BUILDING CERTIFICATES AUSTRALIA

BUILDING CODE OF AUSTRALIA 2019 – AMENDMENT ONE COMPLIANCE REPORT

149-163 MILTON STREET, ASHBURY

Prepared for:	**SJB Architects**
Project No.:	**20/0198**
Date:	**28th August 2020**
Status:	**Issue 1.0**

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1.0. DOCUMENT HISTORY AND DRAWING SCHEDULE

1.1. Document History

Date	Issue	Status	Prepared by	Reviewed by
28.08.2020	Issue 1.0	Final Version	Tim O'Reilly BPB3154	Orlando Da Silva BPB 0081
30.07.2020	Issue 0.1	Draft for Client Review	Tim O'Reilly BPB3154	Orlando Da Silva BPB 0081

1.2. Drawing Schedule

Drawing By	Project No.	Drawing No.	Drawing Title	Issue
SJB Architects	6119	DA-0101	Basement Plan	8
SJB Architects	6119	DA-0110	Ground Floor Plan	8
SJB Architects	6119	DA-0111	Level 1 Plan	7
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2.0. EXECUTIVE SUMMARY

The development being the subject of this report relates to the construction of residential apartment building complex comprising nine separate buildings both of a townhouse design and apartment tower design, all of which are sitting over the top of a common basement.

This report has been prepared for SJB Architecture and will be used to assist in ensuring the proposal is compliant with the current BCA.

The following potential non-compliances have been identified with the Deemed-to-Satisfy Provisions of the BCA. It is proposed that these non-compliances will be dealt with by justification against the Performance Requirements of the BCA in accordance with A2.2.

C2.2 – General floor area and volume limitations	The floor area (and it is expected the volume) of the basement level exceeds the maximum allowed under this Clause. A fire-engineered Performance Solution may be required to address this.
D1.4 – Exit travel distances	The exit travel distances within the basement exceed 20m to a single exit or 20m to a point of choice. A fire-engineered Performance Solution may be required to address this.
D1.5 – Distance between alternative exits	The distance between alternative exits within the basement exceeds 60m. A fire-engineered Performance Solution may be required to address this.

3.0. INTRODUCTION

3.1. Location and Description

The development being the subject of this Report is located at 149-163 Milton Street, Ashbury. The property is bounded by adjoining properties to the north and south, Milton Street to the east and Whitfield Reserve to the west.

The proposed development comprises a residential apartment building complex consisting of nine separate buildings being of both a townhouse design and apartment tower design, all are situated over the top of a common basement.

3.2. Report Purpose

This Report has been prepared by Building Certificates Australia Pty Ltd as an indicative Building Code of Australia 2019 – Amendment One (BCA) compliance review of the proposed development. The assessment has been undertaken against the Deemed-To-Satisfy (DTS) provisions of the BCA relating to Parts C, D, E and F only. This review is provided to assist in ensuring the building is capable of complying with the BCA.

3.3. Basis of Report

This Report is based upon:

- A desktop review of the documentation submitted for assessment (refer to drawing schedule section 1.2); and
- The Deemed-to-Satisfy provisions of Parts C, D, E and F of the BCA.

3.4. Referenced Documents

The following documentation was relied upon when preparing this Report:

- The performance and deemed-to-satisfy provisions of the 2019 Building Code of Australia Amendment One, Volume One (BCA) incorporating the NSW Appendices where applicable.
- Guide to the National Construction Code Volume 1.
- Disability (Access to Premises — Buildings) Standards 2010.
- Environmental Planning & Assessment Act 1979.
- Environmental Planning & Assessment Regulation 2000.

3.5. Limitations and Exclusions

The limitations and exclusions of this Report are as follows:

- This Report is based on a review of the referenced documents only.
- No assessment has been undertaken with respect to the Disability Discrimination Act 1992 (DDA). Separate advice from an appropriately qualified access consultant should be obtained by the client to be satisfied that their obligations under the DDA have been addressed.

  Please note that whilst the BCA specifies a minimum standard of compliance with AS1428.1 and Part D3 of the BCA for access and facilities for people with disabilities, compliance with such requirements may not necessarily preclude the possibility of a future complaint made under the Disability Discrimination Act 1992 (DDA). The DDA is a complaint-based legislation and is presently not identified by the State Building Codes and Regulations. In this regard the client should be satisfied that their obligations under the DDA have been addressed.

- This Report does not address issues in relation to the following:
  a) The structural adequacy of the building including the Fire Resistance Levels (FRL's) of any existing building elements (unless specifically referred to).
  b) The design, maintenance or operation of any existing electrical, mechanical, hydraulic or fire protection services.
  c) Environmental Planning and Assessment Act and Regulations.
  d) Local Government Act and Regulations.
  e) Workplace Health and Safety Act and Regulations.

f) SafeWork requirements.
g) Requirements of other Regulatory Authorities including, but not limited to, Telstra, Sydney Water, Electricity Supply Authority, RMS, Council and the like.
h) Disability Discrimination Act.
i) Construction Safety Act.
j) Any previous conditions of Development Consent issued by the relevant Local Council.

- Building Certificates Australia Pty Ltd cannot guarantee acceptance of this Report by the Local Council, Fire and Rescue NSW or other approval authorities.

- No part of this document may be reproduced in any form or by any means without written permission from Building Certificates Australia Pty Ltd. This Report is based solely on client instructions, therefore, should not be used by any third party without prior knowledge of such instructions.

Compliance with the Building Code of Australia

The BCA is a performance-based document whereby compliance can be achieved by satisfying the Deemed-to-Satisfy (DtS) requirements, or by formulating a Performance Solution to address the relevant Performance Requirements (or a combination of both).

As specified above, the Environmental Planning and Assessment Regulation 2000 requires all new building work to comply with the relevant requirements of the BCA (as in force at the time the application for the CC is made). This means that the plans and documentation submitted with the CC application must demonstrate full compliance with the relevant provisions of the BCA.

Disability (Access to Premises — Buildings) Standards 2010

The Disability (Access to Premises — Buildings) Standard 2010 does not apply to this building as it is considered to be entirely new**.** Rather, disabled access is dealt with under BCA Part D3.

3.6. Terminology

- *Building Code of Australia* - Document published on behalf of the Australian Building Codes Board. The BCA is a uniform set of technical provisions for the design and construction of buildings and other structures throughout Australia and is adopted in NSW under the provisions of the Environmental Planning & Assessment Act & Regulation.

- *Fire-Resistance Level (FRL)* - means the grading periods in minutes tested in accordance with AS 1530.4-2005 for the following criteria -
  (a) structural adequacy;
  (b) integrity; and
  (c) insulation,
  and expressed in that order (e.g. 90/90/90).

- *Fire Source Feature (FSF)* - the far boundary of a road adjoining the allotment; or a side or rear boundary of the allotment; or an external wall of another building on the allotment which is not a Class 10 building.

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

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

  Compliance with the Performance Requirements can only be achieved by-
  (a) complying with the Deemed-to-Satisfy Provisions; or
  (b) formulating an Alternative Solution which-
  (i) complies with the Performance Requirements; or
  (ii) is shown to be at least equivalent to the Deemed-to-Satisfy Provisions; or
  (c) a combination of (a) and (b).

- *Sole Occupancy Unit (SOU)* - means a room or other part of a building for occupation by one or joint owner, lessee, tenant, or other occupier to the exclusion of any other owner, lessee, tenant, or other occupier.

