lindsay perry access

Access Report

LAHC Maryland Development

38-40 John T Bell Drive
MARYLAND NSW 2287

For: CKDS Architecture
Ref: LP_20267

Document Control

This report has been prepared based on the documentation available and time allocated to conduct the review. All reasonable attempts have been made to identify key compliance matters.

Revision Summary:

prepared by:		
Jillian Coram-Parker	Draft	22 March 2022

approved by:		
Lindsay Perry	Draft Revision 1 Revision 2 Revision 3 Revision 4	24 March 2022 1 June 2022 14 July 2022 21 July 2022 9 October 2022

Contact Details:

Lindsay Perry Access Pty Ltd
PO Box 453
NEW LAMBTON NSW 2305

lindsay@lpaccess.com.au
0418 909 180

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Clarifications:

This report is limited to items within drawings listed in this report only.

Construction is to be in accordance with the recommendations made in this access report to ensure compliance.

Any dimensions quoted throughout this report and within Australian Standards are CLEAR dimensions, not structural. This needs to be considered during construction to account for wall linings and the like.

Definitions:

The following terminology has been used throughout this report:

Compliant | compliance with current accessibility legislation has been achieved
Compliant configuration | circulation and spatial planning requirements are compliant
Capable of compliance | compliance is achievable through detailed design
To be confirmed | inadequate information is provided to determine compliance
Not yet compliant | circulation and spatial planning requirements have not yet been met
To be addressed during detailed design stage |details not available at DA stage

Executive Summary

Development application documentation for the Land and Housing Corporation Maryland Development located at 38-40 John T Bell Drive Maryland NSW, has been reviewed against current accessibility legislation.

The following table summarises our findings.

Item No.	Description	Compliance Status
The Disability (Access to Premises) Standards		
5.1	Access Code	Refer BCA commentary
5.2	New Work & The Affected Part	Not applicable
Access and Approach		
6.1	Allotment Boundary to Entrance	Compliant
6.2	Link between Associated Buildings	Compliant configuration
6.3	Accessways (Pathways Generally)	Compliant configuration
6.4	Accessible Carparking	Not applicable
6.5	Step Ramps	Compliant configuration
6.6	Accessible Ramp	Compliant configuration
6.7	Stairs	Compliant configuration
6.8	Walkways	Compliant configuration
6.9	Accessible Entrances	Compliant configuration
6.10	Non-accessible Entrances	Compliant configuration
Interior		
7.1	Extent of Access Generally	Compliant
7.2	Circulation Areas	Compliant
7.3	Doorways	Compliant configuration
7.4	Exempt Areas	None specified
7.5	Floor Finishes	To be addressed during detailed design
7.6	Controls	To be addressed during detailed design
7.7	Visual Indication to Glazing	To be addressed during detailed design
7.8	Tactile Indicators	Compliant configuration
7.9	Slip Resistance (Ramps & Stairs)	To be addressed during detailed design
7.10	Thresholds	To be addressed during detailed design
7.11	Stairs	Compliant configuration
SEPP 65 Universal Housing Requirements | Livable Housing Silver Level		
8.1	Dwelling Access	Compliant configuration
8.2	Dwelling Entrance	Compliant configuration
8.3	Internal Corridors and Doors	Capable of compliance
8.4	Toilet	Compliant configuration
8.5	Shower	Compliant configuration
8.6	Reinforcement of Bathroom Walls	To be addressed during detailed design
8.7	Internal Stairways	Not applicable

We consider that the drawings presented for assessment, for the purposes of a development application, generally comply with current statutory requirements. Accessibility requirements are included in Appendix 1 of this report to guide the detailed design. Best Practice options are provided within Appendix 2 and we encourage their implementation into the design.

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The recommendations throughout this report reflect the professional opinion and interpretation of Lindsay Perry Access Pty Ltd. This may differ from that of other consultants.

LINDSAY **PERRY**
Access Consultant (ACAA Accreditation No. 136)
Certificate IV in Access Consulting
Internationally Certified Access Consultant ICAC BE-02-106-18
Registered Architect NSW 7021
Livable Housing Assessor 20047 | NDIS SDA Assessor SDA00049

1 Project Background

The project is a residential development that provides two (2) buildings, each over two (2) levels. A total of sixteen (16) units are provided within the development.

The units are provided in a one- and two-bedroom arrangement with car parking centrally located within the site. The ground floor units (8 in total) are nominated to achieve LHA silver level.

Figure 1 | Proposed Development

2 Reviewed Documentation

Documentation prepared by CKDS Architecture has been reviewed as follows:

dwg no.	drawing name	revision
A-0001	Cover Sheet	B
A-0002	Planning Controls	B
A-0003	Solar Ground Floor – South	B
A-0004	Solar Ground Floor – North	B
A-0005	Solar First Floor – South	B
A-0006	Solar First Floor – North	B
A-0007	RFB & Landscape	B
A-0008	Waste Management Plan	B
A-0101	Demolition Plan	B
A-1001	Site Analysis Plan	B
A-1002	Site Plan – Ground	B
A-1003	Site Plan – First Floor	B
A-1004	Site Plan – Roof	B
A-1101	Ground Floor Plan – South	B
A-1102	Ground Floor Plan – North	B
A-1103	First Floor Plan – North	B
A-1104	First Floor Plan – South	B
A-2001	North / South Elevation	B
A-2002	East / West Elevation	B
A-3001	Section A	B
A-3002	Section B & C	B
A-4001	Shadow Diagrams	B
A-4002	Shadow Diagrams	B
A-5001	John T Bell Drive	B
A-5002	Matfen Close	B
A-7001	Window Schedule	B

3 Council Requirements

The Newcastle Development Control Plan 2012 is applicable to this site. Part 3.03 Residential Development (3.03.04 Configuration) includes a requirement for universal design features to be included in ALL dwellings, other than shop top housing and single dwellings to secondary dwellings, to promote flexible housing for all community members and references the Livable Housing Design Guidelines Silver Level universal design features.

Livable Housing requirements have been addressed in Section 8 of this report.

4 Legislation

Access assessment has been made against Access Legislation including:

- The Commonwealth Disability Discrimination Act 1992 (DDA)
- Disability (Access to Premises (Buildings)) Standards 2010
- Access Code for Buildings 2010
- The National Construction Code Building Code of Australia Volume 1 2019, Amendment 1 (BCA)
  - Section D2.14 / D2.15 / D2.17 – landings, thresholds and slip resistance
  - Section D3 – Access for People with Disabilities
- Australian Standard AS1428.1 (2009) Amendment 1 & 2, – Design for Access and Mobility
- Australian Standard AS1428.2(1992) – Design for Access and Mobility: Enhanced and additional requirements – Buildings and facilities
- Australian Standard AS1428.4.1 (2009) Amendment 1 – Design for Access and Mobility: Means to assist the orientation of people with vision impairment – Tactile ground surface indicators
- State Environmental Planning Policy 65 – Residential Design Quality of Residential Apartment Development (SEPP65) – Apartment Design Guide – July 2015
- The Livable Housing Design Guidelines – Edition 4

A summary of the requirements of relevant legislation follows.

The Disability Discrimination Act 1992

The DDA requires independent, equitable, dignified access to all parts of the building for all building users regardless of disability. The DDA makes it unlawful to discriminate against a person on the grounds of disability.

The Disability (Access to Premises) Standards

The Disability (Access to Premises - buildings) Standards 2010 (the Premises Standards) commenced on 1 May 2011. Any application for a building approval for a new building or upgrade of an existing building on or after that date triggers the application of the Premises Standards.
The Premises Standards include an **Access Code** written in the same style as the Building Code of Australia. It has a number of Performance Requirements that are expressed in broad terms and references a number of technical Deemed-to-Satisfy Provisions.

The National Construction Code / Building Code of Australia (Volume 1)

The Building Code of Australia (BCA) is contained within the National Construction Code (NCC) and provides the minimum necessary requirements for safety, health, amenity and sustainability in the design and construction of new buildings (and new building work in existing buildings) throughout Australia. The BCA is a performance-based code and compliance can be met through satisfying the deemed-to-satisfy provisions or by meeting the prescribed performance requirements.

The BCA for Class 2 buildings, access for people with disabilities is required:

- From a pedestrian entrance required to be accessible to at least 1 floor containing sole-occupancy units and to the entrance doorway of each sole-occupancy unit located on 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, or the like.
- Where a ramp complying with AS 1428.1 or a passenger lift is installed—
  a) to the entrance doorway of each sole-occupancy unit; and
  b) to and within rooms or spaces for use in common by the residents, located on the levels served by the lift or ramp.

AS1428 – Design for Access and Mobility

The AS1428 Suite provides design requirements for accessibility generally, covering all types of disabilities. AS1428.1 and AS1428.4.1 are referenced by the NCC / BCA.

- Australian Standard AS1428.1 (2009) Amendment 1 & 2, – Design for Access and Mobility contains access requirements that are mandatory for the provision of access for persons with a disability and is referred by the BCA
- Australian Standard AS1428.2(1992) – Design for Access and Mobility: Enhanced and additional requirements – Buildings and facilities provides enhanced and best practice requirements that will minimize DDA risk
- Australian Standard AS1428.4.1 (2009) Amendment 1 – Design for Access and Mobility: Means to assist the orientation of people with vision impairment – Tactile ground surface indicators

SEPP 65 Residential Design Quality of Residential Apartment Development.

The Apartment Design Guide includes a requirement for livable housing. Developments are to provide a minimum 20% of apartments that achieve silver level for livable housing.

Livable Housing Australia Design Guidelines

The Livable Housing Design Guidelines, 2017 include Silver, Gold and Platinum Level which cater to differing levels of accessibility.

5 The Disability (Access to Premises) Standards

Any application for a building approval for a new building or upgrade of an existing building triggers the application of the Premises Standards.

The Premises Standards include an Access Code written in the same style as the Building Code of Australia. Additionally, it offers a number of concessions for existing buildings as outlined below.

5.1 Access Code

The Premises Standards include an Access Code written in the same style as the Building Code of Australia.

Compliance Summary:

Refer to BCA requirements throughout subsequent sections of this report.

5.2 New Work and The Affected Part

The Disability (Access to Premises – Buildings) Standards apply to **...a new part, and any affected part, of a building,** to the extent that the part of the building is...a Class 3, 5, 6, 7, 8, 9 or 10 building (Clause 2.1).

New work is defined as follows (Clause 2.1 (4)):

- An extension to the building or a modified part of the building.

An **affected part** is defined as follows (Clause 2.1 (5)):

- The principal pedestrian entrance of an existing building that contains a new part; and
- Any part of an existing building, that contains a new part, that is necessary to provide a continuous accessible path of travel from the entrance to the new part.

Compliance Summary:

Not applicable

Commentary:

The new work and affected part provisions are applicable to modification works, not new developments.

6 BCA | Access and Approach + External Areas Generally

The approach to the building needs to be considered when considering access for persons with a disability. The BCA has three requirements for the approach to the building for persons with a disability.

An accessible path of travel is required to the building entrance from the allotment boundary at the main points of pedestrian entry, from accessible carparking areas and from any adjacent and associated accessible building.

In this instance, the approach to the building has been considered as follows:

- from the allotment boundary at the pedestrian entrance along John T Bell Drive to the building entrance
- from the allotment boundary at the pedestrian entrance along Matfen Close to the building entrance
- between associated accessible buildings within the site

There is no accessible carparking within this development, nor is it a statutory requirement.

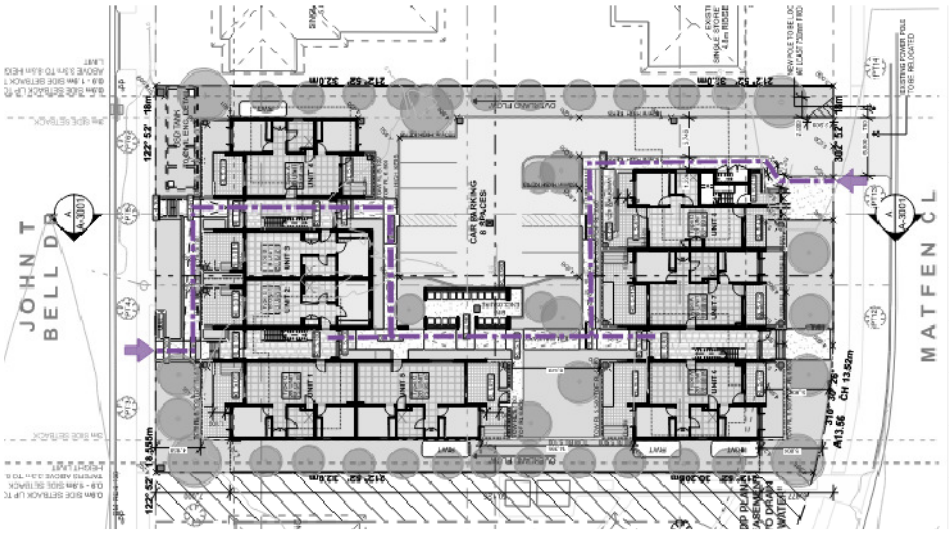

Figure 2 | Overall Site Plan

6.1 Approach from Allotment Boundary

The BCA requires that a continuous accessible path of travel be provided from the allotment boundary at the main points of pedestrian entry to the main entrance.

Compliance Summary:

Compliant

Commentary:

An accessible path of travel, that includes walkways, is provided to the budling entrances from each street frontage.

6.2 Approach between Associated Buildings

The BCA requires that a continuous accessible path of travel be provided between associated accessible buildings.

Compliance Summary:

Compliant

Commentary:

Walkways are provided for access between the buildings.

6.3 Accessible Carparking

As this is a residential development (Class 2), there are no BCA requirements for the provision of accessible carparking.

6.4 Walkways

AS1428.1 defines a walkway as having a gradient of 1:20. The accessible path of travel refers to a pathway which is grade restricted and provides wheelchair access as per the requirements of AS1428.

Compliance Summary:

Compliant configuration

Commentary:

Walkways with a nominated gradient of 1:20 are provided within the site as part of the accessible path of travel from allotment boundaries and for access between the buildings.

Overall configuration is in keeping with current accessibility legislation.

6.5 Stairs

AS1428.1 has access requirements for all public access stairs and is applicable in this instance.

Compliance Summary:

Compliant configuration

Commentary:

Stairs are provided as a part of the pedestrian access from both John T Bell Drive and Matfen Close to the building entrances.

Overall configuration is in keeping with current legislation including set back from the property boundaries, width between handrails and handrails with extension both sides.

Requirement for tactile indicators and contrasting non-slip nosing strips to be addressed in subsequent design stages.

6.6 Accessible Entrances

In a building required to be accessible, an accessway must be provided through the principal pedestrian entrance, and not less than 50% of all pedestrian entrances including the principal pedestrian entrance.

In a building with a total floor area more than 500 sqm a pedestrian entrance which is not accessible must not be located more than 50m from an accessible pedestrian entrance.

Compliance Summary:

Compliant configuration

Commentary:

Single hinged doorways are provided as the entry doors to the building lobbies and to individual Units.

While stairs are the means of access to some entrances, the entry doors offer compliant circulation areas.

We recommend the use of 920mm single leaf door to provided 850mm clear single leaf opening space required.

6.7 Non-accessible Entrances

The entrance to the building from Matfen Close is not accessible entrances due to stairs. As the doorway is located within 50m of an accessible entrance this is compliant with BCA requirements.

Compliance Summary:

Compliant

Commentary:

Provide directional signage identifying the location of the accessible entrance that displays the International Symbol for Access per BCA Specification D3.6.

7 BCA | Interior

The interior areas subject to accessibility requirements include the residential common areas being the entry lobbies and corridors at the ground floor level and the bin enclosure central to the buildings. The following accessibility requirements do not apply to individual units.

7.1 Extent of Access Generally – BCA

Access for people with disabilities is required from a pedestrian entrance required to be accessible to at least 1 floor containing sole-occupancy units and to the entrance doorway of each sole-occupancy unit located on that level.
Access is also required to and within not less than 1 of each type of room or space for use in common by the residents.

Compliance Summary:

Compliant

7.2 Circulation Areas

BCA (Clause D3.3) requires the provision of turning spaces and passing areas to corridors to enable wheelchair circulation throughout a building.

Turning spaces 1540mm wide by 2070mm long are required within 2m of the end of corridors to enable a wheelchair to turn through 90° and passing areas 1800mm wide by 2000mm long are required every 20m along a corridor where no line of sight.

Within corridor areas, 1500x1500mm is required to facilitate a 90° turn by a wheelchair. This must be accommodated within accessible areas.

Compliance Summary:

Compliant

7.3 Doorways Generally

AS1428.1 has requirements for doorways within the accessible path of travel to enable independent access for people using a wheelchair.

Compliance Summary:

Compliant Configuration

Commentary:
Doorways within the accessible path of travel achieve the required circulation areas.

7.4 Exempt Areas

BCA Clause D3.4 does not require access for people with disabilities to areas that would be inappropriate due to the particular use of the area or would pose a health and safety risk. This includes the path of travel to these areas.

Compliance Summary:

None specified

7.5 Floor Finishes

All floor finishes are to be flush to provide an accessible path of travel throughout the different areas of the building. Maximum allowable construction tolerance is 3mm (5mm for beveled edges) as part of the accessible path of travel.

Compliance Summary:

To be addressed during detailed design stages

7.6 Controls

Controls such as light switches, GPOs, alarm keypads, card swipes, etc are to be located within the accessible height range of 900-1100mm above the floor level and not within 500mm of an internal corner to comply with AS1428.1(2009), Clause 14.

Compliance Summary:

To be addressed during detailed design stage.

7.7 Visual Indication to Glazing

Provide decals to all full height glazing that can be mistaken for a doorway to assist persons with a vision impairment. Decals to be solid and have a minimum 30% luminance contrast to the background colour and be not less than 75mm high located within the height range of 900-1100mm above the finished floor level per AS1428.1, Clause 6.6.

Compliance Summary:

To be addressed during detailed design stage.

7.8 Tactile Indicators

For a building that is required to be accessible, tactile ground surface indicators must be provided to warn people who are blind or have a vision impairment that they are approaching a stairway (other than a fire isolated stair); an escalator; a moving walkway; a ramp (other than a fire isolated ramp, step ramp, kerb ramp or swimming pool ramp); and in the absence of a suitable barrier, an overhead obstruction less than 2m above the floor level or an accessway ,meeting a vehicular way if there is no kerb or kerb ramp (BCA D3.8).

Tactile indicators to be detectable, durable, non-slip and have a minimum 30% luminance contrast to the background color (45% for discrete tactile indicators and 60% for discrete two-tone tactile indicators).

Compliance Summary:

Capable of compliance

Commentary:
Tactile indicators provided to stairs and ramps per BCA requirements.

