BLACKETT MAGUIRE+ GOLDSMITH

BCA Assessment Report

HARDI AGEDCARE

Mountainview

57 Mulgoa Road, Penrith

14 May 2020

Reference.: 190359

Address [redacted]

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CONTENTS

REPORT STATUS				
DATE	**REVISION**	**STATUS**	**AUTHOR**	**REVIEWED**
15/04/2020	-	DA Documentation	JH	BM
14/05/2020	1	DA Documentation	JH	BM

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A. INTRODUCTION

A.1 BACKGROUND / PROPOSAL

Blackett Maguire + Goldsmith Pty Ltd (BM+G) have been commissioned by Hardi Aged Care to undertake a Building Code of Australia (BCA) 2019 assessment for the additions and alterations to the existing aged care building located at 57 Mulgoa Road, Penrith.

The proposal seeks consent for alterations and additions to the existing Residential Aged Care Facility (RACF) located at No. 57 Mulgoa Road, Penrith. More specifically, the proposal involves the construction of an additional level (to take the development to a 2 storey building) and the substantial renovation of its interior to significantly improve the amenity provided for its occupants, improved functionality and operational efficiency. The proposal will convert existing 2, 3 and 4 bed rooms to single or double rooms with independent bathroom ensuite facilities provided. The proposal will result in an increase of only 1 bed (from 99 existing to 100 proposed) with 96 being single bed rooms and 2 being double rooms.

A.2 AIM

The aim of this report is to:

+ Undertake an assessment of the additions and alterations to the existing Aged Care Facility against the Deemed-to-Satisfy (DTS) Provisions of the BCA 2019.
+ Identify any BCA compliance issues that require resolution/attention for the proposed development.

A.3 PROJECT TEAM

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

+ Report Preparation – Josh Hagenson (Building Surveyor)
+ Peer Reviewer - Brian Maguire (Director)

A.4 DOCUMENTATION

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

+ BCA 2019
+ The Guide to the BCA
+ Architectural plan by John Flower Architect:

Drawing No.	Revision	Date	Drawing No.	Revision	Date
DA01.1	A		DA02	A	
DA01.3	A		DA01.4	A	
DA01.5	A		DA01.6	A	
DA01.7	A		DA01.8	A	
DA01.10	A		DA01.11	A	

A.5 REGULATORY FRAMEWORK

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

Clause 143(1) of the EPA Regulation 2000 prevents a certifying authority from issuing a construction certificate if the proposed building work includes a change of building use unless:

(a) the fire protection and structural capacity of the building will be appropriate to its new use, and

(b) the building will comply with such of the Category 1 fire safety provisions as are applicable to the new use.

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

Clause 94 of the EPA Regulation requires the Consent Authority to consider the adequacy of the existing building when determining the Development Consent and take into consideration whether it would be appropriate to require the existing building to be brought into total or partial conformity with the BCA.

A.6 LIMITATIONS & EXCLUSIONS

The limitations and exclusions of this report are as follows:

- The following assessment is based upon a review of the architectural documentation.
- Notwithstanding Part D3 of the BCA (being part of this assessment), the building owner should be satisfied that their obligations under the DDA have been addressed.
- The Report does not address matters in relation to the following:
    i. Local Government Act and Regulations.
    ii. NSW Public Health Act 1991 and Regulations.
    iii. Occupational Health and Safety (OH&S) Act and Regulations.
    iv. Work Cover Authority requirements.
    v. Water, drainage, gas, telecommunications and electricity supply authority requirements.
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B. BUILDING CHARACTERISTICS

B.1 BUILDING CLASSIFICATION

The following table presents a summary of relevant building classification items of the proposed development:

▪ **BCA Classification:**	Class 9c (Aged Care Building)
▪ **Rise in Storeys:**	Rise in storeys of two (2).
▪ **Effective Height:**	Less than 12m
▪ **Type of Construction:**	Type C Construction
▪ **Climate Zone:**	Zone 6

B.2 FLOOR AREA / VOLUME

Maximum size of fire compartment is as follows (of which the proposed development achieves compliance with):

Classification		Type A	Type B	**Type C**
Class 9c	Max floor area	8,000m²	5,500m²	**3,000m²***
	Max volume	48,000m³	33,000m³	**18,000m³**

See body of the report for containment of fire compartments.

B.3 FIRE SOURCE FEATURE

The distances from the nearest Fire Source Features are:

Boundary	**Distance to Fire Source Feature**
North	3m to the boundary*
East	>3m to Mulgoa Road
South	>3m to the boundary
West	>3m to Retreat Drive

**The dimension to the boundary is taken from the external wall. 2 external stairs are proposed, as will be constructed of fire rated / non-combustible materials, however are not considered loadbearing nor are they constituting an external wall and therefore have not been assessed as the setback measurement in this instance.*

C. SUMMARY OF KEY COMPLIANCE ISSUES

The following comprises a summary of the key compliance issues identified in the BCA assessment that are to be addressed with an application for a Construction Certificate.

C.1 MATTERS REQUIRING FURTHER INFORMATION/PLAN AMENDMENTS

BCA CLAUSES		DESCRIPTION
1.	C3.3	Exposure between openings in different Fire Compartments at ground floor is to be addressed.
2.	Spec C3.4	The smoke doors and fire doors are to swing in the direction of egress, or swing in both directions and are to have a smoke seal that prevents the free passage of smoke.
3.	D1.4	Distance to an exit from the First Floor terrace exceeds 40m. A Performance Solution (Fire Engineering) will be required to address
4.	D2.17	Handrails are to be documented on the Construction Certificate architectural drawings for the internal public corridors used by residents unless a Performance Solution is proposed to be developed. Any Solutions for corridor handrails will need to include regular resting points designated and design for resident use.
5.	D3.5	A minimum of one accessible car space is required, where new carparking spaces are proposed. The 'shared space' is to be provided with a bollard and is to be indicated on the Construction Certificate drawings.
6.	D3.8	TGSI's are to be provided at the main entrance if there is no kerb / kerb ramp provided.
7.	F2.1	The location of the bath or a space for storage of a mobile bath is to be identified.
8.	F2.4	A minimum of 1 x unisex accessible sanitary facility is required to the common areas. A Performance Solution (Access) will be required for the design of the ensuites within the proposed Accessible Ole Occupancy Units.
9.	FP1.4	A Performance Solution (Architectural) is required to demonstrate compliance with the proposed wall system for purposes of preventing moisture and water penetration.

D. BCA ASSESSMENT

D.1 BCA DEEMED-TO-SATISFY COMPLIANCE ISSUES:

The following comments have been made in relation to compliance with the relevant provisions of the BCA associated with the proposed development.

SECTION A – CLASSIFICATION OF BUILDINGS & STRUCTURES

1. Clause A3.1 – Principles of Classification.

The classification of a building or part of a building is determined by the purpose for which it is designed, constructed or adapted to be used.

2. Clause A3.3 – Multiple Classification

Each part of a building must be classified separately and where these parts have different purposes – If not more than 10% of the floor area of a storey – being the minor use, is used for a purpose which is a different classification applying to the major use, may apply to the whole storey. Note: This provision does not apply to certain minor uses as set out in this clause.

Comments: *The proposal consists of Class 9c building.*

SECTION B - STRUCTURE

3. Part B1 – Structural Provisions

Structural engineering details prepared by an appropriately qualified structural engineer to be provided to demonstrate compliance with Part B1 in relation to the new structural elements of the building.

Comments: *Details are to be provided to the Accredited Certifier confirming that the design achieves compliance with the following, inclusive of reference to the following Australian Standards (where relevant):*

- AS 1170.0 – 2002 General Principles
- AS 1170.1 – 2002, including certification for balustrading (dead and live loads)
- AS 1170.2 – 2002, Wind loads
- AS 1170.4 – 2007, Earthquake loads
- AS 3700 – 2018, Masonry code
- AS 3600 – 2018, Concrete code
- AS 4100 – 1998, Steel Structures and/or
- AS 4600 – 2005, Cold formed steel.
- AS 2159 –2009, Piling
- AS 1720.1 – 2010, Design of timber structure
- AS/NZS 1664.1 and 2 – 1997, Aluminium construction
- AS 2047 – 1999, Windows in buildings.
- AS 1288 – 2006, Glass in buildings.

In addition, details pertaining to the method of addressing attack from subterranean termites in accordance with AS3660.1-2014 are to be provided with the application for Construction Certificate.

SECTION C – FIRE RESISTANCE

FIRE RESISTANCE AND STABILITY

4. Clause C1.1 – Type of Construction Required

The minimum type of fire-resisting construction of a building must be that specified in Table C1.1 and Specification C1.1 except as allowed for in this clause.

Comments: *Type C Construction applies to the building subject to maximum fire compartments sizes as identified in Part C2 below (See also appendix 1 for relevant fire resistance levels).*

5. Clause C1.2 – Calculation of Rise in Storeys

The rise in storeys of a building is the sum of the greatest number of storeys at any part of the external walls of the building and any storeys within the roof space calculated in accordance with the requirements set out in this clause.

Comments*: The subject development has a rise in story of two (2).*

6. Clause C1.3 – Buildings of Multiple Classification

In a building of multiple classifications, the type of construction required for the building is the most fire-resisting type resulting from the application of Table C1.1 on the basis that the classification applying to the top storey applies to all storeys. This clause also contains exceptions in relation to Class 4 parts.

