Date: 3 November 2023
Our Ref: P230170

The Owners Corporation 42 Fairy Bower Rd, Manly
C/- Strata Master
42 Fairy Bower Rd,
Manly NSW 2095
Att: Ms. Claire Fleming

Dear Claire,

RE: 42 Fairy Bower Rd, Manly
FIRE SAFETY ASSESSMENT REPORT

Please find enclosed our Fire Safety Audit Report prepared in respect of the existing building situated at the above-listed site.

It is recognized that this older building will not comply in many ways with the current Building Code requirements and in this regard, it is our aim to identify key compliance issues and provide recommendations in regard to improving the level of Fire Safety within the building.

This commentary enables the project team to readily identify and understand the nature and extent of information required within the Building Permit (or other) application to demonstrate the attainment of BCA compliance.

Should you require any further information, please do not hesitate to contact me on the number provided.

Yours faithfully

Kieran Tobin
Director

FIRE SAFETY ASSESSMENT REPORT

PREPARED FOR

The Owners Corporation 42 Fairy Bower Rd, Manly

REGARDING

42 Fairy Bower Rd, Manly

Prepared By

BCA vision

REPORT REGISTER

The following report register documents the development and issue of this report and project as undertaken by this office, in accordance with the *Quality Assurance* policy of BCA Vision Pty Ltd.

Our Reference	Issue No.	Remarks	Issue Date
P230170	1	Fire Safety Assessment Report	3 November 2023

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1.0 INTRODUCTION

1.1 GENERAL

This "BCA Compliance Assessment" report has been prepared at the request of The Owners Corporation 42 Fairy Bower Rd, Manly and relates to 42 Fairy Bower Rd, Manly.

The subject building is an existing two storey masonry residential Unit Block.
The building is a two Storey class 2 building containing 4 residential Units.

The intent of this report is to assess the level of Fire Safety available to the building with a view to improving the level of fire safety available to building occupants.
It is not intended to recommend implicit compliance within this older building, it is intended to propose methods where applicable which may improve Fire safety.

1.2 REPORT BASIS

The content of this report reflects –

(a) The principles and provisions of BCA 2022, Parts C, D1, D2 and E
(b) An inspection of the building by BCA Vision on Wednesday the 1st of November 2023

1.3 EXCLUSIONS

It is conveyed that this report should not construed to infer that an assessment for compliance with the following has been undertaken –

(a) Structural adequacy of the existing building;
(b) General building services.
(c) BCA Vision have not removed building Fabric and in this regard must make assumptions in regard to parts of the building which are not visible. BCA Vision cannot guarantee these assumptions and, in this regard, further inspection by the relevant parties (owner and occupier) is encouraged;
(d) The individual requirements of service providers (i.e. Telstra, Water Supply, Energy Australia);
(e) The individual requirements of the Workcover Authority;
(f) Disability Discrimination Act (DDA);
(g) Reporting on hazardous materials, OH&S matters or site contamination;
(h) Assessment of any structural elements or geotechnical matters relating to the building, including any;
(i) Consideration of any fire services operations (including hydraulic, electrical or other systems);
(j) Assessment of plumbing and drainage installations, including stormwater;
(k) Assessment of mechanical plant operations, electrical systems or security systems;
(l) Heritage significance;
(m) Consideration of energy or water authority requirements;
(n) Consideration of Council's local planning policies;

(o) Environmental or planning issues;
(p) Requirements of statutory authorities;
(q) Sections B, D4, F, G, H, J or I of the BCA are not considered;
(r) Provision of any construction approvals or certification under Part 4A or Part 5 of the Environmental.

1.4 REPORT PURPOSE

The purpose of this report is to identify the extent to which the architectural design documentation complies with the relevant prescriptive provisions of the BCA 2022, Parts C, D1, D2 and E.
Assessment of the proposed design considers each prescriptive BCA provision, and identifies such as either: –

(a) Being complied with; or
(b) Not being complied with; or
(c) Requiring the provision further detail with the future Building Permit or other application or
(d) Not being relevant to the particular building works proposal.

The status of the design, in terms of these four (4) categories, is summarised within Part 3 of this report.
Where prescriptive non-compliance is identified, suitable recommendations to remedy the non-compliance shall be detailed in Part 4.

In instances where insufficient detail exists, summary of the information required from the project team for inclusion within future applications (i.e. Building Permit) shall also be outlined in Part 4.

2.0 BUILDING DESCRIPTION

2.1 GENERAL

In the context of the Building Code of Australia (BCA), the subject development is described within items 2.2 – 2.6 below.

2.2 RISE IN STOREYS (CLAUSE C1.2)

The building has a rise in storeys of two (2)

2.3 BUILDING CLASSIFICATION (CLAUSE A3.2)

The entire building incorporates the following classifications: -

CLASS	DESCRIPTION
Class 2	Class 2 building is a building containing two or more sole-occupancy units
Class 10a	Detached Laundry Facilities

2.4 EFFECTIVE HEIGHT (CLAUSE A1.1)

The building does not have an effective height NOT exceeding 12m.

2.5 TYPE OF CONSTRUCTION (TABLE C1.1)

Specification 5 - TYPE B CONSTRUCTION: FRL OF BUILDING ELEMENTS

Building element		Class of building—FRL: (in minutes)
		Structural adequacy*/ *Integrity*/ *Insulation
		2, 3 or 4 part
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
	1.5 to less than 3 m	90/ 60/ 30
	3 to less than 9 m	90/ 30/ 30
	9 to less than 18 m	90/ 30/–
	18 m or more	–/–/–
For non- *loadbearing* parts—		
	less than 1.5 m	–/ 90/ 90
	1.5 to less than 3 m	–/ 60/ 30
	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—		
For *loadbearing* columns—		

Building element		Class of building—FRL: (in minutes)
		Structural adequacy*/ *Integrity*/ *Insulation
		2, 3 or 4 part
	less than 18 m	90/–/–
	18 m or more	–/–/–
For non- *loadbearing* columns—		
		–/–/–
COMMON WALLS and FIRE WALLS—		90/ 90 / 90
INTERNAL WALLS—		
Fire-resisting lift and stair *shafts*—		
	Loadbearing	90/ 90/ 90
Fire-resisting stair *shafts*—		
	Non- *loadbearing*	–/ 90/ 90
Bounding *public corridors*, public lobbies and the like—		
	Loadbearing	60/ 60/ 60
	Non- *loadbearing*	–/ 60/ 60
Between or bounding *sole-occupancy units*—		
	Loadbearing	60/ 60/ 60
	Non- *loadbearing*	–/ 60/ 60
OTHER LOADBEARING INTERNAL WALLS		
and COLUMNS—		60/–/–

3.0 BCA ASSESSMENT – SUMMARY

3.1. GENERAL

The tables contained within items 3.2 – 3.5 below summarise the compliance status of the proposed architectural design in terms of each prescriptive provision of the Building Code of Australia.

For those instances of either "prescriptive non-compliance" or "Detail required" (where further discussion on compliance is required), a detailed analysis and commentary is provided within Part 4.

