DC PARTNERSHIP

Building Code Report

Bourke Aboriginal Corporation Health Services

Development Application

Bourke Integrated Primary Healthcare Centre
88-96 Mitchell Street, Bourke NSW 2840

Fire Safety Engineers | Inclusive Accessibility Consultants | Building Code Consultants

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Project: Bourke Integrated Primary Healthcare Centre 88-96 Mitchell Street, Bourke NSW 2840
Document Type: BCA Design Assessment Report
Our Reference: SYD224_319-2 (BCA) DY

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Revision History—

OUR REFERENCE	REMARKS	ISSUE DATE
SYD224_319-1 (BCA) DY	DRAFT report issued for review and comment	16 October 2024
SYD224_319-2 (BCA) DY	FINAL report issued	01 November 2024

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EXECUTIVE SUMMARY

This BCA Design Assessment Report has been prepared by DC Partnership at the request of Bourke Aboriginal Corporation Health Services and relates to the healthcare centre located at 88-96 Mitchell Street, Bourke NSW 2840.

Based upon our assessment to date we are of the opinion that the subject development is capable of achieving compliance with the performance provisions of the BCA, either by complying with the prescriptive requirements or via a performance-based approach.

With respect to the assessment undertaken, the following areas shall be reviewed further as the project develops—

ITEM	DESCRIPTION	RESPONSIBILITY
1.	Multipurpose room (inclusive of the covered deck) is understood to be used separately, hence is required to be classified as a Class 9b assembly building and - Must be provided with automatic shutdown of any air-handling system (other than non-ducted individual room units with a capacity not more than 1000 L/s and miscellaneous exhaust air systems installed in accordance with Sections 5 and 6 of AS 1668.1) which does not form part of the smoke hazard management system, on the activation of— smoke detectors installed complying with S20C6 of Specification 20. Please provide further details of the proposed mechanical system to determine whether it triggers the need to provide automatic shutdown.	Project Architect / Services Engineer

1.0 INTRODUCTION

1.1 General

This report has been prepared at the request of Bourke Aboriginal Corporation Health Services and relates to the proposed healthcare centre located at 88-96 Mitchell Street, Bourke NSW 2840.

1.2 Purpose of report

The purpose of this report is to identify the extent to which the architectural design documentation complies with the prescriptive provisions of the NCC 2022 Volume One - Building Code of Australia, thereby after referred to as the BCA.

1.3 Documentation Provided for Assessment

This assessment is based upon the Architectural documentation prepared by DunnHillam Architecture & Urban Design listed within **Appendix 1.**

1.4 Limitations

In interpreting the report, the following limitations shall be noted –

(a) This report is based upon, and limited to, the information depicted in the documentation provided for assessment, and does not make any assumptions regarding 'design intention' or the like;

(b) This assessment does not contain comments regarding detailed design issues such as (but not limited to): slip resistance, handrail design, door schedule and door hardware specification and lift specification.

(c) The list of fire safety measures in Section 2.7 is not a proposed fire safety schedule within the context of the Environmental Planning and Assessment (Development Certification and Fire Safety) Regulation 2021; and

1.5 Report Exclusions

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

(a) Work Health & Safety Act (2011) and Regulations (2017);

(b) WorkCover Authority requirements;

(c) Structural and Services Design Documentation;

(d) The individual requirements of service authorities (i.e. Telecommunication Carriers, Sydney Water, Endeavour Energy);

(e) Any conditions imposed by the Consent Authority;

(f) Any conditions imposed by the Principal Certifying Authority;

(g) Design and Building Practitioners Act (2020) and Regulations (2021);

(h) Adaptable Housing (AS4299-1995);

(i) Liveable Housing Guidelines;

(j) BASIX certificate;

(k) The Disability Discrimination Act (DDA) 1992;

(l) The accessibility requirements of the BCA, as contained within Part D4 and F4D5 of the BCA; and

(m) The energy efficiency provisions of the BCA, as contained with Section J of the BCA.

1.6 Relevant Legislative Framework

(a) New building works –

Sub-section 19(1)(c) of the Environmental Planning and Assessment (Development Certification and Fire Safety) Regulations 2021 requires that all works forming part of the Construction Certification ('new works') comply with the current requirements of the BCA.

All new works proposed in the architectural documentation are required to comply but existing features of an existing building need not comply with the BCA unless specified under different parts of the legislation e.g. change of building use or consent authority may require upgrade of buildings.

(b) Existing buildings (No change of use) –

Section 14(3) of the Environmental Planning and Assessment (Development Certification and Fire Safety) Regulations 2021 prevents a certifying authority from issuing a Construction Certificate that involves the alteration, enlargement or extension of an existing building unless on completion of the building work, the fire protection and structural capacity of the building will not be reduced.

2.0 DEVELOPMENT DESCRIPTION

2.1 General

This report has been prepared at the request of Bourke Aboriginal Corporation Health Services and relates to the proposed healthcare centre located at 88-96 Mitchell Street, Bourke NSW 2840.

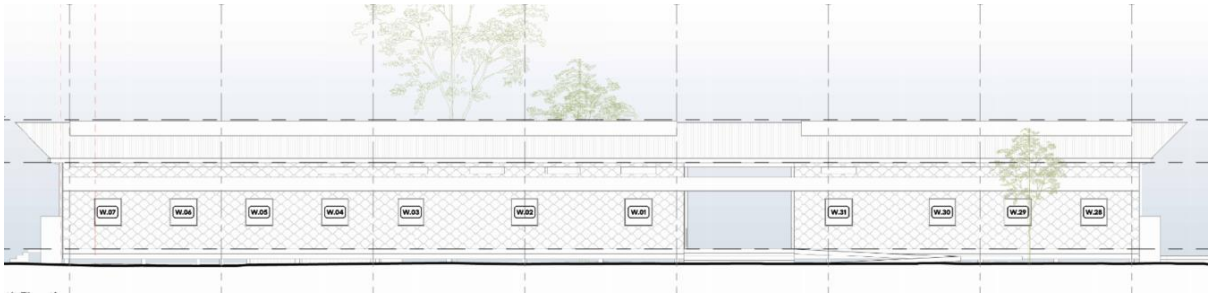

Figure 2.1 – Elevation prepared by DunnHillam Architecture & Urban Design

2.2 Building Description

The proposed works will comprise of healthcare centre

Table 2.2 – Building description

DESCRIPTION		
Building Classification	Medical Centre	Class 5/6
	Multi-purpose Room	Class 9b
Storeys Contained	One (1)	
Rise in Storeys	One (1)	
Type of Construction	Type C	
Effective Height	0	<12 m
Fire Compartment Size (Largest)	~1000 m^2	Within Limitation
Climate Zone	Zone 4	

Table 2.3 – Floor areas and population summary

PART / USE	FLOOR AREA (m^2)	DESNITY (m^2/per person)	POPULATION
Staff	~40	~10 m^2	40
Patrons / Patients	-	-	~40

Notes –
1. The above populations for staff have been based on the floor areas (of the office areas and consultant rooms) and calculations in accordance with D2D18 of the BCA.
2. The above populations for patrons / patients are based on the number of consult rooms and the approximate number of seats in the waiting area.
3. The floor areas are approximate and shall not be taken as accurate.

2.3 BCA Assessment – Interpretation Notes

To provide the reader with additional context, the following information regarding assessment methodology used in this assessment is provided below—

(a) The building is classified as Class 5/6 (provisions of both classes apply) as it is understood the procedures will not cause patients to be non-ambulatory or require physical assistance. The building supplies a health care service to the public hence is akin to a barber shop / veterinarian but also contains several office rooms;

(b) Multipurpose room (inclusive of the covered deck) is proposed to be used separately from the rest of the building, hence is classified as Class 9b;

(c) For an assessment of the BCA accessibility provisions as principally contained in Parts D4, E3D8, F4D5 and F4D6, refer to the Access Design Assessment Report prepared by DC Partnership.