Comments*: The building is a Class 9c aged care building.*

7. Clause C1.5 – Two Storey Class 2, 3 or 9c Buildings

A building having a rise in storeys of 2 may be of Type C construction provided that it complies with the following:

+ Class 2 or 3 (or mixture) where each SOU has access to at least 2 exits; or its own direct access to road or open space.
+ A class 9c aged care building complying with the maximum compartment size specified in Table C2.2 for Type C Construction.

Comments: *Complies. The building has a rise on storeys of 2 and will be construction to meet the maximum fire compartment size as prescribed in Part C2.*

8. Clause C1.8 – Lightweight Construction

Lightweight construction must comply with Specification C1.8 if used in a wall system in accordance with sub-clauses (a) & (b).

Comments: *Compliance is readily achievable.*

Confirmation to be provided with the application for Construction Certificate for any proposed fire rated lightweight construction (e.g. fire rated plasterboard walls).

9. Clause C1.9 – Non-combustible Materials

The materials as set out in sub-clauses (a) to (e) of this clause, though combustible or containing combustible fibres, may be used wherever a non-combustible material is required.

Comments: *Compliance is readily achievable. Where it is proposed to use a combustible material complying with the concessions under this clause, Test Reports will need to be provided demonstrating that the material complies with the requirements set out in the respective subclauses.*

10. Clause C1.10 – Fire Hazard Properties

The fire hazard properties of the following linings, materials and assemblies in a Class 2 to 9 building must comply with Specification C1.10 and the additional requirements of the NSW Provisions of the Code.

Comments: *Compliance is readily achievable. A Design statement is to be provided with the application for a Construction Certificate. Details for compliance will also need to be sought at the Occupation Certificate stage.*

COMPARTMENTATION AND SEPARATION

11. Clause C2.2 – General Floor Area and Volume Limitations

This clause sets out the parameters for the area and volume of Class 9 buildings as required by sub-clauses (a), (b) & (c).

***Comments**: The proposed new building works do not exceed the floor area limitations for Type C Construction, being a maximum of 3,000m² (the largest being 2,591m² as a combination of that front entry portion of ground floor and the whole of the first floor). The proposed fire compartment drawings are noted in the appendix in this report.*

12. Clause C2.5 – Class 9a & 9c Buildings

Class 9c buildings must comply with the provisions of sub-clauses (a) & (b) of this Part and the NSW Provisions of the Code.

***Comments**: The architectural documentation shows that the building is divided into 3 smoke compartments, each less than 500m² (noting the combination of the 236.5m² and 102.7m² from first floor does not exceed 500m²).*

The smoke walls and smoke doors will be required to be constructed in accordance with BCA Specifications C2.5 & C3.4 respectively.

The required smoke walls (if lightweight material) are to be lined with non-combustible lining not less than 13mm standard grade plasterboard. Note that the walls are to:

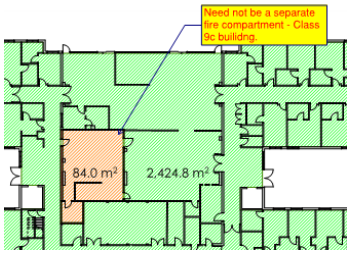
- *not incorporate glass except safety glass in accordance with AS1288; and*
- *be fitted with self-closing smoke doors with smoke seals; and*
- *have all service penetrations protected at the junction of the smoke-proof wall to stop the passage of smoke; and*
- *Incorporate smoke dampers where air-handling ducts penetrate the wall – unless the duct forms part of a smoke hazard management system.*

The bulkhead above all smoke doors (between the top of door and underside of an imperforate ceiling) is to be not less than 400mm.

All internal walls between and bounding SOUs and bounding a pubic corridor must:

- *If provided with cavity insulation, have only non-combustible insulation;*
- *Extend to the underside of-*
    - *i. The floor next above; or*
    - *ii. A ceiling lined with standard grade plasterboard not less than 13 mm thick or an equivalent non-combustible material; or*
    - *iii. A non-combustible roof covering; an*
- *Not incorporate any penetrations above door head height unless the penetrations are adequately stopped to prevent the free passage of smoke.*

***Note 1**: the kitchen area is contained within a smoke compartment that does not include any sleeping areas. It is not required to be fire separated (i.e. that is a requirement pertaining to Class 9a buildings), and accordingly needs no additional specific smoke compartmentation.*



***Note 2**: the following areas will require smoke separation is contained within a resident sleeping area:*

- *laundry if is includes gas fired driers and the like;*
- *storage rooms used predominantly for admin records.*

13. Clause C2.7 – Separation by Fire Walls

C2.7 sets out the requirements for the construction of fire walls that are to provide the separation of buildings and fire compartments as indicated in sub-clauses (b) & (c).

Comments*: Compliance is readily achievable. Fire walls are proposed at the Ground level main entry foyer to ensure maximum fire compartment sizes are not exceeded. The fire walls are to achieve an FRL of 90/90/90. And are to extend to the outer face of the external walls.*

14. Clause C2.12 – Separation of Equipment

The clause requires equipment as listed below to be separated from the remainder of the building with construction that achieves an FRL of 120/120/120 and doorways being self-closing -/120/30 fire doors:

- *Lift motors and lift control panels; or*
- *Emergency generators used to sustain emergency equipment operating in the emergency mode; or*
- *Central smoke control plant; or*
- *Boilers; or*
- *A battery or batteries installed in the building that have a voltage exceeding 12 volts and a capacity exceeding 200Kwh.*

Comments: *The specifications of any batteries proposed to be housed within the Comms Room are required to be provided at the Construction Certificate stage. If the room houses a battery exceeding 12 volts with a capacity greater than 200Kwh, the equipment is required to be separated by construction that achieves an FRL of 120/120/120. Any doorway to the enclosure is to be a self-closing -/120/30 fire door.*

15. Clause C2.13 – Electricity Supply System

The following areas are to be fire separated from the remainder of the building by construction that achieves an FRL of 120/120/120:

- *An electricity substation located within a building.*
- *A main switchboard which sustains emergency equipment operating in the emergency mode.*
- *If electrical conductors located within a building supply a substation (located within the building) which also supplies the main switchboard; or they supply the main switchboard itself must be fire separated by construction that achieves 120/120/120 or alternatively:*
  - *Have a classification in accordance with AS/NZS 3013 of not less than –*
  - *If located in a position that could be straight to damage by motor vehicles – WS53W; or*
  - *Otherwise – WS52W.*
- *Where emergency equipment is required in a building, all switchboards in the electrical installation, which sustain the electricity supply to the emergency equipment switchgear is separated from the non-emergency equipment switchgear by metal partitions designed to minimise the spread of fault from the non-emergency equipment switchgear, eg:*
  - *Fire hydrant booster pumps.*
  - *Pumps for automatic sprinkler systems, water spray, chemical fluid suppression systems or the like.*
  - *Pumps for fire hose reels where such pumps and fire hose reels form the sole means of fire protection in the building.*
  - *Air handling systems designed to exhaust and control the spread of fire and smoke.*
  - *Emergency lifts.*
  - *Control and indicating equipment.*
  - *Sound systems and intercom systems for emergency purposes*

Comments: *Compliance readily achievable. Details demonstrating specific compliance in relation to any required fire hydrant pumps will need to be provided at the Construction Certificate stage.*

PROTECTION OF OPENINGS

16. Clause C3.2 – Protection of Openings In External Walls

Openings in an external wall that is required to have an FRL must –

(a) If the distance between the opening and the fire-source feature to which it is exposed is less than –
- 3 m from a side or rear boundary of the allotment; or
- 6 m from the far boundary of a road, river, lake or the like adjoining the allotment, if not located in a storey at or near ground level; or
- 6 m from another building on the allotment that is not a Class 10, be protected in accordance with C3.4 and if wall-wetting sprinklers are used, they are located externally; and

(b) If the required to be protected under (a), not occupy more than 1/3 of the area of the external wall of the storey in which it is located unless they are in a Class 9b building used as an open spectator stand.

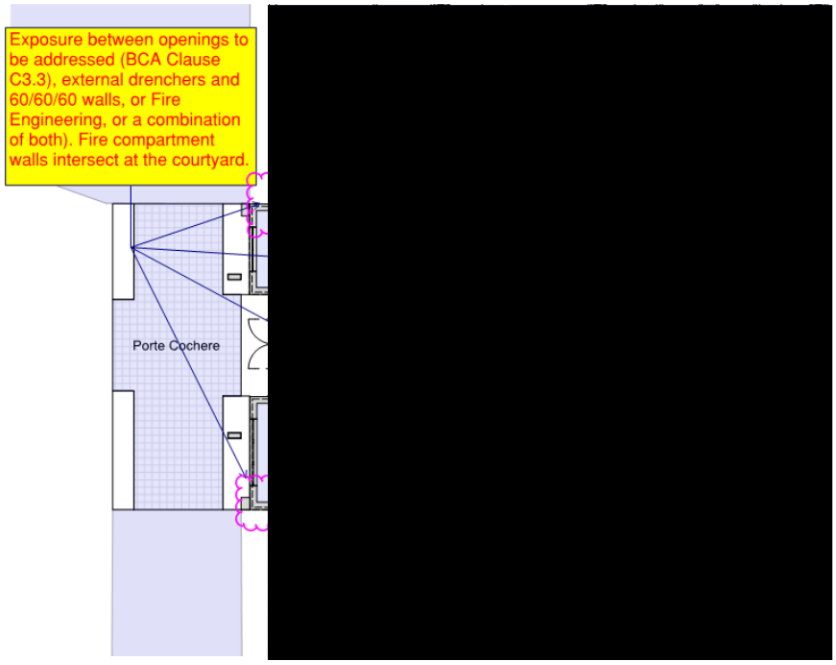
***Comments**: Compliance is readily achievable.*

17. Clause C3.3 – Separation of External Walls & Associated Openings in Different Fire Compartments

The distance between parts of external walls and any openings within them in different fire compartments separated by a fire wall must be not less than that set out in Table C3.3 unless-

+ Those parts of each wall have an FRL not less than 60/60/60; and
+ Any openings protected in accordance with C3.4.