Note FDR = Further Discussion or Description Required

3.2 SECTION C – FIRE RESISTANCE

BCA reference	Complies	Does not comply	FDR	Not relevant
C2D1 - Deemed-to-Satisfy Provisions		✓		
C2D4 - Buildings of multiple classification				✓
C2D5 - Mixed types of construction				✓
C2D6 - Two storey Class 2, 3 or 9c buildings				✓
C2D7 - Class 4 parts of buildings				✓
C2D8 - Open spectator stands and indoor sports stadiums				✓
C2D9 - Lightweight construction				✓
C2D10 - Non-combustible building elements				✓
C2D11 - Fire hazard properties			✓	
C2D12 - Performance of external walls in fire				✓
C2D13 - Fire-protected timber: Concession				✓
C2D14- Ancillary elements				✓
C2D15-Fixing of bonded laminated cladding panels				✓
C3D3 - General floor area and volume limitations				✓
C3D4 - Large isolated buildings				✓
C3D5 - Requirements for open spaces and vehicular access				✓
C3D6 - Class 9 buildings				✓
C3D7 - Vertical separation of openings in external walls				✓
C3D8 - Separation by fire walls				✓
C3D9 - Separation of classifications in the same storey				✓
C3D10 - Separation of classifications in different storeys				✓
C3D11 - Separation of lift shafts				✓
C3D12 - Stairways and lifts in one shaft				✓
C3D13 - Separation of equipment				✓
C3D14 - Electricity supply system				✓
C3D15 - Public corridors in Class 2 and 3 buildings				✓
C4D3 - Protection of openings in external walls	✓			
C4D4- Separation of external walls and associated openings in different fire compartments				✓
C4D5- Acceptable methods of protection				✓
C4D6- Doorways in fire walls				✓
C4D7-Sliding fire doors				✓
C4D8- Protection of doorways in horizontal exits				✓
C4D9- Openings in fire-isolated exits				✓
C4D10- Service penetrations in fire-isolated exits				✓
C4D11- Openings in fire-isolated lift shafts				✓
C4D12- Bounding construction: Class 2 and 3 buildings and Class 4 parts		✓		
C4D13- Openings in floors and ceilings for services			✓	
C4D14- Openings in shafts			✓	
C4D15- Openings for service installations			✓	
C4D16- Construction joints			✓	
C4D17- Columns protected with lightweight construction to achieve an FRL				✓

3.3 SECTION D – ACCESS AND EGRESS

BCA reference	Complies	Does not comply	FDR	Not relevant
D2D3 - Number of exits required	✓			
D2D4 - When fire-isolated stairways and ramps are required				✓
D2D5 - Exit travel distances	✓			
D2D6 - Distance between alternative exits				✓
D2D7 - Height of exits, paths of travel to exits and doorways	✓			
D2D8 - Width of exits and paths of travel to exits			✓	
D2D9 - Width of doorways in exits or paths of travel to exits	✓			
D2D10 - Exit width not to diminish in direction of travel			✓	
D2D12 - Travel via fire-isolated exits				✓
D2D13 - External stairways or ramps in lieu of fire-isolated exits				✓
D2D14 - Travel by non-fire-isolated stairways or ramps	✓			
D2D15 - Discharge from exits	✓			
D2D16 - Horizontal exits				✓
D2D17 - Non-required stairways, ramps or escalators				✓
D2D18 - Number of persons accommodated				✓
D2D19 - Measurement of distances				✓
D2D20 - Method of measurement				✓
D2D21 - Plant rooms, lift machine rooms and electricity network substations: Concession				✓
D2D22 - Access to lift pits				✓
D2D23 - Egress from primary schools				✓
D3D3 - Fire-isolated stairways and ramps				✓
D3D4 - Non-fire-isolated stairways and ramps				✓
D3D5 - Separation of rising and descending stair flights				✓
D3D6 - Open access ramps and balconies				✓
D3D7 - Smoke lobbies				✓
D3D8 - Installations in exits and paths of travel			✓	
D3D9 - Enclosure of space under stairs and ramps				✓
D3D10 - Width of required stairways and ramps				✓
D3D11 - Pedestrian ramps				✓
D3D12 - Fire-isolated passageways				✓
D3D13 - Roof as open space				✓
D3D14 - Goings and risers			✓	
D3D15 - Landings	✓			
D3D16 - Thresholds	✓			
D3D17 - Barriers to prevent falls		✓		
D3D18 - Height of barriers			✓	
D3D19 - Openings in barriers				✓
D3D20 - Barrier climbability				✓
D3D21 - Wire barriers				✓
D3D22 - Handrails		✓		
D3D23 - Fixed platforms, walkways, stairways and ladders				✓
D3D24 - Doorways and doors				✓
D3D25 - Swinging doors	✓			
D3D26 - Operation of latch	✓			
D3D27 - Re-entry from fire-isolated exits				✓
D3D28 - Signs on doors				✓
D3D30 - Timber stairways: Concession				✓

3.4 SECTION E – SERVICES AND EQUIPMENT

BCA reference	Complies	Does not comply	FDR	Not relevant
E1D2 - Fire hydrants				✓
E1D3 -Fire hose reels				✓
E1D4 - Sprinklers				✓
E1D5 - Where sprinklers are required: all classifications				✓
E1D6 - Where sprinklers are required: Class 2 and 3 buildings other than residential care buildings				✓
E1D7 -Where sprinklers are required: Class 3 building used as a residential care building				✓
E1D8 - Where sprinklers are required: Class 6 building				✓
E1D9 - Where sprinklers are required: Class 7a building, other than an open-deck carpark				✓
E1D10 -Where sprinklers are required: Class 9a health-care building used as a residential care building, Class 9c buildings				✓
E1D11 - Where sprinklers are required: Class 9b buildings				✓
E1D12 - Where sprinklers are required: additional requirements				✓
E1D13 -Where sprinklers are required: occupancies of excessive hazard				✓
E1D14 -Portable fire extinguishers			✓	
E1D15 -Fire control centres				✓
E1D16 -Fire precautions during construction				✓
E1D17 -Provision for special hazards				✓
E2D3 -General requirements				✓
E2D4 -Fire-isolated exits				✓
E2D5 -Buildings more than 25 m in effective height: Class 2 and 3 buildings and Class 4 part of a building				✓
E2D6 -Buildings more than 25 m in effective height: Class 5, 6, 7b, 8 or 9b buildings				✓
E2D7 -Buildings more than 25 m in effective height: Class 9a buildings				✓
E2D8 -Buildings not more than 25 m in effective height: Class 2 and 3 buildings and Class 4 part of a building			✓	
E2D9 -Buildings not more than 25 m in effective height: Class 5, 6, 7b, 8 and 9b buildings				✓
E2D10 -Buildings not more than 25 m in effective height: large, isolated buildings subject to C3D4				✓
E2D11 -Buildings not more than 25 m in effective height: Class 9a and 9c buildings				✓
E2D12 -Class 7a buildings				✓
E2D13 -Basements (other than Class 7a buildings)				✓
E2D14 -Class 6 buildings – in fire compartments more than 2000 m2: Class 6 building (not containing an enclosed common walkway or mall serving more than one Class 6 sole-occupancy unit)				✓
E2D15 -Class 6 buildings – in fire compartments more than 2000 m2: Class 6 building (containing an enclosed common walkway or mall)				✓
E2D16 -assembly buildings: nightclubs, discotheques and the like				✓
E2D17 - assembly buildings: exhibition halls				✓
E2D18 - assembly buildings: theatres and public halls				✓
E2D19 -Class 9b – assembly buildings: theatres and public halls (not listed in E2D18) including lecture theatres and cinema/auditorium complexes				✓
E2D20 -Class 9b assembly buildings: other assembly buildings (not listed in E2D16 to E2D19)				✓
E2D21 -Provision for special hazards				✓
E3D2 - Lift installations				✓
E3D3 - Stretcher facility in lifts				✓
E3D4 - Warning against use of lifts in fire				✓
E3D5 - Emergency lifts				✓
E3D6 -Landings				✓
E3D7 -Passenger lift types and their limitations				✓

