NCC Assessment Report

69 Melwood Avenue, Forestville

Prepared for: Dilcarra Pty Ltd
Job No: BJA22055
Date: December 22, 2022
Revision Rev 1 - DA

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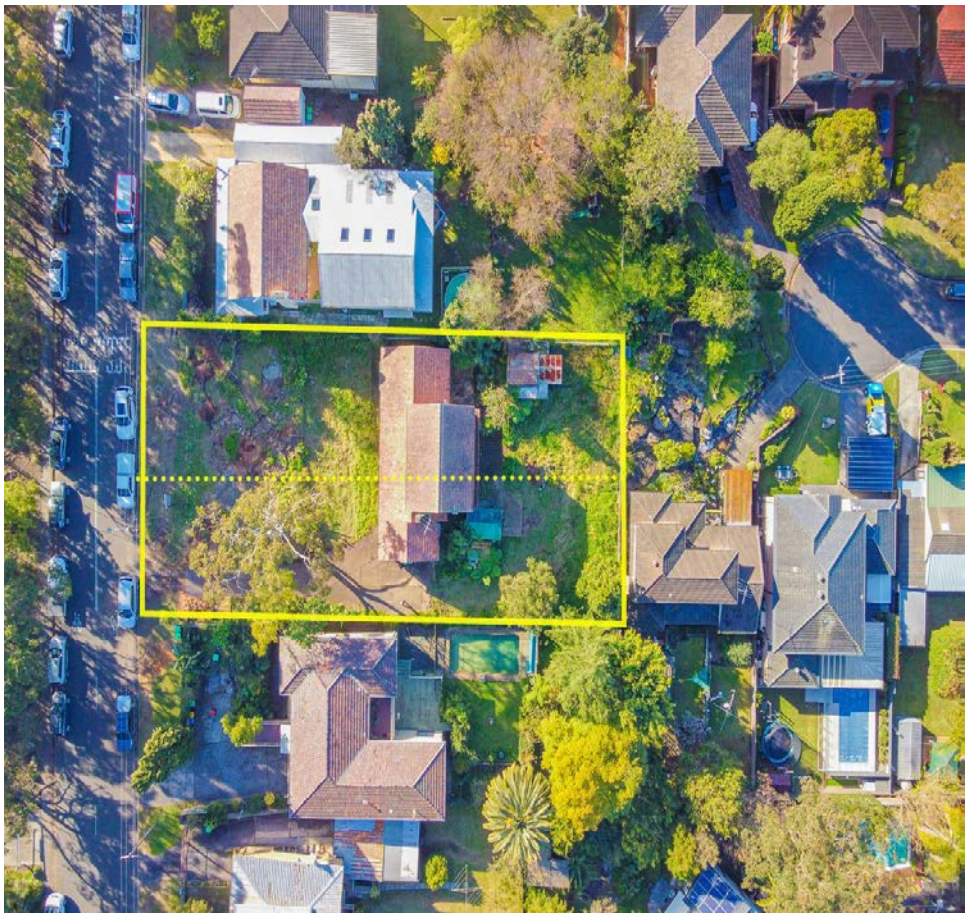
1.0. INTRODUCTION

1.1 Location and Description

The Report prepared is in relation to the proposed development at 69 Melwood Avenue, Forestville with the local Council area of Northern Beaches Council.



The proposal comprises the demolition of a dwelling and the construction of a Seniors Housing Development comprising seven (7) sole-occupancy units over three levels with associated carparking.

1.2 Report Purpose

The purpose of the Report is to assess the design proposal against the deemed-to-satisfy (DTS) provisions of the National Construction Code – Building Code of Australia Volume 1-2019. Amendment 1 (BCA)

1.3 Documentation Relied Upon

Architectural Drawings by CDARCHITECTS			
Drawing No:	**Revision**	**Date**	**Drawing Title**
DA 1001	A	05/12/2022	Cover sheet
DA 1002	A	05/12/2022	Compliance Table
DA 1003	A	05/12/2022	Unit Schedule

DA 1005	A	05/12/2022	Site Plan
DA 1007	A	05/12/2022	Demolition Plan
DA 1101	A	05/12/2022	Ground Floor Plan
DA 1102	A	05/12/2022	Level 1 Floor Plan
DA 1103	A	05/12/2022	Level 2 Floor Plan
DA 1104	A	05/12/2022	Level 3 Floor Plan
DA 1105	A	05/12/2022	Roof Plan
DA 2001	A	05/12/2022	North & South Elevations
DA 2002	A	05/12/2022	East & West Elevation
DA 3001	A	05/12/2022	Long Section
DA 3003	A	05/12/2022	Cross Section

1.4 Legislative Framework

Compliance with the National Construction Code (NCC) – Building Code of Australia

The Environment Planning and Assessment Regulation requires all new buildings to comply with the relevant requirements of the BCA as in force as at the time of the application for the Construction Certificate is made with the Certifying Authority.

Basix Requirements – Residential Portion

Section 44 of the Environmental Planning and Assessment (Development and Fire Safety) Regulation 2021 requires the Certifier to monitor the fulfillment of the Basix requirements. A Certifier may rely on the advice of a qualified person in determining whether a commitment has been fulfilled.

Residential Flat Developments – SEPP 65

The Environmental Planning and Assessment (Development and Fire Safety) Regulation 2021 pursuant to Section 15 requires a qualified designer to provide a statement that verifies that the plans and specifications that form part of the Construction Certificate Application achieve the design quality principles set out in State Environmental Planning Policy No: 65 – Design Quality of Residential Flat Development prior to the issue of such Construction Certificate.

Disability (Access to Premises – Buildings) Standards 2010

The Disability (Access to Premises – Buildings) Standards 2010 is Federal Legislation that is applicable to this Development. Compliance with BCA would be assumed to achieved compliance with the relevant legislation.

Design and Building Practitioners Act & Regulations.

This legislation is in respect to the reforms relating to residential buildings being wholly or partially Class 2. This legislation commenced on July 1, 2021.

1.5 Building Code of Australia

The Report is based on the Deemed-to-Satisfy provisions of the National Construction Code Series Volume 1 – Building Code of Australia, 2019 Amendment 1 (BCA) incorporating the State Variations where applicable.

The BCA applicable as previously stated is the version applicable at the time of lodgement of the Construction Certificate Application to the Registered Certifier.

1.6 Limitations and Exclusions

This Report does not include nor imply any detailed assessment for design or upgrading with respect to: -

(a) The structural adequacy or the design of the building: and

(b) The fire resistance ratings of any proposed structural elements of the building (unless specifically referred to): and

(c) The design and/or operating capacity of any proposed electrical, mechanical or hydraulic services. The services drawings from the individual design consultants have not been reviewed. The design drawing and design certification to be provided as required to the Certifying Authority; and

(d) The Disability Discrimination Act; and

(e) The National Construction Code – Plumbing Code Volume 3; and

(f) Conditions of Development Consent issued by the Consent Authority; and

(g) Work Health and Safety Act 2011

(h) Requirements of Regulatory Authorities including but not limited to Telstra, NBN Co, Sydney Water, Energy Supply Authorities, Council, Work Safe NSW, Roads and Maritime Services

Building Certification Services (NSW) cannot guarantee acceptance of this Report by the Local Council, Certifying Authority, NSW Fire Brigades or other approval Authorities

2.0 BUILDING DESCRIPTION

For the purposes of the Building Code of Australia (BCA) the proposed development may be described as follows:

2.1 Rise in Storeys (Clause C1.2)

The building has a rise in storeys of three (3)

2.2 Building Classifications (Clause A3.2)

The Building has been classified as follows:

Ground Floor	-	Class 2 Residential sole-occupancy units
	-	Class 7b Storage
Level 1	-	Class 2 Residential sole-occupancy unit
	-	Class 7a Carparking
Level 2	-	Class 2 Residential sole-occupancy units
Level 3	-	Class 2 Residential sole-occupancy units

2.3 Effective Height (Clause A1.1)

The building has an effective height of 9.3m.

2.4 Type of Construction Required (Table C1.1)

The building is required to be of Type A Construction

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

Type A Construction

Class 6, 7 & 8	Max floor area	2 000m²
	Max volume	12 000m³
Class 2	The Class 2 portions of the building are not the subject to the floor area and volume limitations of C2.2 as Table 3 of Specification C1.1 and Clause C3.11 of the BCA details the compartmentation and separation provisions of applicable to Class 2 buildings or part.	

2.6 Climate Zone (Clause A1.1)

Building is located within Climate Zone 5

3.0 BUILDING ASSESSMENT

Provided below is an assessment having regard to the amount of detail provided of the deemed-to-satisfy (DTS) provisions of the BCA – 2019 Amendment 1. The relevant BCA clauses that are applicable to the building have been referred to below with the appropriate comments adjacent to the clause and the ability to satisfy respective clause.