4.0 BUILDING DESCRIPTION – PROPOSED DEVELOPMENT

BUILDING CHARACTERISTICS	
BCA Year/Version	BCA 2019 – Amendment One
BCA Referenced Standards	Refer to Appendix 1
Intended Building Uses	Residential
BCA Classifications	BCA Class 2 – residential BCA Class 7a - carpark
Number of storeys	7
Rise In storeys	6 (assumed)
Storeys not counted in Rise	1
Effective Height of Building	The effective height has been determined at >12m but <25m **Note**: The BCA definition of effective height is as follows: *"Effective height means the vertical distance between the floor of the lowest storey included in a determination of rise in storeys and the floor of the topmost storey (excluding the topmost storey if it contains only heating, ventilating, lift or other equipment, water tanks or similar service units)."*
Type of Construction	Type A Construction
Floor area and Volume limitations	Class 7a – Carpark: 5,000m^2 and/or 30,000m^3 There are no maximum floor area or volume requirements for the Class 2 portion of the development.
Fire Compartments and Sole Occupancy Units	The following fire compartments have been assumed: ▪ Basement level is currently detailed as a single compartment with the exception of any plant and/or switch rooms which will need to be further fire-separated. ▪ Each apartment will be considered its own sole occupancy unit.

Exits	The following points in the building have been considered as the exits: ▪ There are ten sets of stairs egressing from the basement level ▪ There are two exits from each storey of Building C ▪ There is a single exit from each storey of Building B ▪ Each *townhouse* has its own exit
Climate Zone	The building is located within Climate Zone 5
Fire Source Features	**North**: The allotment boundary **South**: The allotment boundary **East**: The far side of Milton Street **West**: The allotment boundary *Note:* *A fire-source feature is defined in Section A1.1 of the BCA as –* ***a)*** *the far boundary of a road, river, lake or the like adjoining the allotment; or* ***b)*** *a side or rear boundary of the allotment; or* ***c)*** *an external wall of another building on the allotment which is not a Class 10 building.* *A building element is exposed to a fire-source feature if any of the horizontal straight lines between that part and the fire-source feature, or vertical projection of the feature, is not obstructed by another part of the building that* ▪ *has an FRL of not less than 30/–/–; and* ▪ *is neither transparent nor translucent.*

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5.0 FIRE SAFETY SCHEDULES

5.1 Proposed Fire Safety Schedule

As a result of the works proposed under this development application, the **DRAFT** fire safety schedule for the site will be as follows.

The final fire safety schedule is to be prepared for issue with the Construction Certificate.

Essential Fire and Other Safety Measures	Standard of Performance	Proposed
Fire rated access panels & doors/hoppers	**BCA Spec C3.4**	✓
Automatic fail-safe devices	**BCA D2.19** (Doorways and Doors) **BCA D2.21** (Operation of Latches)	TBA
Automatic fire detection & alarm	**BCA E2.2, NSW Table E2.2a** Spec E2.2a	✓
Automatic fire suppression systems	**BCA E1.5** **BCA Spec E1.5** **BCA Spec E1.5a** AS 2118.1 – 2017 (Sprinklers) TBC AS 2118.4 – 2012 (System for no more than 4 storeys) TBC	✓
Emergency lighting	**BCA E4.2, E4.4** AS/NZS 2293.1 –2018	✓
Exit signs	**BCA E4.5** (Exit Signs) **BCA E4.6** (Direction Signs) **BCA E4.8** (Design and Operation - Exits) AS/NZS 2293.1 –2018	✓
Fire dampers	**BCA C3.15, Spec C3.15** AS 1668.1 – 2015	✓
Fire doors	**BCA C2.12** (Separation of Equipment) **BCA C2.13** (Electricity Supply Systems) **BCA C3.11** (Bounding Construction) Spec C3.4 AS/NZS 1905.1 – 2015	✓
Fire hydrant systems - NSW Storz Couplings	**BCA E1.3** **BCA C2.12 (Separation of Equipment)** AS 2419.1 – 2005	✓

Fire seals	**BCA C3.15,** **BCA C3.16,** **BCA Spec C3.15** AS4072.1-2005	✓
Hose reel systems	**BCA E1.4** AS 2441 – 2005	✓
Lift Facilities (Fire Related)	**BCA E3.2** (Stretcher facility in lifts) **BCA E3.3** (Warning against use of lifts in fire) **BCA E3.7** (Fire Service Controls) **BCA E3.9** (Fire Service Recall Operation Swich) **BCA E3.10** (Service drive control swich) **BCA Spec E3.1**	✓
Lightweight construction	**BCA C1.1, Spec. C1.1** **BCA C1.8, Spec C1.8** AS 1530.4 – 2014 Manufacturer Specifications	(dependent on chosen fire rated wall system)
Mechanical air handling systems 1. Mechanical ventilation to carpark.	**BCA E2.2** AS 1668.1 – 2015	✓
Path of travel for stairways, passageway and ramps	EP&A Reg. 2000 Clauses 184-186	✓
Portable fire extinguishers	**BCA E1.6** AS 2444 – 2001	✓
Warning & operational signs	**BCA E3.3** (Lift Signs), EP&A Regs 2000, Clause 183	✓
Performance Solution(s)	TBA	TBA

5.2 Certification of Essential Fire Safety Measures

Pursuant to Section 169 of the Environmental Planning and Assessment Regulations 2000, it will be necessary for the owner of the building, on completion of work to furnish a Final Fire Safety Certificate with regard to each essential fire safety measure identified in the proposed Fire Safety Schedule listed above.

The Final Fire Safety Certificate must state that each essential fire safety measure specified in the fire safety schedule for the building to which the certificate relates:

(a) has been assessed by a properly qualified person, and
(b) was found, when it was assessed, to be capable of performing to at least the standard required by the current fire safety schedule for the building for which the certificate is issued.

Every year, the owner(s) will need to sign and submit an Annual Fire Safety Statement to the Local Council and the NSW Fire Brigade, which confirms that all essential fire safety measures have been tested and maintained and perform to the original design and installation standard. A copy of the Annual Fire Safety Statement must also be displayed in a prominent area of the buildings (i.e. the main entrance foyers).

6.0 CONCLUSION

Based on our assessment as detailed in Appendix B of this Report, we believe the development can comply with the BCA without significant modification.

Furthermore, in this instance, we believe any modification and/or advancement in the level of detail required to satisfy the requirements of the BCA will **not** necessitate the need for any significant design changes that would trigger a requirement to lodge an application under Section 4.55 of the Environmental Planning and Assessment Act 1979.

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APPENDIX A – FIRE RESISTENANCE LEVLES

Table 3 Type A construction: FRL of building elements

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

Fire-resistance of building elements

In a building required to be of Type A construction—

(a)each building element listed in Table 3 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)any internal wall required to have an FRL with respect to integrity and insulation must extend to—

(i)the underside of the floor next above; or

(ii)the underside of a roof complying with Table 3; or

(iii)if under Clause 3.5 the roof is not required to comply with Table 3, the underside of the non-combustible roof covering and, except for roof battens with dimensions of 75 mm x 50 mm or less or sarking-type material, must not be crossed by timber or other combustible building elements; or

(iv)a ceiling that is immediately below the roof and has a resistance to the incipient spread of fire to the roof space between the ceiling and the roof of not less than 60 minutes; and

(d)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
(e) * * * **
(f)the FRLs specified in Table 3 for an external column apply also to those parts of an internal column that face and are within 1.5 m of a window and are exposed through that window to a fire-source feature.