E3D8 -Accessible features required for passenger lifts				✓
E3D9 -Fire service controls				✓
E3D10 -Residential care buildings				✓
E3D11 -Fire service recall control switch				✓
E3D12 -Lift car fire service drive control switch				✓
E4D2 -Emergency lighting requirements			✓	
E4D3 -Measurement of distance			✓	
E4D4 -Design and operation of emergency lighting			✓	
E4D5 -Exit signs			✓	
E4D6 -Direction signs				✓
E4D7 -Class 2 and 3 buildings and Class 4 parts: exemptions				✓
E4D8 -Design and operation of exit signs			✓	
E4D9 -Emergency warning and intercom systems				✓

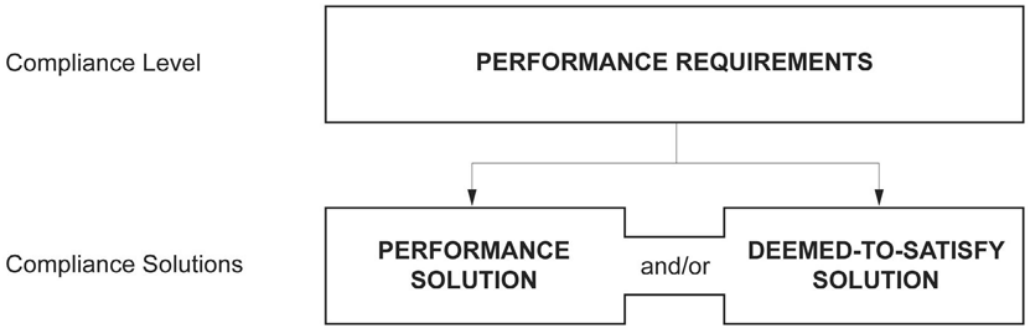
4.0 MATTERS IDENTIFIED / RECOMMENDATIONS

4.1 COMPLIANCE PATHWAYS WITHIN THE BCA

Compliance with the NCC is achieved by complying with—
(1) the Governing Requirements of the NCC; and
(2) the *Performance Requirements*.

A2.1 Compliance with the Performance Requirements
Performance Requirements are satisfied by one of the following, as shown in Figure 1:
(1)A *Performance Solution*.
(2)A *Deemed-to-Satisfy Solution*.
(3)A combination of (1) and (2)**.**

Figure 1: NCC compliance option structure



2.3 KEY COMPLIANCE ISSUES IDENTIFIED

The following table provides a list of key compliance issues within the proposed design.

Deemed-To-Satisfy Compliance – Key Considerations		
Item No.	**BCA Clause**	**Comment**
1.	C2D2, Spec 5	**Building Fire Resistance** **External Walls** The external walls are solid masonry and achieve the required 90/90/90 Fire Resistance Level (FRL) **Internal Walls** (other than within the roof space) The internal walls are solid masonry and achieve the required 90/90/90 Fire Resistance Level (FRL) **Fire separation Ground to First Floor** The floor system between the ground and first floor is concrete (thickness not determined).

		No additional Fire protection is required in our opinion. **Fire Separation First Floor** Ceilings in this location appear to be standard plaster lathe ceilings and do not provide a compliant Fire Resistance. In addition the masonry separating walls within the first floor extend to above the ceiling but not to the underside of the roof covering. We recommend, Either The provision of a ceiling with a resistance to the incipient spread of fire for 60 minutes. The product and system used must be an AS 1530 fire rated plasterboard (or Intumescent Paint) system installed in exact accordance with the product specification. OR Extend the separating wall within the roof space in a material that achieves a Fire Resistance of 90/90/90 Note This method will require removal or alteration to structural roof timbers to ensure that non-compliant penetrations exist post construction and, in this regard, would require advice from a structural engineer in regard to structural roof support. **Fire Separation Sub Floor** No additional Fire protection is required in our opinion.
2.	C2D11	**Fire Hazard Properties – Wall and Ceiling Linings** Floor Linings – It is not possible to identify the compliance of the floor linings with Specification 32 (of the BCA) from a visual inspection. We recommend that any new floor linings (in the future) will require evidence of compliance with Specification 32 from the supplier This is generally provided in the form of an AS 1530 fire test Certificate.
3.	C4D12	**Bounding Construction – Fire Doors** The existing Unit Doors to the common foyer and rear utility stair)were identified as hollow core doors and contained glazed panels. We recommend replacing each of the unit doors self-closing -tight fitting solid core doors.
4.	C3D13 C3D14 C3D15	**Protection of Service Penetrations** **Service Penetrations – Sub Floor** A crawl space opening is provided t the base of the utility stairs which accesses the subfloor beneath unit 1. A small opening exists Unit 1 contains 1 Bearer is provided at the base of the utility stairs into the subfloor of unit 2, the opening facilitates electrical conduit. A timber bearer penetrates the wall between unit 1 and the common internal foyer sub floor.

		In our opinion these elements are considered low risk as limited fuel load is provided within the base of the utility stair and within the subfloor and in this regard we make no recommendations to alter these elements.
5. .	C3D13 C3D14 C3D15	**Protection of Service Penetrations** **Service Penetrations – Ground Floor and first floor** **Chimneys** Chimneys have been provided to each unit The Chimneys are currently not operational. The masonry chimney structure appeared intact and in this regard presents a low risk of spread of fire – no recommendations required. **Plumbing service** penetrations It was not possible to inspect the bathroom ceilings within the ground floor as inspection panels have not been provided within the ceiling; however it was noted that service risers are provided externally. The service pipes are generally galvanised metal plumbing services. Wholly metal service risers (generally waste vents) require a tight fit and a fire rated mastic when penetrating the required "Incipient Ceiling" (First Floor). Its not uncommon for galvanised waste traps to be substituted with PVC. Where this has occurred within the ground floor we identify the following:- Service Risers containing a combination of PVC and metal must be provided with a Fite rated riser shaft to achieve a Fire resistance of 60 minutes. **Electrical Conduit** was identified which will require a compliant method of protection. Lighting cables penetrating the ceiling must be provided with a fire rated mastic fire tested to achieve an FRL of -/60/-
6.	D2D8 D2D10 D3D14 D3D18 D3D19 D3D22	**Internal Open Stair (Common Foyer)** **The internal stair was identified as having the following non compliances** Stair width less than 1000mm (approximately 950mm) – it is noted that this cannot be rectified without considerable structural change The balustrade height is less than 1000mm (approx. 840mm) at the landings The hand rail height as measured from the stair nosing is less than the required 865mm (approx. 740mm) **Our recommendations are as follows:-** **Slip Resistance – Stair Nosings** We recommend providing P3 (R10) slip resistant, 30% contrasting nosing strips top each of the stairs **Balustrade** Increase the height of the balustrade to 1000mm as measured from the finished floor surface Ensure any gaps are less than 125mm