7.9 Slip Resistance (Stairs and Ramps)

The BCA defines the following slip resistance requirements for stairs and ramps:

Application	Surface Conditions	
	Dry	Wet
Ramp steeper than 1:14	P4 or R11	P5 or R12
Ramp steeper than 1:20 but not steeper than 1:14	P3 or R10	P4 or R11
Tread or Landing surface	P3 or R10	P4 or R11
Nosing or landing edge strip	P3	P4

Compliance Summary:

To be addressed during detailed design stage.

7.10 Stairs

AS1428.1 has access requirements for all stairs other than fire isolated egress stairs and is applicable in this instance.

Compliance Summary:

Compliant configuration

Commentary:

Stairs are provided in four (4) locations for access to the first-floor level of each building.

Overall configuration is in keeping with current legislation including width between handrails, handrails with extension both sides and tactile indicators top and bottom.

8 Livable Housing Requirements

The client brief requires that all units at the ground floor level of the development meet the Livable Housing Design Guidelines for Silver Level.

Within this development, a total of eight (8) apartments are provided at the ground floor level that have been designed in keeping with silver level requirements per the Livable Housing Design Guidelines – Fourth Edition as follows – Units 01 to 08 inclusive.

8.1 Dwelling Access

There is a safe, continuous, step-free pathway from the street entrance and/or parking area to a dwelling entrance that is level.

Compliance Summary:

Compliant configuration

Commentary:

An accessible path of travel within the meaning of AS1428.1 (2009) is provided to the ground floor unit entrances.

8.2 Dwelling Entrance

There is at least one level (step-free) entrance into the dwelling to enable home occupants to easily enter and exit the dwelling.

Compliance Summary:

Compliant configuration

Commentary:

Step free entrances are provided to units at the ground floor level.

8.3 Internal Corridors and Doors

Internal doors and corridors facilitate comfortable and unimpeded movement between spaces.

Compliance Summary:

Complaint configuration

Commentary:

Corridors offer adequate clear width. Door sizes and threshold details to be addressed during detailed design. We recommend the use of an 870mm door leaf to achieve a clear opening of 820mm.

8.4 Toilet

The ground (or entry) level has a toilet to support easy access for home occupants and visitors.

Compliance Summary:

Compliant Configuration

Commentary:

The bathroom in all units offers compliant circulation areas.

8.5 Shower

The bathroom and shower are designed for easy and independent access for all home occupants.

Compliance Summary:

Compliant Configuration

Commentary:

Shower is provided in the corner and no hob is shown.

8.6 Reinforcement of Bathroom & Toilet Walls

The bathroom and toilet walls are built to enable grabrails to be safely and economically installed.

Compliance Summary:

To be addressed during detailed design stages.

8.7 Internal Stairways

Where installed, stairways are designed to reduce the likelihood of injury and also enable future adaptation.

Compliance Summary:

Not applicable

9 Conclusion

This report demonstrates that the fundamental aims of accessibility legislation are achievable within the LAHC Maryland Development at 38-40 John T Bell Drive Maryland NSW. Spatial planning and general arrangements of facilities will offer inclusion for all building users.

Disability is often defined as any limitation, restriction or impairment which restricts everyday activities and has lasted or is likely to last for at least 6 months. Disabilities can be very varied. They can be physical, cognitive, intellectual, mental, sensory, or developmental. They can be present at birth or can occur during a person's lifetime. They can also be permanent or temporary. In Australia, almost one in five people – 4.3 million – have a disability with one in three having severe or profound core activity limitation.

Equity and dignity are important aspects in the provision of access to buildings for all users. With respect to people with a disability, equity and dignity are sometimes overlooked in the construction of new buildings or refurbishment works. The design approach needs to maintain a high level of equity for people with disabilities and meet the performance requirements of the BCA. The performance requirements adopt two main concepts in the provision of access for people with a disability being **to the degree necessary** and **safe movement**. Both of these concepts need to be achieved within the context of equitable and dignified access.

In this respect, a wide range of disabilities needs consideration and a compromise reached between requirements of different disability groups. Measures need to be implemented to ensure inclusion of all users, not a particular disability group in isolation.

We consider that the drawings presented for assessment, for the purposes of a development application, demonstrate that compliance with current statutory requirements affecting accessibility is achievable subject to detailed design at the construction certificate stage (refer to Appendix 1 for requirements).

Appendix 1 | Accessibility Requirements

The following accessibility requirements are to be incorporated into the detailed design to ensure compliance of the built form.

Walkways

AS 1428.1 has access requirements for walkways as follows:

a. The minimum unobstructed width of walkways is to be 1000mm (AS1428.1, Clause 6.3). A width of 1200mm is preferred for compliance with AS1428.2.

b. Walkways are to be constructed with no lip or step at joints between abutting surfaces (a construction tolerance of 3mm is allowable, 5mm for bevelled edges -refer to Figure 6 of AS1428.1).

c. The maximum allowable crossfall of a walkway is to be 1:40.

d. Surface of the walkway to be slip-resistant.

e. The ground abutting the sides of the walkway should follow the grade of the pathway and extend horizontally for 600mm. This is not required where there is a kerb or handrail provided (refer to AS1428.1 Clause 10.2).

f. Maximum allowable gradient of the walkway is 1:20 and maximum length between landings to be 15m (for 1:20 gradient). Landings to be a minimum 1200mm in length (where there is no change in direction). For changes in direction of 180º, landings to be 1540mm in length – refer to AS1428.1(2009), Clause 10.8.

Stairs – External

AS 1428.1 has access requirements for all public access stairs as follows:

a. Stairs to comply with AS1428.1(2009), Clause 11.2.

b. Stairs to have closed or opaque risers. Open risers cause confusion for persons with a vision impairment and may trigger conditions such as epilepsy due to light penetrating through the open riser.

c. Provide handrails, with extensions, to both sides of the stair (AS1428.1 (2009), Clause 11.2 & 12). Handrails to have an external diameter between 30-50mm to assist persons with a manual disability such as arthritis.

   Handrails are required on both sides of the stair to cater for left and right-handed disabilities. A central handrail is also an acceptable solution where adequate width is available. In this instance, the use of a double handrail is encouraged so that two users can travel in opposite directions and maintain their grip on the handrail.

d. Stair nosings to have minimum 30% luminance contrast strip 50-75mm wide to the top of the stair tread to assist persons with a vision impairment. The strip can be set back 15mm from the edge of the riser.

e. Stair nosings shall not project beyond the face of the riser.

f. Provide tactile indicators at the top and bottom of the stair to comply with BCA Clause D3.8 and AS1428.4.

   Tactile indicators to be detectable, durable, non-slip and have a minimum 30% luminance contrast to the background colour.

   Tactile indicators at the top and bottom of the stair to be 600-800mm deep across the width of the stair set back 300mm from the edge of the stair.

Accessible Entrances

Access requirements for entrances are as follows.

a. Entrance to comply with AS1428.1(2009), Clause 13 as part of the accessible path of travel.

b. Doors are to have a minimum clear opening width of 850mm to comply AS1428.1(2009), Clause 13.2 as part of the accessible path of travel.

c. Door threshold to be level to provide seamless entry as part of the accessible path of travel. Maximum allowable construction tolerance is 3mm for compliance with AS1428.1(2009), 5mm where beveled edges are provided between surfaces – refer to Figure 6.

d. Door to have hardware within the accessible height range of 900-1100mm above the finished floor level (AS1428.1(2009), Clause 13.5)

e. For glass doors, provide decals to assist persons with a vision impairment. Decals to be solid and have a minimum 30% luminance contrast to the background colour and be not less than 75mm high located within the height range of 900-1100mm above the finished floor level. Decals are to be solid. AS1428.1, Clause 6.6.

f. Where double door sets are provided, one door leaf is to be capable of being held in the closed position to provide door opening widths and circulation to comply with AS 1428.1.

Non-Accessible Entrances

The following access requirements apply to the non-accessible entrance.

a. Provide direction signage displaying the location of the accessible entrance that displays the International Symbol for Access per BCA Specification D3.6.

Circulation Areas Generally

BCA (Clause D3.3) requires the provision of turning spaces and passing areas to corridors to enable wheelchair circulation throughout a building.

Turning spaces 1540mm wide by 2070mm long are required within 2m of the end of corridors to enable a wheelchair to turn through 90° and passing areas 1800mm wide by 2000mm long are required every 20m along a corridor unless there is a clear line of sight.

Within corridor areas, 1500x1500mm is required to facilitate a 90° turn by a wheelchair. This must be accommodated within accessible areas.

Doorways

Access requirements for doorways within the accessible path of travel are as follows:

a. Doorways within the accessible path of travel to have a minimum clear opening width of 850mm (AS1428.1(2009), Clause 13.2). We recommend the use of a 920 leaf door as a minimum to achieve adequate clear width.

   For double doors, the operable leaf must achieve this clear opening width to facilitate single leaf operation.

b. All doorways within the accessible path of travel to have complying circulation areas as illustrated in AS1428.1(2009), Figure 31. Circulation areas to have a maximum crossfall of 1:40.

c. Doors between indoor and outdoor spaces to have a level threshold for seamless transition.

d. Doorways to have minimum 30% luminance contrast as described in AS1428.1(2009), Clause 13.1.

e. Doors to have hardware within the accessible height range of 900-1100mm above the finished floor level (AS1428.1(2009), Clause 13.5). Note that within a childcare centre, this is applicable to the unisex accessible sanitary facilities only.

f. Door handles and related hardware shall be able to be unlocked and opened with one hand per AS1428.1 (2009), Clause 13.5.1. The handles shall enable a person who cannot grip to operate the door without their hand slipping from the handle. We recommend the use of lever handles.

g. For manual controls to automatic doorways, buttons to be located no closer than 500mm from an internal corner and between 1000mm and 2000mm from the hinged door leaf or surface mounted sliding door in the open position. Height of controls to be 900-1100mm affl.

h. Doorways to external areas to achieve a level threshold as part of the accessible path of travel. Maximum allowable construction tolerance is 3mm for compliance with AS1428.1(2009), 5mm where beveled edges are provided between surfaces.

i. Doorways to have operational forces per AS1428.1 (2009), Clause 13.5.2. A maximum allowable force of 20N is required to operate the door.

Floor Finishes

All floor finishes are to be flush to provide an accessible path of travel throughout the different areas of the building. Maximum allowable construction tolerance is 3mm (5mm for bevelled edges) as part of the accessible path of travel. Refer to AS1428.1(2009), Clause 7.2 for further details. This should be implemented during construction to ensure compliance.

Carpet

BCA requires that the pile height or pile thickness does not exceed 11 mm and the carpet backing thickness shall not exceed 4 mm.

Controls

Controls such as light switches, GPOs, alarm keypads, card swipes, etc are to be located within the accessible height range of 900-1100mm above the floor level and not within 500mm of an internal corner to comply with AS1428.1(2009), Clause 14.

Visual Indication to Glazing

Provide decals to all full height glazing that can be mistaken for a doorway to assist persons with a vision impairment. Decals to be solid and have a minimum 30% luminance contrast to the background colour and be not less than 75mm high located within the height range of 900-1100mm above the finished floor level. Decals are to be solid. AS1428.1, Clause 6.6.

Tactile Indicators

For a building that is required to be accessible, tactile ground surface indicators must be provided to warn people who are blind or have a vision impairment that they are approaching a stairway (other than a fire isolated stair); an escalator; a moving walkway; a ramp (other than a fire isolated ramp, step ramp, kerb ramp or swimming pool ramp); and in the absence of a suitable barrier, an overhead obstruction less than 2m above the floor level or an accessway ,meeting a vehicular way if there is no kerb or kerb ramp (BCA D3.8).

Tactile indicators to be detectable, durable, non-slip and have a minimum 30% luminance contrast to the background color (45% for discrete tactile indicators and 60% for discrete two-tone tactile indicators).

Signage

Access requirements for signage are as follows. Note that this does not include general wayfinding signage.

a. Braille and tactile signage formats as outlined within BCA Specification D3.6 that incorporate the international symbol of access or deafness, as appropriate, in accordance with AS 1428.1 must be provided to identify the following:
   - a sanitary facility, except a sanitary facility associated with a bedroom in a Class 1b building or a sole-occupancy unit in a Class 3 or Class 9c building
   - a space with a hearing augmentation system
   - each door required by E4.5 to be provided with an exit sign and state level
   - an accessible unisex sanitary facility and identify if the facility is suitable for left or right handed use
   - an ambulant accessible sanitary facility 1 and be located on the door of the facility
   - where a pedestrian entrance is not accessible, directional signage incorporating the international symbol of access to direct a person to the location of the nearest accessible pedestrian entrance
   - where a bank of sanitary facilities is not provided with an accessible unisex sanitary facility, directional signage incorporating the international symbol of access must be placed at the location of the sanitary facilities that are not accessible, to direct a person to the location of the nearest accessible unisex sanitary

b. Braille and tactile components of the sign to be located not less than 1200mm and not higher than 1600mm affl.

c. Signage to be located at the latch side of the doorway with the leading edge of the sign 50-300mm from the architrave. Where this is not possible, the sign can be located on the door.

   Sample signs are as follows. These are examples only – ensure selected signage complies with BCA Specification D3.6 including provision of Braille locator for multiple lines of text and characters.

Slip Resistance

The BCA defines the following slip resistance requirements for stairs and ramps:

Application	Surface Conditions	
	Dry	Wet
Ramp steeper than 1:14	P4 or R11	P5 or R12
Ramp steeper than 1:20 but not steeper than 1:14	P3 or R10	P4 or R11
Tread or Landing surface	P3 or R10	P4 or R11
Nosing or landing edge strip	P3	P4

Stairs – Internal

Access requirements for public access stairs are as follows and should be addressed during construction to ensure compliance.

a. Stair construction to comply with AS1428.1, Clause 11.1.

b. Stairs to have closed or opaque risers. Open risers cause confusion for persons with a vision impairment and may trigger conditions such as epilepsy due to light penetrating through the open risers.

c. Where the stair intersects with an internal corridor, the stair shall be set back in accordance with AS2418.1 Figure 26C/D to allow adequate space for handrail extensions and tactile indicators.

d. Provide handrails, with extensions, to both sides of the stair (AS1428.1, Clause 11.2). Handrails to have an external diameter between 30-50mm to assist persons with a manual disability such as arthritis. Handrails should be continuous around the landings where possible.

   Handrails are required on both sides of the stair to cater for left and right-handed disabilities. A central handrail is also an acceptable solution where adequate width is available.

e. Stair nosings to have minimum 30% luminance contrast strip 50-75mm wide to the top of the stair tread to assist persons with a vision impairment. The strip can be set back 15mm from the edge of the riser.

f. Stair nosings shall not project beyond the face of the riser.

g. Provide tactile indicators at the top and bottom of the stair to comply with BCA Clause D3.8 and AS1428.4.1.
   Tactile indicators to be detectable, durable, non-slip and have a minimum 30% luminance contrast to the background colour. For discrete tactile indicators, 45% luminance contrast is required (60% where two-tone indicators are used).

Livable Housing – SILVER LEVEL

Livable housing requirements for Silver Level are summarised below:

Dwelling Access

There is a safe, continuous, step-free pathway from the street entrance and/or parking area to a dwelling entrance that is level.

- Path of travel should be minimum 1000mm wide with no steps; an even, slip resistant surface; crossfall not more than 1:40; and maximum slope of 1:14.
- Where ramps are required, landings at 9m intervals are to be provided and are to be not less than 1200mm in length.
- Where a carparking space is relied upon as the safe and continuous pathway to the dwelling, it should be at least 3200mm wide….
- Step ramps where provided to have a maximum gradient of 1:10, clear width of 1000mm and maximum length of 1900mm.
- Where ramps adjoin gates or doorways, landings no less than 1200mm in length, exclusive of the door swing, are required.

Dwelling Entrance

There is at least one level (step-free) entrance into the dwelling to enable home occupants to easily enter and exit the dwelling.

- Entrance doors to have a clear opening with of 820mm and have a level transition (5mm allowable tolerance – where in excess of 5mm, threshold ramp up to 56mm high is allowable)).
- Reasonable shelter from the weather is required.
- 1200x1200mm level landing area required on the arrival side of the door.

Internal Corridors and Doors

Internal doors and corridors facilitate comfortable and unimpeded movement between spaces.

- Doorways on the entry level used for living, dining, bedroom, bathroom, kitchen, laundry and sanitary compartment purposes to have a clear opening with of 820mm and level transition between surfaces (5mm allowable tolerance).
- Corridors to be 1000mm wide.

Toilet

The ground (or entry) level has a toilet to support easy access for home occupants and visitors.

- A toilet on the ground / entry floor is required to have a circulation area in front of the toilet pan 900x1200mm.
- Toilet pan is to be provided in a corner of a room.

Shower

The bathroom and shower are designed for easy and independent access for all home occupants.

- A bathroom is required to have a non-slip hobless shower, located on the corner of the room.

Reinforcement of Bathroom & Toilet Walls

The bathroom and toilet walls are built to enable grabrails to be safely and economically installed.

- Walls to enable safe installation of grabrails to toilet, bath and shower.
- Reinforcement to be in the form of 25mm noggins or plywood sheeting with 12mm thickness.

Internal Stairways

Where installed, stairways are designed to reduce the likelihood of injury and also enable future adaptation.

- Stairs to have a continuous handrail to one side of the stair where the rise is greater than 1m.

Appendix 2 | Best Practice Options for Consideration

We recommend a best practice approach to accessibility that goes beyond minimum standards and embraces the intent of the DDA. The following measures will promote inclusion and participation for all users.

Accessways

We recommend that the accessible path of travel be a minimum 1200mm wide to comply with AS1428.2. Wider pathways will allow easy access for more people who have a permanent disability, people with a temporary disability, people pushing prams and elderly people using walking frames and the like. This is in keeping with the principles of Universal Design.

For or a wheelchair and a pram to pass 1500mm is required and for two wheelchairs to pass requires 1800mm.

Automatic Entrance Doors

The provision of automatic sliding doorways maximizes access for people with a disability. Further, delivery drivers, people carrying parcels and the elderly also benefit from the provision of automatic doors.

Automatic doors provide safe, convenient access for everyone, regardless of age or ability in keeping with universal design principles. They also offer COVID-19 mitigation measures, reducing the transfer of germs and bacteria.

Luminance Contrast

Luminance contrast assists people with a vision impairment to navigate the built environment. Mandatory items that require luminance contrast are tactile indicators, accessible toilet seats and doorways as outlined in other sections of this report. The following can also be provided as a best practice measure to ensure ease of use:

- Minimum 30% luminance contrast between floors and walls or between walls and skirting boards;
- Minimum 30% luminance contrast between the ground surface and obstructions such as columns, bollards and street furniture;
- To assist people with a vision impairment, locate the building entrance, consider providing features with a minimum 30% luminance contrast to the background surface such as an entry mat or awning.
- Minimum 30% luminance contrast between the floor and the entrance mat (this allows people with vision impairment to locate the entrance;
- Minimum 30% luminance contrast between walls and handrails.