(d) As design progresses to CC further details shall be developed to ensure compliance with the requirements of the BCA is achieved, such as:

(i) Wall and floor schedule, showing FRL's, construction, & etc;
(ii) Stair details, showing handrails, barriers, risers, goings, & etc
(iii) Door and window schedules showing operation of latches etc;
(iv) Signage schedule showing statutory signage;
(v) RLs / FFLs of landscaped (external) egress routes;
(vi) Fire hydrant locations;
(vii) Fire hose reel locations;
(viii) Portable fire extinguisher locations;
(ix) Wet area details;
(x) Stairway details

Several acronyms and abbreviations are used throughout this report, refer to **Appendix 2** for clarification.

2.4 Fire Separation / Compartmentation

The building is a single fire compartment within the limitations of C3D3.

2.5 Fire Source Features

The building is exposed to the following fire source features –

Table 2.4 – Fire source features

DESCRIPTION	DISTANCE FROM (m)
Mitchell Street	> 6
Tarcoon Street	> 6
New Laneway	> 6
Western Allotment Boundary	> 3

2.6 Sanitary Facilities

The minimum required number of sanitary facilities is as follows –

Table 2.5 – Sanitary Compartments

LOCATION / USE	POPULATION			REQUIRED			
				PAN	URINAL	BASIN	SHWR
Staff	40	M.	20	*1*	*1*	*1*	-
		F.	20	*2*	*NA*	*1*	-

Notes –
1. An exact 50/50% split between Male and Females have been applied, please advise if this is not suitable for the proposed use;
2. Sanitary facilities are not required to be provided for patrons in a Class 6 building with less than 600 total population;

2.7 Fire Safety Measures

The following is a list of fire safety measures required for the building based on the DtS provisions of the BCA only. The list is subject to change as the design progresses and does not include any Performance Solution / Fire Engineering Report measures or any additional measures.

Table 2.6 – Fire safety measures required by DtS provisions

MEASURE	STANDARD OF PERFORMANCE
Automatic Fire Detection and Alarm System & Automatic Showdown of Air Handling System (*if required*)	BCA 2022 NSW ED2D19 & Spec. 20 AS/NZS 1668.1-2015, AS 1670.1-2018
Emergency Lighting	BCA 2022 Clause E4D2, E4D3 & E4D4 AS 2293.1-2018
Exit And Directional Signage	BCA 2022 Clause E4D5, E4D6 & E4D8, Spec 25 AS 2293.1-2018
Fire Hose Reel Systems	BCA 2022 Clause E1D3 AS 2441-2005
Fire Hydrant Systems	BCA 2022 Clause E1D2 AS 2419.1-2021, AS 2118.6-2012 (Combined System)
Mechanical Air Handling Systems	BCA 2022 Clause E2D3, Spec. 19, Spec. 20, Spec. 21, Spec. 31 AS/NZS 1668.1-2015, AS 1668.2-2012
Portable Fire Extinguishers	BCA 2022 Clause E1D14 AS 2444-2001
Power Operated Doors (Exits)	BCA 2022 Clause D3D24, D3D26 & D3D28 Manufacturer's specifications

3.0 BCA ASSESSMENT SUMMARY

3.1 Interpretation

The following table summarises the compliance status of the architectural design in terms of each applicable prescriptive provision of the BCA and indicates a capability for compliance with the BCA. The following is an explanation of the terminology used in the summary checklist:

(a) N/A: Not Applicable. This clause is not applicable to the proposed design.

(b) Complies: The proposed design complies with the relevant provisions of the BCA.

(c) PS: Performance Solution. The proposed design can comply with the relevant Performance Requirements of the BCA via a Performance Solution.

(d) Does not comply: The proposed design does not comply with the BCA and requires amendment or investigations into the feasibility of a Performance Solution.

(e) Design Detail: The proposed design does not provide enough information to determine compliance. Compliance will be determined as the design develops. A detailed analysis and commentary are provided within **Section 4.0** of this report.

(f) Capable of Compliance: Detailed design issues which are to be designed or implemented by the appropriate discipline within the design team and assessed by the certifying authority at relevant stages of the project. A detailed outline of requirements is provided within **Section 4.0** of this report.

Table 3 – BCA assessment summary checklist

BCA CLAUSE		COMPLIES	DOES NOT COMPLY	DESIGN DETAIL	CAPABLE OF COMPLIANCE
Section B – Structure					
Part B1 - Structural provisions					
B1D2	Resistance to actions				✓
B1D3	Determination of individual actions				✓
B1D4	Determination of structural resistance of materials and forms of construction				✓
B1D6	Construction of buildings in flood hazard areas	**N/A**			
Section C – Fire Resistance					
Part C2 - Fire Resistance and Stability					
C2D2	Type of construction required	✓			
C2D3	Calculation of rise in storeys	**N/A**			
C2D9	Lightweight construction	**N/A**			
C2D10	Non-combustible building elements	**N/A**			
C2D11	Fire hazard properties				✓
C2D12	Performance of external walls in fire	**N/A**			
C2D13	Fire-protected timber: Concession	**N/A**			
C2D14	Ancillary elements	**N/A**			
C2D15	Fixing of bonded laminated cladding panels	**N/A**			
Part C3 - Compartmentation and separation					

BCA CLAUSE		COMPLIES	DOES NOT COMPLY	DESIGN DETAIL	CAPABLE OF COMPLIANCE
C3D3	General floor area and volume limitations	✓			
C3D4	Large isolated buildings	**N/A**			
C3D5	Requirements for open spaces and vehicular access	**N/A**			
C3D6	Class 9 buildings	**N/A**			
C3D7	Vertical separation of openings in external walls	**N/A**			
C3D8	Separation by fire walls	**N/A**			
C3D9	Separation of classifications in the same storey	**N/A**			
C3D10	Separation of classifications in different storeys	**N/A**			
C3D11	Separation of lift shafts	**N/A**			
C3D12	Stairways and lifts in one shaft	**N/A**			
C3D13	Separation of equipment			✓	
C3D14	Electricity supply system	**N/A**			
C3D15	Public corridors in Class 2 and 3 buildings	**N/A**			
Part C4 - Protection of openings					
C4D3	Protection of openings in external walls	**N/A**			
C4D4	Separation of external walls and associated openings in different fire compartments	**N/A**			
C4D5	Acceptable methods of protection	**N/A**			
C4D6	Doorways in fire walls	**N/A**			
C4D7	Sliding fire doors	**N/A**			
C4D8	Protection of doorways in horizontal exits	**N/A**			
C4D9	Openings in fire-isolated exits	**N/A**			
C4D10	Service penetrations in fire-isolated exits	**N/A**			
C4D11	Openings in fire-isolated lift shafts	**N/A**			
C4D12	Bounding construction: Class 2 and 3 buildings and Class 4 parts	**N/A**			
C4D13	Openings in floors and ceilings for services	**N/A**			
C4D14	Openings in shafts	**N/A**			
C4D15	Openings for service installations				✓
C4D16	Construction joints				✓
C4D17	Columns protected with lightweight construction to achieve an FRL	**N/A**			
Section D – Access and Egress					
Part D2 - Provisions for escape					
D2D3	Number of exits required	✓			
D2D4	When fire-isolated stairways and ramps are required	**N/A**			

BCA CLAUSE		COMPLIES	DOES NOT COMPLY	DESIGN DETAIL	CAPABLE OF COMPLIANCE
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	**N/A**			
D2D11	Determination and measurement of exits and paths of travel to exits	**N/A**			
D2D12	Travel via fire-isolated exits	**N/A**			
D2D13	External stairways or ramps in lieu of fire-isolated exits	**N/A**			
D2D14	Travel by non-fire-isolated stairways or ramps	**N/A**			
D2D15	Discharge from exits				✓
D2D16	Horizontal exits	**N/A**			
D2D17	Non-required stairways, ramps or escalators	**N/A**			
D2D21	Plant rooms, lift machine rooms and electricity network substations: Concession	**N/A**			
D2D22	Access to lift pits	**N/A**			
D2D23	Egress from primary schools	**N/A**			
Part D3 - Construction of exits					
D3D3	Fire-isolated stairways and ramps	**N/A**			
D3D4	Non-fire-isolated stairways and ramps	**N/A**			
D3D5	Separation of rising and descending stair flights	**N/A**			
D3D6	Open access ramps and balconies	**N/A**			
D3D7	Smoke lobbies	**N/A**			
D3D8	Installations in exits and paths of travel				✓
D3D9	Enclosure of space under stairs and ramps	**N/A**			
D3D10	Width of required stairways and ramps	**N/A**			
D3D11	Pedestrian ramps	**N/A**			
D3D12	Fire-isolated passageways	**N/A**			
D3D13	Roof as open space	**N/A**			
D3D14	Goings and risers				✓
D3D15	Landings				✓
D3D16	Thresholds				✓
D3D17	Barriers to prevent falls				✓
D3D18	Height of barriers	**N/A**			
D3D19	Openings in barriers	**N/A**			

