BLACKETT MAGUIRE+ GOLDSMITH

BCA ASSESSMENT REPORT

Memorial Avenue

Prepared for:

AJ+C
ALLEN JACK+COTTIER

March 2019

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REPORT STATUS				
DATE	**REVISION**	**STATUS**	**AUTHOR**	**REVIEWED**
20/12/2018	-	BCA Report for DA Submission	BM	TH
07/03/2019	1	Revised DA Drawings	BM	TH

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1.0 INTRODUCTION

1.1 PROPOSAL

Blackett Maguire + Goldsmith Pty Ltd have been commissioned by Allan Jack + Cottier to undertake an assessment of the proposed Memorial Avenue development fronting both 77-79 Bathurst Street and 86-94 Castlereagh Street, Liverpool against the relevant provisions of the Building Code of Australia 2016 (Amendment 1).

The principal building characteristics of the new development are defined as follows:

+ Basement Levels 1-3 – Vehicle parking facilities;
+ Ground Floor – Podium, retail tenancies, restaurant, residential lobby, commercial tenancy, garbage rooms, fire control room, loading dock and associated plant rooms
+ Level 1 – Residential SOU's, pool, outdoor common area, gym and restaurant.
+ Level 2-23 – Residential SOU's (mechanical plant area on the roof).

1.2 AIM

The aim of this report is to:

- Undertake an assessment of the proposed development against the deemed-to-satisfy provisions of the BCA;
- Identify matters that require plan amendments in order to achieve compliance with the BCA;
- Identify matters that are to be required to be addressed by Performance Solutions;
- Enable the certifying authority to satisfy its statutory obligations under Clause 145 of the Environmental Planning and Assessment Regulation, 2000.

1.3 PROJECT TEAM

The following BM+G Team Members have contributed to this Report:

- Brian Maguire – Project Team Leader (Director)
- Josh Hagenson – Building Surveyor

1.4 REFERENCED DOCUMENTATION

The following documentation has been reviewed, referenced and/or relied upon in the preparation of this report:

- Building Code of Australia 2016 Amd 1 (BCA).
- The Guide to the Building Code of Australia 2016 (BCA).
- Architectural Plans prepared by Allan Jack and Cottier:

Drawing No.	Revision	Date	Drawing No.	Revision	Date
DA0000	1	22.02.19	DA0002	1	22.02.19
DA0003	1	22.02.19	DA0004	1	22.02.19
DA0005	1	22.02.19	DA1001	1	22.02.19
DA1002	1	22.02.19	DA1003	1	22.02.19
DA2000	1	22.02.19	DA2001	1	22.02.19
DA2002	1	22.02.19	DA2003	1	22.02.19
DA2010	1	22.02.19	DA2101	1	22.02.19
DA2102	1	22.02.19	DA2103	1	22.02.19
DA2104	1	22.02.19	DA2105	1	22.02.19
DA2106	1	22.02.19	DA2107	1	22.02.19
DA2108	1	22.02.19	DA2109	1	22.02.19
DA2118	1	22.02.19	DA2124	1	22.02.19
DA3101	1	22.02.19	DA3102	1	22.02.19
DA3103	1	22.02.19	DA3104	1	22.02.19
DA3105	1	22.02.19	DA3112	1	22.02.19
DA3201	1	22.02.19	DA3202	1	22.02.19
DA3203	1	22.02.19	DA3204	1	22.02.19
DA4101	1	22.02.19	DA4102	1	22.02.19
DA5101	1	22.02.19	DA8501	1	22.02.19
DA8511	1	22.02.19	DA8512	1	22.02.19
DA8513	1	22.02.19	DA8520	1	22.02.19
DA8521	1	22.02.19	DA8531	1	22.02.19
DA8532	1	22.02.19	DA8533	1	22.02.19
DA8534	1	22.02.19			

1.5 REGULATORY FRAMEWORK

Pursuant to clause 145 of the Environmental Planning and Assessment (EPA) Regulation 2000 all new building work must comply with the current BCA however the existing features of an existing building need not comply with the BCA unless upgrade is required by other clauses of the legislation.

Clause 143(3) of the EP&A Regulation 2000 prevents a certifying authority from issuing a construction certificate if the proposed new work will result in a reduction to the fire protection and structural capacity of the building.

1.6 ASSESSMENT METHODOLOGY

The BCA assessment was carried out in tabulated form in APPENDIX 1 below. The documents were assessed against the BCA 2016 Amd 1 requirements and the findings were detailed under the 'Comment' column.

1.7 LIMITATIONS AND EXCLUSIONS

The limitations and exclusions of this report are as follows:

+ No assessment has been undertaken with respect to the Disability Discrimination Act 1992 (DDA). The building owner needs be satisfied that their obligations under the DDA have been addressed.

  Please note that whilst the BCA specifies a minimum standard of compliance with AS1428 (Parts 1-3) and Part D3 of the BCA for access and facilities for people with disabilities, compliance with such requirements may not necessarily preclude the possibility of a future complaint made under the DDA 1992. The DDA is a complaint based legislation and is presently not identified by the State Building Codes and Regulations. In this regard the building owner should be satisfied that their obligations under the DDA have been addressed.

+ BM+G has not undertaken an assessment of any Alternative Solution Reports at the time of the preparation of this report.
+ The Report does not address matters in relation to the following Local Government Act and Regulations:
  i. Occupational Health and Safety Act and Regulations.
  ii. Work Cover Authority requirements.
  iii. Water, drainage, gas, telecommunications and electricity supply authority requirements.
  iv. Disability Discrimination Act 1992.
+ Blackett Maguire + Goldsmith Pty Ltd cannot guarantee acceptance of this report by Local Council, Fire & Rescue NSW or other approval authorities.
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1.8 REPORT TERMINOLOGY

Building Code of Australia (BCA) - Document published on behalf of the Australian Building Codes Board. The BCA is a uniform set of technical provisions for the design and construction of buildings and other structures throughout Australia and is adopted in NSW under the provisions of the Environmental Planning & Assessment Act & Regulation.

Climatic Zone – Is an area defined in BCA Figure A1.1 and in Table A1.1 for specific locations, having energy efficiency provisions based on a range of similar climatic characteristics.

Construction Certificate – Building Approval issued by the Certifying Authority pursuant to Part 6 of the EP&A Act 1979.

Construction Type – The construction type is a measure of a buildings ability to resist a fire. The minimum type of fire-resisting construction of a building must be that specified in Table C1.1 and Specification C1.1, except as allowed for—

(i) certain Class 2, 3 or 9c buildings in C1.5; and

(ii) a Class 4 part of a building located on the top storey in C1.3(b); and

(iii) open spectator stands and indoor sports stadiums in C1.7.

Note: Type A construction is the most fire-resistant and Type C the least fire-resistant of the types of construction.

Deemed-to-Satisfy (DTS) Provisions of the BCA – Means the prescriptive provisions of the BCA which are deemed to satisfy the performance requirements.

Effective Height – The vertical distance between the floor of the lowest storey included in the calculation of rise in storeys and the floor of the topmost storey (excluding the topmost storey if it contains only heating, ventilating, lift, or other equipment, water tanks or similar service units).

Exit – Any, or any combination of the following if they provide egress to a road or open space;

+ An internal or external stairway.
+ A ramp.
+ A fire-isolated passageway.
+ A doorway opening to a road or open space.

Fire Compartment – The total space of the building; or when referred to in

+ The Performance Requirements – any part of a building separated from the remainder by barriers to fire such as walls and/or floors having an appropriate resistance to the spread of fire with any openings adequately protected; or

+ The Deemed-to-Satisfy Provisions – any part of a building separated from the remainder by walls and/or floors each having an FRL not less than that required for a fire wall for that type of construction and where all openings in the separating construction are protected in accordance with the Deemed-to-Satisfy Provisions of the relevant part.

Fire Resistance Level (FRL) – The grading periods in minutes for the following criteria-

(a) structural adequacy; and

(b) integrity; and

(c) insulation,

and expressed in that order

Fire Source Feature (FSF) - The far boundary of a road adjoining the allotment; or a side or rear boundary of the allotment; or an external wall of another building on the allotment which is not a Class 10 building.

National Construction Code Series (NCC) – The NCC was introduced 01 May 2011 by the Council of Australian Governments. The BCA Volume One (Class 2 to 9 Buildings) is now referenced as the National Construction Code Series Volume One — BCA.

Occupation Certificate **(OC)** – Building Occupation Approval issued by the Principal Certifying Authority pursuant to Part 6 of the EP&A Act 1979.

Open Space - Means a space on the allotment, or a roof or other part of the building suitably protected from fire, open to the sky and connected directly with a public road.

Performance Requirements of the BCA - A Building Solution will comply with the BCA if it satisfies the Performance Requirements. A Performance requirement states the level of performance that a Building Solution must meet.

Compliance with the Performance Requirements can only be achieved by-

(a) complying with the Deemed-to-Satisfy Provisions; or

(b) formulating an Alternative Solution which-

(i) complies with the Performance Requirements; or

(ii) is shown to be at least equivalent to the Deemed-to-Satisfy Provisions; or

(c) a combination of (a) and (b).

Performance Solution – A Building Solution which complies with the Performance Requirements other than by reason of satisfying the DtS Provisions.

Rise in Storeys – The greatest number of storeys calculated in accordance with C1.2.

Sole Occupancy Unit – means a room or other part of a building for occupation by one or joint owner, lessee, tenant, or other occupier to the exclusion of any other owner, lessee, tenant, or other occupier and can include a dwelling and/or office suite

2.0 BUILDING CHARACTERISTICS

2.1 PROPOSED DEVELOPMENT

The proposed high rise mixed use development consists of:

Vehicle parking facilities, retail tenancies, restaurant, commercial tenancy, loading dock, pool, resident common area and residential SOU's.

BCA CLASSIFICATION:	*Class 2 (ILU's); Class 6 (Retail Tenancies); Class 7a (Carpark); Class 10b (Swimming Pool)
RISE IN STOREYS:	**Twenty-three (23)
TYPE OF CONSTRUCTION:	Type A
SPRINKLER PROTECTED THROUGHOUT:	Yes
AUTOMATIC AIR PRESSURISATION FOR FIRE-ISOLATED EXITS.	Yes
EFFECTIVE HEIGHT:	>50m
MAX. FIRE COMPARTMENT SIZE:	Class 2 – Not applicable Class 6 – 5,000m^2 & 30,000m^3 Class 7a – Not applicable to a carpark provided with a sprinkler system complying with Specification E1.5
CLIMATE ZONE:	Zone 5

**The commercial tenancy located on the Ground Level constitutes less than 10% of the floor area of the level and is therefore not a Class 5 as it would otherwise be.*

***The roof level is not considered a story for the purposes of this assessment as it contains plant equipment and the like only.*

2.2 MATTERS REQUIRING CONFIRMATION, REDESIGN OR ADDITIONAL INFORMATION AT THE CONSTRUCTION CERTIFICATE STAGE:

The following comprises a summary of the key compliance issues identified under the clause-by-clause assessment in APPENDIX 1 of this report that will be addressed prior to issue of the Construction Certificate(s) for the project.