Visual Indication to Glazing (additional measures)

To ensure full height glazing that can be mistaken for a doorway is highlighted, we recommend the provision of a “double decal” as per international precedent. This involves the provision of two (2) decal strips that have a minimum 30% luminance contrast to each other. As such, the background colour does not need to be relied upon.

Furniture and Joinery Hardware

The use of D-type pull handles to furniture and joinery that provide a minimum 35mm clearance between the rear face of the handle and the face of the drawer is generally recommended to promote accessibility and inclusion.

Wayfinding – Signage

Signs and symbols should be provided to inform all users. A signage system which informs all users is encouraged. The use of pictograms and directional cues is recommended as is the use of luminance contrast to ensure the message is clear and legible.

Wayfinding – Landmarks and Tactile Indicators

To assist people with vision impairment navigate their environment, the use of directional tactile indicators can be implemented, noting that their use should be minimised. The design of directional tactile indicators is site / building specific.

Additionally, landmarks such as entry features, statues, sculpture, fountains, or other unique features can be used as a means of way-finding throughout a building. This especially assists people with intellectual disabilities.

Terminology (Best-practice recommendation)

The use of positive terminology such as “accessible” should be used when referring to accessible facilities such as toilets and carparking. This term is preferable to “disabled” which is commonly used. This principle is to be adopted through the design and documentation of a project and on signage throughout the completed building.

Lighting and Glare

Minimum interior lighting levels should generally consider AS1428.2 (1992) Clause 19. Consistent lighting levels should be provided throughout, without pools of light or dark areas. AS1428.2 (1992) recommends the following minimum illumination levels:

- Entrances 150lx
- Passages and walkways 150lx
- Stairs 150lx
- Toilets and Locker rooms 200lx
- Counter tops 250lx
- General displays 200-300lx

Glare and excessively reflective surfaces should be avoided. This includes glare from windows.

BUILDING CODE OF AUSTRALIA COMPLIANCE ASSESSMENT REPORT

Residential Unit Development – Community Housing Redevelopment.

38 & 40 John T Bell Drive and 31 & 33 Maften Close, Maryland, NSW

DATE ►05/09/2022

REPORT NO. ►10644.2 – Rev.02

PREPARED FOR ►LAHC

PREPARED BY ► AE&D

AEDGROUP

Innovation & expertise in building regulations

CONTENTS

REVISION STATUS				
REPORT NO/REV	DATE	STATUS	WRITTEN	CHECKED
10644.2 – Rev.00	31/05/2022	DRAFT FOR COMMENT	MN	JC
10644.2 – Rev.01	20/07/2022	FINAL REPORT	MN	JC
10644.2 – Rev.02	05/09/2022	ADDITIONAL REVISION	MN	JC

AE&D Pty Ltd A: Suite 3.04, 55 Miller Street, Pyrmont NSW 2009
Southern Highlands A: Unit 6, 13 Lyell Street, Mittagong NSW 2575
Sutherland Shire A: Level 4 – Suite 33, 29 Kiora Road, Miranda NSW 2228
P: (02) 9571 8433 E: admin@aedconsulting.com.au W: www.aedconsulting.com.au ABN: 15 149 587 495

1.0 EXECUTIVE SUMMARY AND RECOMMENDATIONS

This report provides a Building Code of Australia (BCA) 2019, Amendment 1 assessment of Residential Unit Development – Community Housing Redevelopment., to be located at 38 & 40 John T Bell Drive and 31 & 33 Maften Close, Maryland, NSW

The primary purpose of this report is to identify the non-compliance matters contained in the proposed DA Plan design against the current Deemed-to-Satisfy (DTS) Provisions of the BCA and to provide compliance recommendations to overcome the DTS non-compliances.

1.1 Recommendations

The following is a list of Deemed-to-Satisfy Provisions that should be addressed either by design amendments, additional information **OR** by way of a Performance Solution:

BCA Clause	Deemed-to-Satisfy Provision to be addressed
C1.1 Type of Construction Required	**Potential DTS Departure – External Wall Construction (Type B Construction)** The external walls are located within 9m and 3m from the side boundary which requires the walls to maintain a minimum FRL of 90/30/30 for the loadbearing parts and has no FRL requirements for the non-load bearing portions (please note however, it is likely this wall is considered load bearing).  ***Further details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification (and structural details). This is to include the manufacturers specifications and relevant testing reports to AS1530.4-2014.***
C1.9 Non - combustible building elements	**Potential DTS Departure – Non-combustible Materials** The plans have not provided details of the non-combustible noggings or timber linings for adaptable unit bathroom, or the non-combustible packers to walls within the building that are required to be fire rated. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
C1.14 Ancillary elements	**Potential DTS Departure – Ancillary Connections** The plans have not provided details of the non-combustible noggings and non-combustible packers to the external walls of the building. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***

AE&D Pty Ltd A: Suite 3.04, 55 Miller Street, Pyrmont NSW 2009
Southern Highlands A: Unit 6, 13 Lyell Street, Mittagong NSW 2575
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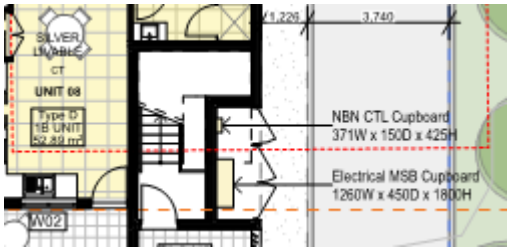
BCA Clause	Deemed-to-Satisfy Provision to be addressed
C3.11 Bounding Construction	**Further Information Required – Separation of Sole-Occupancy Units** Separation of sole-occupancy units with neighbouring SOU's and bounding public corridors is required to be supplied to detail the relevant FRL and door openings. - Walls: FRL 60/60/60 Loadbearing and FRL -/60/60 for non-loadbearing. - Doors: self-closing, tight fitting, solid core door greater than 35mm thickness. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification.***
D2.8 Enclosure of Space under Stairs and Ramps	**DTS Departure – Space Under Stairs Enclosed** Spaces under stairways are not permitted to be enclosed when forming a fire isolated stairway, or if unenclosed, they must be of FRL not less than 60/60/60 and contain self-closing -/60/30 fire doors. Currently the Unit 16 stairway contains enclosed cupboards or storage:  As a result, confirmation is required to be supplied confirming compliance with the D2.8 inclusive of testing reports and manufacturers specifications of the walls, ceilings, and doors. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification.***
D3.2 Access to buildings	**Further Information Required – Access to the Building** Access to the building from the carpark and the main pedestrian entrances is required to be made compliant in accordance with AS1428.1-2009. Details have been provided on the floor plans of the compliant features for accessibility. Further information is required to be supplied to demonstrate compliance through the provision of elevations/specifications/sections of the handrails, ramps, and stairs as required on application for the Construction Certificate. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification.***
D3.3 Parts of the building required to be accessible	**Further Information Required – Access within the Building** Access is required to be provided to all ground level floors from the building entrances throughout in accordance with AS1428.1-2009. Details have been provided on the floor plans of the compliant features for accessibility. Further information is required to be supplied to demonstrate compliance through the provision of elevations/specifications/sections of the handrails, ramps, and stairs as required on application for the Construction Certificate. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification.***
E1.3 Fire Hydrants	**Compliance Required – Fire Hydrant Pressures and Flows** A fire hydrant is required to be installed in any Class 2 development exceeding a total floor area of 500m2. The Hydraulic Engineer has confirmed that street hydrants will be used, and that adequate coverage is provided to both buildings on site. Confirmation has not yet been supplied for the street hydrant pressures and flows. As a result, the hydraulic engineer will be required to provide certification that there is adequate pressure and flows at the furthest points.

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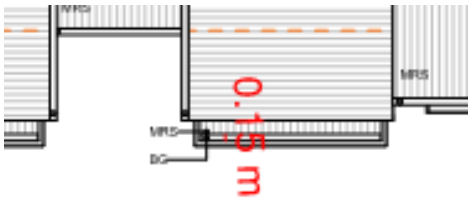
Sutherland Shire A: Level 4 – Suite 33, 29 Kiora Road, Miranda NSW 2228
P: (02) 9571 8433 E: admin@aedconsulting.com.au W: www.aedconsulting.com.au ABN: 15 149 587 495

BCA Clause	Deemed-to-Satisfy Provision to be addressed
	Hydraulic Services Design Certification and associated plans must be incorporated into the construction certificate specification.
E2.2 General Requirements (Inclusive of Table E2.2a / Table E2.2b & NSW amendments)	**Compliance Required - E2.2 – Smoke Alarms and Smoke Detectors** Smoke detectors are required to be installed in the public corridors or internal public spaces, and smoke alarm systems are required to be installed to AS3786-2018 to each sole-occupancy unit. Smoke detectors will be required to be installed to all other portions of the building in accordance with Specification E2.2a of the BCA, and AS1670.1-2018. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification.***
F1.0 Deemed -to-Satisfy Provisions	**Note – Weatherproofing of External Walls and Portions of the Building** Due to there being no deemed to satisfy provisions for the external walls of a building with regards to weatherproofing, a performance solution is required to be obtained from a façade engineer to address the departure from the DTS provisions and confirm compliance with performance requirement FP1.4. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification.***
F1.1 Stormwater Drainage	**Further Information Required – Box Gutter** Stormwater systems are required to be designed and constructed to AS3500.3-2018. Currently, it appears that box gutters have been proposed:  As a result of the above, a rainhead and design dimensions are required to be designed by the Hydraulic Engineer to allow for adequate removal of water from the gutter and preventing the water from pooling or inflow through the roof cavity. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification.***

AE&D Pty Ltd A: Suite 3.04, 55 Miller Street, Pyrmont NSW 2009
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2.0 INTRODUCTION

This report provides a Building Code of Australia (BCA) 2019, Amendment 1 assessment of Residential Unit Development – Community Housing Redevelopment., to be located at 38 & 40 John T Bell Drive and 31 & 33 Maften Close, Maryland, NSW.

This report provides a BCA assessment table in Section 3.0 that summarises the identified non-compliance matters and offers specific recommendations and is a DA Plan assessment. This report is in no way to be misconstrued with a CC plan assessment.

2.1 Basis of Report

The key basis of this report is to address compliance with the Building Code of Australia (BCA) 2019, Amendment 1. The scope of services is limited to Sections C – "Fire Resistance", Section D – "Access & Egress", Section E – "Services & Equipment", and Section F "Health and Amenity".

This report is based on a desktop assessment of the proposed plans, with specific reference to the following:

- Architectural plans prepared by CKDS Architecture Pty Ltd, Drawing Numbers:

Drawing Title	Drawing No.	Revision	Dated
Cover Page	A0001	B	26/08/2022
Cover Page 2	A0002	B	26/08/2022
Block Analysis Plan	A-0003	B	26/08/2022
Site Analysis Plan	A-0004	B	26/08/2022
Demolition Plan	A-0101	B	26/08/2022
Site Plan - Ground	A-1001	B	26/08/2022
Site Plan – First Floor	A-1002	B	26/08/2022
Site Plan - Roof	A-1003	B	26/08/2022
Ground Floor Plan – South	A-1101	B	26/08/2022
Ground Floor Plan - North	A-1102	B	26/08/2022
First Floor Plan - South	A-1103	B	26/08/2022
First Floor Plan - North	A-1104	B	26/08/2022
Roof Plan – South	A-1105	B	26/08/2022
Roof Plan – North	A-1106	B	26/08/2022
Street Elevations	A-2001	B	26/08/2022
East / West Elevation	A-2002	B	26/08/2022
Internal North South Elevations	A-2003	B	26/08/2022
Section A	A-3001	B	26/08/2022
Section B & C	A-3002	B	26/08/2022
Cut and Fill Diagrams	A-4001	B	26/08/2022
Waste Management Plans	A-4002	B	26/08/2022
RFB and Landscape Area	A-4003	B	26/08/2022
Shadow Diagrams	A-5001	B	26/08/2022

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Drawing Title	Drawing No.	Revision	Dated
Solar - South	A-5002	B	26/08/2022
Solar - North	A-5003	B	26/08/2022
Schedule of Finishes	A-6001	B	26/08/2022
Maften Close	A-6002	B	26/08/2022
Window Schedule	A-7001	B	26/08/2022

- The Building Code of Australia 2019, Amendment 1 prepared by the Australian Building Codes Board.
- The Guide to the BCA 2019, Amendment 1, prepared by the Australian Building Codes Board.

2.2 Purpose of the Report

The purpose of this report is to assess the following:

- Assessment under the current Building Code of Australia 2019, Amendment 1 and list any departures from the BCA 2019, Amendment 1.
- Provide recommendations to address identified non-compliances, and/or identify potential performance solutions.

2.3 Limitations of the Report

This report does not assess the following:

- Access and facilities for people with disabilities is addressed however compliance with Disability Discrimination Act 1992 (DDA) is outside the scope of this report. It should be noted that BCA compliance does not necessarily meet the requirements of the Disability Discrimination Act (DDA).
- Reporting on hazardous materials, OH&S matters or site contamination
- Assessment of any structural elements or geotechnical matters relating to the building, including any structural or other assessment of the existing fire-resistant levels of the building
- Consideration of any fire services operations (including hydraulic, electrical or other systems)
- Assessment of plumbing and drainage installations, including stormwater
- Assessment of mechanical plant operations, electrical systems or security systems
- Heritage significance
- Consideration of energy or water authority requirements
- Consideration of Council's local planning policies
- Environmental or planning issues
- Requirements of statutory authorities
- Pest inspection or assessment building damage caused by pests (general/visual pest invasion or damage will be reported, however invasive or intrusive inspections have not be carried out)
- Sections G, H or I of the BCA are not considered.
- Provision of any construction approvals or certification under Part 4A or Part 5 of the Environmental Planning & Assessment Act 1979.
- Glazing, shading, lighting calculations and the like required by Section J of the BCA not been carried out
- BCA 2019 does not directly specify slip-resistance classification(s) for all *accessible paths of travel*; however, we highlight the need under AS 1428.1-2009 for all *accessible paths of travel* to have a slip-resistant surface. We recommend you should seek surface finish advice from an independent specialist slip safety consultant.

AE&D Pty Ltd A: Suite 3.04, 55 Miller Street, Pyrmont NSW 2009
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- Assessment of fire services that have not been indicated on plan. It is advised that suitably qualified FPAA designers be engaged at CC stages to implement these systems into the proposal.
- General BCA compliance clauses have been excluded where detail is not necessary for the purposes of DA submission.
- The assessment has been carried out as if the lots have been consolidated already, and therefore, no assessment of the boundaries as a fire source feature has been included within the assessment.
- No flood planning assessment or flood conditions have been assessed. This is required to be sent to the relevant Hydraulic Engineer to confirm compliance. Please note, the site is deemed to be Class 2 Acid Sulphate Soils.
- No consideration has been given to the potential requirements of Hunter Water in relation to the connections to their systems, and location of sewers within proximity to the development. It is advised that Hunter Water may have additional requirements. This may alter the development in some way; therefore, it is recommended you seek their approval or guidance prior to lodging.

AE&D Pty Ltd A: Suite 3.04, 55 Miller Street, Pyrmont NSW 2009
Southern Highlands A: Unit 6, 13 Lyell Street, Mittagong NSW 2575
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3.0 BCA ASSESSMENT DATA

The following data is provided in respect to review of the building under the Building Code of Australia 2019, Amendment 1 in respect to the compliance assessment of the Residential Unit Development, to be located at 38 & 40 John T Bell Drive and 31 & 33 Maften Close, Maryland.

BCA Building Classifications:	Class 2 (Residential Accommodation)
Building rise in storeys:	2 (determined in accordance with C1.2 of the BCA).
Type of Construction:	Type B (determined in accordance with C1.1 of the BCA)
Effective Height (m):	3.1m

3.1 Location of Fire Source features

The potential fire *source features* to be considered for this building are the external wall of another building on the allotment which is not a Class 10 building, the side or rear of the allotment boundary or the far side of the road.

In this instance the following setbacks are determined in respect to the fire source features applicable to the building

- North – Opposite side of the road (John T Bell Drive)
- South - Opposite side of the road (Maften Close)
- East – Boundary
- West – Boundary

Please note - the opposite building and vice versa are also fire source features.

3.2 Summary of Fire Services Required

Summarised below are the BCA deemed to satisfy fire services required for the building:

- Fire hydrants are required to serve all areas and be provided in accordance with BCA E1.3 and AS 2419.1-2005.
- Portable fire extinguishers must be provided in accordance with BCA E1.6 & Table E1.6 and must be selected, located, and distributed in accordance with Sections 1, 2, 3 and 4 of AS 2444-2001.
- Automatic smoke and fire detection to be provided throughout the building in accordance with Part E2 and BCA Specification E2.2a. and AS 1670.1-2018
- An emergency lighting system must be installed throughout the building in accordance with BCA E4.2 of the BCA and AS 2293.1-2018.
- Exit signs must be installed throughout the building in accordance with BCA E4.5 and AS 2293.1-2018.

3.3 Building subject to Design and Building Practitioners Act

The Design and Building Practitioners Act 2020 and Design and Building Practitioners Regulation 2021 (the DBP legislation) were established to raise the standards of building design and building work. This legislation applies to class 2 buildings or buildings with a class 2 part.

Design Practitioners (e.g. architects, engineers) have obligations in relation to preparing and declaring Regulated Designs under the DBP legislation. The obligations under the DBP legislation are in addition to design requirements under other legislation.

For more information, please go to:

Design-Practitioners-Handbook-3.pdf (nsw.gov.au)

Regulated_Design_Guidance_Material.PDF (nsw.gov.au)

AE&D Pty Ltd A: Suite 3.04, 55 Miller Street, Pyrmont NSW 2009
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P: (02) 9571 8433 E: admin@aedconsulting.com.au W: www.aedconsulting.com.au ABN: 15 149 587 495

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AE&D Pty Ltd A: Suite 3.04, 55 Miller Street, Pyrmont NSW 2009
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Sutherland Shire A: Level 4 – Suite 33, 29 Kiora Road, Miranda NSW 2228
P: (02) 9571 8433 E: admin@aedconsulting.com.au W: www.aedconsulting.com.au ABN: 15 149 587 495

4.0 BCA ASSESSMENT SUMMARY

The following table details the BCA compliance of the assessed design.

BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
SPECIFICATION A1.1 FIRE PROTECTED TIMBER					
Specification A1.1 has been introduced to allow fire-protective timber construction utilising a non-combustible fire protective covering for buildings not exceeding 25m which are sprinkler protected.					
2.1 General requirements			X		Requirements for fire protected timber
2.2 Massive Timber			X		Not applicable.
SECTION B STRUCTURE					
Part B1: Structural Provisions				X	❖ Structural engineer to provide structural drawings/details and accompanying structural design certificate to demonstrate that all building elements will comply with Section B of the BCA. ❖ Glazing must comply with AS1288-2006 and AS2047-2014. ❖ Termite control must comply with AS3660.1-2000 where any primary building elements are timber. ❖ If the building is in a flood hazard area it is required to comply with BCA clause B1.6. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification (and structural details)***
SECTION C FIRE RESISTANCE					
Part C1 - Fire Resistance & Stability					
C1.1 Type of Construction Required				X	Refer to Spec C1.1 and Attachment B for Schedule of FRLs for Type A Construction. These are to be certified by the architect and structural engineer as having been met, based on the proposed design. Please note that specification C1.1 also requires design compliance with the following: 1. Where a combustible material is used as a finish or lining to a wall or roof, or sunscreen, or awning, to a building element required to have an FRL the material must be exempted or comply with the fire hazard properties prescribed under C1.10 and must not otherwise constitute an undue risk of fire spread via the façade of the building or compromise egress from the building. This includes any aluminium panels which where containing plastic strengthening elements would not be non-combustible. 2. Fire isolated shafts are required to be enclosed at the top and bottom of the shaft with fire rated construction as per specification C1.1. This fire rating is required in two directions.

AE&D Pty Ltd A: Suite 3.04, 55 Miller Street, Pyrmont NSW 2009
Southern Highlands A: Unit 6, 13 Lyell Street, Mittagong NSW 2575
Sutherland Shire A: Level 4 – Suite 33, 29 Kiora Road, Miranda NSW 2228
P: (02) 9571 8433 E: admin@aedconsulting.com.au W: www.aedconsulting.com.au ABN: 15 149 587 495

BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
					3. External walls, common walls and the flooring and floor framing of lift pits must be non- combustible construction. 4. Internal lightweight walls to be fire rated, as well as non-load bearing lift, ventilating, pipe, garbage or similar shaft wall must be of non-combustible construction. 5. The walls to fire rated shafts must achieve the fire rating from both directions i.e. from inside and outside the shaft. 6. Roof: The roof of the building does not need an FRL, provided the roof covering is non-combustible (as per the concession in Clause 3.5 of Specification C1.1 of the BCA). 7. Bounding construction to residential units must comply with the fire rating requirements of table 3. 8. Floors: see clause C2.9. In addition floors require an FRL of 90/90/90 where between residential levels. **Potential DTS Departure – External Wall Construction (Type B Construction)** The external walls are located within 9m and 3m from the side boundary which requires the walls to maintain a minimum FRL of 90/30/30 for the loadbearing parts, and has no FRL requirements for the non-load bearing portions (please note however, it is very likely this wall is considered load bearing).  ***Further details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification (and structural details). This is to include the manufacturers specifications and relevant testing reports to AS1530.4-2014. Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification (and structural details)***
C1.2 Calculation of Rise In Storeys			X		Refer to Section 2.0 of this report for further details

AE&D Pty Ltd A: Suite 3.04, 55 Miller Street, Pyrmont NSW 2009
Southern Highlands A: Unit 6, 13 Lyell Street, Mittagong NSW 2575
Sutherland Shire A: Level 4 – Suite 33, 29 Kiora Road, Miranda NSW 2228
P: (02) 9571 8433 E: admin@aedconsulting.com.au W: www.aedconsulting.com.au ABN: 15 149 587 495

BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
C1.3 Buildings of Multiple Classifications			X		Not applicable.
C1.4 Mixed Types of Construction			X		Not applicable.
C1.5 Two Storey Class 2, 3 or 9c buildings			X		A building with a rise in storeys of 2 may be Type C construction if – (a) It is a Class 2 or 3 building or a mixture of these classes and each sole occupancy unit has – (i) Access to at least 2 exits; or (ii) Its own direct access to a road or open space; or ***Note – this cannot be applied as a concession due to the upper floors not having direct access to a road or open space.***
C1.6 Class 4 Parts			X		Not applicable.
C1.7 Open Spectator Stands			X		Not applicable.
C1.8 Lightweight Construction				X	(a) Where it is proposed to use *lightweight construction* (within the meaning of the BCA) this must comply with Specification C1.8 if it is used in a wall system— (i) that is required to have an FRL; or (ii) for a lift shaft, stair shaft or service shaft or an external wall bounding a public corridor including a non fire-isolated passageway or non fire-isolated ramp. (b) If lightweight construction is used for the fire-resisting covering of a steel column or the like, and if — (i) the covering is not in continuous contact with the column, then the void must be filled solid, to a height of not less than 1.2 m above the floor to prevent indenting; and (ii) the column is liable to be damaged from the movement of vehicles, materials or equipment, then the covering must be protected by steel or other suitable material. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
C1.9 Non - combustible building elements		X			<u>Design requirements:</u> (a) In a building *required* to be of Type A or B construction, the following building elements and their components must be *non-combustible*: (i) External walls and *common walls*, including all components incorporated in them including the facade covering, framing and insulation. (ii) The flooring and floor framing of lift pits.

AE&D Pty Ltd A: Suite 3.04, 55 Miller Street, Pyrmont NSW 2009
Southern Highlands A: Unit 6, 13 Lyell Street, Mittagong NSW 2575
Sutherland Shire A: Level 4 – Suite 33, 29 Kiora Road, Miranda NSW 2228
P: (02) 9571 8433 E: admin@aedconsulting.com.au W: www.aedconsulting.com.au ABN: 15 149 587 495

BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
					(iii) Non-*loadbearing internal walls* where they are *required* to be *fire-resisting*. (b) A shaft, being a lift, ventilating, pipe, garbage, or similar shaft that is not for the discharge of hot products of combustion, that is non-loadbearing, must be of non-combustible construction in— (ii) a building required to be Type B construction, subject C2.10, in- (A) a Class, 2 building. (c) A *loadbearing internal wall* and a *loadbearing fire wall*, including those that are part of a *loadbearing shaft*, must comply with **Specification C1.1**. (d) The requirements of **(a)** and **(b)** do not apply to gaskets, caulking, sealants, termite management systems, glass including laminated glass, thermal breaks associated with glazing systems, damp-proof courses. (e) The following materials may be used wherever a *non-combustible* material is *required*: (i) Plasterboard. (ii) Perforated gypsum lath with a normal paper finish. (iii) Fibrous-plaster sheet. (iv) Fibre-reinforced cement sheeting. (v) Pre-finished metal sheeting having a *combustible* surface finish not exceeding 1 mm thickness and where the *Spread-of-Flame Index* of the product is not greater than 0. (vi) Sarking type materials that do not exceed 1mm in thickness and have a Flammability Index not greater than 5. (vii) Bonded laminated materials where— (A) each lamina, including any core, is *non-combustible*; and (B) each adhesive layer does not exceed 1 mm in thickness and the total thickness of the adhesive layers does not exceed 2mm; and (C) the *Spread-of-Flame Index* and the *Smoke-Developed Index* of the bonded laminated material as a whole do not exceed 0 and 3 respectively. **Potential DTS Departure – Non-combustible Materials** The plans have not provided details of the non-combustible noggings or timber linings for adaptable unit bathroom, or the non-combustible packers to walls within the building that are required to be fire rated.

AE&D Pty Ltd A: Suite 3.04, 55 Miller Street, Pyrmont NSW 2009
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					Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification
C1.10 Fire Hazard Properties				X	(a) The fire hazard properties of the following internal linings, materials and assemblies must comply with Specification C1.10 by way of test reports / certificates provided from a *registered testing authority* (within the meaning of the BCA): (i) Floor linings and floor coverings. (ii) Wall linings and ceiling linings. (iii) Air-handling ductwork. (vii) Sarking type materials. (viii) Attachments to floors, ceilings, internal walls and the internal linings of external walls. (ix) Other materials including insulation materials other than sarking type materials. (b) NSW: Paint or fire -retardant coatings must not be used in order to make a material comply with the required fire hazard property, except in respect to a material referred to in NSW Specifications C1.10, NSW Table 4 and to which Notes 4 and 5 are applicable. (c) The requirement s of (a) do not apply to a material or assembly if it is – (i) plaster, cement render, concrete, terrazzo, ceramic tile or the like; or (ii) a fire protective covering; or (iii) a timber framed window; or (iv) a solid timber handrail or skirting; or (v) a timber-faced door; or (vi) an electrical switch, socket-outlet, cover plate or the like; or (vii) a material used – (A) a roof insulating material applied in continuous contact with a substrate; or (B) an adhesive; or (C) a damp-proof course, flashing, caulking, sealing, ground moisture barrier or the like; or (viii) a paint, varnish, lacquer or similar finish, other than nitro-cellulose lacquer; or (ix) a clear or translucent roof light of glass fibre-reinforced polyester if – (A) the roof in which is is installed forms part of a single storey building required to be Type C construction; and (B) the material is used as part of the roof covering; and

AE&D Pty Ltd A: Suite 3.04, 55 Miller Street, Pyrmont NSW 2009
Southern Highlands A: Unit 6, 13 Lyell Street, Mittagong NSW 2575
Sutherland Shire A: Level 4 – Suite 33, 29 Kiora Road, Miranda NSW 2228
P: (02) 9571 8433 E: admin@aedconsulting.com.au W: www.aedconsulting.com.au ABN: 15 149 587 495

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					(C) it is no closer than 1.5m from another roof light of the same type; and (D) each roof light is not more than 14m² in area; and (E) the area of the roof lights per 70m² of roof surface is not more than 14m² in area; or (x) a face plate or neck adaptor of supply and return air outlets of an air handling system; or (xi) a face plate or diffuser plate of light fitting and emergency exit signs and associated electrical wiring and electrical components; or (xii) a joinery unit, cupboard, shelving or the like; or (xiii) NSW: an attached non-building fixture and fitting such as – (A) A curtain, blind, or similar décor, other than- (aa) a proscenium curtain required by Specification H1.3; or. (bb) in a Class 9b building used as an entertainment venue, a material that is regulated under NSW Table 4; and (A) A whiteboard, window treatment or the like; or (xiv) Timber treads, risers, landings and associated supporting framework installed in accordance with D2.25 where the Spread-of-Flame Index and the Smoke-Developed Index of the timber does not exceed 9 and respectively; or (xv) Any other material that does not significantly increase the hazards of the fire. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
C1.11 Performance of External Walls in Fire			X		Not applicable.
C1.12 Combustible materials			X		Deleted.
C1.13 Fire protected timber: concession			X		Fire-protected timber may be used wherever an element is required to be non-combustible, provided- (a) the building is – (i) a separate building; or (ii) a part of a building- (A) which only occupies part of a storey, and is separated from the remaining part by a fire wall; or (B) which is located above or below a part not containing fire-protected timber and the floor

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BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
					between the adjoining parts is provided with an FRL not less than prescribed for a fire wall for the lower storey; and (b) The building has an effective height of not more than 25m; and (c) The building has a sprinkler system (other than a FPAA101D or FPAA101H) throughout complying with Specification E1.5; and (d) Any insulation installed in the cavity of the timber building element required to have an FRL is non-combustible; and (e) Cavity barriers are provided in accordance with Specification C1.13
C1.14 Ancillary elements			X		<u>Design requirements:</u> An *ancillary element* must not be fixed, installed or attached to the internal parts or external face of an *external wall* that is *required* to be *non-combustible* unless it is one of the following: (a) An ancillary element that is non-combustible. (b) A gutter, downpipe or other plumbing fixture or fitting. (c) A flashing. (d) A grate or grill not more than 2m² in an area associated with a building service. (e) An electrical switch, socket outlet, cover plate or the like. (f) A light fitting. (g) A *required* sign. (h) A sign other than one provided under (a) or (g) that – (i) Achieves a group number 1 or 2; and (ii) Does not extend beyond one storey; and (iii) Does not extend beyond one fire compartment; and (iv) Is separated vertically from other signs permitted under (h) by at least 2 storeys. (i) An awning, sunshade, canopy , blind or shading hood other than one provided under (a) that – (i) Meets the requirements of Table 4 of Specification C1.10 as an internal element; and (ii) Serves a storey - (A) At ground level; or (B) Immediately above a storey at ground level ; and (iii) Does not serve an exit, where it would render the exit unusable in a fire. (j) A part of a security, intercom or announcement system. (k) Wiring. (l) A paint, lacquer or similar finish,

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					(m) A gasket, caulking, sealant or adhesive directly associated with (a) to (k). **Potential DTS Departure – Ancillary Connections** The plans have not provided details of the non-combustible noggings and non-combustible packers to the external walls of the building. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
Part C2 - Compartmentation & Separation					
C2.1 Application of Part			X		C2.2, C2.3 and C2.4 do not apply to a carpark provided with a sprinkler system (other than a FPAA101D or FPAA101H system complying with Specification E1.5, an open-deck carpark or an open spectator stand.
C2.2 General Floor Area & Volume Limitations			X		Not applicable.
C2.3 Large Isolated Buildings			X		Not applicable.
C2.4 Requirements for Open Space			X		Not applicable.
C2.5 Class 9a & 9c Buildings			X		Not applicable.
C2.6 Vertical Separation of openings in external walls			X		Not applicable.
C2.7 Separation by Fire Walls			X		Not applicable.
C2.8 Separation of Classifications in the same storey			X		Not applicable.
C2.9 Separation of Classifications in different storeys			X		Not applicable.
C2.10 Separation of lifts shafts			X		Not applicable.
C2.11			X		Not applicable.

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BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
Stairways and lifts in one shaft					
C2.12 Separation of Equipment				X	(a) Equipment other than that described in (b) and (c) must be separated from the remainder of the building with construction complying with (d), if that equipment comprises – (i) lift motors and lift control panels or (ii) Emergency generators used to sustain emergency equipment operating in the emergency mode; or (iii) Central smoke control plant; or (iv) Boilers; or (v) A battery system installed in that building that has a total voltage of 12 volts or more and a storage capacity of 200kWh or more. (b) Equipment need not be separated in accordance with (a) if the equipment comprises- (i) Smoke control exhaust fans located in the air stream which are constructed for high temperature operation in accordance with Specification E2.2b; or (ii) Stair pressurizing equipment installed in compliance with AS 1668.1; or (iii) A lift installation without a machine room; or (iv) Equipment otherwise adequately separated from the remainder of the building. (c) Separation of onsite fire pumps must comply with the requirements of AS2419.1. (d) Separating construction must have – (i) Except as provided by (ii) – (A) An FRL is required by Specification C1.1, but not less than 120/120/120; and (B) Any doorway protected with a -/120/30 self-closing fire door; or (ii) When separating a lift shaft and lift motor room, an FRL not less than 120/-/-. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification.***
C2.13 Electrical Supply				X	(a) An electricity sub-station must be separated from the building in accordance with the Energy Authority Requirements (i.e. Ausgrid). (b) A main switchboard located within the building (and which sustains emergency equipment operating in the emergency mode) must –

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Southern Highlands A: Unit 6, 13 Lyell Street, Mittagong NSW 2575
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					(i) be separated from any other part of the building by construction having an FRL of not less than 120/120/120; and (ii) have any doorway in that construction protected with a self-closing fire door having an FRL of not less than – /120/30. (c) Electrical conductors located within the building that supply – (i) a substation located within the building which supplies a main switchboard covered by (b); or (ii) a main switchboard covered by (b), must— (iii) have a classification in accordance with AS/NZS 3013-2005 of not less than— (A) if located in a position that could be subject to damage by motor vehicles — WS53W; or (B) otherwise — WS52W; or (iv) be enclosed or otherwise protected by construction having an FRL of not less than 120/120/120 (d) where emergency equipment is required in a building, all switchboards in the electrical installation, which sustain the electricity supply to the emergency equipment, must be constructed so that emergency equipment switchgear is separated from non-emergency equipment switchgear by metal partitions designed to minimise the spread of a fault from the non-emergency equipment switchgear. (e) For the purposes of (d), emergency equipment includes but it is not limited to – (i) Fire hydrant booster pumps (ii) Pumps for automatic sprinkler systems, water spray, chemical fluid suppression systems or the like. (iii) Pumps for fire hose reels where such pumps and fire hose reels form the sole means of fire protection in the building. (iv) Air handling systems designed to exhaust and control the spread of fire and smoke. (v) Emergency lifts. (vi) Control and indicating equipment. (vii) Emergency warning and intercom systems (EWIS). ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
C2.14 Public corridors in Class 2 & 3 Buildings	X				In a Class 2 building, a public corridor, if more than 40 m in length, must be divided at intervals of not more than 40 m with smoke-proof walls complying with Clause 2 of Specification C2.5.
Part C3 - Protection of Openings					

AE&D Pty Ltd A: Suite 3.04, 55 Miller Street, Pyrmont NSW 2009
Southern Highlands A: Unit 6, 13 Lyell Street, Mittagong NSW 2575
Sutherland Shire A: Level 4 – Suite 33, 29 Kiora Road, Miranda NSW 2228
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C3.1 Application of Part			X		(a) The DTS provisions of this Part do not apply to- (i) Control joints, weep holes and the like in external walls of masonry construction and joints between panels in external walls of pre -cast concrete panel construction if, in all cases they are not larger than necessary for the purpose; and (ii) Non-combustible ventilators for subfloor or cavity ventilation, if each does not exceed 45000m in face area and spaced not less than 2m from any other ventilator in the same wall; and (iii) Openings in the vertical plane formed between building elements at the construction edge or perimeter of a balcony or verandah, colonnade, terrace, or the like and (iv) In a carpark – (A) Service penetrations through; and (B) Openings formed by a vehicle ramp in, a floor other than a floor that separates a part not uses as a carpark, providing the connected floors comply as a single fire compartment for the purposes of all other requirements of the DTS provisions of Sections C, D & E. (b) For the purposes of DTS provisions of this Part, openings in building elements required to be fire resisting include doorways, windows (including any associated fanlight), infill panels and fixed or openable glazed areas that do not have the required FRL. (c) For the purposes of the DTS provisions of this part, openings other than those covered under (a)(iii), between building elements such as columns, beams and the like, in the plane formed at the construction edge of the perimeter of the building, are deemed to openings in the external wall.
C3.2 Protection of openings in external walls	X				(a) Openings in an external wall that is required to have an FRL must be protected in accordance with C3.4: (i) if the distance between the opening and the fire-source feature is less than 3 m from a side or rear boundary; or (ii) less than 6 m from the far boundary of a road, river, lake or the like adjoining the allotment, if not located in a storey at or near ground level; or (iii) less than 6 m from another building on the allotment that is not Class 10; If wall wetting sprinklers are to be used they are to be located externally. (b) if required to be protected under (a), not occupy more than 1/3 of the area of the external wall of the storey in which it is located unless they are in a Class 9b building used as an open spectator stand.
C3.3			X		Not applicable.