The following abbreviations have been utilised in the tables: -

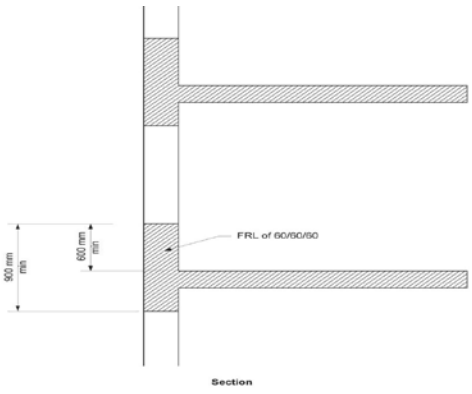
N/A	Not applicable. The DTS clause does not apply to the subject building
Complies	The relevant provisions of the Deemed-to-Satisfy clause have been demonstrated by the proposed design to have been meet
CRA	Compliance readily achievable. While not enough information may be provided it is considered that compliance is readily achievable.
Fi	Further information is necessary to determine the compliance potential of the building design
PS	Performance solution with respect to the Deemed-to-Satisfy provisions is necessary to comply with the relevant Performance Requirements of the BCA
DNC	Does not comply
Noted	The BCA Clause provides a statement not requiring specific design comment or confirmation
FRL	Fire Resistance Level as defined by the National Construction Code 2019 Amendment 1
DTS	Deemed-to-Satisfy provisions defined by the National Construction Code 2019 Amendment 1

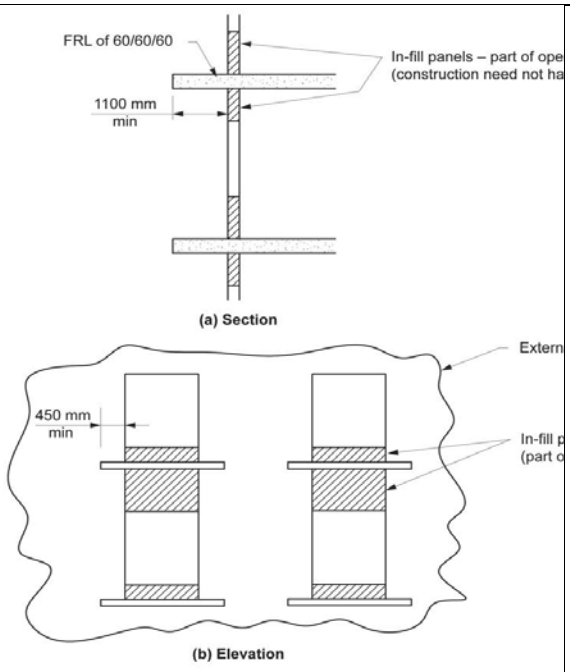
3.1 BCA – 2019 Amendment 1 Clause by Clause Assessment

SECTION B - STRUCTURE			
PART B1 – Structural Provisions			
Clause	**Description**	**Comment**	**Status**
B1.0	Deemed-to-Satisfy Provisions	Information	Noted
B1.1	Resistance to actions	The resistance of a building or structure must be greater than the most critical action effect resulting from different combination of actions. Structural details and design certificate to be obtained from a Structural Engineer prior to release of Construction Certificate.	CRA
B1.2	Determination of individual actions	The magnitude of individual actions must be determined in accordance with the Clause. Structural details and design certificate to be obtained from a Structural Engineer prior to release of Construction Certificate.	CRA
B1.3	****	This clause has deliberately left blank	Noted
B1.4	Determination of structural resistance of materials and forms of construction	Structural details and design certificate to be obtained from a Structural Engineer prior to release of Construction Certificate.	CRA
B1.5	Structural software	Structural details and design certificate to be obtained from a Structural Engineer prior to release of Construction Certificate.	CRA
B1.6	Construction of buildings in flood hazard areas	A Class 2 building in flood hazard area must comply with the ABCB Standard for Construction of Buildings in Flood Hazard Areas	Fi

SECTION C – FIRE RESISTANCE			
PART C1 – Fire Resistance and Stability			
Clause	**Description**	**Comment**	**Status**
C1.1	Type of Construction Required	The building is to be of Type A Construction. Construction is to be in accordance with Specification C1.1 Table 3.	CRA
C1.2	Calculation of rise in storeys	The building has a rise in storeys of three (3)	Noted
C1.3	Buildings of multiple classifications	Informational	Noted
C1.4	Mixed types of construction	A building may be of mixed types of construction where it is separated in accordance with C2.7 and the Type of construction is determined in accordance with C1.1 or C1.3	Noted
C1.5	Two storey Class 2, 3 or 9c buildings	Noted	N/A
C1.6	Class 4 parts of buildings	Noted	N/A

C1.7	Open spectator stands and indoor sports stadiums	Noted	N/A
C1.8	Lightweight construction	Lightweight construction used in wall system must comply with Specification C1.8. If lightweight construction is to used in the proposed development then details demonstrating required FRL's and compliance to be provided prior to the release of the Construction Certificate	CRA
C1.9	Non-combustible building elements	All external walls and common walls including components incorporated in them including faced covering, framing and including framing and insulation, flooring and floor framing to lift pits and non-loadbearing internal walls where they are required to be fire-resisting are to be non-combustible. Shaft, being a lift, ventilating, pipe, garbage, or similar shaft that is not for the discharge of hot products of combustion that is non-loadbearing must be non-combustible. Details of materials to be provided with Construction Certificate. Specific attention is to be given any cladding material to the external façade. Further if any plastic permanent formwork walling system are to be used. This will be the subject of a Performance Solution prepared by the Accredited Fire Safety Engineer.	CRA
C1.10	Fire hazard properties	The fire hazard properties must comply with Specification C1.10 for floor, wall and ceiling lining materials, air-handling ductwork, lift cars, insulation, sarking-type-ductwork and attachments, or be considered non-combustible. Additional details to be provided with construction documentation	CRA
C1.11	Performance of external walls in fire	Concrete external walls that could collapse as complete panels (e.g. tilt-up and pre-cast concrete) in a building having a rise in storeys of not more than 2 must comply with Specification C1.11	N/A
C1.12	****	This clause has deliberately left blank	Noted
C1.13	Fire-protected timber: Concession	Noted	N/A
C1.14	Ancillary elements	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. Exceptions to this as listed in the provisions and to ensure compliance	CRA

PART C2 – Compartmentation and Separation			
Clause	**Description**	**Comment**	**Status**
C2.0	Deemed-to-satisfy Provisions	Information	Noted
C2.1	Application of Part	Clauses C2.2, C2.3 and C2.4 do not apply to a sprinkler protected carpark, open deck carpark or open spectator stand.	Noted
C2.2	General floor area and volume limitations	The size of fire compartments in the building must not exceed that specified in Table C2.2	Complies
C2.3	Large isolated buildings	Noted	N/A
C2.4	Requirements for open spaces and vehicular access	Noted	N/A
C2.5	Class 9a and 9c buildings	Noted	N/A
C2.6	Vertical separation of openings in external walls	Where any window or other opening in the external wall is above another opening in the storey next above an its vertical protection fall no further than 450mm outside the lower opening (measured horizontally) the openings must be separated by a spandrel. The spandrel must be non-combustible. Compliance achieved subject to the windows to the affected openings are to have a sill height of minimum 600mm and a minimum of 900mm between the openings from one level to the next.  Where horizontal projections such as slabs to be utilised then the slab is to be a minimum 1100mm wide and extend 450mm past the opening.	CRA/PS

		 A number of openings within the development will require to be addressed. These could be addressed by either a Performance Solution undertaken by a Fire Safety Engineer or fire rated spandrel construction being installed behind the glazing. The window openings that have been identified are: - Bed 2, kitchen and lounge unit 201 - Bed 1 & 2 unit 203 - Kitchen unit 202 It is also important to note that the return on the rear wall of unit 202 should extend a minimum 450mm past the edge of the balcony slab	
C2.7	Separation by fire walls	**Construction** - A fire wall must be constructed in accordance with the following: • The fire wall must have the relevant FRL prescribed by Specification C1.1. • Any openings in a fire wall must not reduce the FRL required by Specification C1.1 for the fire wall, except where permitted by the Deemed-to-Satisfy provisions of Part C3. **Separation of fire compartments –** A part of a building separated from the remainder of the building by a fire wall may be treated as a separate fire compartment if it is constructed in	CRA/PS

		accordance with the clause and the fire wall extends to the underside of: • A floor having an FRL required for a fire wall: or • The roof covering. The carpark will require to be fire separated from the residential area by FRL 120/120/120 construction. The current design is such that the Class 7b storage on the ground floor will need to be separated by FRL 240/240/240 construction. The fire safety engineer may be able to look at rationalising the fire rating at the CC stage by way of a Performance Solution	
C2.8	Separation of Classifications in same storey	Where a storey has different classifications located alongside one another: • Each building element in that storey must have the higher FRL prescribed in Specification C1.1 for that element for the classification concerned: or • The parts must be separated in that storey by a fire wall having the higher FRL prescribed in Table 3 of Specification C1.1. As stated above the storage area on ground floor will need to be separated by FRL 240/240/240 construction. While the caraprking will need to be separated by minimum 120/120/120 construction This maybe the subject of a Performance Solution by the fire safety engineer	CRA/PS
C2.9	Separation of Classifications in different storeys	Floors separating storeys of different classifications must have an FRL of not less than that prescribed in Specification C1.1 for the classification of the lower storey. The storage area will require to be separated from the level above by FRL 240/240/240 construction while the carpark will need to be separated from the residential by FRL 120/120/120 construction This maybe the subject of a performance solution by the fire safety engineer	CRA/PS
C2.10	Separation of lift shafts	Passenger lifts connecting more than 3 stories must be separated from the remainder of the by enclosure in a fire rated shaft achieving an FRL prescribed by Table 3 of Specification C1.1.	CRA
C2.11	Stairways and lifts in one shaft	A stairway and lift must not be in the same shaft if either the stairway of the lift is required to be in a fire-resisting shaft	CRA