***Comments:** Compliance is readily achievable. Protection is required for 4m lengths along each of the opposing walls, and is available via methods such as external wall wetting drenchers on fixed glazing, automatic fire shutters. Given there is a need for some windows to provide natural ventilation, it is understood that a Performance Based solution may be pursued via Fire Engineering.*



18. Clause C3.4 – Acceptable Methods of Protection

Where protection is required, doorways, windows and other openings must be protected as follows:

+ Doorways –
  (A) Internal or external wall- wetting sprinklers as appropriate used with doors that are self-closing or automatic closing; or
  (B) -/60/30 fire doors that are self-closing or automatic closing.
+ Windows –

(A) Internal or external wall-wetting sprinklers as appropriate used with windows that are automatic closing or permanently fixed in the closed position; or
(B) -/60/- automatic closing fire shutters.

+ Other openings –
(A) Excluding voids – internal or external wall-wetting sprinklers, as appropriate; or
(B) Construction having FRL not less than -/60/-.

Comments: *See above.*

19. Clause C3.8 – Openings in Fire-isolated Exits

This clause specifies that the doorways that open into fire-isolated exits must be protected by -/60/30 fire doors that are self closing or automatic. This clause also details the deemed-to-satisfy methods of activation.

A window in the external walls of fire-isolated exits must be protected in accordance with C3.4 if it is within 6m of and exposed to a window or other opening in a wall of the same building other than in the same fire-isolated enclosure.

Comments: *Not applicable. The development does not contain any fire isolated exits, rather it is the subject of D1.8.*

20. Clause C3.9 – Service Penetrations in Fire-isolated Exits

Fire isolated exits must not be penetrated by any services other than electrical wiring as permitted by D2.7(e), ducting associated with a pressurisation system or water supply pipes for fire services.

Comments*: Not applicable. The development does not contain any fire isolated exits.*

21. Clause C3.12 – Openings in Floors & Ceilings for Services

This clause applies to the floors and ceilings in buildings of Types A, B & C Construction and sets out the methods required to limit the spread of fire though openings in these building elements, required to resist the spread of fire.

Comments: *Compliance is readily achievable.*

22. Clause C3.15 – Openings for Service Installations

The clause details the requirements for protection of service openings in building elements that have an FRL, to prevent the spread of fire. C3.15 only applies only to an element required to have an FRL with respect to integrity or insulation.

Specification C3.15 prescribes materials and methods of installation for services that penetrate walls, floors and ceilings required to have an FRL.

Comments*: Compliance is readily achievable.*

SECTION C - SPECIFICATIONS

23. Specification C1.1 – Fire Resisting Construction

The new building works are required to comply with the requirements detailed under Table 3 of Specification C1.1 for Type C Construction (see appendix 1).

Comments*: Compliance is readily achievable for the requirements of Type C Construction, namely for the floor between storeys and fire walls. The building is not exposed to a fire source feature therefore Table 5 of Spec C1.1 does not require building elements achieve an FRL. See appendix at the end of this report.*

24. Specification C2.5 – Smoke-Proof Walls in Health-Care and Aged Care Buildings

This specification sets out requirements for the construction of smoke-proof walls in Class 9a health care buildings Class 9c aged care buildings.

Comments*: Compliance is readily achievable. The Construction Certificate architectural drawings are to detail walls extending into the eave void* ***or*** *to the underside of a flush plasterboard ceiling lined with 13mm standard grade plasterboard.*

25. Specification C3.4 – Fire Doors, Smoke Doors, Fire Windows and Shutters

This Specification sets out the requirements for the construction of fire doors, smoke doors, fire windows and Fire Shutters.

Comments: *Compliance is readily achievable. Specific attention is required to ensure that the fire doors and smoke doors swing in the direction of egress, or otherwise in both directions achieve a smoke seal that prevents the passage of smoke from one side of the door to the other.*

SECTION D – ACCESS & EGRESS

PROVISION FOR ESCAPE

26. Clause D1.2 – Number of Exits Required

This clause requires the provision of sufficient exits to enable safe egress in case of an emergency. D1.2 provides that all buildings must have at least one exit from each storey and sets out circumstances in which more than one exit may be required (eg 2 exits minimum from a class 9c building that contains sleeping areas).

***Comments**: The number of exits satisfies the minimum requirements of this clause.*

27. Clause D1.3 – When Fire-isolated Stairways & Ramps are Required

This clause indicates when fire isolated stairways and ramps are required to enable safe egress from a building in the case of a fire, setting out the limits to which non-fire isolated exits can be used in Class 2, 3, 5, 6, 7, 8 and 9 buildings, with the exception of Class 9c aged care buildings. Every exit stair in a class 9c building is required to be enclosed within a fire isolated shaft.

***Comments**: Complies. The designated exits from the First floor of the building will be designed as External Stairs in Lieu of a Fire Isolated Exit (See D1.8 below).*

28. Clause D1.4 – Exit Travel Distances

This clause specifies the permitted travel distances allowable from Class 2 to Class 9 buildings. Sub-clauses (a) to (f) specify the maximum distances to be taken into account for the various uses in each Class of building.

For the class 9c and class 7a parts of the building, no point on the floor must be more than 20m to an exit, or a point from which travel in different directions to 2 exits is available, in which case the maximum distance to one of those exits must not exceed 40m.

***Comments:** Performance Based Solution is required. The distance from the terrace on the First Floor to the closest exit exceeds the maximum 40m (43m).*

Architectural documentation shows that compliance is achieved.

29. Clause D1.5 – Distances Between Alternative Exits

Exits required as alternative exits must be –

+ distributed as uniformly as practicable within or around the storey served and in positions where unobstructed access to at least 2 exits is readily available from all points on the floor including lift lobby areas; and
  (i) not less than 9m apart; and
  (ii) not more than –
    - in a Class 2 or 3 building - 45m apart; or
    - In a Class 9a health-care building, if such required exit serves a patient care area – 45m apart; or
    - In all other cases *(i.e. the class 9c in this instance)* – 60m apart.
+ Located so that the alternative paths of travel do not converge such that they become less than 6m apart.

***Comments**: The distance between alternative exits comply with the requirements of this clause.*

30. Clause D1.6 – Dimensions of Exits

This clause specifies the minimum dimensions such as height and width of paths of travel from Class 2 to 9 buildings. It also specifies the minimum dimensions of doorways from the various compartments and the width of exit doors from buildings depending on the uses and functions carried out within them.

+ *The minimum unobstructed width of all public corridors in a class 9c building is 1500mm (including staff areas).*
+ *Doors to all residential rooms are to be a minimum of 1070mm clear unobstructed width (as shown on plans).*
+ *Minimum unobstructed clear width of all other doors in resident use areas is to be 870mm (as shown on plans).*

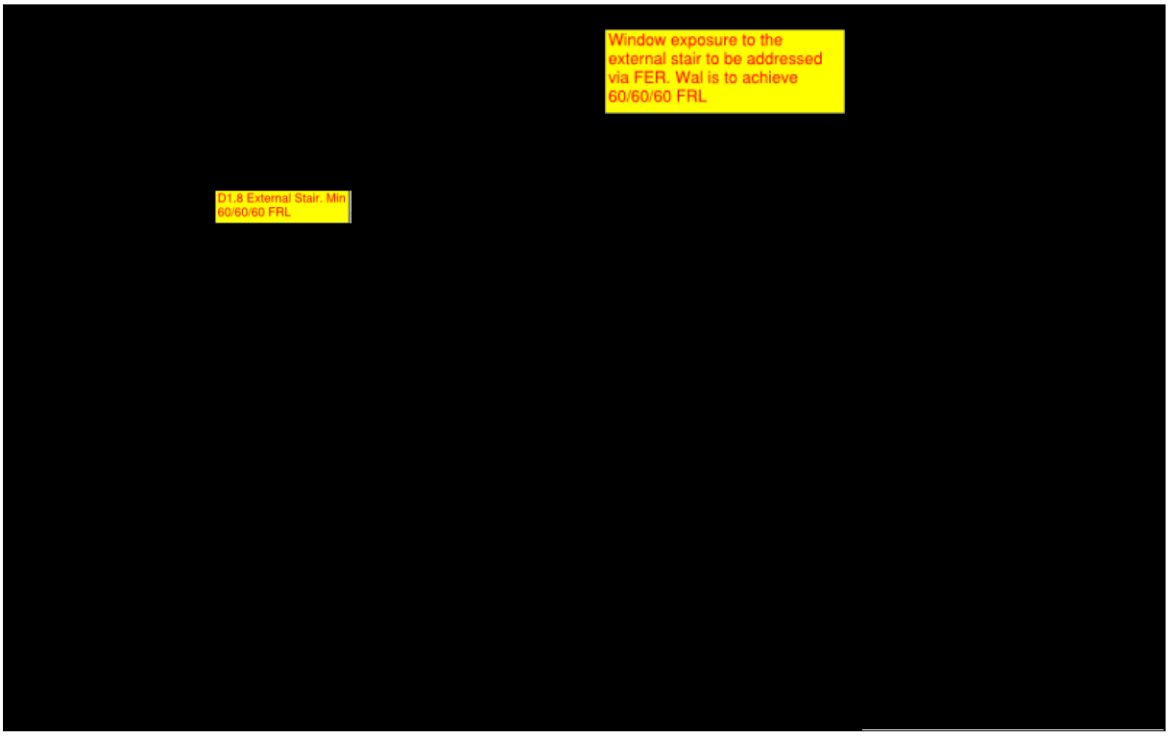
Note: The Delivery Room is not considered to be a corridor.

