



NATIONAL CONSTRUCTION CODE REPORT

FOR: HARLEY GRAHAM ARCHITECTS

LOCATION: 156 JONSON STREET BYRON BAY

PREPARED BY: PAUL MACKIE / LEON NEWLAND

DATE: 14 JUNE 2021

VERSION: 2

National Construction Code Report

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Construction Consultants

Mackie Construction Consultants

PO Box 1351

Kenmore QLD 4069

www.mackieconsultants.com.au

ABN: 59605520385

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Executive Summary

1 Introduction

The proposed building is located at 156 Jonson St Byron Bay The subject property is located within the local government area of Byron Bay



2 Purpose of Report

This report is a documented assessment of the proposed works against the deemed to satisfy requirements of the National Construction Code, Volume One: Building Code of Australia 2019.1, or BCA as now referred to in this report.

3 Development Description

development the development consists of a two level open deck car park connected via a bridge to a class 6 marketplace

4 Basis of Assessment

This report is based on the following documentation

- (i) Architectural Plans prepared by Harley Graham Architects

Drawing Name	Drawing Number	Issue	Date
Architectural	Harley Graham	Location Plan	29/04/21
Architectural	Harley Graham	Site Plan /Section	29/04/21
Architectural	Harley Graham	Roof Plan	29/04/21
Architectural	Harley Graham	Ground Floor Plan	29/04/21
Architectural	Harley Graham	First floor plan	29/04/21
Architectural	Harley Graham	Carparking GF	29/04/21
Architectural	Harley Graham	Carparking FF	29/04/21
Architectural	Harley Graham	Sections	29/04/21
Architectural	Harley Graham	Elevations	29/04/21

Architectural	Harley Graham	Elevations	29/04/21
Architectural	Harley Graham	Perspective	29/04/21
Architectural	Harley Graham	Perspective	29/04/21
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5 Report Versions

Author	Version	Reason	Date	Signed
Paul Mackie	1	DA review	07/10/2020	<i>Paul Mackie</i>
	2	DA Review	14/06/2021	
Reviewer				
Leon Newland	1	DA review	07/10/2020	<i>Leon Newland</i>
	2	DA Review	14/06/2021	

6 Key

- **Complies** - design meets Deemed-to-Satisfy with particular provisions of the BCA clause
- **Capable of Compliance** – at this stage it is too early to determine how full compliance will be achieved and further information is required from architect and/or consultant to ensure full BCA compliance can be achieved at approval stage
- **Alternative Solution** - the design cannot meet the Deemed-to-Satisfy provisions of the BCA and will need to be addressed by a Performance Solution to achieve compliance.
- **Does Not Comply** - the design cannot achieve compliance with the provisions of the BCA and will need to be amended or revised to comply
- **Note** - this is for reference and drawn to your attention as maybe a construction requirements or further information provide during design or prior to during construction or completion of the project.
- **Note (*attention*)** - as above, however the particular clause is highlighted as it may need additional consideration
- Not Applicable** – the particular clause is not applicable to this project (the clause may be removed from the report)

Note: the clause will only be colour coded within the body of the report, not in the DTS or Alternative Solution tables

7 DTS Summary of Issues

The following may need

NCC Clause	Title	Comment/Requirement	Action Required
C1.9	Non-combustible building elements	<p>In a type A construction, the following elements must be NON-COMBUSTIBLE:</p> <ul style="list-style-type: none"> External & Common walls and including all components incorporated in them including the face covering, framing & insulation Flooring and floor framing of lift pits Non- loadbearing internal walls that are required to be rated A lift shaft, ventilating, pipe, garbage or similar (not for discharge of hot products of combustion) <p>Test Reports and statement of compliance from the builder items are installed as per specifications will be required on completion</p>	
C1.14	Ancillary elements	An ancillary element must not be fixed, installed or attached to the internal parts or the external face of an external wall that is required to be non-combustible unless is it an ancillary element approved under this clause.	