		It will be the subject of a performance solution to deal with the issue of the central stairway not being constructed as a fire-isolated stairway as required by D1.3. This Clause may require to be considered depending on the Performance Solution	
C2.12	Separation of equipment	The following equipment located in the building must be separated from the remainder of the building:- • Lift motor rooms 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 12 volts or more and a storage capacity of 200kWh or more. The following equipment need not be separated if the equipment comprises: - • Smoke control exhaust fans located in the air stream which are constructed for the high temperature operation in accordance with Specification E2.2b; or • Stair pressurising equipment installed in compliance with the relevant provisions of AS/NZS 1668.1; or • A lift installation without a machine room; or • Equipment otherwise adequately separated from the remainder of the building. Separation of on-site pumps must comply with the requirements of AS 2419.1 Separation must have construction having an FRL as required by Specification C1.1 but not less than FRL 120/120/120 with openings protected by self-closing fire doors having an FRL of not less than FRL -/120/30.	CRA
C2.13	Electricity Supply System	The following electricity supply equipment must be separated from the remainder of the building by construction having an FRL of minimum 120/120/120 and any doorways in that construction are protected with self-closing FRL -/120/30 fire doors: - • Electricity substation • Main switchboard which sustains emergency equipment operating in emergency mode • Electrical conductors which supply a substation or main switchboard operating	CRA

		emergency equipment in emergency mode • Fire hydrant booster pumps • Pumps for automatic sprinkler systems • Pumps for hose reels where such pumps and fire hose reels form the sole means of fire protection in the building • Air-handling systems designed to exhaust and control the spread of fire and smoke • Emergency lifts • Control and indication equipment • Sound systems and intercom systems for emergency purposes.	
C2.14	Public corridors in Class 2 and 3 buildings	Public corridors in Class 2 parts that exceed 40m in length must be divided at intervals of not more than 40m with smoke proof wall complying with Clause 2 of Specification C2.5.	N/A

PART C3 – Protection of Openings			
Clause	**Description**	**Comment**	**Status**
C3.0	Deemed-to-Satisfy Provisions	Information	Noted
C3.1	Application of Part	Concessions and definition of certain openings	Noted
C3.2	Protection of openings in external walls	No openings are within 3m of the fire source features.	N/A
C3.3	Separation of external walls and associated openings in different fire compartments	Noted	N/A
C3.4	Acceptable methods of protection	Where protection is required openings must be protected as follows: - Doorways – • Internal or external wall-wetting sprinklers as appropriate used with doors that are self-closing; or • -/60/30 fire doors that are self closing Windows: • Internal or external wall-wetting sprinklers as appropriate used with windows that are automatic closing or permanently fixed in the closed position; or • -/60/- fire windows that are automatically closing or permanently fixed in the closed position: or • -/60/- automatic closing fire shutters Other openings: • Excluding voids – internal or external wall-wetting sprinklers; or • Construction having an FRL not less than -/60/-	CRA

		Fire doors, fire windows and fire shutters must comply with Specification C3.4. Protection of the openings would be required to openings with consideration to Clause 3.5 of specification C1.1	
C3.5	Doorways in fire walls	Doorways in fire walls must be protected by self-closing fire doors that achieve an FRL of not less than that required for the fire wall as specified by Specification C1.1 except each door must have an insulation level of at least 30.	CRA
C3.6	Sliding fire doors	Noted	N/A
C3.7	Protection of doorways in horizontal exits	Noted	N/A
C3.8	Openings in fire-isolated exits	Doorways that open to fire-isolated stairways, fire-isolated passageways or fire isolated ramps and are not doorways opening to a road or open space must be protected by FRL -/60/30 fire doors that are self-closing, or automatic-closing in accordance with Clause C3.8 (i) and (ii).	CRA
C3.9	Service penetrations in fire-isolated exits	Fire-isolated exits are not to be penetrated by any services other than: - • Electrical wiring associated with: i. A lighting, detection, or pressurization system serving the exit; or ii. A security, surveillance or management system serving the exit; or iii. Intercommunication system or an audible or visual alarm system in accordance with D2.22; or iv. The monitoring of hydrant or sprinkler isolating valves • Ducting associated with the pressurisation system if it; i. Constructed of material having FRL of not less than -/120/60 where it passes through any other part of the building; and ii. Does not open into any other part of the building; or • Water supply pipes for fire services.	CRA
C3.11	Bounding construction: Class 2, 3 and 4 buildings	The doorways between sole-occupancy units and the public lobbies and any common/service rooms and the public lobbies within the Class 2 potion must be protected by self-closing FRL -/60/30 fire doors. In a Class 2 building where a path of travel to an exit does not provide a person seeking egress	CRA

		with a choice of travel in different directions to alternative exits and is along an open balcony, landing or the like and passes an external wall of: - i. another sole-occupancy unit ii. a room not within a sole-occupancy unit, then that external wall must- iii. be constructed of concrete or masonry, or be lined internally with a fire-protective covering; and iv. have any doorway fitted with a self-closing, tight fitting solid core door not less than 35mm thick; and v. have any windows or other openings- A. protected internally in accordance with C3.4; or B. located at least 1.5m above the floor of the balcony, landing or the like. The door way and wall construction from the carpark to the foyer area will have to be replaced with 2 hour construction with a FRL -/120/30 fire door.	
C3.12	Openings in floor and ceilings for services	Where a service passes through a floor which is required to achieve an FRL or a ceiling required to have a resistance to the incipient spread of fire, the service must be enclosed within a fire resisting shaft or fire protected in accordance with Clause C3.15	CRA
C3.13	Openings in Shafts	In a building of Type A construction, an opening in a wall providing access to a ventilating, pipe, garbage, or other service shaft must be protected by: • if a sanitary compartment – door or panel which together with its frame, is non-combustible or has an FRL of not less than -/30/30; or • a self-closing -/60/30 fire door or hopper; or • an access panel having an FRL of not less than -/60/30; or • if the shaft is a garbage shaft-a door or hopper of non-combustible construction.	CRA
C3.14	-	This clause has been deliberately left blank	-
C3.15	Openings for service installations	Where services (eg. Hydraulic, mechanical, plumbing, electrical etc) penetrate a building element that is required to achieve an FRL with respect to integrity or insulation or a resistance to the incipient spread of fire then that installation must be protected by material that is identical to the tested prototypes and in accordance with AS 4072.1 and AS 1530.4 and has achieved the	CRA

		required FRL or resistance to the incipient spread of fire.	
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	CRA
C3.17	Columns protected with lightweight construction	Noted	N/A

SPECIFICATION C1.1 – Fire-Resisting Construction			
Clause	**Description**	**Comment**	**Status**
2.1	Exposure to fire source feature	A building element is exposed to a *fire-source feature* if any of the horizontal straight lines between that part and the fire source feature, or vertical projection of the feature, is not obstructed by another part of the building that – i. has an FRL of not less than 30/-/- ii. is neither transparent nor translucent	Noted
2.2	Fire protection for a support of another part	Where a part of a building required to have an FRL depends upon direct vertical or lateral support from another part to maintain its FRL, that supporting part must have an FRL not less than that required by other provisions of this Specification and if located within the same fire compartment as the part it supports have an FRL in respect of the structural adequacy the greater of that required for the supporting part itself and for the part it supports	CRA
2.3	Lintels	A lintel must have an FRL required for the part of the building in which it is situated unless it does not contribute to the support of a fire door, fire window or fire shutter and meets the requirements of Specification C1.1 clause 2.3(a) & (b)	CRA
2.4	Attachments not to impair fire-resistance	Where a combustible material is used as a finish or lining to a wall or roof, or sunscreen, or awning, to a building element required to have an FRL- • the material is exempted under C1.10 or comply with the fire hazard properties prescribed under C1.10; and • the material must not be located near or directly above a required exit so as to make the exit unusable in fire; and • the material must not otherwise constitute an undue risk of fire spread via façade of the building or compromise egress from the building. Note: Specific attention is drawn to any composite panel materials. The façade details do	CRA

		indicate the use of Aluminium Composite Panels. Appropriate test report to be obtained. This may require the preparation of Fire Engineered Reports to support the use of the panels	
2.5	General concessions	Noted	N/A
2.6	Mezzanine floors: Concession	Noted	N/A
2.7	Enclosure of shafts	Fire-isolated shafts are required to be enclosed at the top and bottom of the shaft with fire rated construction having an FRL as required for the walls of a non-loadbearing shaft in the same building as per Specification C1.1. This does not apply to shafts extending beyond the roof covering, other than fire-isolated stair and lift shafts and the bottom of non-combustible shafts laid directly on the ground.	CRA
2.8	Carparks in Class 2 and 3 buildings	Noted	N/A
2.9	Residential aged care building: Concession	Noted	N/A
3.1	Fire-resistance of building elements	The FRL's to the building elements are to be in accordance with Table 3 of the subject Specification. External walls, common walls and the floor framing of lift pits must be non-combustible. Internal walls required to be fire rated must extend to – i. to the underside of the floor next above; or ii. the underside of a roof complying with Table 3; or iii. if under Clause 3.5 the roof is not required to comply with Table 3, the underside of the non-combustible roof covering and, except for roof battens with dimensions of 75mm x 50mm or less or sarking type material, must not be crossed by timber or other combustible building elements; or iv. a ceiling that is immediately below the roof and has an incipient spread of fire to the roof space above itself of not less than 60 minutes. Loadbearing internal walls (including those parts of a loadbearing shaft) and fire walls must be of concrete or masonry. Non-loadbearing internal walls required to be fire rated as well as non-load bearing lift,	CRA/PS

