The requirements of (d) do not apply to— (i) handrails referred to in D2.18; or

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					(i) a stairway or ramp providing a change in elevation of less than 1 m; or (ii) a landing; or (iii) a winder where a newel post is installed to provide a handhold. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification.***
D2.18 Fixed Platforms, walkways and ladders				X	A fixed platform, walkway, stairway, ladder and any going and riser, landing, handrail or barrier attached thereto may comply with AS1657 in lieu of D2.13, D2.14 D2.16 and D2.17 if it only serves: (a) Machinery rooms, boiler houses, lift machine rooms, plant-rooms and the like; or (b) Non-habitable rooms, such as attics, storerooms and the like that are not used on a frequent or daily basis in the internal parts of a sole occupancy unit in a Class 2 building or Class 4 part of the building. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification.***
D2.19 Doorways & Doors				X	(a) A doorway serving as a require exit or forming part of a required exit – (i) Must not be fitted with a revolving door; and (ii) Must not be fitted with a roller shutter or tilt-up door unless – (A) It serves a Class 6, 7 or 8 building or part with a floor area not more than 200m^2; and (B) The doorway is the only required exit from the building or part; and (C) It is held in the open position while the building or part is lawfully occupied; and (iii) Must not be fitted with a sliding door unless – (A) It leads directly to a road or open space; and (B) The door is able to be opened manually under a force of not more than 110 N; and (iv) If fitted with a door which is power-operated – (A) It must be able to be opened manually under a force of not more than 110 N if there is a malfunction or failure of the power source; and (B) If it leads directly to a road or open space it must open automatically if there

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					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. (b) A power-operated door in a path of travel to a required exit, must be able to open manually under a force of not more than 110 N if there is a malfunction or failure of the power source. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification.***
D2.20 Swinging Doors				X	A swinging door in a required exit or forming part of a required exit – (a) Must not encroach – (i) At any part of its swing by more than 500mm of the require width (including any landings) of a required – (A) Stairway; or (B) Ramp; or (C) Passageway, If it is likely to impede the path of travel of the people already using the exit; and (ii) When fully open, by more than 100 mm on the required width of the required exit, and The measurement of encroachment in each case is to include door handles or other furniture or attachments to the door; and (b) Must swing in the direction of egress unless (i) It serves a building 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; or (ii) It serves a sanitary compartment or airlock (in which case it may swing in either direction; and (c) Must not otherwise impede the path or direction of egress. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification.***
D2.21 Operation of Latch				X	(a) A door in a required exit, forming part of a required exit or in the path of travel to a required exit must be readily openable without a key from the side that faces a person seeking egress by – (i) A single hand downward action or pushing action on a single device which is located between 900mm and 1.1 m from the floor and

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					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 (ii) a single hand pushing action on a single device which is located between 900mm and 1.2m from the door; and (iii) where the latch operation device referred to in (ii) is not located on the door leaf itself – (A) manual controls to power operated doors must be at least 25mm wide, proud of the surrounding surface and located – (aa) not less than 500mm from an internal corner; and (bb) for a hinged door, between 1m and 2m from the door leaf in any position; and (cc) for a sliding door, within 2m of the doorway and clear of a surface mounted door in the open position. (B) Braille and tactile signage complying with Clause 3 and 6 of Specification D3.6 must identify the latch operation device. (b) The requirements of (a) do not apply to a door that – (i) Serves a vault, strong-room, sanitary compartment, or the like; or (ii) Serves only, or is within – (A) A sole occupancy unit in a Class 2 or 4 building or part; or (B) A sole occupancy unit in a Class 3 building (other than the entry door to a sole occupancy unit of a boarding house, guest house, hostel, lodging house or backpacker accommodation);or (C) A sole occupancy unit with a floor area not more than 200m² in a Class 5, 6, 7 or 8 building; or (D) A space which is otherwise inaccessible to persons at all times when the door is locked;or

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					(iii) Serves – (A) Australian Government Security Zones 4 or 5; or (B) The secure parts of banks, detention centre, mental health facility, early childhood centre or the like; and it can be immediately unlocked – (C) By operating a fail-safe control switch, not contained within the protective enclosure, to actuate a device to unlock the door; or (D) By hand by a person or persons, specifically nominated by the owner, properly instructed as to the duties and responsibilities involved and available at all times when the building is lawfully occupied so that persons in the building or part may immediately escape if there is a fire; or (iv) Is fitted with a fail-safe device which automatically unlocks the door upon the activation of any sprinkler system (other than a FPAA101D system) complying with Specification E1.5, or smoke , or any other detector system deemed suitable in accordance with AS1670.1 installed throughout the building, and is readily operable when unlocked; or. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
D2.22 Re-entry from Fire isolated exits			X		Not applicable
D2.23 Signs on Doors				X	(a) A sign, to alert persons that the operation of certain doors must not be impaired, must be installed where it can readily be seen on, or adjacent to— (i) a required— (A) fire door providing direct access to a fire-isolated exit, except a door providing direct egress from a sole-occupancy unit in a Class 2 or 3 building or Class 4 part of a building; and (B) smoke door, on the side of the door that faces a person seeking egress and, if the door is fitted with a device for holding it in the open position, on either the wall adjacent to the doorway or both sides of the door; and

