BUILDING INNOVATIONS AUSTRALIA

BCA 2019 A1

INDICATIVE COMPLIANCE REPORT

FOR DA LODGEMENT

27-29 North Avalon Road,

Avalon Beach NSW 2107

Prepared for:	**Armada Avalon Pty Ltd C/- Environa Studio**
Project No.:	**PRO-03421-P2Y2**
Date:	**18/09/2020**
Status:	**Report Issue v3.1**

Building Innovations Australia
143 Foveaux Street, Surry Hills NSW 2010
T: (02) 8014 7720 FAX: 9211 9332 ABN: 80 606 174 592

BUILDING INNOVATIONS AUSTRALIA

Table of Contents

Document History

Date	Issue	Status	Prepared by	Assessed by	Reviewed by
26/06/2019	Draft Report v0.1	Initial document created	Kallan Baker	Joseph Bond	Mardiros Tatian
12/07/2019	Report Issue v1.0	Report issued to client	Kallan Baker	Joseph Bond	Mardiros Tatian
27/09/2019	Report Issue v2.0	Updated to reflect latest plans	Kallan Baker	Joseph Bond	Mardiros Tatian
17/09/2020	Report Issue v3.0	Report updated to reflect new DA plans	Kallan Baker	Joseph Bond	Mardiros Tatian
18/09/2020	Report Issue v3.1	Report updated to reflect latest DA plans	Kallan Baker	Joseph Bond	Mardiros Tatian

1.0. INTRODUCTION

1.1. Location and Description

This report is prepared in preparation of a Development Application (DA) lodgement and is for assessment purposes, it comprises a National Building Code of Australia 2019 Amendment 1 (NBCA) assessment of the proposed seniors living residential development as required under Clause 145 of the Environmental Planning and Assessment Regulations.

The development incorporates the demolition of existing structures and construction of a new three (3) storey building comprising of ten (10) seniors living residential apartments with associated parking and storage spaces located within the Basement Floor Level.

Figure 1 *Site location and topography*

1.2. Report Purpose

The purpose of this report is to provide an indicative compliance assessment of the DA design documentation for the proposal, against the current requirements of the BCA.

Demonstrating compliance with the BCA is not a prescribed head of consideration under Section 4.15 (formally Section 79C) of the Environmental Planning & Assessment Act 1979. It is noted however that Council has an obligation to consider whether the DA proposal, as lodged, is indicatively capable of complying with the BCA - without significant modification to those plans for which approval is sought.

This report will demonstrate that there will be no additional requirements, resulting from prescribed application of the BCA, for any significant design changes that would necessitate the submission of an application under Section 4.55 (formally Section 96) of the Environmental Planning and Assessment Act 1979.

As such, and to pre-empt the Certifying Authority's role under clause 145 of the Environmental Planning & Assessment Regulation 2000, we have undertaken a preliminary assessment of the development against the provisions of the BCA applicable to the lodged Construction Certificate.

1.3. Basis of Report

This report is based upon and limited to:

- An assessment of design documentation referenced in Appendix B of this report.
- The Deemed-to-Satisfy provisions of the National Building Code of Australia 2019 Amendment 1 including the NSW variations where applicable.

1.4. Referenced Documents

The following documentation was relied upon when preparing this report:

- Assessment of design documentation referenced in Appendix B of this report.
- The performance and deemed-to-satisfy provisions of the National Building Code of Australia 2019 Amendment 1 incorporating the NSW Appendices where applicable.
- Guide to the National Building Code of Australia.
- Disability (Access to Premises — Buildings) Standards 2010.
- Environmental Planning & Assessment Act 1979.
- Environmental Planning & Assessment Regulation 2000.

1.5. Limitations and Exclusions

The limitations and exclusions of this report are as follows:

- The plans are assessed indicatively to the extent necessary to proceed to construction certificate stage whereby assessment will be undertaken pursuant to Part 4A of the Environmental Planning and Assessment Act 1979. This means that the design has been assessed to be able to comply with the BCA (i.e. the submitted plans are consistent with the BCA but certain design details may not be specified at this stage due to the plans and specifications being at pre DA stage).
- 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 building elements (unless specifically referred to).
  b) The design, maintenance or operation electrical, mechanical, hydraulic or fire protection services.
  c) Environmental Planning and Assessment Act and Regulations (unless specifically referred to).
  d) Local Government Act and Regulations.
  e) Occupational Health and Safety Act and Regulations.
  f) WorkCover Authority requirements.
  g) Requirements of other Regulatory Authorities including, but not limited to, Telstra, Sydney Water, Electricity Supply Authority, RTA, Council and the like.
  h) Disability Discrimination Act (DDA) other than minimum requirements under the Disability (Access to Premises — Buildings) Standards 2010. DDA is a Case by Case Assessment, this building will comply with the set items under the Premises Standards.
  i) Construction Safety Act.
  j) Conditions of Development Consent issued by the relevant Local Council.
- This assessment does not incorporate the detailed requirements of the Australian Standards.

- Building Innovations Australia Pty Ltd cannot guarantee acceptance of this report by the Local Council, NSW Fire Brigades or other approval authorities.
- Without written permission from Building Innovations Australia Pty Ltd, no part of this document may be reproduced in any form or by any means. This report is based solely on client instructions, and therefore should not be used by any third party without prior knowledge of such instructions.

1.6. Legislative Framework

Section 4.15 (formally Section 79C) of the Environmental Planning and Assessment Act provides the matters of consideration that the consent authority must take into account in the determination of a development application.

Once development consent is granted, and pursuant to Clause 145 of the Environmental Planning and Assessment Regulations 2000, a certifying authority must not issue a construction certificate for building work unless:

(a1) the plans and specifications for the building include such matters as each relevant BASIX certificate requires, and

(a) the design and construction of the building (as depicted in the plans and specifications and as described in any other information furnished to the certifying authority under clause 140) are not inconsistent with the development consent, and

(b) the proposed building (not being a temporary building) will comply with the relevant requirements of the Building Code of Australia (as in force at the time the application for the construction certificate was made).

Compliance with the National Building Code of Australia

The BCA is a performance based document whereby compliance can be achieved by satisfying the deemed to satisfy requirements or by formulating a performance solution to address the relevant performance requirements.

As indicated above, the requirements of the Environmental Planning and Assessment Regulations 2000 requires all new building works to comply with the relevant requirements of the BCA (as in force at the time the application for the construction certificate was made).

This means that the plans and documentation submitted with the *construction certificate* (CC) application must demonstrate full compliance with the relevant provisions of the Building Code of Australia.

Clause 143 Fire protection and structural capacity

If your development incorporates a Change of Use, Category 1 fire safety measures must be considered and implemented in to the design as applicable:

EP1.3: *A fire hydrant system*

EP1.4: *An automatic fire suppression system*

EP1.6: *Suitable facilities must be provided to the degree necessary in a building to co-ordinate fire brigade intervention*

EP2.1: *Sleeping Accommodation, occupants must be provided with automatic warning*

EP2.2: *Conditions in any evacuation route must be maintained for the period of time occupants take to evacuate*

EP3.2: *One or more passenger lifts fitted as emergency lifts to serve each floor served by the lifts in a building must be installed to facilitate the activities of the fire brigade and other emergency services personnel*

Details of the above will need to be identified on the Building Fire Safety Schedule/Statement as present, if not present; these measures will need to be installed in to the building if applicable.

Clause 144, 144A and 152 Referral of certain plans and specifications to New South Wales Fire Brigades

Under the Environmental Planning and Assessment Regulations Clause 144, Clause 144A has specific requirements for any Fire Engineering which identifies Category 2 fire safety provisions which form part of a building being more than 6,000m² and/or within a Fire Compartment more than 2,000m².

Category 2 means the following provisions of the Building Code of Australia, namely, CP9, EP1.3, EP1.4, EP1.6, EP2.2 and EP3.2 in Volume One of that Code

If this building has a floor area of more than 6,000m^2 or a performance solution is proposed within a fire compartment more than 2,000m², any Performance Solution which identifies one or more of the above performance provisions, Fire Brigade approval is required in the form of a Clause 144 Approval along with a required Engineering Statement under Clause 144A and following the completion of the building a Clause 152 Report from the Fire Commissioner is required, a final fire safety report for a building means a written report specifying whether or not the Fire Commissioner is satisfied:

(a) that the building complies with the Category 2 fire safety provisions, and

(b) that the fire hydrants in the fire hydrant system will be accessible for use by New South Wales Fire Brigades, and

(c) that the couplings in the fire hydrant system will be compatible with those of the fire appliances and equipment used by New South Wales Fire Brigades.

Fulfilment of BASIX Commitments (Residential only)

Clause 154A of the Environmental Planning and Assessment Regulations 2000 requires a certifying authority to monitor fulfilment of any commitments listed on the BASIX certificate, where the BASIX requires the certifying authority to monitor those commitments.

A certifying authority must not issue an occupation certificate (whether interim or final) for any building resulting from, or any building that becomes a BASIX affected building because of, BASIX affected development or BASIX optional development to which this clause applies, or for any part of such a building, unless each of the commitments whose fulfilment it is required to monitor in relation to the building or part has been fulfilled.

For the purpose of satisfying itself as to the fulfilment of any such commitment, a certifying authority may rely on the advice of any properly qualified person (i.e. Energy Efficiency Consultant).

Special Requirements for Residential Flat Developments

Clause 143A of the Environmental Planning and Assessment Regulations 2000 requires a qualified designer to provide a statement that verifies that the plans and specifications that form part of construction certificate application achieve or improve the design quality of the development having regard to the design quality principles set out in Part 2 of the State Environmental Planning Policy No. 65 – Design Quality of Residential Flat Development prior to the issue of a Construction Certificate.

Clause 154A of the Environmental Planning and Assessment Regulations 2000 requires a qualified designer to provide a statement that verifies that the residential flat development achieves the design quality of the development as shown in the plans and specifications having regard to the design quality principles set out in Part 2 of the State Environmental Planning Policy No. 65 – Design Quality of Residential Flat Development prior to the issue of an Occupation Certificate.

Disability (Access to Premises — Buildings) Standards 2010

Disability (Access to Premises — Buildings) Standards 2010 has been introduced and is applicable to this building. It is noted that unless Part D3, Clauses E3.6, F2.2 & F2.4 are included in the below assessment, an access consultant may need to be engaged to provide specific comments as to compliance with this standard. Note that except for slight variations, particularly for Class 1b buildings, available verification methods and adult change facilities, as this is a new building to BCA 2019 A1, compliance with the Disability (Access to Premises — Buildings) Standards 2010 would inherently comply.

1.7. 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; and

  (b) integrity; and

  (c) insulation,

  and expressed in that order.
- *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 a Performance 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* - 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.

2.0. BUILDING DESCRIPTION – PROPOSED DEVELOPMENT

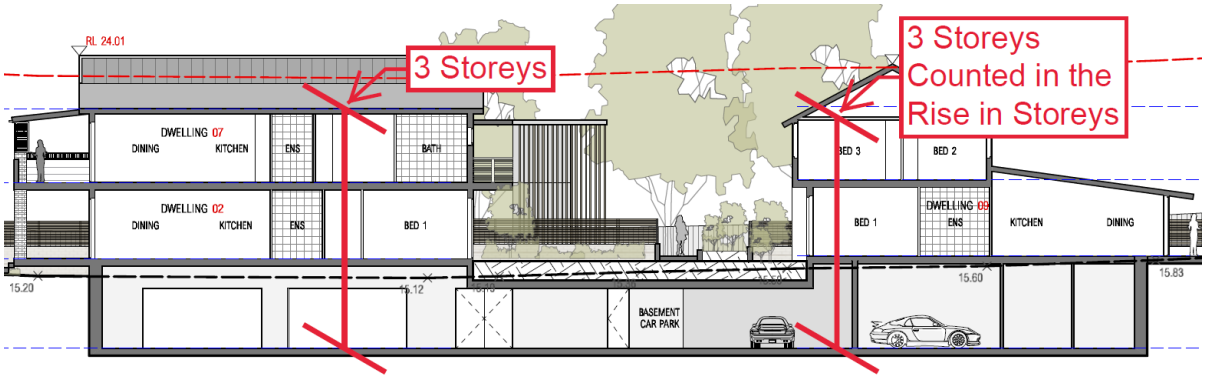
2.1. Building Code of Australia Description

For the purposes of the Building Code of Australia 2019 A1 (BCA) the proposed development may be described as follows.

2.2. Rise in Storeys (RIS) (Clause C1.2)

The overall building has a rise in storeys of three (3) as illustrated below;

The number of storeys contained is three (3).



2.3. Building Classifications (Part A6)

The proposed building has been classified as follows.

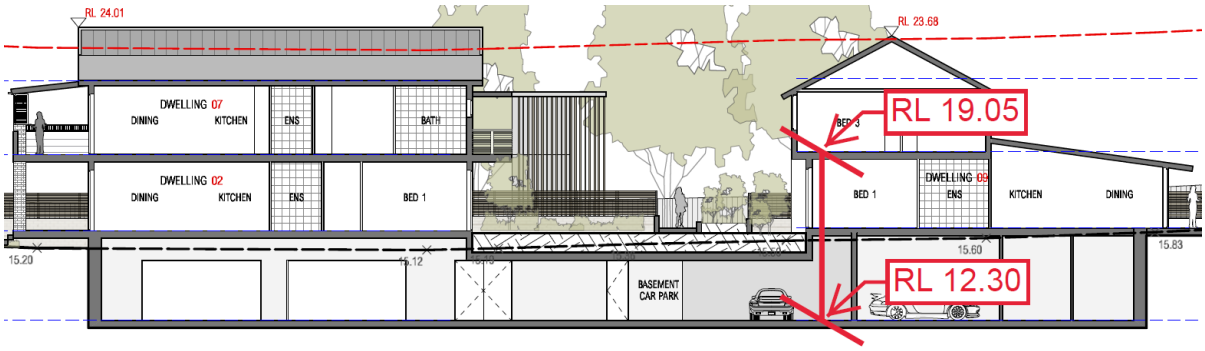
BUILDING LEVELS	PLAN LEVELS	CLASSIFICATION	USE	RIS
Basement Floor	Basement Floor Plan	Class 7a & 7b	Carpark & Storage	1
Ground Floor	Level 1 Floor Plan	Class 2	Residential	2
First Floor	Level 2 Floor Plan	Class 2	Residential	3
Roof	Roof Level Plan	-	-	-

2.4. Effective Height (Schedule 3)

The building has an effective height (EH) of approximately **6.75m** when measured from the floor of the topmost storey which is less than 12m.