		ventilating, pipe, garbage or similar shaft wall must be of non-combustible construction.	
3.2	Concessions for floors	A floor need not comply with Table 3 if its laid directly on the ground or is within a sole-occupancy unit in a Class 2 building	Noted
3.3	Floor loading of Class 5 & 9b buildings; Concession	Noted	N/A
3.4	Roof superimposed on concrete slab Concession	Noted	N/A
3.5	Roof concession	The roof need not comply with Table 3 if the covering is non-combustible and the has a rise in storeys of 3 or less	CRA
3.6	Roof lights	If a roof is required to have an FRL or its covering is required to be non-combustible, rooflights or the like installed in that roof must – a) have an aggregate area of not more than 20% of the roof surface; and b) be not less than 3m from- i. any boundary of the allotment other than the boundary with a road or public place; and ii. any part of the building which projects above the roof unless that part has the FRL required by a fire wall and any openings in that part of the wall for 6m vertically above the rooflight or the like are protected in accordance with C3.4; and iii. any rooflight or the like in an adjoining sole-occupancy unit if the walls bounding the unit are required to have an FRL; and iv. any rooflight or the like in an adjoining fire separated section of the building; and c) if a ceiling with a resistance to the incipient spread of fire is required, be installed in a way that will maintain the level of protection provided by the ceiling to the roof space. Consideration needs to be given as unit G01 has three skylights that require the windows in unit U101ensuite and bedroom 2 to be protected. This maybe the subject of a Performance Solution by the Fire Safety Engineer. The skylight to central stairway will need to be considered that it cannot occupy more than 20% of the roof area. This stairway should be fire isolated in a DTS design and glass would not be	CRA/PS

		permissible. This to be addressed in the Performance Solution by the Fire Safety Engineer	
3.7	Internal columns and walls: Concession	Noted	N/A
3.8	Open spectator stands and indoor sports stadiums: Concession	Noted	N/A
3.9	Carparks	Noted	N/A
3.10	Class 2 and 3 buildings: Concession	Concessions are available for sprinkler protected buildings other than FPAA101D or FPAA101H systems	N/A

SPECIFICATION C1.10 – Fire Hazard Properties			
Clause	**Description**	**Comment**	**Status**
1	Scope	This Specification sets out requirements in relation to the *fire hazard properties* of linings, materials and assemblies in Class 2 to 9 buildings as set out in Table 1	CRA
2	Application	Linings, materials and assemblies in Class 2 to 9 buildings must comply with the appropriate provisions of Table 1	CRA
3	Floor linings and floor coverings	A floor lining or covering must have a *critical radiant flux* not less than that listed in Table 2.	CRA
4	Wall and ceiling lings	A wall or ceiling lining system must comply with a group number specified in Table 3 A group number of a wall or ceiling lining must be determined in accordance with AS 5637.1	CRA
5	Air-handling ductwork	Rigid and flexible ductwork in a Class 2 to 9 building must comply with the *fire hazard properties* set out in AS 4254 Parts 1 and 2	CRA
6	Lift cars	Materials used as – a) floor linings and floor coverings must have a *critical radiant flux* not less than 2.2; and b) wall and ceiling linings must be a Group 1 material or a Group 2 material in accordance with AS 5637.1	CRA
7	Other materials	Materials and assemblies in a Class 2 to 9 building not included in Clauses 3, 4, 5 or 6 must not exceed the indices set out in Table 4	CRA

SECTION D – ACCESS and EGRESS			
Part D1 – Provision for Escape			
Clause	**Description**	**Comment**	**Status**
D1.1	Application of Part	The *Deemed-to-Satisfy provisions* of this Part do not apply to the internal parts of a sole-occupancy unit	Noted
D1.2	Number of exits required	The building has the required number of exits.	Complies

D1.3	When fire-isolated stairways and ramps are required	Noted	N/A
D1.4	Exit travel distances	The maximum travel distances from the entry doorways of the residential sole-occupancy units (SOU) to a point of choice of exits and to an exit is permitted to be 6m as per D1.4(a)(i)(A). Class 5, 6, 7a carpark— No point on a floor must be more than 20 m from an exit, or a point from which travel in different directions to 2 exits is available, in which case the maximum distance to one of those exits must not exceed 40 m. The travel distance to the single exit on level 1 carpark exceeds 20m. The distance is approximately 32m. This is to be the subject of a Performance Report by the Fire Safety Engineer.	PS
D1.5	Distance between alternative exits	Exits that are required as alternate means of egress must be – a) distributed as uniformly as practicable within or around the storey served and in positions where unobstructed access to at least 2 exits is readily available from all points on the floor including lift lobby areas; and b) not less than 9m apart; and c) not more than- i. in a Class 2 building – 45m apart; or ii. in all other cases – 60m apart; and d) located so that the alternate paths of travel do not converge such that they become less than 6m apart. Note the requirements of Specification E1.5a for Class 2 buildings.	N/A
D1.6	Dimensions of exits and paths of travel to exits	In a required exit or path of travel, the unobstructed height throughout must be not less than 2m, except the unobstructed height of any doorway must be reduced to not less than 1980mm. The unobstructed width of each exit or path of travel to an exit except a doorway must not be less than 1m. The unobstructed width of the doorway may be reduced to 750mm unless providing access for people with disabilities is required. Compliance with AS 1428.1 needs to be addressed if for people with disabilities.	CRA

		The unobstructed width must be measured clear of all obstructions such as handrails, protecting parts of barriers and the like. The unobstructed width of a required exit or ramp must not diminish in the direction of travel to a road or open space.	
D1.7	Travel via fire-isolated exits	Each fire-isolated stairway or fire-isolated ramp must provide independent egress from each storey served and discharge directly, or by way of its own fire-isolated passageway- i. to a road or open space; or ii. to a point – A. in a storey or space, within the confines of the building, that is used only for pedestrian movement, carparking or the like and is open on at least 2/3 of its perimeter; and B. from which unimpeded path of travel, not further than 20m, is available to a road or open space; or iii. into a covered area that- A. adjoins a road or open space; B. and is open for at least 1/3 of its perimeter; and C. has an unobstructed height throughout, including the perimeter openings of not less than 3m; and D. provides unimpeded path of travel from the point of discharge to the road or open space of not more than 6m. D1.7(c) states that – Where a path of travel from the point of discharge of the 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- i. an FRL of not less than 60/60/60; and ii. any openings protected internally in accordance with C3.4 for a distance of 3m above or below, as appropriate, the level of the path of travel, or the height of the wall, which ever is lesser. The current design requires the central stairway to be fire-isolated. In this regard as it has not it would not comply with these provisions. It is proposed to have the Fire Safety Engineer develop a Performance Solution for the design.	PS

D1.8	External stairways or ramps in lieu of fire-isolated exits	External stairways may be used in lieu of fire-isolated exit stairs serving storeys below an effective height of 25m, provided the stairway is non-combustible throughout and protected in accordance with Clause D1.8(c). The protection required under D1.8(c) is such that it must adequately protect occupants using the exit from exposure to a fire within the building, in accordance with one of the following methods: i. The part of the external wall of the building to which the exit is exposed must have – A. An FRL of not less than 60/60/60 B. No openings less than 3m from the exit (except a doorway serving the exit protected by a -/60/30 fire door in accordance with C3.8(a); and C. Any opening 3m or more but less than 3m or more than 6m from the exit, protected in accordance with C3.4 and if wall wetting sprinklers are used they are internally located. ii. The Exit must be protected from- A. Any part of the external wall of the building having an FRL of less than 60/60/60; and B. Any openings in the external wall by the construction of a wall, roof, floor or other shielding element as appropriate in accordance with (d) Clause D1.8(d) The wall, roof, floor or other shielding element required by (c)(ii) must- i. Have an FRL of not less than 60/60/60; and ii. Have no openings less than 3m from the external wall of the building (except a doorway serving the exit protected by a FRL -/60/30 fire door in accordance with C3.8(a); and iii. Have any opening 3m or more but less than 6m from any part of the external wall of the building protected in accordance with C3.4 and if wall wetting sprinklers are used they are located on the side exposed to the external wall.	N/A
D1.9	Travel by non-fire-isolated stairways or ramps	A non-fire isolated stairway or ramp serving as a required exit must provide a continuous means of travel by its own flights and landings from every	PS

		storey served to a level at which egress to a road or open space is provided D1.9(d)(i) requires that the non-fire-isolated stairway servicing a Class 2 building must discharge at a point no greater than 15m from a doorway providing egress to a road or open space. This is increased to 20m for the Class 7 pursuant to D1.9(e). This issue will need top be considered in the Performance Solution by the Fire Safety Engineer. In a Class 5, 6, 7, 8 or 9 building the distance from any point on a floor to a point of egress to a road or open space by way of a required non-fire-isolated stairway or non-fire-isolated ramp must not exceed 80m In a Class 5 to 8 or 9b building a required non-fire-isolated stairway or non-fire-isolated ramp must discharge at a point not more than – i. 20m from a doorway providing egress to a road or open space or from a fire-isolated passageway leading to a road or open space; or ii. 40m from one or 2 such doorways or passageways if travel to each of them from the non-fire-isolated stairway or non-fire-isolated ramp is in opposite or approximately opposite directions.	
D1.10	Discharge from exits	Exits must not be blocked at the point of discharge and where necessary, suitable barriers must be provided to prevent vehicles blocking the exit If a required exit leads to open space, the path of travel to the road must have an unobstructed width of not less than 1m If the exit discharges to open space that is at a different level than the public road to which it is connected, the path of travel to the road must be by a ramp or other incline not steeper than 1:8 or a stairway complying with the BCA The discharge points of alternate exits must be located as far apart as practical	CRA
D1.11	Horizontal exits	Noted	N/A
D1.12	Non-required stairways, ramps and escalators	The escalator and non-required non-fire-isolated stairway must not connect more than 3 storeys	N/A
D1.13	Number of persons accommodated	Information	Noted
D1.14	Measurement of distances	Information	Noted
D1.15	Method of measurement	Information	Noted