		Hand Rails Increase the height of the handrail to 865mm as measured from the stair nosing Ensure any gaps are less than 125mm
7.	D2D8 D2D10 D3D14 D3D18 D3D19 D3D22	**Rear (Enclosed)(Utility) Stair** The rear stair is representative of the requirements of the time which predate Ordinance 70 and the current BCA. In effect the rear stair is redundant as a required Exit from the building The stair is non compliant with the current BCA as follows:- Stair width less than the required minimum1000mm (approximately 710mm) Balustrade height is less than the required minimum 1000mm (approx. 760mm) at the landings The hand rail height is less than the required minimum 865mm above the stair nosing (approximately 760mm) If the stair is commonly used for access to the lower ground floor laundry facilities we would recommend altering these elements however it is noted that some elements such as the width and winders would could not be reasonably altered without significant structural changes. If the stair is not commonly used our recommendation would be to provide devices (i,e. common locking devices) to restrict access to these stair by Children
8.	E1D14	**Portable Fire Extinguishers** We recommend providing a 2.5kg type ABE Portable Fire Extinguisher on each level within the building
9.	E2D8	**Smoke Hazard Management** The Smoke detection within the units appears to be compliant AS 3786 hard wired detectors apart from Unit 1 which appears to be a battery operated unit only. We recommend replacing Unit 1 smoke alarm with an AS 3786 compliant hardwired smoke alrm with battery back up. Currently there is no smoke detection and alarm system provided within the common foyer or rear utility stair. Common and Utility Stair area detection must be at a minimum and AS 3786 system located in accordance with AS 1670 system allowing a Building Occupant Warning System complying with Specification 20
10.	Part E4	**Exit Signage and Emergency Lighting** New AS/NZS 2293.1 compliant Exit signage and Emergency Lighting is above the stair at the first floor landing and at the Ground Floor Exit Door

5.0 BCA ASSESSMENT – DETAILED ANALYSIS

5.1 GENERAL

With reference to the "BCA Assessment Summary" contained within Part 3 above, the following detailed analysis and commentary is provided.

This commentary is formulated to enable the design documentation to be further progressed, for the purpose of evidencing the attainment of compliance with the relevant provisions of the BCA.

In our opinion compliance with the Building Code of Australia 2022, Parts C, D1, D2, D3 and E can be achieved in regard to the proposed works subject to the implementation of the following details into the Construction documentation.

5.2 SECTION C – FIRE RESISTANCE

CLAUSE	CLAUSE REQUIREMENT	ACTION/RECOMENDATION
C2D2	**Type of construction required** (1)The minimum Type of *fire-resisting construction* of a building must be determined in accordance with Table C2D2, except as allowed for— (a)certain Class 2, 3 or 9c buildings, in C2D6; and (b)a Class 4 part of a building located on the top *storey*, in C2D4(2); and (c)*open spectator stands* and indoor sports stadiums, in C2D8. (2)Each building element must comply with Specification 5 as applicable.	**Building Fire Resistance** **External Walls** The external walls are solid masonry and achieve the required 90/90/90 Fire Resistance Level (FRL) **Internal Walls** (other than within the roof space) The internal walls are solid masonry and

		achieve the required 90/90/90 Fire Resistance Level (FRL) **Fire separation Ground to First Floor** The floor system between the ground and first floor is concrete (thickness not determined). No additional Fire protection is required in our opinion. **Fire Separation First Floor** Ceilings in this location appear to be standard plaster lathe ceilings and do not provide a compliant Fire Resistance. In addition the masonry separating walls within the first floor extend to above the ceiling but not to the underside of the roof covering. We recommend, Either The provision of a ceiling with a resistance to the incipient spread of fire for 60 minutes. The product and system used must be an AS 1530 fire rated plasterboard (or Intumescent Paint) system installed in exact accordance with the product

		specification. OR Extend the separating wall within the roof space in a material that achieves a Fire Resistance of 90/90/90 Note This method will require removal or alteration to structural roof timbers to ensure that non-compliant penetrations exist post construction and, in this regard, would require advice from a structural engineer in regard to structural roof support. **Fire Separation Sub Floor** No additional Fire protection is required in our opinion.
C2D11	**Fire hazard properties** (1)The *fire hazard properties* of the following internal linings, materials and assemblies within a Class 2 to 9 building must comply with Specification 7: (a)Floor linings and floor coverings. (b)Wall linings and ceiling linings. (c)Air-handling ductwork. (d)Lift cars. (e)In Class 9b buildings used as a theatre, public hall or the like— (i)fixed seating in the audience area or auditorium; and (ii)a proscenium curtain *required* by Specification 32.	**Fire Hazard Properties – Wall and Ceiling Linings** Floor Linings – It is not possible to identify the compliance of the floor linings with Specification 32 (of the BCA) from a visual inspection. We recommend that any new floor linings (in the future) will require evidence of compliance with Specification 32 from the supplier This is generally provided in the form of

	(f)Escalators, moving walkways and non-*required* non *fire-isolated stairways* or pedestrian ramps subject to Specification 14. (g)*Sarking-type materials*. (h)Attachments to floors, ceilings, *internal walls*, *common walls*, *fire walls* and to internal linings of *external walls*. (i)Other materials including insulation materials other than *sarking-type materials*. (2)Paint or fire-retardant coatings must not be used to achieve compliance with the *required fire hazard properties*. (3)The requirements of (1) do not apply to a material or assembly if it is— (a)plaster, cement render, concrete, terrazzo, ceramic tile or the like; or (b)a *fire-protective covering*; or (c)a timber-framed *window*; or (d)a solid timber handrail or skirting; or (e)a timber-faced door; or (f)an electrical switch, socket-outlet, cover plate or the like; or (g)a material used for— (i)a roof insulating material applied in continuous contact with a substrate; or (ii)an adhesive; or (iii)a *damp-proof course*, *flashing*, caulking, sealing, ground moisture barrier, or the like; or (h)a paint, varnish, lacquer or similar finish, other than nitro-cellulose lacquer; or (i)a clear or translucent roof light of glass fibre-reinforced polyester if— (i)the roof in which it is installed forms part of a single *storey* building *required* to be Type C construction; and (ii)the material is used as part of the roof covering; and (iii)it is not closer than 1.5 m from another roof light of the same type; and (iv)each roof light is not more than 14 m2 in area; and (v)the area of the roof lights per 70 m2 of roof surface is not more than 14 m2; or (j)a face plate or neck adaptor of supply and return air outlets of an air handling system; or (k)a face plate or diffuser plate of light fitting and emergency *exit* signs and associated electrical wiring	an AS 1530 fire test Certificate.