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					(ii) a— (A) fire door forming part of a horizontal exit; and (B) smoke door that swings in both directions; and (C) door leading from a fire isolated exit to a road or open space, on each side of the door. (b) A sign referred to in (a) must be in capital letters not less than 20 mm high in a colour contrasting with the background and state— (i) for an automatic door held open by an automatic hold-open device— "FIRE SAFETY DOOR—DO NOT OBSTRUCT"; or (ii) for a self-closing door— "FIRE SAFETY DOOR DO NOT OBSTRUCT DO NOT KEEP OPEN"; or (iii) for a door discharging from a fire-isolated exit— "FIRE SAFETY DOOR—DO NOT OBSTRUCT". ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
D2.24 Protection of openable windows				X	(a) A window opening must be provided with protection, if the floor below the window is 2 m or more above the surface beneath in— (i) a bedroom in a Class 2 building. (b) Where the lowest level of the window opening is less than 1.7 m above the floor, a window opening covered by (a) must comply with the following: (i) The openable portion of the window must be protected with— (A) a device capable of restricting the window opening; or (B) a screen with secure fittings. (ii) A device or screen required by (i) must— (A) not permit a 125 mm sphere to pass through the window opening or screen; and (B) resist an outward horizontal action of 250 N against the—

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					(aa) window restrained by a device; or (bb) screen protecting the opening; and (C) have a child resistant release mechanism if the screen or device is able to be removed, unlocked or overridden. (c) A barrier with a height not less than 865 mm above the floor is required to an openable window— (i) in addition to window protection, when a child resistant release mechanism is required by (b)(ii)(C); and (ii) where the floor below the window is 4 m or more above the surface beneath if the window is not covered by (a). (d) A barrier covered by (c) except for (e) must not— (i) permit a 125 mm sphere to pass through it; and (ii) have any horizontal or near horizontal elements between 150 mm and 760 mm above the floor that facilitate climbing. (e) A barrier required by (c) to an openable window in— (i) fire-isolated stairways, fire-isolated ramps and other areas used primarily for emergency purposes, excluding external stairways and external ramps; and (ii) Class 7 (other than carparks) and Class 8 buildings and parts of buildings containing those classes, must not permit a 300 mm sphere to pass through it. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
D2.25 Timber stairways concession					Not applicable
Part D3 - Access for People with Disabilities – Refer to separate access consultant's report					
SECTION E SERVICES & EQUIPMENT					
Part E1 - Fire Fighting Equipment					
E1.3 Fire Hydrants				X	**Plans indicate the location of the fire hydrant booster (FSB) assembly next to Hillier Road (remote from the building and adjoins the principal vehicle access) in accordance with Clause 7.3(c) of**

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					AS2419.1-2017. Additional details to be provided at CC stage. ***Note: concessions apply depending upon the type of sprinkler system utilised. Details are to be provided at CC stage to ensure compliance with this clause.*** <u>Design Requirements:</u> (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, except – (A) 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 (B) 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.

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					Note – Concessions under Specification E1.5a (AS 2118.1, AS2118.4 sprinkler system) for Class 2 & 3 buildings with an effective height of not more than 25m with a rise in storeys of 4 or more. *Internal fire hydrants need not be provided where -* ❖ *The building is served by external fire hydrants that provide compliant coverage, except that in a residential care building the nozzle at the end of the length of hose need only reach the entry door of any sole occupancy unit to be considered as covering the area within the sole occupancy unit; or* ❖ *A dry fire hydrant system that otherwise complies with AS 2419.1 is installed in the building and –* - *Each fire hydrant head is located in accordance with E1.3 and fitted with a blank end cap or plug; and* - *The pipe work is installed in accordance with E1.3 (as for a required fire main) except that it need not be connected to a water supply; and* - *A hydrant booster inlet connection is provided in accordance with E1.3; and* ❖ *An external street or feed hydrant capable of providing the required system flow is located within 60m of the hydrant booster connection.* *Note – Concessions under Specification E1.5a (FPAA101D sprinkler system) for Class 2 & 3 buildings with an effective height of not more than 25m with a rise in storeys of 4 or more.* *Internal fire hydrants need not be provided where -* ❖ *The building is served by external fire hydrants that provide compliant coverage, except that in a residential care building the nozzle at the end of the length of hose need only reach the entry door of any sole occupancy unit to be considered as covering the area within the sole occupancy unit; or* ❖ *A dry fire hydrant system that otherwise complies with AS 2419.1 is installed in the building except -* - *The system pipework is not connected to the water supply; and* - *An on-site fire pump set is not required; and* - *The minimum fire hydrant outlet flow of 6 L/s may be achieved when boosted by a fire brigade pumping appliance; and* - *The minimum pipe sizes specified in AS 2419.1 do not apply, and* - *Each fire hydrant head is located in accordance with E1.3 and fitted with a blank end cap or plug; and* - *A hydrant booster inlet connection is provided in accordance with E1.3; and* - *An external street or feed hydrant capable of providing the required system flow is located within 60m of the hydrant booster connection.*