8 Development Approval Conditions

This section will be completed when the notice of determination is issued from Byron Shire Council

9 Other Comments

Additional assessment will be undertaken as the scheme develops

The following approvals and receipts may be required:

- Long Service Levy Receipt
- Operational works
- Landscaping
- Crossover permit
- Plumbing Approval
- Fire Service submission

10 Design Documentation Required

- Electrical Design Certificate & Plans
- Structural Design Certificate & Plans
- Stormwater Design Certificate & Plans
- Mechanical Design Certificate & Plans
- Hydraulic Design Certificate & Fire Services Plans (Fire Hydrant & Hose Reel System)

11 Building Code of Australia (BCA) Description.

11.1 General

The project has been assessed under BCA 2019.1

The following information in relation to the building has been identified:

BCA Clause		Description of Requirements		
BCA Version		BCA 2019- amendment 1		
Building Description		The building/s is described as; 2 storey class 7 carpark and 2 storey class 6 market		
A1.1	Effective height	2.7		
A3.2	Classification	Class 5 Office Class 6 Retail Class 7 Carpark		
B1.2a	Importance Levels of Buildings & Structures	2		
C1.1	Minimum Type of Construction	A		
C1.2	Rise in Storeys	2		
C2.2	General Floor Areas m ²	Level	Floor Area	Occupancy
		1 market	2698m ²	Class 6
		2 Market	1340m ²	
		Total Market place	4038	
		Carpark 1	5,547m ²	Class 7
		Carpark 2	4060.7m ²	Class 7
		Total Carpark	9,607.7 m ²	

BCA 2019 – Assessment

12 Structure

BCA Clause	Title	Assessment & Comment	Status
B1.0-1.6	Structural Provisions	<p>Please provide Structural drawings and design certificates covering all structural elements.</p> <ul style="list-style-type: none"> ➤ Structural Reliability ➤ Resistance to Actions ➤ Determination of Individual Actions ➤ Determination of Structural Resistance of Materials & Forms of Construction ➤ Construction of Buildings in Flood Hazard Areas – Building Act 	Capable of Compliance
	Earthquake	<p>The non-structural components such as partitions, ceilings, shelving over 2.0m, lighting will need to be designed to resist seismic forces and this must be noted on the plans. A design certificate for any lightweight systems from a structural engineer or consultant to AS:1170.4-2007 should be provided (Note any changes to essential services such as sprinklers, detection, mechanical also need to be designed to AS1170.4-2007 and require to be referenced on design certificates)</p>	Capable of Compliance

13 Fire Safety (BCA Section C)

13.1 Fire Resistance & Stability (Part C1)

BCA Clause	Title	Assessment & Comment	Status
C1.1	Type of Construction Required	The minimum type of fire resisting construction of the building is Type A construction.	Note
C1.2	Calculation of the rise in storeys	The building has a total rise in storeys of: 2	Note
C1.9	Non-combustible building elements	<p>a) In a building required to be of Type A construction, the following building elements and their components must be non-combustible:</p> <ul style="list-style-type: none"> (i) External walls and common walls, including all components incorporated in them including the facade covering, framing and insulation. (ii) The flooring and floor framing of lift pits. (iii) Non-loadbearing internal walls where they are required to be fire-resisting. <p>(b) A shaft, being a lift, ventilating, pipe, garbage, or similar shaft that is not for the discharge of hot products of combustion, that is non-loadbearing, must be of non-combustible construction in—</p> <ul style="list-style-type: none"> (i) a building required to be of Type A construction; and (ii) a building required to be of Type B construction, subject to C2.10, in— <ul style="list-style-type: none"> (A) a Class 2, 3 or 9 building; and (B) a Class 5, 6, 7 or 8 building if the shaft connects more than 2 storeys. <p>(c) A loadbearing internal wall and a loadbearing fire wall, including those that are part of a loadbearing shaft, must comply with Specification C1.1.</p> <p>Test Reports and statement of compliance from the builder items are installed as per specifications will be required on completion.</p>	Note
C1.10	Fire hazard properties	<p>Any material or assembly in the building must comply with-</p> <ul style="list-style-type: none"> (i) for floor materials, floor coverings, wall and ceiling lining materials, Specification C1.10a; and (ii) for other materials, Specification C1.10. <p>Documentation will be required on completion of the works indicating compliance with this BCA part (e.g. a specifications or product data sheets).</p> <p>Floor linings are coverings are to list Critical Radiant Flux (CRF in kW/m²) and smoke development rates. Wall and ceiling linings are to list a Group Number. Un-sprinklered buildings have additional requirements to be listed</p>	Note
C1.14	Ancillary elements	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; The following are considered to be exempt:	Note