BCA CLAUSE		COMPLIES	DOES NOT COMPLY	DESIGN DETAIL	CAPABLE OF COMPLIANCE
D3D20	Barrier climbability	**N/A**			
D3D21	Wire barriers	**N/A**			
D3D22	Handrails	**N/A**			
D3D23	Fixed platforms, walkways, stairways and ladders	**N/A**			
D3D24	Doorways and doors				✓
D3D25	Swinging doors			✓	
D3D26	Operation of latch				✓
D3D27	Re-entry from fire-isolated exits	**N/A**			
D3D28	Signs on doors	**N/A**			
D3D29	Protection of openable windows	**N/A**			
D3D30	Timber stairways: Concession	**N/A**			
Section E – Services and Equipment					
Part E1 – Fire fighting equipment					
E1D2	Fire hydrants				✓
E1D3	Fire hose reels				✓
E1D4 - E1D12	Sprinklers	**N/A**			
E1D13	Where sprinklers are required: occupancies of excessive hazard	**N/A**			
E1D14	Portable fire extinguishers				✓
E1D15	Fire control centres	**N/A**			
E1D16	Fire precautions during construction	**N/A**			
E1D17	Provisions for special hazards	**N/A**			
Part E2 - Smoke hazard management					
E2D3	General requirements	**N/A**			
E2D4	Fire-isolated exits	**N/A**			
E2D5 - E2D20	Smoke hazard management system	**N/A**			
NSW E2D19	Smoke hazard management system			✓	
E2D21	Provision for special hazards	**N/A**			
Part E3 - Lift installations					
E3D2	Lift installations	**N/A**			
E3D3	Stretcher facility in lifts	**N/A**			
E3D4	Warning against use of lifts in fire	**N/A**			
E3D5	Emergency lifts	**N/A**			
E3D6	Landings	**N/A**			
E3D7	Passenger lift types and their limitations	**N/A**			
E3D9	Fire service controls	**N/A**			
E3D10	Residential care buildings	**N/A**			
E3D11	Fire service recall control switch	**N/A**			

BCA CLAUSE		COMPLIES	DOES NOT COMPLY	DESIGN DETAIL	CAPABLE OF COMPLIANCE
E3D12	Lift car fire service drive control switch	**N/A**			
Part E4 - Visibility in an emergency, exit signs and warning systems					
E4D4	Design and operation of emergency lighting				✓
E4D8	Design and operation of exit signs				✓
E4D9	Emergency warning and intercom systems	**N/A**			
Section F - Health and amenity					
Part F1 - Surface water management, rising damp and external waterproofing					
F1D3	Stormwater drainage				✓
F1D4	Exposed joints				✓
F1D5	External waterproofing membranes				✓
F1D6	Damp-proofing				✓
F1D7	Damp-proofing of floors on the ground				✓
F1D8	Subfloor ventilation				✓
Part F2 - Wet areas and overflow protection					
F2D2	Wet area construction				✓
F2D3	Rooms containing urinals	**N/A**			
F2D4	Floor wastes				✓
Part F3 - Roof and wall cladding					
F3D2	Roof coverings				✓
F3D3	Sarking				✓
F3D4	Glazed assemblies				✓
F3D5	Wall cladding				✓
Part F4 - Sanitary and other facilities					
F4D2	Facilities in residential buildings	**N/A**			
F4D4	Facilities in Class 3 to 9 buildings	✓			
F4D8	Construction of sanitary compartments				✓
F4D11	Waste management	**N/A**			
Part F5 - Room heights					
F5D2	Height of rooms and other spaces	✓			
Part F6 - Light and ventilation					
F6D2	Provision of natural light	**N/A**			
F6D3	Methods and extent of natural light	**N/A**			
F6D4	Natural light borrowed from adjoining room	**N/A**			
F6D5	Artificial lighting				✓
F6D6	Ventilation of rooms				✓
F6D7	Natural ventilation				✓
F6D8	Ventilation borrowed from adjoining room				✓

BCA CLAUSE		COMPLIES	DOES NOT COMPLY	DESIGN DETAIL	CAPABLE OF COMPLIANCE
F6D9	Restriction on location of sanitary compartments	✓			
F6D10	Airlocks	**N/A**			
F6D11	Carparks	**N/A**			
F6D12	Kitchen local exhaust ventilation	**N/A**			
Part F7 - Sound transmission and insulation					
F7D3	Determination of airborne sound insulation ratings	**N/A**			
F7D4	Determination of impact sound insulation ratings	**N/A**			
F7D5	Sound insulation rating of floors	**N/A**			
F7D6	Sound insulation rating of walls	**N/A**			
F7D7	Sound insulation rating of internal services	**N/A**			
F7D8	Sound insulation rating of internal pumps	**N/A**			
Part F8 - Condensation management					
F8D3	External wall construction	**N/A**			
F8D4	Exhaust systems	**N/A**			
F8D5	Ventilation of roof spaces	**N/A**			
Section G - Ancillary provisions					
Part G1 - Minor structures and components					
G1D2	Swimming pools	**N/A**			
G1D3	Refrigerated chambers, strong-rooms and vaults	**N/A**			
G1D4	Outdoor play spaces	**N/A**			
Part G2 - Boilers, pressure vessels, heating appliances, fireplaces, chimneys and flues					
G2D2 – G2D4	Boilers, pressure vessels, heating appliances, fireplaces, chimneys and flues	**N/A**			
Part G3 - Atrium construction					
G3D2 – G3D8	Atrium construction	**N/A**			
Part G4 - Construction in alpine areas					
G4D3 – G4D8	Construction in alpine areas	**N/A**			
Part G5 - Construction in bushfire prone areas					
NSW G5D3 – G5D4	Construction in bushfire prone areas	**N/A**			
Part G6 - Occupiable outdoor areas					
G6D2 – G6D10	Occupiable outdoor areas	**N/A**			
Section I – Special use buildings					
Part I1 Class 9b buildings					

BCA CLAUSE		COMPLIES	DOES NOT COMPLY	DESIGN DETAIL	CAPABLE OF COMPLIANCE
I1D2-I1D7	Class 9b buildings	**N/A**			

4.0 BCA DETAILED ASSESSMENT

4.1 General

With reference to the 'BCA Assessment Summary' contained within **Section 3** of this report, 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

4.2 Section B – Structure

Part B1 - Structural provisions

Note	Structural works shall comply with this section. Compliance with Section B of the BCA shall be addressed by the project's Structural Engineer as part of the structural design documentation.
B1D2	**Resistance to actions (prev. B1.1)** The resistance of a building or structure shall be greater than the most critical action effect resulting from different combinations of actions – (a) The most critical action is determined in accordance with AS/NZS 1170.0-2002 and B1D3; and (b) The resistance of a building or structure is determined in accordance with B1D4. ***Capable of Compliance:*** The design is to be certified by the projects structural engineer at the construction certificate phase of the development.
B1D3	**Determination of individual actions (prev. B1.2)** The magnitude of individual actions must be determined in accordance with the actions contained within this clause, including – (a) Permanent actions; (b) Imposed actions; (c) Wind / snow / earthquake actions; (d) Considerations to the nature of the – (xi) Action; (xii) Building or structure; and (xiii) Importance level; and (e) Any additional addition actions that may be applicable. ***Capable of Compliance:*** The design is to be certified by the projects structural engineer at the construction certificate phase of the development.

B1D4 **Determination of structural resistance of materials and forms of construction (prev. B1.4)**

The structural resistance of materials and forms of construction must be determined in accordance with this clause (as appropriate or as applicable), a summary is as follows –

(a) Masonry: AS 3700:2018.