APPENDIX B: BCA REQUIREMENTS - CLAUSE BY CLAUSE ASSESSMENT

An indicative compliance assessment of the referenced documents identified in section 1.2 of this report has been undertaken against the Deemed-to-Satisfy Provisions of the National Building Code of Australia 2019 Amendment One (BCA).

In the table below is a summary of the Deemed-to-Satisfy Provisions of the BCA. All Deemed-to-Satisfy clauses that are applicable to the subject building have been referred to below, including a comment adjacent to each clause of the proposal's ability to satisfy each respective clause.

The abbreviations outlined below have been used in the following tables:

N/A	The Deemed-to-Satisfy clause does not apply to the subject Building.
Complies	The relevant provisions of the Deemed-to-Satisfy clause have been demonstrated by the proposed design and existing building features.
CRA	'Compliance Readily Achievable'. It is considered that the level of detail included in the DA documentation will not determine strict compliance with the individual BCA clause requirement. Further detailed documentation can be submitted as part of the Construction Certificate application, demonstrating compliance with the requirement of the BCA. Where this abbreviation is used, demonstrating BCA compliance is not expected to fundamentally change the DA approved building design.
FI	Further information is necessary to determine the compliance potential of the building design.
PS	Preparation of a Performance Solution with respect to this Deemed-To-Satisfy Provision is possible to satisfy the relevant BCA Performance Requirements.
DNC	Does Not Comply.
DTS	Deemed-To-Satisfy provisions as defined by the National Building Code of Australia 2019 – Amendment 1.

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BCA 2019 Amendment One Clause by Clause Assessment

Clause	Description	Status	Comments
SECTION C – FIRE RESISTANCE			
Part C1 – Fire Resistance and Stability			
C1.1	Type of construction required	CRA	The building must be constructed in accordance with the **Type A** fire-resisting construction requirements outlined in BCA Specification C1.1, and any external cladding must be non-combustible. Details of all wall and door types will need to be included in the final construction design.
C1.2	Calculation of rise in storeys	Noted	The building has an overall rise in storeys of six (assumed).
C1.3	Buildings of multiple Classification	Noted	Type A construction applicable to the whole building.
C1.4	Mixed types of Construction	N/A	
C1.5	Two storey Class 2, 3 or 9c buildings	N/A	
C1.6	Class 4 parts of buildings	N/A	
C1.7	Open spectator stands and indoor sports stadiums	N/A	
C1.8	Lightweight construction	N/A	
C1.9	Non-combustible building elements	CRA	The following building elements and their components must be non-combustible ▪ External walls and common walls, including all components incorporated in them including the façade covering, framing and insultation ▪ A shaft that is non-loadbearing ▪ The flooring and floor framing of lift pits ▪ Non-loadbearing internal walls where they are required to be fire-resisting. Details of all wall types, including all their components will need to be included in the final construction design. NB:- For a material to be considered non-combustible it must be tested in accordance with AS 1530.1
C1.10	Fire hazard properties	CRA	The fire hazard properties of all floor linings and floor coverings, wall linings, and ceiling linings must comply with BCA Specification C1.10. Fire Test Certificates will be required for all chosen products unless exempt by this Clause.

Clause	Description	Status	Comments
C1.11	Performance of external walls in fire	N/A	
C1.12	Deliberately left blank	N/A	
C1.13	Fire-protected timber: Concession	N/A	Fire-protected timber in a Class 2, 3 or 5 building 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 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 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	CRA	Any ancillary elements attached to the internal parts or external face of an external wall must be non-combustible unless it listed as having an exemption under BCA clause C1.14. Details of any ancillary elements will need to be included in the final construction design. NB:- For a material to be considered non-combustible it must be tested in accordance with AS 1530.1
Part C2 – Compartmentation and Separation			
C2.1	Application of Part	Noted	Clauses C2.2, C2.3 and C2.4 do not apply to a sprinkler protected carpark, open deck carpark or open spectator stand.
C2.2	General floor area and volume limitations	PS	The floor area within the basement exceeds the maximum allowed by this clause. This will need to be addressed via a fire-engineered Performance Solution
C2.3	Large isolated buildings	N/A	
C2.4	Requirements for open spaces and vehicular access	N/A	

C2.5	Class 9a and 9c Buildings	N/A	
C2.6	Vertical separation of openings in external walls	CRA	Spandrels are required to protect all vertical separated openings. If vertical spandrels are used, they must extend 900mm being 600mm above the slab and 300mm below. If horizontal spandrels are utilised these must extend 1,400mm out from the building and 450mm either side of the opening to which they protect. Spandrels are not required for any building protected by a sprinkler system complying with AS 2118 Details of any ancillary elements will need to be included in the final construction design.
C2.7	Separation by fire walls	CRA	Fire separating walls within the basement level are to comply with this Clause and the relevant requirements of Specification C1.1. Details of any ancillary elements will need to be included in the final construction design.
C2.8	Separation of classifications in the same storey	CRA	The Class 2 parts within the basement are to be separated from the remainder of the level by construction achieving a FRL of 120/120/120
C2.9	Separation of classifications in different storeys	CRA	Floors are to achieve adequate fire separation in accordance with Specification C1.1 and as discussed in Appendix A of this report.
C2.10	Separation of lift shafts	CRA	Lift shafts are required to be separated in accordance with Specification C1.1
C2.11	Stairways and lifts in one shaft	Complies	Stairways and lifts cannot be contained within the same shaft
C2.12	Separation of equipment	CRA	If the building contains any of the equipment specified in BCA clause C2.12(a) it must be enclosed by construction having a FRL of no less than that specified in BCA Specification C1.1 with reference to the relevant classification (except it cannot be any less than 120/120/120), and have any doorway protected by a self-closing fire door having a FRL of no less than -/120/30.
C2.13	Electricity supply system	CRA	Any substation or other electricity supply system referenced under this Clause must be enclosed by construction having a FRL of no less than that specified in BCA Specification C1.1 with reference to the relevant classification (except it cannot be any less than 120/120/120), and have any doorway protected by a self-closing fire door having a FRL of no less than -/120/30.
C2.14	Public corridors in Class 2 and 3 buildings	CRA	Ensure no building corridor exceeds 40m in length. The building as designed appears to comply with this Clause.

Part C3 – Protection of Openings			
C3.1	Application of Part	Noted	
C3.2	Protection of openings in external walls	N/A	There are no openings within 3m of a fire-source feature
C3.3	Separation of external walls and associated openings in different fire compartments	N/A	
C3.4	Acceptable methods of Protection	N/A	.
C3.5	Doorways in fire walls	CRA	All fire doors are to comply with the requirements of this Clause. This means ensuring an FRL consistent with the wall in which the door sits is achieved, however the insulation level may be reduced to 30mins
C3.6	Sliding fire doors	N/A	
C3.7	Protection of doorways in horizontal exits	N/A	
C3.8	Openings in fire-isolated exits	N/A	No fire-isolated exits proposed
C3.9	Service penetrations in fire isolated exits	N/A	No fire-isolated exits proposed
C3.10	Openings in fire-isolated lift shafts	CRA	Lift doors are to achieve a FRL of -/60/- and comply with AS 1735.11
C3.11	Bounding construction: Class 2 buildings	CRA	All SOUs are to be fire separated from the remainder of the building by construction achieving a FRL of 90/90/90 (loadbearing) or -/60/60 (non-loadbearing). Self-closing fire rated doors achieving a FRL of -/60/30 are required to each unit NB:- Fire ratings and wall types are to be shown on the final construction design.
C3.12	Openings in floors for services	CRA	Services passing through floors must be placed within fire resisting shafts or protected in accordance with BCA clause C3.15. Details are to be provided with the final construction design.