132 Compartmentation & Separation (Part C2)

BCA Clause	Title	Assessment & Comment	Status																								
C2.2	General floor area & volume limitations	<p>The Building is class XXXX and construction type XX. Therefore the maximum fire compartment size is;</p> <table border="1"> <thead> <tr> <th>Classification</th> <th>Type A Construction</th> <th>Type B Construction</th> <th>Type C Construction</th> </tr> </thead> <tbody> <tr> <td>5, 9b or 9c</td> <td>Max floor area—8 000 m² Max volume—48 000 m³</td> <td>Max floor area—5 500m² Max volume—33 000 m³</td> <td>Max floor area—3 000m² Max volume—18 000 m³</td> </tr> <tr> <td>6, 7, 8 or 9a (except for patient care areas)</td> <td></td> <td>Max floor area—3 500² Max volume—21 000 m³</td> <td>Max floor area—2 000m² Max volume—12 000 m³</td> </tr> </tbody> </table> <table> <thead> <tr> <th><u>Area</u></th> <th><u>Floor Area</u></th> <th><u>Volume</u></th> </tr> </thead> <tbody> <tr> <td>Ground</td> <td>2698m²</td> <td>17,806m³ (6.6m high) estimate</td> </tr> <tr> <td>Level 1</td> <td>1340m²</td> <td>XXXXm³ (.0m high)</td> </tr> <tr> <td>Total</td> <td>4038 m²</td> <td>17,806m³</td> </tr> </tbody> </table> <p>The proposed floor area and volume complies</p>	Classification	Type A Construction	Type B Construction	Type C Construction	5, 9b or 9c	Max floor area—8 000 m ² Max volume—48 000 m ³	Max floor area—5 500m ² Max volume—33 000 m ³	Max floor area—3 000m ² Max volume—18 000 m ³	6, 7, 8 or 9a (except for patient care areas)		Max floor area—3 500 ² Max volume—21 000 m ³	Max floor area—2 000m ² Max volume—12 000 m ³	<u>Area</u>	<u>Floor Area</u>	<u>Volume</u>	Ground	2698m ²	17,806m ³ (6.6m high) estimate	Level 1	1340m ²	XXXXm ³ (.0m high)	Total	4038 m²	17,806m³	Complies
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C2.6	Vertical separation of openings in external walls	<p>In a Type A building Vertical separation is required between openings in external walls. This may be achieved by having 60-minute fire rated separation using one of the following methods:</p> <ul style="list-style-type: none"> • 900mm spandrel extending not less than 600mm above the upper surface of the intervening floor; or • 1100mm horizontal projection from the wall. Balconies may achieve this in some areas. <p>Vertical separation is not required between openings in external walls in a fully sprinklered building.</p>	Capable of Compliance																								