BCA Clause		Description
1.	**C1.10**	Confirmation that the roof linings proposed to the outdoor areas of level 1 and 4 are non-combustible.
2.	**C1.14**	Ancillary Elements (i.e. elements that are secondary to and not an integral part of another element to which it is attached) other than those provided with a concession under the clause are required to be non-combustible or of materials complying with the concessions under Clause C1.9(e).
3.	**C2.14**	The corridors located within the residential parts of the building are not to exceed 40m in length without the provision of a smoke door.
4.	**D1.7**	The fire isolated exit located to the west of the building serving the levels above is to be redesigned so that occupants discharge perpendicular to the building. This entails a relocation of the door discharging to open space. Glazed opening of the eastern Residential Lobby are to be protected by drenchers complying with C3.4.
5.	**D2.16**	The Level 4 terrace balustrade is to be designed such that it does not include a climbable element.
6.	**D2.17**	Handrails are to be documented on the Construction Certificate architectural drawings.

BCA Clause		Description
7.	E1.3	The fire isolated stairs are to be designed such that a fire hydrant landing valve can be located at the level which it serves within the fire isolated stair without infringing upon required 1m wide path of travel.
8.	E2.2	Spatial allocation for automatic air pressurisation system risers are to be shown on the architectural drawings for the three levels of basement.
9.	F1.6	Conformation that the sarking material proposed for use within the external wall is not combustible.
10.	F2.1	A sanitary facility that is readily accessible to maintenance workers and the like is to be provided on the Ground level.
11.	F2.2/ 2.3	Sanitary facilities for Class 5 & 6 uses are to be further established to ensure sufficient sanitary facilities are provided based on the expected population.
12.	F4.1	Windows which provide an aggregate light transmitting area of not less than 10% of the floor area of the room are to be detailed on the Construction Certificate plans for all habitable rooms within Class 2 SOUs.
13.	F4.11	Confirmation that the carpark doesn't rely upon the use of more than one *jet fan* is required.
14.	G1	Appropriate safety fencing to the proposed pool is to be designed in accordance with the Swimming Pools Act.

2.3 MATTERS REQUIRING FIRE SAFETY ENGINEERED PERFORMANCE SOLUTIONS:

The following comprises a summary of the key compliance issues identified under the clause-by-clause assessment in APPENDIX 1 of this report that will be addressed as Fire Engineered Performance Solutions:

BCA Clause		Description	Performance Requirement
1.	Spec C1.1	The base of the garbage chutes will not be fire rated, rather the rooms associated with those shafts will be enclosed in fire rated construction.	CP1, CP2
2.	C3.2/ 3.4	Heat attenuation screens can be used in lieu of drenchers to protect windows located within 3m of the side boundary.	CP2
3.	D1.2	Two (2) exits will not be provided to the Commercial tenancy located on Ground Level.	DP4
4.	D1.4	There are several areas that exceed the maximum distance to a point on the floor where a choice between alternative exits are available and also the distance to an exit.	DP4, EP2.2
5.	D1.5	There are several areas that exceed the maximum distance between alternative exits.	DP4, EP2.2
6.	E1.3	The fire hydrant booster assembly is proposed within 10m of the building and a wall achieving an FRL of 90/90/90 will not extend 2m each side and 3m above the booster assembly.	EP1.3
7.	E2.2	The Two retail tenancies and the restaurant are not proposed to be provided with Zone Smoke Control	EP2.2

2.4 MATTERS REQUIRING PERFORMANCE SOLUTIONS (NOT FIRE ENGINEERING):

The following comprises a summary of the key compliance issues identified under the clause-by-clause assessment in APPENDIX 1 of this report that need to be addressed by the appropriately qualified person:

BCA Clause		Description	Performance Requirement
1.	**FP1.4**	A solution is required for the external walls to confirm the assembly prevents the penetration of water that could cause unhealthy or dangerous conditions, or loss of amenity for occupants; and undue dampness or deterioration of building elements.	FP1.4

3.0 CONCLUSION

This report contains an assessment of the referenced architectural documentation for the proposed Memorial Avenue mixed use residential building located at 77-79 Bathurst Street & 86-94 Castlereagh, Liverpool against the deemed-to-satisfy provisions of the Building Code of Australia 2016 Amendment 1 (BCA).

Arising from the assessment, key compliance issues have been identified that require resolution, either by way of Fire Engineered Performance Solutions or plan amendments prior to the Construction Certificate stage.

Notwithstanding the above, it is considered that the proposed development can readily achieve compliance with the BCA subject to resolution of the matters identified under Section 9 & APPENDIX 1 of this report.

APPENDIX 1

CLAUSE-BY-CLAUSE BCA ASSESSMENT

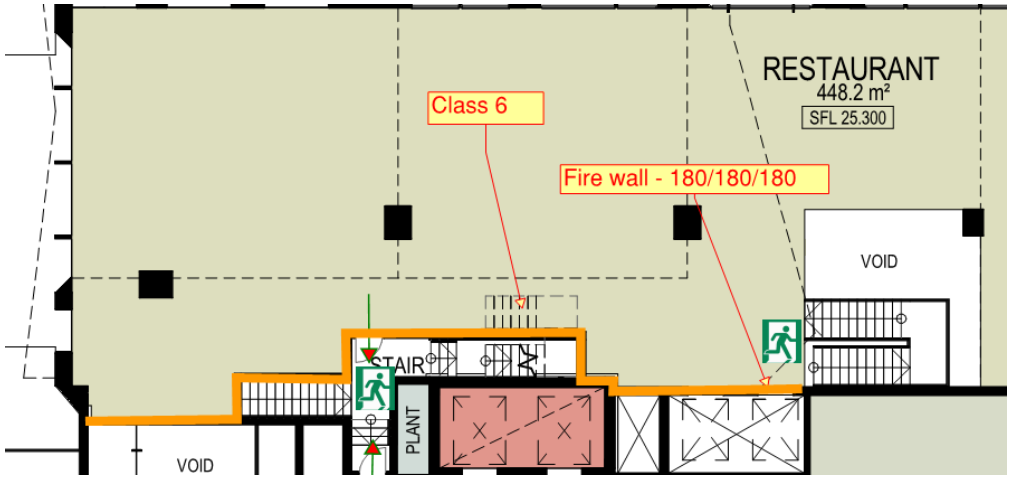
KEY:

- **Complies**: The referenced plans show compliance with this clause
- **Compliance Readily Achievable**: The referenced plans do not show sufficient information to establish compliance with this clause. Design certification, should be submitted with the application for the Construction Certificate
- **Further Information Required:** The referenced plans do not show sufficient information to establish compliance with this clause. Further details, should be submitted with the application for the Construction Certificate
- **Performance Solution**: The referenced plans do not comply with this clause and a Performance Solution is required/proposed to demonstrate compliance with the Performance Requirements and can be submitted with the application for a Construction Certificate.
- **Noted**: Provisions contained within this BCA clause are provided for guidance, or are to be read in conjunction with other BCA clauses
- **Not applicable/Not critical**: This clause is not applicable or not critical to the proposed development.
- **Does Not Comply** The proposal does not comply with this clause and redesign is required.

Clause	Reference	Comment
SECTION B	**STRUCTURE**	
Part B1	***Structural Provisions***	
B1.2 Determination of individual actions	Structural engineering details prepared by an appropriately qualified structural engineer to be provided to demonstrate compliance with Part B1 in relation to the new structural elements of the building.	**Compliance Readily Achievable** Design Statement is to be provided confirming that the design achieves compliance with the following is required at the time of the Construction Certificate application, inclusive of reference to the following Australian Standards (where relevant): AS 1170.0 – 2002 General Principles AS 1170.1 – 2002, including certification for balustrading (dead and live loads) AS 1170.2 – 2002, Wind loads AS 1170.4 – 2007, Earthquake loads AS 3700 – 2001, Masonry code AS 3600 – 2009, Concrete code AS 4100 – 1998, Steel Structures and/or AS 4600 – 2005, Cold formed steel. AS 2047 – 1999, Windows in buildings. AS 1288 – 2006, Glass in buildings
B1.4 Determination of structural resistance of materials	Materials & Forms of Construction	**Compliance Readily Achievable:** Detail and design certification to be provided at the Construction Certificate stage.

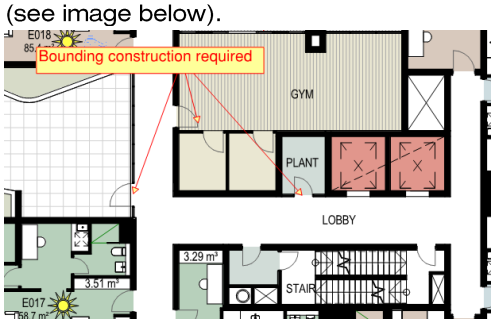
Clause	Reference	Comment
SECTION C	**FIRE RESISTANCE**	
Part C1	***Fire Resistance and Stability***	
C1.1 Type of Construction	Type of Construction is arrived by virtue of the Rise in Storeys of the building dependant on the nature of the respective Building Classifications.	**Noted** Type A Construction is required. Building elements are required to achieve the required FRL's nominated under Table 3 of Specification C1.1 (refer to comments below under Specification C1.1 & Appendix 2).
C1.2 Calculation of Rise In Storeys	Calculation of Rise In Storeys is determined by the sum of the greatest number of storeys at any part of the external walls of the building.	**Noted** Upon completion of the works the buildings will have a Rise in Storeys of twenty-three (23). Note: the Roof Level is not considered a storey.
C1.8 – Lightweight construction	Lightweight construction must comply with Specification C1.8 if used in a wall system in accordance with sub-clauses (a) & (b).	**Compliance Readily Achievable:** Detail to be provided at the Construction Certificate stage.
C1.9 Non-combustible Material	The materials as set out in sub-clauses (a) to (e) of this clause, though combustible or containing combustible fibres, may be used wherever a non-combustible material is required.	**Compliance readily achievable.** Where it is proposed to use a combustible material complying with the concessions under Clause C1.9(e), Test Reports (or CodeMark certificate of conformity) will need to be provided demonstrating that the material complies with the requirements set out in the respective subclauses. *As of 12 March 2018 C1.12 has been repealed in lieu of C1.9 and C1.14* *Note: See comments under C1.14*
C1.10 - Early fire hazard properties	The fire hazard properties of the outlined linings, materials and assemblies in a Class 2 to 9 building must comply with Specification C1.10	**Compliance Readily Achievable:** The roof lining of the Residential Common Outdoor Area (Level 1) and the Landscaped Roof Terrace (level 4) are to be non-combustible otherwise a Performance Solution is required. Detail to be provided at the Construction Certificate stage.