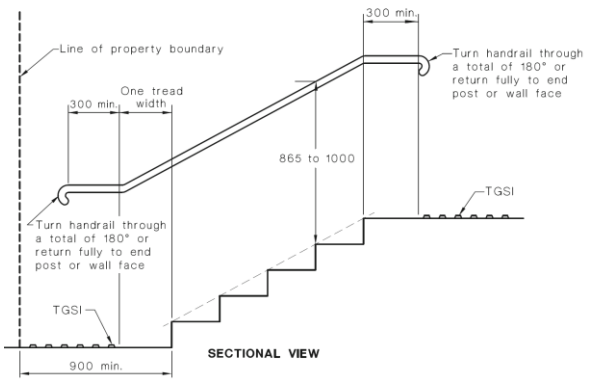
C3.13	Openings in shafts	N/A	
C3.14	Deliberately left blank	N/A	
C3.15	Openings for service installation	CRA	Methods and materials used to protect openings for service installations are to be identical to tested prototypes, compliant with AS4072.1 and AS1530.4, and must achieve the required FRL or resistance to the incipient spread of fire or other specified method. Details are to be provided with the final construction design.
C3.16	Construction Joints	CRA	Construction joints are to be installed in accordance with a tested prototype compliant with AS 1530.4. Details of proposed products are to be included within the final constriction design.
C3.17	Columns protected with lightweight construction	Noted	Columns must be protected in accordance with the identical tested prototype.
SECTION D – ACCESS AND EGRESS			
Part D1 – Provision for Escape			
Clause	Description	Status	Comments
D1.1	Application of Part	Noted	The Deemed to Satisfy provisions of this part do not apply to the internal parts of a sole occupancy unit in a Class 2, 3 or 4 building.
D1.2	Number of exits required	Complies	A choice of at least 2 alternative exits required from the basement level and one exit required from every other level.
D1.3	When fire-isolated exits are required	N/A	
D1.4	Exit travel distances	PS	No point on the basement level is to be more than 20m from a single exit or a point where travel in different direction to 2 exits is available, in which case the maximum distance to one of those exits must not exceed 40m. Currently there are a number of locations where this distance is exceeded. This will need to be addressed via a fire-engineered Performance Solution Furthermore, travel distance within Building B exceeds 12m (sprinkler concession) to a single exit. This will also require a fire-engineered Performance Solution.
D1.5	Distance between alternative exits	PS	The distance between alternate exits in the Basement Level exceed 60m. This will need to be addressed via a fire-engineered Performance Solution.

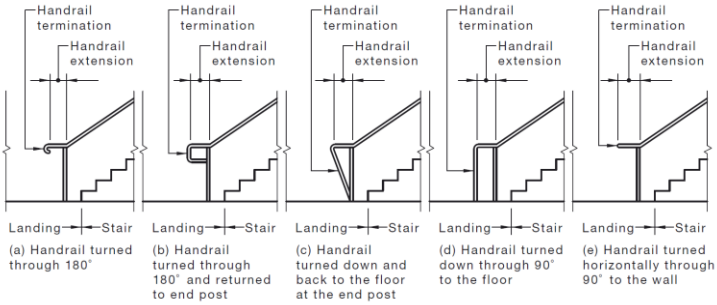
D1.6	Dimensions of exits and paths of travel to exits	CRA	All paths of travel including common stairways and ramps in which lead to an exit or serving as an exit must have an unobstructed width of no less 1,000mm, measured clear of any obstructions. This should be clearly detailed on the final construction design and submitted for review. NB:- Give special consideration to this Clause within the Basement Level
D1.7	Travel via fire-isolated exits	CRA	Fire-isolated exits are required in both Buildings B and C
D1.8	External stairways in lieu of fire-isolated exits	N/A	No external stairs
D1.9	Travel by non-fire-isolated stairways or ramps	CRA	Travel via the non-fire-isolated stairs within the Basement Level, being the stairs that pass by no more than 1 level, are to comply with this Clause
D1.10	Discharge from exits	CRA	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.
D1.11	Horizontal exits	N/A	
D1.12	Non-required stairs, ramps or escalators	N/A	
D1.13	Number of persons Accommodated	Noted	
D1.14	Measurement of distance	Noted	
D1.15	Method of measurement	Noted	
D1.16	Plant rooms and lift machine rooms: Concession	N/A	
D1.17	Access to lift pits	CRA	Access to lift pits is must be in accordance with this clause. Details of the chosen lifts are to be included with the final design.
Part D2 – Construction of Exits			
D2.1	Application of Part	Noted	Except for— **D2.13**, **D2.14(a)**, **D2.16**, **D2.17(d)**, **D2.17(e)**, **D2.18** and **D2.24**, the Deemed-to-Satisfy Provisions of this Part do not apply to the internal parts of a sole-occupancy unit in a Class 2 building or Class 4 part of a building.
D2.2	Fire-isolated stairs or ramps	CRA	Fire-isolated stairs are to comply with the requirements of this Clause.
D2.3	Non-fire-isolated stairways and ramps	CRA	Stairs are to be non-combustible.

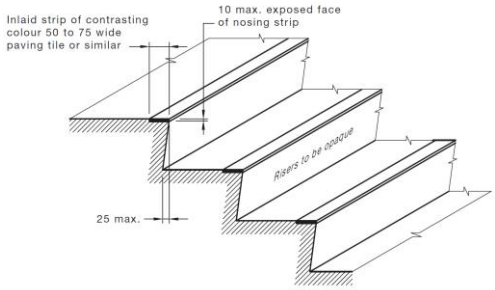
D2.4	Separation of rising and descending stair flights	CRA	Rising and descending flights of stairs within the fire-isolated stair shaft are to be separated.
D2.5	Open access ramps and balconies	N/A	
D2.6	Smoke lobbies	N/A	
D2.7	Installations in exits and paths of travel	CRA	Electrical distribution boards and other services or equipment must be located wholly within, and enclosed by, non-combustible construction, or have a fire-protective covering, with the doorway suitably sealed against smoke spreading from the enclosure. This notation should be included on the final construction design.
D2.8	Enclosure of space under stairs and ramps	CRA	*If applicable:* the storage space located under the stairs is required to be separated from the remainder of the building by construction achieving a FRL of 60/60/60. This also means providing a self-closing -/60/30 fire door.
D2.9	Width of stairways	CRA	The common stairways are required to have a minimum width of 1m **between handrails**. This should be clearly notated on the final construction design.
D2.10	Pedestrian ramps	N/A	No ramps proposed
D2.11	Fire-isolated passageways	N/A	
D2.12	Roof as open space	CRA	Any openings required to service the carpark at ground level ie, ventilation openings must be located at least 3m from a path of travel.
D2.13	Goings and risers	CRA	The stairways throughout the building must be designed in accordance with BCA clause D2.13, including the provision of slip-resistance in accordance with BCA Table D2.14 and AS 4586-2013.
D2.14	Landings	CRA	Landings must comply with the requirements of BCA clause D2.14.
D2.15	Thresholds	CRA	Thresholds within all common areas are to comply with the requirements of AS 1428.1-2009. Doorway thresholds within the units are not to exceed 190mm
D2.16	Barriers to prevent falls	CRA	Barriers compliant with BCA clause D2.16 must be provided to protect any fall of 1,000mm or more. A barrier is also required for any windows in Buildings B & C where the fall to ground below exceeds 4m. Details are to be included on the final construction design.