***Comments**: Architectural documentation shows that compliance is generally achieved, noting that all corridors are exceeding the minimum 1500mm widths and 1800m widths and SOU entry doors.*

31. Clause D1.8 – External Stair in lieu of a Fire Isolated Exit

An external stairway or ramp may serve as a required exit in lieu of a fire-isolated exit (serving a storey below an effective height of 25m) provided that it is constructed in accordance with the requirements of sub-clauses (a) to (d) with respect to being provided with protection from the building by way of distance separation or alternatively by fire rated construction, or a mixture of both.

Comments: *Compliance is readily achievable, noting that the solid walls are providing protection for the stair where it is exposed to and closer to the building than 6m. The walls and roof to the stair are to be minimum FRL of 60/60/60, however if loadbearing it is to be 120/120/120. See Appendix later in this report.*



32. Clause D1.10 – Discharge from Exits

This clause requires that an exit must not be blocked at the point of discharge. Barriers such as bollards must be installed to prevent vehicles from blocking the discharge from exits.

This clause also provides the methods of construction, location and separation, at exit discharge points for all building Classes.

Comments: *Compliance is readily achievable provided that any gates in the path of travel open automatically in fire mode.*

33. BCA Clause D1.11 – Horizontal Exits

Horizontal Exits must not be counted as required exits between sole-occupancy units or in an early childhood centre, primary or secondary school. Horizontal Exits may be counted as required exits in Class 9a-health care building or a Class 9c aged care building if the path of travel from a fire compartment leads by one or more Horizontal Exits directly into another fire compartment which has at least one required exit which is not a Horizontal exit.

In addition, Horizontal Exits must have a clear area on the side of the fire wall to which occupants are evacuating, to accommodate the total number of persons serviced by the Horizontal Exit of not less than 2.5m^2 per patient.

Comments: *Not applicable. No horizontal exits are proposed.*

34. BCA Clause D1.12 – Non-required stairs, ramps or escalators

In an escalator, moving walkway, or non-required, non-fire isolated stairway or pedestrian ramp must not be used between storeys in a patient care area in a class 9a building or a resident use area in a class 9c building.

Comments: *Not applicable.*

CONSTRUCTION OF EXITS

35. Clause D2.2 – Fire-isolated Stairways & Ramps

A stairway or ramp, including landings that are required to be within a fire-resisting shaft must be constructed of non-combustible materials to protect the structural integrity of the shaft.

Comments: *Not applicable to this building.*

36. Clause D2.4 – Separation of Rising & Descending Stair Flights

If a stairway serving as an exit is required to be fire-isolated there must be no direct connection between the rising and descending flights of stairs at the level from which egress is obtained. This clause also prescribes the level of construction required.

Comments*: Not applicable to this building.*

37. Clause D2.7 – Installations in Exits & Paths of Travel

This clause restricts the installation of certain services in fire-isolated exits, non-fire-isolated exits and certain paths of travel to exits. It prescribes which services shall not be installed as well as the circumstances in which certain services may be installed in fire-isolated and non-fire-isolated exits.

If installed in a path of travel to an exit, Electrical distribution boards, Communication cupboards and the like containing motors, etc are to be enclosed with non-combustible construction, and doors are to be provided with smoke seals to the perimeter

Comments*: Compliance is readily achievable. It is understood that the electrical distribution boards and comms cupboards will be provided with non-combustible lining smoke seals to doors.*

38. Clause D2.9 – Width of Stairways

A required stairway or ramp that exceeds 2m in width is counted as having a width of only 2m unless it is divided by a handrail, balustrade or other barrier continuous between landings and each division has a width of not more than 2m.

Comments*: Compliance is readily achievable.*

39. Clause D2.13 – Goings & Risers

This clause sets out the detailed requirements for the construction and geometry of the goings and risers in required stairways. These details are set out in sub-clauses (a) to (c) and Table D2.13 Riser and Going Dimensions.

Comments*: Compliance is readily achievable.*

40. Clause D2.14 – Landings

The dimensions and gradients of landings in stairways are set out in this clause; the configuration will depend on the proposed use of a building. Sub-clause (b) details the layout for a Class 9a building to allow for the movement of a stretcher.

Comments*: Compliance is readily achievable.*

41. Clause D2.15 – Thresholds

The threshold of a doorway must not incorporate a step or ramp at any point closer to the doorway than the width of the door leaf unless –

- In patient care areas in a class 9a health-care building, the door sill is not more than 25mm above the finished floor level to which the doorway opens: or
- In a Class 9c aged care building, a ramp is provided with a maximum gradient of 1;8 for a maximum height of 25mm over the threshold.

Comments*: Compliance is readily achievable. Special attention is required to ensure that the exit discharging from the south east sitting room does not include a step in the threshold where it meets the intervening ramp.*

42. Clause D2.16 – Balustrades or Other Barriers

This clause details where balustrades are required to be provided and sets out in specific detail the construction requirements.

Typically, the following will apply to a class 9c building:

- Balustrades are required where the fall to the level below is more than 1m in height. The minimum height of a balustrade is 1m above the floor of the landing, walkway or the like; and 865mm above the floor of a stairway or a ramp.
- For a fall of more than 4m to the surface level below, a window sill must be a minimum of 865mm in height above the height of the floor surface.
- Where the floor is more than 4m above the surface beneath the balustrade any horizontal or near horizontal members between 150mm and 760mm above the floor must not could facilitate climbing.
- Balustrades must be constructed so as to not permit a sphere of 125mm diameter to pass through. The exception to this is within fire isolated exits within the building, or within a class 7 or 8 building, where the rails can be positioned a maximum of 460mm apart, so long as a bottom rail is located so a sphere of 150mm cannot pass through the opening between the nosing of the stair treads and the rail or between the floor of the landing, balcony or the like.

***Comments**: Compliance is readily achievable.*

43. Clause D2.17 – Handrails

This Clause sets out the requirements regarding the location, spacing and extent of handrails required to be installed in buildings. Handrails are required to both sides of all stairs (with the exception of handrails for fire isolated exit stairs).

A class 9c building must be provided along each side of every passageway or corridor in a resident use area and must be:

- Fixed not less than 50mm clear of the wall; and
- Where practicable, continuous for their full length.

***Comments**: Handrails are to be documented on the Construction Certificate architectural drawings for the internal public corridors used by residents unless a Performance Solution is developed to address the departure, and also for the external stair discharging the south-western sitting space. Handrails are required both sides of stairs and ramps.*

44. Clause D2.19 – Doorways & Doors

This clause applies to all doorways and refers to the types of doors that cannot be used in buildings of prescribed uses, the use of power operated doors and the force required to operate sliding doors.

In a class 9c building within resident use areas sliding doors are not permitted.

***Comments**: Compliance is readily achievable. If any of the exit doors are proposed to be power operated, they must automatically open upon activation of a smoke detector or sprinkler.*

45. Clause D2.20 – Swinging Doors

A swinging door *in a required exit* or *forming part of a required exit* must swing in the direction of egress and must not otherwise impede egress. In addition, the door must not encroach at any part of its swing by more than 500mm on the required width of the exit (with the exception of airlocks and sanitary compartments, and with the exception of buildings or building parts that are less than 200m^2).

***Comments**: Compliance is achieved for the doors leading to exits. See C3.4 above for smoke and fire doors compliance.*

46. Clause D2.21 – Operation of Latch

A door in a required exit or forming part of a required exit and in a path of travel to a required exit must be readily openable without a key from the side that faces a person seeking egress, by a single downward action or pushing action on a single device which is located between 900mm & 1.1m from the floor. This clause prohibits the use of devices such as deadlocks and knobs (rather, lever latches are required). D2.21 also sets out exceptions in relation to buildings where special security arrangements are required in relation to the uses carried out.

Where fitted with a fail-safe device which automatically unlocks the door upon the activation of a sprinkler system or detection system, the above need not apply.

***Comments**: Compliance is readily achievable.*

47. Clause D2.22 – Re-entry from Fire-isolated exits

Doors of a fire-isolated exit must not be locked from the inside in a Class 9a health-care building, a Class 9c aged care building and in a fire-isolated exit serving a storey above 25m effective height, throughout the exit.

This clause details the exceptions to the above requirements if the doors are fitted with an automatic failsafe device that automatically unlocks the door upon the activation of a fire alarm as follows:

+ On at least every fourth storey, the doors are not able to be locked and a sign is fixed on such doors stating that re-entry is available; or
+ An intercommunication system, or an audible or visual alarm system, operated from within the enclosure is provided near the doors and a sign is fixed adjacent to such doors explaining its purpose and method of operation.