(b) Concrete:

(i) Concrete construction: AS 3600:2018.
(ii) Autoclaved aerated concrete: AS 5146.1:2015 & AS 5146.3:2018.
(iii) Post-installed and cast-in fastenings: AS 5216:2021.

(c) Steel construction:

(d) Steel structures: AS 4100:2020.

(i) Cold-formed steel structures: AS/NZS 4600:2018.
(ii) Composite steel and concrete: AS/NZS 2327-2017.
(iii) Aluminium construction: AS/NZS 1664.1:1997 or AS/NZS 1664.2:1997.

(e) Timber construction:

(i) Design of timber structures: AS 1720.1.
(ii) Timber structures: AS 1684.2:2021, AS 1684.3:2021 or AS 1684.4:2010.
(iii) Nailplated timber roof trusses: AS 1720.5:2015.

(f) Piling: AS 2159:2009.

(g) Glazed assemblies:

(i) External: AS 2047:2014.
(ii) Internal: AS 1288:2021.

(h) Termite Risk Management: AS 3660.1:2014.

(i) Roof construction (except in cyclonic areas):

(i) Terracotta, fibre-cement and timber slates and shingles: AS 4597:1999.
(ii) Roof tiling: AS 2050:2018.
(iii) Cellulose cement corrugated sheets: AS/NZS 2908.1:2000.
(iv) Metal roofing: AS 1562.1:2018.
(v) Particleboard structural flooring: AS 1860.2:2006.

Capable of Compliance: The design is to be certified by the projects structural engineer at the construction certificate phase of the development.

4.3 Section C – Fire Resistance & Stability

Part C2 – Fire Resistance and Stability

C2D2 **Type of Construction Required (prev. C1.1)**

Exposure to fire source features

A part of 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 has an FRL of not less than 30/–/– and is neither transparent nor translucent.

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 be non-combustible. In addition, the supporting element must have an FRL (with respect to structural adequacy), greater of that required for the supporting part itself and for the part it supports.

Lintels

A lintel must have the FRL required for the part of the building in which it is situated. A lintel need not require fire rating if it meets the requirements of this clause.

Method of attachment not to reduce the fire-resistance of building elements

The method of attaching or installing a finish, lining, ancillary element, or service installation to a building element must not reduce the fire-resistance of that element to below that required.

Type C Fire-resisting Construction — Fire-resistance of Building Elements
In a building required to be of Type C construction—

(a) a building element listed in this specification and any beam or column incorporated in it, must have an FRL not less than that listed in those Tables for the particular Class of building concerned; and

(b) an external wall that is required by Table S5C24a to have an FRL need only be tested from the outside to satisfy the requirement; and

(c) a fire wall or an internal wall bounding a sole-occupancy unit or separating adjoining units must comply with Specification 6 if it is of lightweight construction and is required to have an FRL; and

Capable of Compliance: As the building is setback more than 3 m, generally nil FRLs are required.

C2D11 **Fire Hazard Properties (prev. C1.10)**

This clause outlines the minimum fire hazard properties of materials inside the subject development which is susceptible to the effects of flame or heat. All

C2D11 *Cont'd*

linings, materials or assemblies used for flooring, floor coving, wall and ceiling lining are required to comply with Specification 7.

Capable of Compliance: All proposed internal linings, materials or assemblies used for floors, walls, ceilings and etc. are to have fire hazard properties in accordance with Spec. 7 of the BCA. Relevant test reports and specifications should be submitted to the certifying authority at the construction documentation phase of the project.

Part C3 - Compartmentation and separation

C3D3

General Floor Area & Volume Limitations (prev. C2.2)

The maximum floor area and volume limitations of a fire compartment as nominated in the deemed to satisfy provisions are as follows:

Type C - The floor area and volume limitations are:

(a) Class 5, 9b or 9c: 3,000 m^2 and 18,000 m^3

(b) Class 6, 7, 8 or 9a: 2,000 m^2 and 12,000 m^3

Complies: No fire compartment within the building is more than the maximum requirements outlined in this clause.

C3D13

Separation of Equipment (prev. C2.12)

Any of the following equipment located in the building must be separated from the remainder of the building:

(a) emergency generators used to sustain emergency equipment operating in the emergency mode; or

(b) central smoke control plant; or

(c) boilers; or

(d) a battery system installed in the building that has a total voltage of 12 volts or more and a storage capacity of 200 kWh or more.

Equipment need not be separated in if the equipment comprises:

(a) smoke control exhaust fans located in the air stream which are constructed for high temperature operation in accordance with Specification 21; or

(b) equipment otherwise adequately separated from the remainder of the building.

Equipment otherwise adequately separated from the remainder of the building. Separation must be by construction having an FRL as required by Specification 5, but not less than FRL 120/120/120 with openings protected by self-closing fire doors having an FRL of not less than –/120/30.

Further Information Required: Please confirm (consultant with the relevant services engineer or equipment supplier) whether any proposed equipment is required to be fire separated.

Part C4 - Protection of openings

C4D15 **Openings for Services Installations (prev. C3.15)**

Any opening(s) for service(s) such as electrical, mechanical, plumbing, etc) that penetrate a building element which is required to be of fire- resisting construction is required to be protected (i.e. fire seal).

Capable of Compliance: Service penetrations in a building element required to have an FRL are to be protected by methods in accordance with this clause, e.g., a tested system, where the product installed is identical to a tested prototype.

C4D16 **Construction Joints (prev. C3.16)**

This clause sets out to limit the spread of fire between elements which are required to achieve an FRL. 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 4072.1 and AS 1530.4 to achieve the required FRL or that differs from a prototype in accordance with Section 4 of AS 4072.1 and achieves the required FRL.

Capable of Compliance: Construction joints, spaces and the like between fire rated building elements are to be protected by methods in accordance with this clause, e.g., a tested system, where the product installed is identical to a tested prototype.

4.4 Section D - Access and egress

Part D2 - Provisions for escape

D2D3 **Number of exits required (prev. D1.2)**

General

Without passing through another sole-occupancy unit every occupant of a storey must have access to an exit.

Note – The multipurpose room does not contain more than 50 people.

Complies: The number of exits has been assessed as complying with the requirements of this clause.

D2D5 **Exit travel distances (prev. D1.4)**

Class 5, 6, 7, 8 or 9

(a) 20 m from any point on the floor to an exit or a point of choice to at least two (2) exits; and.

(b) 40 m from any point on the floor to an exit, if more than one (1) exit is available.

Class 5 and 6

D2D5 *Cont'd*

In a Class 5 or 6 building, the distance to a single exit serving a storey at the level of access to a road or open space may be increased to 30 m.

Complies: The distance to exits have been assessed as being no further than the DTS provisions of the BCA.

D2D6

Distance between alternative exits (prev. D1.5)

General

Alternative exits must –

(a) be located so that alternative paths of travel do not converge such that they become less than 6 m apart.

(b) 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.

Class 5, 6, 7, 8 or 9

Exits shall be located to not be more than 60m apart and not closer than 9m

Complies: The distance between alternative exits has been assessed as being no further than the DTS provisions of the BCA.

D2D7

Height of exits, paths of travel to exits and doorways (prev. D1.6)

In a required exit or path of travel to an exit the unobstructed height throughout must be not less than 2 m, except the unobstructed height of any doorway may be reduced to not less than 1980 mm.

Capable of Compliance: Door schedule to be detailed as design progresses.

D2D8

Width of exits and paths of travel to exits (prev. D1.6)

General

The unobstructed width of each required exit or path of travel to an exit, must be not less than 1 m.

Complies: The egress widths have been assessed as complying with the requirements of this clause.

D2D9

Width of doorways in exits or paths of travel to exits (prev. D1.6)

General

The unobstructed width of each exit provided to comply with D2D8, minus 250 mm.

In any other case except where it opens to a sanitary compartment or bathroom, the doorway must not be less than 750 mm wide.

Capable of Compliance: Door schedule to be detailed as design progresses.