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Separation of external walls and associated openings in different fire compartments					
C3.4 Acceptable Methods of Protection	X				(a) Where protection is required to doorways and windows and other openings they must be protected as follows: (i) Doorways ❖ Internal or external wall wetting sprinklers as appropriate used with doors that are self-closing or automatic closing; or ❖ -/60/30 fire doors that are self-closing or automatic closing (ii) Windows ❖ Internal or external wall wetting sprinklers as appropriate used with windows that are automatic closing or permanently fixed in the closed position or; ❖ -/60- fire windows that are automatic closing or permanently fixed in the closed position or ❖ -/60- automatic closing fire shutters. (iii) Other openings – ❖ Excluding voids – internal or external wall wetting sprinklers as appropriate or ❖ Construction having a FRL not less than -/60/-. (b) Fire doors, fire windows and fire shutters must comply with Specification C3.4.
C3.5 Doorways in Fire Walls			X		Not applicable.
C3.6 Sliding Fire Doors			X		Not applicable.
C3.7 Protection of Doorways in horizontal exits			X		Not applicable.
C3.8 Openings in fire isolated exits			X		Not applicable – no fire-isolated exits proposed.
C3.9 Service Penetrations in fire-isolated exits			X		Not applicable.
C3.10 Openings in Fire isolated lift shafts			X		Not applicable.
C3.11 Bounding Construction				X	(a) A doorway in a Class 2 or 3 building must be protected if it provides access from a sole-occupancy unit to— (i) a public corridor, public lobby, or the like; or

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					(ii) a room not within a sole-occupancy unit; or (iii) the landing of an internal non fire-isolated stairway that serves as a required exit; or (iv) another sole-occupancy unit. (b) A doorway in a Class 2 or 3 building must be protected if it provides access from a room not within a sole-occupancy unit to— (i) a public corridor, public lobby, or the like; or (ii) the landing of an internal non fire-isolated stairway that serves as a required exit. (d) Protection for a doorway required under (a), (b) or (c) must be at least— (ii) in a building of Type B construction — a self-closing, tight fitting, solid core door not less than 35 mm thick, except— (e) Other openings in internal walls which are required to have an FRL with respect to integrity and insulation must not reduce the fire-resisting performance of the wall. (f) A door required by (d) may be automatic-closing in accordance with the following: (i) The automatic-closing operation must be initiated by the activation of a smoke detector, or any other detector deemed suitable in accordance with AS 1670.1 if smoke detectors are unsuitable in the atmosphere, installed in accordance with the relevant provisions of AS 1670.1 and located not more than 1.5 m horizontal distance from the approach side of the doorway. (ii) Where any other required suitable fire alarm system, including a sprinkler system (other than a FPAA101D system) complying with Specification E1.5, is installed in the building, activation of the system must also initiate the automatic-closing operation. (g) In a Class 2 building where a path of travel to an exit does not provide a person seeking egress with a choice of travel in different directions to alternative exits and is along an open balcony, landing or the like and passes an external wall of— (i) another sole-occupancy unit; or (ii) a room not within a sole-occupancy unit, then that external wall must— (iii) be constructed of concrete or masonry, or be lined internally with a fire-protective covering; and (iv) have any doorway fitted with a self-closing, tight-fitting solid core door not less than 35 mm thick; and (v) have any windows or other openings— (A) protected internally in accordance with C3.4; or

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Southern Highlands A: Unit 6, 13 Lyell Street, Mittagong NSW 2575
Sutherland Shire A: Level 4 – Suite 33, 29 Kiora Road, Miranda NSW 2228
P: (02) 9571 8433 E: admin@aedconsulting.com.au W: www.aedconsulting.com.au ABN: 15 149 587 495

BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
					(B) located at least 1.5 m above the floor of the balcony, landing or the like. **<u>Further Information Required – Separation of Sole-Occupancy Units</u>** Separation of sole-occupancy units with neighbouring SOU's and bounding public corridors is required to be supplied to detail the relevant FRL and door openings. - <u>Walls</u>: FRL 60/60/60 Loadbearing and FRL -/60/60 for non-loadbearing. - <u>Doors</u>: self-closing, tight fitting, solid core door greater than 35mm thickness. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification.***
C3.12 Openings in floors and ceilings for services				X	Where services pass through a floor which is required to achieve a FRL or a ceiling required to have a RISF, the service must be enclosed within a fire resisting shaft or fire protected in accordance with Clause C3.15. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification.***
C3.13 Openings in Shafts			X		Not applicable.
C3.15 Openings for Service Installations				X	Where services pass through an element which is required to achieve a FRL (other than an external wall or roof), the service must be fire stopped by a tested system or Specification C3.15. *Note – Concessions under Specification E1.5a (sprinklered building) for Class 2 & 3 buildings with an effective height of not more than 25m with a rise in storeys of 4 or more.* ❖ *service penetrations through internal non loadbearing and shafts may be reduced to -/45/15/ where a AS2118.1 or AS2118.4 sprinkler system installed.* ❖ *service penetrations through non-loadbearing internal walls and shafts may be reduced to -/60/15 where FPAA101D & FPAA101H sprinkler system installed.* ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
C3.16 Construction Joints				X	Construction joints, spaces, and the like in and between building elements required to be fire-resisting with respect to integrity and insulation must be protected in a manner identical with a prototype tested in accordance with AS 1530.4 to achieve the required FRL. The requirements above do not apply where joints, spaces and the like between fire protected timber elements are provided with cavity barriers in accordance with Specification C1.13. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***

AE&D Pty Ltd A: Suite 3.04, 55 Miller Street, Pyrmont NSW 2009
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C3.17 Columns protected in lightweight construction to achieve an FRL				X	Any column protected by lightweight construction to achieve an FRL which passes through a building element that is required to have an FRL or a resistance to the incipient spread of fire, must be installed using a method and materials identical with a prototype assembly of construction which has achieved the required FRL or resistance to the incipient spread of fire. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
SECTION D ACCESS & EGRESS					
Part D1 - Provision for Escape					
D1.1 Application of Part			X		The DTS provisions of this Part do not apply to the internal parts of a sole occupancy unit in a Class 2 building.
D1.2 Number of Exits required	X				(a) **All buildings** — Every building must have at least one exit from each storey. (g) **Access to exits** — Without passing through another sole-occupancy unit every occupant of a storey or part of a storey must have access to— (i) an exit; or (ii) at least 2 exits, if 2 or more exits are required.
D1.3 When Fire Isolated exits are required			X		Not applicable / not required.
D1.4 Exit Travel Distances	X				(a) Class 2 and 3 buildings— (i) The entrance doorway of any sole-occupancy unit must be not more than— (A) 6 m from an exit or from a point from which travel in different directions to 2 exits is available; or (B) 20 m from a single exit serving the storey at the level of egress to a road or open space; and *Note – the maximum distance of travel from a single exit serving the storey at the level of egress to the road or open space may be increased from 20m to 30m under Specification E1.5a (AS2118.1, AS2118.4, FPAA101D or FPAA101H sprinkler system) in buildings with an effective height of not more than 25m with rise in storeys of 4 or more.* (ii) no point on the floor of a room which is not in a sole-occupancy unit must be more than 20 m from an exit or from a point at which travel in different directions to 2 exits is available.
D1.5 Distance Between Alternative Exits	X				Exits that are required as alternative means of egress must be— (a) distributed as uniformly as practicable within or around the storey served and in positions where unobstructed access to at least 2 exits is readily available from all points on the floor including lift lobby areas; and (b) not less than 9 m apart; and

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					(c) not more than— (i) in a Class 2 building — 45 m apart; or (d) located so that alternative paths of travel do not converge such that they become less than 6 m apart.
D1.6 Dimensions of Exits and paths of Travel to Exits	X				In a required exit or path of travel to an exit— (a) 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; and (b) the unobstructed width of each exit or path of travel to an exit, except for doorways, must be not less than— (i) 1 m; or (ii) 1.8 m in a passageway, corridor or ramp normally used for the transportation of patients in beds within a treatment area or ward area; and (v) in any other case except where it opens to a sanitary compartment or bathroom — 750 mm wide; and (g) the unobstructed width of a required exit must not diminish in the direction of travel to a road or open space, except where the width is increased in accordance with (b)(ii) or (f)(i); and (h) the required width of a stairway or ramp must— (i) be measured clear of all obstructions such as handrails, projecting parts of balustrades or other barriers and the like; and (ii) extend without interruption, except for ceiling cornices, to a height not less than 2 m vertically above a line along the nosings of the treads or the floor surface of the ramp or landing. (i) to determine the aggregate unobstructed width, the number of persons accommodated must be calculated according to D1.13.
D1.7 Travel via Fire Isolated Stairs			X		Not applicable.
D1.8 External Stairways or ramps in lieu of Fire Isolated Stairs			X		Not applicable.
D1.9 Travel by non-fire-isolated stairs	X				(a) A non-fire-isolated stairway or non-fire-isolated ramp serving as a required exit must provide a continuous means of travel by its own flights and landings from every storey served to the level at which egress to a road or open space is provided. (b) In a Class 2, 3 or 4 building, the distance between the doorway of a room or sole occupancy unit and the point of egress to a road or open space by way of a stairway or ramp that is not fire-isolated and is required to serve that room or sole-occupancy unit must not exceed—

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					(ii) 60 m in all other cases. (d) In a Class 2 building, a required non-fire-isolated stairway or non-fire-isolated ramp must discharge at a point not more than— (i) 15 m from a doorway providing egress to a road or open space or from a fire isolated passageway leading to a road or open space; or (ii) 30 m from one of 2 such doorways or passageways if travel to each of them from the non-fire-isolated stairway or non-fire-isolated ramp is in opposite or approximately opposite directions.
D1.10 Discharge from Exits				X	(a) 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. (b) 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— (i) the minimum width of the required exit; (ii) or 1 m, whichever is the greater. (c) 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— (i) a ramp or other incline having a gradient not steeper than 1:8 at any part, or not steeper than 1:14 if required by the Deemed-to-Satisfy Provisions of Part D3; or (ii) except if the exit is from a Class 9a building, a stairway complying with the Deemed-to-Satisfy Provisions of the BCA. (d) The discharge point of alternative exits must be located as far apart as practical. (g) The number of persons accommodated must be calculated according to D1.13. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
D1.11 Horizontal Exits			X		Not applicable.
D1.12 Non-required stairways, ramps or escalators			X		Not applicable.
D1.13 Number of Persons Accommodated			X		For the purpose of the Deemed-to-Satisfy provisions, the number of persons accommodated in a storey, room or mezzanine must be determined with consideration to the purpose for which it is used and the layout of the floor area by—

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Note NSW Table D1.13 Area per person according to use					(a) calculating the sum of the numbers obtained by dividing the floor area of each part of the storey by the number of square metres per person listed in Table D1.13 according to the use of that part, excluding spaces set aside for— (i) lifts, stairways, ramps and escalators, corridors, hallways, lobbies and the like; and (ii) service ducts and the like, sanitary compartments or other ancillary uses; or (b) reference to the seating capacity in an assembly building or room; or (c) any other suitable means of assessing its capacity. *Refer NSW Table D1.13 to calculate area per person according to use.*
D1.14 Measurement of Distances			X		The nearest part of an exit means in the case of— (a) a fire-isolated stairway, fire-isolated passageway, or fire-isolated ramp, the nearest part of the doorway providing access to them; and (b) a non-fire-isolated stairway, the nearest part of the nearest riser; and (c) a non-fire-isolated ramp, the nearest part of the junction of the floor of the ramp and the floor of the storey; and (d) a doorway opening to a road or open space, the nearest part of the doorway; and (e) a horizontal exit, the nearest part of the doorway.
D1.15 Method of Measurement			X		The following rules apply: (a) In the case of a room that is not a sole occupancy unit in a Class 2 or 3 building or Class 4 part of a building, the distance includes the straight-line measurement from any point of the floor of the room to the nearest part of the doorway leading from it, together with the distance from the part of the doorway to the single required exit or point from which travel in different directions to 2 required exits is available. (b) Subject to (d), the distance from the doorway of a sole occupancy unit in a Class 2 or 3 building is measured in a straight line to the nearest part of the required single exit or point from which travel in different directions to 2 required exits is available. (c) Subject to (d), the distance between exits is measured in a straight line between the nearest parts of those exits. (d) Only the shortest distance is taken along a corridor, hallway, external balcony or other path of travel that curves or changes direction. (e) If more than one corridor, hallway, or other internal path of travel connects required exits, for the purposes of D1.5(c) the measurement is along the path of travel through the point at

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					which travel in different directions to those exits is available, as determined in accordance with D1.4. (f) If a wall (including a demountable internal wall) that does not bound – (i) A room; or (ii) A corridor, hallway or the like, causes a change in direction in proceeding to a required exit, the distance is measured along the path of travel past the wall. (iii) If permanent fixed seating is provided, the distance is measured along the path of travel between the rows of seats. (iv) In the case of a non-fire isolated stairway or non-fire isolated ramp, the distance is measured along a line connecting the nosings of the treads, along the slope of the ramp, together with the distance connecting those lines across any intermediate landing.
D1.16 Plant Rooms and lift Motor Rooms: Concession			X		Not applicable.
D1.17 Access to lift pits			X		Not applicable.
Part D2 - Construction of Exits					
D2.1 Application of Part			X		Except for D2.13, D2.14 (a), D2.16, D2.17(d), D2.17(e) and D2.18, the Deemed-to-Satisfy Provisions of this Part do not apply to the internal parts of the Class 2 sole-occupancy units. Note NSW D2.1 (entertainment venues)
D2.2 Fire-Isolated stairways and ramps				X	Not applicable.
D2.3 Non-fire Isolated stairways and ramps				X	In a building having a rise in storeys of more than 2, required stairs and ramps (including any landings and any supporting building elements) which are not required to be within a fire resisting shaft, must be constructed according to D2.2, or only of - (a) reinforced or prestressed concrete; or (b) steel in no part less than 6 mm thick; or (c) timber that— (i) has a finished thickness of not less than 44 mm; and (ii) has an average density of not less than 800 kg/m3 at a moisture content of 12%; and (iii) has not been joined by means of glue unless it has been laminated and glued with resorcinol formaldehyde or resorcinol phenol formaldehyde glue".

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					Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification
D2.4 Separation of Rising and Descending Stairs			X		Not applicable.
D2.5 Open Access ramps and balconies			X		Not applicable.
D2.6 Smoke Lobbies			X		Not applicable.
D2.7 Installations in Exits and Paths of Travel				X	(a) Access to service shafts and services other than to fire-fighting or detection equipment as permitted in the Deemed-to-Satisfy Provisions of Section E, must not be provided from a fire-isolated stairway. (b) An opening to any chute or duct intended to convey hot products of combustion from a boiler, incinerator, fireplace or the like must not be located in any part of a required exit or any corridor, hallway, lobby or the like leading to a required exit. (c) Gas or other fuel services must not be installed in a required exit. (d) Services or equipment comprising – (i) Electricity meters, distribution boards or cuts; or (ii) Central telecommunications distribution boards or equipment; or (iii) Electrical motors or other motors service equipment in the building, May be installed in – (i) A required exit, except for fire-isolated exits specified in (a); or (ii) In any corridor, hallway, lobby or the like leading to a required exit, If the services or equipment are enclosed by non-combustible construction or a fire-protective covering with doorways or openings suitably sealed against smoke spreading from the enclosure. (e) Electrical wiring may be installed in a fire-isolated exit if the wiring is associated with; (i) A lighting, detection, or pressurization system serving the exit; or (ii) A security, surveillance or management system serving the exit; or (iii) An intercommunication system or an audible or visual alarm system in accordance with D2.22; or (iv) The monitoring of hydrant or sprinkler isolating valves.

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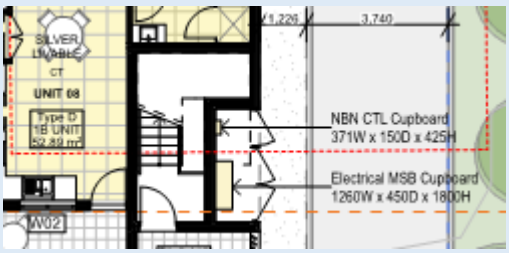
					Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification
D2.8 Enclosure of Space Under Stairs and ramps		X			(b) Non fire-isolated stairways and ramps — The space below a required non fire-isolated stairway (including an external stairway) or non fire-isolated ramp must not be enclosed to form a cupboard or other enclosed space unless— (i) the enclosing walls and ceilings have an FRL of not less than 60/60/60; and (ii) any access doorway to the enclosed space is fitted with a self-closing –/60/30 fire door. **DTS Departure – Space Under Stairs Enclosed** Spaces under stairways are not permitted to be enclosed when forming a fire isolated stairway, or if unenclosed, they must be of FRL not less than 60/60/60 and contain self-closing -/60/30 fire doors. Currently the Unit 16 stairway contains enclosed cupboards or storage:  As a result, confirmation is required to be supplied confirming compliance with the D2.8 inclusive of testing reports and manufacturers specifications of the walls, ceilings, and doors. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification.***
D2.9 Width of Stairs			X		Not applicable.
D2.10 Pedestrian Ramps			X		Not applicable.
D2.11 Fire-Isolated Passageways			X		Not applicable.
D2.12 Roof as Open Space			X		Not applicable.
D2.13 Goings & Risers				X	(a) A stairway must have— (i) not more than 18 and not less than 2 risers in each flight; and

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					(ii) going (G), riser (R) and quantity (2R + G) in accordance with Table D2.13, except as permitted by (b) and (c); and (iii) constant goings and risers throughout each flight, except as permitted by (b) and (c), and the dimensions of goings (G) and risers (R) in accordance with (a)(ii) are considered constant if the variation between— (A) adjacent risers, or between adjacent goings, is no greater than 5 mm; and (B) the largest and smallest riser within a flight, or the largest and smallest going within a flight, does not exceed 10 mm; and (iv) risers which do not have any openings that would allow a 125 mm sphere to pass through between the treads; and (v) treads which have— (A) a surface with a slip-resistance classification not less than that listed in Table D2.14 when tested in accordance with AS 4586; or (B) a nosing strip with a slip-resistance classification not less than that listed in Table D2.14 when tested in accordance with AS 4586; and (vi) 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 (viii) in the case of a required stairway, no winders in lieu of a landing. (ix) conspicuous edges to the treads of steps in a Class 9b building used as an entertainment venue; and (b) In the case of a non-required stairway— (i) the stairway must have— (A) not more than 3 winders in lieu of a quarter landing; and (B) not more than 6 winders in lieu of a half landing; and (ii) the going of all straight treads must be constant throughout the same flight and the dimensions of goings (G) is considered constant if the variation between— (A) adjacent goings, is no greater than 5 mm; and (B) the largest and smallest going within a flight, does not exceed 10 mm; and (iii) the going of all winders in lieu of a quarter or half landing may vary from the going of the straight treads within the same flight provided that the going of all such winders is constant. (c) Where a stairway discharges to a sloping public walkway or public road—