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					- *A hydrant booster inlet connection is provided in accordance with E1.3; and* ❖ *An external street or feed hydrant capable of providing the required system flow is located within 60m of the hydrant booster connection.* ***Hydraulic Services Design Certification and associated plans must be incorporated into the construction certificate specification***
E1.4 Fire Hose Reels				X	<u>Design Requirements:</u> (a) E1.4 does not apply to – (i) A Class 2, 3 or 5 building or Class 4 part of a building; or (ii) A Class 8 electricity network substation; or (iii) A Class 9c building; or (iv) Classrooms and associated corridors in a primary or a secondary school. (b) A fire hose reel system must be provided – (i) to serve the whole building where one or more internal fire hydrants area installed; or (ii) where internal fire hydrants are not installed, to serve any fire compartment with a floor area greater than 500m². (c) The fire hose reel system must – (i) Have hose reels installed in accordance with AS 2441; and (ii) Provide hose reels to serve only the storey in which they are located except a sole occupancy unit of not more than 2 storeys in a Class 6, 7, 8 and 9 building may be served by a single fire hose reel located at the level of egress from that sole occupancy unit provided the fire hose reel can provide coverage to the whole of the sole occupancy unit. (d) Fire hose reels must be located internally, externally or in combination, to achieve the system coverage as specified in AS2441. (e) In achieving system coverage, one or a combination of the following criteria for individual internally located fire hose reels must be met in determining the layout of any fire hose reel system: (i) Fire hose reels must be located adjacent to an internal hydrant (other than one in a fire isolated exit). Except that a fire hose reel need not be located adjacent to every fire hydrant, provided system coverage can be achieved.

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					(ii) Fire hose reels must be located within 4m of an exit, except that a fire hose reel need not be located adjacent to every exit, provided system coverage can be achieved. (iii) Where system coverage is not achieved by compliance with (i) and (ii), additional fire hose reels may be located in paths of travel to an exit to achieve the required coverage. (f) Fire hose reels must be located so that the fire hose will not pass through doorways fitted with fire or smoke doors, except (i) Doorways in walls referred to in C2.5(a)(v) in a Class 9a building and C2.5(b)(iv) in a Class 9c building, separating ancillary use areas of high potential fire hazard; and (ii) Doorways in walls referred to in C2.12 or C2.13 separating equipment or electrical supply systems; and (iii) Doorways opening into shafts referred to in C3.13. (g) Where the normal water supply cannot achieve the flow and pressures required by AS 2441, or is unreliable – (h) A pump; or (i) Water storage facility; or (j) Both a pump and water storage facility, Must be installed to provide the minimum flor and pressures required by clause 6.1 of AS 2441. ***Hydraulic Services Design Certification and associated plans must be incorporated into the construction certificate specification***
E1.5 Sprinklers				X X	**Plans indicate location of the sprinkler booster (FSB) adjoining Hillier Road. Details to be provided at CC stage confirming if the system is a combined hydrant / sprinkler system to allow 1 booster.** <u>Design Requirements:</u> A sprinkler system must - (a) Be installed in a building or part of a building when required by Table E1.5; and (b) Comply with Specification E1.5 and Specification E1.5a as applicable as summarised below – ❖ Class 2 – 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

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					❖ Class 7a carparks (other than open deck) – in fire compartments that accommodate more than 40 vehicles. ***Hydraulic Services Design Certification must be incorporated into the construction certificate specification***
E1.6 Portable Fire Extinguishers				X	(a) Portable fire extinguishers must be – (i) Provided as listed in Table E1.6; (ii) For a Class 2 building, provided – (A) To serve the whole Class 2 building where one or more internal fire hydrants are installed; or (B) Where internal fire hydrants are not installed, to serve any fire compartment with a floor area greater than 500m², and for the purpose of this clause, a sole occupancy unit in a Class 2 building is considered to be a fire compartment; and (iii) Subject (b), selected, located and distributed in accordance with Sections 1, 2, 3 and 4 of AS 2444. (b) Portable fire extinguishers provided in a Class 2 building must be – (i) An ABE type fire extinguisher; and (ii) A minimum size of 2.5kg; and (iii) Distributed outside a sole occupancy unit – (A) To serve only the storey on which they are located; and (iv) So that the travel distance from the entrance doorway of any sole occupancy unit to the nearest fire extinguisher is not more than 10m. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
E1.8 Fire Control Centre			X		Not applicable
E1.9 Fire Precautions during construction				X	In a building under construction – (a) not less than one portable fire extinguisher to suit Class A, B and C fires and electrical fires must be provided at all times on each storey adjacent to each required / temporary exit; and (b) After the building has reach an effective height of 12m – (i) the required fire hydrants and fire hose reels must be operational on all floor / roof covered

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					storeys, except for the 2 uppermost storeys; and (ii) Any 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	**General smoke hazard management requirements** (a) A building must comply with Table E2.2a as applicable to Class 2 to 9 buildings and Table E2.2b as applicable to Class 6 and 9b buildings such that each separate part complies with the relevant provisions for the classification. (b) An air-handling system which does not form part of a smoke hazard management system in accordance with Table E2.2a or Table E2.2b and which recycles air from one fire compartment to another fire compartment or operates in a manner that may unduly contribute to the spread of smoke from one fire compartment to another fire compartment (such as lobby air supply) must— (i) (i) be designed and installed to operate as a smoke control system in accordance with AS/NZS 1668.1; or (ii) (A) incorporate smoke dampers where the air-handling ducts penetrate any elements separating the fire compartments served; and (B) be arranged such that the air-handling system is shut down and the smoke dampers are activated to close automatically by smoke detectors complying with clause 7.5 of AS 1670.1; and for the purposes of this provision, each sole-occupancy unit in a Class 2 or 3 building is treated as a separate fire compartment. (c) Miscellaneous air-handling systems covered by Sections 5 and 6 of AS 1668.1 serving more than one fire compartment (other than a carpark ventilation system) and not forming part of a smoke hazard management system must comply with the Section of the Standard. (d) A smoke detection system must be installed in accordance with Clause 6 of Specification E2.2a to