	and electrical components; or (l)a joinery unit, cupboard, shelving, or the like; or (m)an attached non-building fixture and fitting such as— (i)a curtain, blind, or similar decor, other than a proscenium curtain *required* by Specification 32; and (ii)a whiteboard, *window* treatment or the like; or (n)timber treads, risers, landings and associated supporting framework installed in accordance with D3D30 where the *Spread-of-Flame Index* and the *Smoke-Developed Index* of the timber does not exceed 9 and 8 respectively; or any other material that does not significantly increase the hazards of fire.	
C4D12	**Bounding construction: Class 2 and 3 buildings and Class 4 parts** (1)A doorway in a Class 2 or 3 building must be protected if it provides access from a *sole-occupancy unit* to— (a)a *public corridor*, public lobby, or the like; or (b)a room not within a *sole-occupancy unit*; or (c)the landing of an internal non *fire-isolated stairway* that serves as a *required exit*; or (d)another *sole-occupancy unit*. (2)A doorway in a Class 2 or 3 building must be protected if it provides access from a room not within a *sole-occupancy unit* to— (a)a *public corridor*, public lobby, or the like; or (b)the landing of an internal non *fire-isolated stairway* that serves as a *required exit*. (3)A doorway in a Class 4 part of a building must be protected if it provides access to any other internal part of the building. *NSW C4D12(4)* (4)Except as provided in (5), protection for a doorway must be at least— (a)in a building of Type A construction — a *self-closing* –/60/30 fire door; and (b)in a building of Type B or C construction — a *self-closing*, tight fitting, solid core door, not less than 35 mm thick. (5)In a Class 3 building used as a *residential care building* protected with a sprinkler system complying with Specification 17, protection for a doorway must be at least— (a)a tight fitting, solid core door not less than 35 mm thick if the building is divided into *floor areas* not exceeding 500 m2 with smoke proof walls complying with S11C2; or	**Bounding Construction – Fire Doors** The existing Unit Doors to the common foyer and rear utility stair)were identified as hollow core doors and contained glazed panels. We recommend replacing each of the unit doors self-closing -tight fitting solid core doors.

	(b)a tight fitting, solid core door not less than 35 mm thick fitted with a *self-closing* device, a delayed closing device or an *automatic* closing device. (6)Other openings in *internal walls* which are *required* to have an FRL with respect to *integrity* and *insulation* must not reduce the *fire-resisting* performance of the wall. (7)A door *required* by (4) or (5) may be *automatic*-closing in accordance with the following: (a)The *automatic*-closing operation must be initiated by the activation of a smoke detector, or any other detector deemed suitable in accordance with AS 1670.1 if smoke detectors are unsuitable in the atmosphere, installed in accordance with the relevant provisions of AS 1670.1 and located not more than 1.5 m horizontal distance from the approach side of the doorway. (b)Where any other *required* suitable fire alarm system, including a sprinkler system (other than a FPAA101D system) complying with Specification 17, is installed in the building, activation of the system must also initiate the *automatic*-closing operation. (8)The requirements of (9) apply in a Class 2 or 3 building where a path of travel to an *exit*— (a)does not provide a person seeking egress with a choice of travel in different directions to alternative *exits*; and (b)is along an open balcony, landing or the like; and (c)passes an *external wall* of— (i)another *sole-occupancy unit*; or (ii)a room not within a *sole-occupancy unit*. (9)The *external wall* mentioned in (8)(c) must— (a)be constructed of concrete or masonry, or be lined internally with a *fire-protective covering*; and (b)have any doorway fitted with a *self-closing*, tight-fitting solid core door not less than 35 mm thick; and (c)have any *windows* or other openings— protected internally in accordance with C4D5	
C4D13	**Openings in floors and ceilings for services** (1)Where a service passes through— (a)a floor that is *required* to have an FRL with respect to *integrity* and *insulation*; or (b)a ceiling *required* to have a *resistance to the incipient spread of fire*,	**Protection of Service Penetrations** **Service Penetrations – Sub Floor** A crawl space opening is provided t the base of the utility stairs which accesses

	the service must be installed in accordance with (2). (2)A service must be protected— (a)in a building of Type A construction, by a *shaft* complying with Specification 5; or (b)in a building of Type B or C construction, by a *shaft* that will not reduce the fire performance of the building elements it penetrates; or (c)in accordance with C4D15. (3)Where a service passes through a floor which is *required* to be protected by a *fire-protective covering*, the penetration must not reduce the fire performance of the covering.	the subfloor beneath unit 1. A small opening exists Unit 1 contains 1 Bearer is provided at the base of the utility stairs into the subfloor of unit 2, the opening facilitates electrical conduit. A timber bearer penetrates the wall between unit 1 and the common internal foyer sub floor. In our opinion these elements are considered low risk as limited fuel load is provided within the base of the utility stair and within the subfloor and in this regard we make no recommendations to alter these elements.
C4D15	**Openings for service installations** [2019: C3.15] (1)The requirements of (2) apply where an electrical, electronic, plumbing, mechanical ventilation, air-conditioning or other service penetrates a building element (other than an external wall or roof) that is required to have an FRL with respect to integrity or insulation or a resistance to the incipient spread of fire. (2)An installation mentioned in (1) must comply with any one of the following: (a)Tested systems — the following applies: (i)The service, building element and any protection method at the penetration— (A)are identical with a prototype assembly of the service, building element and protection method which has been tested in accordance with AS 4072.1 and AS 1530.4 and has achieved the required FRL or resistance to the incipient spread of fire; or (B)differ from a prototype assembly of the service, building element and protection method in accordance with Section 4 of AS 4072.1. (ii)It complies with (i) except for the insulation criteria relating to the service if— (A)the service is a pipe system comprised entirely of metal (excluding pipe seals or the like); and (B)any combustible building element is not located within 100 mm of the service for a distance of 2 m from the penetration; and (C)combustible material is not able to be located within 100 mm of the service for a distance of 2 m from the penetration; and	**Protection of Service Penetrations** **Service Penetrations – Ground Floor and first floor** **Chimneys** Chimneys have been provided to each unit The Chimneys are currently not operational. The masonry chimney structure appeared intact and in this regard presents a low risk of spread of fire – no recommendations required. **Plumbing service** penetrations It was not possible to inspect the bathroom ceilings within the ground floor as inspection panels have not been provided

	(D)it is not located in a required exit. (iii)The determination of the required FRL must be confirmed in a report from an Accredited Testing Laboratory in accordance with Specifications 1 and 2. (b)Ventilation and air-conditioning — in the case of ventilating or air-conditioning ducts or equipment, the installation is in accordance with AS 1668.1. (c)Compliance with Specification 13 — the following applies: (i)The service is a pipe system comprised entirely of metal (excluding pipe seals or the like) and is installed in accordance with Specification 13 and it— of fire; and penetrates a wall, floor or ceiling, but not a ceiling required to have a (A)resistance to the incipient spread (B)connects not more than 2 fire compartments in addition to any fire-resisting service shafts; and (C)does not contain a flammable or combustible liquid or gas. (ii)The service is sanitary plumbing installed in accordance with Specification 13 and it— (A)is of metal or UPVC pipe; and (B)penetrates the floors of a Class 5, 6, 7, 8 or 9b building; and (C)is in a sanitary compartment separated from other parts of the building by walls with the FRL required by Specification 5 for a stair shaft in the building and a self-closing –/60/30 fire door. (iii)The service is a wire or cable, or a cluster of wires or cables installed in accordance with Specification 13 and it— of fire; and penetrates a wall, floor or ceiling, but not a ceiling required to have a (A)resistance to the incipient spread (B)connects not more than 2 fire compartments in addition to any fire-resisting service shafts. The service is an electrical switch, outlet, or the like, and it is installed in accordance with Specification 13.	within the ceiling; however it was noted that service risers are provided externally. The service pipes are generally galvanised metal plumbing services. Wholly metal service risers (generally waste vents) require a tight fit and a fire rated mastic when penetrating the required “Incipient Ceiling” (First Floor). Its not uncommon for galvanised waste traps to be substituted with PVC. Where this has occurred within the ground floor we identify the following:- Service Risers containing a combination of PVC and metal must be provided with a Fite rated riser shaft to achieve a Fire resistance of 60 minutes. **Electrical Conduit** was identified which will require a compliant method of protection. Lighting cables penetrating the ceiling must be provided with a fire rated mastic fire tested to achieve an FRL of -/60/-