Comments: *Not applicable to this building. The first floor exits are designed as external stairs.*

48. Clause D2.23 – Signs on Doors

This clause requires the use of signs to alert persons that the operation of smoke doors and fire doors and doors discharging form fire isolated exits, must not be impaired and must be installed where they can be readily seen.

Comments: *Compliance is readily achievable. The existing access door within the ceiling space allowing access between the smoke compartments are also required to be provided with signage as detailed below*.

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

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

ACCESS FOR PEOPLE WITH A DISABILITY

49. Clause D3.1 – General Building Access Requirements.

The extent of access required depends on the classification of the building. Buildings and parts of buildings must be accessible as set out in Table D3.1 unless exempted by Clause D3.4.

For a *Class 9c building*, access is required to all common areas as follows:

+ From the pedestrian entrance required to be accessible, to at least one floor containing SOUs and to the entrance doorway of each SO located on that level;
+ To and within not less than 1 of each type of room or space for use in common by the residents, including a cooking facility, sauna, gymnasium, swimming pool, common laundry, games room, TV room, individual shop, dining room, public viewing area, ticket purchasing service, lunch room, lounge room and the like.
+ Where a ramp complying with AS1428.1 or a passenger lift is installed to the entrance doorway of each SOU; and to and within rooms or spaces for use in common by the residents, located on the levels serviced by the lift or ramp.

The building contains 20 resident rooms - 2 accessible rooms are required.

Comments*: Compliance is readily achievable. The architectural drawings show four (4) rooms per floor as being designed in accordance with the special requirements of AS1428.1-2009. However, the ensuites in those rooms are not proposed to be designed in accordance with AS1428.1-2009.*

50. Clause D3.2 – General Building Access Requirements for People with Disabilities

Accessways are to be provided to accessible buildings from the main points of pedestrian entry at the allotment boundary and any accessible car parking space or accessible associated buildings connected by a pedestrian link.

Access must be provided through the principal pedestrian entrance and through not less than 50% of all pedestrian entrances (including the principal pedestrian entry).

In addition, as the building is greater than 500m^2, the non-accessible entrance must not be greater than 50m from an accessible entrance.

The minimum width of an accessible doorway must have a clear opening width of not less than 850mm in accordance with AS1428.1.

***Comments**: It is understood that an access consultant will be engaged to undertake an assessment in this regard.*

51. Clause D3.3 – Parts of the Building to be Accessible

This part specifies the requirements for accessways within buildings which must be accessible.

***Comments:** Compliance is readily achievable.*

All doorways shall have a minimum luminance contrast of 30% provided between: door leaf and door jamb; or door leaf and adjacent wall; or architrave and wall; or door leaf and architrave; or door jamb and adjacent wall.

The minimum width of the area of luminance contrast shall be 50mm.

Circulation to the doorways in resident use areas that are required to be accessible comply with Section 13 of AS1428.1-2009. Details to be included in the Construction Certificate documentation.

52. Clause D3.4 – Exemptions

This part provides exemptions to the Deemed-to-Satisfy provisions for access by people with a disability. This part provides details on buildings or parts of buildings not required to be accessible under the BCA where providing access would be inappropriate because of the nature of the area or the tasks undertaken.

***Comments**: This concession can be readily applied to those parts of the building such as the kitchen and the laundry.*

53. Clause D3.5 – Access Carparking

This part provides details of the number of accessible carparking spaces required in a carpark depending on the classification of the building.

***Comments**: Compliance is readily achievable. Details to be provided to the proposed site plan showing locations. A shared space and bollard are to be located adjacent to the nominated accessible space.*

54. Clause D3.6 – Signage

Braille and tactile signage must be provided to required accessible sanitary facilities, spaces with hearing augmentation, ambulant sanitary facilities, pedestrian entrances that are not accessible, and to each door required by Clause E4.5 to be provided with an exit sign. The latter is to state "EXIT and LEVEL…."

***Comments**: Compliance is readily achievable.*

55. Clause D3.7 – Hearing Augmentation

This part provides requirements for provision of hearing augmentation in accessible buildings, i.e. to be provided where an in-built amplification system (other than one used for emergencies), is installed:

- In a room in a class 9b building;
- In an auditorium, conference room, meeting room, or room for judiciary purposes.
- At any ticket office, teller's booth, reception area or the like where the public is screened from the service provider.

***Comments**: Not required for this class 9c building.*

56. Clause D3.8 – Tactile Indicators

This clause provides for the installation of tactile indicators in buildings required to be accessible and must be provided to warn people who are blind or have a vision impairment that they are approaching a stairway, escalator, passenger conveyor, ramp, overhead obstruction or an accessway meeting a vehicular way, except for areas exempted by D3.4.

Comments: Stairways and ramps serving the Class 9c building will not need to be provided with Tactile Ground Surface Indicators in accordance with AS1428.4.1 includes a concession for Class 9a and 9c buildings. Instead, handrails to stairways and ramps are to have raised tactile warning, in the form of a domed button 4-5mm in height and 10-12mm in diameter, and shall be provided on the top of each handrail, 150 (+/-10mm, from the end of the handrail. In this instance the drawings show that TGSI's are proposed and are therefore to be removed.

However, where the main entry and Porte cochere are not separated by a kerb / kerb ramp, there will need to be Tactile Ground Surface Indicators provided to the area.

57. Clause D3.12 – Glazing on an Accessway

This part requires the provision of a contrasting strip, chair rail, handrail or transom across all frameless or fully glazed doorways and surrounding glazing capable of being mistaken for an opening.

Comments: Compliance is readily achievable.

SECTION E – SERVICES AND EQUIPMENT

Part E1 FIRE FIGHTING EQUIPEMENT

58. Clause E1.3 – Fire hydrants

A fire hydrant system must be provided to serve a building having a total floor area greater than 500m² and where a fire brigade is available to attend a building fire, installed in accordance with the provisions of AS2419.

The hydrant booster assembly and any external fire hydrants are required to be located greater than 10 metres from an external wall of the building, or affixed to the external wall and protected by a radiant heat shield that has an FRL of 90/90/90 located 2 metres either side and 3 metres above the outlets.

Any gas meter must be located a minimum of 10-metres from the hydrant booster outlet.

A required fire services pump room is required to be accessible directly from the road or open space, or from a door opening from a fire isolated exit.

Comments: *The building has a floor area greater than 500m² therefore fire hydrant coverage must be achieved in accordance with AS2419.1-2005. Design certification will be provided with the CC documentation verifying compliance in this regard.*

59. Clause E1.4 – Fire hose reels

E1.4 does not apply to a Class 9c aged care building or classrooms and associated corridors in a primary or secondary school.

A fire hose reel system must be provided to serve a building where one or more internal fire hydrants are installed or in a building with a floor area greater than 500m².

This clause requires that the fire hose reel system must be installed in accordance with AS 2441 and sets out the detail for location and uses of fire hose reels.

Comments*: Not applicable for a Class 9c building.*

60. Clause E1.5 – Sprinklers

A sprinkler system must be installed in a building or part of a building when required by Table E1.5 and comply with Specification E1.5.

Table E1.5 sets out which types of building occupancies and Classes which are required to have sprinkler systems installed in them.

Specification E1.5 sets out requirements for the design and installation of sprinkler systems.

Comments*: Compliance is readily achievable, sprinkler coverage throughout is required. The standard of performance is to be AS2118.4-2012 or AS2118.1-2017. Design certification will be provided with the CC documentation verifying compliance in this regard.*

61. Clause E1.6 – Portable fire extinguishers

Portable fire extinguishers must be provided as listed in Table E1.6 and must be selected, located and distributed in accordance with Sections 1, 2, 3 and 4 of AS 2444.

Comments*: Compliance is readily achievable. A combination of H_20 and $C0_2$ extinguishers are required within each smoke compartment. Design certification will be provided with the CC documentation verifying compliance in this regard.*

PART E2 SMOKE HAZARD MANAGEMENT

62. Clause E2.2 – General Requirements

Class 2 to 9 buildings must comply with the provisions of this Clause to remove smoke during a fire, to control the operation of air handling systems and to prevent the spread of smoke between compartments.

Buildings must comply with the provisions of Table E2.2a, as applicable to Class 2 to 9 buildings and Table E2.2b as applicable to Class 6 and 9b buildings. It deals with the design and construction of air handling systems that are part of a smoke hazard management system and air handling system that are not part of a smoke hazard management system.

Comments*: Compliance is readily achievable. Smoke Hazard Management provisions are to be addressed in accordance with BCA Spec E2.2, the building is required to be provided with the following:*

- *An Automatic Smoke Detection and Alarm System is to be provided throughout. The design and construction is to ensure that no detectors are located within 900mm of an air supply outlet or 400mm from a ceiling fan.*
- *Automatic Shutdown of any air handling system upon activation of the Automatic Smoke Detection System and Sprinkler System.*

Remote automatic indication of each zone must be given in each smoke compartment by means of one of the following:

- *Mimic panels with an illuminated alpha numeric display;* ***or***
- *Annunciator panels with alpha numeric display*

Manual call points are required to be installed in paths of travel so that no point on the floor is more than 30m from a manual call point.