D2D15 **Discharge from exits (prev. D1.10)**

General

An exit must not be blocked at the point of discharge and where necessary, suitable barriers must be provided to prevent vehicles from blocking the exit, or access to it e.g. discharge points.

If a required exit leads to an open space, the path of travel to the road must have an unobstructed width throughout of not less than -

(a) 1 m or minimum width of the required exit; or

(b) If an 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 having a gradient not steeper than 1:8 at any part (not steeper than 1:14 if required to be accessible) or a stairway.

The discharge point of alternative exits must be located as far apart as practical.

Capable of Compliance: Bollards to be detailed as design progresses.

Part D3 - Construction of exits

D3D8 **Installations in exits and paths of travel (prev. D2.7)**

Any services or equipment (being electrical meters, distribution boards or the like) installed within the hallway are required to be enclosed by non-combustible construction or a fire-protective covering (i.e. 1 layer of 13mm fire-protective grade plasterboard) with doorway(s) or opening(s) suitably sealed against smoke spreading from the enclosure.

Capable of Compliance: The design is to be certified by the electrical services at the construction certificate phase of the development.

D3D14 **Goings and risers (prev. D2.13)**

General

A stairway must have -

(a) The going and risers of a stair must be constant throughout each flight except that between adjacent risers or going, not greater than 5mm and not more than 10mm throughout the flight; and

(b) No openings greater than 125mm; and

(c) In a required stair, no winders in lieu of a landing; and

(d) The stair treads are required to have a surface or nosing strip achieving a slip-resistance classification of P3 or R10 in dry or P4 or R11 in wet tested in accordance with AS4586-2013; and

(e) 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

D3D14 *Cont'd*

(f) The going, riser and steepness dimension of the stairways are required to be designed within the following range -

RISER (R)		GOING (G)		SLOPE RELATIONSHIP (2R+G)	
Max	**Min**	**Max**	**Min**	**Max**	**Min**
190	115	355	250	700	550

Capable of Compliance: Stairways are to be detailed as design progresses.

D3D15

Landings (prev. D2.14)

General

Stair landings are required to be a minimum of 750mm long with a gradient not steeper than 1:50 and have a slip-resistance surface or strip.

The surface or strip is required to achieve a slip-resistance classification of P3 or R10 in dry or P4 or R11 in wet tested in accordance with AS4586-2013

Capable of Compliance: Stairways are to be detailed as design progresses.

D3D16

Thresholds (prev. D2.15)

General

The threshold of a doorway is not permitted to incorporate a step or ramp at any point closer to the doorway than the width of the door leaf.

That is unless the doorway opens to a road or open space and:

(a) In a building required to be accessible, is provided with a threshold or step ramp in accordance with AS1428.1-2009; or

(b) In all other cases, the door sill is not more than 190mm above the finished surface of the ground.

Capable of Compliance: The design is to be detailed as design progresses.

D3D17

Barriers to prevent falls (prev. D2.16)

A continuous barrier must be provided along the side of the following if the trafficable surface is 1 m or more above the surface beneath —

(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.

Capable of Compliance: Barriers are to be detailed as design progress.

D3D24 **Doorways and doors (prev. D2.19)**

General

A doorway serving as a required exit or forming part of a required exit must not be fitted with –

(a) a revolving door; and

(b) a roller shutter or tilt-up door unless—

(i) it serves a Class 6, 7 or 8 building or part with a floor area not more than 200 m^2; and
(ii) the doorway is the only required exit from the building or part; and
(iii) it is held in the open position while the building or part is lawfully occupied; and

(c) a sliding door unless it leads directly to road or open space and the door can be manually opened by a force of not more than 110N; and

(d) a power operated door It must be opened manually under a force of not more than 110N and if it leads directly to road or open space, must open automatically on power failure, or activation of a fire or smoke alarm.

Capable of Compliance: Specifications and operation of D01 to be detailed as design progresses.

D3D25 **Swinging doors (prev. D2.20)**

A swinging door in a required exit or forming part of a required exit must not encroach more than 500 mm on the required width of a required stairway, ramp or passageway if it is likely to impede the path of travel of the people already using the exit. Furthermore, such a swinging door must swing in the direction of egress, unless it serves a sanitary compartment, airlock or is the only required exit serving a building part with floor area not more than 200m² and is fitting with hold open device.

Further Information Required / Does Not Comply: Doorway to plant room to be fitted with a hold open device or amended to swing outwards

D3D26 **Operation of latch (prev. D2.21)**

General

Any door in a required exit, forming part of a required exit or in the path of travel to a required exit are required to be readily operable without a key from the side that faces a person seeking egress-

(a) By a single hand pushing or downward action on a single device located between 900mm and 1100mm from the floor-

(b) Be such that the hand of a person who cannot grip will not slip from the handle during the operation of the latch; and

(c) Have a clearance between the handle and the back plate or door face at the centre grip section of the handle of not less than 35mm nor more than 45mm.

D3D26 *Cont'd*

(d) A single hand pushing action on a single device which is located between 900mm and 1.2m above the floor. Where the latch operation device is not located on the door, the power operated manual controls must be at least 25mm wide, proud of the surrounding surface and located 500mm from an internal corner and between 1-2m of the doorway.

(e) Is fitted with a fail-safe device which automatically unlocks the door upon activation of any smoke or any other detector deemed suitable in accordance with AS1670.1-2015.

(f) Certain requirements or concessions apply when the door serves a vault, strong-room, sanitary compartment, an SOU, Australian Government Security Zones 4 or 5; or the secure parts of a bank, detention centre, mental health facility, early childhood centre, 9a or 9c building.

Capable of Compliance: Door hardware schedule to be detailed at the construction certificate phase of the development.

4.5 Section E - Services and equipment

Part E1 - Fire fighting equipment

E1D2

Fire Hydrants (prev. E1.3)

A fire hydrant system complying with AS2419.1-2021 is required to serve the building, including –

(a) If internal hydrants are provided, all points on a floor are required to be within 40 m of an internal hydrant;

(b) If external hydrants are provided, all points on a floor are required to be within 70 m of an external hydrant;

(c) Where a sprinkler system is installed throughout the building in accordance with AS2118.1, AS2118.4, AS2118.6, FPAA101H or FPAA101D, the protection requirements to fire brigade booster assemblies and external hydrants do not apply;

(d) If the fire brigade booster assembly is within, or affixed to, the external wall of the building, the booster shall be within 20 m of the principal pedestrian entrance and be identified by a visual alarm device;

(e) if the fire brigade booster assembly is remote from the building, it is required to be-

(i) adjacent to the site boundary and the principal vehicle access for the fire brigade pumping appliance to the building or site;
(ii) or within 20 m of the façade of the building containing the principal pedestrian entrance and within 20 m of the main pedestrian entrance.

Capable of Compliance: The design is to be certified by the hydraulic engineer / wet fire services engineer at the construction certificate phase of the development.

E1D3 **Hose Reels (prev. E1.4)**

A hose reel system complying with AS2441-2005 is required to serve the class 6 parts, where one or more internal fire hydrants are installed.

A fire hose reel system must be provided in accordance with the following –

(a) Hose reels are required to be located within 4m of an exit, except that a fire hose reel need not be located adjacent to every exit, provided system coverage can be achieved;

(b) All points on a floor are required to be in reach of a 4m hose stream at the end of a 36m hose length laid on the floor;

(c) Additional hose reels can be installed along the path of travel where additional coverage is required;

(d) A hose reels must be located so that the fire hose will not pass through a fire or smoke door.

Capable of Compliance: The design is to be certified by the hydraulic engineer / wet fire services engineer at the construction certificate phase of the development.

E1D14 **Portable fire extinguishers (prev. E1.6 and Table E1.6)**

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).

(d) To cover Class A fire risks in normally occupied fire compartments less than 500 m^2 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.

Capable of Compliance: The design is to be certified by the fire services engineer at the construction certificate phase of the development.