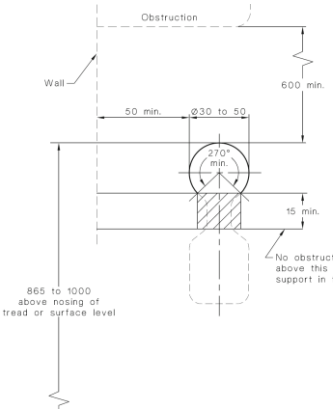
D2.17	Handrails	CRA	All stairways within the common areas are required to be accessible under D3 in the BCA and are to have a handrail installed on both sides of the stairs in accordance with AS 1428.1-2009. This means ensuring the stairway is a minimum 1.2m wide to allow for a clear width of 1m between handrails. These details are to be included on the final construction design. NB:- This requirement does not apply to the fire-isolated stairs. Stairs located within each of the units (townhouses) are only required to have a handrail on one side, located a minimum 865mm above the stair nosings.
D2.18	Fixed platforms walkways, stairways and ladders	N/A	
D2.19	Doorways and doors	N/A	
D2.20	Swinging doors	CRA	A swinging door in a required exit or forming part of a required exit must swing in the direction of egress. Door swings leading into the stairways must ensure they do not encroach by more than 500mm onto the minimum 1m required path of travel width.
D2.21	Operation of latch	CRA	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 on a single device which is located between 900 mm 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 centre grip section of the handle of not less than 35 mm and not more than 45 mm; or (ii)a single hand pushing action on a single device which is located between 900 mm and 1.2 m from the floor
D2.22	Re-entry from fire-isolated Exits	N/A	
D2.23	Signs on doors	N/A	
D2.24	Protection of openable windows	CRA	Window restrictors are required on all bedroom windows where the fall to the ground below exceeds 2m. This should be notated on the final construction design.

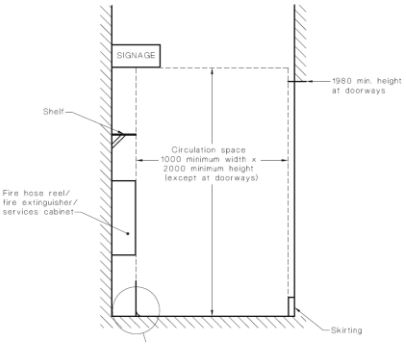
D2.25	Timber stairways: Concession	N/A	
SECTION D3.3 – ACCESS FOR PEOPLE WITH DISABILITIES			
D3.0	Deemed-to-Satisfy Provisions	Noted	
D3.1	General Building Access Requirements	CRA	Accessibility must be provided to all parts of the building normally used by the occupants. This should be reviewed by a suitably qualified access consultant.
D3.2	Access to Buildings	CRA	(a) An accessway must be provided to a building required to be accessible (i) from the main points of a pedestrian entry at the allotment boundary; and (ii) from another accessible building connected by a pedestrian link; and (iii) from any required accessible carparking space on the allotment. (b) In a building required to be accessible, an accessway must be provided through the principal pedestrian entrance, and— (i) through not less than 50% of all pedestrian entrances including the principal pedestrian entrance; and (ii) in a building with a total floor area more than 500 m^2, a pedestrian entrance which is not accessible must not be located more than 50 m from an accessible pedestrian entrance, except for pedestrian entrances serving only areas exempted by BCA clause **D3.4**. This should be reviewed by a suitably qualified access consultant.
D3.3	Parts of buildings to be accessible	CRA	The ramps, stairways, lifts, accessways, and floor coverings must comply with BCA clause D3.3. This includes internal and external paths of travel. This should be reviewed by a suitably qualified access consultant.

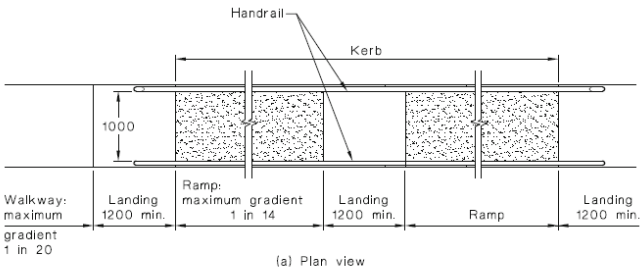


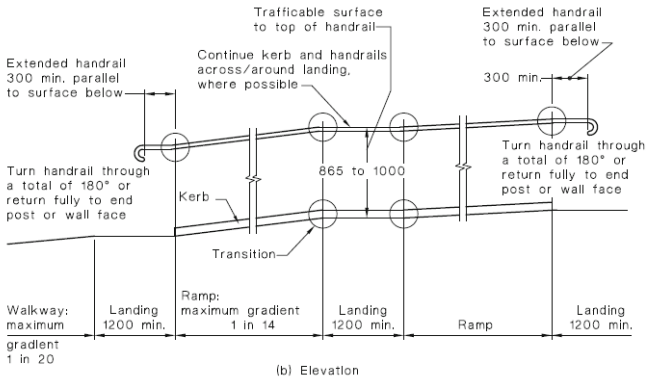












DIMENSIONS IN MILLIMETRES

FIGURE 14 RAMP HANDRAILS

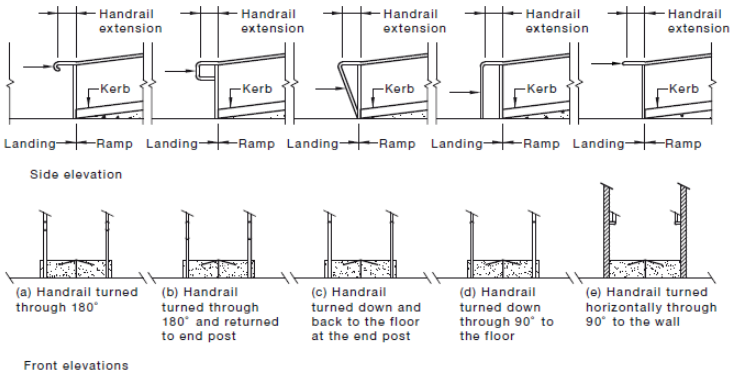
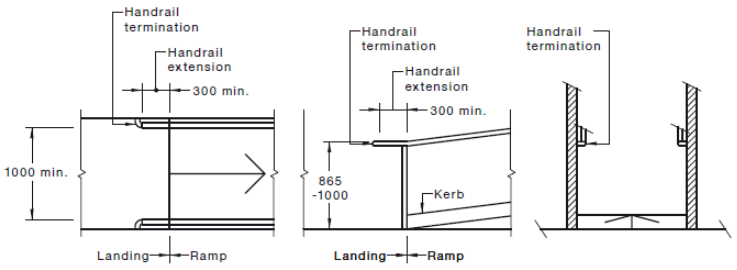
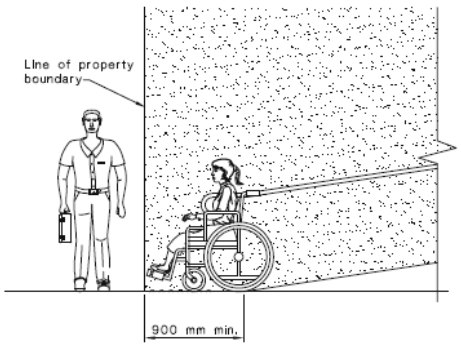