A design certificate verifying compliance with respect to AS1670.1-2018 will be provided with the CC submission in this instance.

PART E3 LIFT INSTALLATIONS

63. Clause E3.2 – Stretcher Lift

A stretcher lift is required to serve each storey, i.e. have a clear space of not less than 600mm wide x 2000mm long x 1400mm high.

Comments*: Applicable to this building. See E3.8 below.*

64. Clause E3.3 – Warning Against use of Lifts in Fire

Warning signs required be provided must be displayed where they can be readily seen and must comply with the details and dimensions of Figure 3.3.

Comments*: Compliance is readily achievable.*

65. Clause E3.6 – Passenger Lifts

In an accessible building, every passenger lift must be one of the types identified in Table E3.6a, have accessible features in accordance with Table E3.6b and not rely on a constant pressure device for its operation if the lift car is fully enclosed.

Comments*: Compliance is readily achievable. See also E3.2 and E3.8.*

66. Clause E3.7 – Fire Service Controls

In passenger lifts designed in accordance with AS 1735 Parts 1 and 2, all lift cars serving any storey above an effective height of 12m must be provided with fire service controls.

Comments: *Not applicable to this development. The building is less than 12m in effective height.*

67. Clause E3.8 – Aged Care Buildings

Where residents in an aged care building are on levels which do not have direct access to a road or open space a building must be provided with either at least **one lift to accommodate a stretcher** in accordance with E3.2(b) or a ramp in accordance with AS1428.1 and the ramp must discharge to a level providing direct access to a road or open space.

Comments: *Compliance is readily achievable.*

68. Clause E3.9 – Fire Service recall operation switch

Each group of lifts must be provided with one fire service control switch (required by Clause E3.7 above) that activates the fire service recall operation. This clause details the switch, the labelling, the key and operation procedures for a fire service recall operation.

Comments: *Not applicable to this building. The building is less than 12m in effective height.*

69. Clause E3.10 – Lift car fire service drive control switch

The lift car fire service drive control switch required by E3.7 must be activated from within the lift car. This clause details the switch, the initiation, the labelling and operation for the fire service drive control switch.

Comments: *Not applicable to this building.*

EMERGENY LIGHTING, EXIT SIGNS AND WARNING SYSTEMS

70. Clause E4.2 – Emergency Lighting Requirements

This clause details when emergency lighting must be installed in Class 2 to 9 buildings. The requirements for buildings and parts of buildings are detailed in sub-clauses (a) to (i) and each sub-clause must be considered as more than one may apply to any single building.

Comments: *A design statement verifying compliance will be provided with the CC submission.*

71. Clause E4.5, E4.6 – Exit Signs

An exit sign must be clearly visible to persons approaching the exit and must be installed on, above or adjacent to each door providing egress form a building. Sub-clauses (a) to (d) set out the situations where exit signs are required to be installed.

Comments*: A design statement verifying compliance will be provided with the CC submission.*

SECTION F – HEALTH & AMENITY

PART F1 DAMP AND WEATHERPROOFING.

72. Performance Requirement FP1.4

A roof and external wall (including openings around windows and doors) must prevent the penetration of water that could cause

a) Unhealthy or dangerous conditions, or loss of amenity for occupants; and

b) Undue dampness or deterioration of building elements.

Note 1: There are no Deemed-to-Satisfy provisions for this Performance Requirement in respect to External Walls.

Note 2: Refer to Clause F1.5 for roof coverings.

Comments: A *Performance Solution will be provided with the Construction Certificate application demonstrating compliance with:*

- *The Verification Methods in Clause FV1; or*
- *Other verification methods deemed acceptable by the Certifier; or*
- *Evidence to support that the use of the material or product, form of construction or design meets the Performance Requirements or the DTS provisions, such as a Certificate of Conformity (e.g. CodeMark); or*
- *By way of Expert Judgement*.

73. Clause F1.1 – Stormwater drainage

Stormwater drainage must comply with AS/NZ 3500.3.

Comments: *A design statement verifying compliance will be provided with the CC submission.*

74. Clause F1.4 – External above ground membranes

Waterproofing membranes for external above ground use must comply with AS4654 Parts 1 and 2.

Comments: *Compliance is readily achievable.*

75. Clause F1.5 (Roof coverings): A roof must be covered with

- *Concrete roof tiles complying with AS 2049 and fixed as per AS 2050.*
- *Cellulose cement corrugated sheeting compiling with AS/NZS 2908.1 and installed as per AS/NZS 1562.2.*
- *Metal roof sheeting comply with AS 1562.1*
- *Plastic roof sheeting complying with AS/NZS 4256 parts 1, 2 3 and 5 and AS/NZS 1562.3.*
- *Asphalt shingles complying with ASTM D3018-90 class A.*

Comments*: Compliance is readily achievable. Design Certification to be provided at the Construction Certificate stage.*

76. Clause F1.6 (Sarking): Sarking must be installed to roof and walls for weatherproofing as per AS/NZS 4200.1 and 2 - 1994.

Comments**:** *Compliance is readily achievable. Design Certification to be provided at the Construction Certificate stage.*

77. Clause F1.7 – Waterproofing of Wet Areas

This clause requires that wet areas in Class 2 to 9 buildings must be waterproofed. It prescribes the standards to which the work must be carried out in sub-clauses (a) to (e) with emphasis in sub-clauses (c), (d) & (e) on the construction of rooms containing urinals and their installation.

Comments*: Compliance is readily achievable. Details will be provided with the application for Construction Certificate.*

78. Clause F1.10 – Damp-proofing of Floors on the Ground

If the floor of a room is laid on the ground or on fill, moisture from the ground must be prevented from reaching the upper surface of the floor and adjacent walls by the insertion of a vapour barrier in accordance with AS 2870. Damp-proofing need not be provided if weatherproofing is not required or the floor is the base of a stair, lift or similar shaft which is adequately drained by gravitation or mechanical means.

***Comments**: Compliance is readily achievable.*

79. Clause F2.1 – Facilities in Residential Buildings

Each building or group of buildings is required to provide –

+ A closet pan and wash basin for each resident or part thereof for whom private facilities are not provided; and
+ A shower for each 7 residence or part thereof for whom private facilities are not provided; and
+ **A suitable bath, fixed or mobile**

Additionally, the following facilities are to be provided –

+ One kitchen or other adequate facility for the preparation and cooking or reheating of food including a kitchen sink and washbasin; and
+ Laundry facilities for the cleaning and drying of linen and clothing or adequate facilities for holding and dispatch or treatment of soiled linen and clothing and the like and the receipt and storage of clean linen; and
+ One clinical hand wash basin for each 16 residents or part thereof.

***Comments**: Compliance is readily achievable as every resident room has an ensuite. It is assumed that a suitable fixed or mobile bath will be provided. The Construction Certificate plans show what is assumed to be two (2) clinical hand wash basins within the clinical treatment room.*

80. Clause F2.2 – Calculation of Number of Occupants & Facilities

This clause sets out the requirements for the calculation of the number of occupants and the number of sanitary facilities required to be installed in Class 2 to 9 buildings. The parameters for the calculation are set out in sub-clauses (a) to (d).

***Comments**: Note.*

81. Clause F2.3 – Facilities in Class 3 to 9 Buildings

This clause provides the requirements for sanitary facilities to be installed in Class 3, 5, 6, 7, 8 and 9 buildings in accordance with Table F2.3. The requirements and variations are set out in sub-clauses (a) to (h).

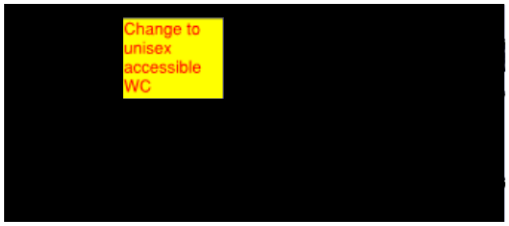
***Comments**: Compliance is generally achieved. Each resident room has access to ensuites, and additional facilities are provided within the common areas for visitors with staff having their own facilities.*

Note: The WC designated for staff use adjacent the Bulk Store is able to remain gender- on the basis that the accessible WC is able to cater for the expected population resulting in the staff WC being considered surplus.

82. Clause F2.4 – Accessible Sanitary Facilities

Accessible unisex sanitary compartments must be provided, in accordance with Table F2.4(a) and unisex showers must be provided in accordance with Table F2.4(b), in buildings or parts that are required to be accessible. The details for the provision of disable facilities and the standard, AS 1428.1, are set out in sub-clauses (a) to (i).

***Comments**: To be addressed in the design. Currently there isn't an accessible unisex sanitary facility shown for the common areas.*



83. Clause F2.5 – Construction of Sanitary Compartments

Other than in an early childhood centre sanitary compartments must have doors and partitions that separate adjacent compartments and extend –

+ from floor level to the ceiling in the case of a unisex facility; or

- a height of not less than 1.5m above the floor if primary school children are the principal users; or
- 1.8m above the floor in all other cases.

The door to a fully enclosed sanitary compartment must open outwards; or slide: or be readily removable from the outside of the sanitary compartment, unless there is a clear space of at least 1.2m, measured in accordance with Figure F2.5 between the closet pan within the sanitary compartment and the doorway.

***Comments**: Compliance is readily achievable.*

84. Clause F2.8 – Waste Management

In a Class 9a health-care building and a Class 9c aged care building facilities as set out in sub-clauses (a) & (b) must be provided to facilitate the emptying of containers of sewage and dirty water.