*Lowest Point taken @ RL 12.30 (Approx.)

*Highest Point taken @ RL 19.05



2.5. Type of Construction (Table C1.1)

The building is required to be of **Type 'A'** Construction.

2.6. Floor Area and Volume Limitations (Table C2.2)

The building is subject to maximum floor area and volume limits under Type 'A' Construction of:

Class of Building Part	Floor Area & Volume		Outcome
	Max Permitted (Table C2.2)	Max. Proposed	
▪ Class 7a	5,000 m²	< 5,000 m²	Complies
	30,000 m³	< 30,000 m³	
▪ Class 7b	5,000 m²	< 5,000 m²	Complies
	30,000 m³	< 30,000 m³	

**Class 7a is exempt from Table C2.2 Floor Area restrictions if Carpark is proposed to be Sprinkler Protected pursuant to Clause E1.5.*

The Class 2 portions of the building are not subject to any floor area and volume limitations of C2.2 of the BCA. Table 3 of Specification C1.1 and C3.11 of the BCA regulate compartmentalisation and separation provisions applicable to Class 2 buildings or building portions.

2.7. Fire protection and structural capacity (Clause 143)

If your development incorporates a Change of Use, Category 1 fire safety measures must be considered and implemented into the design as applicable.

EP1.3:	*A fire hydrant system (required)*
EP1.4:	*An automatic fire suppression system*
EP1.6:	*Suitable facilities must be provided to the degree necessary in a building to co-ordinate fire brigade intervention*
EP2.1:	*Sleeping Accommodation, occupants must be provided with automatic warning*
EP2.2:	*Conditions in any evacuation route must be maintained for the period of time occupants take to evacuate*
EP3.2:	*One or more passenger lifts fitted as emergency lifts to serve each floor served by the lifts in a building must be installed to facilitate the activities of the fire brigade and other emergency services personnel*

2.8. Fire Brigade referral (Clause 144)

If this building requires Fire Engineering referral would need to be forwarded to the NSW Fire Brigades under a Clause 144 referral.

3.0. BCA REQUIREMENTS

Noting that the level of documentation at this stage is for a Development Application (DA) assessment purposes, an indicative compliance assessment of the referenced documents identified in Appendix B of this report has been undertaken against the Deemed-to-Satisfy Provisions of the National Building Code of Australia 2019 Amendment 1 (BCA).

Outlined 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, notwithstanding it is at DA documentation stage.
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 requirements. However, subject to noting the requirements of each clause, it is considered BCA compliance can be readily demonstrated without significant implication to the approved design. This will occur through progression of documentation to the Construction Certificate stage of the development.
FI	Further information is necessary to determine the compliance potential of the building design.
PS	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 A1.

3.1. BCA 2019 A1 Clause by Clause Assessment

SECTION B – STRUCTURE

Part B1 – Structural Provisions			
Clause	Description	Status	Comments
B1.1	Resistance to actions	CRA	The resistance of a building or structure must be greater than the most critical action effect resulting from different combinations of actions. Structural details and a design certificate will be obtained from a qualified structural engineer prior to the issue of a Construction Certificate.
B1.2	Determination of individual actions	CRA	The magnitude of individual actions must be determined in accordance with Clause B1.2 of the BCA. Structural details and a design certificate will be obtained from a qualified structural engineer prior to the issue of a Construction Certificate.
B1.3	-	-	No Provisions.
B1.4	Determination of structural resistance of materials and forms of construction	CRA	The structural resistance of materials and forms of construction must be determined in accordance with the relevant Australian Standards in accordance with Clause B1.4 of the BCA. Structural details and a design certificate will be required by a qualified structural engineer prior to the issue of a Construction Certificate.
B1.5	Structural Software	Noted	
B1.6	Construction of building in flood hazard areas	Noted	

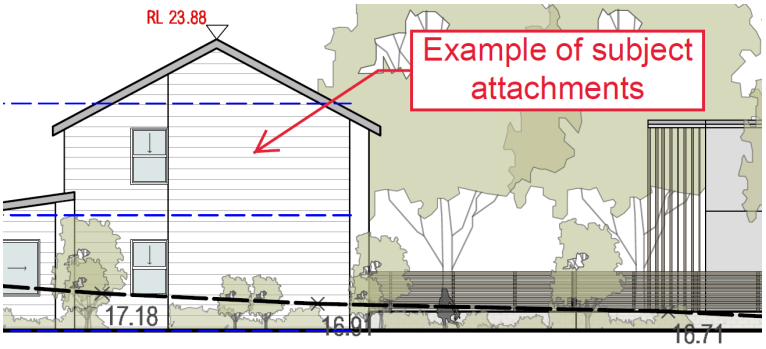
SECTION C – FIRE RESISTANCE

Part C1 – Fire Resistance and Stability			
Clause	Description	Status	Comments
C1.1	Type of construction required	CRA	The building is to be erected in Type 'A' fire resisting construction in accordance with Specification C1.1 of the BCA. Refer to 'Appendix' A for the relevant fire resisting requirements. Plans to reflect required FRLs prior to the issue of a Construction Certificate.
C1.2	Calculation of rise in storeys	Noted	The building has an overall rise in storeys of three (3). The building contains three (3) storeys.

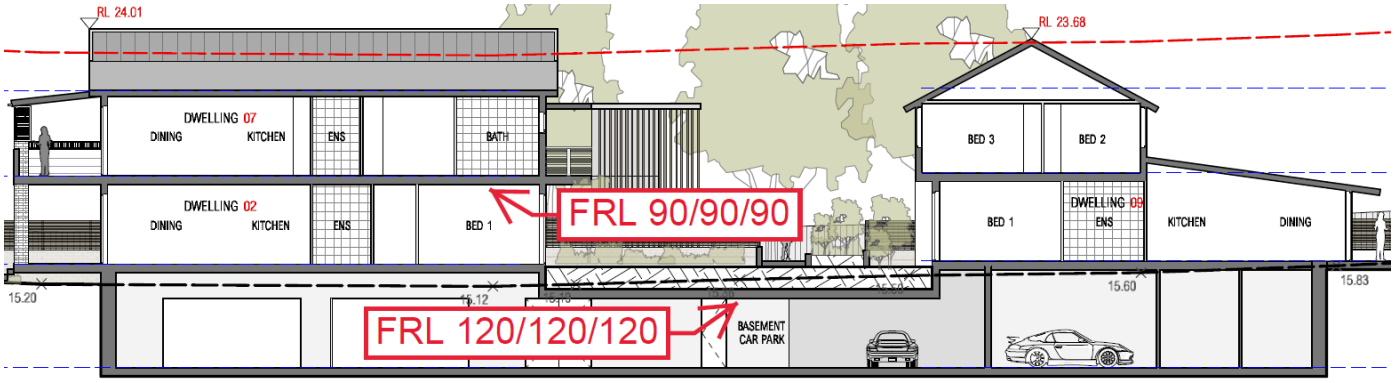
<table>
<tr><th colspan="4">Part C1 – Fire Resistance and Stability</th></tr>
<tr><th>Clause</th><th>Description</th><th>Status</th><th>Comments</th></tr>
<tr><td>C1.3</td><td>Buildings of multiple classification</td><td>Noted</td><td>The building is required to be constructed of Type ‘A’ fire resisting construction as the classification of the top storey is a Class 2.</td></tr>
<tr><td>C1.4</td><td>Mixed types of Construction</td><td>Noted</td><td>If a fire wall divides the building in accordance with Clause C2.7, the building portions are able to be constructed in differing levels of fire-resistance determined in accordance with Clause C1.1 and C1.3.</td></tr>
<tr><td>C1.5</td><td>Two storey Class 2, 3 or 9c buildings</td><td>N / A</td><td></td></tr>
<tr><td>C1.6</td><td>Class 4 parts of buildings</td><td>N / A</td><td></td></tr>
<tr><td>C1.7</td><td>Open spectator stands and indoor sports stadiums</td><td>N / A</td><td></td></tr>
<tr><td>C1.8</td><td>Lightweight construction</td><td>CRA</td><td>Lightweight construction used in a wall system must comply with Specification C1.8.

Lightweight construction used as a fire-resisting covering of a steel column or the like, and where the covering is not in continuous contact with the column must have the voids filled to a height of not less than 1.2m above the floor and where the column is liable to be damaged must be protected by steel or other suitable material.

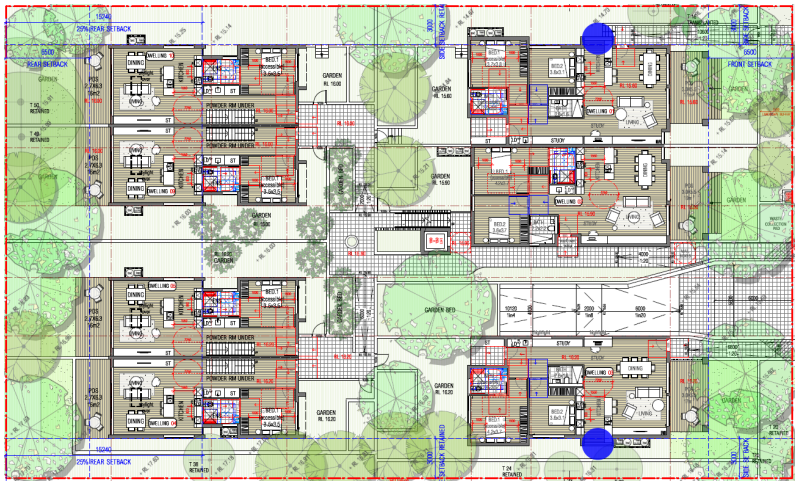
If lightweight construction is used in the proposed development, then details demonstrating required FRL and compliance with this clause must be provided prior to the issue of a Construction Certificate.</td></tr>
<tr><td>C1.9</td><td>Non-combustible building elements</td><td>CRA</td><td>In a building required to be of Type A construction, the following building elements and their components must be non-combustible, concrete, masonry or fire protected timber:
<table>
<tr><th>Building Element</th><th>Type A Construction</th></tr>
<tr><td>External wall</td><td>Non-combustible</td></tr>
<tr><td>Common wall</td><td>Non-combustible</td></tr>
<tr><td>Floor and floor framing of lift pit</td><td>Non-combustible</td></tr>
<tr><td>All loadbearing internal walls (including shaft walls)</td><td>Concrete, masonry or fire-protected timber</td></tr>
<tr><td>Loadbearing fire walls</td><td>Concrete, masonry or fire-protected timber</td></tr>
<tr><td>Non-loadbearing internal walls required to be fire-resistant</td><td>Non-combustible</td></tr>
<tr><td>Non-loadbearing lift, ventilating, pipe, garbage and like shafts which do not discharge hot products of combustion</td><td>Non-combustible</td></tr>
</table></td></tr>
</table>

Part C1 – Fire Resistance and Stability			
Clause	Description	Status	Comments
			Attachments Proposed attachments are to comply with the requirements of C1.9 and C1.14 of the BCA as applicable:  Design certification will be required verifying compliance prior to the issue of a Construction Certificate.
C1.10	Fire hazard properties	CRA	The fire hazard properties of all floor materials, floor coverings, wall and ceiling lining materials must comply with Specification C1.10. The fire hazard properties of all other materials must comply with Specification C1.10. Design certification will be required verifying compliance prior to the issue of a Construction Certificate.
C1.11	Performance of external walls in fire	N / A	Concrete external walls that could collapse as complete panels (e.g. tilt-up and pre-cast concrete), in a building having a rise in storeys of not more than 2, must comply with Specification C1.11.
C1.12	-	-	No provisions
C1.13	Fire-protected timber: Concession	N / A	
C1.14	Ancillary elements	CRA	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 determined to meet certain fire properties and limitations on the extent of coverage. Design certification will be required verifying compliance prior to the issue of a Construction Certificate.

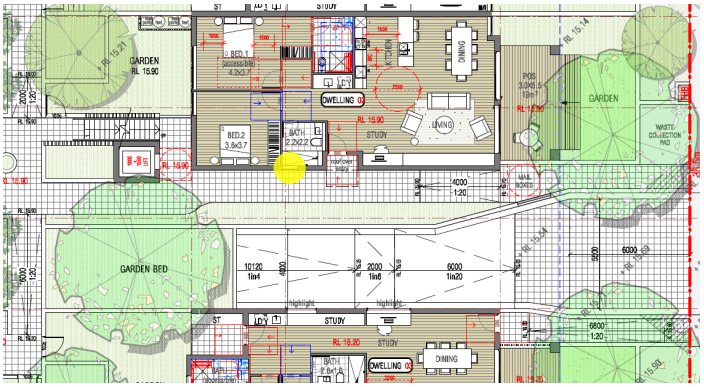
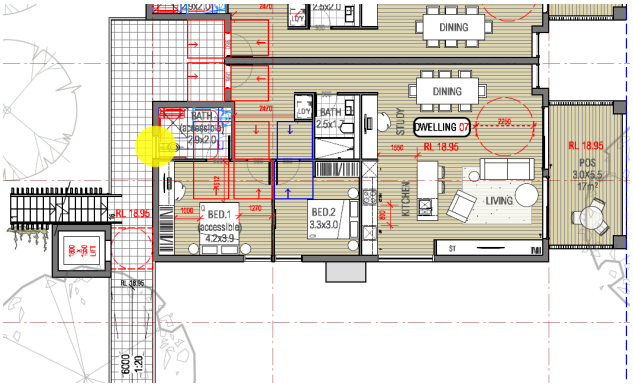
Part C2 – Compartmentation and Separation			
Clause	Description	Status	Comments
C2.1	Application of Part	Noted	Clauses C2.2, C2.3 and C2.4 do not apply to a sprinkler protected carpark, open deck carpark or open spectator stand.
C2.2	General floor area limitations	Complies	All parts of the building comply and are within compartment limitations.
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	In a building of Type 'A' construction that is not sprinkler protected, a spandrel must be provided. The spandrel must be not less than 900mm in height, extended not less than 600mm above the upper surface of the intervening floor and be of non-combustible material having an FRL of not less than 60/60/60. Alternatively, a slab or other horizontal construction that projects outwards not less than 1100mm and extends 450mm beyond the opening and be of non-combustible material having an FRL of not less than 60/60/60. **Vertical Spandrels** Vertical Spandrels throughout the building appear to extend not less than 900m in height and 600mm above the upper surface of the intervening floor. **Horizontal Spandrels** Horizontal spandrels throughout the building appear to extend 450mm along the walls. Horizontal spandrels throughout the building appear to extend 1100mm past the openings. Designer to confirm compliance of all vertical and horizontal spandrels prior to the issue of the Construction Certificate.
C2.7	Separation by fire walls	Noted	
C2.8	Separation of classifications in the same storey	Noted	Refer to Clause C2.7 if applicable.