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					operate AS 1668.1 systems that are provided for zone pressurisation and automatic air pressurisation for fire isolated exits. **Class 2 residential parts** An **Automatic Smoke Detection and Alarm System** must be installed throughout the Class 2 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 2 parts must be provided with: • a smoke alarm system complying with Clause 3 of Specification E2.2a; or • 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. *Note: Smoke alarms in sole occupancy units are required to be interconnected.* 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 2 parts other than SOUs in accordance with AS 1670.1-2015 and must be connected to activate a building occupant warning system in accordance with clause 6 of Spec E2.2a. **Class 7a building part** The basement level carpark must be provided with a mechanical ventilation system in accordance with AS 1668.2-2012 which 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. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification.***
E2.3 Provision for Special Hazards			X		Not applicable
Part E3 - Lift Installations					

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E3.1 Lift installations				X	An electric passenger lift installation and an electrohydraulic passenger lift installation 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	(a) A stretcher facility in accordance with (b) must be provided— (i) where an emergency lift is not required, if passenger lifts are installed to serve any storey above an effective height of 12 m, in at least one of those lifts to serve each floor served by the lifts. (b) A stretcher facility must accommodate a raised stretcher with a patient lying on it horizontally by providing a clear space not less than 600 mm wide x 2000 mm long x 1400 mm high above the floor level. ***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		Not applicable
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***
E3.6 Facilities for People with Disabilities			X		Refer to separate access consultants report
E3.7 Fire Service Controls				X	Lifts serving any storey above an effective height of 12m must be provided with a: (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 (b) lift car fire drive control switch complying with E3.10 for every lift.

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					Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification
E3.8 Residential Care Buildings			X		Not applicable
E3.9 Fire service recall operation switch				X	Information relevant to specific fire service recall control switch requirements. ***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	Information relevant to specific lift car fire service drive control switch requirements. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
Part E4 - Visibility in an Emergency, Exit signs and Warning Systems					
E4.2 Emergency Lighting Requirements				X	Emergency lighting must be provided throughout the building relevant to the requirements of this clause. ***Electrical Design Certification must be incorporated into the construction certificate specification***
E4.3 Measurement of Distance			X		Distances, other than vertical rise, must be measured along the shortest path of travel whether by straight lines, curves or a combination of both.
E4.4 Design and Operation of Emergency Lighting			X		The emergency lighting system must comply with AS/NZS 2293.1-2005. ***Electrical Design Certification must be incorporated into the construction certificate specification***
E4.5 Exit Signs				X	An exit sign must be clearly visible to persons approaching the exit, and must be installed on, above or adjacent to each— (a) door providing direct egress from a storey to— (i) an enclosed stairway, passageway or ramp serving as a required exit; and (ii) an external stairway, passageway or ramp serving as a required exit; and (iii) an external access balcony leading to a required exit; and (b) door from an enclosed stairway, passageway or ramp at every level of discharge to a road or open space; and (c) horizontal exit; and (d) door serving as, or forming part of, a required exit in a storey required to be provided with emergency lighting in accordance with E4.2.

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					Electrical design plans and certification must be incorporated into the construction certificate specification
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 directional exit sign locations must be illustrated on the architectural floor plans***
E4.7 Class 2 & 3 Buildings & Class 4 Parts: Exemption			X		Informational clause - Exit doors in Class 2 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. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
E4.8 Design & Operation of Exit Signs				X	Exit signs must comply with: (a) AS/NZS 2293.1-2005; or (b) 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 Systems			X		Not applicable
SECTION F HEALTH & AMENITY					
Part F1 - Damp & Weatherproofing					
F1.0 Deemed -to-Satisfy Provisions			X		Performance Requirements FP1.4, for the prevention of the penetration of water through external wall, must be complied. There are no Deemed -to Satisfy Provisions for this Performance Solution in respect to external walls. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
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***

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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	A roof must be covered with— (a) concrete roofing tiles complying with AS 2049 and fixed, except in cyclonic areas, in accordance with AS 2050, as appropriate; or (b) terracotta roofing tiles complying with AS 2049 and fixed, except in cyclonic areas, in accordance with AS 2050; or (c) cellulose cement corrugated sheeting complying with AS/NZS 2908.1 and installed in accordance with AS/NZS 1562.2; or (d) metal sheet roofing complying with AS 1562.1; or (e) plastic sheet roofing designed and installed in accordance with AS/NZS 4256 Parts 1, 2, 3 and 5 and AS/NZS 1562.3; or (f) Terracotta, fibre-cement and timber slates and shingles designed and installed to complying with AS 4597 except in cyclonic areas ***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 4200.1 and AS 4200.2. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
F1.7 Waterproofing of wet area				X	Wet areas must be waterproofed in accordance with AS 3740-2010 and F1.7 & Table F1.7 of the BCA. ***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 sheet material in accordance with AS 3660.1-2000 ***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		Not applicable

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<table>
<tr><th>BCA DEEMED-TO-SATISFY PROVISION</th><th>COMPLIES</th><th>DOES NOT COMPLY</th><th>NA or Informational</th><th>Compliance Required</th><th>COMMENTS</th></tr>
<tr><td>F1.11
Provision of Floor Wastes</td><td></td><td></td><td></td><td>X</td><td>Bathrooms and laundries in Class 2 buildings 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</td></tr>
<tr><td>F1.12
Sub Floor Ventilation</td><td></td><td></td><td>X</td><td></td><td>Not applicable</td></tr>
<tr><td>F1.13
Glazed Assemblies</td><td></td><td></td><td></td><td>X</td><td>Glazed assemblies within external walls in accordance with AS 2047-1999.
Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification</td></tr>
<tr><td colspan="6">Part F2 - Sanitary & Other Facilities</td></tr>
<tr><td>F2.1
Facilities in residential buildings</td><td></td><td></td><td></td><td>X