Clause	Reference	Comment
C1.14 Ancillary elements	An ancillary element must not be fixed, installed or attached to the internal parts or external face of an external wall that is required to be non-combustible unless it is one of the following: (a) An ancillary element that is non-combustible. (b) A gutter, downpipe or other plumbing fixture or fitting. (c) A flashing. (d) A grate or grille not more than 2 m² in area associated with a building service. (e) An electrical switch, socket-outlet, cover plate or the like. (f) A light fitting. (g) A required sign. (h) A sign other than one provided under (a) or (g) that— i. achieves a group number of 1 or 2; and ii. does not extend beyond one storey; and iii. does not extend beyond one fire compartment; and iv. is separated vertically from other signs permitted under (h) by at least 2 storeys. (i) An awning, sunshade, canopy, blind or shading hood other one provided under (a) that— i. meets the requirements of Table 4 of Specification C1.10 as for an internal element; and ii. serves a storey— (A) at ground level; or (B) immediately above a storey at ground level; and iii. does not serve an exit, where it would render the exit unusable in a fire. (j) A part of a security, intercom or announcement system. (k) Wiring (l) A paint, lacquer or a similar finish. (m) A gasket, caulking, sealant or adhesive directly associated with (a) to (k)	**Compliance is readily achievable** Detailed assessment of the façade and the respective attachments will be undertaken during design development and addressed at the Construction Certificate stage. Note: This clause has relevance to the Dulux Gold Tressure Louvre Screens, Dulx Duralloy fins and the two pergolas located on the Level 4 terrace.
Part C2	***Fire Compartmentation & Separation***	
C2.2 General Floor area and volume limitations	This Clause sets out the maximum fire compartment sizes for each specific class of building subject to the respective Types of Construction that are applicable in each case.	**Complies** See table in Section 2 of this report
C2.6 Vertical Separation of Openings in External Walls	If in a building of Type A construction, any part of a window or other opening in an external wall is above another opening in the storey next below and its vertical projection falls no further than 450 mm outside the lower opening (measured horizontally), the openings must be separated by and horizontal or vertical spandrel with an FRL of 60/60/60, and 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.	**Not Applicable** Spandrel protection is not required in a building which is provided with sprinklers throughout. Note: The balcony section drawing indicates a face brick spandrel is provided to Level 3.

Clause	Reference	Comment
C2.7 separation by fire wall	Fire walls used to separate adjoining Fire Compartments must in accordance with the following: + Constructed to achieve the higher FRL of the two fire compartments as prescribed in Specification C1.1 and extend to the underside of a floor with the same FRL, or to the underside of a non-combustible roof covering. + Any openings in a fire wall must not reduce the, except where permitted by the Deemed-to-Satisfy Provisions of Part C3 (i.e. fire doors; protection of services). + Building elements, other than roof battens with dimensions of 75 mm x 50 mm or less or sarking-type material, must not pass through or cross the fire wall unless the required fire resisting performance of the fire wall is maintained.	**Compliance is readily achievable** A Fire Wall is required to separate the restaurant (Class 6) from the remainder of the level occupied by residential SOU's (Class 2) by a fire wall achieving an FRL of not less than 180/180/180. Notwithstanding, a Performance Solution I readily justifiable to reduce the required FRL to 120/120/120 on the basis that that the subject wall bounds an external courtyard, lift and stairs (see Spec C1.1).
		
C2.8 Separation of classifications in the same storey	Different building classifications situated adjacent to each other in the same storey are required to adopt the higher FRL prescribed in Specification C1.1 or have the parts of the building separated by a fire wall.	**Compliance is Readily Achievable**: The Level 1 Restaurant area is to be separated from the remainder of the building by a fire wall and therefore fire rated elements are required to achieve the most stringent requirement of the included classifications as prescribed in Specification C1.1. In this instance the FRLs of the restaurant bounding walls are to achieve 180/180/180 Note: The restaurant space exceeds 10% of the floor area of level 1.
C2.9 Separation of classifications in different storeys	This clause specifies the required separation between parts of a building which are of a different classification, situated one above another, to minimise the risk of a fire in one classification causing the failure of building elements in another classification in a different storey.	**Further Information Required:** The floors between different classifications need to be fire rated in accordance with Specification C1.1 as follows: + Floors above the Class 2 parts require an FRL of 90/90/90, + Floors above the Class 7a parts (FRL of 120/120/120); + Floors above the Class 6 part (FRL of 180/180/180)

Clause	Reference	Comment
C2.10 Separation of lift shafts	This clause applies to all classes of buildings and specifies the protection requirements for openings for lift shafts and lift landing doors. The requirements are set out in sub-clauses (a), (b) (c) & (d) which relate to openings in Type A, B and C construction. Also note the Deemed to Satisfy Provisions of Part C3.	**Compliance Readily Achievable**: Noting that the proposed lifts are located in different classifications on various levels of the building the following FRL's are required: -Class 2: FRL 90/90/90 -Class 7a : FRL 120/120/120 -Class 6: FRL 180/120/120
C2.11 Stairways and lifts in one shaft	A stairway and lift must not be within the same shaft if either the stairway or the lift is required to be in a fire-resisting shaft.	**Compliance Readily Achievable**: All lifts and stairs are contained in separate shafts.
C2.12 Separation of equipment	Equipment as listed below must be separated from the remainder of the building with construction that achieves an FRL of 120/120/120 and doorways being self-closing -/120/30 fire doors: + Lift motors and lift control panels; or + Emergency generators used to sustain emergency equipment operating in the emergency mode; or + Central smoke control plant; or + Boilers; or + A battery or batteries installed in the building that have a voltage exceeding 24 volts and a capacity exceeding 10 ampere hours.	**Compliance Readily Achievable:** Fire compartment plans are required to be provided at the Construction Certificate stage which detail the required FRLs.
C2.13 Electricity supply system	To ensure certain types of electrical equipment to operate during an emergency the requirements of sub-clauses (a), (b) (c), (d) & (e) must be complied with relating to sub-stations, sub-mains and main switchboards.	**Compliance Readily Achievable:** Fire compartment plans are required to be provided at the Construction Certificate stage which detail the required FRLs. Special consideration to be given to the Switch Room located on the Ground Level.
C2.14 Public corridors in class 2 & 3 buildings	A public corridor, if more than 40m in length, must be divided at internals of not more than 40m with smoke proof walks complying with Clause 2 of Specification C2.5	**Does Not Comply** The following locations require the provision of a smoke door to ensure that the total length of the public corridor does not exceed 40m in length: • Level 1 East Tower • Level 2 East & West Tower • Level 3 East & West Tower Note: Smoke doors are to swing in the direction of egress unless connected to a hold open device.

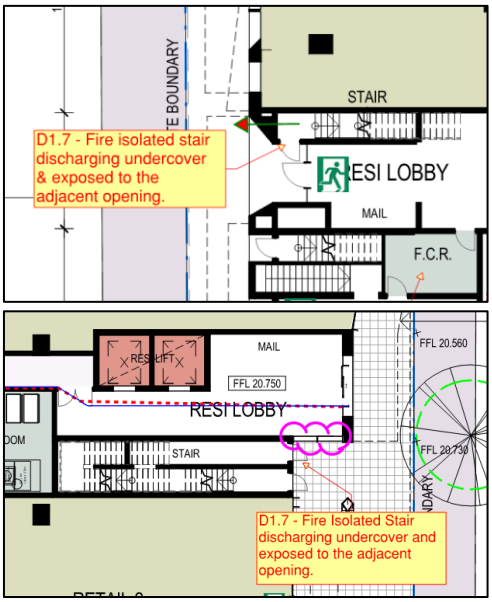
Clause	Reference	Comment
Part C3	***Protection of Openings***	
C3.2 Protection of openings in external walls	Openings in an external wall that is required to have an FRL must – (a) If the distance between the opening and the fire-source feature to which it is exposed is less than – (i) 3 m from a side or rear boundary of the allotment; or (ii) 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) 6 m from another building on the allotment that is not a Class 10, be protected in accordance with C3.4 and if wall-wetting sprinklers are used, they are located externally; and (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.	**Performance Solution**: Applies to the openings in the external wall closer than 3m to a side boundary. Level 1 • Unit E011 • Unit E016 Level 2 • Unit E021 • Unit E026 Level 3 • Unit W)38 • Unit E031 • Unit E036 Note 1: Drenchers require fixed glass to operate which may impact upon natural ventilation requirements of bedrooms. However, instances where the boundary is more than 1.2m from the exposed window heat attenuation screens can be used in lieu of drenchers as part of a Performance Solution permitting the use of an operable window. Note 2: The element protruding from the external wall adjacent the bedroom of Units W28 and W38 is understood to achieve an FRL of 30/--/--
C3.3 Exposure of openings in difference fire compartments	The distance between parts of external walls and any openings within them in different fire compartments separated by a fire wall must be not less than that set out in Table C3.3 unless- + Those parts of each wall have an FRL not less than 60/60/60; and + Any openings protected in accordance with C3.4.	**Not applicable:** There are no compartments exposed to each other for the purposes of applying Clause C3.3.
C3.4 Acceptable methods of protection	Where protection is required, doorways, windows and other openings must be protected as follows: + Doorways – (a) Internal or external wall-wetting sprinklers as appropriate used with doors that are self-closing or automatic closing; or (b) -/60/30 fire doors that are self-closing or automatic closing. + Windows – (a) Internal or external wall-wetting sprinklers as appropriate used with windows that are automatic closing or permanently fixed in the closed position; or (b) -/60/- automatic closing fire shutters. + Other openings – (a) Excluding voids – internal or external wall-wetting sprinklers, as appropriate; or (b) Construction having FRL not less than -/60/-.	**Performance Solution**: Details of the method of protection where applicable are to be provided at the Construction Certificate stage. Note: Bedroom windows to the residential SOU's require special attention due to the potential conflict between providing natural ventilation and also the method of protecting windows. Options include: + Fire shutters located externally; + External wall wetting drenchers to windows, however the windows are required to be fully closed at the time of activation of drenchers; + Performance Solutions may be developed that relies on radiant heat attenuation screens. The use of these screens are limited, i.e. the proximity to the fire source feature is to be considered, and within 1.2m is regularly difficult to justify its use.

Clause	Reference	Comment
C3.8 Openings in fire isolated exits	Specifies that the doorways that open into fire-isolated exits must be protected by -/60/30 fire doors that are self-closing or automatic. This clause also details the deemed-to-satisfy methods of activation. This does not apply to doors opening to a road or open space. A window in the external walls of fire-isolated exits 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.	**Compliance Readily Achievable**: Details to be included into the design. It is noted that none of the fire isolated exit stairs are proposed to have windows.
C3.9 Service penetrations in fire isolated exits	Fire isolated exits must not be penetrated by any services other than electrical wiring as permitted by D2.7, ducting associated with a pressurisation system or water supply pipes for fire services.	**Compliance Readily Achievable**: Details to be included into the design.
C3.10 Openings in fire isolated lift shafts	If lift shafts are required to be fire-isolated an entrance doorway must be protected by -/60- fire doors and the lift indicator panels must backed by construction having an FRL of not less than -/60/60 if it exceeds 35000mm²	**Compliance Readily Achievable**: Details to be included into the design.
C3.11 Bounding construction: Class 2, 3 and 4 parts	Protection is required to the bounding walls of sole-occupancy units or public corridors in Class 2 & 3 buildings and Class 4 portions of buildings of Types A, B & C Construction. Namely: + Doorways must be protected if providing access from an SOU to a: – Public corridor; – A room not within an SOU; or – The landing of an internal non-fire isolated stairway that serves a required exit; or – Another SOU + A doorway must be protected by a self-closing -/60/30 fire door if it provides access from a room not within an SOU to a public corridor or the like; or to the landing on a non-fire isolated stairway that serves as a required exit.	**Compliance Readily Achievable**: Relates to the residential parts of the building only. Fire compartment plans are required to be provided at the Construction Certificate stage which detail the required FRLs. Note: Bounding construction is required not only to the openings of the SOU's but any room opening onto the corridor or the like (see image below). 
C3.12 Openings in floors and ceilings for services	This clause applies to the floors and ceilings in buildings of Types A, B & C Construction and sets out the methods required to limit the spread of fire through openings in these building elements, required to resist the spread of fire.	**Compliance Readily Achievable**: Details to be included into the design.
C3.13 Openings in shafts	This clause specifies that in buildings of Type A Construction, openings in shafts must be protected (generally with 1 hour fire rated shafts and doors).	**Compliance Readily Achievable**: Details to be included into the design.