Part C2 – Compartmentation and Separation			
Clause	Description	Status	Comments
C2.9	Separation of classifications in different storeys	CRA	The floor slab separating the different storeys require an FRL of: • Basement/ground floor FRL 120/120/120; and • Ground/first floor FRL 90/90/90. Note: Floors within the same Class 2 SOU are not required to achieve an FRL as specified in Specification C1.1 of the BCA. Refer to 'Appendix' A for the relevant fire resisting requirements. Plans to reflect required FRLs prior to the issue of a Construction Certificate.
			
C2.10	Separation of lift shafts	CRA	Any lift connecting more than 2 storeys building must be separated from the remainder of the building with material that achieves a FRL appropriate to that storey as required by Table 3 of Specification C1.1 and if required to be an emergency lift of not less than 120/120/120. Any opening in the fire-isolated lift shaft must be protected in accordance with Clause C3.10 of the BCA. Design verification to be provided prior to the issue of the Construction Certificate.
C2.11	Stairways and lifts in one shaft	Complies	A stairway and lift must not be in the same shaft if either the stairway or the lift is required to be in a fire-resisting shaft. Both the stairway & lift appear to be in separate shafts.
C2.12	Separation of equipment	CRA	Equipment that comprises lift motors, lift control panels, central smoke control plant, boilers or certain battery systems must be separated from the remainder of the building by construction with an FRL as required under Specification C1.1 but not less than 120/120/120 and any doorways in that construction protected with a self-closing –/120/30 fire door. Design certification will be required verifying compliance prior to the issue of a Construction Certificate.

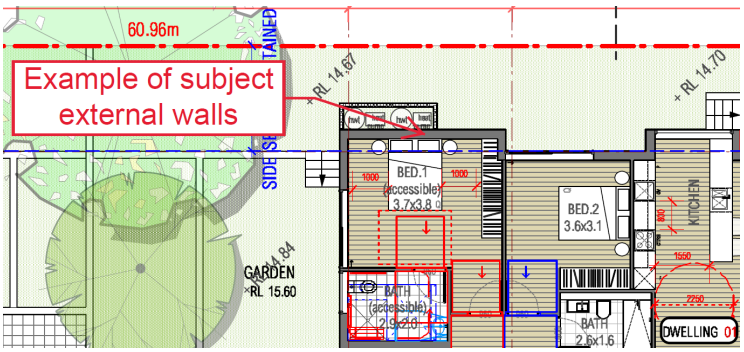
Part C2 – Compartmentation and Separation			
Clause	Description	Status	Comments
Note: Clause 6.4.2 of AS 2419.1-2005 requires that an internal pumproom located within the building shall have the following: • A door opening to a road or open space, or a door opening to fire-isolated passage or stair which leads to a road or open space; and • Except where the building is sprinkler protected in accordance with AS 2118.1, enclosing walls with an FRL not less than that prescribed by the BCA for a firewall for the particular building classifications served by the fire hydrant system.			
C2.13	Electricity supply system	CRA	The following electricity supply equipment: • electrical substation (TBA) • main switchboard which sustains emergency equipment operating in emergency mode (TBA) • electricity conductors which supply substation or main switchboard (TBA) Must be separated from the remainder of the building by construction with an FRL of not less than 120/120/120 and any doorways in that construction protected with a self-closing –/120/30 fire door. Final details verifying compliance can be provided on plans prior to the issue of a Construction Certificate.
C2.14	Public corridors in Class 2 and 3 buildings	N / A	

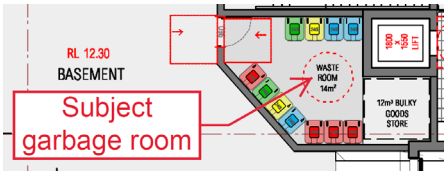
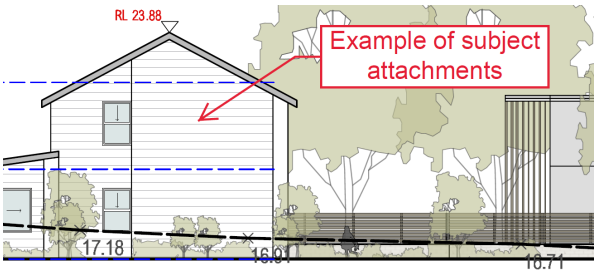
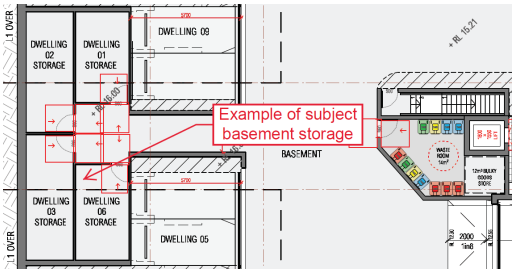
Part C3 – Protection of Openings			
Clause	Description	Status	Comments
C3.1	Application of Part	Noted	Concessions and definition of certain openings.
C3.2	Protection of openings in external walls	CRA or PS	Openings located within 3m of the side boundary must be protected in accordance with Clause C3.4 of the NCC. Compliance can be achieved by as slight redesign or alternatively via a fire engineering performance solution undertaken prior to the issue of the Construction Certificate.
The following external wall openings are located within 3m of the side allotment boundaries: **Ground & First Floors** • The western facing external wall openings of the Kitchen Area within Dwellings 01 & 06; and • The eastern facing external wall openings of the Kitchen Area within Dwellings 03 & 08. 			
C3.3	Separation of external walls and associated openings in different fire compartments	Noted	If fire walls are provided, refer to 'Appendix' A for the relevant fire resisting requirements of the fire wall. Plans to reflect required FRLs and location of fire walls (if any are proposed) prior to the issue of a Construction Certificate.
C3.4	Acceptable method of protection	CRA or PS	Window openings that are required to be protected are to be protected by wall wetting sprinklers with windows that are automatic closing or permanently fixed in the closed position, --/60/-- fire windows or --/60/60 automatic fire shutters. Other openings that required to be protected are to be protected by internal or external wall-wetting sprinklers or have construction with an FRL not less than --/60/--. Alternatively a fire engineering performance solution can be undertaken to achieve compliance with the performance requirements of the BCA. Plans to reflect required FRLs and location of openings protected in accordance with Clause C3.4 of the BCA prior to the issue of a Construction Certificate.

Part C3 – Protection of Openings			
Clause	Description	Status	Comments
C3.5	Doorways in fire walls	Noted	
C3.6	Sliding fire doors	N / A	
C3.7	Protection of doorways in horizontal exits	Noted	
C3.8	Openings in fire isolated exits	Noted	No fire isolated exits proposed in the current design.
C3.9	Service penetrations in fire isolated exits	Noted	No fire isolated exits proposed in the current design.
C3.10	Openings in fire isolated lift shafts	CRA	Openings in lift shafts are to be protected by –/60/– fire doors complying with AS1735.11. Lift indicator panels are to be backed by construction having an FRL of not less than -/60/60 if it exceeds 35,000mm^2 (175mm X 200 mm). Details verifying compliance must be provided on plans prior to the issue of a Construction Certificate.
C3.11	Bounding construction: Class 2, 3, and 4 buildings	CRA or PS	As this building is Type 'A 'construction, doorways of the Class 2 residential sole occupancy units which open into the enclosed common corridors or the like are to be fitted with self-closing FRL –/60/30 fire doors. Additionally, 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 another sole-occupancy unit or a room not within a sole-occupancy unit, then that external wall must have any windows or other openings located at least 1.5 m above the floor of the balcony, landing or the like or protected internally in accordance with C3.4. **Note: The construction separating the Class 2 SOU's from the carpark are to comply with Table 3 of Specification C1.1 and Clause C3.11 of the BCA (refer to Spec C1.1 of this report for further details).** Details verifying compliance must be provided on plans prior to the issue of a Construction Certificate. **Please also note 2 points:** 1: Walls within Class 2 and 3 buildings require Sound Ratings under F5. SOU doors are to incorporate an assembly which as an Rw not less than 30 from common areas. 2: The SOU doors however still need to transmit at least 85 or 100 dB(A) depending on the alarms system selected under Spec E2.2a Clause 6, as part of the Building Occupant Warning System. Occupants within the unit need to hear the buildings alarm system.

Part C3 – Protection of Openings			
Clause	Description	Status	Comments
The following external wall openings require to be at least 1.5m above the floor level or protected in accordance with C3.4: **Ground & First Floors** Numerous ground & first floor units along the path of travel leading to the road appear not to be provided with a minimum 1.5m sill height.   Compliance can be achieved via slight redesign or alternatively a fire engineering performance solution can be undertaken prior to the issue of the Construction Certificate.			
C3.12	Openings in floors for services	CRA	Services passing through floors are to be placed within fire resisting shafts or in accordance with Clause C3.15. Details verifying compliance must be provided on plans prior to the issue of a Construction Certificate.
C3.13	Openings in shafts	CRA	In a building of Type A construction, an opening in a wall providing access to a ventilating, pipe, garbage, or other service shaft must be protected by: • If it is a sanitary compartment - a door or panel which together with its frame, is non-combustible or has an FRL of not less than –/30/30, or • A self-closing –/60/30 fire door or hopper, or • An access panel with an FRL of not less than –/60/30, or • If the shaft is a garbage shaft - a door or hopper of non-combustible construction. Details verifying compliance must be provided on plans prior to the issue of a Construction Certificate.
C3.14	-	-	No provisions

Part C3 – Protection of Openings			
Clause	Description	Status	Comments
C3.15	Openings for service installation	CRA	Where services (e.g. hydraulic, mechanical, plumbing, electrical) penetrate a building element that is required to achieve an FRL with respect to integrity or insulation or a resistance to the incipient spread of fire then that installation must be protected / sealed (e.g. fire collars, fire dampers etc) by material that is identical to tested prototypes and in accordance with AS4072.1 and AS1530.4, and having achieved the required FRL or resistance to the incipient spread of fire or other specified method. Details verifying compliance must be provided on plans prior to the issue of a Construction Certificate.
C3.16	Construction joints	CRA	Construction joints are to be installed in accordance with a tested prototype in accordance with AS1530.4. Details verifying compliance must be provided on plans prior to the issue of a Construction Certificate.
C3.17	Columns protected with lightweight construction	CRA	Columns must be protected in accordance with the identical tested prototype. Details verifying compliance must be provided on plans prior to the issue of a Construction Certificate.

Specification C1.1–Fire-Resisting Construction			
Clause	Description	Status	Comments
Spec C1.1	Requirements for Type A construction	PS	Clause C1.1 requires the building to be constructed as Type A construction in accordance with Part 2, Part 3 and Table 3 of Specification C1.1 of the BCA. **External Walls** All load-bearing and non-load-bearing walls are required to achieve an FRL tested from both sides as stipulated by Table 3 of Specification C1.1. 

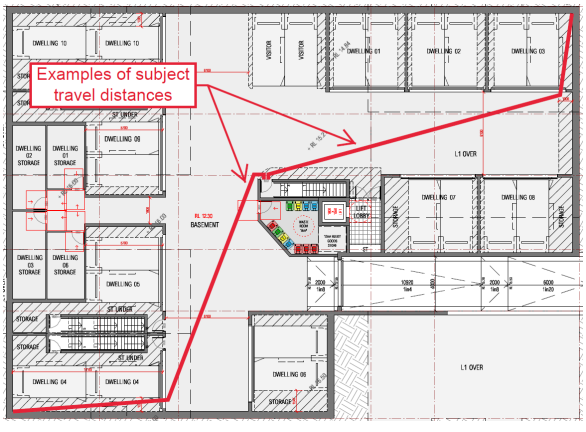
Specification C1.1–Fire-Resisting Construction			
Clause	Description	Status	Comments
			Ground Floor Bounding Walls Note: all bounding construction separating the Class 7 Carpark and the Class 2 sole occupancy units above are to achieve the minimum FRL's specified under Table 3 of Specification C1.1 of the BCA. **Garbage Room** The basement floor garbage room is recommended to be enclosed with FRL 120/120/120 construction and fitted with FRL –/120/30 fire doors in accordance with Specification C1.1 of the BCA.  **Attachments** All attachments are to comply with the requirements in Specification C1.1 & Clause C1.10 and meet the intent of Clause 2.4 of Spec C1.1.  Details verifying compliance must be provided on plans prior to the issue of a Construction Certificate. **Basement Storage** Storage within the basement carpark appears to be greater than 10% of the total floor area.  Compliance can be achieved via a fire engineering performance solution undertaken prior to issue of the Construction Certificate.