X</td><td>Within each SOU provide the following:
<table>
<tr><th>Facilities required</th><th>Facilities provided</th></tr>
<tr><td>Kitchen sink and facilities for the preparation and cooking of food</td><td>To be shown on the CC plans.</td></tr>
<tr><td>A bath or shower</td><td>To be shown on the CC plans.</td></tr>
<tr><td>A closet pan and washbasin</td><td>To be shown on the CC plans.</td></tr>
<tr><td>Clothes washing facilities, comprising at least one washtub and space for a washing machine</td><td>To be shown on the CC plans.</td></tr>
<tr><td>Clothes drying facilities comprising a clothes line or hoist with not less than 7.5m of line or a space for one heat-operated drying cabinet or appliance in the same room as the clothes washing facilities</td><td>N/A – Each SOU has its own laundry.</td></tr>
</table>
Within the common area provide the following:
<table>
<tr><th>Facilities required</th><th>Facilities provided</th></tr>
<tr><td>Cleaners toilet containing a closet pan and washbasin in a compartment or room at or near ground level and accessible to employees without entering an SOU.</td><td>A cleaner’s toilet has been detailed on basement level - 01</td></tr>
</table></td></tr>
</table>

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					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		Informational clause. ❖ The number of persons accommodated must be calculated according to D1.13 if it cannot be more accurately determined by other means. ❖ Unless the premises are used predominantly by one sex, sanitary facilities must be provided on the basis of equal numbers of males and females. ❖ In calculating the number of sanitary facilities to be provided under F2.1 and F2.3, a unisex facility required for people with a disability may be counted once for each sex. ❖ For the purposes of this Part, a unisex facility comprises one closet pan, one washbasin and means for the disposal of sanitary towels.
F2.3 Facilities for Class 3 to 9 Buildings				X	(a) Except where permitted by (b), (c), (f), F2.4(a) and F2.4(b), separate sanitary facilities for males and females must be provided for Class 7 buildings in accordance with Table F2.3. (b) If not more than 10 people are employed, a unisex facility may be provided instead of separate facilities for each sex. (c) If the majority of employees are of one sex, not more than 2 employees of the other sex may share toilet facilities if the facilities are separated by means of walls, partitions and doors to afford privacy. (d) Adequate means of disposal of sanitary towels must be provided in sanitary facilities for use by females. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
F2.4 Facilities for People with Disabilities			X		Refer to separate access consultant's report
F2.5 Construction of Sanitary Compartments				X	Other than in an early childhood centre, sanitary compartments must have: (a) Doors and partitions that separate adjacent compartments; and (b) the door to a fully enclosed sanitary compartment must open outwards, or slide, or be removable from outside of the compartment, unless there is a clear space of at least 1.2m between the closet pan within the compartment and the doorway.

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					Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification
F2.6 Interpretation: Urinals and washbasins			X		Information relevant to urinal and washbasin design. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
F2.7 Microbial Control Note NSW F2.7 (Clause Deleted)			X		N/A Clause Deleted in NSW.
F2.8 Waste Management			X		Not applicable
F2.9 Accessible adult change facilities			X		Not applicable
Part F3 Room Sizes					
F3.1 Height of Rooms and other spaces				X	The ceiling height must be not less than— (a) in a Class 2 building— (i) a kitchen, laundry, or the like — 2.1 m; (ii) and a corridor, passageway or the like — 2.1 m; and (iii) a habitable room excluding a kitchen — 2.4 m; and (iv) in a room or space with a sloping ceiling or projections below the ceiling line within - (A) a habitable room— (aa) in an attic — a height of not less than 2.2 m for not less than two thirds of the floor area of the room or space; and (bb) in other rooms — a height of not less than 2.4 m for not less than two thirds of the floor area of the room or space; and (B) a non-habitable room — a height of not less than 2.1 m for not less than two thirds of the floor area of the room or space; and when calculating the floor area of a room or space, any part that has a ceiling height of less than 1.5 m is not included; and (b) in a Class 7 building— (i) except as allowed in (ii) and (f) — 2.4 m; and

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					(ii) a corridor, passageway, or the like — 2.1 m. (c) In any building— (i) a bathroom, shower room, sanitary compartment, airlock, tea preparation room, pantry, store room, garage, car parking area, or the like — 2.1 m; and (ii) a commercial kitchen & required accessible change room facility — 2.4 m; and (iii) above a stairway, ramp, landing or the like — 2 m measured vertically above the nosing line of stairway treads or the floor surface of the ramp, landing or the like. ***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 all habitable rooms in Class 2 buildings. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
F4.2 Methods and extent of natural lighting				X	(a) Required natural lighting must be provided by— (i) windows, excluding roof lights, that— (A) 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 (B) are open to the sky or face a court or other space open to the sky or an open verandah, carport or the like; or (ii) roof lights, that— (A) have an aggregate light transmitting area measured exclusive of framing members, glazing bars or other obstructions of not less than 3% of the floor area of the room; and (B) are open to the sky; or (iii) a proportional combination of windows and roof lights required by (i) and (ii). (b) In a Class 2 building a required window that faces a boundary of an adjoining allotment or a wall of the same building or another building on the allotment must not be less than a horizontal distance from that boundary or wall that is the greater of— (i) generally — 1 m; and