***Comments**: Compliance is readily achievable. At least one slop hopper or other device other than a WC for the safe handling and disposal of liquid and solid wastes with a flushing apparatus, tap and grating must be provided for every 60 beds or part thereof; and an appliance for the disinfection of pans or an adequate means to dispose of receptacles.*

PART F3 ROOM HEIGHTS

85. Clause F3.1 Height of Rooms and other spaces

The ceiling heights in Class 2 to 9 buildings must not be less than required in sub-clauses (a) to (f) of this clause. The ceiling minimum heights for a class 9c building are 2.4m for habitable spaces and public corridors.

***Comments**: Compliance is readily achievable. Architectural drawings show compliance in this regard.*

PART F4 LIGHT AND VENTILATION

86. Clause F4.1 – Provision of natural Light

Natural lighting must be provided in:

(i) Class 2 buildings and Class 4 parts of buildings – to all habitable rooms.

(ii) Class 3 buildings – all bedrooms and dormitories.

(iii) Class 9a and 9c buildings – all rooms used for sleeping purposes.

(iv) Class 9b buildings – to all general-purpose classrooms in primary or secondary schools and all playrooms and the like for the use of children in an early childhood centre.

***Comments:** Note. The requirements of this part apply to the building.*

87. Clause F4.2 - Methods & Extent of Natural Lighting

Sub-clauses (a), (b) & (c) set out the requirement that natural light must be provided by windows and the size and location of such windows. Natural light can also be provided by the use of rooflights in accordance with the provisions of this Clause.

Note: The Guide to the BCA, as part of the commentary under F4.2, contains an example for determining proportional combination of windows and rooflights. Figure F4.2(1) in the Guide to the BCA contains an elevation showing method of measuring distance of window from boundary. Figure F4.2(2) contains an illustration of window sill in aged care building.

In a class 9c aged care building, a required window must be transparent and located-

(i) In an external wall with the window sill not more than 1m above the floor level; and

(ii) Where the window faces an adjoining allotment, another building or another wall of the same building, it must not be less than a horizontal distance of 3m from the adjoining allotment, other building or wall

***Comments**: Compliance is readily achievable.*

88. Clause F4.4 – Artificial Lighting

Artificial lighting is required where it is necessary to minimise the hazard to occupants during an emergency evacuation. Sub-clauses (a), (b) & (c) sets out the places where artificial lighting is always required in all classes of buildings and the standard to which it must be installed.

***Comments**: A design statement verifying compliance will be provided with the CC submission.*

89. Clause F4.5 – Ventilation of Rooms

A habitable room, office, shop, factory, workroom, sanitary compartment, bathroom, shower room, laundry and any other room occupied by a person for any purpose must have natural ventilation complying with F4.6 or a mechanical or air-conditioning system complying with AS1668.2 and AS/NZS 3666.1.

Comments*: Compliance is readily achievable.*

90. Clause F4.6 – Natural Ventilation

Natural ventilation provided in accordance with F4.5(a) must consist of permanent openings, windows, doors or other devices which can be opened in accordance with sub-clauses (a), (b) & (c).

Comments*: Confirmation is required in relation to any windows that are fixed in a partially closed position (for security) to ensure the minimum 5% of the floor area of the room can be achieved.*

91. Clause F4.11 – Carparks

Every storey of a carpark except an open-deck carpark must have-

(a) A system of ventilation complying with AS 1668.2; or

(b) An adequate system of permanent natural ventilation.

Comments*: Not applicable. There is no Class 7a carpark associated with this development.*

92. Clause F4.12 – Kitchen Local Exhaust Ventilation

A commercial kitchen must be provided with a kitchen exhaust hood complying with AS AS/NZS 1668.1 and AS 1668.2 in accordance with the provisions of sub-clauses (a) and (b).

Comments*: Compliance is readily achievable. A design statement verifying compliance will be provided with the CC submission.*

PART F5 SOUND TRANSMISSION AND INSULATION

93. Clause F5.1 – Application of Part

The Deemed-to-Satisfy Provisions of this Part apply to Class 2 and 3 buildings and Class 9c aged care buildings.

94. Clause F5.2 – Determination of Airborne Sound Insulation Ratings

A form of construction required to have an airborne sound insulation rating must comply with sub-clauses (a) and (b). Sub-clause (b) calls up the provisions of Specification F5.2.

Comments: *Compliance is readily achievable. Details of the design solution adopted to achieve compliance are to be provided with the Construction Certificate.*

95. Clause F5.3 – Determination of Impact Sound Insulation Ratings

This part sets out the construction requirements for floors and walls in buildings required to have a sound insulation rating which must comply with sub-clauses (a), (b) & (c).

Comments: *Compliance is readily achievable. Design certification to be provided with the Construction Certificate documentation.*

96. Clause F5.4 – Sound Insulation Rating of Floors

The sound rating of floors in a Class 2 or 3 building must be calculated in accordance with the requirements of sub-clause (a) and the floors in a Class 9c aged care building must be calculated in accordance with sub-clause (b). The deemed-to-satisfy construction requirements are set out in Specification F5.2. Table 3A of the Specification prescribes Acceptable Forms of Construction for Floors.

Comments: *Compliance is readily achievable. Design certification to be provided with the Construction Certificate documentation.*

97. Clause F5.5 – Sound Insulation Rating of Walls

The sound rating required for walls in Class 2 and 3 buildings and Class 9c aged care buildings is set out in sub-clauses (a) to (f). The deemed-to-satisfy construction requirements are set out in Specification F5.2. Table 2A of the Specification prescribes Acceptable Forms of Construction for Walls.

Comments*: Compliance is readily achievable. Design certification to be provided with the Construction Certificate documentation.*

98. Clause F5.6 – Sound Insulation Rating of Services

This clause details the separation requirements for services. The requirements only apply to services which pass through more than one sole-occupancy unit or are located in a wall or floor cavity which separates sole-occupancy units. F5.6 does not apply if the pipe is only located in a single unit or any part of a Class 2, 3 or 9c building which is not part of a sole-occupancy unit.

***Comments**: Compliance is readily achievable. Design certification to be provided with the Construction Certificate documentation.*

99. Clause F5.7 – Sound Isolation of Pumps

A flexible coupling must be used at the point of connection between the service pipes in a building and any circulating or other pump.

***Comments**: Compliance is readily achievable. Design certification to be provided with the Construction Certificate documentation.*

SECTION G – ANCILLARY PROVISIONS

PART G1 Minor Structures & Components

100. Clause G1.2- Refrigerated chambers, strong-rooms and vaults

A refrigerated or cooling chamber, strongroom or vault which is of sufficient size for a person to enter must have-

(i) A door which is capable of being opened by hand from the inside without a key; and

(ii) Internal lighting controlled only by a switch which is located adjacent the entrance doorway inside the chamber; and

(iii) An alarm that is

a. Located outside but controlled only from within the chamber

b. Able to achieve a sound pressure level outside of the chamber of 90dB(A) when measures 3m from the sounding device

(iv) A door to a refrigerated or cooling chamber must have a doorway with a clear width of not less than 600mm and a clear height of not less than 1.5m.

***Comments**: Compliance is readily achievable, applies to the freezer and cool room located in the back of house portion of the building.*

101. PART G6 – Occupiable Outdoor Area

This part does not apply to an occupiable outdoor area of a sole-occupancy unit in a Class 2 or 3 building, Class 9c building or Class 4 part of a building (with the exception of the requirements for Fire Hazard Properties), nor does it apply to an occupiable outdoor area with an area less than 10m2.

A lining, material or assembly in an occupiable outdoor area must comply with C1.10 as for an internal element. The following fire hazard properties of a lining, material or assembly in an occupiable outdoor area are not required to comply with C1.10:

(i) Average specific extinction area.

(ii) Smoke-Developed Index.

(iii) Smoke development rate.

(iv) Smoke growth rate index ($SMOGRA_{RC}$).

Note 1: For the purposes of the Deemed-to-Satisfy Provisions of C2.7, C2.8 and C2.9, a reference to a storey includes an *occupiable outdoor area*, however a fire wall cannot be used to separate an occupiable outdoor area into different fire *compartments*.

Note 2: A reference to a storey or room in Part D1, Part D2, Part E1 *(except for cl 7(b)(i) of Spec E1.5)*, Part E3, Part E4 includes an occupiable *outdoor area*.

Note 3: An occupiable outdoor area is not a storey for the purposes of Schedule 3 of the NCC and therefore is not included in the determination of *rise in storeys*.

Note 4: For the purposes of the Deemed-to-Satisfy Provisions of F4.4, F4.8 and F4.9, a reference to a room includes an occupiable *outdoor area*.

***Comments:** Compliance is readily achievable. This clause applies to the Terraces located on First Floor level.*

SECTION J – ENERGY EFFICIENCY

102. PART J1.0 – Deemed-to-Satisfy Provisions

The provision of insulation of the building envelope will be required in the proposed Building, in accordance with Clauses J1.0 to J1.6, and the Tables therein, including Thermal Construction General, Roof and Ceiling Construction, Rooflights, Walls, and Floors. Design details and/or certification of design will be required to be provided in this regard.