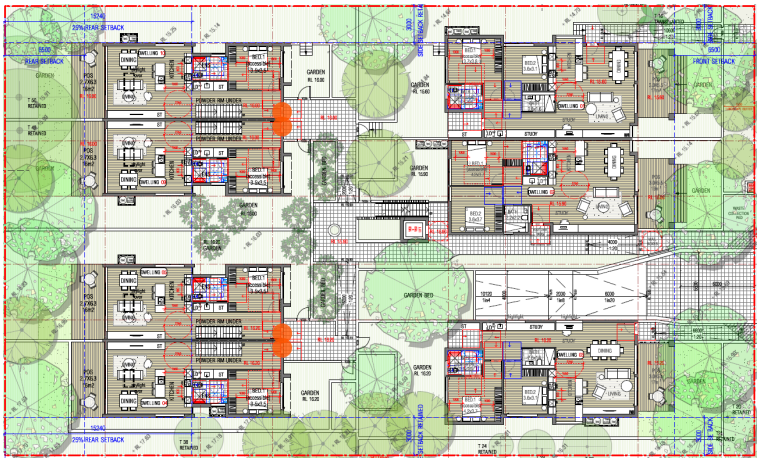
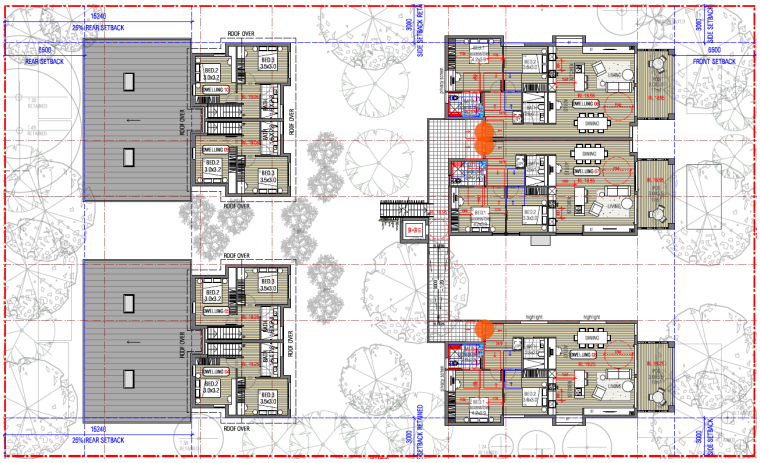
SECTION D – ACCESS AND EGRESS

Part D1 – Provision for Escape			
Clause	Description	Status	Comments
D1.1	Application of Part	Noted	Does 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	PS	Building has effective height less than 25m. The ground to first floor storeys are to have at least one (1) exit. The basement is provided with one (1) exit in lieu of two (2) exits as required by D1.2(c). Compliance to be achieved by a fire engineering performance solution to be conducted prior to the issuance of the Construction Certificate.
D1.3	When fire isolated exits are required	Complies	In a Class 2 building, a required non-fire-isolated stairway is permitted if it connects, passes through or passes by not more than 3 consecutive storeys and one extra storey if it is only for the accommodation of motor vehicles or for other ancillary purposes, or the building has a sprinkler system (other than a FPAA101D system) complying with Specification E1.5 installed throughout. The stairway(s) appear to comply with the requirements of this Clause.
D1.4	Exit travel distances	PS	The entrance doorway of any sole-occupancy unit must be not more than 6 m (increased to 12 m if the building is provided with a required automatic fire sprinkler system in accordance with Specification E1.5a) from an exit or from a point from which travel in different directions to 2 exits is available or 20 m from a single exit serving the storey at the level of egress to a road or open space. 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. Compliance can be achieved by a fire engineering performance solution undertaken prior to the issue of the Construction Certificate.

Basement Floor

The following travel distances from the basement floor exceeds 20m to a single exit.



Part D1 – Provision for Escape			
Clause	Description	Status	Comments
Ground Floor The following SOU's retain distances of greater than 20m to a road or open space in lieu of 20m and include: • Dwelling 04; and • Dwelling 05; and • Dwelling 09; and • Dwelling 10.  **First Floor** The following SOU's retain distances of up to 13.1m to a single exit in lieu of 6m and include: • Dwelling 06; • Dwelling 07; and • Dwelling 08. 			
D1.5	Distances between alternative exits	N / A	The current design consists of single exits on all floors, so alternative exit requirements do not apply.
D1.6	Dimensions of exits	CRA	In a required exit or path of travel, the unobstructed height throughout must be not less than 2m, except the unobstructed height of any doorway must be reduced to not less than 1980mm. The unobstructed width of each exit or path of travel to an exit except a doorway must not be less than 1m.

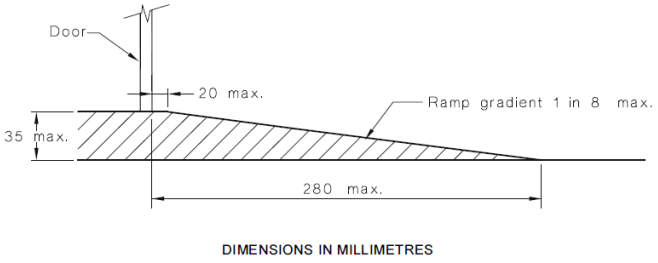
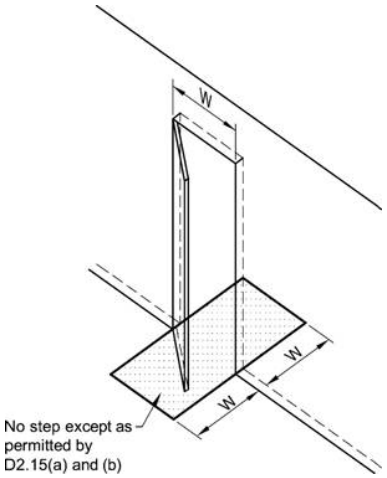
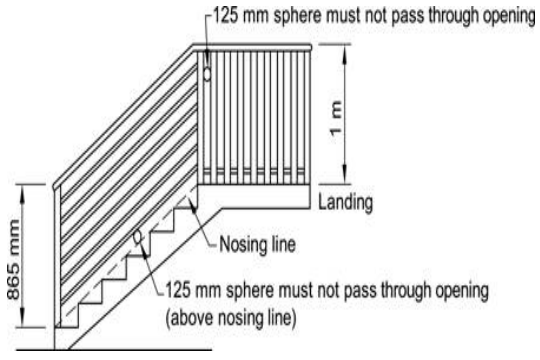
Part D1 – Provision for Escape			
Clause	Description	Status	Comments
			The unobstructed width must be measured clear of all obstructions such as handrails, projecting parts of balustrades or other barriers and the like. **Note:** all service and common areas such as the residential bin storage room are required to be provided with a clear exit width of 1m. **Non-Fire Isolated Stairways and Ramps** All non- fire isolated stairways and ramps serving the building must include double handrails and tactile indicators in accordance with AS 1428.1-2009. It should be noted that the inclusion of the AS 1428.1-2009 compliant handrails to the subject stairway will reduce the unobstructed width between the handrails to less than 1m. **Please note: Internal non-fire isolated stairs must incorporate double handrail as required under D3, stairs are to be >1.2m wide to cater for this requirement.** Details verifying compliance must be provided on plans prior to the issue of a Construction Certificate.
D1.7	Travel via fire-isolated exits	N / A	The current design proposes no fire-isolated exits.
D1.8	External stairways in lieu of fire-isolated exits	N / A	The building design proposes no external stairways in lieu of fire-isolated exits.
D1.9	Travel by Non-fire-isolated Stairways or ramps	CRA	A required non-fire-isolated stairway or ramp 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. In a Class 2 building, the distance between the doorway of a sole-occupancy unit and a road or open space via a required non-fire-isolated stairway or ramp must not exceed 60m. A required non-fire-isolated stairway or ramp **serving the residential parts of the building** must discharge at a point not more than **15 m** from a road or open space or from a fire-isolated passageway leading to a road or open space. A required non-fire-isolated stairway or ramp **serving the carpark** must discharge at a point not more than **20 m** from a road or open space or from a fire-isolated passageway leading to a road or open space. Details verifying compliance must be provided on plans prior to the issue of a Construction Certificate.
D1.10	Discharge from exits	CRA	Suitable barriers such as bollards are to be provided to prevent the blockage of exits by vehicles, etc. All external ramps that are used as a path from an exit to a road must have a gradient not steeper than 1:8 at any part. Details verifying compliance must be provided on plans prior to the issue of a Construction Certificate.

Part D1 – Provision for Escape			
Clause	Description	Status	Comments
D1.11	Horizontal exits	N / A	The current design does not consist of required horizontal exits.
D1.12	Non-required stairs, ramps or escalators	Noted	
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	Final details as to the lift shafts and pits are required.
DANGER: LIFTWELL ENTRY OF UNAUTHORISED PERSONS PROHIBITED KEEP CLEAR AT ALL TIMES			(a) where the pit depth is not more than 3 m, be through the lowest landing doors; or (b) where the pit depth is more than 3 m, be provided through an access doorway complying with the following: (i) In lieu of D1.6, the doorway must be level with the pit floor and not be less than 600 mm wide by 1980 mm high clear opening, which may be reduced to 1500 mm where it is necessary to comply with (ii). (ii) No part of the lift car or platform must encroach on the pit doorway entrance when the car is on a fully compressed buffer. (iii) Access to the doorway must be by a stairway complying with AS 1657. (iv) In lieu of D2.21, doors fitted to the doorway must be— (A) of the horizontal sliding or outwards opening hinged type; and (B) self-closing and self-locking from the outside; and (C) marked on the landing side with the letters not less than 35 mm high: **"DANGER LIFTWELL – ENTRY OF UNAUTHORIZED PERSONS PROHIBITED – KEEP CLEAR AT ALL TIMES"**
D1.18	Egress from early childhood centres	N / A	The subject building does not contain any Class 9b early childhood centre parts.

Part D2 – Construction of Exits			
Clause	Description	Status	Comments
D2.1	Application of Part	Noted	
D2.2	Fire isolated stairs or ramps	N / A	The current design proposes no fire-isolated exits.
D2.3	Non-fire-isolated stairways and ramps	CRA	Required stairs that are not required to be within a fire-resting shaft are to be constructed of concrete, steel (6mm), or timber (44mm) of specified minimum dimensions. Engineering details are to be submitted with the Construction Certificate Documentation.
D2.4	Separation of rising and descending stair flights	N / A	If a stairway serving as an exit is required to be fire-isolated, there must be no direct connection between a flight rising from a storey below the lowest level of access to a road or open space and a flight descending from a storey above that level. Furthermore, any construction that separates or is common to the rising and descending flights must be non-combustible; and smoke proof in accordance with Clause 2 of Specification C2.5.
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 boards and the like are to be located within and enclosed by non-combustible construction or have a fire-protective covering with the doorway suitably sealed against smoke spreading from the enclosure. Design verification is to be provided prior to the issue of the Construction Certificate.
D2.8	Enclosure of space under stairs and ramps	CRA	The space below non fire-isolated stairs must not be enclosed to form a cupboard or similar enclosed space unless the enclosing walls have an FRL of not less than 60/60/60 and any doorway to the enclosed space is fitted with a self-closing –/60/30 fire door. Design verification is to be provided prior to the issue of the Construction Certificate.
D2.9	Width of stairways	Noted	Stairway width is to be measured clear of obstructions such as handrails, projecting parts of balustrades or other barriers and the like and extend to a height of not less than 2m.
D2.10	Pedestrian ramps	CRA	Ramps serving as a required exit must not have a gradient steeper than 1:8. If the ramp is required for disabled access under Part D3 it must comply with AS1428.1. The surface of the ramp must have a non-slip finish. Note: The floor surface of a ramp must have a slip-resistance classification not less than that listed in Table D2.14 of the BCA when tested in accordance with AS 4586-2013.

<table>
<tr><th colspan="4">Part D2 – Construction of Exits</th></tr>
<tr><th>Clause</th><th>Description</th><th>Status</th><th>Comments</th></tr>
<tr><td>D2.11</td><td>Fire-isolated passageways</td><td>N / A</td><td>No fire isolated passageways proposed in the current design.</td></tr>
<tr><td>D2.12</td><td>Roof as open space</td><td>PS</td><td>If an exit discharges to a roof of a building, the roof must have an FRL of not less than 120/120/120 and not have any rooflights or other openings within 3 m of the path of travel of persons using the exit to reach a road or open space.

Ground Floor Open Space
The subject ground floor central courtyard area appears to be required to act as an open space as required by this clause.
Compliance can be achieved via a fire engineering performance solution undertaken prior to issue of the Construction Certificate.</td></tr>
<tr><td>D2.13</td><td>Goings and risers</td><td>CRA</td><td>Stairs are to have risers measuring between 115-190mm and goings between 250-355.
Goings and Risers are to satisfy the equation of
2R+G=700(max) and 550(min).
Goings and risers are to be consistent throughout in one flight. Any gap between risers must not permit a 125mm sphere to pass through it.
Ensure all stairways throughout the building do not contain less than 2 or more than 18 risers.
All treads and surfaces with a slip resistant classification are to be fitted with non-slip finish or non-skid strips compliant with the requirements of Table D2.14 when tested in accordance with AS4586-2013 and 30% colour contrasting nosings.
Final details are to be submitted with the Construction Certificate Documentation.</td></tr>
<tr><td>D2.14</td><td>Landings</td><td>CRA</td><td>Landings must comply with the requirements of Clause D2.14 of the BCA. Landings must be not less than 750mm long and have a non-slip finish throughout or an adequate non-skid strip near the edge of the landing where it leads to a flight below and 30% colour contrasting nosings.
Strips at the edge of the landing with slip-resistance classification not less than that listed in Table D2.14 when tested in accordance with AS 4586-2013, where the edge leads to a flight below.
Table D2.14 Slip-resistance classification
<table>
<tr><th>Application</th><th>Dry surface conditions</th><th>Wet surface conditions</th></tr>
<tr><td>Ramp steeper than 1:14</td><td>P4 or R11</td><td>P5 or R12</td></tr>
<tr><td>Ramp steeper than 1:20 but not steeper than 1:14</td><td>P3 or R10</td><td>P4 or R11</td></tr>
<tr><td>Tread or landing surface</td><td>P3 or R10</td><td>P4 or R11</td></tr>
<tr><td>Nosing or landing edge strip</td><td>P3</td><td>P4</td></tr>
</table>
Final details are to be submitted with the Construction Certificate Documentation.</td></tr>
</table>

Part D2 – Construction of Exits			
Clause	Description	Status	Comments
D2.15	Thresholds	CRA	A 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 the door opens to a road or open space, external stair landing or external balcony and the doorsill is not more than 190mm above the finished surface of the ground balcony or the like to which the door opens. Final details are to be submitted with the Construction Certificate Documentation.
Note: If the door is in a path of travel required to be accessible under D3, a step is not allowed. **Note: This applies to all Fire Isolated Exit Doors also including the last exit door to open space.**			
 DIMENSIONS IN MILLIMETRES FIGURE 21 THRESHOLD RAMP			
D2.16	Balustrades	CRA	Balustrades complying with Deemed-to-Satisfy provisions of the BCA are to be provided to where the level of the surface below is 1m or more. Balustrades must also be provided where the level of the surface beneath is more than 4m where it is possible for a person to fall through an openable window.
			Where the level of the surface below is 4m or more, a balustrade or other barrier must not facilitate climbing of horizontal elements between 150mm and 760mm above the floor. Any opening in the balustrade must not permit a 125mm sphere to pass through the balusters. Wire balustrades must be constructed to comply with Clause D2.16 (h) and Tables D2.16a and D2.16b. Details demonstrating compliance with this clause must be incorporated into the architectural drawings prior to the issue of a Construction Certificate.