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BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
					(ii) 50% of the square root of the exterior height of the wall in which the window is located, measured in metres from its sill. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
F4.3 Natural light borrowed from adjoining room			X		(a) Natural lighting to a room in a Class 2 building, 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; 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 lights required by (A) and (B). (b) The areas specified in (a)(ii) and (a)(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	Information relevant to the provision of artificial lighting in accordance with AS/NZS 1680.0-2009 to specific building areas. ***Electrical Design Certification must be incorporated into the construction certificate specification***

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F4.5 Ventilation of Rooms				X	All rooms to be provided with Clause F4.6 compliant natural ventilation **OR** a mechanical ventilation or air-conditioning system complying with AS 1668.2-2012. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
F4.6 Natural Ventilation			X		(a) Natural ventilation provided in accordance with F4.5(a) must consist of permanent openings, windows, doors or other devices which can be opened— (i) with ventilating area not less than 5% of the floor area of the room required to be ventilated; and (ii) open to— (A) a suitably sized court, or space open to the sky; or (B) an open verandah, carport, or the like; or (C) an adjoining room in accordance with F4.7. (b) The requirements of (a)(i) do not apply to a Class 8 electricity network substation. ***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 a Class 2 building, a sole-occupancy unit of a building— (i) the room to be ventilated is not a sanitary compartment; and (ii) the window, opening, door or other device has a ventilating area of not less than 5% of the floor area of the room to be ventilated; and (iii) the adjoining room has a window, opening, door or other device with a ventilating area of not less than 5% of the combined floor areas of both rooms; and (b) in a Class 7 building— (i) the window, opening, door or other device has a ventilating area of not less than 10% of the floor area of the room to be ventilated, measured not more than 3.6 m above the floor; and (ii) the adjoining room has a window, opening, door or other device with a ventilating area of

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					not less than 10% of the combined floor areas of both rooms; and (c) the ventilating areas specified in (a) and (b) may be reduced as appropriate if direct natural ventilation is provided from another source. ***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		A room containing a closet pan or urinal must not open directly into — (a) a kitchen or pantry (b) a public dining room or restaurant; or ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
F4.9 Airlocks				X	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 — (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 ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
F4.11 Carparks				X	Every storey of a carpark (except an open deck carpark) must have: (a) a system of mechanical ventilation complying with AS1668.2-2012; or (b) a system of natural ventilation complying with Section 4 of AS 1668.4-2012. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
Part F5 - Sound Transmission					
F5.1 Application of Part					The provisions of this Part apply to Class 2 buildings only.
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

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					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) 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 ($L_{n,w}$) determined in accordance with AS/ISO 717.2 using results from laboratory measurements; or (ii) comply with Specification F5.2. (b) A wall in a building required to have an impact sound insulation rating must— (iii) for a Class 2 building be of discontinuous construction; and. (c) For the purposes of this Part, discontinuous construction means a wall having a minimum 20 mm cavity between 2 separate leaves, and (iv) for masonry, where wall ties are required to connect leaves, the ties are of the resilient type; and (v) 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) A floor in a Class 2 or 3 building must achieve an $R_w + C_{tr}$ (airborne) not less than 50, and an $L_{n,w}$ (impact) not more than 62, if separating: (i) SOU's; or (ii) An SOU from a plant room, lift shaft, stairway, 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) A wall in a Class 2 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

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					(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. (b) A door may be incorporated in a wall in a Class 2 building 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. (c) 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. (d) Where a wall required to have sound insulation has a roof above, the wall must continue to— (iii) the underside of the roof above; or (iv) a ceiling that provides the sound insulation required for the wall. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
F5.6 Sound insulation rating of 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. ***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 pump. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
Part F6 – Condensation Management					
F6.1 Application of Part				X	The Deemed-to-Satisfy Provisions of this Part only apply to a sole-occupancy unit of a Class 2 building.
F6.2 Pliable building membrane			X		(a) Where a pliable building membrane is installed in an external wall, it must— (i) comply with AS/NZS 4200.1; and (ii) be installed in accordance with AS 4200.2; and

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					(iii) be a vapour permeable membrane for climate zones 6, 7 and 8; and (iv) be located on the exterior side of the primary insulation layer of wall assemblies that form the external envelope of a building. (b) Except for single skin masonry and single skin concrete, where a pliable building membrane is not installed in an external wall, the primary water control layer must be separated from water sensitive materials by a drained cavity. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
F6.3 Flow rate and discharge of exhaust systems			X		(a) An exhaust system installed in a kitchen, bathroom, sanitary compartment or laundry must have a minimum flow rate of— (i) 25 L/s for a bathroom or sanitary compartment; and (ii) 40 L/s for a kitchen or laundry. (b) Exhaust from a kitchen must be discharged directly or via a shaft or duct to outdoor air. (c) Exhaust from a bathroom, sanitary compartment, or laundry must be discharged— (i) directly or via a shaft or duct to outdoor air; or (ii) to a roof space that is ventilated in accordance with F6.4. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
F6.4 Ventilation of roof spaces			X		(a) Where an exhaust system covered by F6.3 discharges directly or via a shaft or duct into a roof space, the roof space must be ventilated to outdoor air through evenly distributed openings. (b) Openings required by (a) must have a total unobstructed area of 1/300 of the respective ceiling area if the roof pitch is greater than 22°, or 1/150 of the respective ceiling area if the roof pitch is less than or equal to 22°. (c) 30% of the total unobstructed area required by (b) must be located not more than 900 mm below the ridge or highest point of the roof space, measured vertically, with the remaining required area provided by eave vents. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***