FIGURE 15(A) RAMP HANDRAILS—EXAMPLES OF HANDRAIL TERMINATIONS

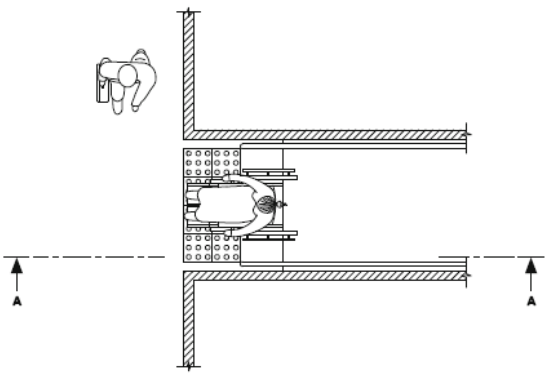


DIMENSIONS IN MILLIMETRES

FIGURE 15(B) RAMP HANDRAILS—DETAIL FOR HANDRAILS TERMINATED BY TURNING HORIZONTALLY THROUGH 90° TO THE WALL



SECTIONAL ELEVATION A-A



Plan

NOTE: TGSIs to be installed within the property boundary.

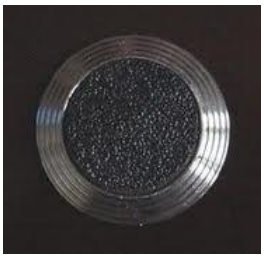
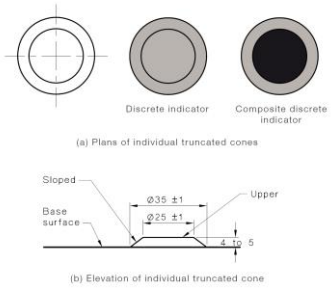
FIGURE 16 LOCATION OF RAMP AT A BOUNDARY TO PREVENT PROTRUSION OF HANDRAILS AND TACTILE GROUND SURFACE INDICATORS (TGSIs) INTO A TRANSVERSE PATH OF TRAVEL

Extraction from Standards Australia Handbook 197:1999

TABLE 3

PEDESTRIAN FLOORING SELECTION GUIDE – MINIMUM PENDULUM OR RAMP RECOMMENDATIONS FOR SPECIFIC LOCATIONS

Location	Pendulum	Ramp
External colonnade, walkway and pedestrian crossings	W	R10
External ramps	V	R11
Entry foyers hotel, office, public buildings - wet	X	R10
Entry foyers hotel, office, public buildings - dry	Z	R9
Shopping centre excluding food court	Z	R9
Shopping centre – food court	X	R10
Internal ramps, slopes (greater than 2 degrees) - dry	X	R10
Lift lobbies above external entry level	Z	R9
Other separate shops inside shopping centres	Z	R9
Other shops with external entrances – entry area	X	R10
Fast food outlets, buffet food servery areas	X	R10
Hospitals and aged care facilities – dry areas	Z	R9
Hospital and aged care facilities – ensuites	X	A or R10
Supermarket aisles except fresh food areas	Z	R9
Shop and supermarket fresh fruit and vegetable areas	X	R10
Communal changing rooms	X	A
Swimming pool surrounds and communal shower rooms	W	B
Swimming pool ramps and stairs leading into water	V	C
Toilet facilities in offices, hotels, shopping centres	X	R10
Undercover concourse areas of sports stadium	X	R10
Accessible internal stair nosings (dry) – handrails present	X	R10
Accessible internal stair nosings (wet) – handrails present	W	B or R11
External stair nosings	W	R11

D3.4	Exemptions	N/A	
D3.5	Accessible Car parking	CRA	Accessible carparking spaces are required at a rate of 1 space per 100. These spaces are to comply with AS 2890.6.
D3.6	Signage	CRA	Signage compliant with BCA clause D3.6 must be provided to and throughout the building.
D3.7	Hearing Augmentation	N/A	
D3.8	Tactile Ground Surface indicators (TGSIs)	CRA	Where required, TGSIs must comply with the requirements of AS1428.4-2009.
There are three (3) distinct types of TGSI, these each need to be assessed as to the most appropriate based on the surface it is to be applied and lighting conditions. AS1428.4.1 – 2009 clearly provides installation requirements.  **30% contrast to surface**  **45% Contrast to Surface**  **60% Contrast to Surface** 			
D3.9	Wheelchair Seating Spaces in Class 9b Assembly Buildings	N/A	
D3.10	Swimming Pools	N/A	
D3.11	Ramps	CRA	Any ramps both internally and externally are to comply with the requirements of AS 1428.1-2009
D3.12	Glazing on an accessway	CRA	Where there is no chair rail, handrail, or transom on an accessway 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 1428.1-2009.

SECTION E – SERVICES AND EQUIPMENT			
Part E1 – Fire Fighting Equipment			
Clause	Description	Status	Comments
E1.1	-	-	No Provisions
E1.2	-	-	No Provisions
E1.3	Fire Hydrants	CRA	The total floor area of the subject development is greater than 500m². Therefore, a system of fire hydrants compliant with AS 2419.1-2005 is required to serve the buildings. Of particular note, this Australian Standard requires that a hydrant system within 10m of a building be protected with a shield wall that extends 2m either side and 3m above take offs. It is also very likely that attack hydrants will be required around the complex to facilitate adequate coverage. Note: this system is required to be designed by a Competent Fire Safety Practitioner.
E1.4	Hose Reels	CRA	Fire hose reels in accordance with AS 2441 are required to serve the basement carpark. Fire hose reel location and suitable coverage is to be shown on the final construction details and submitted for review. Note: this system is required to be designed by a Competent Fire Safety Practitioner.
E1.5	Sprinklers	CRA	A sprinkler system is required to protect all parts of this building in accordance with Specification E1.5 and Specification E.15a. The following specific extract from Specification E1.5 below will apply to this development: (c) for Class 5, 6, 7, 8, 9a (other than a *residential care building*) or 9b parts of a building with an *effective height* not more than 25 m, which also contains Class 2 or 3 parts: a sprinkler system in accordance with Specification E1.5a as for a Class 2 or 3 building and the relevant provisions of this Specification except— (i) a FPAA101D sprinkler system cannot be used where the Class 5, 6, 7, 8, 9a (other than a *residential care building*) or 9b parts— (A) contain more than 2 *storeys*; or (B) are more than 25% of the total floor area of the building; or (C) are located above the fourth *storey*; and (ii) a FPAA101D or FPAA101H sprinkler system cannot be used where the Class 7a part (other than an *open-deck carpark*) accommodates more than 40 vehicles; or (d) for a combined sprinkler and fire hydrant system: AS 2118.6; or (e) for a Class 9a *health-care building* used as a *residential care building*: AS 2118.4 as applicable; or (f) for a Class 2, 3 or 9c building: AS 2118.4 as applicable. Note: this system is required to be designed by a Competent Fire Safety Practitioner. Please refer to the below table for further BCA concessions in regards to each DtS allowable systems