Part E2 – Smoke hazard management

NSW E2D19	**Design and operation of emergency lighting (prev. E2.2)** A building or part of a building used as an assembly building must be provided with automatic shutdown of any air-handling system (other than non-ducted individual room units with a capacity not more than 1000 L/s and miscellaneous exhaust air systems installed in accordance with Sections 5 and 6 of AS 1668.1) which does not form part of the smoke hazard management system, on the activation of— smoke detectors installed complying with S20C6 of Specification 20 ***Further Information Required:*** The Multipurpose room being classified as Class 9b is subject to this requirement. Please provide further details of the proposed mechanical system to determine whether it triggers the need to provide automatic shutdown.

Part E4 - Visibility in an emergency, exit signs and warning systems

E4D4	**Design and operation of emergency lighting (prev. E4.4)** Every required emergency lighting system must comply with AS/NZS 2293.1-2018. The design is to be certified by the dry fire designer at the construction certificate phase of the development. ***Capable of Compliance:*** The design is to be certified by the electrical services engineer at the construction certificate phase of the development.
E4D8	**Design and operation of exit signs (prev. E4.8)** Every required exit sign must— (a) comply with— (i) AS/NZS 2293.1; or (ii) for a photoluminescent exit sign, Specification 25; and (b) clearly visible at all times when the building is occupied by any person having the right of legal entry to the building. ***Capable of Compliance:*** The design is to be certified by the electrical services engineer at the construction certificate phase of the development.

4.6 Section F - Health and amenity

Part F1 - Surface water management, rising damp and external waterproofing

F1D3	**Stormwater drainage (prev. F1.1)** Stormwater drainage must be designed and constructed in accordance with AS/NZS 3500.3:2018. ***Capable of Compliance:*** The design is to be certified by the civil engineer / hydraulic engineer at the construction certificate phase of the development.

F1D4 **Exposed joints (new for 2022)**

Exposed joints in the drainage surface on a roof, balcony, podium or similar horizontal surface part of a building must—

(a) be protected in accordance with Section 2.9 of AS 4654.2:2012; and

(b) not be located beneath or run through a planter box, water feature or similar part of the building.

Capable of Compliance: The design is to be certified by the project architect / waterproofing consultant at the construction certificate phase of the development.

F1D5 **External waterproofing membranes (prev. F1.4)**

A roof, balcony, podium, or similar horizontal surface part of a building must be provided with a waterproofing membrane in accordance with AS 4654.1:2012 and AS 4654.2:2012

Capable of Compliance: The design is to be certified by the appropriate consultant at the construction certificate phase of the development.

F1D6 **Damp-proofing (F1.9)**

Moisture from the ground must be prevented from reaching –

(a) the lowest floor timbers and the walls above the lowest floor joists; and

(b) the walls above the damp-proof course; and

(c) the underside of a suspended floor constructed of a material other than timber, and the supporting beams or girders.

Where a damp-proof course is required, it must consist of materials complying with AS/NZS 2904:1995 or impervious sheet material in accordance AS 3660.1:2014.

Note – This is not applicable to the Covered Deck and Plant Rooms

Capable of Compliance: The design is to be certified by the structural engineer / project architect at the construction certificate phase of the development.

F1D7 **Damp-proofing of floors on the ground (prev. F1.10)**

A floor laid directly onto ground or fill must be provided with a vapour barrier complying with AS2870:2011.

Capable of Compliance: The design is to be certified by the structural engineer / project architect at the construction certificate phase of the development.

F1D8 **Subfloor ventilation (prev. F1.12)**

Subfloor spaces must –

(a) be provided with openings and clearances in accordance with **Table F1D8** of the BCA; and

(b) be cleared of all building debris and vegetation; and

(c) have the ground beneath the suspended floor graded to prevent surface water ponding under the building; and

(d) contain no dead air spaces; and

(e) have openings evenly spaced as far as practicable; and

(f) have openings placed not more than 600 mm in from corners.

In double leaf masonry walls, openings must be provided in both leaves of the masonry, with openings being aligned to allow an unobstructed flow of air.

In internal subfloor walls, openings must have an unobstructed area equivalent to that required for the adjacent external openings.

Additional requirements for excessively damp spaces or areas subject to frequent floods

In addition to the above, one of the following is required –

(a) Increase subfloor ventilation (as required by **Table F1D8)** by 50%; or

(b) Seal the ground with an impervious membrane; or

(c) Subfloor framing must be –

(i) where above ground, above-ground durability Class 1 or 2 timbers or H3 preservative treated timbers in accordance with AS 1684.2:2021, AS 1684.3:2021 or AS 1684.4:2010; or
(ii) where in ground, in-ground durability Class 1 or 2 timbers or H5 preservative treated timbers in accordance with AS 1684.2:2021, AS 1684.3:2021 or AS 1684.4:2010; or
(iii) steel in accordance with NASH Standard 'Residential and Low-Rise Steel Framing' Part 2.

Capable of Compliance: The design is to be detailed by the project architect at the construction certificate phase of the development.

Part F2 - Wet areas and overflow protection

F2D2 **Wet area construction (prev. F1.7)**

Class 5,6,7,8 or 9

Building elements in a bathroom or shower room, a slop hopper or sink compartment, a laundry or sanitary compartment must be water resistant or waterproof in accordance with Spec. 26 and AS 3740:2021.

Capable of Compliance: The design is to be certified by the project architect at the construction certificate phase of the development.

F2D4 **Floor wastes (F1.11)**

Where a floor waste is installed, the continuous fall of a floor plane to the waste must be between 1:80 and 1:50.

Capable of Compliance: The design is to be certified by the appropriate consultant at the construction certificate phase of the development.

Part F3 - Roof and wall cladding

Note F3P1 Weatherproofing (of external walls) may be satisfied by compliance with F3D3, F3D4 and F3D5, provided the form of construction is referenced by these DtS clauses. Otherwise, compliance with F3P1 (of external walls) to be achieved by a Performance Solution satisfying F3V1 or other suitable method from A5G2 of the BCA.

F3D2 **Roof coverings (prev. F1.5)**

A roof must be covered with —

(a) Concrete roofing tiles: AS 2049:2002 & AS 2050:2018; or

(b) Metal sheet roofing: AS 1562.1; or

(c) Plastic sheet roofing: AS 1562.3; or

(d) Terracotta, fibre-cement and timber slates and shingles: AS 4597;, except in cyclonic areas; or

(e) An external waterproofing membrane complying with F1D5.

Capable of Compliance: The design is to be certified by the project architect at the construction certificate phase of the development.

F3D3 **Sarking (prev. F1.6)**

Any sarking-type materials used for weatherproofing of roofs and walls are required to comply with AS/NZS4200.1:2017 and AS4200.2:2017.

Capable of Compliance: The design is to be certified by project architect at the construction certificate phase of the development.

F3D4 **Glazed assemblies (prev. F1.13)**

The following glazed assemblies in an external wall, must comply with AS 2047:2014 requirements for resistance to water penetration:

(a) Windows.

(b) Sliding and swinging glazed doors with a frame, including French and bi-fold doors with a frame.

(c) Adjustable louvres.

(d) Shopfronts.

(e) Window walls with one piece framing.

Despite the above The following glazed assemblies are exempt from complying with AS 2047:2014:

(a) All glazed assemblies not in an internal wall.

(b) Revolving doors.

(c) Fixed louvres.

(d) Skylights, roof lights and windows in other than the vertical plane.

(e) Sliding and swinging glazed doors without a frame.

(f) Windows constructed on site and architectural one-off windows, which are not design tested in accordance with AS 2047.

(g) Second-hand windows, re-used windows and recycled windows.

(h) Heritage windows.

Capable of Compliance: The design is to be certified by the project architect at the construction certificate phase of the development.

F3D5 **Wall cladding (New for 2022)**

External wall cladding must comply with one or a combination of following:

(a) Masonry, including masonry veneer, unreinforced and reinforced masonry: AS 3700:2018.

(b) Autoclaved aerated concrete: AS 5146.3:2018.

(c) Metal wall cladding: AS 1562.1:2018.

Capable of Compliance: The design is to be certified by the project architect at the construction certificate phase of the development.

Part F4 - Sanitary and other facilities

F4D4 **Facilities in Class 3 to 9 buildings (F2.3)**

Sanitary facilities shall be provided for occupants in accordance with the relevant tables from this clause. Adequate sanitary facilities have been provided. Refer to **Section 2.6** for the detailed calculation.