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SECTION G ANCILLIARY PROVISIONS					
Part G1 - Minor Structures and Components					
G1.1 Swimming Pools			X		Not applicable
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: (a) The windows can be cleaned wholly from within the building; or (b) Via a method complying with the Work Health and Safety Act 2011 and regulations made under that Act. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
G1.2 Refrigeration chambers, strong-rooms and vaults			X		Not applicable
G1.3 Outdoor play areas			X		Not applicable
Part G2 - Boilers, Pressure Vessels, Heating Appliances, Fireplaces, Chimneys and Flues					
G2.2 Installation of appliances			X		The installation of a stove, heater or similar appliance in a building must comply with: ❖ Domestic solid fuel burning appliances – Installation: AS/NZS 2918-2001; or ❖ Boilers and pressure vessels: specification G2.2 ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
G2.3 Open fire places			X		Not applicable
G2.4 Incinerator rooms			X		Not applicable
Part G3 - Atrium Construction – Not applicable					
Part G4 - Construction in Alpine Areas – Not applicable					
Part G5 - Construction in Bushfire Prone Areas - Not applicable					
Part G6 - Occupiable Outdoor Areas					
G6.1 Application of Part			X		The DTS provisions of this part apply to buildings containing an outdoor are in addition to the other DTS provisions of the BCA. It does not apply to such areas within a sole occupancy unit.

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					Note – occupiable outdoor area is a defined as a space on a roof, balcony, or similar part of a building that is open to the sky; and to which access is provided, other than access only for maintenance; and that is not open space or directly connected to open space.
G6.2 Fire hazard properties				X	(a) A lining, material or assembly in an occupiable area must comply with C1.10 as for an internal element. (b) The following fire hazard properties of a lining, material or assembly in an occupiable are not required to comply with C1.10: (i) Average specific extinction area. (ii) Smoke-development Index. (iii) Smoke development rate. (c) Smoke growth rate index. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
G6.3 Fire separation				X	For the purposes of DTS provisions of C2.7, C2.8 and C2.9, a reference to a storey includes an occupiable outdoor area, however a fire wall cannot be used to separate an occupiable area into different fire compartments.
G6.4 Provision for escape				X	For the purposes of the DTS provisions of Part D1, a reference to a storey or room includes an occupiable outdoor area.
G6.5 Construction of exits				X	For the purposes of the DTS provisions of Part D2, a reference to a storey includes an occupiable outdoor area.
G6.6 Firefighting equipment				X	For the purposes of the DTS provisions of Part E1, a reference to a storey includes an occupiable outdoor area.
SECTION J **ENERGY EFFICIENCY** ***NOTE – BCA 2019 REQUIREMENTS FOR SECTION J DO NOT COME INTO EFFECT UNTIL MAY 2020***					
NSW SECTION J - ENERGY EFFICIENCY					
NSW SUBSECTION J(A) ENERGY EFFICIENCY - CLASS 2 BUILDINGS AND CLASS 4 PARTS				X	The requirements of the BASIX Certificate must be incorporated into the design. ***Details demonstrating compliance with the approved BASIX design must be incorporated into the construction certificate plans / specification***
NSW J(A)1 BUILDING FABRIC					
NSW J(A)1.1 Application of Part			X		Part J(A)1 is only applicable to Class 2 buildings, where a development consent or complying development certificate specifies that thermal insulation is to be provided as part of the development.

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NSW J(A)1.2 Compliance with BCA provisions				X	(a) Class 2 buildings, must comply with the National Provisions of J0.2(b) to (e) i.e.: (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 ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
NSW J(A)2 BUILDING SEALING					
NSW J(A)2.1 Application of Part				X	The requirements of this Part are applicable to Class 2 buildings, excluding: (a) A building in a climate zones 2 and 5 where the only means of air-conditioning is by using an evaporative cooler; (b) A building ventilation opening necessary for the safe operation of a gas appliance; (c) parts of the building that cannot be fully enclosed.
NSW J(A)2.2 Compliance with BCA Provisions				X	Class 2 buildings, must comply with the following National Provisions: (a) J3.2 Chimneys and flues; (b) J3.3 Roof lights; (c) J3.4 External doors and windows; (d) J3.5 Exhaust fans; (e) J3.6 Construction of roofs walls and floors; and (f) J3.7 Evaporative coolers. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
NSW J(A)3 AIR CONDITIONING AND VENTILATING SYSTEMS					
NSW J(A) 3.1 Application of Part			X		Applicable to Class 2 buildings.
NSW J(A) 3.2 Compliance with BCA Provisions				X	Class 2 buildings must comply with the following national BCA provisions (as applicable): (a) J5.2 (a) to (d) and (f) to (g) Air conditioning systems; and (b) J5.3 Mechanical ventilation systems; and (c) J5.4 Miscellaneous exhaust systems.