Clause	Reference	Comment
C3.15 Openings for service installations	The clause details the requirements for protection of service openings in building elements that have an FRL, to prevent the spread of fire. C3.15 applies only to an element required to have an FRL with respect to integrity or insulation. Specification C3.15 prescribes materials and methods of installation for services that penetrate walls, floors and ceilings required to have an FRL. Where the mechanical ventilation system penetrates floors or walls that require an FRL the installation is to comply with AS/NZS 1668.1.	**Compliance Readily Achievable**: Details to be included into the design.
C3.16 Construction joints	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.	**Compliance Readily Achievable**: Details to be included into the design.
C3.17 Columns protected with lightweight construction to achieve an FRL	A column protected by lightweight construction to achieve an FRL which passes through a building element that is required to have an FRL or a resistance to the incipient spread of fire, must be installed using a method and materials identical with a prototype assembly of the construction which has achieved the required FRL or resistance to the incipient spread of fire.	**Compliance Readily Achievable**: Details to be included into the design.
Spec.	***Specifications***	
Spec C1.1 Fire resisting construction	The new building works are required to comply with the requirements detailed under Table 3 of Specification C1.1 for Type A Construction.	**Further Information Required:** Compartment plans are to detail the FRLs that will be provided throughout based on the requirements of Table 3 of Specification C1.1 (refer to appendix 3). Performance Solutions are worth pursuing for the following area: • Garbage chutes – allow the garbage room to retain the fire rating of the base rather than fire rating of the shaft.

Clause	Reference	Comment
SECTION D	**ACCESS AND EGRESS**	
Part D1	***Provisions for Escape***	
D1.2 Number of exits required	All buildings must have at least one exit from each storey, except in the following circumstances where 2 exits are required:. + Buildings >25m in effective height (all Classes); + Basement areas >1.5m below Ground Level	**Performance Solution** Two (2) exits will not be provided to the Commercial tenancy located on the Ground Level, however this departure is readily justified with a Performance Solution on the basis that the single available door provides direct access to open space. **Complies** The remainder of the building has access to at least two (2) exits from every storey. Note: The Roof level contains only plant or the like and is therefore not considered a storey, accordingly a single exit is permitted to serve the space.
D1.3 When Fire isolated exits are required	Class 2– every stairway must be fire-isolated if it connects more than 3 consecutive storeys. An extra storey of any classification can be included if the building has a sprinkler system throughout; or if the stair is not providing access from or egress to the additional storey, and is separated by construction achieving an FRL of 60/60/60, and is smoke proof.	**Complies**: All exits stairs in the development are fire-isolated.
D1.4 Exit travel distances	For Class 2 buildings: + Maximum 6m to an exit or to a point of choice between alternative exits from sole-occupancy units. + 20m from a single exit to open space or road when the storey is on the same level of egress from sole-occupancy units + Maximum 20m to an exit or to a point of choice between alternative exits from any other part of the floor not in a sole-occupancy unit. For Class 5, 6, 7a and 9 buildings: + Maximum 20m to an exit or to a point of choice between alternative exits. + Maximum distance to one of those exits is 40m.	**Performance Solution** The following areas exceed the maximum permitted distance to a point where a choice of alternative exits is available: + Basement Levels 1, 2 & 3 – The distance to an exit is up to approximately 45m in lieu of the maximum permitted 40m. + Ground Level - The distance to an exit is up to approximately 54m in lieu of the maximum permitted 40m. + Level 1 - The distance to an exit from an SOU is up to approximately 8m in lieu of the maximum permitted 6m. + Level 2 - Up to 11m to a point where a choice between alternative exits is available in lieu of the maximum permitted 6m. + Level 3 - Up to 11m to a point where a choice between alternative exits is available in lieu of the maximum permitted 6m. + Level 4 Landscaped Terrace – Up to 28m to a point where a choice between alternative exits is available in lieu of the maximum permitted 20m. + Level 4-23 - Up to 8m to a point where a choice between alternative exits is available in lieu of the maximum permitted 6m.
D1.5 Distances between alternative exits	Exits required as alternative exits 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	**Performance Solution** The following areas exceed the maximum permitted 60m between exits:

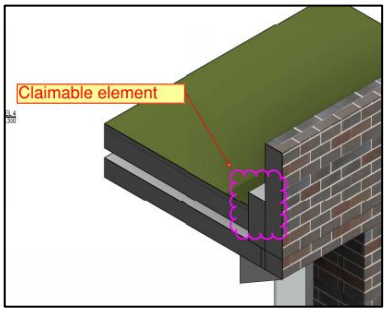
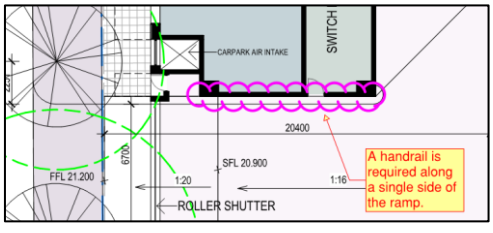
Clause	Reference	Comment
	available from all points on the floor including lift lobby areas; and (i) not less than 9m apart; and (ii) not more than + 45m apart in class 2 buildings; + 60m apart in all other cases (c) Located so that the alternative paths of travel do not converge such that they become less than 6m apart.	+ Basement 2 & 3 – Distance between exits is in the order of 83m + Basement 1– Distance between exits is in the order of 91m + Ground Level – Distance between exits is in the order of 89m The following areas exceed the maximum permitted 45m between exits: + Level 1 – Distance between exits is in the order of 52m.
D1.6 Dimensions of exits	The unobstructed height throughout a required exit must not be less than 2m and not less than 1980mm for a doorway. For the Class 2 part: The unobstructed width of paths of travel must be not less than 1m however, additional circulation space will be required in various locations to address compliance with AS1428.1-2009 The doorways in the building must have a minimum unobstructed opening as follows: + 850mm for accessible units and common doors + 750mm for other sole-occupancy unit doorways. For the Class 7a parts: + The minimum width of the corridors is to be 1m in width; however, additional circulation space will be required in various locations to address compliance with AS1428.1-2009. + The doorways in the building must have a minimum unobstructed opening of 850mm where required to be accessible	**Compliance is Readily Achievable:** Dimensions of corridors and doorways are to be further detailed.

Clause	Reference	Comment
D1.7 Travel via fire isolated exits	A doorway from a room must not open directly into a stairway, passageway or ramp that is required to be fire-isolated unless it is from a public corridor/lobby, sole-occupancy unit occupying all of a storey or a sanitary compartment/airlock. Each fire isolated stairway or ramp must provide independent egress from each storey served and must discharge to – + A road or open space; or + To a point in a space within the building that is only used for pedestrian movement or car parking that is open a minimum of 2/3 of its perimeter and from which a path of travel under 20m is available to a road or open space; or + A covered area that adjoins a road or open space, is open for a minimum of 1/3 of its perimeter, has an unobstructed height of at least 3m throughout and provides a path of travel the point of discharge to a road or open space within 6m. Where a path of travel from the point of discharge of a fire isolated exit necessitates passing within 6m of any part of an external wall of the same building, measured horizontally at right angles to the path of travel, that part of the wall must have – + an FRL of not less than 60/60/60; and + Any openings protected internally in accordance with BCA Clause C3.4, + For a distance of 3m above or below, as appropriate, the level of the path of travel, or for the height of the wall, whichever is the lesser.	**Does Not Comply** The discharge of the stairs at Ground Level is to be redesigned to ensure that occupants discharge the building without being exposed to the adjacent opening or travel beneath the building before reaching open space(see image below).  **Compliance readily achievable** Remainder of the building. Note: Fire service pumprooms are permitted to discharge into a fire isolated stair.
D1.8 External Stairs in Lieu of a Fire Isolated Exit	An external stairway or ramp may serve as a required exit in lieu of a fire-isolated exit serving a storey below an effective height of 25 m, if the stairway or ramp is— + non-combustible throughout; and + protected in accordance with BCA Part C3 if it is within 6 m of, and exposed to any part of the external wall of the building it serves	**Not Applicable** There are no External Stairs in lieu of fire isolated exits in this building.

Clause	Reference	Comment
D1.9 Travel via Non-fire isolated Exits	A non-fire-isolated stairway or non-fire-isolated ramp serving as a required exit must provide a continuous means of travel by its own flights and landings from every storey served to the level at which egress to a road or open space is provided. The maximum distance from any point of the floor to a point of egress to a road or open space is to be not more than 80m to the discharge point: + not being more than 20m to a door providing egress to a road or open space or + a fire isolated passageway leading to a road or + open space or + 40m from one of two such doorways or passageways located in opposite directions.	**Complies:** Applies to the non-fire isolated stair serving the mezzanine level of the restaurant**.**
D1.10 Discharge from exits	Upon egress occupants must have suitable paths of travel including compliant stairways and ramps (where required) between the building and the Roadway. Graded surfaces such as the vehicular ramp must not be steeper than 1:8 and may require handrails. Bollards are required to exit doors where they could be potentially blocked by vehicles. This will also include the discharge points of the stair to the carparking areas above to ensure that a clear 1 metre wide path of travel is provided to the public roadway. Bollards may also be required in front of the exits in the basement.	**Complies**. The architectural documentation shows that compliance is achieved in this regard.
D1.11 Horizontal Exits	Horizontal Exits may be counted as required exits in Class 9a-health care building or a In addition, Horizontal Exits must have a clear area on the side of the fire wall to which occupants are evacuating, to accommodate the total number of persons serviced by the Horizontal Exit of not less than 2.5m2 per patient.	**Not Applicable**:
D1.12 Non-Required stairways ramps or escalators	Relates to escalators, moving walkways, ramps or stairways that are not fire isolated nor required as an exit.	**Not Applicable**
D1.16 Plant rooms & lift motor rooms concession	A ladder may be used in lieu of a stairway to provide egress from a plant room with a floor area of not more than 100m^2 or all but one point of egress from a plant room or a lift machine room with a floor area not more than 200m^2. Sub-clause (b) sets out the parameters for the ladders permitted to be used in this circumstance.	**Compliance Readily Achievable**: Details showing how access to the Roof Level is accessed are to be included in the design.
D1.17 Access to lifts pits	This clause provides the requirements for access to lift pits not more than 3m deep and the requirements of construction of access for lift pits that are more than 3m deep. The requirements for signage to lift pits are also set out.	**Compliance Readily Achievable**: Details to be included into the design.