AS 2118.1 OR AS 2118.4 CONSESSIONS FOR CLASS 2 & 3 BUILDINGS WITH A RISE IN STOREYS OF 4 OR MORE AND AN EFFECTIVE HEIGHT OF LESS THAN 25M	
BCA CLAUSE	**CONSESSION**
C3.8 and C3.11	Self-closing fire doors may be reduced to not less than -/30/30
C3.15	The FRL of all service penetrations through non-loadbearing internal walls and shafts constructed of fire-protected timber may be reduced to -/60/15 The FRL of all service penetrations through all other non-loadbearing walls may be reduced to -/45/15
Specification C1.1	The FRL for all non-loadbearing internal walls and shafts constructed of fire-protected timber required to have FRLs of greater than -/60/60 may be reduced to -/60/60. The FRL of all other non-loadbearing walls may be reduced to -/45/45.
D1.3	The FRL for fire-isolated stairways enclosed with non-loadbearing construction may be reduced to -/45/45.
D1.4(a)(i)(A)	Except in a residential care building, the maximum distance of travel may be increased from 6m to 12m.
D1.4(a)(i)(B)	The maximum distance of travel from a single exit serving the storey at the level of egress to a road or open space may be increased from 20m to 30m
E1.3	Internal fire hydrants are not required where (A) The building is served by external fire hydrants that provide compliant coverage, except that in a residential care building the nozzle at the end of the length of hose need only reach the entry door of any Sole-Occupancy Unit to be considered as covering the area within the Sole-Occupancy Unit; or (B) A dry fire hydrant system that otherwise complies with AS 2419.1 is installed in the building and; ▪ Each fire hydrant head is located in accordance with E1.3 and fitted with a blank end cap or plug; and ▪ The pipework is installed in accordance with E1.3 except that it need not be connected to a water supply; and ▪ A hydrant booster inlet connection is provided in accordance with E1.3; and ▪ An external street or feed hydrant capable of providing the required system flow is located within 60m of the hydrant booster connection.
E4.9	An emergency warning and intercom system need not be provided in a residential care building if a warning system with an override public address facility is installed in accordance with Specification E2.2d

E1.6	Portable fire extinguishers	CRA	Portable fire extinguishers are required to be provided in accordance with Table E1.6 of the BCA and AS 2444-2001. Fire extinguisher type and locations are required to be detailed on the final construction design.

Table E1.6 Requirements for extinguishers

Occupancy class	Risk class (as defined in AS 2444)
General provisions—Class 2 to 9 buildings (except within *sole-occupancy units* of a Class 9c building).	(a) To cover Class AE or E fire risks associated with emergency services switchboards.[Note 1] (b) To cover Class F fire risks involving cooking oils and fats in kitchens. (c) To cover Class B fire risks in locations where flammable liquids in excess of 50 litres are stored or used (not including that held in fuel tanks of vehicles). (d) To cover Class A fire risks in normally occupied *fire compartments* less than 500 m^2 not provided with fire hose reels (excluding *open-deck carparks*). (e) To cover Class A fire risks in classrooms and associated corridors in primary and secondary schools not provided with fire hose reels. (f) To cover Class A fire risks associated with a Class 2, 3 or 5 building or Class 4 part of a building.
Specific provisions (in addition to general provisions)— (a) Class 9a *health-care building*, including a Class 9a building used as a *residential care building*. (b) Class 3 parts of detention and correctional occupancies. (c) Class 3 accommodation for children, aged persons and people with disabilities, including a Class 3 building used as a *residential care building*. (d) Class 9c building.	To cover Class A and E fire risks.[Note 2]

Notes to Table E1.6:

1. For the purposes of this Table, an emergency services switchboard is one which sustains emergency equipment operating in the emergency mode.
2. A Class E fire extinguisher need only be located at each nurses' station, supervisors' station or the like.
3. Additional extinguishers may be required to cover fire risks in relation to special hazards provided for in E1.10.
4. The fire risks in a Class 2 or 3 building or Class 4 part of a building must include risks within any *sole-occupancy units*, however portable fire extinguishers are not required to be located within a *sole-occupancy unit* unless the *sole-occupancy unit* has a *floor area* greater than 500 m^2.

E1.7	-	-	No Provisions
E1.8	Fire control centres	N/A	
E1.9	Fire precautions during construction	CRA	In a building under construction not less than one fire extinguisher to suit Class A, B and C fires and electrical fires must be provided at all times on each storey adjacent to each required exit or temporary stairway or exit.
E1.10	Provisions for special Hazards	N/A	
Part E2 – Smoke Hazard Management			
E2.1	Application of Part	Noted	

E2.2	General requirements	CRA	The building must be provided with a smoke detection and alarm system complying with Table E2.2 and Specification E2.2a Note: this Clause requires that the carpark be mechanically ventilated in accordance with AS 1668.2 and Clause 5.5 of AS 1668.1 except • that fans with metal blades suitable for operation at normal temperature may be used; and • the electrical power and control cabling need not be fire rated Full details of the chosen system are required on the final construction design. The use of *jet fans* will be subject to a Performance Solution. Note: this system is required to be designed by a Competent Fire Safety Practitioner.
E2.3	Provisions for special Hazards	N/A	
Part E3 – Lift Installations			
E3.1	-	-	No provisions.
E3.2	Stretcher facility in lifts	N/A	Stretcher facilities are required
E3.3	Warning against use of lifts in fire	CRA	A warning sign must— (a) be displayed where it can be readily seen— (i) near every call button for a passenger lift or group of lifts throughout a building; except (ii) a small lift such as a dumb-waiter or the like that is for the transport of goods only; and (b) comply with the details and dimensions of **Figure E3.3** and consist of— (i) incised, inlaid or embossed letters on a metal, wood, plastic or similar plate securely and permanently attached to the wall; or (ii) letters incised or inlaid directly into the surface of the material forming the wall.
E3.4	Emergency lifts	N/A	Building has an effective height of less than 25m
E3.5	Landings	CRA	Access and egress to and from liftwell landings must comply with the Deemed-to-Satisfy Provisions of BCA Section D.
E3.6	Facilities for people with disabilities	CRA	In an *accessible* building, every passenger lift must— (a) be one of the types identified in **Table E3.6a**, subject to the limitations on use specified in the Table; and (b) have *accessible* features in accordance with **Table E3.6b**; and (c) not rely on a constant pressure device for its operation if the lift car is fully enclosed.

E3.7	Fire Services Control	CRA	Fire services controls are required
E3.8	Aged care buildings	N/A	
E3.9	Fire service recall control switch	CRA	Fire service recall control switch is required
E3.10	Lift car fire service drive control switch	CRA	Lift car fire service drive control switch is required
Part E4 – Emergency Lighting, Exit Signs and Warning Systems			
E4.1	-	-	No provisions
E4.2	Emergency lighting requirements	CRA	Emergency lighting is to be provided throughout the basement level in accordance with this clause. Details are required to be shown on the final construction design and submitted for review.
E4.3	Measurement of distance	Noted	
E4.4	Design and operation of emergency lighting	Noted	Every required emergency lighting system must comply with AS 2293.1-2018.
E4.5	Exit signs	CRA	Exit signage is to be provided throughout the basement level and common parts of the apartment towers in accordance with this clause. Details are required to be shown on the final construction design and submitted for review.
E4.6	Direction signs	CRA	Where an exit location is not clear to a person unfamiliar with the building, exit signs with directional arrows must be installed in appropriate positions in corridors, hallways, lobbies and the like indicating the direction to a required exit in accordance with this clause. This may mean providing some directional signs at ground level to assist people egress from the units to the street. Details are required to be shown on the final construction design and submitted for review.
E4.7	Class 2, 3 and 4 buildings: Exemptions	Noted	E4.5 does not apply to— (a)a Class 2 building in which every door referred to is clearly and legibly labelled on the side remote from the *exit* or balcony— (i)with the word “EXIT” in capital letters 25 mm high in a colour contrasting with that of the background; or (ii)by some other suitable method; and (b)an entrance door of a *sole-occupancy unit* in a Class 2 or 3 building or Class 4 part of a building.