D1.16	Plant rooms, lift motor rooms and electricity network substations: Concession	A ladder may be used in lieu of a stairway to provide egress from- i. A plant room with a floor area of not more than 100m² ; or ii. All but one point of egress from a plant room, a lift machine room or a Class 8 electricity network substation with a floor area of not more than 200m². A ladder permitted as above – i. May form part of an exit provided that in the case of the fire-isolated stairway it is contained within the shaft; or ii. May discharge within the storey in which case it must be considered as forming part of the path of travel; and iii. For a plant room or a Class 8 electricity network substation, must comply with AS 1657	N/A
D1.17	Access to lift pits	Access to lift pits where the pit depth is not more than 3m is to be through the lowest landing doors. Where the pit depth is more than 3m access must be via an access doorway complying with Clause D1.17(b)	CRA

Part D2 – Construction of exits			
Clause	**Description**	**Comment**	**Status**
D2.0	Deemed-to-Satisfy Provisions	Information	Noted
D2.1	Application of Part	Information Except for D2.13, D2.14(a), D2.16, D2.17(d), D2.17(e), D2.21 and D2.24 the Deemed-to-Satisfy Provisions of this Part do not apply to the internal parts of the sole-occupancy unit in a Class 2 building	Noted
D2.2	Fire-isolated stairways and ramps	The stairway and ramp that is required to be within a fire-resisting shaft must be constructed of non-combustible materials if there is local failure it will not cause structural damage to, or impair the fire-resistance of the shaft	CRA
D2.3	Non-fire-isolated stairways and ramps	Non-fire-isolated stairways are to be constructed according to D2.2 or only of- a. Reinforced or prestressed concrete; or b. Steel in no part less than 6mm thick; or c. Timber that- i. Has a finish thickness of not less than 44mm; and ii. Has an average density of not less than 800kg/m³ at a moisture content of 125; and iii. Has not been joined by means of glue unless it has been laminated and glued with resorcinol	CRA

		formaldehyde or resorcinol phenol formaldehyde glue	
D2.4	Separation of Rising and descending stair flights	If a stairway serving as an exit is required to be fire-isolated, there is to be no direct connection between a flight rising from a storey below the lowest level of access to a road or open space and a flight descending from a storey above that level. Any construction that separates or is common to the rising and descending flights must be non-combustible and smoke proof in accordance with Clause 2 of Specification C2.5	Complies
D2.5	Open access ramps and balconies	Noted	N/A
D2.6	Smoke lobbies	Noted	N/A
D2.7	Installations in the path of travel	Access to service shafts and services other than to fire fighting and detection equipment must not be provided from a fire isolated stairway or passageway. Gas and other fuel services must not be installed in a required exit Electrical meters, distribution boards, or ducts, telecommunications boards or equipment installed in corridors/hallways/lobbies or the like must be enclosed with non-combustible construction or a fire protective covering with doorways suitably sealed against smoke spread. Electrical wiring may be installed in fire isolated exits if the wiring is associated with; - i. A lighting, detection, or pressurisation system serving the exit; or ii. A security, surveillance or management system serving the exit; or iii. An intercommunication system or an audible or visual alarm system in accordance with D2.22 iv. The monitoring of hydrant or sprinkler isolating valves.	CRA
D2.8	Enclosure of space under stairs and ramps	The space under a fire-isolated stairway within the shaft must not be enclosed to forma cupboard or similar enclosure. The space below a required non-fire-isolated stairway including an external stairway or non-fire-isolated ramp must not be enclosed to form a cupboard or other enclosed space unless the enclosing walls and ceilings have an FRL of not less than 60/60/60 and the doorway is fitted with a self-closing FRL --/60/30 fire door. The plans give no indication of any such enclosures	CRA

D2.9	Width of stairways and ramps	A required stairway or ramp that exceeds 2m in width is counted as having a width of only 2m unless it is divided by a handrails or barrier continuous between lands and each division has a width of not more than 2m	Noted
D2.10	Pedestrian ramps	Ramps serving as a required exit must not have a gradient steeper than 1:8. If the ramp is also serving as an accessible ramp under Part D3 it must comply with AS 1428.1. The floor surface of the ramp must have a slip-resistance classification not less than that listed in Table D2.14 when tested in accordance with AS 4586	CRA
D2.11	Fire-isolated passageways	The enclosing construction of a fire-isolated passageway must have an FRL of not less than 120/120/120	N/A
D2.12	Roof as open space	Where the exits discharge to the roof area the roof area to achieve minimum FRL of 120/120/120.	N/A
D2.13	Goings and risers	Stairways are to comply with eth following: - • Must have not more than 18 and not less than 2 risers in each flight • Going must be between 240mm and 355mm within residential sole occupancy units • Goings between 250mm and 355 in other areas • Risers must be between 115mm high and 190mm high • The slope relationship 2R(riser) + G(going) must be within the range of 550mm – 700mm. • The goings and riser are to be constant throughout each flight. They are considered constant if adjacent risers, or between adjacent goings, is no greater than 5mm. The largest and smallest riser within the flight, or the largest and smallest going within the flight, does not exceed 10mm. • Risers do not have any openings that would allow a 125mm sphere to pass through between the treads • Treads must have a slip-resistance classification not less than that listed in Table D2.14 when tested in accordance with AS 4586. • Treads to be of solid construction (not mesh or other perforated material) if stairway is more than 10 high or connects more than 3 storeys • In the case of required stairway, no winders in lieu of a landing	CRA

<table>
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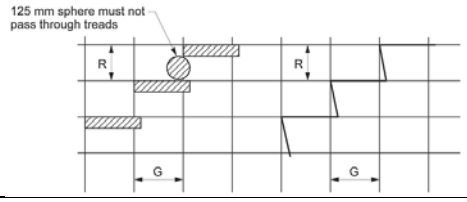
<td>

In the case of non-required stairway the stairway must have not more than 3 winders in lieu of a quarter landing and not more than 6 winders in lieu of a half landing.

Table D2.13 Riser and going dimensions
<table>
<tr><th>Stairway Location</th><th>Riser (R)</th><th>Going (G) Note 3</th><th>Quantity (2R + G)</th></tr>
<tr><td>Public</td><td>Max 190mm
Min 115mm</td><td>Max 355mm
Min 250mm</td><td>Max 700mm
Min 550mm</td></tr>
<tr><td>Private Note 1</td><td>Max 190mm
Min 115mm</td><td>Max 355mm
Min 240mm</td><td>Max 700mm
Min 550mm</td></tr>
</table>
Note 1: Private stairways are stairways in a sole-occupancy unit of a Class 2

Figure D2.13 Riser and going dimensions


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<td></td>
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<tr>
<td>D2.14</td>
<td>Landings</td>
<td>Landings must comply with Clause D2.14. Landings must be not less than 750mm long and have a non-slip finish throughout or an adequate non-skid strip near the edge of the landing where it leads to a flight below and 30% colour contrasting nosings
Strips at the edge of the landing with slip - resistance classification not less that listed in Table D2.14 when tested in accordance with AS 4586, where the edge leads to a flight below.</td>
<td>CRA</td>
</tr>
<tr>
<td>D2.15</td>
<td>Thresholds</td>
<td>The threshold of a doorway must not incorporate a step or ramp at any point closer to the doorway that the width of the door leaf unless-
<ol type="a">
In a doorway required to be accessible, the doorway-
<ol type="i">
Opens to a road or open space; and
Is provided with a threshold ramp in accordance with AS 1428.1; or

In other cases-
<ol type="i">
The doorway opens to a road or open space, external stair landing or external balcony; and
The door sill is not more than 190mm above the finished surface of the ground, balcony, or the like, to which the doorway opens