Clause	Reference	Comment
PART D2	***Construction of Exits***	
D2.2 Fire isolated stairways & ramps	A stairway or ramp, including landings that are required to be within a fire-resisting shaft must be constructed of non-combustible materials to protect the structural integrity of the shaft.	**Compliance Readily Achievable**: Details to be included into the design.
D2.3 Non-fire-isolated stairways and ramps	In a building with a rise in storeys of more than 2, required non-fire-isolated stairways and ramps must be either constructed in accordance with D2.2 or – + Reinforced or prestressed concrete; or + Steel at least 6mm thick at all points; or + Timber that has a finished thickness of at least 44mm, has an average density of at least 800 kg/m^3 at a moisture content of 12% and has not been joined by means of glue unless it has been laminated and glued with resorcinol/phenol formaldehyde.	**Compliance Readily Achievable**: Details demonstrating compliance with regard to the required non-fire isolated stair serving the mezzanine level of the restaurant are to be provided at the Construction Certificate stage.
D2.4 Separation of Rising and Descending Stair Flights	In a fire isolated exit there must be no direct connection between the flight rising from a storey below the road, and a flight descending from above that level. Separating construction must be non-combustible and smoke proof.	**Compliance Readily Achievable**: There is no direct connection between the rising and descending stairs at the level which they discharge. Details which demonstrate how smoke separation between the stairs is achieved shall be provided at the Construction Certificate stage.
D2.7 Installations in exits and paths of travel - Review	If installed in a path of travel to an exit, electrical distribution boards, communication cupboards and the like containing motors, etc. are to be enclosed with non-combustible construction, and doors are to be provided with smoke seals to the perimeter.	**Compliance Readily Achievable**: Details to be included into the design.
D2.13 Goings and risers	The stairs must comply with the tread, riser and going dimensions of this clause and the nosing of the stairs must be provided with a non-slip treads and meet the provisions of AS1428.1-2009. The following will apply in relation to the construction of all stairways: + Stairway must have not more than 18 and not less than 2 risers in each flight. + Goings and risers within the stair flights must be constant throughout. + Risers must be solid construction with no gaps and treads must have non slip finishes and stair nosings. + Goings and risers are to be in accordance with BCA Table D2.13	**Compliance Readily Achievable**: Details to be included into the design.

<table>
<tr><th>Clause</th><th>Reference</th><th>Comment</th></tr>
<tr><td>D2.14
Landings</td><td>In a stairway –
+ Landings must be a minimum of 750mm long, and where it involves a change of direction the length is measured 500mm from the inside edge of the landing
+ Have a slip resistance of the surface of the nosing strip in accordance with Table D2.14 and tested in accordance with AS 4586.
<table>
<tr><th rowspan="2">Application</th><th colspan="2">Surface Conditions</th></tr>
<tr><th>Dry</th><th>Wet</th></tr>
<tr><td>Ramps steeper than 1:14</td><td>P4/R11</td><td>P5/R12</td></tr>
<tr><td>Ramp steeper than 1:20 but not steeper than 1:14</td><td>P3/R10</td><td>P4/R11</td></tr>
<tr><td>Tread or landing surface</td><td>P3/R10</td><td>P4/R11</td></tr>
<tr><td>Nosing or landing strip</td><td>P3</td><td>P4</td></tr>
</table></td><td>Compliance Readily Achievable:
Details to be included into the design.</td></tr>
<tr><td>D2.15
Thresholds</td><td>The threshold of a doorway must not incorporate a step or ramp at any point closer to the doorway than the width of the door leaf unless –
+ In a part of the building required to be accessible, be provided with a threshold or step ramp to comply with AS 1428.1-2009.
+ In parts not required to be accessible (i.e. discharge of fire-isolated stairway), the door sill is not more than 190mm above the outside FFL.
+ In other cases, the doorway opens to a road or open space, external stair or balcony and the door still is a maximum of 190mm above the finished surface.</td><td>Compliance Readily Achievable:
Details to be included into the design.</td></tr>
</table>

Clause	Reference	Comment
D2.16 Balustrades	This clause details where balustrades are required to be provided and sets out in specific detail the construction requirements. Typically the following will apply: + Balustrades are required where the fall to the level below is more than 1m in height. The minimum height of a balustrade is 1m above the floor of the landing, walkway or the like; and 865mm above the floor of a stairway or a ramp. + For a fall of more than 4m to the surface level below, a window sill must be a minimum of 865mm in height above the height of the floor surface. + Where the floor is more than 4m above the surface beneath the balustrade any horizontal or near horizontal members between 150mm and 760mm above the floor must not facilitate climbing. + Balustrades must be constructed so as to not permit a sphere of 125mm diameter to pass through. The exception to this is within fire isolated exits within the building, or within a Class 7 or 8 building, where the rails can be positioned a maximum of 460mm apart, so long as a bottom rail is located so a sphere of 150mm cannot pass through the opening between the nosing of the stair treads and the rail or between the floor of the landing, balcony or the like.	**Does Not Comply:** The Level 4 landscaped terrace is shown to have a climbable element which runs around the inside perimeter of the face brick balustrade contrary to the requirements of this clause.  **Compliance Readily Achievable**: Details to be included into the design where applicable. Note 1: The perimeter of the loading dock need not comply with the requirements of the clause by virtue of the concession granted under part (b)(i). Note 2: should it be proposed to position condenser units, GPO's, gas fittings or the like on the balconies of the SOU's particular attention should be given to ensure that they are located such that they don't constitute a climbable element.
D2.17 Handrails	Generally - + Be located along at least one side; and + Be located along the full length, except where it is associated with a barrier; and + Have the top surface of the handrail a minimum of 865mm above the stairs or floor; and + Have no obstruction on or above that may break a handhold, except for newel posts, stanchions or the like. These requirements do not apply to handrails referred to in D2.18, a stairway or ramp providing a change in elevation of less than 1m, a land or a winder where a newel post is installed to provide a handhold.	**Further Information Required:** Handrails are to be documented on the Construction Certificate architectural drawings as follows: Fire-Isolated Stairs: A handrail is required along one side of all fire-isolated stairs which is a minimum of 865mm above the stair nosing and 1m above landings (which are greater than 500mm in length). The handrail must also be continuous between flights. Other stairs Handrails are to be provided to both sides of all other stairs that are not contained within a fire isolated exit. Note: A handrail is to be provided to a single side of the ramp on the approach to the exit discharging adjacent the roller shutter on the Ground Level. 

Clause	Reference	Comment
D2.18 Fixed platforms, walkways stairways and ladders	A fixed platform, walkway, stairway, ladder, any going and riser, any balustrade or other barrier attached thereto may comply with AS1657 if it only serves a machinery or plant room or non-habitable part of a sole-occupancy unit in a Class 2 building or Class 4 part.	**Compliance Readily Achievable**: Details to be included into the design. Note: Specific details of the access to the roof top are to be provided demonstrating compliance at the Construction Certificate stage.
D2.19 Doorways and doors	This clause applies to all doorways and refers to the types of doors that cannot be used in buildings of prescribed uses, the use of power operated doors and the force required to operate sliding doors. If the door is also power operated, it must be opened manually under a force of not more than 110N if there is a malfunction or failure to the power source; or upon the activation of a fire or smoke alarm anywhere in the fire compartment served by the door.	**Compliance Readily Achievable**: The proposed automatic sliding doors are to be fitted with fail-safe devices which trigger the doors to open automatically upon activation of the sprinkler/detection system within the fire compartment served by the door.
D2.20 Swinging doors	A swinging door in a required exit or forming part of a required exit must swing in the direction of egress and must not otherwise impede egress. In addition, the door must not encroach at any part of its swing by more than 500mm on the required width of the exit (with the exception of airlocks and sanitary compartments, and with the exception of buildings or building parts that are less than 200m^2).	**Complies.**
D2.21 Operation of latch	A door in a required exit or forming part of a required exit and in a path of travel to a required exit must be readily openable without a key from the side that faces a person seeking egress, by a single downward action or pushing action on a single device which is located between 900mm & 1100mm from the floor. This clause prohibits the use of devices such as deadlocks and knobs (rather, lever latches are required). D2.21 also sets out exceptions in relation to buildings where special security arrangements are required in relation to the uses carried out. Where fitted with a fail-safe device which automatically unlocks the door upon the activation of a sprinkler system or detection system, the above need not apply.	**Compliance Readily Achievable**: Details to be included into the design.
D2.22 Re-entry from fire-isolated exits	Doors of a fire-isolated exit must not be locked from the inside n a fire-isolated exit serving a storey above 25m effective height. This clause details the exceptions to the above requirements if the doors are fitted with an automatic failsafe device that automatically unlocks the door upon the activation of a fire alarm as follows: + On at least every fourth storey, the doors are not able to be locked and a sign is fixed on such doors stating that re-entry is available; or + An intercommunication system, or an audible or visual alarm system, operated from within the enclosure is provided near the doors and a sign is fixed adjacent to such doors explaining its purpose and method of operation.	**Compliance Readily Achievable**: Applies to all fire-isolated stairways. Details to be included into the design with the Construction Certificate application.

Clause	Reference	Comment
D2.23 Signs on doors	This clause requires the use of signs to alert persons that the operation of smoke doors and fire doors and doors discharging from fire isolated exits, must not be impaired and must be installed where they can be readily seen.	**Compliance Readily Achievable**: Details to be included in the developing design.

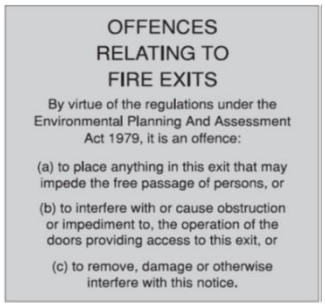
a) A sign, to alert persons that the operation of certain doors must not be impaired, must be installed where it can readily be seen on, or adjacent to, a—
   (i) A required fire door providing direct access to a fire-isolated exit; and
   (ii) A required smoke door, on the side of the door that faces 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
   (iii) Fire door forming part of a *horizontal exit*; and
   (iv) Smoke door that swings in both directions; and
   (v) 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—

Any new self-closing fire and/or smoke doors leading into the fire stair or forming part of a Horizontal Exit or smoke compartment are to be provided with signage as follows:

Any new automatic closing fire and/or smoke doors which are held on hold open devices that leads into the fire stair or forming part of a Horizontal Exit or smoke compartment are to be provided with signage as follows:

In addition to the above, the doors which provide access to the fire isolated exits and also the Horizontal Exits must have signage provided adjacent to the entry doorway which states the following (ref Clause 183 of EP&A Reg 2000):



Clause	Reference	Comment
D2.24 Protection of openable windows	This clause relates to the protection of openable windows in a class 2 building, where the floor level is more than 2m above the surface level beneath. The intent of this clause is to limit the risk of a person (especially a young child) falling through an openable window, however it does not apply to such a window where the lowest level of its window opening is less than 1.7m above the floor. Details for protection include the following: + Openable portion of the window must have a device to restrict the window opening; or + Be fitted with a screen with secure fittings; + Not permit a sphere of 125mm to pass through; + Resist outward horizontal action of 250N; + Have a child resistant release mechanism if the screen or device is able to be removed, unlocked or overridden. In addition to the above, and for floors that are more than 4m above the surface level below, a barrier with a height not less than 865mm above the floor is required for all openable windows. The barrier must permit a sphere of 125mm to pass through, and must not have any horizontal or near horizontal elements between 150mm and 760mm above the floor that facilitate climbing.	**Compliance Readily Achievable**: Windows to bedrooms within the Class 2 part of the building which have a sill height less than 1.7 m above FFL are to be provided with device capable of restricting the opening to less than 125mm. For other parts of the building where the floor is more than 4m above the surface level below and have a window sill height less than 865mm are not to have openings greater than 125mm nor contain horizontal or near horizontal elements between 150mm and 760mm above the floor that facilitate climbing. Details to be included in the developing design.
PART D3	***Access for People with Disabilities***	
D3.1 General building access requirements	The extent of access required depends on the classification of the building. Buildings and parts of buildings must be accessible as set out in Table D3.1 unless exempted by Clause D3.4.	**Compliance Readily Achievable**: Design statement and Access Report to be provided at Construction Certificate stage.
D 3.2 Access to buildings	This part requires accessways to be provided to accessible buildings from the main points of pedestrian entry at the allotment boundary and any accessible car parking space or accessible associated buildings connected by a pedestrian link. Access must be provided to and within all areas normally used by occupants (as required by Clause D3.1) within this building from the main points of pedestrian entry at the allotment boundary; from another accessible building connected by a pedestrian link; and any accessible car parking space. Accessways are to be provided to accessible buildings from the main points of pedestrian entry at the allotment boundary and any accessible car parking space or accessible associated buildings connected by a pedestrian link. Access must be provided through the principal pedestrian entrance and through not less than 50% of all pedestrian entrances (including the principal pedestrian entry).	**Compliance Readily Achievable:** Design statement and Access Report to be provided at Construction Certificate stage.