5.3 SECTION D – ACCESS AND EGRESS

CLAUSE	CLAUSE REQUIREMENT	ACTION/RECOMENDATION
D2D8	**Width of exits and paths of travel to exits** [2019: D1.6(b), (c), (d) and (e)] (1)The unobstructed width of each *required exit* or path of travel to an *exit*, except for ladders provided in accordance with D2D21, D3D23 or I3D5, and doorways, must be not less than— (a)1 m; or *area* or *ward area*; and 1.8 m in a passageway, corridor or ramp normally used for the transportation of patients in beds within a (b)*treatment* (c)in a *public corridor* in a Class 9c *aged care building*, notwithstanding (2) and (3)— (i)1.5 m; and (ii)1.8 m for the full width of the doorway, providing access into a *sole-occupancy unit* or communal bathroom. (2)If the *storey*, *mezzanine* or *open spectator stand* accommodates more than 100 persons but not more than 200 persons, the aggregate unobstructed width of each *required exit* or path of travel to an *exit*, except for doorways, must be not less than— (a)1 m plus 250 mm for each 25 persons (or part) in excess of 100; or 1.8 m in a passageway, corridor or ramp normally used for the transportation of patients in beds within a (b)*treatment area* or *ward area*. (3)If the *storey*, *mezzanine* or *open spectator stand* accommodates more than 200 persons, the aggregate unobstructed width of each *required exit* or path of travel to an *exit*, except for doorways, must be not less than— (a)2 m plus 500 mm for every 60 persons (or part) in excess of 200 persons if egress involves a change in floor level by a stairway or ramp with a gradient steeper than 1 in 12; or (b)in any other case, 2 m plus 500 mm for every 75 persons (or part) in excess of 200. (4)In an *open spectator stand* which accommodates more than 2000 persons, the aggregate unobstructed width of each *required exit* or path of travel to an *exit*, except for doorways, must be not less than 17 m plus a width (in metres) equal to the number in excess of 2000 divided by 600.	For Reference

D2D10	**Exit width not to diminish in direction of travel** The unobstructed width of a *required exit* must not diminish in the direction of travel to a road or *open space*, except where the width is increased in accordance with D2D8(1)(b) or D2D9(a)(i).	For reference
D3D8	**Installations in exits and paths of travel** (1)Access to service *shafts* and services other than to fire-fighting or detection equipment as permitted in the *Deemed-to-Satisfy Provisions* of Section E, must not be provided from a *fire-isolated stairway*, *fire-isolated passageway* or *fire-isolated ramp*. (2)An opening to any chute or duct intended to convey hot products of combustion from a boiler, incinerator, fireplace or the like, must not be located in any part of a *required exit* or any corridor, hallway, lobby or the like leading to a *required exit*. (3)Gas or other fuel services must not be installed in a *required exit*. (4)Except for in a fire-isolated *exit* specified in (1), services or equipment enclosed in accordance with (5) may be installed in a *required exit*, or in any corridor, hallway, lobby or the like leading to a *required exit*, where that service or equipment comprises— (a)electricity meters, distribution boards or ducts; or (b)central telecommunications distribution boards or equipment; or (c)electrical motors or other motors serving equipment in the building. (5)An enclosure for the purposes of (4) must be suitably sealed against smoke spreading from the enclosure and be— (a)*non-combustible* construction; or (b)a *fire-protective covering*. (6)Electrical wiring may be installed in a fire-isolated *exit* if the wiring is associated with— (a)a lighting, detection, or pressurisation system serving the *exit*; or (b)a security, surveillance or management system serving the *exit*; or (c)an intercommunication system or an audible or visual alarm system in accordance with D3D27; or the monitoring of hydrant or sprinkler isolating valves.	For Reference

D3D14	**Goings and risers** (1)A stairway must have— (a)not more than 18 and not less than 2 risers in each *flight*; and (b)going (G), riser (R) and quantity (2R + G) in accordance with Table D3D14, except as permitted by (2) and (3); and (c)constant goings and risers throughout each *flight*, except as permitted by (2) and (3), and the dimensions of goings (G) and risers (R) in accordance with (1)(b) are considered constant if the variation between— (i)adjacent risers, or between adjacent goings, is no greater than 5 mm; and (ii)the largest and smallest riser within a *flight*, or the largest and smallest going within a *flight*, does not exceed 10 mm; and (d)risers which do not have any openings that would allow a 125 mm sphere to pass through between the treads; and (e)treads which have— (i)a surface with a slip-resistance classification not less than that listed in Table D3D15 when tested in accordance with AS 4586; or (ii)a nosing strip with a slip-resistance classification not less than that listed in Table D3D15 when tested in accordance with AS 4586; and (f)treads of solid construction (not mesh or other perforated material) if the stairway is more than 10 m high or connects more than 3 *storeys*; and (g)in a Class 9b building, not more than 36 risers in consecutive *flights* without a change in direction of at least 30°; and (h)in the case of a *required* stairway, no winders in lieu of a landing. (2)In the case of a non-*required* stairway— (a)the stairway must have— (i)not more than 3 winders in lieu of a quarter *landing*; and (ii)not more than 6 winders in lieu of a half *landing*; and (b)the going of all straight treads must be constant throughout the same *flight* and the dimensions of goings (G) is considered constant if the variation between— (i)adjacent goings,	**Internal Open Stair (Common Foyer)** **The internal stair was identified as having the following non compliances** Stair width less than 1000mm (approximately 950mm) – it is noted that this cannot be rectified without considerable structural change The balustrade height is less than 1000mm (approx. 840mm) at the landings The hand rail height as measured from the stair nosing is less than the required 865mm (approx. 740mm) **Our recommendations are as follows:-** **Slip Resistance – Stair Nosings** We recommend providing P3 (R10) slip resistant, 30% contrasting nosing strips top each of the stairs **Balustrade** Increase the height of the balustrade to 1000mm as measured from the finished floor surface Ensure any gaps are less than 125mm **Hand Rails** Increase the height of the handrail to 865mm as measured from the stair nosing Ensure any gaps are less than 125mm