General

(a) The number of occupants has been determined from floor areas and table D2D18.

(b) Generally, separate male and female facilities are required.

(c) In a Class 5 building and Class 6 building (with less than 600 people), facilities are only required for staff

(d) An accessible unisex sanitary compartment may be counted once for each sex, hence supporting up to 20 x staff ***being 10 x male and 10 x female staff (rounded down from 15x on the basis of equal numbers of males and females.

Complies: The facilities in the class 3 to 9 buildings have been assessed as complying with the requirements of this clause.

F4D8 **Construction of sanitary compartments (prev. F2.5)**

Sanitary compartments must have doors and partitions that separate adjacent compartments and extend 1.8m above the floor.

The door to a full enclosed sanitary compartment is required to:

(a) Open outwards;

(b) Slide; or

(c) Be readily removable from the outside of the sanitary compartment (i.e. lift-off hinges).

Unless there is a clear space of at least 1.2m between the closest pan within the sanitary compartment and the hinge side edge of the doorway.

Capable of Compliance: Door hardware schedule to be detailed the construction certificate phase of the development.

Part F5 - Room heights

F5D2 **Height of rooms and other spaces**

Class 5, 6, 7 or 8

(a) All areas — 2.4m, unless specified below

(b) Corridor, passageway, or the like — 2.1 m

Specific rooms and other spaces (all classes)

F5D2 *Cont'd*

(a) bathroom, shower room, sanitary compartment, other than an accessible adult change facility, airlock, tea preparation room, pantry, store room, garage, car parking area, or the like — 2.1 m; and

(b) above a stairway, ramp, landing or the like — 2 m measured vertically above the nosing line of stairway treads or the floor surface of the ramp, landing or the like; and

Complies: The height of rooms and other spaces has been assessed as complying with the requirements of this clause.

Part F6 - Light and ventilation

F6D5 **Artificial lighting (prev. F4.4)**

Artificial lighting in accordance AS/NZS 1680.0.must be provided—

(a) in required stairways, passageways, and ramps; and

(b) if natural light of a standard equivalent to that required by F6D3 is not available, and the periods of occupation or use of the room or space will create undue hazard to occupants seeking egress in an emergency, to all rooms that are frequently occupied, all spaces required to be accessible, all corridors, lobbies, internal stairways, other circulation spaces and paths of egress.

Capable of Compliance: The design is to be certified by the electrical service engineer at the construction certificate phase of the development.

F6D6 **Ventilation of rooms (prev. F4.5)**

Natural or mechanical ventilation is required to be provided any habitable room, office, shop, factory, workroom, sanitary compartment, bathroom, shower room, laundry and any other room occupied by a person for any purpose.

Capable of Compliance: The design is to be certified by the mechanical engineer at the construction certificate phase of the development.

F6D7 **Natural ventilation (prev. F4.6)**

Natural ventilation must consist of openings, windows, doors or other devices which can be opened with a ventilating area not less than 5% of the floor area of the room required to be ventilated; and open to—

(a) a suitably sized court, or space open to the sky; or

(b) an open verandah, carport, or the like; or

(c) an adjoining room in accordance with F6D8.

Capable of Compliance: The design is to be certified by the mechanical engineer at the construction certificate phase of the development.

F6D9 **Restriction on location of sanitary compartments (prev. F4.8)**

A sanitary compartment must not open directly into—

(a) a kitchen or pantry; or

(b) a room used for public assembly (which is not an early childhood centre, primary school or open spectator stand); or

(c) a workplace normally occupied by more than one person.

Complies: The location of sanitary compartments has been assessed as complying with the requirements of this clause.

5.0 CONCLUSION

Our strategy for ensuring compliance will be refined and documented during the design process in conjunction with the continual development of the architectural documentation, as required.

Based upon our assessment to date we are of the opinion that the subject development is capable of achieving compliance with the performance provisions of the BCA. Compliance would be achieved via a complying with the relevant deemed-to-satisfy requirements as outlined within the BCA.

Report By

David Yan
Building Code Consultant
For DC Partnership

Verified By

Lindsay Beard
Principal | Building Codes
For DC Partnership

APPENDIX 1 – DOCUMENTATION PROVIDED FOR ASSESSMENT

This BCA assessment was based upon the architectural documentation prepared by DunnHillam Architecture & Urban Design namely—

DRAWING	REV	TITLE	DATE
DA-01	-	Cover Sheet	-
DA-02	-	Ground Plan	-
DA-03	-	Elevations	-
DA-04	-	Sections	-
DA-05	-	Shadow Diagrams	-

APPENDIX 2 – ABBREVIATIONS & DEFINITIONS

The following acronyms and abbreviations are used throughout the report.

ACRONYM / ABBREVATION	DEFINITION
AS	Australian Standard
CHF	Critical Heat Flux
BCA	Building Code of Australia 2022
DTS	Deemed to Satisfy
FRL	Fire-resistance level
FH	Fire hydrant
FHR	Fire hose reel
NCC	National Construction Code
PFE	Portable fire extinguisher
PBDB	Performance Based Design Brief
RC	Reinforced concrete
SOU	Sole occupancy unit
SPEC.	Specification
U-Value	Thermal transmittance

DEFINITIONS

The following definitions are provided for words used throughout the report.

Accessible

Accessible means having features to enable use by people with a disability.

Combustible

A material — means combustible as determined by AS 1530.1; and construction or part of a building — means constructed wholly or in part of combustible materials.

Deemed-to-Satisfy Provisions

Provisions which are deemed to satisfy the Performance Requirements.

Deemed-to-Satisfy Solution

A method of satisfying the Deemed-to-Satisfy Provisions.

Effective height

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

Exit

Exit means –

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

(a) An internal or external stairway.

(b) A ramp.

(c) A fire-isolated passageway.

(d) A doorway opening to a road or open space.

(e) A horizontal exit or a fire-isolated passageway leading to a horizontal exit.

Fire compartment

Fire compartment means –

(a) the total space of a building; or

(b) when referred to in—

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

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

Fire-resistance level (FRL)

Fire-resistance level (FRL) means the grading periods in minutes determined in accordance with Specification A2.3, for the following criteria—

(a) structural adequacy; and

(b) integrity; and

(c) insulation,

— expressed in that order.

Note: A dash means that there is no requirement for that criterion. For example, 90/–/– means there is no requirement for an FRL for integrity and insulation, and –/–/– means there is no requirement for an FRL.

Fire-source feature

(a) the far boundary of a road, river, lake or the like adjoining the allotment; or

(b) a side or rear boundary of the allotment; or

(c) an external wall of another building on the allotment which is not a Class 10 building

Fire wall

Fire wall means a wall with an appropriate resistance to the spread of fire that divides a storey or building into fire compartments.

Loadbearing

Intended to resist vertical forces additional to those due to its own weight.

Non-combustible

Non-combustible means—

(a) applied to a material — not deemed combustible as determined by AS 1530.1:1994 — Combustibility Tests for Materials; and

(b) applied to construction or part of a building — constructed wholly of materials that are not deemed combustible

Occupiable outdoor area

Occupiable outdoor area means a space on a roof, balcony or similar part of a building–

(a) that is open to the sky; and

(b) to which access is provided, other than access only for maintenance; and

(c) that is not open space or directly connected with open space.

Open space

Open space means a space on the allotment, or a roof or similar part of a building adequately protected from fire, open to the sky and connected directly with a public road.

Performance Requirement

Performance Requirement means a requirement which states the level of performance which a Performance Solution or Deemed-to-Satisfy Solution must meet.

Performance Solution

Performance Solution means a method of complying with the Performance Requirements other than by a Deemed-to-Satisfy Solution.

Sole-occupancy unit

Sole-occupancy unit means a room or other part of a building for occupation by one or joint owner, lessee, tenant, or other occupier to the exclusion of any other owner, lessee, tenant, or other occupier and includes—

(a) a dwelling; or

(b) a room or suite of rooms in a Class 3 building which includes sleeping facilities: or

(c) a room or suite of associated rooms in a Class 5, 6, 7, 8 or 9 building; or

(d) a room or suite of associated rooms in a Class 9c building, which includes sleeping facilities and any area for the exclusive use of a resident.