Part D2 – Construction of Exits			
Clause	Description	Status	Comments
D2.17	Handrails	CRA	Handrails are to be provided to at least one side of stair flights within fire isolated stairs and both side in any other case (See D3) and located not less than 865mm above the nosings of stair treads and the floor surfaces of landings. All internal stairways within the residential SOU's are to include single handrails as required by this Clause. Details demonstrating compliance with this clause must be incorporated into the architectural drawings prior to the issue of a Construction Certificate.
D2.18	Fixed platforms walkways, stairways and ladders	CRA	Fixed platforms, walkways, stairways, ladders, landings, handrails, balustrades and any tread or riser in a plant room, lift motor room or the like is to comply with AS1657.
D2.19	Doorways and doors	CRA	A doorway serving as a required exit or forming part of a required exit: • must not be fitted with a revolving door; and • must not be fitted with a roller shutter or tilt-up door unless— o it serves a Class 6, 7 or 8 building or part with a floor area not more than 200 m2; and o the doorway is the only required exit from the building or part; and • it is held in the open position while the building or part is lawfully occupied; and • must not be fitted with a sliding door unless— o it leads directly to a road or open space; and o the door is able to be opened manually under a force of not more than 110 N; and • if fitted with a door which is power-operated— o 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 o 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 anywhere in the fire compartment served by the door. Designer to verify compliance with this Clause prior to the issue of the Construction Certificate.

Part D2 – Construction of Exits			
Clause	Description	Status	Comments
D2.20	Swinging doors	CRA	A swinging door in a required exit or forming part of a required exit must not encroach more than 500 mm on the required width of a required stairway, ramp or passageway if it is likely to impede the path of travel of the people already using the exit. Furthermore, such a swinging door must swing in the direction of egress, unless it serves a sanitary compartment, airlock or is the only required exit serving a building part with floor area not more than 200m² and is fitting with hold open device. The door swings pertaining to the required exits appear to comply with the requirements of this clause. Details demonstrating compliance with this clause must be incorporated into the architectural drawings prior to the issue of a Construction Certificate.
D2.21	Operation of latch	CRA	The latch of a door in a required exit, forming part of a required exit or in the path of travel is to be readily openable without a key from the side of that faces a person seeking egress. It is to have a single downward action or pushing action and to be located between 900mm and 1100mm from the floor. Where the latch operation referred to above is not located on the door leaf itself, manual controls to power-operated doors must be at least 25mm wide, proud of the surrounding surface located not less than 500mm from an internal corner, and: • for a hinged door located between 1m and 2m from the door leaf in any position; or • for a sliding door located within 2m of the doorway and clear of a surface mounted door in the open position. Design verification to be provided prior to the issue of the Construction Certificate.

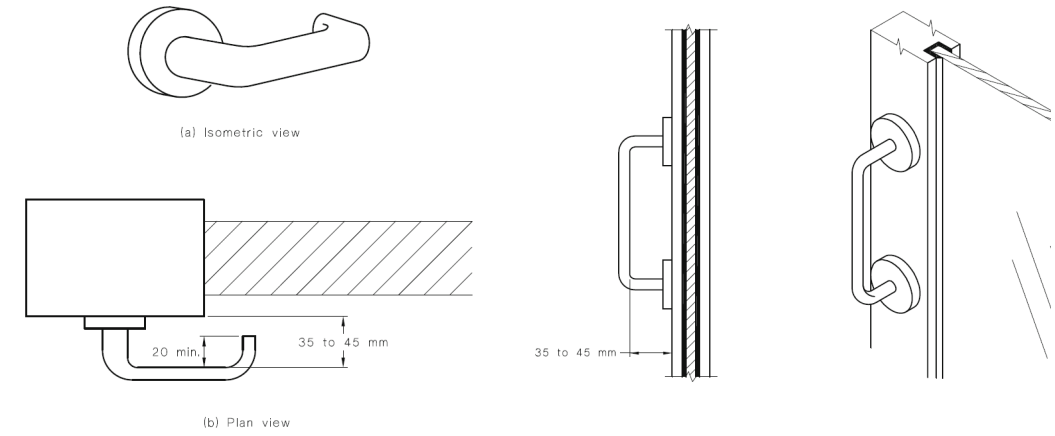


FIGURE 35(A) EXAMPLE OF ACCEPTABLE DOOR HARDWARE FOR HINGED DOORS

Part D2 – Construction of Exits			
Clause	Description	Status	Comments
D2.22	Re-entry fire-isolated exits	N / A	
D2.23	Signs on doors	CRA	Fire Door and Smoke Door signage is required to be provided to all doors giving access to and egress from the fire isolated stairways. **NOTE: Braille Exit Level Signs are to be Installed at Each Exit Also. D3.6**

Any Fire Door require the standard signage, “Fire Safety Door, Do not Obstruct, Do Not Keep Open etc ” along with the EP& A Notice;

- A Fire Door on an auto-closing or fire trip is to incorporate the following wording:

  “**FIRE SAFETY DOOR—DO NOT OBSTRUCT**”

- A Self-Closing Fire Doors are to incorporate the following wording:

  “**FIRE SAFETY DOOR —DO NOT OBSTRUCT —DO NOT KEEP OPEN**”

- For the last door discharging from a fire isolated exit, (Door opening on to open space/outside)
- “**FIRE SAFETY DOOR—DO NOT OBSTRUCT**”.

Along with the required BCA signage, the EPA & A Regulations require a warning notice to be displayed in a conspicuous position adjacent to a doorway providing access to, but not within, that stairway, passageway or ramp:

- **OFFENCE RELATING TO FIRE EXITS**

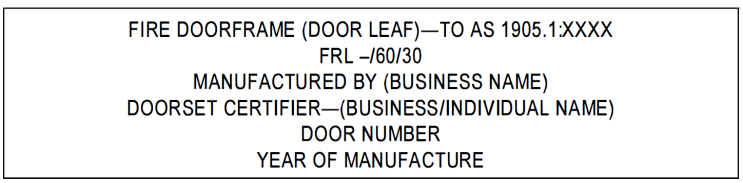
  It is an offence under the Environmental Planning and Assessment Act 1979:

  (a) to place anything in or near this fire exit that may obstruct persons moving to and from the exit, or

  (b) to interfere with or obstruct the operation of any fire doors, or

  (c) to remove, damage or otherwise interfere with this notice.

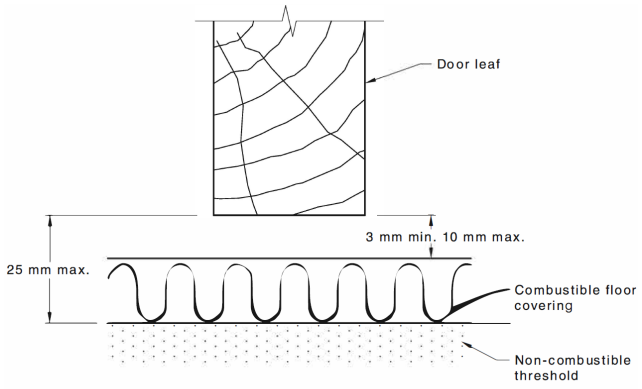
All fire doors and frames are to be tagged in accordance with AS 1905.1-2015 and a complete door schedule is to be provided at the Occupation Certificate Stage.



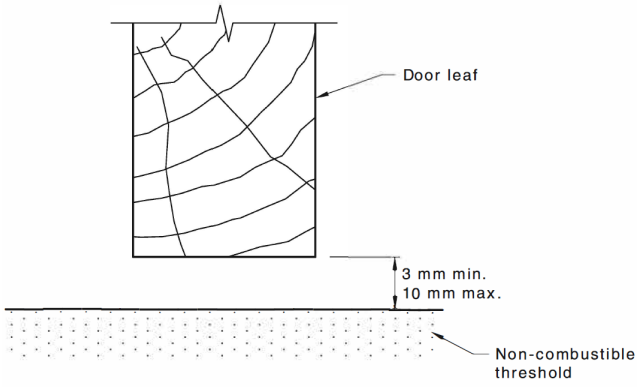
Part D2 – Construction of Exits

Clause	Description	Status	Comments

Clearances under and the side of fire doors are to be in accordance with AS 1905.1-2015



(a) With a combustible floor covering



(b) Without a combustible floor covering

(Company Name)

FIRE DOOR CERTIFICATE

Certificate Number 12345

Project Name: .....

Building Owner/ Representative: .....

Building Address: .....

The member company nominated certifies the following:

1 The fire doorsets installed in this building comply with AS 1905.1:XXXX.

2 The fire doorsets are labelled as required by the appropriate regulatory authorities in accordance with Australian Standard AS 1905.1:XXXX.

3 A manual dealing with the fire-resistant doorsets installed in this building has been completed in accordance with AS 1905.1:XXXX.

4 A paper-based copy of the manual has been provided to the building owner/representative.

Certified by: ..... Member Company

Name of Certifier: .....

Signature: .....

Date: .....

Fire Resistant Doorset—Schedule of Evidence

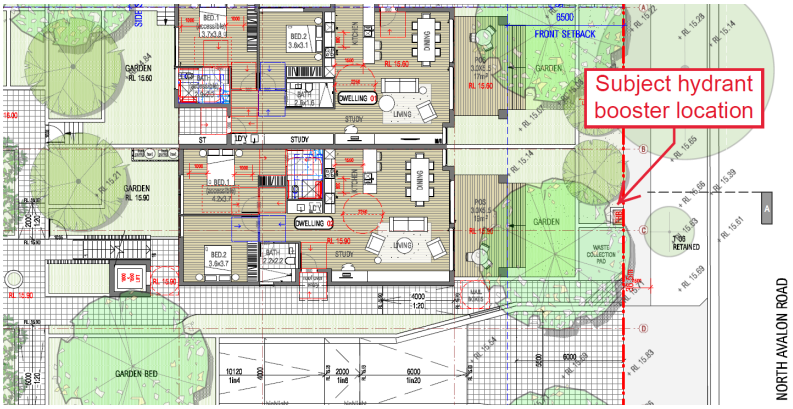
Project name:			Date of installation:			
Building address:						
Building owner/ representative:			Date of certification:			
Door identification number						
Door location						
Door leaf type and manufacturer						
Door facing and edging material						
Door dimensions	Width		Height		Thickness	
Frame type and manufacturer						
Frame fixing and backfill material						
Wall type and FRL						
Doorset FRL						
Doorset hardware						
Lock	Make	Model	Type	Materials on leaf	Materials on frame	FRL
Furniture	Make	Model	Type	Materials on leaf	Materials on frame	FRL
Fixtures	Make	Model	Type	Materials on leaf	Materials on frame	FRL
Fittings	Make	Model	Type	Materials on leaf	Materials on frame	FRL
Vision panel	Make	Model	Type	Materials on leaf	Materials on frame	FRL
XXXX	Make	Model	Type	Materials on leaf	Materials on frame	FRL
Test report references						
Assessment report references						
Date of final inspection	Certificate No.		Inspecting officer		Thickness	
Date of Certification	Doorset Certifier's Name and (if applicable) Licence No.			Doorset Certifier's Business Name		
Operating and maintenance information						
Doorframe						
Doorset						
Lock						
Furniture						
Fixtures						
Fittings						
Vision panel						

Part D2 – Construction of Exits			
Clause	Description	Status	Comments
D2.24	Protection of Operable Windows	CRA	All window openings throughout the development must be provided with protection, if the floor below the window is 2m or more above the surface beneath in a Class 2 building. Where the lowest level of the window opening is less than 1.7m above the floor, the operable portion of the window must be protected with a device capable of restricting the window opening or a screen with secure fittings. A device or screen must: • Not permit a 125mm sphere to pass through the window opening or screen; • Resist an outward horizontal action of 250N against the window restraining device or screen protecting the opening; and • Have a child restraint release mechanism if the screen or device is able to be removed, unlocked or overridden. A barrier with a height not less than 865mm above the floor is required to an openable window in addition to window protection, when a child resistant release mechanism is required and where the floor below the window is 4m or more above the surface beneath if the window is not provided with protection. The barrier must not permit a 125mm sphere to pass through it and must not contain any horizontal or near horizontal elements between 150mm and 760mm above the floor that facilitate climbing. Details demonstrating compliance with this clause must be incorporated into the architectural drawings prior to the issue of a Construction Certificate.
D2.25	Timber stairways: Concession	N / A	
NSW D2.101	Doors of travel in an entertainment venue	N / A	

Part D3 – Access for People with Disabilities
An assessment of the Deemed-to-Satisfy provisions of the BCA relating to access for people with disabilities is outside the scope of this report. **A detailed assessment of access provisions by a suitably qualified Access Consultant is recommended.**

BUILDING INNOVATIONS AUSTRALIA

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 or PS	Fire Hydrant Coverage is required throughout the whole building in accordance with AS 2419.1. Location of fire hydrant booster system appears to be within 10m of the building without a surrounding fire rated construction as required by AS2419.1.  Compliance can be achieved via slight redesign or alternatively a fire engineering performance solution can be undertaken prior to issue of the Construction Certificate. Fire hydrant pump room (if required) location to be provided prior to the issue of the Construction Certificate. Final plans and a design certificate from a qualified hydraulic engineer prior to the issue of a Construction Certificate. *Please note: If variations from AS2419.1 are required, a Clause 188 approval may be required to be submitted to the NSW Fire Brigade for approval, please allocate time for this process if required.*

AS2419.1:2005

3.2.2.2 Location External fire hydrants shall be located as follows:

(a) In a position that provides pedestrian access to the building for the fire brigade.

(b) When installed as a feed fire hydrant [See Figure 3.2.2.2(a), (b), (d) and (e)], within 20 m of a hardstand such that when a fire brigade pumping appliance is connected to it—

(i) all portions of the building shall be within reach of a 10 m hose stream, issuing from a nozzle at the end of a 60 m length of hose laid on the ground; and

(ii) a minimum of 1 m of hose shall extend into any room served.