	is no greater than 5 mm; and (ii)the largest and smallest going within a *flight*, does not exceed 10 mm; and (c)the going of all winders in lieu of a quarter or half *landing* may vary from the going of the straight treads within the same *flight* provided that the going of all such winders is constant. (3)Where a stairway discharges to a sloping public walkway or public road— (a)the riser (R) may be reduced to account for the slope of the walkway or road; and the quantity (2R+G) may vary at that location. **Table D3D15:Slip-resistance classification** Application / Dry Surface conditions / Wet surface conditions Ramp steeper than 1:14 / P4 or R11 / P5 or R12 Ramp steeper than 1:20 but not steeper than 1:14 / P3 or R10 / P4 or R11 Tread or *landing* surface / P3 or R10 / P4 or R11 Nosing or *landing* edge strip / P3 / P4	**Rear (Enclosed)(Utility) Stair** The rear stair is representative of the requirements of the time which predate Ordinance 70 and the current BCA. In effect the rear stair is redundant as a required Exit from the building The stair is non compliant with the current BCA as follows:- Stair width less than the required minimum1000mm (approximately 710mm) Balustrade height is less than the required minimum 1000mm (approx. 760mm) at the landings The hand rail height is less than the required minimum 865mm above the stair nosing (approximately 760mm)
D3D17	**Barriers to prevent falls** (1)A continuous barrier must be provided along the side of— (a)a roof to which general access is provided; and (b)a stairway or ramp; and (c)a floor, corridor, hallway, balcony, deck, verandah, *mezzanine*, access bridge or the like; and (d)any delineated path of access to a building, if the trafficable surface is 1 m or more above the surface beneath. (2) The requirements of (1) do not apply to— (a)the perimeter of a *stage*, rigging loft, loading dock or the like; or (b)areas referred to in D3D23; or (c)a retaining wall unless the retaining wall forms part of, or is directly associated with a	If the stair is commonly used for access to the lower ground floor laundry facilities we would recommend altering these elements however it is noted that some elements such as the width and winders would could not be reasonably altered without significant structural changes. If the stair is not commonly used our recommendation would be to provide devices (i,e. common locking devices) to

	delineated path of access to a building from the road, or a delineated path of access between buildings; or (d)a barrier provided to an openable window covered by D3D29. (3)A barrier *required* by (1) must be constructed in accordance with D3D18, D3D19, D3D20 and, if a wire barrier is used, D3D21.	restrict access to these stair by Children
D3D18	**Height of barriers** (1) The height of a barrier *required* by D3D17 must be not less than the following: (a)For stairways or ramps with a gradient of 1:20 or steeper — 865 mm. (b)For *landings* to a stair or ramp where the barrier is provided along the inside edge of the *landing* and does not exceed 500 mm in length — 865 mm. (c)In front of fixed seating on a *mezzanine* or balcony within an auditorium in a Class 9b building, where the horizontal projection extends not less than 1 m outwards from the top of the barrier — 700 mm. (d)For all other locations — 1 m. (2) For a barrier provided under (1) — (a)barrier heights are measured vertically from the surface beneath, except that for stairways the height must be measured above the nosing line of the stair treads; and (b)a transition zone may be incorporated where the barrier height changes from 865 mm on a stair *flight* or ramp to 1 m at a *landing* or floor.	
D3D19	**Openings in barriers** (1) Except where allowed by (2), openings in a *required* barrier must not allow a 125 mm sphere to pass through. (2) In a *fire-isolated stairway*, *fire-isolated ramp* or other area used primarily for emergency purposes, openings in a *required* barrier— (a)must not allow a 300 mm sphere to pass through; or (b)where rails are used— (i)a 150 mm sphere must not be able to pass through the opening between the nosing line of the stair treads and the rail or between the rail and the floor of the	

	landing, balcony or the like; and (ii)the opening between rails must not be more than 460 mm. (3) In Class 7 (other than *carparks*) and Class 8 buildings, openings in a *required* barrier— (a)must not allow a 300 mm sphere to pass through; or (b)where rails are used— (i)a 150 mm sphere must not be able to pass through the opening between the nosing line of the stair treads and the rail or between the rail and the floor of the *landing*, balcony or the like; and (ii)the opening between the rails must not be more than 460 mm. (4) The requirements of (2) do not apply to external stairways, external ramps, or *fire-isolated stairways* or *fire-isolated ramps* serving Class 9b *early childhood centres*. (5) For a barrier provided under (1), the maximum 125 mm barrier opening for a stairway, such as a non-*fire-isolated stairway*, is measured above the nosing line of the stair treads. (6) Where a *required* barrier is fixed to the vertical face forming an edge of a *landing*, balcony, deck, stairway or the like, the opening formed between the barrier and the face must not exceed 40 mm. (7) For the purposes of (6), the opening is measured horizontally from the edge of the trafficable surface to the nearest internal face of the barrier.	
D3D22	**Handrails** (1) Except for handrails referred to in D3D23, and subject to (2), handrails must— (a)be located along at least one side of the ramp or *flight*; and (b)be located along each side if the total width of the stairway or ramp is 2 m or more; and (c)in a Class 9b building used as a primary *school* or a building that contains an *early childhood centre*— (i)have one handrail fixed at a height of not less than 865 mm; and (ii)in addition to (i), have a handrail— (A)fixed at a height between 665 mm and 750 mm in a primary *school*; and (B)with a cross-sectional dimension not less than 16 mm and not greater than 45 mm as	

	measured in any direction across its centre, fixed at a height between 450 mm and 700 mm in a Class 9b *early childhood centre*; and (d)in any other case, be fixed at a height of not less than 865 mm; and (e)be continuous between stair *flight* landings and have no obstruction on or above them that will tend to break a handhold; and (f)in a *required exit* serving an area *required* to be *accessible*, be designed and constructed to comply with clause 12 of AS 1428.1, except that clause 12(d) does not apply to a handrail *required* by (1)(c)(ii). (2) The height *required* by (1)(c) and (d) is measured above the nosings of stair treads and the floor surface of the ramp, landing or the like. (3) Handrails— (a)in a Class 9a *health-care building* must be provided along at least one side of every passageway or corridor used by patients, and must be— (i)fixed not less than 50 mm clear of the wall; and (ii)where practicable, continuous for their full length; and (b)in a Class 9c *aged care building* must be provided along both sides of every passageway or corridor used by residents, and must be— (i)fixed not less than 50 mm clear of the wall; and (ii)where practicable, continuous for their full length. (4) Handrails *required* to assist people with a disability must be provided in accordance with D4D4. (5) Handrails to a stairway or ramp within a *sole-occupancy unit* in a Class 2 or 3 building or Class 4 part of a building must— (a)be located along at least one side of the *flight* or ramp; and (b)be located along the full length of the *flight* or ramp, except in the case where a handrail is associated with a barrier, the handrail may terminate where the barrier terminates; and (c)have the top surface of the handrail not less than 865 mm vertically above the nosings of the stair treads or the floor surface of the ramp; and	

	(d)have no obstruction on or above them that will tend to break a handhold, except for newel posts, ball type stanchions, or the like. (6) The requirements of (5) do not apply to— (a)handrails referred to in D3D23; or (b)a stairway or ramp providing a change in elevation of less than 1 m; or (c)a landing; or a winder where a newel post is installed to provide a handhold.	