APPENDIX 3 – FRLS

Table A3 TYPE C CONSTRUCTION: FRL OF BUILDING ELEMENTS

Building element	Class of building—FRL: (in minutes) *Structural adequacy/Integrity/Insulation*			
	2, 3 or 4 part	5, 7a or 9	6	7b or 8
EXTERNAL WALL (including any column and other building element incorporated therein) or other external building element, where the distance from any *fire-source feature* to which it is exposed is—				
Less than 1.5 m	90/ 90/ 90	90/ 90/ 90	90/ 90/ 90	90/ 90/ 90
1.5 to less than 3 m	–/–/–	60/ 60/ 60	60/ 60/ 60	60/ 60/ 60
3 m or more	–/–/–	–/–/–	–/–/–	–/–/–
EXTERNAL COLUMN not incorporated in an *external wall*, where the distance from any *fire-source feature* to which it is exposed is—				
Less than 1.5 m	90/–/–	90/–/–	90/–/–	90/–/–
1.5 to less than 3 m	–/–/–	60/–/–	60/–/–	60/–/–
3 m or more	–/–/–	–/–/–	–/–/–	–/–/–
COMMON WALLS and FIRE WALLS—	90/ 90/ 90	90/ 90/ 90	90/ 90/ 90	90/ 90/ 90
INTERNAL WALLS-				
Bounding *public corridors*, public lobbies and the like—	60 / 60/ 60	–/–/–	–/–/–	–/–/–
Between or bounding *sole-occupancy units*—	60/ 60/ 60	–/–/–	–/–/–	–/–/–
Bounding a stair if *required* to be rated—	60/ 60/ 60	60/ 60/ 60	60/ 60/ 60	60/ 60/ 60
ROOFS	–/–/–	–/–/–	–/–/–	–/–/–

APPENDIX 4 – FIRE HAZARD PROPERTIES

The tables below are a summary of Spec. 7 and indicates the required fire hazard properties of internal linings, materials and assemblies.

FLOOR LININGS AND FLOOR COVERINGS

LOCATION / AREA	REQUIREMENT
Throughout	Critical Radiant Flux (kW/m^2)

Class	*Not sprinkler protected*	*Sprinkler protected*	*Fire-isolated exits & fire control rooms*
Class 2, 3, 5, 6, 7, 8 or 9b, excluding Class 3 accommodation for the aged and Class 9b as specified below	2.2	1.2	2.2
Class 3 accommodation for the aged	4.5	2.2	4.5
Class 9a patient care areas	4.5	2.2	4.5
Class 9a areas other than patient care areas	2.2	1.2	4.5
Class 9b auditorium or audience seating area used mainly for indoor swimming or ice skating	1.2	1.2	2.2
Class 9b auditorium or audience seating area used mainly for other sports or multi-purpose functions	2.2	1.2	2.2
Class 9c resident use area	N/A	2.2	4.5
Class 9c areas other than resident use areas	N/A	1.2	4.5

Non-sprinkler protected areas	Max. Smoke Development Rate of 750 percent minutes (% min)
Continued more than 150 mm up a wall	Group Number 1 or 2
Lift cars	Critical Radiant Flux (kW/m^2) - 2.2

WALL AND CEILING LININGS

LOCATION / AREA	REQUIREMENT
Throughout	Group Number

Class	*Fire-isolated exits & fire control rooms*	*Public corridors*	*Specific areas*	*Other areas*
Class 2 or 3, unsprinklered, excluding accommodation for the aged, people with disabilities and children	Walls: 1	Walls: 1, 2	Walls: 1, 2, 3	Walls: 1, 2, 3
	Ceilings: 1	Ceilings: 1, 2	Ceilings: 1, 2, 3	Ceilings: 1, 2, 3
Class 2 or 3, sprinklered, excluding accommodation for the aged, people with disabilities and children	Walls: 1	Walls: 1, 2, 3	Walls: 1, 2, 3	Walls: 1, 2, 3
	Ceilings: 1	Ceilings: 1, 2, 3	Ceilings: 1, 2, 3	Ceilings: 1, 2, 3
Class 3 or 9a, unsprinklered, accommodation for the aged, people with a disability, children and health-care buildings	Walls: 1	Walls: 1	Walls: 1, 2	Walls: 1, 2, 3
	Ceilings: 1	Ceilings: 1	Ceilings: 1, 2	Ceilings: 1, 2, 3
Class 3 or 9a, sprinklered, accommodation for the aged, people with a disability, children and health-care buildings	Walls: 1	Walls: 1, 2	Walls: 1, 2, 3	Walls: 1, 2, 3
	Ceilings: 1	Ceilings: 1, 2	Ceilings: 1, 2, 3	Ceilings: 1, 2, 3
Class 5, 6, 7, 8 or 9b schools, unsprinklered	Walls: 1	Walls: 1, 2	Walls: 1, 2, 3	Walls: 1, 2, 3
	Ceilings: 1	Ceilings: 1, 2	Ceilings: 1, 2	Ceilings: 1, 2, 3

	Class 5, 6, 7, 8 or 9b schools, sprinklered	Walls: 1	Walls: 1, 2, 3	Walls: 1, 2, 3	Walls: 1, 2, 3
		Ceilings: 1	Ceilings: 1, 2, 3	Ceilings: 1, 2, 3	Ceilings: 1 ,2, 3
	Class 9b other than schools, unsprinklered	Walls: 1	Walls: 1	Walls: 1, 2	Walls: 1, 2, 3
		Ceilings: 1	Ceilings: 1	Ceilings: 1, 2	Ceilings: 1, 2, 3
	Class 9b other than schools, sprinklered	Walls: 1	Walls: 1, 2	Walls: 1, 2, 3	Walls: 1, 2, 3
		Ceilings: 1	Ceilings: 1, 2	Ceilings: 1, 2, 3	Ceilings: 1, 2, 3
	Class 9c, sprinklered	Walls: 1	Walls: 1, 2	Walls: 1, 2, 3	Walls: 1, 2, 3
		Ceilings: 1	Ceilings: 1, 2	Ceilings: 1, 2, 3	Ceilings: 1, 2, 3
Non-sprinkler protected areas	Smoke Growth Rate Index not more than 100; **or** Average Specific Extinction Area less than 250 m^2/kg.				
Lift cars	Group Number 1 or 2				

OTHER MATERIALS

LOCATION / AREA	REQUIREMENT
Rigid and flexible ductwork	Fire hazard properties set out in AS 4254.1 and AS 4254.2.
Fire-isolated exits & fire control rooms	Spread-of Flame Index 0 Smoke-Developed Index 2
Non-fire-isolated stairs & escalators and auditorium fixed seating	Spread-of Flame Index 0 Smoke-Developed Index 5
Sarking-type material	Flammability Index 0 (fire control rooms) Flammability Index 5 (other areas)
Other materials	Spread-of Flame Index 9 Smoke-Developed Index 8 (if the Spread-of Flame Index is more than 5)

TEST STANDARDS

FIRE HAZARD PROPERTY	TEST STANDARD
Critical Radiant Flux	AS ISO 9239.1
Smoke Development Date	AS ISO 9239.1
Smoke Growth Rate Index	AS 5637.1
Average Specific Extinction Area	AS 5637.1
Group Number	AS 5637.1
Flammability Index	AS 1530.2
Spread-of Flame Index	AS 1530.3
Smoke-Developed Index	AS 1530.3

NOTES

”Sprinklered” means a building fitted with a sprinkler system (that is not a FPAA101D or FPAA101H system) complying with Specification 17.

”Specific areas” means -

(a) for Class 2 and 3 buildings, a sole-occupancy unit; and

(b) for Class 5 buildings, open plan offices with a minimum floor dimension/floor to ceiling height ratio > 5; and

(c) for Class 6 buildings, shops or other building with a minimum floor dimension/floor to ceiling height ratio > 5; and

(d) for Class 9a health-care buildings, patient care areas; and

(e) for Class 9b theatres and halls, etc, an auditorium; and

(f) for Class 9b schools, a classroom; and

(g) for Class 9c buildings, resident use area.

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