(c) Where installed as an attack fire hydrant [see Figure 3.2.2.2(f)], within 50 m of a hardstand such that when connected directly to the external attack fire hydrant—

Part E1 – Fire Fighting Equipment			
Clause	Description	Status	Comments

(i) all portions of the building shall be within reach of a 10 m hose stream, issuing from nozzle at the end of a 60 m length of hose laid on the ground; and

(ii) a minimum of 1 m of hose shall extend into any room served.

(d) Where installed in a system fitted with a fire brigade booster assembly and having feed fire hydrant performance only [see Figure 3.2.2.2(c)], within 20 m of a fire brigade pumping appliance located on a hardstand. All portions of the building shall be within reach of a 10 m hose stream, issuing from a nozzle at the end of 60 m length of hose laid on the ground with a minimum of 1 m of hose extending into any room served—

(i) where the hose is connected directly to the external fire hydrant; and

(ii) where the hose is connected to a fire brigade pumping appliance fed from the fire hydrant.

(e) In a position not less than 10 m from the building it is protecting unless safeguarded by construction—

(i) having a FRL of not less than 90/90/90;

(ii) extending 2 m each side of the fire hydrant outlet; and

(iii) extending not less than 3 m above the ground adjacent to the fire hydrant or the height of the building, whichever is the lesser.

(f) In a position not less than 10 m from any high voltage main electrical distribution equipment such as transformers and distribution boards, and from liquefied petroleum gas and other combustible storage.

(g) In a position so that the fire hydrant is not obstructed or obscured by obstacles, stored goods, vehicles, vegetation etc.

(h) In a position so that the fire hydrant is protected from possible mechanical damage by vehicles.

6.4 PUMPROOM

6.4.1 General

Pumprooms containing fixed on-site pumpsets and associated equipment shall be weatherproof and be—

(a) secure to prevent the entry of unauthorized persons;

(b) adequately ventilated for the aspiration and cooling of pump drivers;

(c) heated, where necessary, to prevent freezing and facilitate the cold start of compression ignition drivers;

(d) identified by appropriate signs and other visual and audible aids, so that the room and its entrance can be readily located by the attending fire brigade; and

(e) constructed with a minimum 2.1 m high internal clearance with adequate space for pump maintenance and replacement.

6.4.2 Internal pumprooms

Pumprooms located within a building shall have—

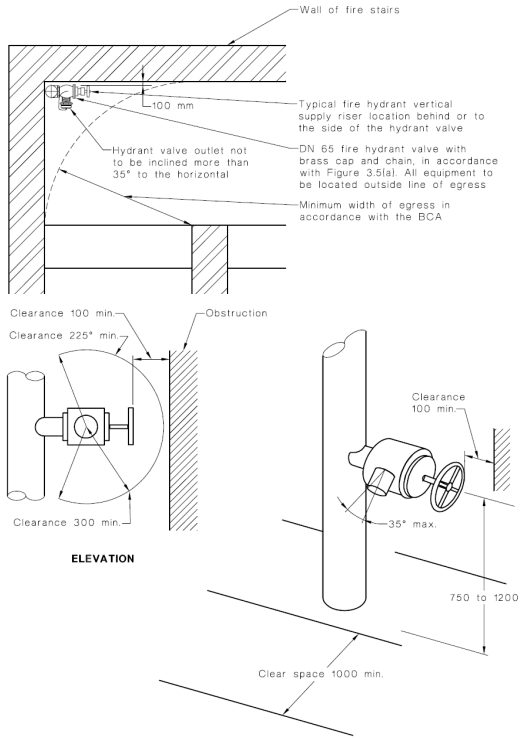
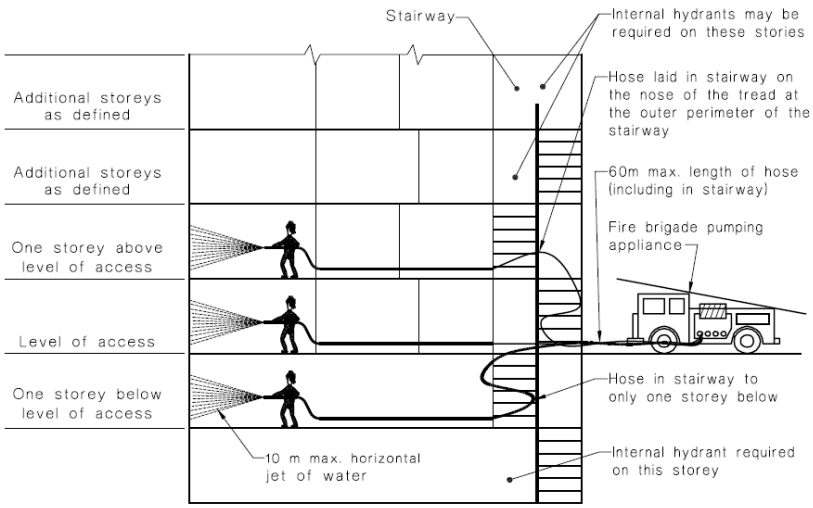
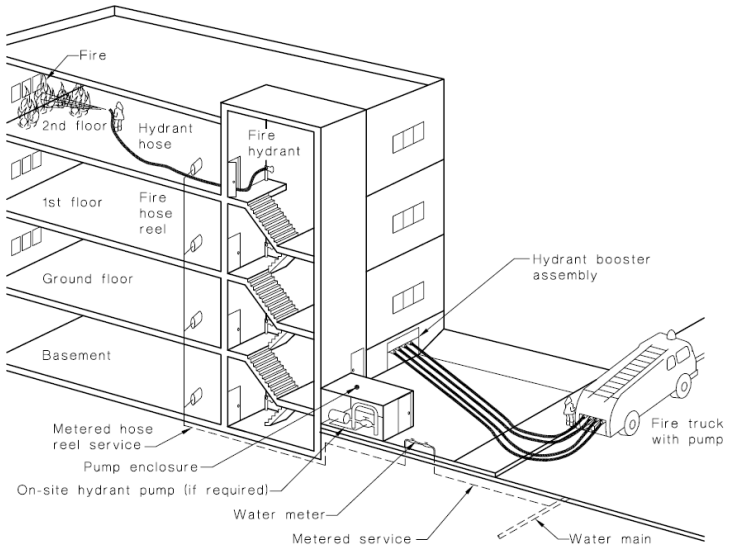
(a) a door opening to a road or open space, or a door opening to fire-isolated passage or stair which leads to a road or open space; and

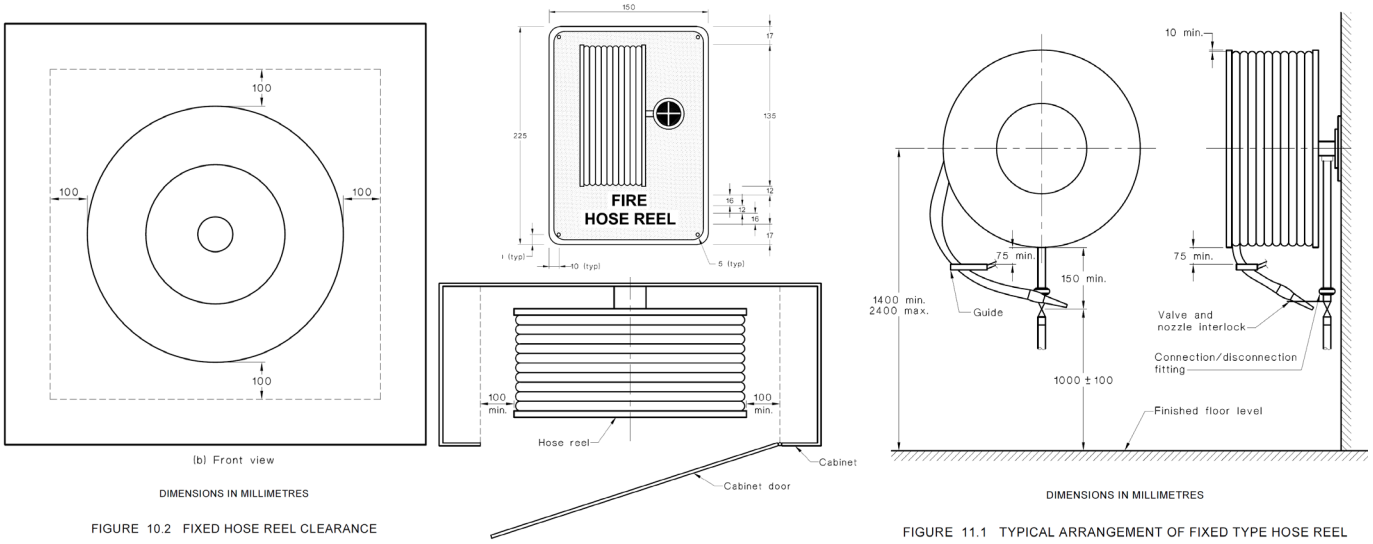
(b) Except where the building is sprinklered in accordance with AS 2118.1, enclosing walls with an FRL not less than that prescribed by the BCA for a firewall for the particular building classification served by the fire hydrant system.

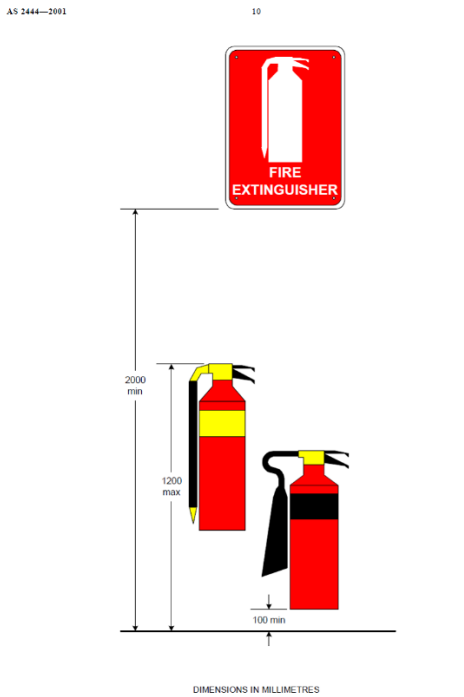
6.4.3 External Pumprooms

Pumprooms and enclosures, located external to and within 6 m of any building they are protecting, shall have enclosing walls with an FRL not less than that prescribed by the BCA for a firewall for the particular building classification served by the fire hydrant system.

Hardstand shall be provided within 20 m of the access door to the pumproom.

Part E1 – Fire Fighting Equipment			
Clause	Description	Status	Comments
			 (g) Hose coverage from external hydrant (see Clause 3.2.2.1) NOTE: Due to difficulties associated with fighting building fires, internal fire hydrants are required in fire-isolated stairs for levels more than one floor below ground and one or more levels above ground.
			
E1.4	Hose Reels	CRA	Fire hose reels coverage is required within the car park portions of the building if a hydrant is located within the building. Where fire hose reels are located within the building, they are to be within 4m of an exit, additional hose reels may be provided for coverage purposes however are to be located in a path of travel to an exit. Fire hose reels are to be installed accordance with AS2441. Final plans and a design certificate from a qualified hydraulic engineer prior to the issue of a Construction Certificate.

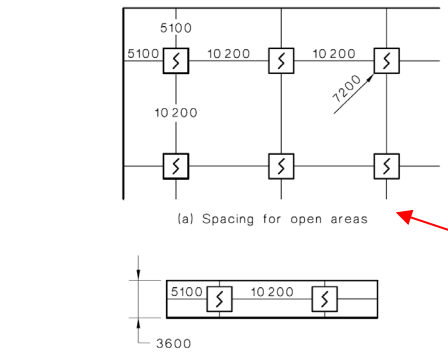
Part E1 – Fire Fighting Equipment			
Clause	Description	Status	Comments
 FIGURE 10.2 FIXED HOSE REEL CLEARANCE FIGURE 11.1 TYPICAL ARRANGEMENT OF FIXED TYPE HOSE REEL			
E1.5	Sprinklers	N / A	A Class 2 or 3 building (excluding a building used as a residential care building) and any other class of building (excluding a building used as a residential care building) containing a Class 2 or 3 part requires sprinkler protection throughout the whole building if any part of the building has a rise in storeys of 4 or more and an effective height of not more than 25m. As this building contains a rise in storeys of 3, sprinkler protection of the subject development is not required.
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. For Class 2, 3 or 5 buildings or Class 4 parts of a building portable fire extinguishers must be provided to serve the whole storey where one or more internal fire hydrants are installed and when fire hydrants are not installed to serve any fire compartment which a floor area greater than 500m^2 (for the purposes of this Clause a Class 2, 3 or 4 parts of a building are considered to be a fire compartment). Portable fire extinguishers provided in a Class 2 or 3 building or Class 4 part of a building must be: • An ABE type fire extinguisher; and • A minimum size of 2.5kg; and • Distributed outside a sole-occupancy unit to serve the storey at which they are located and ensure that the travel distance from the entrance doorway of any sole-occupancy unit to the nearest fire extinguisher is not more than 10m. Details demonstrating compliance with this clause must be incorporated into the architectural drawings prior to the issue of a Construction Certificate.