</td>
<td>CRA</td>
</tr>
</table>

D2.16	Barriers to prevent falls	Balustrades must be provided to stairs and balconies, driveways ramps etc where there is a fall of more than 1m to the surface below. Balustrades are to comply with the following: - Balustrades are to be minimum 865mm above stair nosings. 865mm above landings to a stair where the barrier is provided along the inside edge of the landing and does not exceed 500mm in length. All other locations 1m Balustrade openings in fire-isolated stairways: - • Maximum openings of 300mm; or • Where rails are used a 150mm sphere must not be able to pass through the opening between the nosing line of the stair treads and the rail or between the rail and the floor on the landing, balcony or the like; and the opening between rails must not be more than 460mm. Balustrade other than fire-isolated stairways are to be such that a 125mm sphere must not be able to pass through any opening and for stairways, 125mm sphere is measured above the nosing line of the stair treads. For floors other than in fire-isolated exits that are greater than 4m above the surface below, the balustrade must not incorporate any horizontal or near horizontal elements between 150mm and 760mm above the floor that could facilitate climbing. Specific attention it drawn to the design of the balconies with the upturns to ensure compliance with this provision.	CRA
D2.17	Handrails	Handrails to stairways must: - • be located along at least one side of the ramp or flight; and • located along each side if the total width of the stairway or ramp is more than 2m or more; and • be fixed at a height of not less than 865mm measured above the nosings of stair treads and the floor surface of the ramp, landing, or the like; and • continuous between stair flight landings and have no obstructions that will break a hand-hold. • In a required exit serving an area required to be accessible, designed and constructed in accordance with clause 12 of AS 1428.1. • Handrails required to assist people with a disability must be provided in accordance with D3.3	CRA

		Handrails to a stairway with a sole-occupancy unit in the Class 2 portion must: - • Be located along at least one side of the flight or ramp • Be located along the full length of the flight or ramp, except is the case where a handrail is associated with a barrier , the handrail may terminate where the barrier terminates; and • Top surface of the handrail not less than 865mm vertically above the nosings of the stair treads; and • Have no obstruction on or above them that will tend to break a handhold, except for newel posts, ball type stanchions or the like. The requirements to the Class 2 portion do not relate to handrails referred to in D2.18, stairway or ramp providing a change of elevation less than 1m , a landing or winder where the newel post is installed to provide a handhold	
D2.18	Fixed platforms, walkways, stairways and ladders	Fixed platforms, walkways, stairways, ladders, landings, handrails, balustrades and any tread or riser in a plant room, lift motor room or the like is to comply with AS 1657	CRA
D2.19	Doorways and doors	A doorway serving as a required exit or forming part of a required exit: - • must not be fitted with a revolving door; and • must not be fitted with a roller shutter or tilt up door unless – o it serves a Class 6, 7 or 8 building or part with a floor area not more than 200m²; and o the doorway is the only required exit from the building or part; and o it is held in the open position while the building or part is lawfully occupied • must not be fitted with a sliding door unless- o it leads directly to a road or open space; and the door is able to be opened manually under a force of not more than 110N; and • if fitted with a door that is power operated – o must be able to be opened manually under a force of not more than 110N if there is a malfunction or failure of the power source; and	CRA

		o if it leads directly to a road or open space it must open automatically if there is a power failure to the door or on the activation of a fire or smoke alarm anywhere in the fire compartment served by the door	
D2.20	Swinging doors	Swinging doors in a required exit must not encroach- i. at any part of its swing by more than 500mm on the required 1m width of the exit; and ii. when fully open, by more than 100mm on the required width of the required exit. The measurement of the encroachment in each case is to include door handles or other furniture or attachments to the door. A swinging door in a required exit must swing in the direction of egress unless- i. it serves a building or part with a floor area not more than 200m², it is the only required exit from the building or part and it is fitted with a device for holding it in the open position; or ii. it serves a sanitary compartment or airlock (in which case it may swing in either direction)	CRA
D2.21	Operation of latch	A door in a required exit or forming part of a required exit and doors in the path of travel to an exit must be readily openable without a key from the side that faces a person seeking egress, by – i. a single hand downward action on a single device which is located between 900mm and 1.1m from the floor and if serving an area required to be accessible by Part D3 – A. be such that the hand of a person who cannot grip will not slip from the handle during the operation of the latch; and B. have a clearance between the handle and the back plate of the door face at the centre grip section of the handle of not less than 35mm and not more than 45mm; or ii. a single hand pushing action on a single device which is located between 900mm and 1.2m from the floor	CRA

		The above requirements do not apply to a door that – i. serves a sanitary compartment ii. serves only or is within- A. a sole-occupancy unit in the Class 2 portion B. serves a sole-occupancy unit in a Class 5, 6 or 7 building with a floor area not more than 200m²; or C. a space which is otherwise inaccessible to persons at all times when the door is locked iii. is fitted with a fail-safe device which automatically unlocks the door upon the activation of an AS 1670.1 detection system installed throughout the building	
D2.22	Re-entry from fire isolated exits	Doors of a fire-isolated exit must not be locked from the inside as follows: • In a fire-isolated exit serving any storey above an effective height of 25m throughout the exit. These requirements do not apply to a door fitted with a fail-safe device that automatically unlocks the door upon the activation of a fire alarm and- i. 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 ii. 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.	N/A
D2.23	Signs on doors	A sign must be placed on certain doors to alert persons that the operation must not be impaired. Must be installed so it can be readily seen on or adjacent to a: - • required door providing direct access to a fire isolated exit, except a door providing direct egress from a sole-occupancy unit in a Class 2 or 3 building or Class 4 part on the side that faces a person seeking egress; and • required smoke door The sign is to be placed 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	N/A

		The sign must be in capital letters not less than 20mm high in a colour contrasting with the background and state – • For a self-closing door – "FIRE SAFETY DOOR DO NOT OBSTRUCT DO NOT KEEP OPEN" • For a door discharging from a fire-isolated exit – "FIRE SAFETY DOOR - DO NOT OBSTRUCT" This to be placed on both sides of the final exit door to the fire stair • For an automatic door held by automatic hold open device " FIRE SAFETY DOOR – DO NOT OBSTRUCT" Note: Fire signage is accordance with Clause 183 of the Environmental Planning and Assessment Regulation 2000 is also required.	
D2.24	Protection of openable windows	A window opening must be provided with protection, if the floor below the window is 2m or more above the surface beneath in a bedroom in a Class 2 building Where the lowest level of the window opening is less than 1.7m above the floor, a window opening as above must be protected to the openable potion with a device capable of restricting the window opening or a screen with secure fittings The device or screen as detailed as required above is to not permit a 125mm sphere to pass through the window opening or screen and resist an outward horizontal action of 250 N against the • Window restrained by the device; or • Screen protecting the opening; and Have a child resistant release mechanism if the screen or device is able to be removed, unlocked or overridden. A barrier with a height not less than 865mm above the floor is required to an openable window- i. in addition to window protection, when a child resistant mechanism is required by (b)(ii)(C); and	CRA

		ii. where the floor below the window is more than 4m or more above the surface beneath if the window is not covered by D2.24(a) A barrier covered by D2.24(c) except for D2.24(e) must not permit a 125mm sphere to pass through and have any horizontal or near horizontal elements between 150mm and 760mm above the floor that facilitate climbing. A barrier required by D2.24(c) to an openable window in a fire isolated stairways, fire-isolated ramps and other areas used primarily for emergency purposed, excluding external stairways or external ramps and Class 7 (other than carpark) must not permit a 300mm sphere to pass through.	
D2.25	Timber stairways: Concession	Noted	N/A

PART D3 – Access for people with a disability			
Clause	**Description**	**Comment**	**Status**
D3.0	Deemed-to-satisfy Provisions	Disability (Access to Premises – Buildings) Standards 2010 is to be considered in conjunction with the BCA. The specific access requirements have been dealt with under a separate report	Noted
D3.1	General Building Access Requirements	The Access requirements have been assessed separately by the Access Consultant Urban - Link Buildings and parts of buildings must be accessible as required by Table D3.1, unless exempted by D3.4. Compliance with Part D3 of the BCA is applicable to this building. From the public entrance required to be accessible to at least 1 floor containing sole-occupancy units and to the entrance doorway of each sole-occupancy unit located on the level. Where a ramp complying with AS1428.1 or a passenger lift is installed- • to the entrance doorway of each sole-occupancy unit and • to and within rooms or spaces for the use in common by the residents,	CRA

		located on the levels served by the lift or ramp The requirements of the access is detailed in AS 1428.1 and would be comprehensively access in the CC application.	
D3.2	Access to Buildings	An accessway has been provided from the Principal Pedestrian Entrance areas. The general requirements appear to have been addressed and will require additional assessment at CC stage	CRA
D3.3	Parts of Buildings to be accessible	Final details to be provided detailing compliance with CC stage documentation.	CRA
D3.4	Exemptions	Information	Noted
D3.5	Accessible parking	Disabled carparking spaces to comply with AS2890.6	CRA
D3.6	Signage	Specific signage required as detailed and would be detailed at CC stage	CRA
D3.7	Hearing Augmentation	Information	N/A
D3.8	Tactile Indicators	Tactile indications to be provided as required by AS 1428.1	CRA
D3.9	Wheelchair seating spaces in Class 9b Assembly Buildings	Noted	N/A
D3.10	Swimming Pools	Noted	N/A
D3.11	Ramps	Noted	CRA
D3.12	Glazing on an Accessway	On an accessway, where there is no chair rail, handrail or transom, all frameless or fully glazed doors, sidelights, and any glazing capable of being mistaken for a doorway or opening, must be clearly marked in accordance with AS 1428.1	CRA