Clause	Reference	Comment
	In addition, as the building is greater than 500m^2, the non-accessible entrance must not be greater than 50m from an accessible entrance.	
D3.3 Parts of buildings to be accessible	This part specifies the requirements for accessways within buildings which must be accessible. In accordance with Clause D3.3; the non-fire-isolated stairways must comply with Clause 11 of AS 1428.1-2009 and the passenger lift must comply with Clause E3.6. Clause D3.3(g) and (h) requires that the pile height or pile thickness shall not exceed 11mm and the carpet backing thickness shall not exceed 4mm. Moreover, the carpet pile height or pile thickness dimension shall not exceed 11mm, the carpet backing thickness dimension shall not exceed 4mm and their combined dimension shall not exceed 15mm.	**Compliance Readily Achievable**: Design statement and Access Report to be provided at Construction certificate stage.
D3.4 Concessions	This part provides exemptions to the Deemed-to-Satisfy provisions for access by people with a disability. This part provides details on buildings or parts of buildings not required to be accessible under the BCA where providing access would be inappropriate because of the nature of the area or the tasks undertaken.	**Noted**: This can apply to the Back of House areas, Plant rooms, Fire services rooms and the like.
D3.5 Accessible Carparking	Accessible carparking spaces need not be provided in a Class 7a building or carparking area where a parking service is provided and direct access to any of the carparking spaces is not available to the public. Additionally, accessible spaces need not be designated where there is 5 or less carparking spaces. Accessible carparking spaces must be provided in accordance with Table D3.15 of the BCA 2016 in a Class 7a building required to be accessible and a carparking area on the same allotment as a building required to be accessible. Additionally, accessible spaces must comply with AS/NZS 2890.6.	**Compliance Readily Achievable**: Design statement and Access Report to be provided at Construction certificate stage. It is noted that additional requirements from the Consent Authority will be requested during the Development Application assessment process.
D3.6 Signage	Braille and tactile signage must be provided to required accessible sanitary facilities, spaces with hearing augmentation, ambulant sanitary facilities, pedestrian entrances that are not accessible, **and** to each door required by Clause E4.5 to be provided with an exit sign. The latter is to state EXIT and state the level e.g. LEVEL 1.	**Compliance Readily Achievable**: Design statement and Access Report to be provided at Construction Certificate stage.

Clause	Reference	Comment
Signage Specification:- The signage is to be:- (a) Located between 1200-1600mm above FFL (b) Signs with single lines of characters are to have the line of the tactile characters between 1250mm-1350mm above FFL (c) Signage tactile characters must be raised or embossed to a height between 1mm-1.5mm (d) Upper case letter to be between 20mm-55mm (e) Signage is to be contrasting & is to comply with BCA Specification E3.6. Signage Locations The Braille & tactile egress signage is to be located adjacent or on (see above) each door that:- (a) Provides direct egress into a fire isolated stairway (b) Provides direct discharge from the storey into a passageway or lobby (airlock) associated with the fire isolated stairway (c) Provide direct discharge from a fire isolated stairway to open space (discharge door) (d) Forms part of a horizontal exit (--/120/30 fire doors in the fire compartment walls)		
D3.7 Hearing augmentation	This part provides requirements for provision of hearing augmentation in accessible buildings, i.e. to be provided where an in-built amplification system (other than one used for emergencies), is installed: + In an auditorium, conference room, meeting room, or room for judiciary purposes. + At any ticket office, teller's booth, reception area or the like where the public is screened from the service provider. This part provides requirements for provision of hearing augmentation in accessible buildings.	**Compliance Readily Achievable**: Design statement and Access Report to be provided at Construction Certificate stage
D3.8 Tactile indicators	This clause provides for the installation of tactile indicators in buildings required to be accessible and must be provided to warn people who are blind or have a vision impairment that they are approaching a stairway, escalator, passenger conveyor, ramp, overhead obstruction or an accessway meeting a vehicular way, except for areas exempted by D3.4	**Compliance is Readily Achievable**: Design statement and Access Report to be provided at Construction Certificate stage.
D3.11 Ramps	Ramps may be used as part of an accessway where there is a change of level and must comply with the requirements set out in AS1428.1	**Compliance Readily Achievable**: Design statement and Access Report to be provided at Construction Certificate stage.
D3.12 Glazing on an accessway	Where there is no chair rail, handrail or transom, all frameless or fully glazed doors, sidelights, including any glazing capable of being mistaken for a doorway or opening, shall be clearly marked for their full width with a solid and non-transparent contrasting line. The contrasting line shall be not less than 75 mm wide and shall extend across the full width of the glazing panel. The lower edge of the contrasting line shall be located between 900 mm and 1000 mm above the plane of the finished floor level. Any contrasting line on the glazing shall provide a minimum of 30% luminance contrast when viewed against the floor surface or surfaces within 2 m of the glazing on the opposite side.	**Compliance Readily Achievable**: Design statement and Access Report to be provided at Construction Certificate stage.

Clause	Reference	Comment
SECTION E	**SERVICES AND EQUIPMENT**	
Part E1	***Fire Fighting Equipment***	
E1.3 Fire hydrants	A fire hydrant system in accordance with the provisions of AS2419.1-2005 must be provided to serve a building having a total floor area greater than 500m². The hydrant booster assembly and any external fire hydrants are required to be located greater than 10 metres from an external wall of the building, or affixed to the external wall and protected by a radiant heat shield that has an FRL of 90/90/90 located 2 metres either side and 3 metres above the outlets. Any gas meter must be located a minimum of 2-metres from the hydrant booster outlet. Internal hydrants within fire-isolated stairways are required to have a minimum 1m clearance from the outlet. A required fire services pump room is required to be accessible directly from the road or open space, or from a door opening from a fire isolated exit. Internal Hydrants are to be located within each required Fire Isolated Exit (or alternatively the external stairs in lieu of a fire isolated exit).	**Performance Solution:** The proposed location of the fire hydrant booster assembly does not facilitate the provision of a 90/90/90 FRL wall which extends 2m each side and 3m above the booster assembly accordingly a Performance Solution is required to justify its proposed location. **Further Information Required:** The Construction Certificate drawings are to detail internal hydrant landing valves within fire-isolated stairways which have a minimum 1m clearance from the outlet noting that the landing valve must be located at the level which it serves i.e. a change in height of not more than 2 risers. Note 1: The location of the Fire Services room presumably containing the hydrant pump is located in the Basement 1 Level with direct access to the fire isolated exit. This arrangement is suitable however no other services can be located in this room other than those relating to fire services. Note 2: The building is >50m in effective height and accordingly additional requirements apply for hydrant infrastructure, such as relay pumps.
E1.4 Fire Hose Reels	A fire hose reel system must be provided to serve a building where one or more internal fire hydrants are installed or in a building with a floor area greater than 500m². Fire Hose Reels are to be located within 4m of an exit, or located adjacent to an internal hydrant (other than one within a fire isolated exit). Where system coverage is not achieved by the above, additional FHR may be located in paths of travel to an exit.	**Compliance is readily achievable:** Note 1: Fire hose reel coverage is not required for Class 2 parts. Coverage plans are to be provided at the Construction Certificate stage. Note 2: Hose reels located within a tenancy (retail or restaurant) cannot be used to achieve coverage outside the subject tenancy.
E1.5 Sprinklers	A sprinkler system must be installed in a building or part of a building when required by Table E1.5 and comply with Specification E1.5. Sprinkler alarm valves must be located in a secure room or enclosure which has direct egress to a road or open space. Table E1.5 sets out which types of building occupancies and Classes which require having sprinkler systems installed in them.	**Further Information Required:** A Sprinkler system complying with Specification E1.5 and AS2118.1-1999 is to be provided throughout the development. Construction Certificate plans are to demonstrate that Sprinkler alarm valves will be located in a secure room or enclosure which has direct egress to a road or open space. Note: ensure that the plenum located throughout the basement levels is provided coverage.

Clause	Reference	Comment
E1.6 Portable fire extinguishers	Portable fire extinguishers must be provided as listed in Table E1.6 and must be selected, located and distributed in accordance with Sections 1, 2, 3 and 4 of AS 2444 In a class 2 building, portable fire extinguishers must be: + An ABE type fire extinguisher; and + A minimum size of 2.5kg; and + Distributed outside a sole-occupancy unit- a) to serve only the storey at which they are located; and b) so that the travel distance from the entrance doorway of any sole-occupancy unit to the nearest fire extinguisher is not more than 10m.	**Further Information Required:** Portable Fire Extinguishers are to be detailed throughout the building in accordance with AS2444. The Class 2 parts must have extinguishers (minimum 2.5 kg ABE) located within 10m of SOU doorways.
E1.8/ Spec E1.8 Fire Control Centre / Room	A Fire Control Facility must be provided for a building with an effective height of >25m and for Class 6, 7, 8 or 9 buildings >18,000m^2. The room is required to be accessed by 2 paths of travel, one from a public space or a fire isolated passageway and the other from the front entrance, each not requiring a change in level of more than 300mm.	**Compliance readily achievable:** The building exceeds 50m in effective height and accordingly a dedicated Fire Control Room is required as per Clause 9 of Spec E1.8. The Construction Certificate plans are required to show the required equipment and fixtures as per clauses 6-12 of Spec E1.8 i.e. FIP, raked plan table, phone, blackboard/white board etc.
E1.9 Fire precautions during construction	In buildings under construction at least one fire extinguisher to suit Class A, B and C fires and electrical fires must be provided at all times on each storey adjacent to a required exit and if the building has reached an effective height of 12m the required hydrant and hose reel systems must be installed, as set out in (b)(ii) and be operational and any required booster connections must be installed.	**Compliance Readily Achievable**: Contractor to note.