5.4 SECTION E – SERVICES AND EQUIPMENT

CLAUSE	CLAUSE REQUIREMENT	ACTION/RECOMENDATION
E1D14	**Portable fire extinguishers** [2019: E1.6 and Table E1.6] (1) Portable fire extinguishers must be— (a)provided as listed in (3) and (4); and (b)for a Class 2, 3 or 5 building or Class 4 part of a building, provided— (i)to serve the whole Class 2, 3 or 5 building or Class 4 part of a building where one or more internal fire hydrants are installed; or (ii)where internal fire hydrants are not installed, to serve any *fire compartment* with a *floor area* greater than 500 m2, and for the purposes of this clause, a *sole-occupancy unit* in a Class 2 or 3 building or Class 4 part of a building is considered to be a *fire compartment*; and (c)subject to (2), selected, located and distributed in accordance with Sections 1, 2, 3 and 4 of AS 2444. (2) Portable fire extinguishers provided in a Class 2 or 3 building or Class 4 part of a building must be— (a)an ABE type fire extinguisher; and (b)a minimum size of 2.5 kg; and (c)distributed outside a *sole-occupancy unit*— (i)to serve only the *storey* at which they are located; and (ii)so that the travel distance from the entrance doorway of any *sole-occupancy unit* to the nearest fire extinguisher is not more than 10 m. (3) In Class 2 to 9 buildings (except within *sole-occupancy units* of a Class 9c building), portable fire extinguishers must be provided as follows: (a)To cover Class AE or E fire risks associated with emergency services switchboards. (b)To cover Class F fire risks involving cooking oils and fats in kitchens. (c)To cover Class B fire risks in locations where flammable liquids in excess of 50 litres are stored or used (not including that held in fuel tanks of vehicles).	**Portable Fire Extinguishers** We recommend providing a 2.5kg type ABE Portable Fire Extinguisher on each level within the building

	(d)To cover Class A fire risks in normally occupied *fire compartments* less than 500 m2 not provided with fire hose reels (excluding *open-deck carparks*). (e)To cover Class A fire risks in classrooms and associated corridors in primary and secondary schools not provided with fire hose reels. (f)To cover Class A fire risks associated with a Class 2, 3 or 5 building or Class 4 part of a building. (4) In addition to the requirements of (3), portable fire extinguishers must be provided to cover Class A and E fire risks in the following occupancies in buildings, or parts of a building: (a)A Class 9a *health-care building*, including a Class 9a building used as a *residential care building*. (b)Class 3 parts of detention and correctional occupancies. (c)Class 3 accommodation for children, aged persons and people with disabilities, including a Class 3 building used as a *residential care building*. (d)A Class 9c building. (5) For the purposes of (3) and (4): (a)Fire risks are defined in accordance with AS 2444. (b)An emergency services switchboard is one which sustains emergency equipment operating in the emergency mode. (c)A Class E fire extinguisher need only be located at each nurses' station, supervisors' station or the like. (d)Additional extinguishers may be required to cover fire risks in relation to special hazards provided for in E1D17. *units*, however portable fire extinguishers are not required to be located within a *sole-occupancy unit* unless the *sole-occupancy unit* has a *floor area* greater than 500 m2. The fire risks in a Class 2 or 3 building or Class 4 part of a building must include risks within any (e)*sole-occupancy*	
E2D8	**Buildings not more than 25 m in effective height: Class 2** In a Class 2 and 3 building or part of a building, or Class 4 part of a building, if the building is	**Smoke Hazard Management** The Smoke detection within the units

	not more than 25 m in *effective height*— (a)it must be provided with an *automatic* smoke detection and alarm system complying with Specification 20; and (b)where a *required fire-isolated stairway* serving the Class 2 or 3 parts also serves one or more *storeys* of Class 5, 6, 7 (other than an *open-deck carpark*), 8 or 9b parts— (i)the *fire-isolated stairway*, including any associated *fire-isolated passageway* or *fire-isolated ramp*, must be provided with an *automatic* air pressurisation system for fire-isolated *exits* in accordance with AS 1668.1; or (ii)the Class 5, 6, 7 (other than an *open-deck carpark*), 8 and 9b parts must be provided with— (A)an *automatic* smoke detection and alarm system complying with Specification 20; or (B)a sprinkler system (other than a FPAA101D or FPAA101H system) complying with Specification 17; and (c)where a *required fire-isolated stairway* serving the Class 4 part also serves one or more *storeys* of Class 5, 6, 7 (other than an *open-deck carpark*), 8 or 9b parts— (i)a system complying with (b)(i) or (b)(ii) must be installed; or (ii)a smoke alarm or detector system complying with Specification 20 must be provided except that alarms or detectors need only be installed adjacent to each doorway into each *fire-isolated stairway* (set back horizontally from the doorway by a distance of not more than 1.5 m) to initiate a building occupant warning system for the Class 4 part.	appears to be compliant AS 3786 hard wired detectors apart from Unit 1 which appears to be a battery operated unit only. We recommend replacing Unit 1 smoke alarm with an AS 3786 compliant hardwired smoke alrm with battery back up. Currently there is no smoke detection and alarm system provided within the common foyer or rear utility stair. Common and Utility Stair area detection must be at a minimum and AS 3786 system located in accordance with AS 1670 system allowing a Building Occupant Warning System complying with Specification 20
E4D2	**Emergency lighting requirements** An emergency lighting system must be installed— (c)in every passageway, corridor, hallway, or the like, having a length of more than 6 m from the entrance doorway of any *sole-occupancy unit* in a Class 2 or 3 building or Class 4 part of a building to the nearest doorway opening directly to— (i)a *fire-isolated stairway*, *fire-isolated passageway* or *fire-isolated ramp*; or	**Exit Signage and Emergency Lighting** New AS/NZS 2293.1 compliant Exit signage and Emergency Lighting is above the stair at the first floor landing and at the Ground Floor Exit Door

	(ii)an external stairway serving instead of a *fire-isolated stairway* under D2D13; or (iii)an external balcony leading to a *fire-isolated stairway*, *fire-isolated passageway* or *fire-isolated ramp*; or (iv)a road or *open space*; and (d)in every *required* non-*fire-isolated stairway*	
E4D3	**Measurement of distance** Distances, other than vertical rise, must be measured along the shortest path of travel whether by straight lines, curves or a combination of both.	
E4D4	**Design and operation of emergency lighting** Every *required* emergency lighting system must comply with AS/NZS 2293.1.	
E4D5	**Exit signs** An *exit* sign must be clearly visible to persons approaching the *exit*, and must be installed on, above or adjacent to each— (a)door providing direct egress from a *storey* to— (i)an enclosed stairway, passageway or ramp serving as a *required exit*; and (ii)an external stairway, passageway or ramp serving as a *required exit*; and (iii)an external access balcony leading to a *required exit*; and (b)door from an enclosed stairway, passageway or ramp at every level of discharge to a road or *open space*; and (c)*horizontal exit*; and (d)door serving as, or forming part of, a *required exit* in a *storey required* to be provided with emergency lighting in accordance with E4D2.	
E4D8	**Design and operation of exit signs** Every *required exit* sign must— (a)comply with— (i)AS/NZS 2293.1; or	

	(ii)for a photoluminescent *exit* sign, Specification 25; and (b)be clearly visible at all times when the building is occupied by any person having the right of legal entry to the building.	

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