SECTION E – SERVICES and EQUIPMENT			
Part E1 – Fire Fighting Equipment			
Clause	**Description**	**Comment**	**Status**
E1.0	Deemed-to-Satisfy Provisions	Information	Noted
E1.1	-	This clause deliberately left blank	-
E1.2	-	This clause deliberately left blank	-
E1.3	Fire Hydrants	A fire hydrant system complying with AS 2419.1-2005 must be provided to serve the building.	CRA
E1.4	Fire hose reels	A fire hose reel system complying with E1.4 and AS 2441-2005 is to be provided to the building other than the Class 2 portion.	CRA
E1.5	Sprinklers	Noted	N/A
E1.6	Portable fire extinguishers	Portable fire extinguishers must be provided in accordance with Clause E1.6 and Table E1.6 of	CRA

		the BCA and selected, located and distributed in accordance with AS 2444-2001. For the Class 2 part of the building, portable fire extinguishers are to be provided as follows: - i. a ABE type fire extinguisher; and ii. a minimum size of 2.5kg; and distributed outside a sole occupancy unit- A. to serve only that storey at which they are located 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.	
E1.7	****	This clause has deliberately left blank	-
E1.8	Fire control centres	Noted	N/A
E1.9	Fire precautions during construction	During construction, not less than one fire extinguisher to suit Class A, B and C fires and electrical fires must be provided at all times on each storey adjacent to each required exit After the building has reached an effective height of 12m, the required fire hydrants and fire hose reels must be operational on all floor / roof covered storeys, except for the 2 uppermost storeys. All required booster connections must be installed	CRA
E1.10	Provision for special hazards	Noted	N/A

Part E2 – Smoke hazard management			
Clause	**Description**	**Comment**	**Status**
E2.0	Deemed-to-Satisfy Provisions	Information	Noted
E2.1	Application of Part	Information	Noted
E2.2	General requirements Tables E2.2a and E2.2b	<u>General requirements</u> An air handling system which does not form part of a smoke hazard management system in accordance with Table E2.2a or Table E2.2b and which recycles air from one fire compartment to another fire compartment or operates in a manner that may unduly contribute to the spread of smoke from one fire compartment to another fire compartment must- i. be designed and installed to operate as a smoke control system in accordance with AS/NZS 1668.1; or ii. A. Incorporate smoke dampers where the air-handling ducts penetrate any elements separating the fire compartments serves; and	CRA

		B. Be arranged such that the air-handling system is shut down and the smoke dampers are activated to close automatically by smoke detectors complying with clause 7.5 of AS 1670.1; and For the purposes of this provision, each sole-occupancy unit in a Class 2 building is treated as a separate fire compartment Miscellaneous air-handling systems covered by Sections 5 and 6 od AS /NZS 1668.1 serving more than one fire compartment(other than a carpark ventilation system) and not forming part of a smoke hazard management system must comply with that Section of the Standard. <u>Class 2 parts</u> Class 2 parts to be provided with automatic smoke detections and alarm system complying with Specification E2.2a. <u>Class 7a</u> The class 7a carpark area is to be provided with a mechanical ventilation system in accordance with AS 1668.2 must comply with clause 5.5 of AS/NZS 1668.1 except that the fans with metal blades for operation at normal temperature may be used, and the electrical power and control cabling need not be fire rated. The central stairway under DTS is required to be fire-isolated. In this regard the class 7 areas would require be provided with a automatic smoke Additional smoke hazard management requirements may be required by the Fire Safety Engineer in the Performance Solutions prepared for the building.	
E2.3	Provisions for special hazards	Noted	N/A

Part E3 – Lift installations			
Clause	**Description**	**Comment**	**Status**
E3.0	Deemed-to-Satisfy Provisions	Information	Noted
E3.1	Lift installations	An electric passenger lift installation and an electrohydraulic passenger lift installation must comply with Specification E3.1	CRA

E3.2	Stretcher facility in lifts	A stretcher facility must be provided to at least one emergency lift required by E3.4 A stretcher facility must accommodate a raised stretcher with a patient lying on it horizontally by providing a clear space not less than 600mm wide x 2000mm long x 1400mm high above floor level	N/A
E3.3	Warning against use of lifts in fire	Warning signs indicating Do not use lifts if there is a fire to be provided near every call button for a passenger lift or group of lifts as per E3.3. The warning sign is to comply with Figure E3.3	CRA
E3.4	Emergency lifts	Noted	N/A
E3.5	Landings	Access and egress to and from liftwell landings must comply with the deemed-to-satisfy provisions of Section D.	CRA
E3.6	Passenger lifts	In an accessible building every lifts must be one as detailed 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	CRA
E3.7	Fire service controls	The lifts serving any storey above an effective height of 12m must be provided with: a) a fire service recall control switch complying with E3.9 for- i. a group of lifts; or ii. a single lift not a group that serves the storey b) A lift car fire service device control switch complying with E3.10 for every lift	CRA
E3.8	Aged care buildings	Noted	N/A
E3.9	Fire service recall switch	The fire service recall control switch required by E3.7 is to comply as detailed. Certification to be obtained from installer	CRA
E3.10	Lift car service drive control switch	The lift car service switch required by E3.7 is to comply as detailed. Certification to be obtained from installer	CRA

Part E4 – Visibility in an Emergency, Exit Signs and Warning Systems			
Clause	**Description**	**Comments**	**Status**
E4.0	Deemed-to-Satisfy	Information	Noted
E4.1	-	This clause has deliberately been left blank	-
E4.2	Emergency lighting requirements	An emergency lighting system must be installed throughout the building in accordance with AS 2293.1-2005. Ensure that the lighting is provided to the stairways leading from the basement to ground floor level.	CRA

E4.3	Measurement of distance	Information	Noted
E4.4	Design and operation of emergency lighting	The emergency lighting system to comply with AS 2293.1-2005	CRA
E4.5	Exit signs	Exit signs locations to comply as detailed.	CRA
E4.6	Direction signs	Where an exit is not readily apparent, directional signage is to installed indicating the direction of the required exit	CRA
E4.7	Class 2 and 3 buildings and Class 4 Parts: Exemptions	Information	Noted
E4.8	Design and operation of exit signs	Exit signs must be installed complying with AS 2293.1 and be clearly visible at all times the building is occupied	CRA
E4.9	Sound systems and intercom systems for emergency purposes	Noted	N/A

SECTION F: HEALTH AND AMENITY			
Part F1 – Damp and Weatherproofing			
Clause	**Description**	**Comments**	**Status**
F1.0	Deemed-to-Satisfy Provisions	Information	Noted
F1.1	Stormwater drainage	Stormwater drainage to comply with AS 3500.3-2003 Additional requirements may be applicable from Consent Authority	CRA
F1.2	-	This clause has deliberately left blank	-
F1.3	-	This clause has deliberately left blank	-
F1.4	External above ground membranes	Waterproofing membranes for external above ground use must comply with AS 4654 parts 1 and 2	CRA
F1.5	Roof coverings	Noted	N/A
F1.6	Sarking	Sarking-type materials used for weatherproofing must comply with AS/NZS 4200 parts 1 and 2 – 1994	CRA
F1.7	Waterproofing of wet areas in buildings	Wet areas must be constructed in accordance with AS 3740-2010 and F1.7 of the BCA	CRA
F1.8	-	This clause has deliberately left blank	-
F1.9	Damp-proofing	Compliance to be provided as peer provisions	CRA
F1.10	Damp-proofing of floors on the ground	If a room is laid on the ground or on fill, moisture from the ground must be prevented from reaching the upper surface of the floor and adjacent walls by the insertion of a vapour barrier in accordance with AS 2870-2011 except damp-proofing need not be provided if weatherproofing is not required and the floor is the base of a stair, lift or similar shaft which is adequately drained by gravitation or mechanical devices	CRA
F1.11	Provision of floor waste	In a Class 2 building, a bathroom or laundry at any level above a sole-occupancy unit or public space must have a floor waste and the floor	CRA

		graded to the floor waste to permit drainage of water	
F1.12	Sub-floor ventilation	Noted	N/A
F1.13	Glazed assemblies	Glazed assemblies are required by comply as detailed with AS 2047 and AS 1288	CRA

Part F2 – Sanitary and other facilities			
Clause	**Description**	**Comments**	**Status**
F2.0	Deemed-to-Satisfy Provisions	Information	Noted
F2.1	Facilities in residential buildings	Each SOU must be provided with sanitary facilities, a kitchen sink, facility for the preparation and cooking of food, laundry wash tub and space for washing machine and dryer.	CRA
F2.2	Calculation of number of occupants and facilities.	Information	Noted
F2.3	Facilities in Class 3 to 9 buildings	Sanitary facilities must be provided for the retail/commercial use in accordance with Clause F2.3.	N/A
F2.4	Accessible sanitary facilities	If a common area facility is provided then it is required to be accessible as required by Table F2.4(a).	N/A
F2.5	Construction of sanitary facilities	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 between the closet pan within the sanitary compartment and the doorway. Refer figure F2.5	CRA
F2.6	Interpretation; Urinal and washbasins	Information	Noted
F2.7	Microbial (legionella) control	Hot water, warm water and cooling water systems in a building other than a system serving only a single sole-occupancy unit in a Class 2 or 3 building or Class 4 part of a building must be installed in accordance with AS/NZS 3666.1	CRA
F2.8	Waste management	Noted	N/A
F2.8	Accessible adult change facilities	Noted	N/A

Part F3 – Room Sizes			
Clause	**Description**	**Comment**	**Status**
F3.1	Height of rooms and other spaces	The ceiling heights in the building are required as follows. Please note that additional provisions may be applicable under SEPP 65: - <u>Class 2</u> • 2.4 for all habitable rooms excluding kitchens • 2.1m for kitchens, laundries, bathrooms, corridors and passageways	CRA