Clause	Reference	Comment
Part E2	***Smoke Hazard Management***	
E2.2 General requirements for smoke hazard management (including Tables E2.2a & E2.2b)	Class 2 parts: + A smoke alarm system is required throughout the building as per Clause 3 or 4 of Specification E2.2a of the BCA and the relevant provisions of AS 3786 - 2014. + Where the exits serve any storey above 25m in effective height the exits are required to be pressurised. Class 5, 6 & 9b parts + An automatic air pressurisation system for fire-isolated exits in accordance with AS/NZS 1668.1 in each required fire-isolated stairway; **or** + A zone smoke control system in accordance with AS/NZS 1668.1, if the Class 5, 6, 7b, 8 or 9b building part has more than one fire compartment; **or** + An automatic smoke detection and alarm system complying with Specification E2.2a; **or** + A sprinkler system complying with Specification E1.5. Class 7a parts: + A mechanical ventilation system in accordance with AS 1668.2 must comply with clause 5.5 of AS/NZS 1668.1 except that— - fans with metal blades suitable for operation at normal temperature may be used; and - the electrical power and control cabling need not be fire rated.	**Compliance Readily Achievable:** An automatic air pressurisation system for fire-isolated exits in accordance with Specification E2.2 and AS/NZS 1668.1-2015 is proposed to be provided in each required fire-isolated stairway throughout the development. The class 2 portion is required to be provided with an automatic smoke detection system in accordance with Spec E2.2a. The Class 7a and 6 parts are required to be provided with sprinklers, and therefore AS1670.1 is not a DTS requirement in those spaces **Performance Solution** Zone Smoke Control is required for the Class 6 parts of the building as they are separate fire compartments in a building exceeding 25m effective height. In this instance It is worthy of pursuing the deletion of Zone Smoke control as these spaces are below 25m, and are provided with sprinklers. Note: Stair pressurisation is required for the fire isolated stairs serving the basement levels however the drawings do not show the provision of mechanical risers.
E2.3 Provision for special hazards	Additional smoke hazard management measures may be necessary due to the nature of a buildings special characteristic, its use, the nature of materials being stored in them and special mix of classifications.	**Noted** No further action is required for this development.
Part E3	***Lift Installations***	
E3.2 Stretcher facilities in lifts	Stretcher facilities, complying with this clause, must be provided in lifts in at least one emergency lift as required by E3.4 or in a storey above an effective height of 12m.	**Compliance Readily Achievable**: At least one of the lifts (which serve each storey for each tower) must be designed to accommodate a stretcher facility i.e. must accommodate a raised stretcher with a patient lying on it horizontally by providing a clear space not less than 600mm wide x 2000mmm long x 1400mm high above the floor level.
E3.3 Warning against use of lifts in fire	Warning signs required be provided must be displayed where they can be readily seen and must comply with the details and dimensions of Figure 3.3.	**Compliance Readily Achievable:** Design certification to be provided at the Construction Certificate stage.

Clause	Reference	Comment
E3.4 Emergency Lifts	At least one (1) Emergency Lift must be installed in a building which has an effective height of not more than 25m. if 2 or more passenger lifts are proposed, at least 2 Emergency Lifts must be provided. Dimensions: + Minimum depth of car: 2280mm + Minimum width of car: 1600mm + Minimum Floor to Ceiling Height: 2300mm + Minimum Door Height: 2100mm + Minimum Door Width: 1300mm	**Compliance Readily Achievable** Confirmation is to be provided that each tower is provided with at least 2 emergency lifts serving each storey. Emergency lifts need to be provided in fire rated shafts and have minimum dimensions as per Table E3.4
E3.5 Landings	Access and egress to and from lift well landings must comply with the Deemed-to-Satisfy Provisions of Part D.	**Compliance Readily Achievable:**
E3.6 Passenger lifts	In an accessible building, every passenger lift must be one of the types identified in Table E3.6a, have accessible features in accordance with Table E3.6b and not rely on a constant pressure device for its operation if the lift car is fully enclosed.	**Compliance Readily Achievable:** Design certification to be provided at the Construction Certificate stage.
E3.7 Fire service controls	In passenger lifts designed in accordance with AS 1735 Parts 1 and 2, all lift cars serving any storey above an effective height of 12m must be provided with fire service controls.	**Compliance Readily Achievable:** Design certification to be provided at the Construction Certificate stage.
E3.9 Fire service recall operation switch	Each group of lifts must be provided with one fire service control switch (required by Clause E3.7 above) that activates the fire service recall operation. This clause details the switch, the labelling, the key and operation procedures for a fire service recall operation.	**Compliance Readily Achievable:** Design certification to be provided at the Construction Certificate stage.
E3.10 Lift car fire service drive control switch	The lift car fire service drive control switch required by E3.7 must be activated from within the lift car. This clause details the switch, the initiation, the labelling and operation for the fire service drive control switch.	**Compliance Readily Achievable:** Design certification to be provided at the Construction Certificate stage.
Part E4	***Emergency Lighting, Exit Signage and Warning Systems***	
E4.2 Emergency lighting	This clause details when emergency lighting must be installed in Class 2 to 9 buildings. The requirements for buildings and parts of buildings are detailed in sub-clauses (a) to (i) and each sub-clause must be considered as more than one may apply to any single building.	**Compliance Readily Achievable:** Design certification to be provided at the Construction Certificate stage.
E4.4 Design and operation of emergency lighting	Every required emergency lighting system must comply with AS2293.1.	**Compliance Readily Achievable:** Design certification to be provided at the Construction Certificate stage.
E4.5 Exit signs	An exit sign must be clearly visible to persons approaching the exit and must be installed on, above or adjacent to each door providing egress from a building. Sub-clauses (a) to (d) set out the situations where exit signs are required to be installed.	**Compliance Readily Achievable:** Design certification to be provided at the Construction Certificate stage.

Clause	Reference	Comment
E4.6 Direction signs	If an exit is not readily apparent to persons occupying or visiting the building then exit signs must be installed in appropriate positions in corridors, hallways, lobbies, and the like, indicating the direction to a required exit.	**Compliance Readily Achievable:** Design certification to be provided at the Construction Certificate stage.
E4.8 Design and operation of exit signs	Every required exit sign must comply with AS/NZS 2293.1 and be clearly visible at all times when the building is occupied by any person having the legal right of entry into the building.	**Compliance Readily Achievable:** Design certification to be provided at the Construction Certificate stage.
E4.9 Sound System and Intercom System for Emergency Purposes	A SSISEP (EWIS) is required for buildings that exceed 25m in effective height	**Compliance Readily Achievable:** Design certification to be provided at the Construction Certificate stage.

Clause	Reference	Comment
SECTION F	**HEALTH AND AMENITY**	
Part F1	***Damp & Weather Proofing***	
FP1.4	A roof and external wall (including openings around windows and doors) must prevent the penetration of water that could cause a) Unhealthy or dangerous conditions, or loss of amenity for occupants; and b) Undue dampness or deterioration of building elements. *Note 1: There are no Deemed-to-Satisfy provisions for this Performance Requirement in respect to External Walls.* *Note 2: Refer to Clause F1.5 for roof coverings.*	**Performance Solution** Design statement and a documented Performance Solution is to be provided with the Construction Certificate application, either by using: + The Verification Methods in Clause FV1; or + Other verification methods deemed acceptable by the Certifier; or + Evidence to support that the use of the material or product, form of construction or design meets the Performance Requirements or the DTS provisions, such as a Certificate of Conformity (eg. CodeMark); or + By way of Expert Judgement.
F1.1 Stormwater drainage	Stormwater drainage must comply with AS/NZ 3500.3.	**Compliance Readily Achievable:** Design certification to be provided at the Construction Certificate stage.
F1.4 External Above ground Membranes	Waterproofing membranes for external above ground use must comply with AS4654 Parts 1 and 2.	**Compliance Readily Achievable:** Design certification to be provided at the Construction Certificate stage.
F1.5 Roof coverings	This clause details the materials and appropriate standards, with which roofs must be covered with. The roofing requirements are set out in sub-clauses (a), (b), (c), (d), (e) & (f) which set out the types of materials that may be used and the adopted Australian Standards that apply to their quality and installation.	**Compliance Readily Achievable:** Design certification to be provided at the Construction Certificate stage.
F1.6 Sarking	Sarking-type materials used for weatherproofing of roofs must comply with AS/NZS 4200 parts 1 and 2.	**Compliance Readily Achievable**: Details to be included into the design. Note: If combustible sarking is specified to be located within the external wall assembly a Performance Solution will be required.
F1.7 Waterproofing of wet areas in buildings	This clause requires that wet areas in Class 2 to 9 buildings must be waterproofed. It prescribes the standards to which the work must be carried on the construction of rooms containing urinals and their installation.	**Compliance Readily Achievable**: Details to be included into the design.
F1.9 Damp-proofing	(a) This sub-clause requires that moisture from the ground must be prevented from reaching certain parts of buildings as listed. (b) This sub-clause requires that all damp-proofing materials and termite shields used as damp-proofing must comply with AS/NZS 2904 and AS 3660.1. (c) This sub-clause lists the buildings and parts of building that do not need to comply with (a).	**Compliance Readily Achievable**: Details to be included into the design.

Clause	Reference	Comment
F1.10 Damp-proofing of floors on the ground	If the floor of a room is laid on the ground or on fill, moisture from the ground must be prevented from reaching the upper surface of the floor and adjacent walls by the insertion of a vapour barrier in accordance with AS 2870. Damp-proofing need not be provided if weatherproofing is not required or the floor is the base of a stair, lift or similar shaft which is adequately drained by gravitation or mechanical means.	**Compliance Readily Achievable**: Details to be included into the design.
F1.11 Floor Wastes	Class 2, 3 or Class 4 parts of buildings, a bathroom or laundry located at any level above a sole occupancy unit or public space must have a floor waste and the floor graded to the floor waste.	**Compliance Readily Achievable**: Details to be included into the design.
F1.13 Glazed assemblies	Glazed assemblies in an external wall must comply with AS2047 requirements for resistance to water penetration for windows, sliding doors with a frame, adjustable louvres, shop fronts and windows with one piece framing.	**Compliance Readily Achievable**: Details to be included into the design.
Part F2	***Sanitary & Other Facilities***	
F2.1 Facilities in residential buildings	In a Class 2 building: + Each residential sole occupancy unit is required to be provided with a kitchen sink with facilities for cooking, a bath or shower, a closet pan and washbasin, a washtub and a space for a washing machine and drier. + In a residential building containing more than 10 sole-occupancy units a closet pan and washbasin in a room at or near ground level must be provided and be accessible to employees without entering a sole-occupancy unit.	**Compliance Readily Achievable**: Plans submitted with the Construction Certificate are to show the location of a sanitary facility located on the Ground Level which is readily accessible to maintenance workers or the like.
F2.2 / F2.3 – Calculation of Number of Occupants & Facilities	This clause sets out the requirements for the calculation of the number of occupants and the number of sanitary facilities required to be installed in Class 2 to 9 buildings. Sanitary facilities are required to be provided for the employees of the commercial tenancies. If not more than 10 persons are employed a single unisex facility may be provided, the facility is required to comply as an accessible sanitary facility with AS 1428.1-2009.	**Further Information Required**: + The location of the sanitary facilities proposed to serve the commercial tenancy, restaurant, and two retail tenancies is to be shown on the drawings. + Note 1: The projected population for each of the aforementioned tenancies is to be provided otherwise a calculation of population in accordance with D1.13 will be relied upon which is often more onerous than necessary. + Note 2: Sanitary facilities located within a tenancy cannot be relied upon for catering for occupants of a different tenancy.
F2.4 Accessible sanitary facilities	Accessible unisex sanitary compartments must be provided, in accordance with Table F2.4(a) and unisex showers must be provided in accordance with Table F2.4(b), in buildings or parts that are required to be accessible. The details for the provision of disable facilities and the standard, AS 1428.1, are set out in sub-clauses (a) to (i).	**Compliance is readily achievable**: The design of the accessible facilities is to be further assessed by an Accredited Access consultant.