E4.8	Design and operation of exit signs	Noted	Exit signs are to operate in accordance with AS 2293.1-2018 and be clearly visible at all times while the building is occupied.
E4.9	Sound systems and intercom systems for emergency purposes	N/A	

SECTION F – HEALTH AND AMENITY			
Part F1 – Damp and Weatherproofing			
Clause	Description	Status	Comments
F1.1	Stormwater drainage	CRA	Stormwater drainage design shall be in accordance with AS/NZS 3500.3. Stormwater drainage details are required as part of the final construction design.
F1.2	-	-	No provisions
F1.3	-	-	No provisions
F1.4	External above ground membranes	CRA	Waterproofing membranes must comply with AS 4654 Parts 1 and 2 This is required to be notated on the final construction design.
F1.5	Roof coverings	CRA	Roof coverings are to comply with the relevant Australian Standards as per this clause. This is to be notated on the final construction design.
F1.6	Sarking	CRA	Sarking type materials used for weatherproofing of roofs and walls must comply with AS/NZS 4200 Parts 1 and 2.
F1.7	Waterproofing of wet areas	CRA	All shower enclosure surfaces, floor surfaces in bathrooms, shower rooms, slop hoppers, sink compartments, laundry and sanitary compartments are required to be waterproofed and/or water-resistant in accordance with AS 3740-2010. This is to be notated on the final construction design.
F1.8	-	-	No provisions
F1.9	Damp-proofing	CRA	Damp-proofing must be provided in accordance with the requirements of BCA clause F1.9.

F1.10	Damp-proofing of floors on the ground	CRA	A vapour barrier in accordance with AS 2870-2011 is to be provided beneath the basement floor slab.
F1.11	Provisions of floor wastes	CRA	The floor of each bathroom/laundry must have a floor waste and the floor must be graded to permit drainage to the floor waste.
F1.12	Sub-floor ventilation	N/A	
F1.13	Glazed assemblies	CRA	Windows, sliding doors with a frame, adjustable louvres, shopfronts and window walls with one piece framing in an external wall must comply with AS 2047-2014 requirements for resistance to water penetration.
Part F2 – Sanitary and Other Facilities			
F2.1	Facilities in residential buildings	N/A	
F2.2	Calculation of number of occupants and fixtures	Noted	
F2.3	Facilities in Class 3 to 9 buildings	N/A	
F2.4	Accessible sanitary Facilities	N/A	No common bathrooms are shown on the design drawings.
F2.5	Construction of sanitary compartments	CRA	Doors to fully enclosed toilets are to open outwards, slide or be readily removable from the outside of the sanitary compartment unless there is a clear space of at least 1.2m between the closet pan within the sanitary compartment and the nearest part of the doorway.
F2.6	Interpretation: Urinals and washbasins	Noted	
F2.7	Warm water installations	N/A	Not Applicable in NSW
F2.8	Waste Management	N/A	
Part F3 – Room Sizes			
F3.1	Height of rooms and other spaces	CRA	Ceiling heights must be not less than— (a) in a habitable room excluding a kitchen — 2.4 m; and (b) in a kitchen — 2.1 m; and (c) in a corridor, passageway or the like — 2.1 m; and

			(d) in a bathroom, shower room, laundry, sanitary compartment, airlock, pantry, storeroom, garage, car parking area or the like — 2.1 m; and (e) in a room or space with a sloping ceiling or projections below the ceiling line within— (i) a habitable room— (A) in an attic — a height of not less than 2.2 m for at least two-thirds of the floor area of the room or space; and (B) in other rooms — a height of not less than 2.4 m over two-thirds of the floor area of the room or space; and (ii) a non-habitable room — a height of not less than 2.1 m for at least two-thirds of the floor area of the room or space, (f) 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 (g) in a stairway — 2.0 m measured vertically above the nosing line.
Part F4 – Light and Ventilation			
F4.1	Provisions of natural light	Noted	Natural light is required to all habitable rooms within the Class 2 part.
F4.2	Methods and extent of natural light	CRA	Windows providing natural light must have an aggregate light transmitting area of not less than 10% of the floor area of the room it serves.
F4.3	Natural light borrowed from adjoining room	Noted	If required natural light can be borrowed via an adjoining room in accordance with this clause.
F4.4	Artificial lighting	CRA	Artificial lighting must be provided in required stairways, passageways, ramps, sanitary compartments and other spaces used in common by occupants of the building complying with AS1680.0-2009 in accordance with the requirements of BCA clause F4.4.
F4.5	Ventilation of rooms	CRA	Ventilation must be provided throughout the building by natural or mechanical means. If ventilation is provided by a mechanical system, it must comply with AS 1668.2-2012.
F4.6	Natural ventilation	CRA	If natural ventilation is proposed, the aggregate size of any window opening must not be less than 5% of the floor area of the room served.
F4.7	Ventilation borrowed from adjoining room	Noted	Natural ventilation can be borrowed from an adjoining room in accordance with this clause.

F4.8	Restriction on location of sanitary compartments	N/A	No common sanitary facilities are shown on the plans.
F4.9	Airlocks	N/A	No common sanitary facilities are shown on the plans.
F4.10	-	-	No provisions
F4.11	Carparks	CRA	Mechanical ventilation is required within the carpark in accordance with AS 1668.2 (refer to Clause E2.2)
F4.12	Kitchen local exhaust	N/A	Commercial Kitchens only. Note: Despite the above, any range hood and associated ducting must not contravene the building's ability to suppress fire via construction methods. In this regard, compliance with BCA clause C3.15 is required.
Part F5 – Sound Transmission and Insulation			
F5.1	Application of part	Noted	Applicable to Class 2 buildings
F5.2	Determination of airborne sound insulation ratings	Noted	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 ISO 717.1 using results from laboratory measurements; or (b)comply with Specification F5.2.
F5.3	Determination of impact sound installation ratings	CRA	(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 (Ln,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 or 3 building be of discontinuous construction; and (ii) for a Class 9c building, must— (A)for other than masonry, be two or more separate leaves without rigid mechanical connection except at the periphery; or (B)be identical with a prototype that is no less resistant to the transmission of impact sound when tested in accordance with Specification F5.5 than a wall listed in Table 2 of Specification F5.2. (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. All forms of acoustic construction are required to be detailed on the final construction design and submitted for review.
F5.4	Sound insulation rating for floors	CRA	Sound insulation of floors is to comply with this Clause All forms of acoustic construction are required to be detailed on the final construction design and submitted for review.
F5.5	Sound insulation rating of walls	CRA	Sound insulation of walls is to comply with this Clause All forms of acoustic construction are required to be detailed on the final construction design and submitted for review.
F5.6	Sound insulation rating of services	CRA	Sound insulation of services is to comply with this Clause All forms of acoustic construction are required to be detailed on the final construction design and submitted for review.
F5.7	Isolation of pumps	Noted	A flexible coupling must be used at the point of connection between the service pipes in a building and any circulating or other pump.