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BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
					Note**: Compliance is not required with the national BCA provisions of J5.2(e) as those matters are regulated under BASIX.* ***Details demonstrating compliance with this clause must be incorporated into the construction certificate specification
NSW J(A)4 HOT WATER SUPPLY					
NSW J(A)4.1 Application of Part			X		Applicable to Class 2 buildings.
NSW J(A)4.2 Compliance with BCA Provisions				X	A Class 2 building must comply with the following National BCA provisions of Clause J7.2. ***Note:** Compliance is not required with the national BCA provisions of J7.3 and J7.4 as those matters are regulated under BASIX.* ***Details demonstrating compliance with this clause must be incorporated into the construction certificate specification***
NSW J(A)5 ACCESS FOR MAINTENANCE					
NSW J(A)5.1 Application of Part			X		Applies to 'common areas' of Class 2 buildings (not within sole occupancy units).
NSW J(A)5.2 Access for maintenance			X		Clause deleted.
NSW J(A)5.3 Compliance with BCA provisions			X		Class 2 buildings must comply with the national BCA provisions of J8.3
NSW SUBSECTION J(B) ENERGY EFFICIENCY - CLASS 3 AND CLASS 5-9 BUILDINGS					
NSW J(B) 1 Compliance with BCA Provisions				X	Class 3 and Class 5 to 9 buildings must comply with all of the provisions of the National Section J, except as varied by NSW J3.1 (as referenced below).
NSW J3.1 Application of Part			X		Add the following sub-clause to the National Section J provisions of Clause J3.1: ❖ *J3.1(d) – "parts of buildings that cannot be fully enclosed"*
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 must— (a) for reducing the heating or cooling loads— (i) collectively achieve an average energy rating of not less than 6 stars; and

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BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
					(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 (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				X	Where required, insulation must be provided as per AS/NZS 4859.1-2002 and installed as per this clause.

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BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
Thermal construction –general					***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		Not applicable
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					
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.

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

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BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
					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.
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			X		An air-conditioning system refrigerant chiller must comply with MEPS and the full load operation energy

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BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
Refrigerant chillers					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			X		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 the perimeter of a building				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 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			X		Lifts must –

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BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
					(c) Be configured to ensure artificial lighting and ventilation in the car are turned off when it is unused for 15 minutes and (d) Achieve the idle and standby energy performance level in Table 6.7a; and (e) Achieve – (iii) The energy efficiency class in Table 6.7b; or (iv) If a dedicated goods lift, energy efficiency class D in accordance with ISO 25745-2.
J6.8 Escalators and moving walkways			X		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***
Part J8: Access for maintenance and facilities for monitoring					
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.
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 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, 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 (BCA) assessment of a new residential apartment building with associated carparking, to be located at 1 – 9 Anderson Avenue, 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.

Written by:	Review by
Clint Mills **Building Consultant** **for AE&D**	Trenton Jones **Director** **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 firefighting 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 (i.e. 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 firefighting equipment

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7.0 ATTACHMENT B – REQUIREMENTS TYPE A CONSTRUCTION

7. Fire-resistance of building elements

7.1 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) * * * * *

(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 constructed from—

(i) concrete; or

(ii) masonry; or

(iii) fire-protected timber, provided that—

(A) the building is—

(aa) a separate building; or

(bb) a part of a building—

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

(BB) (BB) which is located above or below a part not containing fire-protected timber and the floor between the adjoining parts is provided with an FRL not less than that prescribed for a fire wall for the lower storey; and

(B) the building has an effective height of not more than 25 m; and

(C) the building has a sprinkler system (other than a FPAA101D or FPAA101H system) throughout complying with Specification E1.5; and

(D) any insulation installed in the cavity of the timber building element required to have an FRL is non-combustible; and

(E) cavity barriers are provided in accordance with Specification C1.13; or

(iv) any combination of (i) to (iii); and

(e) * * * * *

(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 within it) or other external building element, where the distance from any fire-source feature to which it is exposed is—				

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Building Element	Class of building – FRL: (in minutes) *Structural adequacy/Integrity/Insulation*			
For loadbearing parts—				
Less than 1.5m	90/90/90	120/120/120	180/180/180	240/240/240
1.5 to less than 3m	90/60/60	120/90/90	180/180/120	240/240/180
3m or more	90/60/30	120/60/30	180/120/90	240/180/90
For non-loadbearing parts—				
Less than 1.5m	-/90/90	-/120/120	-/180/180	-/240/240
1.5 to less than 3m	-/60/60	-/90/90	-/180/120	-/240/180
3m 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
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

7.2 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 of a building; or

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(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.

7.3 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—

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

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

7.4 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.

7.5 Roof: Concession

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

(a) has a sprinkler system (other than a FPAA101D or FPAA101H system) complying with Specification E1.5 installed throughout; or

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

(c) is of Class 2 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.

7.6 Roof lights

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

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

(b) be not less than 3 m from—

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

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

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

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

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

7.7 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; or

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

7.8 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:

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

(b) Columns and loadbearing walls supporting only the roof if they are non-combustible.

(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.

7.9 Carparks

(a) Notwithstanding Clause 3.1, a carpark may comply with Table 3.9 if it is an open-deck carpark or is protected with a sprinkler system (other than a FPAA101D or FPAA101H 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 3m from a fire-source feature to which it is exposed:		
			Loadbearing	60/60/60
			Non-loadbearing	-/60/60
	(ii)	3m 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/-/-

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Building Element			FRL (not less than) *Structural adequacy/Integrity/Insulation ESA/M (not greater than)*
	(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 7.1
Column			
(a)	Supporting only the roof (not used for carparking) and 3m or more from a fire-source 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 25m^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 30m^2/tonne
(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 to Table 3.9:
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.

7.10 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 Clause 3.1(d) of Specification C1.1 and the requirements of C1.9(a), (b) and 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 non-combustible; 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.

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(c) In a Class 2 or 3 building complying with (a) or (b) and fitted with a sprinkler system (other than a FPAA101D or FPAA101H 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

(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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