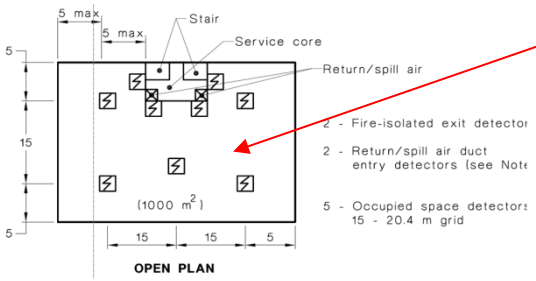
Part E1 – Fire Fighting Equipment			
Clause	Description	Status	Comments
 FIGURE 3.2 MOUNTING HEIGHTS FOR PORTABLE FIRE EXTINGUISHERS AND LOCATION SIGNS			Signs are to be installed clearly over or directly adjacent to Portable fire extinguishers. – Each extinguisher shall be located in a conspicuous and readily accessible position. Extinguishers shall not be located in positions where access could present a hazard to the potential user. Where practicable, extinguishers shall be located along normal paths of travel and near exits. (Max 15m from each other etc) – Extinguishers Signs must be shown and shall be mounted not less than 2.0 m above floor level, or at a height that makes them most apparent to a person of average height and visual acuity approaching the extinguisher location. In addition to the location sign referred to in Clause 3.3 of AS2444, the cabinet or enclosure shall be marked with the words '**FIRE EXTINGUISHER**' in letters at least 32 mm high in a colour contrasting with the background unless the door has not less than 50% of its surface area fabricated from transparent material that permits visual identification of the cabinet's contents. Signs are to be installed clearly over or directly adjacent to Portable fire extinguishers. – Each extinguisher shall be located in a conspicuous and readily accessible position. Extinguishers shall not be located in positions where access could present a hazard to the potential user. Where practicable, extinguishers shall be located along normal paths of travel and near exits. (Max 15m from each other etc) – Extinguishers Signs must be shown and shall be mounted not less than 2.0 m above floor level, or at a height that makes them most apparent to a person of average height and visual acuity approaching the extinguisher location.
E1.7	-	-	No Provisions
E1.8	Fire control centres	Noted	
E1.9	Fire precautions during construction	CRA	During construction, not less than one fire extinguisher to suit Class A, B and C fires is required for each storey, and is required to be located adjacent to each exit. Details verifying compliance must be included on the architectural plans prior to the issue of the Construction Certificate.
E1.10	Provisions for special hazards	N / A	

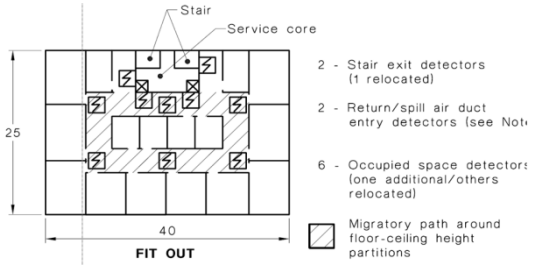
General Fire Service Signage	
FIRE HOSE REEL FIRE HYDRANT BOOSTER FIRE EXTINGUISHER SPRINKLER STOP VALVE INSIDE FIRE PANEL	FIRE HYDRANT PUMP – DO NOT SWITCH OFF SPRINKLER BOOSTER CONNECTION FIRE CONTROL ROOM

Part E2 – Smoke Hazard Management			
Clause	Description	Status	Comments
E2.1	Application of Part	Noted	Part is not applicable to • Open deck car parks • Open spectator stands
E2.2	General requirements	CRA	The building must be provided with an automatic smoke detection and alarm system, and smoke detectors complying with Specification E2.2a and a Building Occupant Warning System (BOWS). Each Class 2 SOU is to incorporate an AS3786 smoke alarm system which is connected to the consumer mains source and interconnected throughout the SOU. The common areas of the building are to incorporate a smoke detection and alarm system installed in accordance with AS1670.1-2018 and activate a Building Occupant Warning System (BOWS) being sound pressure *within* each SOU door is to achieve no less than 85 dB(A). The carpark is to be provided with fans with metal blades suitable for operation at normal temperature and electrical power and control cabling need not be fire rated. Upon activation of the BOWS, the fans are to run at full speed. Details and a design certificate will be required by a qualified electrical engineer prior to the issue of a Construction Certificate.

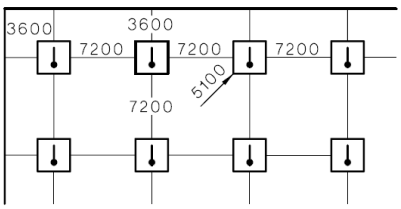
Part E2 – Smoke Hazard Management			
Clause	Description	Status	Comments







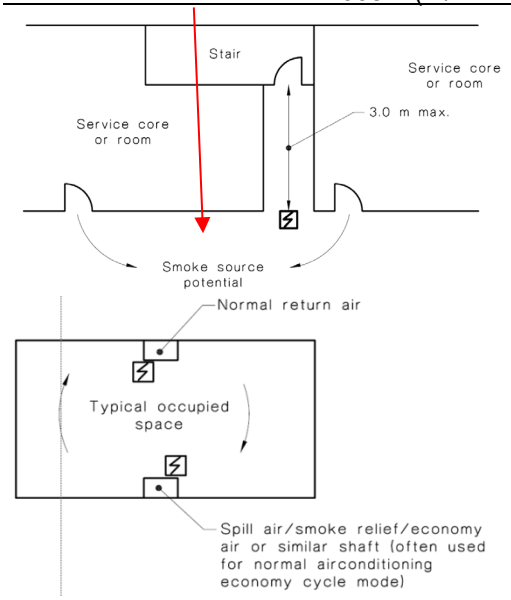
NOTE: Where return/relief air path is via the ceiling void, the return/relief air duct entry smoke detectors should be within the ceiling void.



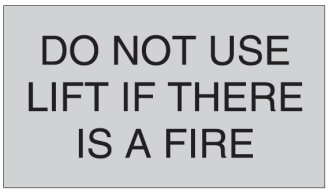
I.e.: Heat Detectors – AS1670.1

I.e.: Smoke Detectors – AS1670.1

I.e.: Smoke Detectors – AS1668.1 (M/V Shutdown etc.)



E2.3	Provisions for special hazards	N / A	

Part E3 – Lift Installations			
Clause	Description	Status	Comments
E3.1	-	-	No provisions.
E3.2	Stretcher facility in lifts	N / A	As the effective height of this building appears to be less than 12 metres, a stretcher lift is not required.
E3.3	Warning against use of lifts in fire	CRA	A warning sign is to be displayed where it can be readily seen near every call button of the passenger lift. The warning sign is to comply with the details and dimensions set out in Figure E3.3 of the BCA. 
E3.4	Emergency lifts	N / A	
E3.5	Landings	CRA	Access and egress to and from the lift well landings is to comply with the Deemed-to-Satisfy provisions of Section D of the BCA. Ensure all lift landings achieve an unobstructed width of 1540mm x 2070mm as required by AS 1428.1-2009. *Refer to Clause D3.3 of this report for further detail.* To be confirmed with details provided at Construction Certificate stage or design statement.
E3.6	Facilities for people with disabilities	N / A	An assessment of the Deemed-to-Satisfy provisions of the BCA relating to access for people with disabilities (Clause D3.1-D3.12, E3.6, F2.2 & F2.4) is outside the scope of this report. A detailed assessment of access provisions by a suitably qualified Access Consultant is recommended.
E3.7	Fire Services Control	Noted	
E3.8	Aged care buildings	N / A	
E3.9	Fire service recall control switch	N / A	
E3.10	Lift car fire service drive control switch	N / A	

Part E4 – Emergency Lighting, Exit Signs and Warning Systems			
Clause	Description	Status	Comments
E4.1	-	-	No provisions
E4.2	Emergency lighting requirements	CRA	Emergency lighting is to be provided throughout the building in accordance with Clause E4.2 of the BCA. Drawings a design certificate will be required by a suitably qualified electrical engineer prior to the issue of a Construction Certificate.
E4.3	Measurement of distance	Noted	
E4.4	Design and operation of emergency lighting	CRA	Emergency lighting shall be provided throughout the building in accordance with the requirements of Clause E4.4 of the BCA and AS 2293.1. Details and a design certificate will be required by a suitably qualified electrical engineer prior to the issue of a Construction Certificate.
E4.5	Exit signs	CRA	Exit signs are to be provided in accordance with Clause E4.5 of the BCA.
			Exit signs must be clearly visible to person approaching the exit and must be installed on, above or adjacent to; 1. A door providing direct egress from a storey to a stairway, passageway or ramp serving as a required exit. 2. A door from an enclosed stairway, passageway or ramp at every level of discharge to a road or open space. 3. A door serving as or forming part of a required exit in a storey required to be provided with emergency lighting. A test switch is to be installed for each storey. Where and if requirements are altered under this proposal, details and a design certificate will be required by a suitably qualified electrical engineer prior to the issue of a Construction Certificate.
E4.6	Direction signs	CRA	Where an exit is not readily apparent then 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 Clause E4.6 of the BCA. Where and if requirements are altered under this proposal, details and a design certificate will be required by a suitably qualified electrical engineer prior to the issue of a Construction Certificate.
E4.7	Class 2, 3 and 4 buildings: Exemptions	Noted	

Part E4 – Emergency Lighting, Exit Signs and Warning Systems			
Clause	Description	Status	Comments
E4.8	Design and operation of exit signs	CRA	Exit signs are to operate in accordance with AS 2293.1 or for a photo luminescent exit sign, Specification E4.8 and be clearly visible at all times while the building is occupied. Where and if requirements are altered under this proposal, details and a design certificate will be required by a suitably qualified electrical engineer prior to the issue of a Construction Certificate.
E4.9	Emergency warning and intercom systems	N / A	

SECTION F – HEALTH AND AMENITY

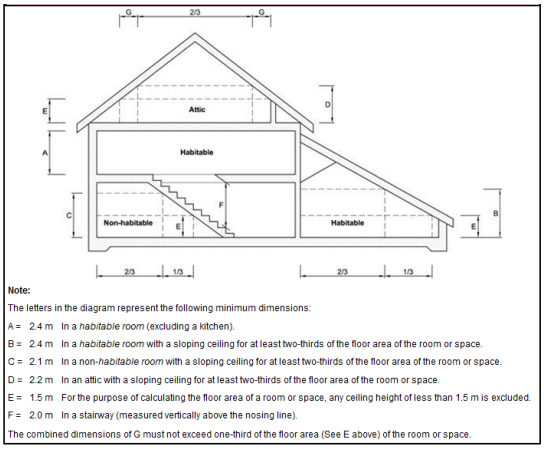
Part F1 – Damp and Weatherproofing			
Clause	Description	Status	Comments
F1.1	Stormwater drainage	CRA	Stormwater drainage design shall be in accordance with AS/NZS 3500.3. Details and a design certificate will be required by a suitably qualified hydraulic engineer prior to the issue of a Construction Certificate.
F1.2	-	-	No provisions
F1.3	-	-	No provisions
F1.4	External above ground membrane	CRA	Waterproofing membranes for external above ground use may comply with AS 4654 Part 1 and 2. Details and a design certificate to be provided prior to the issue of a Construction Certificate.
F1.5	Roof coverings	CRA	Roof coverings are to comply with the relevant Australian Standards as per Clause F1.5. Details and design certification to be provided prior to the issue of a Construction Certificate.
F1.6	Sarking	CRA	Sarking type materials used for weatherproofing of roofs and walls must comply with AS/NZS 4200 Parts 1 and 2. Details and design certification to be provided prior to the issue of a Construction Certificate.
F1.7	Waterproofing of wet areas in buildings	CRA	Shower enclosure surfaces, floor surfaces in bathrooms, shower rooms, slop hoppers, sink compartments, laundry and sanitary compartments are required to be or water resistant or waterproof in accordance with Table F1.7 and AS 3740-2010. Details and design certification to be provided prior to the issue of a Construction Certificate.
F1.8	-	-	No provisions
F1.9	Damp-proofing	N / A	
F1.10	Damp-proofing of floors on the ground	CRA	A vapour barrier in accordance with AS2870 is to be provided beneath the basement floor slab. Details and design certification to be provided prior to the issue of a Construction Certificate.
F1.11	Provisions of floor wastes	CRA	The floor of each bathroom / laundry is to be graded to permit drainage to a floor waste. The plans forming part of the Construction Certificate Application must detail compliance with the above.

Part F1 – Damp and Weatherproofing			
Clause	Description	Status	Comments
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 requirements for resistance to water penetration. Details and design certification to be provided prior to the issue of a Construction Certificate.

Part F2 – Sanitary and Other Facilities			
Clause	Description	Status	Comments
F2.1	Facilities in residential buildings	CRA	Sanitary and other facilities for Class 2 and 3 buildings must be provided in accordance with Clause F2.1. **Note**: Under Clause F2.1 of the BCA 2019 A1, sanitary facilities are not required to be provided within the common areas of a Class 2 building. If for any reason sanitary facilities are provided within the common areas of the building, not less than one (1) unisex accessible sanitary compartment is to be provided to serve the common areas of the building as per Clause F2.4(a) and Table F2.4(a) of the BCA. **Laundry and Washtubs** All Class 2 residential SOU's are to be provided with laundry and washtub facilitates as required by this Clause. Details and design certification to be provided prior to the issue of a Construction Certificate.
F2.2	Calculation of number of occupants and fixtures	Noted	Floor area of each room is to be provided for the purpose of calculating occupant numbers within the building. Note: a unisex facility comprises one closet pan, one washbasin and means for the disposal of sanitary towels Details and design certification to be provided prior to the issue of a Construction Certificate.
F2.3	Facilities in Class 3 to 9 buildings	N / A	
F2.4	Facilities for people with disabilities	N / A	An assessment of the Deemed-to-Satisfy provisions of the BCA relating to access for people with disabilities (Clause D3.1-D3.12, E3.6, F2.2 & F2.4) is outside the scope of this report. A detailed assessment of access provisions by a suitably qualified Access Consultant is recommended.

Part F2 – Sanitary and Other Facilities			
Clause	Description	Status	Comments
F2.5	Construction of sanitary compartments	CRA	Doors to the 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. Plans submitted with the Construction Certificate Application must detail compliance with the above.
F2.6	Interpretation: Urinals and washbasins	Noted	
F2.7	Warm water installations	N / A	Not Applicable in NSW
F2.8	Waste	N / A	
F2.9	Accessible adult change facilities	N / A	

Part F3 – Room Sizes			
Clause	Description	Status	Comments
F3.1	Height of rooms and other spaces	CRA	Ceiling heights must be not less than—



Note:

The letters in the diagram represent the following minimum dimensions:

A = 2.4 m In a *habitable room* (excluding a kitchen).

B = 2.4 m In a *habitable room* with a sloping ceiling for at least two-thirds of the floor area of the room or space.

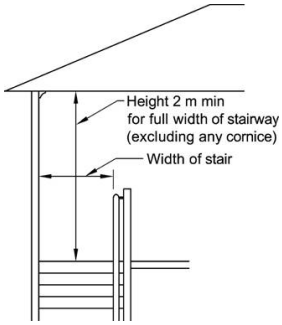
C = 2.1 m In a *non-habitable room* with a sloping ceiling for at least two-thirds of the floor area of the room or space.