Clause	Reference	Comment
F2.5 Construction of sanitary compartments	Other than in an early childhood centre, sanitary compartments must have doors and partitions that separate adjacent compartments and extend – + from floor level to the ceiling in the case of a unisex facility; or + 1.8m above the floor in all other cases. The door to a fully enclosed sanitary compartment must open outwards; or slide: or be readily removable from the outside of the sanitary compartment, unless there is a clear space of at least 1.2m, measured in accordance with Figure F2.5 between the closet pan within the sanitary compartment and the doorway.	**Compliance Readily Achievable**: Details to be included into the design.
Part F3	***Room Sizes***	
F3.1 Height of rooms and other spaces.	The minimum ceiling heights within the development are as follows: <u>Class 2 part</u> + Kitchen, laundry or the like – 2.1m + Corridor or passageway – 2.1m + A habitable room, excluding kitchen – 2.4m <u>Class 6, 7a & 7b</u> + Generally – 2.4m + Carparking area – 2.1m + Corridor, passageway, or the like — 2.1 m; and <u>All building parts</u> + Bathroom, shower room, sanitary compartment, airlock, pantry, store room, garage or the like — 2.1 m; + Commercial kitchen – 2.4m; + 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.	**Compliance Readily Achievable**: Detailed sections throughout the building are required to be provided for review at the Construction Certificate stage. <u>Note</u>: Occupancies below external terraces generally suffer from additional insulation requirements which can lead to lower than permitted ceiling heights (eg. ADG and 2700mm minimum).
Part F4	***Light & Ventilation***	
F4.1 Natural lighting	Natural lighting must be provided in: + Class 2 buildings – to all habitable rooms.	**Further Information Required:** Windows are to be detailed on the Construction Certificate plans for all habitable rooms within Class 2 SOUs.
F4.2/F4.3 Method and extent of achieving natural lighting	Windows or the like are to have an aggregate light transmitting area of not less than 10% of the floor area of the room.	**Compliance is readily achievable**: Compliance with the requirements of this Clause is to be demonstrated on the Construction Certificate plans with respect to glazed opening sizes to ensure 10% of the area of the floor is dimensioned.
F4.4 Artificial lighting	Artificial lighting must be provided in required stairways, passageways, and ramps and where natural light is insufficient. The artificial lighting system must comply with AS/NZS 1680.0.	**Compliance Readily Achievable:** Design certification to be provided at the Construction Certificate stage.

Clause	Reference	Comment
F4.5 Ventilation of rooms	A habitable room, office, shop, factory, workroom, sanitary compartment, bathroom, shower room, laundry and any other room occupied by a person for any purpose must have natural ventilation complying with F4.6 **or** a mechanical or air-conditioning system complying with AS1668.2 and AS/NZS 3666.1. Note: NSW F4.5(b) a mechanical ventilation or air-conditioning system complying with AS 1668.2 – the reference to AS/NZS 2666.1 is deleted from the BCA in NSW as the need to comply with this standard is regulated under the relevant section of the Public Health Act 1991.	**Compliance Readily Achievable:** Design certification to be provided at the Construction Certificate stage.
F4.6/F4.7 Natural ventilation	Natural ventilation must consist of openings, windows, doors or other devices which can be opened— with a ventilating area not less than 5% of the floor area of the room required to be ventilated. Additionally, open to a suitably sized space open to the sky or an adjoining room in accordance with F4.7.	**Compliance Readily Achievable:** Design certification to be provided at the Construction Certificate stage. Note: Additional comments under C3.4
F4.8 Restriction on position of water closets and urinals	A room containing a water closet pan or urinal must not open directly into a kitchen or pantry, public dining room or restaurant, a dormitory in a Class 3 building, a room used for public assembly (which is not an early childhood centre, primary school or open spectator stand) or a workplace normally occupied by more than 1 person.	**Compliance Readily Achievable:** The assessment of the additional WC's required by F2.2/2.3 will be undertaken at the Construction Certificate stage.
F4.9 Airlocks	If a room containing a closet pan or urinal is prohibited under F4.8 form opening directly into another room then the provisions of sub-clauses (a) & (b) apply relating to the requirements of airlocks and mechanical ventilation standards	**Not Applicable:** No airlocks are currently proposed in the building.
F4.11 Carparks	Every storey of a carpark must have AS1668.2 ventilation or AS1668.4 Natural Ventilation (except an open deck carpark)	**Compliance Readily Achievable:** Compliance with AS1668.2 is readily achievable However, if there is more than one Jet Fan proposed in the carpark a Performance Solution will be necessary.
F4.12 Kitchen local exhaust ventilation	A commercial kitchen must be provided with a kitchen exhaust hood complying with AS 1668.1 and 1668.2	**Compliance Readily Achievable:** Design certification to be provided at the Construction Certificate stage.

Clause	Reference	Comment
SECTION G	**ANCILLARY PROVISIONS**	
NSW Part G1	This Section applies to the technical construction requirements for barriers to restrict access to swimming pools, subject to out-of-ground pool walls and the walls of above ground pools not being considered to be effective barriers. The Swimming Pools Act 1992 and Reg 2008 regulate the circumstances in which a barrier is required and prevail in the case of any inconsistency.	**Compliance Readily Achievable**: Pool fencing in accordance with AS1926.1 will be required to be implemented at the proposed pool.

Clause	Reference	Comment
SECTION J	**ENERGY EFFICIENCY**	
BASIX	For class 2 buildings.	**Compliance Readily Achievable**: BASIX certification and details on plans to be provided with the Construction Certificate.
J1 Building Fabric	The provision of insulation of the building envelope will be required in the proposed building, in accordance with Clauses J1.0 to J1.6, and the Tables therein, including Thermal Construction General, Roof and Ceiling Construction, Rooflights, Walls, and Floors. Design details and/or certification of design will be required to be provided in this regard.	**Compliance Readily Achievable**: Design certification and Section J report to be provided at the Construction Certificate stage.
J2 Glazing	Glazing within the external building envelope will be required to be assessed/designed to achieve compliance with Clauses J2.0 to J2.5, including the Tables therein, having regard to the maximum aggregate air-conditioning energy attributable to each façade of the proposed building. A calculation demonstrating that the proposed design of the building complies with the requirements of Part J2 is required to be provided in this regard.	**Compliance Readily Achievable**: Design certification and Section J report to be provided at the Construction Certificate stage.
J3 Building sealing	The proposed building envelope will be required to be sealed to prevent air infiltration in accordance with the requirements of Clauses J3.0 to J3.6. Details or certification that the proposed building design complies with the requirements of Part J3 is required to be provided.	**Compliance Readily Achievable**: Design certification and Section J report to be provided at the Construction Certificate stage.
J5 Air-conditioning & ventilation systems	Details and/or design certification which confirm that any proposed air-conditioning system or unit within the proposed building achieves compliance with the relevant requirements of Part J5 will be required to be provided from the mechanical engineer.	**Compliance Readily Achievable**: Design certification and Section J report to be provided at the Construction Certificate stage.
J6 Artificial lighting & power	Details and/or design certification which confirm that all artificial lighting, power control, and boiling/chilled water units within the proposed building achieves compliance with the relevant requirements of Part J6 will be required to be provided from the electrical engineer.	**Compliance Readily Achievable**: Design certification and Section J report to be provided at the Construction Certificate stage.
J7 Hot water supply & swimming pool & spa pool plant	Details and/or design certification which confirm that any proposed hot water supply system within the proposed building achieves compliance with the relevant requirements of Part J7 (Section 8 of AS 3500.4) will be required to be provided from the hydraulic engineer.	**Compliance Readily Achievable**: Design certification and Section J report to be provided at the Construction Certificate stage.
J8 Access for maintenance & facilities for monitoring	See NSW Subsection J8 for access to maintenance. Access must be provided to all plant, equipment and components that require maintenance in accordance with Part I2.	**Compliance Readily Achievable**: Design certification and Section J report to be provided at the Construction Certificate stage.

APPENDIX 2

PRELIMINARY FIRE SAFETY SCHEDULE

Statutory Fire Safety Measure	Design / Installation Standard	Proposed
Access Panels, Doors & Hoppers	BCA Clause C3.13 & AS 1530.4 – 2014 and Manufacturer's specifications	✓
Alarm Signalling Equipment	AS 1670.3 – 2004	✓
Automatic Fail Safe Devices	BCA Clause D2.21	✓
Automatic Fire Detection & Alarm System	BCA Spec. E2.2a & AS 1670.1 – 2015	✓
Automatic Fire Suppression Systems	BCA Spec. E1.5 & AS 2118.1 –1999	✓
Emergency Lighting	BCA Clause E4.4 & AS 2293.1 – 2005	✓
Emergency Evacuation Plan	AS 3745	✓
Exit Signs	BCA Clauses E4.5, E4.6 & E4.8; and AS 2293.1 – 2005	✓
EWIS	BCA Clause E4.9 and AS1670.4-2015	
Fire Blankets	AS 3504 – 1995 & AS2444 – 2001	✓
Fire Dampers	BCA Clause C3.15, AS 1668.1 – 2015 & AS 1682.1 & 2 – 1990 and manufacturer's specification	✓
Fire Doors	BCA Clause C2.12, C2.13, C3.3 C3.4, C3.5, C3.7, C3.8 & C3.11; and AS 1905.1 – 2015 and manufacturer's specification	✓
Fire Hydrant Systems	Clause E1.3 & AS 2419.1 – 2005	✓
Fire Seals	BCA Clause C3.15, AS 1530.4 – 2014 & AS 4072.1 – 2005 and manufacturer's specification	✓
Lightweight Construction	BCA Clause C1.8 & AS 1530.4 – 2015 and manufacturer's specification	✓
Mechanical Air Handling Systems	BCA Clause E2.2, AS/NZS 1668.1 – 2015 & AS 1668.2 – 2012	✓
Paths of Travel	EP&A Regulation Clause 186	✓
Portable Fire Extinguishers	BCA Clause E1.6 & AS 2444 – 2001	✓
Pressurising Systems	BCA Clause E2.2 & AS/NZS 1668.1 – 2015	✓
Smoke Hazard Management Systems	BCA Part E2 & AS/NZS 1668.1 –2015	✓
Smoke Dampers	AS/NZS 1668.1 – 2015	✓
Smoke Doors	BCA Spec C3.4 & C2.5	✓
Wall-Wetting Sprinklers	BCA Clause C3.4 & AS 2118.2 – 1995	✓
Warning & Operational Signs	Section 183 of the EP&A Regulation 2000, AS 1905.1 – 2015, BCA Clause C3.6, D2.23, D3.6, E3.3	✓

APPENDIX 3

TYPE A CONSTRUCTION: FRL OF BUILDING ELEMENTS

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

Notes:

1. Any lightweight construction in a fire wall or an internal wall required to have an FRL is to comply with Specification C1.8.
2. Any insulation installed in the cavity of the wall is required to be non-combustible.
3. Fire rated shafts are required to be enclosed at the top and bottom by construction having an FRL of not less than what the shaft requires (in both directions)
4. Lift shafts are required to be enclosed at the top of the shaft with fire rated construction having an FRL in accordance with the table above.
5. Fire isolated exits are to be provided with a fire rated "lid" that achieves an FRL in accordance with the table above.
6. Where roof lights are proposed they are required to be located not less than 3 metres from a roof light in an adjoining fire separated part; and must not be more than 20% of the area of the roof.
7. Any loadbearing internal walls or loadbearing fire walls are to be masonry or concrete.
8. External walls must be of non-combustible construction. Non-loadbearing parts of an external wall that are more than 3m from a fire source feature need not be fire rated.