***Comments**: Compliance is readily achievable.*

103. PART J1 – Building Fabric

Glazing within the external building envelope will be required to be assessed/designed to achieve compliance with Clauses J1.2 (Thermal Construction); J1.3 (Roof and Ceiling Construction), J1.4 (Roof lights), J1.5 (Walls and Glazing), J1.6 (Floors) 2.0 to J2.5, including the Tables therein, having regard to the maximum aggregate air-conditioning energy attributable to each façade of the proposed building. A calculation demonstrating that the proposed design of the building complies with the requirements of Part J2 is required to be provided in this regard.

***Comments**: Design compliance is demonstrated in the JV3 report provided with the CC documentation.*

104. PART J3 – Building Sealing

The proposed building envelope will be required to be sealed to prevent air infiltration in accordance with the requirements of Clauses J3.0 to J3.6. Details or certification that the proposed building design complies with the requirements of Part J3 is required to be provided.

***Comments**: Design compliance is demonstrated in the JV3 report provided with the CC documentation*

105. PART J5 – Air-Conditioning & Ventilation Systems

Details and/or design certification which confirm that any proposed air-conditioning system or unit within the proposed building achieves compliance with the relevant requirements of Part J5 will be required to be provided from the Mechanical Engineer.

***Comments**: Design compliance is demonstrated in the JV3 report provided with the CC documentation.*

106. PART J6 – Artificial Lighting & Power

Details and/or design certification which confirm that all artificial lighting, power control, and boiling/chilled water units within the proposed building achieves compliance with the relevant requirements of Part J6 will be required to be provided from the Electrical Engineer.

***Comments**: Design compliance is demonstrated in the JV3 report provided with the CC documentation.*

107. PART J7 – Hot Water Supply & Swimming Pool & Spa Pool Plant

Details and/or design certification which confirm that any proposed hot water supply system within the proposed building achieves compliance with the relevant requirements of Part J7 (Section 8 of AS 3500.4) will be required to be provided from the Hydraulic Engineer.

***Comments**: Design compliance is demonstrated in the JV3 report provided with the CC documentation.*

108. PART J8 – Access for Maintenance & Facilities for Monitoring

See NSW Subsection J8 for access to maintenance.

Access must be provided to all plant, equipment and components that require maintenance in accordance with Part 2.

***Comments**: Compliance is readily achievable. Details are to be provided from the design consultants for their respective disciplines by way of design certification for proposed new glazing, building fabric, ventilation, electrical and hydraulic systems that compliance with the requirements of Section J has been achieved.*

E. CONCLUSION

This report contains an assessment of the referenced architectural documentation for the proposed additions to **Mountainview Nursing Home, Penrith** against the Deemed-to-Satisfy Provisions of the BCA 2019.

Arising from the review, it is considered that the proposed development can readily achieve compliance with the relevant provisions of the BCA. Necessary documentation will need to be provided with the application for the Construction Certificate to demonstrate detailed compliance with the BCA as outlined above.

APPENDIX 1

TYPE C CONSTRUCTION: FRL OF BUILDING ELEMENTS

Table 5 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 2

FIRE SAFETY MEASURES

The following fire safety measures are required for the proposed development:

Essential Fire and Other Safety Measures	Standard of Performance	Proposed
Alarm Signaling Equipment	AS1670.3 – 2018	✓
Automatic Fail-Safe Devices	BCA Clause D2.21	✓
Automatic Fire Detection & Alarm System	BCA Spec. E2.2a & AS 1670.1 - 2018.	✓
Automatic Fire Suppression Systems	BCA Spec. E1.5 & AS2118.4-2012	✓
Building Occupant Warning System activated by the Sprinkler System	BCA Spec E1.5 and AS 1670.1 – 2018	✓
Emergency Lighting	BCA Clause E4.4 & AS 2293.1 - 2018	✓
Exit Signs	BCA Clauses E4.5, E4.6 & E4.8 and AS 2293.1 – 2018	✓
Fire Blankets	AS2444-2001	✓
Fire Doors	BCA Clause C2.12, C2.13, C3.4 and AS 1905.1 – 2015	✓
Fire Hydrant Systems	Clause E1.3 & AS 2419.1 - 2005	✓
Mechanical Air Handling Systems (including automatic shutdown)	BCA Clause E2.2, AS/NZS 1668.1 - 2015 & AS 1668.2 – 2012	✓
Paths of Travel	EP & A Regulation Clause 186	✓
Portable Fire Extinguishers	BCA Clause E1.6 & AS 2444 – 2001	✓
Smoke Dampers	AS/NZS 1668.1 - 2015	✓
Smoke Doors	BCA Spec. C3.4 & C2.5	✓
Warning & Operational signs	Section 183 of the EP & A Regulations 2000, AS 1905.1 - 2015, BCA Clause D2.23, E3.3	✓
Performance Solutions – •	*TBA*	

APPENDIX 3

COMPARTMENT PLAN

Fire Compartments

Level 2

Level 1

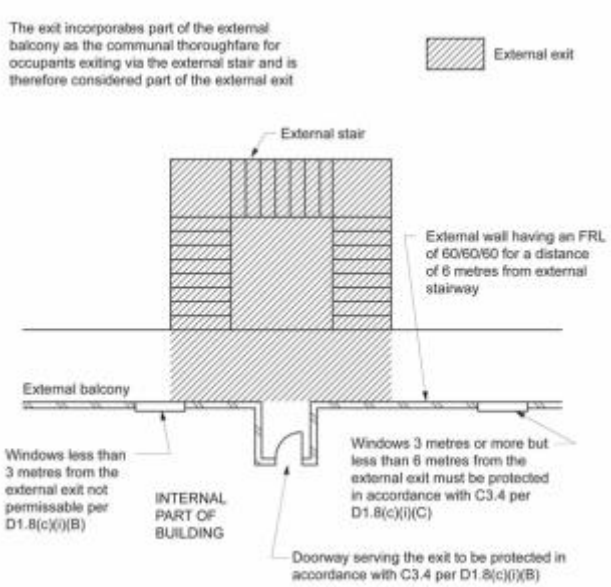
Smoke Compartments

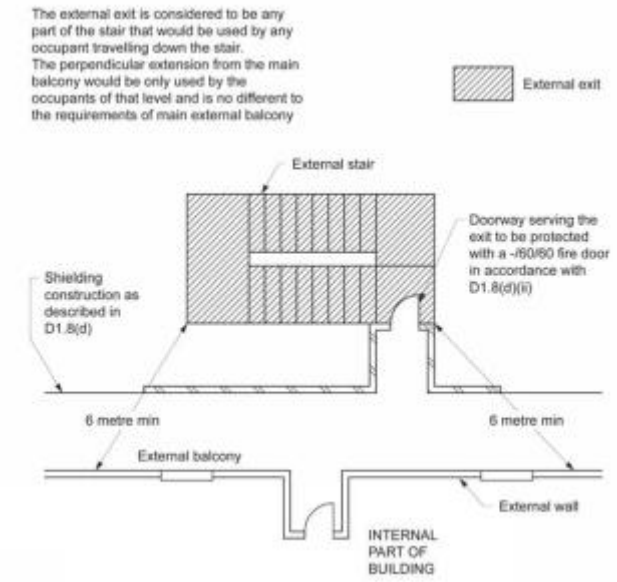
Level 2

Level 1

APPENDIX 4

CLAUSE D1.8 EXTERNAL STAIRS IN LEIU OF FIRE ISOLATED EXITS





APPENDIX 5

Terminology

Alternative Solution

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

Building Code of Australia (BCA)

Document published on behalf of the Australian Building Codes Board. The BCA is a uniform set of technical provisions for the design and construction of buildings and other structures throughout Australia and is adopted in New South Wales (NSW) under the provisions of the EPA Act and Regulation. Building regulatory legislation stipulates that compliance with the BCA Performance Requirements must be attained and hence this reveals BCA's performance based format.

Construction Certificate

Building Approval issued by the Certifying Authority pursuant to Part 4A of the EP&A Act 1979.

Construction Type

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

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

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

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

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

Climatic Zone

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

Deemed to Satisfy Provisions (DtS)

Provisions which are deemed to satisfy the Performance Requirements.

Effective Height

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

Fire Resistance Level (FRL)

The grading periods in minutes for the following criteria-

(a) structural adequacy; and

(b) integrity; and

(c) insulation,

and expressed in that order.

Fire Source Feature (FSF)

The far boundary of a road which adjoins the allotment; or a side or rear boundary of the allotment; or an external wall of another building on the allotment which is not a Class 10 building.

National Construction Code Series (NCC)

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

Occupation Certificate

Building Occupation Approval issued by the Principal Certifying Authority pursuant to Part 4A of the EPA Act 1979.

Open Space

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

Performance Requirements of the BCA

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

Compliance with the Performance Requirements can only be achieved by-

(a) complying with the DtS Provisions; or

(b) formulating an Alternative Solution which-

(i) complies with the Performance Requirements; or

(ii) is shown to be at least equivalent to the DtS Provisions; or

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

Rise in Storey

Means the greatest number of storeys calculated in accordance with Clause C1.2

Storey

Mans a space within a building which is situated between one floor level and the floor level next above, or if there is no floor above, the ceiling or roof above, but not:

a) a space that contains only

I. a lift shaft, stairway or meter room;

II. a bathroom, shower room, laundry, water closet, or other sanitary compartment; or

III. accommodation intended for not more than 3 vehicles; or

(b) a mezzanine

Sole Occupancy Unit (SOU)

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 dwelling.