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					(i) the riser (R) may be reduced to account for the slope of the walkway or road; and (ii) the quantity (2R+G) may vary at that location. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
D2.14 Landings				X	In a stairway (a) Landings having a maximum gradient of 1:50 may be used in any building to limit the number of risers in each flight and each landing must – (i) Be not less than 750 mm long, and where this involves a change in direction, the length is measured 500 mm from the inside edge of the landing; and (ii) Have – (A) A surface with a slip-resistance classification not less than that listed in Table D2.14 when tested in accordance with AS4586; or (B) A strip at the edge of the landing with a slip-resistance classification not less than that listed in Table D2.14 when tested in accordance with AS4586, where the edge leads to a flight below; and ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
D2.15 Thresholds	X				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— (c) in a building required to be accessible by Part D3, the doorway— (i) opens to a road or open space; and (ii) is provided with a threshold ramp or step ramp in accordance with AS 1428.1; or (e) in other cases— (i) the doorway opens to a road or open space, external stair landing or external balcony; and (ii) the door sill is not more than 190 mm above the finished surface of the ground, balcony, or the like, to which the doorway opens.
D2.16 Balustrades and other Barriers Note NSW D2.16				X	(a) A continuous barrier must be provided along the side of— (i) a roof to which general access is provided; and (ii) a stairway or ramp; and (iii) a floor, corridor, hallway, balcony, deck, verandah, mezzanine, access bridge or the like; and

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					(iv) any delineated path of access to a building, if the trafficable surface is 1 m or more above the surface beneath. (b) The requirements of (a) do not apply to— (i) the perimeter of a stage, rigging loft, loading dock or the like; or (ii) areas referred to in D2.18; or (iii) a retaining wall unless the retaining wall forms part of, or is directly associated with a delineated path of access to a building from the road, or a delineated path of access between buildings; or (iv) a barrier provided to an openable window covered by D2.24. (c) A barrier required by (a) must be constructed in accordance with NSW Table D2.16a 1. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
D2.17 Handrails				X	(a) Except for handrails referred to in D2.18, handrails must be— (i) located along at least one side of the ramp or flight; and (iii) located along each side if the total width of the stairway or ramp is 2 m or more; and (iii) in a Class 9b building used as a primary school— (A) have one handrail fixed at a height of not less than 865 mm; and (B) have a second handrail fixed at a height between 665 mm and 750 mm, measured above the nosings of stair treads and the floor surface of the ramp, landing or the like; and (iv) in any other case, fixed at a height of not less than 865 mm measured above the nosings of stair treads and the floor surface of the ramp, landing, or the like; and (v) continuous between stair flight landings and have no obstruction on or above them that will tend to break a hand-hold; and (vi) in a required exit serving an area required to be accessible, designed and constructed to comply with clause 12 of AS 1428.1, except that clause 12(d) does not apply to a handrail required by (a)(iii)(B). (c) Handrails required to assist people with a disability must be provided in accordance with D3.3. (d) Handrails to a stairway or ramp within a sole-occupancy unit in a Class 2 or 3 building or Class 4 part of a building must— (i) be located along at least one side of the flight or ramp; and

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					(ii) be located along the full length of the flight or ramp, except in the case where a handrail is associated with a barrier, the handrail may terminate where the barrier terminates; and (iii) have the top surface of the handrail not less than 865 mm vertically above the nosings of the stair treads or the floor surface of the ramp; and (iv) have no obstruction on or above them that will tend to break a handhold, except for newel posts, ball type stanchions, or the like. (e) The requirements of (d) do not apply to— (i) handrails referred to in D2.18; or (ii) a stairway or ramp providing a change in elevation of less than 1 m; or (iii) a landing; or (iv) a winder where a newel post is installed to provide a handhold. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification.***
D2.18 Fixed Platforms, walkways and ladders			X		Not applicable.
D2.19 Doorways & Doors				X	(b) A doorway serving as a require exit or forming part of a required exit, or a doorway in a patient care area of a Class 9a health-care building – (i) Must not be fitted with a revolving door; and (ii) Must not be fitted with a roller shutter or tilt-up door unless – (B) The doorway is the only required exit from the building or part; and (C) It is held in the open position while the building or part is lawfully occupied; and (iii) Must not be fitted with a sliding door unless – (A) It leads directly to a road or open space; and (B) The door is able to be opened manually under a force of not more than 110 N; and (iv) If fitted with a door which is power-operated – (A) It must be able to be opened manually under a force of not more than 110 N if there is a malfunction or failure of the power source; and (B) If it leads directly to a road or open space it must open automatically if there is a power failure to the door or on the activation of a fire or smoke alarm

AE&D Pty Ltd A: Suite 3.04, 55 Miller Street, Pyrmont NSW 2009
Southern Highlands A: Unit 6, 13 Lyell Street, Mittagong NSW 2575
Sutherland Shire A: Level 4 – Suite 33, 29 Kiora Road, Miranda NSW 2228
P: (02) 9571 8433 E: admin@aedconsulting.com.au W: www.aedconsulting.com.au ABN: 15 149 587 495

BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
					anywhere in the fire compartment served by the door. (C) A doorway or opening within sight of the audience but not intended for egress must have a notice displayed clearly indicating it's purpose and such a notice must not be internally illuminated; and (D) Notwithstanding (b)(iii), a sliding door may be fitted where – (aa) It leads directly to a road or open space and forms a main entrance; and (bb) It is capable of swinging in the direction of egress when pressure is applied to the inside face of the door; and (cc) The door is provided with signage that clearly indicates to persons seeking egress, the potential for swinging the door open in an emergency. (c) A power-operated door in a path of travel to a required exit, except for a door in a patient care area of a Class 9a health-care building as provided in (b), must be able to open manually under a force of not more than 110 N if there is a malfunction or failure of the power source. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification.***
D2.20 Swinging Doors	X				A swinging door in a required exit or forming part of a required exit – (a) Must not encroach – (i) At any part of its swing by more than 500mm of the require width (including any landings) of a required – (A) Stairway; or (B) Ramp; or (C) Passageway, If it is likely to impede the path of travel of the people already using the exit; and (ii) When fully open, by more than 100 mm on the required width of the required exit, and The measurement of encroachment in each case is to include door handles or other furniture or attachments to the door; and (b) Must swing in the direction of egress unless (i) It serves a building part with a floor area not more than 200m^2, it is the only required exit from the building part and it is fitted with a device for holding it in the open position; or

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					(ii) It serves a sanitary compartment or airlock (in which case it may swing in either direction; and (c) Must not otherwise impede the path or direction of egress.
D2.21 Operation of Latch				X	(a) A door in a required exit, forming part of a required exit or in the path of travel to a required exit must be readily openable without a key from the side that faces a person seeking egress by – (i) A single hand downward action or pushing action on a single device which is located between 900mm and 1.1 m from the floor and if serving an area required to be accessible by Part D3 – (A) be such that the hand of a person who cannot grip will not slip from the handle during the operation of the latch; and (B) have a clearance between the handle and the back plate or door face at the center grip section of the handle of not less than 35mm and not more than 45mm; or (ii) a single hand pushing action on a single device which is located between 900mm and 1.2m from the door; and (iii) where the latch operation device referred to in (ii) is not located on the door leaf itself – (A) manual controls to power operated doors must be at least 25mm wide, proud of the surrounding surface and located – (aa) not less than 500mm from an internal corner; and (bb) for a hinged door, between 1m and 2m from the door leaf in any position; and (cc) for a sliding door, within 2m of the doorway and clear of a surface mounted door in the open position. (B) Braille and tactile signage complying with Clause 3 and 6 of Specification D3.6 must identify the latch operation device. (b) The requirements of (a) do not apply to a door that – (i) Serves a vault, strong-room, sanitary compartment, or the like; or (ii) Serves only, or is within – (A) A sole occupancy unit in a Class 2 or 4 building or part; or (D) A space which is otherwise inaccessible to persons at all times when the door is locked; or (iii) Serves – (A) Australian Government Security Zones 4 or 5; or

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P: (02) 9571 8433 E: admin@aedconsulting.com.au W: www.aedconsulting.com.au ABN: 15 149 587 495

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					(B) The secure parts of banks, detention centre, mental health facility, early childhood centre or the like; and it can be immediately unlocked – (C) By operating a fail-safe control switch, not contained within the protective enclosure, to actuate a device to unlock the door; or (D) By hand by a person or persons, specifically nominated by the owner, properly instructed as to the duties and responsibilities involved and available at all times when the building is lawfully occupied so that persons in the building or part may immediately escape if there is a fire; or (iv) Is fitted with a fail-safe device which automatically unlocks the door upon the activation of any sprinkler system (other than a FPAA101D system) complying with Specification E1.5, or smoke , or any other detector system deemed suitable in accordance with AS1670.1 installed throughout the building, and is readily operable when unlocked; or (v) is in a Class 9a or 9c building and— (A) is one leaf of a two-leaf door complying with D1.6(f)(i) or D1.6(f)(iv) provided that it is not held closed by a locking mechanism and is readily openable; and (B) the door is not required to be a fire door or smoke door. (c) The requirements of (a) do not apply in a Class 9b building (other than a school, an early childhood centre or a building used for religious purposes) to a door in a required exit, forming part of a required exit or in the path of travel to a required exit serving a storey or room accommodating more than 100 persons, determined in accordance with D1.13, in which case it must be readily openable— (i) without a key from the side that faces a person seeking egress; and (ii) by a single hand pushing action on a single device such as a panic bar located between 900 mm and 1.2 m from the floor; and (iii) where a two-leaf door is fitted, the provisions of (i) and (ii) need only apply to one door leaf if the appropriate requirements of D1.6 are satisfied by the opening of that one leaf; and (iv) where the door is a door in a path of travel providing re-entry to the building from a balcony, terrace or the like, it may be fitted with key-operated fastenings only, the tongues of which must be locked in the retracted position whenever the building is occupied by the public, so the door can yield to pressure.

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					Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification
D2.22 Re-entry from Fire isolated exits			X		Not applicable.
D2.23 Signs on Doors			X		Not applicable.
D2.24 Protection of openable windows				X	(a) A window opening must be provided with protection, if the floor below the window is 2 m or more above the surface beneath in— (i) a bedroom in a Class 2 building. (b) Where the lowest level of the window opening is less than 1.7 m above the floor, a window opening covered by (a) must comply with the following: (i) The openable portion of the window must be protected with— (A) a device capable of restricting the window opening; or (B) a screen with secure fittings. (ii) A device or screen required by (i) must— (A) not permit a 125 mm sphere to pass through the window opening or screen; and (B) resist an outward horizontal action of 250 N against the— (aa) window restrained by a device; or (bb) screen protecting the opening; and (C) have a child resistant release mechanism if the screen or device is able to be removed, unlocked or overridden. (c) A barrier with a height not less than 865 mm above the floor is required to an openable window— (i) in addition to window protection, when a child resistant release mechanism is required by (b)(ii)(C); and (ii) where the floor below the window is 4 m or more above the surface beneath if the window is not covered by (a). (d) A barrier covered by (c) except for (e) must not— (i) permit a 125 mm sphere to pass through it; and (ii) have any horizontal or near horizontal elements between 150 mm and 760 mm above the floor that facilitate climbing. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification.***

AE&D Pty Ltd A: Suite 3.04, 55 Miller Street, Pyrmont NSW 2009
Southern Highlands A: Unit 6, 13 Lyell Street, Mittagong NSW 2575
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D2.25 Timber stairways concession				X	(a) Notwithstanding D2.2(a), timber treads, risers, landings and associated supporting framework which – (i) has a finished thickness of not less than 44mm: and (ii) has an average density of not less than 800kg/m3 at a moisture content of 12%, may be used within a required fire isolated stairway or fire isolated passageway constructed from fire-protected timber in accordance with C1.13 subject to – (iii) the building being protected throughout by a sprinkler system complying with specification E1.5 which extends to within the fire isolated enclosure; and (iv) fire protection being provided to the underside of stair flights and landings located immediately above a landing level which- (A) is at or near the level of egress: or (B) provides direct access to a carpark. (b) Fire protection required by (a) must be not less than one layer of 13mm fire protective grade plasterboard fixed in accordance with the system requirements for a fire protective covering. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification – compliance required if being used.***
Part D3 - Access for People with Disabilities					
D3.1 General building access requirements		X			Information relevant to the extent of disabled access required depending upon the building classification, and the features required by AS 1428.1-2009 to ensure such buildings or parts are accessible. All doors that are required for disabled access are to be a minimum of 850mm clear width. This also includes doors into fire stairs.
D3.2 Access to buildings				X	Information relevant to the provision of an AS 1428.1-2009 compliant accessway: ❖ from the main points of a pedestrian entry at the allotment boundary; and ❖ from other accessible buildings on the same allotment; and ❖ from any accessible residential carparking space on the allotment. **Further Information Required – Access to the Building** Access to the building from the carpark and the main pedestrian entrances is required to be made compliant in accordance with AS1428.1-2009. Details have been provided on the floor plans of the compliant features for accessibility. Further information is required to be supplied to demonstrate compliance through the provision of elevations/specifications/sections of the handrails, ramps, and stairs as required on application for the Construction Certificate.

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					Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification.
D3.3 Parts of the building required to be accessible				X	In a building required to be accessible— (a) every ramp and stairway, except for ramps and stairways in areas exempted by D3.4, must comply with— (i) for a ramp, except a fire-isolated ramp, clause 10 of AS 1428.1; and (ii) for a stairway, except a fire-isolated stairway, clause 11 of AS 1428.1; and (iii) for a fire-isolated stairway, clause 11.1(f) and (g) of AS 1428.1; and (a) every passenger lift must comply with E3.6; and (b) accessways must have— (i) passing spaces complying with AS 1428.1 at maximum 20 m intervals on those parts of an accessway where a direct line of sight is not available; and (ii) turning spaces complying with AS 1428.1— (A) within 2 m of the end of accessways where it is not possible to continue travelling along the accessway; and (B) at maximum 20 m intervals along the accessway; and (c) an intersection of accessways satisfies the spatial requirements for a passing and turning space; and (d) a passing space may serve as a turning space; and (e) a ramp complying with AS 1428.1 or a passenger lift need not be provided to serve a storey or level other than the entrance storey in a Class 5, 6, 7b or 8 building— (i) containing not more than 3 storeys; and (ii) with a floor area for each storey, excluding the entrance storey, of not more than 200 m^2; and (f) clause 7.4.1(a) of AS 1428.1 does not apply and is replaced with 'the pile height or pile thickness shall not exceed 11 mm and the carpet backing thickness shall not exceed 4 mm'; and (g) the carpet pile height or pile thickness dimension, carpet backing thickness dimension and their combined dimension shown in Figure 8 of AS 1428.1 do not apply and are replaced with 11 mm, 4 mm and 15 mm respectively. *Note: BCA 2019, Amendment 1 does not directly specify slip-resistance classification(s) for all accessible paths of travel; however, we highlight the need under AS 1428.1-2009 for all accessible paths of travel to have a slip-resistant surface. We recommend you should seek surface finish advice from an independent specialist slip safety consultant.* **<u>Further Information Required – Access within the Building</u>** Access is required to be provided to all ground level floors from the building entrances throughout in accordance with AS1428.1-2009.

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					Details have been provided on the floor plans of the compliant features for accessibility. Further information is required to be supplied to demonstrate compliance through the provision of elevations/specifications/sections of the handrails, ramps, and stairs as required on application for the Construction Certificate. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification.***
D3.4 Exemptions			X		Information relevant to parts of buildings that are not required to be accessible.
D3.5 Carparking			X		Not applicable – unless required through a Council imposed condition.
D3.6 Signage				X	Information relevant to the provision of braille and tactile signage complying with Specification D3.6 to identify: ❖ sanitary facilities; and ❖ a space with hearing augmentation; and ❖ each door required by Clause E4.5 to be provided with an exit sign, inclusive of the requirement to state “EXIT” and “Level” followed by the floor level number on such doors. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
D3.7 Hearing augmentation			X		Not applicable.
D3.8 Tactile indicators				X	Information relevant to the provision of tactile ground surfaced indicators complying with AS/NZS 1428.4.1-2009 to: ❖ a stairway, other than a fire-isolated stairway; and ❖ an escalator; and ❖ a passenger conveyor; and ❖ a ramp, other than a fire-isolated ramp, step ramp, kerb ramp, or swimming pool ramp; and ❖ warn of overhead obstructions; and ❖ warn of an accessway that intersects with a vehicular way adjacent to any pedestrian entrance to a building. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
D3.9 Wheelchair seating spaces in Class 9b assembly buildings			X		Not applicable.
D3.10 Swimming Pools			X		Not applicable.
D3.11				X	On an accessway—

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Ramps					(a) a series of connected ramps must not have a combined vertical rise of more than 3.6 m; and (b) a landing for a step ramp must not overlap a landing for another step ramp or ramp ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
D3.12 Glazing on an accessway				X	On an accessway, where there is no chair rail, handrail, or transom, all frameless or fully glazed doors, sidelights and any glazing capable of being mistaken for a doorway or opening, must be clearly marked in accordance with AS 1428.1. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
SECTION E SERVICES & EQUIPMENT					
Part E1 - Fire Fighting Equipment					
E1.3 Fire Hydrants				X	(a) A hydrant system must be provided to serve a building – (i) Having a total floor area greater than 500m²; and (ii) Where a fire brigade station is – (A) No more than 50 km from the building as measured along roads; and (B) Equipped with equipment capable of utilising a fire hydrant. (b) The fire hydrant system- (i) Must be installed in accordance with AS2419.1, except – (B) Where a sprinkler system is installed throughout a building in accordance with AS 2118.1, AS 2118.4, AS 2118.6, FPAA101H or FPAA101D the fire hydrant booster protection requirements of Clause 7.3(c)(ii) and 7.3(d)(iii) of AS 2419.1 do not apply, and (C) A fire hydrant booster assembly may be located between 3.5m and 10m of the building, and need not comply with Clause 7.3(d)(iii) of AS 2419.1 where the assembly is protected by an adjacent fire rated freestanding wall that – (aa) achieves an FRL of not less than 90/90/90; and (bb) extends not less than 1m each side of the outermost fire hydrant booster risers within the assembly and is not less than 3m wide; and (cc) extends to a height of not less than 2m above finished ground level; and

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					(ii) Where internal fire hydrants are provided, they must serve only the storey on which they are located except that a sole occupancy unit – (A) In a Class 2 building, it may be served by a single fire hydrant located at the level of egress from the sole occupancy unit; or ❖ *An external street or feed hydrant capable of providing the required system flow is located within 60m of the hydrant booster connection.* **<u>Compliance Required – Fire Hydrant Pressures and Flows</u>** A fire hydrant is required to be installed in any Class 2 development exceeding a total floor area of 500m2. The Hydraulic Engineer has confirmed that street hydrants will be used, and that adequate coverage is provided to both buildings on site. Confirmation has not yet been supplied for the street hydrant pressures and flows. As a result, the hydraulic engineer will be required to provide certification that there is adequate pressure and flows at the furthest points. ***Hydraulic Services Design Certification and associated plans must be incorporated into the construction certificate specification.***
E1.4 Fire Hose Reels			X		Not applicable.
E1.5 Sprinklers			X		Not applicable.
E1.6 Portable Fire Extinguishers				X	(a) Portable fire extinguishers must be – (i) Provided as listed in Table E1.6; (ii) For a Class 2 building, provided – (A) To serve the whole Class 2 building where one or more internal fire hydrants are installed; or (B) Where internal fire hydrants are not installed, to serve any fire compartment with a floor area greater than 500m², and for the purpose of this clause, a sole occupancy unit in a Class 2 building is considered to be a fire compartment; and (iii) Subject (b), selected, located and distributed in accordance with Sections 1, 2, 3 and 4 of AS 2444. (b) Portable fire extinguishers provided in a Class 2 building must be – (i) An ABE type fire extinguisher; and (ii) A minimum size of 2.5kg; and (iii) Distributed outside a sole occupancy unit – (A) To serve only the storey on which they are located; and (B) So that the travel distance from the entrance doorway of any sole occupancy unit to the nearest fire extinguisher is not more than 10m.