		Class 5,6 & 7 2.4m generally and 2.1 for corridors, passageways and storerooms Carparking areas are to comply with AS 2890.1 & AS 2890.6. Stairways 2m measured vertically above the nosing line	

Part F4 – Light and ventilation			
Clause	**Description**	**Comments**	**Status**
F4.1	Provision of natural light	Natural night must be provided to all habitable rooms	Complies
F4.2	Methods and extent of natural lighting	Natural light must be provided by: • Windows with an aggregate light transmitting area of not less than 10% of the floor area of the room	Complies
F4.3	Natural light borrowed from adjoining room	Information	Noted
F4.4	Artificial lighting	Lighting to all areas to comply with AS 1680.1	CRA
F4.5	Ventilation of rooms	All rooms to be provided with Clause F4.6 compliant natural ventilation or mechanical ventilation system complying with AS 1668.2-2012	CRA
F4.6	Natural ventilation	Natural ventilation provided in accordance with F4.5(a) must consist of permanent openings, windows, doors or other devices which can be opened that attain an aggregate opening or openable size not less than 5% of the floor area of the room required to be ventilated.	CRA
F4.7	Restriction on position of water closets and urinal	A room containing a closet pan or urinal must not open into a; • Kitchen or pantry • Public dining room or restaurant • Room used for public assembly • A workplace normally occupied by more than one person	CRA
F4.9	Airlocks	Airlocks and mechanical ventilation to be provided as required	CRA
F4.10	-	This clause has been deliberately left blank	-
F4.11	Carparks	Every storey of a carpark except open deck carpark) must have a system of mechanical ventilation complying with AS 1668.2-2012	CRA
F4.12	Kitchen local exhaust ventilation	Noted	N/A

Part F5 Sound Transmission and Insulation			
Clause	**Description**	**Comments**	**Status**
F5.1	Application of Part	Information	Noted

F5.2	Determination of airbourne sound insulation ratings	Information	Noted
F5.3	Determination of impact sound insulation ratings	A wall in a building required to have an impact sound insulation rating must be of discontinuous construction and for the purposes of this part discontinuous construction means a wall having a minimum 20mm cavity between the two leaves and for masonry where wall ties are required to connect leaves, the ties are of the resilient type and for other than masonry there is no mechanical linkage between leaves except at the periphery. Floors requiring impact sound insulation rating must comply with provisions	CRA
F5.4	Sound insulation rating of floors	A floor in a Class 2 building must achieve an Rw t Ctr (airborne) not less than 50 and an Ln,w(impact) not more than 62 if it separates sole occupancy units or a SOU from a plant room, lift shaft, public corridor, public lobby or parts of a different classification	CRA
F5.5	Sound insulation rating of walls	A wall in a Class 2 building must: i. Have an Rw = Ctr (airborne) not less than 50 if it separates SOU's ii. Have an Rw (airborne) not less than 50 if it separates SOU's and the stairway, public corridor, public lobby or the like, or parts of a different classification; and iii. Be discontinuous construction in accordance with F5.3(b) id it separates A. A bathroom, sanitary compartment, laundry or kitchen in one SOU from a habitable room (other than a kitchen) in an adjoining unit; or B. A SOU from a plant room or lift shaft Where the wall required to have insulation has a floor above or roof above, the wall must continue to the underside of the floor above or the ceiling that provides the sound insulation required for the wall. Doorways in walls separating Class 2 SOU from stairway, public corridor, public lobby or the like must be provided with a door assembly that has an RW not less than 30	CRA
F5.6	Sound insulation rating of services	If a soil or waste pipe passes through more than one SOU the pipe must be separated from the rooms with construction that has a Rw =Ctr (airborne) not less than 40 if adjacent to a	CRA

		habitable room (other than a kitchen) or 25 if adjacent to a kitchen or other room	
F5.7	Sound insulation of pumps	A flexible coupling must be used at the point of connection between the service pipes and any circulating pump	CRA

Part F6 Condensation management			
Clause	**Description**	**Comments**	**Status**
F6.0	Deemed-to-Satisfy Provisions	Information	Noted
F6.1	Application of Part	The Deemed-to-Satisfy Provisions of this Part only apply to a sole-occupancy unit of a Class 2 building and a Class 4 part of a building.	CRA
F6.2	Pliable building membrane	Where a pliable building membrane is installed in an external wall, it must— (i) comply with AS/NZS 4200.1; and (ii) be installed in accordance with AS 4200.2; and (iii) be a vapour permeable membrane for climate zones 6, 7 and 8; and (iv) be located on the exterior side of the primary insulation layer of wall assemblies that form the external envelope of a building. Except for single skin masonry and single skin concrete, where a pliable building membrane is not installed in an external wall, the primary water control layer must be separated from water sensitive materials by a drained cavity.	CRA
F6.3	Flow rate and discharge of exhaust systems	(a) An exhaust system installed in a kitchen, bathroom, sanitary compartment or laundry must have a minimum flow rate of— (i) 25 L/s for a bathroom or sanitary compartment; and (ii) 40 L/s for a kitchen or laundry. (b) Exhaust from a kitchen must be discharged directly or via a shaft or duct to outdoor air. (c) Exhaust from a bathroom, sanitary compartment, or laundry must be discharged— (i) directly or via a shaft or duct to outdoor air; or (ii) to a roof space that is ventilated in accordance with F6.4.	CRA

F6.4	Ventilation of roof spaces	(a) Where an exhaust system covered by F6.3 discharges directly or via a shaft or duct into a roof space, the roof space must be ventilated to outdoor air through evenly distributed openings. (b) Openings required by (a) must have a total unobstructed area of 1/300 of the respective ceiling area if the roof pitch is greater than 22°, or 1/150 of the respective ceiling area if the roof pitch is less than or equal to 22°. (c) 30% of the total unobstructed area required by (b) must be located not more than 900 mm below the ridge or highest point of the roof space, measured vertically, with the remaining required area provided by eave vents.	CRA

SECTION G – ANCILLARY PROVISIONS			
Part G1 – Minor Structures and components			
Clause	**Description**	**Comments**	**Status**
G1.1	Swimming pools	Swimming pools and spas are to be provided with safety fencing compliant to AS 1926. Parts 1 & 2 and as required by the Swimming Pools Act 1992 and the Swimming Pools Regulation 2008 A water recirculation system must comply with AS 1926.3-2010	N/A
G1.2	Refrigerated chambers, strong rooms and vaults	Noted	N/A
G1.3	Outdoor play areas	Noted	N/A
NSW G1.101	Provision for cleaning windows	A safe manner for cleaning windows located 3 or more storeys above ground level must be provided, and compliance is achieved where: • The windows can be cleaned wholly from within the building; or • Complying with the Work Health and Safety Act 2011 and regulations made under that Act	CRA

Part G2 – Boilers, pressure vessels, heating appliances, fire places, chimneys and flues			
Clause	**Description**	**Comments**	**Status**
G2.0	Deemed-to-Satisfy Provisions	Information	Noted
G2.1	*****	This clause has deliberately left blank	
G2.2	Installation of appliances	Installation of stove, heater or similar appliance in a building must comply with • For boilers and pressure vessels in accordance with Specification G2.2	CRA
G2.3	Open fireplaces	Noted	N/A
G2.4	Incinerator Rooms	Noted	N/A

Part G3 – Atrium construction			
Clause	**Description**	**Comments**	**Status**
G3.1	Atriums affected by this Part	Noted	N/A

Part G6 – Occupiable outdoor areas			
Clause	**Description**	**Comments**	**Status**
G6.1	Application of Part	Information	Noted
G6.2	Fire Hazard properties	Subject to G6.2(b) a lining, material or assembly in the occupiable outdoor area must comply with C1.10 as for internal elements	N/A
G6.3	Fire separation	For the purposes of DTS provisions C2.7, C2.8 and C2.9 a reference to a storey includes an occupiable outdoor area. A fire wall cannot be used to separate an occupiable outdoor area into different fire compartments	N/A
G6.4	Provisions for escape	For the purposes of DTS provisions of Part D1, a reference to a storey or room includes an occupiable outdoor area.	N/A
G6.5	Construction of exits	For the purposes of DTS of Part D2 a reference to a storey or room includes an occupiable outdoor area	N/A
G6.6	Fire fighting equipment	Except for Clause 7(b)(i) of Specification E1.5 for the purposes of DTS provisions of Part E1 a reference to a storey or room includes an occupiable outdoor area	N/A
G6.7	Lift installations	For the purposes of DTS provisions of Part E3 a reference to a storey or room includes an occupiable outdoor area	N/A
G6.8	Visibility in an emergency, exit signs and warning systems	For the purposes of the DTS provisions of Part E4 a reference to a storey or room includes an occupiable outdoor area	N/A
G6.9	Light and ventilations	For the purposes of the DTS provisions of F4.4, F4.8 & F4.9 a reference to a storey or room includes an occupiable outdoor area	N/A
G6.10	Fire orders	For the purposes of the DTS provisions of G4.9 a reference to a storey or room includes an occupiable outdoor area	N/A

SECTION J – ENERGY EFFIENCY
This Report does not deal with the provisions of Section J

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Annexure A – Table 3 Type A construction: FRL of building elements

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