D = 2.2 m In an attic with a sloping ceiling for at least two-thirds of the floor area of the room or space.

E = 1.5 m For the purpose of calculating the floor area of a room or space, any ceiling height of less than 1.5 m is excluded.

F = 2.0 m In a stairway (measured vertically above the nosing line).

The combined dimensions of G must not exceed one-third of the floor area (See E above) of the room or space.



(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

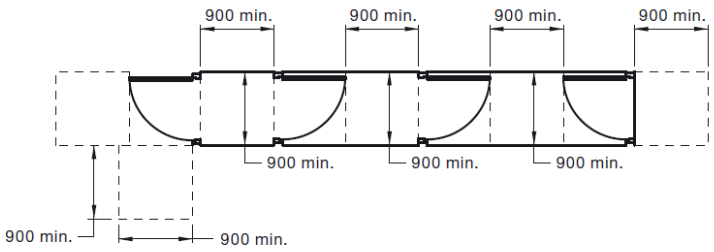
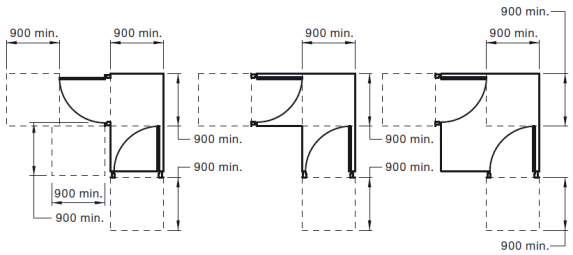
(B) in other rooms — a height of not less than 2.4 m over two-thirds of the floor area of the room or space; and

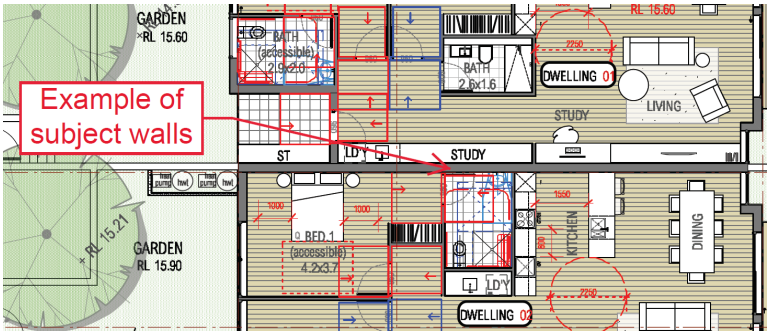
(ii) a non-habitable room — a height of not less than 2.1 m for at least two-thirds of the floor area of the room or space, and when calculating the floor area of a room or space, any part that has a ceiling height of less than 1.5 m is not included; and

(f) in a stairway — 2.0 m measured vertically above the nosing line.

Designer to verify compliance prior to the issue of the Construction Certificate.

Part F4 – Light and Ventilation			
Clause	Description	Status	Comments
F4.1	Provisions of natural light	Noted	Natural light must be provided to all habitable rooms located within the Class 2 portion of the development.
F4.2	Methods and extent of natural light	Complies	
F4.3	Natural light borrowed from adjoining room	CRA	Natural lighting to a room in a Class 2 building or Class 4 part of a building or in a sole-occupancy unit of a Class 3 building, may come through a glazed panel or opening from an adjoining room (including an enclosed verandah). Designer to assess the design of light to all bedrooms prior to the issue of the Construction Certificate. Details and design certification for natural light borrowed are to be provided by the architect prior to the issue of a Construction Certificate.
F4.4	Artificial lighting	CRA	Artificial lighting must be provided in required stairways, passageways, ramps, sanitary compartments, bathrooms, laundries and other spaces used in common by occupants of the building complying with AS1680.0 in accordance with the requirements of Clause F4.4 of the BCA. Details and design certification to be provided by electrical engineer prior to the issue of a Construction Certificate.
F4.5	Ventilation of rooms	CRA	Ventilation shall be provided throughout the building by means of natural ventilation complying with Clause F4.6 or mechanical ventilation complying with the requirements of AS1668.2 and AS3666.1 as required by Clause F4.5 of the BCA. Details and design certification to be provided by mechanical engineer prior to the issue of a Construction Certificate. *Note: Any air handling system which recycles air from one fire compartment to another or operates in a manner that may unduly contribute to the spread of smoke from one compartment to another must be designed to operate a smoke control system in accordance with AS1668.1 or incorporate smoke dampers where the air-handling ducts pass any separating element to another fire compartment and shutdown and the smoke dampeners are activated to close automatically via smoke detectors complying with clause 4.10 of AS1668.1*
F4.6	Natural ventilation	CRA	See Clause F4.5
F4.7	Ventilation borrowed from adjoining room	CRA	See Clause F4.5
F4.8	Restriction on position of water closets and urinals	Complies	

Part F4 – Light and Ventilation			
Clause	Description	Status	Comments
F4.9	Airlocks	Noted	Note: Airlocks must comply with the set distances under AS1428.1 :2009
  (b) Path of travel to ambulant toilets		
F4.10	-	-	No provisions
F4.11	Carparks	CRA	The carpark is to be provided with ventilation complying with AS1668.2 or have an adequate system of permanent natural ventilation. Details and design certification to be provided by mechanical engineer prior to the issue of a Construction Certificate.
F4.12	Kitchen local exhaust	N / A	

Part F5 – Sound Transmission and Insulation			
Clause	Description	Status	Comments
F5.1	Application of part	Applies	Applicable to Class 2 buildings
F5.2	Determination of airborne sound insulation ratings	Noted	Construction required to have an airborne sound insulation rating must have the value for weighted sound reduction index (Rw) or weighted sound reduction index with spectrum adaptation term (Rw + Ctr) determined in accordance with AS/NZS1276.1, or ISO717.1 using result from laboratory measurements, or comply with Specification F5.2 of the BCA.
F5.3	Determination of impact sound installation ratings	CRA	A floor required to have an impact sound insulation rating must have the required value for weighted normalised impact sound pressure level with spectrum adaptation term (Ln,w+Cl) determined in accordance with AS/ISO 717.2 using results from laboratory measurements or comply with Specification F5.2 of the BCA. A wall that is required to have an impact sound insulation rating must be of discontinuous construction. For the purposes of this Part, discontinuous construction means a wall having a minimum 20 mm cavity between 2 separate leaves, and for masonry, where wall ties are required to connect leaves, the ties are of the resilient type. For other than masonry, there is no mechanical linkage between leaves except at the periphery. **SOU Walls Bounding SOU Bathrooms** Discontinuous construction is required between the habitable rooms of an SOU and the bathroom of an adjoining SOU.  Design verification to be provided prior to the issue of the Construction Certificate.
F5.4	Sound insulation rating for floors	CRA	Floors separating sole occupancy units or separating sole occupancy units from a plant room, lift shaft, public lobby or the like or parts of different classifications must have an Rw + Ctr of not less than 50 and an Ln,w + Cl of not more than 62. A design certificate and details of form of construction required to achieve such will be required from a qualified acoustic engineer prior to the issue of a Construction Certificate.

Part F5 – Sound Transmission and Insulation			
Clause	Description	Status	Comments
F5.5	Sound insulation rating of walls	CRA	A wall separating sole occupancy units must have an Rw + Ctr not less than 50. A wall separating a sole occupancy from a lift shaft, public lobby or the like, or parts of different classifications must have an Rw + Ctr not less than 50. Compliance with F5.3(b) is required if the wall separates a bathroom, sanitary compartment, laundry or kitchen in one sole occupancy unit from a habitable room (excluding a kitchen) in another adjoining unit or a sole occupancy unit from a plant room or lift shaft. A door may be incorporated in a wall 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. Where a wall required to have sound insulation has a floor above, the wall must continue to the underside of the floor above or a ceiling that provides the sound insulation required for the wall. Where a wall required to have sound insulation has a roof above, the wall must continue to the underside of the roof above or a ceiling that provides the sound insulation required for the wall. A design certificate and details of form of construction required to achieve such will be required from a qualified acoustic engineer prior to the issue of a Construction Certificate.
F5.6	Sound insulation rating of services	CRA	If a duct, soil, waste or water supply pipe, including a duct or pipe that is located in a wall or floor cavity, serves or passes through more than one sole-occupancy unit, the duct or pipe must be separated from the rooms of any sole-occupancy unit by construction with an Rw + Ctr (airborne) not less than— (i) 40 if the adjacent room is a habitable room (other than a kitchen); or (ii) 25 if the adjacent room is a kitchen or non-habitable room. If a storm water pipe passes through a sole-occupancy unit it must be separated in accordance with (i) and (ii) above. A design certificate and details will be required by a qualified acoustic engineer prior to the issue of a Construction Certificate.
F5.7	Isolation of pumps	CRA	A flexible coupling must be used at the point of connection between the service pipes in a building and any circulating or other pump.

Part F6 – Condensation management			
Clause	Description	Status	Comments
F6.1	Application of Part	Applies	Applicable to a sole-occupancy unit of a Class 2 building or a Class 4 part of a building.
F6.2	Pliable building membrane	CRA	(a) Where a pliable building membrane is installed in an external wall, it must— (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. (b) 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 and a design certificate to be provided prior to the issue of a Construction Certificate.
F6.3	Flow rate and discharge of exhaust systems	CRA	(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 and design certification to be provided by mechanical engineer prior to the issue of a Construction Certificate.
F6.4	Ventilation of roof spaces	CRA	(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 and design certification to be provided by mechanical engineer prior to the issue of a Construction Certificate.

SECTION G – ANCILLARY PROVISIONS

Part G1 – Minor structures and components			
Clause	Description	Status	Comments
G1.1 & NSW G1.1	Swimming pools	N / A	
G1.2	Refrigerated chambers, strong-rooms and vaults	N / A	
G1.101	Provision for cleaning windows	CRA	A safe manner of cleaning windows is to be provided as windows are located 3 or more storeys above ground level. The windows must either be able to be cleaned wholly from within the building, or a method complying with the Construction Safety Act 1912 and Regulations is required. Details verifying compliance must be provided prior to the issue of a Construction Certificate.

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 H – SPECIAL USE BUILDINGS

N / A

SECTION I – MAINTENANCE

Note:

Essential Fire Safety Measures or other safety measures must be maintained and certified on a ongoing basis, in accordance with the provisions of the Environmental Planning and Assessment Regulation, 2000.

SECTION J – ENERGY EFFICENCY

A detailed assessment of Section J of the BCA is beyond the scope of this report.

A Section J compliance report is recommended to be provided prior to the issue of the Construction Certificate.

4.0. CONCLUSION

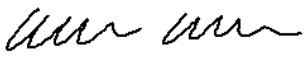
Although demonstrating compliance with the BCA at DA assessment stage is not a prescribed head of consideration under Section 4.15 (formally Section 79C) of the Environmental Planning & Assessment Act 1979, Council has an obligation to consider whether the proposal, as lodged, is indicatively capable of complying with the BCA - without significant modification to those plans for which approval is sought.

In this instance we are confident that any modifications and advancement in level of details required to the proposal in order to satisfy the requirements of the BCA (in force at the time the Construction Certificate application is lodged) will not necessitate the need for any significant design changes that in turn would necessitate the submission of an application under Section 4.55 (formally Section 96) of the Environmental Planning and Assessment Act 1979.

In the same regard, we draw Council's attention to the requirements of clause 145 of the Environmental Planning & Assessment Regulation 2000, and suggest that detailed & specific BCA compliance matters shall be addressed to the satisfaction of the appointed Certifying Authority prior to the issue of the Construction Certificate.

Further, it is considered that this BCA review and the additional preparation of the required Construction Certificate documentation will be sufficient to ensure that the proposed design will achieve the necessary compliance with the BCA.

PREPARED BY:



Kallan Baker
Junior Consultant
Building Innovations Australia Pty Ltd
B.Eng (Bachelor of Civil Engineering)

ASSESSED BY:

Joseph Bond
Senior Consultant
Building Innovations Australia Pty Ltd
M. Proj Mgmt (Master of Project Management)
Grad.Dip.Bld.Survey (Graduate Diploma of Building Surveying)
B.Bus Admin (Bachelor of Business Administration)
B.Info Tech (Bachelor of Information Technology)
Cert IV in NatHERS Assessment

REVIEWED BY:

Mardiros Tatian
Director
Building Innovations Australia Pty Ltd
M.Fire.Eng (Master of Fire Engineering)
Grad.Dip.Bld.Survey (Graduate Diploma of Building Surveying)
B.Med.Sci (Bachelor of Medical Science)
Building Professionals Board, NSW- A1 Accredited Certifier BPB 2572

APPENDIX A – FIRE RESISTANCE LEVELS

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
ROOFS	90/ 60/ 30	120/ 60/ 30	180/ 60/ 30	240/ 90/ 60

Note: *Under Spec C1.1, there are many individual additional requirements and concessions which need to be assessed and read in conjunction with this Specification. Your engineer is to confirm compliance with all required Fire Rated Elements.*

General Requirements:

- Exposure to Fire-source features
- Fire Protection for a supporting of another part
- Lintels
- Attachments not to impair fire-resistance
- General concessions

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) external walls, common walls and the flooring and floor framing of lift pits must be non-combustible; and

(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 of concrete or masonry; and

(e) a non-loadbearing

(i) internal wall required to be fire-resisting; and

(ii) lift, ventilating, pipe, garbage, or similar shaft that is not for the discharge of hot products of combustion, must be of non-combustible construction; and

(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 – REFERENCED DOCUMENTATION

The following documentation was used in the preparation of this report:

Drawing No.	Title	Rev.	Project No.	Date	Drawn By
101	BASEMENT FLOOR PLAN	R	991	18/09/2020	Environa Studio
102	LEVEL 1 FLOOR PLAN	R	991	18/09/2020	Environa Studio
103	LEVEL 2 FLOOR PLAN	R	991	18/09/2020	Environa Studio
110	ROOF LEVEL PLAN	R	991	18/09/2020	Environa Studio
120	SECTIONS AA + BB	R	991	18/09/2020	Environa Studio
130	ELEVATIONS NORTH + EAST	R	991	18/09/2020	Environa Studio
131	ELEVATIONS SOUTH + WEST	R	991	18/09/2020	Environa Studio
133	ELEVATIONS NORTH + SOUTH (INTERNAL)	R	991	18/09/2020	Environa Studio