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					Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification
E1.8 Fire Control Centre			X		Not applicable.
E1.9 Fire Precautions during construction			X		Not applicable.
E1.10 Provision for Special Hazards			X		Not applicable.
Part E2 Smoke Hazard Management					
E2.2 General Requirements (inclusive of Table E2.2a / Table E2.2b & NSW amendments)				X	**General smoke hazard management requirements** (a) A building must comply with (b), (c), (d) and— (i) Table E2.2a as applicable to Class 2 to 9 buildings such that each separate part complies with the relevant provisions for the classification; and (ii) Table E2.2b as applicable to Class 6 and 9b buildings such that each separate part complies with the relevant provisions for the classification. (b) An air-handling system which does not form part of a smoke hazard management system in accordance with Table E2.2a or Table E2.2b and which recycles air from one fire compartment to another fire compartment or operates in a manner that may unduly contribute to the spread of smoke from one fire compartment to another fire compartment must— (i) be designed and installed to operate as a smoke control system in accordance with AS 1668.1; or (ii) (A) incorporate smoke dampers where the air-handling ducts penetrate any elements separating the fire compartments served; and (B) be arranged such that the air-handling system is shut down and the smoke dampers are activated to close automatically by smoke detectors complying with clause 7.5 of AS 1670.1; and for the purposes of this provision, each sole-occupancy unit in a Class 2 or 3 building is treated as a separate fire compartment. (d) A smoke detection system must be installed in accordance with Clause 6 of Specification E2.2a to operate AS 1668.1 systems that are provided for zone pressurisation and automatic air pressurisation for fire-isolated exits.

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					Note: Smoke alarms in sole occupancy units are required to be interconnected. **<u>Compliance Required - E2.2 – Smoke Alarms and Smoke Detectors</u>** Smoke detectors are required to be installed in the public corridors or internal public spaces, and smoke alarm systems are required to be installed to AS3786-2018 to each sole-occupancy unit. Smoke detectors will be required to be installed to all other portions of the building in accordance with Specification E2.2a of the BCA, and AS1670.1-2018. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
E2.3 Provision for Special Hazards			X		Not applicable.
Part E3 - Lift Installations – N/A to this project					
Part E4 - Visibility in an Emergency, Exit signs and Warning Systems					
E4.2 Emergency Lighting Requirements				X	An emergency lighting system must be installed— (a) in every fire-isolated stairway, fire-isolated passageway or fire-isolated ramp; and (c) in every passageway, corridor, hallway, or the like, having a length of more than 6 m from the entrance doorway of any sole-occupancy unit in a Class 2 or 3 building or Class 4 part of a building to the nearest doorway opening directly to— (i) a fire-isolated stairway, fire-isolated passageway or fire-isolated ramp; or (ii) an external stairway serving instead of a fire-isolated stairway under D1.8; or (iii) an external balcony leading to a fire-isolated stairway, fire-isolated passageway or fire-isolated ramp; or (iv) a road or open space; and (d) in every required non-fire-isolated stairway; and ***Electrical Design Certification must be incorporated into the construction certificate specification***
E4.3 Measurement of Distance			X		Distances, other than vertical rise, must be measured along the shortest path of travel whether by straight lines, curves or a combination of both.
E4.4 Design and Operation of Emergency Lighting				X	The emergency lighting system must comply with AS/NZS 2293.1-2018
E4.5 Exit Signs				X	An exit sign must be clearly visible to persons approaching the exit, and must be installed on, above or adjacent to each— (a) door providing direct egress from a storey to—

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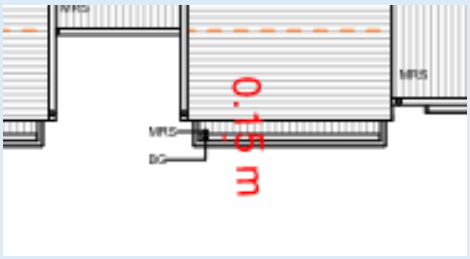
					(i) an enclosed stairway, passageway or ramp serving as a required exit; and (ii) an external stairway, passageway or ramp serving as a required exit; and (iii) an external access balcony leading to a required exit; and (b) door from an enclosed stairway, passageway or ramp at every level of discharge to a road or open space; and (c) horizontal exit; and (d) door serving as, or forming part of, a required exit in a storey required to be provided with emergency lighting in accordance with E4.2. ***Electrical design plans and certification must be incorporated into the construction certificate specification***
E4.6 Direction Signs (inclusive of NSW E4.6)				X	If an exit is not readily apparent to persons occupying or visiting the building, then exit signs must be installed— (a) in appropriate positions in corridors, hallways, lobbies, foyers, auditoria, and the like, indicating the direction to a required exit; and ***Electrical Design Certification must be incorporated into the construction certificate specification and directional exit sign locations must be illustrated on the architectural floor plans***
E4.7 Class 2 & 3 Buildings & Class 4 Parts: Exemption				X	Informational clause - Exit doors in Class 2 parts need not comply with E4.5 provided every exit door is clearly and legibly labelled on the side remote from the exit with the word “EXIT” in capital letters 25mm high in a colour contrasting with that of the background or some other suitable method. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
E4.8 Design & Operation of Exit Signs				X	Exit signs must comply with: (a) AS/NZS 2293.1-2018; or (b) For a photoluminescent exit sign, Specification E4.8. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
E4.9 Emergency Warning & Intercom Systems			X		Not applicable.
SECTION F HEALTH & AMENITY					
Part F1 - Damp & Weatherproofing					
F1.0 Deemed -to-Satisfy Provisions		X			Performance Requirements FP1.4, for the prevention of the penetration of water through external wall, must be complied.

AE&D Pty Ltd A: Suite 3.04, 55 Miller Street, Pyrmont NSW 2009
Southern Highlands A: Unit 6, 13 Lyell Street, Mittagong NSW 2575
Sutherland Shire A: Level 4 – Suite 33, 29 Kiora Road, Miranda NSW 2228
P: (02) 9571 8433 E: admin@aedconsulting.com.au W: www.aedconsulting.com.au ABN: 15 149 587 495

BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
					There are no Deemed -to Satisfy Provisions for this Performance Solution in respect to external walls. **<u>Note – Weatherproofing of External Walls and Portions of the Building</u>** Due to there being no deemed to satisfy provisions for the external walls of a building with regards to weatherproofing, a performance solution is required to be obtained from a façade engineer to address the departure from the DTS provisions and confirm compliance with performance requirement FP1.4. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
F1.1 Stormwater Drainage				X	Stormwater drainage must comply with AS/NZS 3500.3-2018. **<u>Further Information Required – Box Gutter</u>** Stormwater systems are required to be designed and constructed to AS3500.3-2018. Currently, it appears that box gutters have been proposed:  As a result of the above, a rainhead and design dimensions are required to be designed by the Hydraulic Engineer to allow for adequate removal of water from the gutter and preventing the water ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
F1.4 External above ground membranes				X	Any external above ground membranes must be waterproofed as per AS 4654 Parts 1 and 2-2012. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
F1.5 Roof coverings				X	A roof must be covered with— (a) concrete roofing tiles complying with AS 2049 and fixed, except in cyclonic areas, in accordance with AS 2050, as appropriate; or (b) terracotta roofing tiles complying with AS 2049 and fixed, except in cyclonic areas, in accordance with AS 2050; or (c) cellulose cement corrugated sheeting complying with AS/NZS 2908.1 and installed in accordance with AS/NZS 1562.2; or (d) metal sheet roofing complying with AS 1562.1; or

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P: (02) 9571 8433 E: admin@aedconsulting.com.au W: www.aedconsulting.com.au ABN: 15 149 587 495

BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
					(e) plastic sheet roofing designed and installed in accordance with AS/NZS 4256 Parts 1, 2, 3 and 5 and AS/NZS 1562.3; or (f) Terracotta, fibre-cement and timber slates and shingles designed and installed to complying with AS 4597 except in cyclonic areas ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
F1.6 Sarking				X	Sarking-type materials used for weatherproofing must comply with AS/NZS 4200.1 and AS 4200.2. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
F1.7 Waterproofing of wet area				X	(a) In a Class 2 building, building elements in wet areas must— (i) be water resistant or waterproof in accordance with Table F1.7; and (ii) comply with AS 3740. (c) Where a slab or stall type urinal is installed— (i) the floor surface of the room containing the urinal must— (A) be an impervious material; and (B) where no step is installed— (aa) be graded to the urinal channel for a distance of 1.5 m from the urinal channel; and (bb) the remainder of the floor be graded to a floor waste; and (C) where a step is installed— (aa) the step must have an impervious surface and be graded to the urinal channel; and (bb) the floor behind the step must be graded to a floor waste; and (ii) the junction between the floor surface and the urinal channel must be impervious. (d) Where a wall hung urinal is installed— (i) the wall must be surfaced with impervious material extending from the floor to not less than 50 mm above the top of the urinal and not less than 225 mm on each side of the urinal. (ii) the floor must be surfaced with impervious material and graded to a floor waste. (e) In a room with timber or steel-framed walls and containing a urinal— (i) the wall must be surfaced with an impervious material extending from the floor to not less than 100 mm above the floor surface; and

AE&D Pty Ltd A: Suite 3.04, 55 Miller Street, Pyrmont NSW 2009
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Sutherland Shire A: Level 4 – Suite 33, 29 Kiora Road, Miranda NSW 2228
P: (02) 9571 8433 E: admin@aedconsulting.com.au W: www.aedconsulting.com.au ABN: 15 149 587 495

BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
					(ii) the junction of the floor surface and the wall surface must be impervious. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
F1.9 Damp-proofing				X	Where a damp-proof course is required, it must consist of a material that complies with AS/NZS 2904-1995; or impervious sheet material in accordance with AS 3660.1-2000 ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
F1.10 Damp-proofing of floors on the ground				X	If a 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 2870-2011 (N/A to areas that do not require weatherproofing – refer specific clause exemptions). ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
F1.11 Provision of Floor Wastes				X	Bathrooms and laundries in Class 2 buildings must be provided with a floor waste, and the floor of such areas must be graded to such floor waste. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
F1.12 Sub Floor Ventilation			X		Not applicable.
F1.13 Glazed Assemblies				X	Information relevant to the provision of glazed assemblies within external walls in accordance with AS 2047-2014. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
Part F2 - Sanitary & Other Facilities					
F2.1 Facilities in residential buildings			X		Information detailing the minimum sanitary facilities required in Class 2 buildings.
F2.2 Calculation of number of occupants and fixtures			X		Informational clause. ❖ The number of persons accommodated must be calculated according to D1.13 if it cannot be more accurately determined by other means. ❖ Unless the premises are used predominantly by one sex, sanitary facilities must be provided on the basis of equal numbers of males and females. ❖ In calculating the number of sanitary facilities to be provided under F2.1 and F2.3, a unisex facility required for people with a disability may be counted once for each sex.

AE&D Pty Ltd A: Suite 3.04, 55 Miller Street, Pyrmont NSW 2009
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BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
					❖ For the purposes of this Part, a unisex facility comprises one closet pan, one washbasin and means for the disposal of sanitary towels.
F2.3 Facilities for Class 3 to 9 Buildings			X		Not applicable.
F2.4 Facilities for People with Disabilities			X		Not applicable – not required to be installed unless common areas contain a sanitary facility.
F2.5 Construction of Sanitary Compartments	X				Other than in an early childhood centre, sanitary compartments must have: (a) Doors and partitions that separate adjacent compartments; and (b) the door to a fully enclosed sanitary compartment must open outwards, or slide, or be removable from outside of the compartment, unless there is a clear space of at least 1.2m between the closet pan within the compartment and the doorway.
F2.6 Interpretation: Urinals and washbasins			X		Information relevant to urinal and washbasin design.
F2.7 Microbial Control Note NSW F2.7 (Clause Deleted)			X		N/A - Clause Deleted in NSW.
F2.8 Waste Management			X		Not applicable.
F2.9 Accessible adult change facilities			X		Not applicable.
Part F3 Room Sizes					
F3.1 Height of Rooms and other spaces	X				The ceiling height must be not less than— (a) in a Class 2 building— (i) a kitchen, laundry, or the like — 2.1 m; (ii) and a corridor, passageway or the like — 2.1 m; and (iii) a habitable room excluding a kitchen — 2.4 m; and (iv) in a room or space with a sloping ceiling or projections below the ceiling line within - (A) a habitable room— (aa) in an attic — a height of not less than 2.2 m for not less than two thirds of the floor area of the room or space; and

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					(bb) in other rooms — a height of not less than 2.4 m for not less than two thirds of the floor area of the room or space; and (B) a non-habitable room — a height of not less than 2.1 m for not less than two thirds of the floor area of the room or space; and when calculating the floor area of a room or space, any part that has a ceiling height of less than 1.5 m is not included; and (f) In any building— (i) a bathroom, shower room, sanitary compartment, airlock, tea preparation room, pantry, store room, garage, car parking area, or the like — 2.1 m; and (ii) a commercial kitchen & required accessible change room facility — 2.4 m; and (iii) 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.
Part F4 - Light & Ventilation					
F4.1 Provision of natural light				X	Natural lighting must be provided to: ❖ all habitable rooms in Class 2 buildings. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
F4.2 Methods and extent of natural lighting				X	(a) Required natural lighting must be provided by— (i) windows, excluding roof lights, that— (A) have an aggregate light transmitting area measured exclusive of framing members, glazing bars or other obstructions of not less than 10% of the floor area of the room; and (B) are open to the sky or face a court or other space open to the sky or an open verandah, carport or the like; or (ii) roof lights, that— (A) have an aggregate light transmitting area measured exclusive of framing members, glazing bars or other obstructions of not less than 3% of the floor area of the room; and (B) are open to the sky; or (iii) a proportional combination of windows and roof lights required by (i) and (ii). (b) in a Class 2 part of a building a required window that faces a boundary of an adjoining allotment or a wall of the same building or another building on the allotment must not be less than a horizontal distance from that boundary or wall that is the greater of—

AE&D Pty Ltd A: Suite 3.04, 55 Miller Street, Pyrmont NSW 2009
Southern Highlands A: Unit 6, 13 Lyell Street, Mittagong NSW 2575
Sutherland Shire A: Level 4 – Suite 33, 29 Kiora Road, Miranda NSW 2228
P: (02) 9571 8433 E: admin@aedconsulting.com.au W: www.aedconsulting.com.au ABN: 15 149 587 495

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					(i) generally — 1 m; and (iii) 50% of the square root of the exterior height of the wall in which the window is located, measured in metres from its sill. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
F4.3 Natural light borrowed from adjoining room			X		(a) Natural lighting to a room in a Class 2 building, may come through a glazed panel or opening from an adjoining room (including an enclosed verandah) if— (i) both rooms are within the same sole-occupancy unit or the enclosed verandah is on common property; and (ii) the glazed panels or openings have an aggregate light transmitting area of not less than 10% of the floor area of the room to which it provides light; and the adjoining room has— (A) windows, excluding roof lights, that— (aa) have an aggregate light transmitting area of not less than 10% of the combined floor areas of both rooms; and (bb) are open to the sky or face a court or other space open to the sky or an open verandah, carport or the like; or (B) roof lights, that— (aa) have an aggregate light transmitting area of not less than 3% of the combined floor areas of both rooms; and (bb) are open to the sky; or (C) a proportional combination of windows and roof lights required by (A) and (B). (B) The areas specified in (a)(ii) and (a)(iii) may be reduced as appropriate if direct natural light is provided from another source.
F4.4 Artificial lighting				X	Information relevant to the provision of artificial lighting in accordance with AS/NZS 1680.0-2009 to specific building areas. ***Electrical Design Certification must be incorporated into the construction certificate specification***
F4.5 Ventilation of Rooms				X	All rooms to be provided with Clause F4.6 compliant natural ventilation **OR** a mechanical ventilation or air-conditioning system complying with AS 1668.2-2012. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
F4.6 Natural Ventilation			X		(a) Natural ventilation provided in accordance with F4.5(a) must consist of permanent openings, windows, doors or other devices which can be opened—

AE&D Pty Ltd A: Suite 3.04, 55 Miller Street, Pyrmont NSW 2009
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Sutherland Shire A: Level 4 – Suite 33, 29 Kiora Road, Miranda NSW 2228
P: (02) 9571 8433 E: admin@aedconsulting.com.au W: www.aedconsulting.com.au ABN: 15 149 587 495

BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
					(i) with ventilating area not less than 5% of the floor area of the room required to be ventilated; and (ii) 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 F4.7. (b) The requirements of (a)(i) do not apply to a Class 8 electricity network substation. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
F4.7 Ventilation borrowed from adjoining room			X		Natural ventilation to a room may come through a window, opening, ventilating door or other device from an adjoining room (including an enclosed verandah) if both rooms are within the same sole-occupancy unit or the enclosed verandah is common property, and— (a) in a Class 2 building, a sole-occupancy unit of a Class 3 building or Class 4 part of a building— (i) the room to be ventilated is not a sanitary compartment; and (ii) the window, opening, door or other device has a ventilating area of not less than 5% of the floor area of the room to be ventilated; and (iii) the adjoining room has a window, opening, door or other device with a ventilating area of not less than 5% of the combined floor areas of both rooms; and (c) the ventilating areas specified in (a) and (b) may be reduced as appropriate if direct natural ventilation is provided from another source. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
F4.8 Restriction of position of water closets and urinals	X				Rooms containing closet pans or urinals must not open directly into kitchen / pantry areas, public dining areas, Class 3 dormitory areas, public assembly areas (excluding early childhood centres, primary schools and open spectator stands) and a workplace normally occupied by more than one person.
F4.9 Airlocks			X		Not applicable.
F4.11 Carparks			X		Not applicable.
F4.12 Kitchen local exhaust			X		Not applicable.
Part F5 - Sound Transmission					

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BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
F5.1 Application of Part			X		The provisions of this Part apply to Class 2 buildings.
F5.2 Determination of airborne sound insulation ratings				X	A form of construction required to have an airborne sound insulation rating must— (a) have the required value for weighted sound reduction index (Rw) or weighted sound reduction index with spectrum adaptation term (Rw + Ctr) determined in accordance with AS/NZS 1276.1 or ISO 717.1 using results from laboratory measurements; or (b) comply with Specification F5.2. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
F5.3 Determination of impact sound insulation ratings				X	(a) A floor in a building required to have an impact sound insulation rating must— (i) have the required value for weighted normalised impact sound pressure level ($L_{n,w}$) determined in accordance with AS/ISO 717.2 using results from laboratory measurements; or (ii) comply with Specification F5.2. (b) A wall in a building required to have an impact sound insulation rating must— (i) for a Class 2 building be of discontinuous construction; and (c) For the purposes of this Part, discontinuous construction means a wall having a minimum 20 mm cavity between 2 separate leaves, and (i) for masonry, where wall ties are required to connect leaves, the ties are of the resilient type; and (ii) for other than masonry, there is no mechanical linkage between leaves except at the periphery. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
F5.4 Sound Insulation of floors between units				X	(a) A floor in a Class 2 building must achieve an $R_w + C_{tr}$ (airborne) not less than 50, and an $L_{n,w}$ (impact) not more than 62, if separating: (i) SOU's; or (ii) An SOU from a plant room, lift shaft, stairway, public corridor, public lobby or parts of a different classification. (iii) A floor in a Class 9c aged care building separating SOU's must achieve an R_w not less than 45. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***

AE&D Pty Ltd A: Suite 3.04, 55 Miller Street, Pyrmont NSW 2009
Southern Highlands A: Unit 6, 13 Lyell Street, Mittagong NSW 2575
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BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
F5.5 Sound insulation of walls between units				X	(a) A wall in a Class 2 building must— (i) have an Rw + Ctr (airborne) not less than 50, if it separates sole-occupancy units; and (ii) have an Rw (airborne) not less than 50, if it separates a sole-occupancy unit from a plant room, lift shaft, stairway, public corridor, public lobby or the like, or parts of a different classification; and (iii) comply with F5.3(b) if it separates— (A) a bathroom, sanitary compartment, laundry or kitchen in one sole-occupancy unit from a habitable room (other than a kitchen) in an adjoining unit; or (B) a sole-occupancy unit from a plant room or lift shaft. (b) A door may be incorporated in a wall in a Class 2 building that separates a sole occupancy unit from a stairway, public corridor, public lobby or the like, provided the door assembly has an Rw not less than 30. (e) Where a wall required to have sound insulation has a floor above, the wall must continue to— (i) the underside of the floor above; or (ii) a ceiling that provides the sound insulation required for the wall. (f) Where a wall required to have sound insulation has a roof above, the wall must continue to— (i) the underside of the roof above; or (ii) a ceiling that provides the sound insulation required for the wall. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
F5.6 Sound insulation rating of services				X	Ducts and pipes must achieve an $R_w + C_{tr}$ (airborne) of no less than 40 if the adjacent room is habitable or 25 if non-habitable. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
F5.7 Sound isolation of pumps				X	A flexible coupling must be used at the point of connection between the service pipes in a building and any circulating pump. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
Part F6 – Condensation Management					
F6.1 Application of Part				X	The Deemed-to-Satisfy Provisions of this Part only apply to a sole-occupancy unit of a Class 2 building.
F6.2				X	(a) Where a pliable building membrane is installed in an external wall, it must—

AE&D Pty Ltd A: Suite 3.04, 55 Miller Street, Pyrmont NSW 2009
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Pliable building membrane					(i) comply with AS/NZS 4200.1; and (ii) be installed in accordance with AS 4200.2; and (iii) be a vapour permeable membrane for climate zones 6, 7 and 8; and (iv) be located on the exterior side of the primary insulation layer of wall assemblies that form the external envelope of a building. (c) Except for single skin masonry and single skin concrete, where a pliable building membrane is not installed in an external wall, the primary water control layer must be separated from water sensitive materials by a drained cavity. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
F6.3 Flow rate and discharge of exhaust systems				X	(a) An exhaust system installed in a kitchen, bathroom, sanitary compartment or laundry must have a minimum flow rate of— (i) 25 L/s for a bathroom or sanitary compartment; and (ii) 40 L/s for a kitchen or laundry. (b) Exhaust from a kitchen must be discharged directly or via a shaft or duct to outdoor air. (c) Exhaust from a bathroom, sanitary compartment, or laundry must be discharged— (i) directly or via a shaft or duct to outdoor air; or (ii) to a roof space that is ventilated in accordance with F6.4. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
F6.4 Ventilation of roof spaces				X	(a) Where an exhaust system covered by F6.3 discharges directly or via a shaft or duct into a roof space, the roof space must be ventilated to outdoor air through evenly distributed openings. (b) Openings required by (a) must have a total unobstructed area of 1/300 of the respective ceiling area if the roof pitch is greater than 22°, or 1/150 of the respective ceiling area if the roof pitch is less than or equal to 22°. (c) 30% of the total unobstructed area required by (b) must be located not more than 900 mm below the ridge or highest point of the roof space, measured vertically, with the remaining required area provided by eave vents. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
SECTION G ANCILLIARY PROVISIONS					

AE&D Pty Ltd A: Suite 3.04, 55 Miller Street, Pyrmont NSW 2009
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BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
Part G1 - Minor Structures and Components – N/A					
Part G2 - Boilers, Pressure Vessels, Heating Appliances, Fireplaces, Chimneys and Flues – N/A					
Part G3 - Atrium Construction – N/A					
Part G4 - Construction in Alpine Areas – N/A					
Part G5 - Construction in Bushfire Prone Areas – N/A					
Part G6 - Occupiable Outdoor Areas – N/A					
SECTION J **ENERGY EFFICIENCY** – N/A to this assessment. Refer to separate consultant's report.					

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5.0 CONCLUSION

This report provides a Building Code of Australia 2019, Amendment 1 (BCA) assessment of the proposed Residential Unit Development – Community Housing Redevelopment.

The primary purpose of this report was to identify the non-compliance matters contained in the proposed design philosophy against the current Deemed-to-Satisfy (DTS) Provisions of the BCA and to provide compliance recommendations to overcome the DTS non-compliances.

This report provided a BCA assessment table in Section 3.0 that summarises the identified non-compliance matters and offers specific recommendations that are also outlined in the Executive Summary.

Further, if compliance with the deemed-to-satisfy provisions is not achievable or desirable, Performance Solutions could be further developed and verified by an appropriately qualified BCA Consultant or Fire Safety Engineer.

 **PREPARED BY: Mark Nicholson** BUILDING CERTIFIER Bachelor of Construction Management (Building)(Honours) UoN Building Surveyor - Restricted 1 and 10 (BDC2582) For AED	 **REVIEWED BY: JOSHUA CURAN** DIRECTOR Graduate Diploma in Fire Safety Engineering (WSU) Graduate Diploma in Building Surveying (WSU) Building Surveyor Level 1 (AIBS 7637) Building Surveyor - Unrestricted (BDC2679) Accredited Practitioner – Fire Safety Assessment (FPAS No:F054805A) For AED

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6.0 ATTACHMENT A - INSPECTION & MAINTENANCE

6.1 Fire Safety Measures

The fire safety measures within the building must be maintained to ensure correct operation at all times the building is occupied. All firefighting equipment should be tagged when tested/inspected and logbooks kept up-to-date for all smoke detection, warning systems and sprinkler systems (where installed).

An annual fire safety certificate must be submitted to the local consent authority and the NSW Fire Brigade each year indicating satisfactory performance of the fire safety measures contained within the building. The annual fire safety statement should be displayed in a prominent place within the building (i.e. the main entry foyer).

The correct operation and maintenance of the buildings fire safety measures is critical in affording an adequate level of fire safety.

6.2 Good Housekeeping

The ongoing management of the building should ensure good housekeeping procedures. The following matters should be considered by building management:

- Ensure exits and paths of travel to exits remain unobstructed (in particular stairways)
- Avoid storage of materials in unoccupied areas
- Limit storage of flammable/combustible materials to designated and approved areas
- Prevent chocking open fire/smoke doors
- Prevent storage of materials that could hinder access to firefighting equipment

AE&D Pty Ltd A: Suite 3.04, 55 Miller Street, Pyrmont NSW 2009
Southern Highlands A: Unit 6, 13 Lyell Street, Mittagong NSW 2575
Sutherland Shire A: Level 4 – Suite 33, 29 Kiora Road, Miranda NSW 2228
P: (02) 9571 8433 E: admin@aedconsulting.com.au W: www.aedconsulting.com.au ABN: 15 149 587 495

7.0 Type B Fire-Resisting Construction

4.1 Fire-resistance of building elements

In a building *required* to be of Type B construction—

(a) each building element listed in Table 4, and any beam or column incorporated in it, must have an FRL not less than that listed in the Table for the particular Class of building concerned; and

(b) * * * * *

(c) if a stair shaft supports any floor or a structural part of it—

(i) the floor or part must have an FRL of 60/–/– or more; or

(ii) the junction of the stair *shaft* must be constructed so that the floor or part will be free to sag or fall in a fire without causing structural damage to the *shaft*; and

(d) any *internal wall* which is *required* to have an FRL with respect to *integrity* and *insulation*, except a wall that bounds a *sole-occupancy unit* in the topmost (or only) *storey* and there is only one unit in that *storey*, must extend to—

(i) the underside of the floor next above if that floor has an FRL of at least 30/30/30; or

(ii) the underside of a ceiling having a *resistance to the incipient spread of fire* to the space above itself of not less than 60 minutes; or

(iii) the underside of the roof covering if it is *non-combustible* and, except for roof battens with dimensions of 75 mm x 50 mm or less or *sarking-type material*, must not be crossed by timber or other *combustible* building elements; or

(iv) 450 mm above the roof covering if it is *combustible*; and

(e) a *loadbearing internal wall* and a *loadbearing fire wall* (including those that are part of a *loadbearing shaft*) must be constructed from—

(i) concrete; or

(ii) masonry; or

(iii) *fire-protected timber*, provided that—

(A) the building is—

(aa) a separate building; or

(bb) a part of a building—

(AA) which only occupies part of a *storey*, and is separated from the remaining part by a *fire wall*; or

(BB) which is located above or below a part not containing *fire-protected timber* and the floor between the adjoining parts is provided with an FRL not less than that prescribed for a *fire wall* for the lower *storey*; and

(B) the building has an *effective height* of not more than 25 m; and

(C) the building has a sprinkler system (other than a FPAA101D or FPAA101H system) throughout complying with Specification E1.5; and

(D) any insulation installed in the cavity of the timber building element *required* to have an FRL is *non-combustible*; and

(E) cavity barriers are provided in accordance with Specification C1.13; or

(iv) any combination of (i) to (iii); and

(f) in a Class 2 building, except where within the one *sole-occupancy units* a floor separating *storey* or above a space for the accommodation of motor vehicles or used for storage or any other ancillary purpose, must—

(i) be constructed so that it is at least of the standard achieved by a floor/ceiling system incorporating a ceiling which has a *resistance to the incipient spread of fire* to the space above itself of not less than 60 minutes; or

(ii) have an FRL of at least 30/30/30; or

(iii) have a *fire-protective covering* on the underside of the floor, including beams incorporated in it, if the floor is *combustible* or of metal; and

Table 4 Type B construction: FRL of building elements

Building element	Class of building—FRL: (in minutes)

AE&D Pty Ltd A: Suite 3.04, 55 Miller Street, Pyrmont NSW 2009
Southern Highlands A: Unit 6, 13 Lyell Street, Mittagong NSW 2575
Sutherland Shire A: Level 4 – Suite 33, 29 Kiora Road, Miranda NSW 2228
P: (02) 9571 8433 E: admin@aedconsulting.com.au W: www.aedconsulting.com.au ABN: 15 149 587 495

	Structural adequacy/Integrity/Insulation			
	2, 3 or 4 part	**5, 7a or 9**	**6**	**7b or 8**
EXTERNAL WALL (including any column and other building element incorporated within it) or other external building element, where the distance from any *fire-source feature* to which it is exposed is—				
For *loadbearing* parts—				
less than 1.5 m	90/ 90/ 90	120/120/120	180/180/180	240/240/240
1.5 to less than 3 m	90/ 60/ 30	120/ 90/ 60	180/120/ 90	240/180/120
3 to less than 9 m	90/ 30/ 30	120/ 30/ 30	180/ 90/ 60	240/ 90/ 60
9 to less than 18 m	90/ 30/–	120/ 30/–	180/ 60/–	240/ 60/–
18 m or more	–/–/–	–/–/–	–/–/–	–/–/–
For non-*loadbearing* parts—				
less than 1.5 m	–/ 90/ 90	–/120/120	–/180/180	–/240/240
1.5 to less than 3 m	–/ 60/ 30	–/ 90/ 60	–/120/ 90	–/180/120
3 m or more	–/–/–	–/–/–	–/–/–	–/–/–
EXTERNAL COLUMN not incorporated in an *external wall*, where the distance from any *fire-source feature* to which it is exposed is—				
For *loadbearing* columns—				
less than 18 m	90/–/–	120/–/–	180/–/–	240/–/–
18 m or more	–/–/–	–/–/–	–/–/–	–/–/–
For non-*loadbearing* columns—				
For non-*loadbearing* columns—	–/–/–	–/–/–	–/–/–	–/–/–
COMMON WALLS and FIRE WALLS—	90/ 90 / 90	120/120/120	180/180/180	240/240/240
INTERNAL WALLS—				
***Fire-resisting* lift and stair *shafts*—**				
Loadbearing	90/ 90/ 90	120/120/120	180/120/120	240/120/120
***Fire-resisting* stair *shafts*—**				
Non-*loadbearing*	–/ 90/ 90	–/120/120	–/120/120	–/120/120
Bounding *public corridors*, public lobbies and the like—				
Loadbearing	60/ 60/ 60	120/–/–	180/–/–	240/–/–
Non-*loadbearing*	–/ 60/ 60	–/–/–	–/–/–	–/–/–
Between or bounding *sole-occupancy units*—				
Loadbearing	60/ 60/ 60	120/–/–	180/–/–	240/–/–
Non-*loadbearing*	–/ 60/ 60	–/–/–	–/–/–	–/–/–
OTHER LOADBEARING INTERNAL WALLS and COLUMNS—	60/–/–	120/–/–	180/–/–	240/–/–
ROOFS	–/–/–	–/–/–	–/–/–	–/–/–

4.2 Carparks

(a) Notwithstanding Clause 4.1, a *carpark* may comply with Table 4.2 if it is an *open-deck carpark* or is protected with a sprinkler system (other than a FPAA101D or FPAA101H system) complying with Specification E1.5 and is—

AE&D Pty Ltd A: Suite 3.04, 55 Miller Street, Pyrmont NSW 2009
Southern Highlands A: Unit 6, 13 Lyell Street, Mittagong NSW 2575
Sutherland Shire A: Level 4 – Suite 33, 29 Kiora Road, Miranda NSW 2228
P: (02) 9571 8433 E: admin@aedconsulting.com.au W: www.aedconsulting.com.au ABN: 15 149 587 495

(i) a separate building; or

(ii) a part of a building, and if occupying only part of a *storey*, is separated from the remaining part by a *fire wall*.

(b) For the purposes of this Clause, a *carpark*—

(i) includes—

(A) an administration area associated with the functioning of the *carpark*; and

(B) There the *carpark* is sprinklered, is associated with a Class 2 or 3 building and provides carparking for separate *sole-occupancy units*, each carparking area with an area not greater than 10% of its *floor area* for purposes ancillary to the *sole-occupancy units*; but

(ii) excludes—

(A) except for (b)(i), any area of another classification, or other part of a Class 7 building not used for carparking; and

(B) a building or part of a building specifically intended for the parking of trucks, buses, vans and the like.

Table 4.2 Requirements for carparks

Note to Table 4.2: ESA/M means the ratio of exposed surface area to mass per unit length.

4.3 Class 2 and 3 buildings: Concession

(a) A Class 2 or 3 building having a *rise in storeys* of not more than 2 need not comply with Clause 4.1(e) of Specification C1.1 and the requirements of C1.9(a) and (b) for *non-combustible* materials if it is constructed using—

(i) timber framing throughout; or

(ii) *non-combustible* material throughout; or

(iii) a combination of (i) and (ii), provided—

(iv) * * * * *

(v) any insulation installed in the cavity of a wall *required* to have an FRL is *non-combustible*; and

(vi) the building is fitted with an *automatic* smoke alarm system complying with Specification E2.2a.

(b) A Class 2 or 3 building having a *rise in storeys* of not more than 2 may have the top *storey* constructed in accordance with (a) provided—

(i) the lowest storey is used solely for the purpose of parking motor vehicles or for some other ancillary purpose; and

(ii) the lowest storey is constructed of concrete or masonry including the floor between it and the Class 2 or 3 part of the building above; and

(iii) the lowest storey and the storey above are separated by construction having an FRL of not less than 90/90/90 with no openings or penetrations that would reduce the fire-resisting performance of that construction except that a doorway in that construction may be protected by a –/60/30 self-closing fire door.

(c) In a Class 2 or 3 building complying with (a) or (b) and fitted with a sprinkler system (other than a FPAA101D or FPAA101H system) complying with Specification E1.5, any FRL criterion prescribed in Table 4—

(i) for any *loadbearing* wall, may be reduced to 60, except any FRL criterion of 90 for an *external wall* must be maintained when tested from the outside; and

(ii) for any non-*loadbearing internal wall*, need not apply, if—

(A) it is lined on both sides with 13 mm standard grade plasterboard or similar *non-combustible* material; and

(B) it extends—

(aa) to the underside of the floor next above if that floor has an FRL of at least 30/30/30 or is lined on the underside with a *fire-protective covering*; or

(bb) to the underside of a ceiling with a *resistance to the incipient spread of fire* of 60 minutes; or

(cc) to the underside of a *non-combustible* roof covering; and

AE&D Pty Ltd A: Suite 3.04, 55 Miller Street, Pyrmont NSW 2009
Southern Highlands A: Unit 6, 13 Lyell Street, Mittagong NSW 2575
Sutherland Shire A: Level 4 – Suite 33, 29 Kiora Road, Miranda NSW 2228
P: (02) 9571 8433 E: admin@aedconsulting.com.au W: www.aedconsulting.com.au ABN: 15 149 587 495

(C) any insulation installed in the cavity of the wall is *non-combustible*; and

(D) any construction joints, spaces and the like between the top of the wall and the floor, ceiling or roof is smoke sealed with intumescent putty or other suitable material.

AE&D Pty Ltd A: Suite 3.04, 55 Miller Street, Pyrmont NSW 2009
Southern Highlands A: Unit 6, 13 Lyell Street, Mittagong NSW 2575
Sutherland Shire A: Level 4 – Suite 33, 29 Kiora Road, Miranda NSW 2228
P: (02) 9571 8433 E: admin@aedconsulting.com.au W: www.aedconsulting.com.au ABN: 15 149 587 495