C2.8	Separation of classifications in the same storey	If a building has parts of different classifications located alongside one another in the same storey— (a) each building element in that storey must have the higher FRL prescribed in Specification C1.1 for that element for the classifications concerned; or (b) the parts must be separated in that storey by a fire wall having— (i) the higher FRL prescribed in Table 3 or 4; or (ii) the FRL prescribed in Table 5, of Specification C1.1 as applicable, for that element for the Type of construction and the classifications concerned; or (c) where one part is a carpark complying with Table 3.9, 4.2 or 5.2 of Specification C1.1, the parts may be separated by a fire wall complying with the appropriate Table. Carpark and market place to have 6-metre separation with the connecting bridge to be non-combustible	Note
C2.9	Separation of classifications in different storeys	If parts of different classification are situated one above the other in adjoining storeys they must be separated as follows: (a) Type A construction — The floor between the adjoining parts must have an FRL of not less than that prescribed in Specification C1.1 for the classification of the lower storey.	Note
C2.10	Separation of lift shafts	Any lift connecting more than 2 storeys, or more than 3 storeys if the building is sprinklered, (other than lifts which are wholly within an atrium) must be separated from the remainder of the building by enclosure in a shaft	Not Applicable
C2.11	Stairways & lifts in one shaft	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	Complies
C2.12	Separation of equipment	The following equipment must be separated from the rest of the building by 2 hour fire rated construction having doorways protected with -/120/30 self-closing fire doors: <ul style="list-style-type: none"> • Lift motors / control panels. • Emergency generators used to sustain emergency equipment operating in the emergency mode. • Central smoke control plant. • Boilers. • Batteries installed in the building with a voltage exceeding 24 volts and a capacity exceeding 10 ampere hours. <p>This will be checked as the design develops and more information is known about the equipment in the building.</p>	Note
C2.13	Electricity Supply system	The following electricity supply systems must be separated from the rest of the building by 2 hour fire rated construction having doorways protected with -/120/30 fire doors: <ul style="list-style-type: none"> • Electricity supply substation. • Main switchboard sustaining emergency equipment. • Electrical conductors supplying the above. <p>Additionally, emergency switchgear must be separated from non-emergency switchgear by metal partitions designed to minimise the spread of a fault.</p>	Note

133 Protection of Openings (Part C3)

BCA Clause	Title	Assessment & Comment	Status														
C3.2	Protection of openings in external walls	<p>Openings in an external wall that is required to have an FRL must be protected in accordance with C3.4 if less than;</p> <ul style="list-style-type: none"> (i) 3m from the rear boundary of the allotment (ii) 6m from the far boundary of a road, river, lake or the like if adjoining the allotment in not located in a storey at or near ground level <p>6m from another building on the allotment that is not a class 10</p>	Alternative Solution														
C3.3	Separation of external walls & associated openings in different fire compartments	<p>The distance between parts of external walls and the openings within them in different fire compartments</p> <table border="1"> <thead> <tr> <th>Angle between walls</th> <th>Min Distance</th> </tr> </thead> <tbody> <tr> <td>0° (walls opposite)</td> <td>6m</td> </tr> <tr> <td>more than 0° to 45°</td> <td>5m</td> </tr> <tr> <td>more than 45° to 90°</td> <td>4m</td> </tr> <tr> <td>more than 90° to 135°</td> <td>3m</td> </tr> <tr> <td>more than 135° to 180°</td> <td>2m</td> </tr> <tr> <td>more than 180°</td> <td>nil</td> </tr> </tbody> </table>	Angle between walls	Min Distance	0° (walls opposite)	6m	more than 0° to 45°	5m	more than 45° to 90°	4m	more than 90° to 135°	3m	more than 135° to 180°	2m	more than 180°	nil	Alternative Solution
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more than 90° to 135°	3m																
more than 135° to 180°	2m																
more than 180°	nil																
C3.12	Openings in floors & ceilings for services	<p>(a) Where a service passes through-</p> <ul style="list-style-type: none"> (i) a floor that is required to have an FRL with respect to integrity and insulation; or (ii) a ceiling required to have a resistance to the incipient spread of fire, the service must be installed in accordance with (b). <p>(b) A service must be protected-</p> <ul style="list-style-type: none"> (i) by a shaft with FRL 120/90/90 (-/90/90 if non-loadbearing); or (ii) in accordance with C3.15 <p>(c) Where a service passes through a floor which is required to be protected by a fire-protective covering, the penetration must not reduce the fire performance of the covering.</p>	Note														
C3.13	Openings in shafts	<p>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-</p> <ul style="list-style-type: none"> (a) if it is in 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 (b) a self-closing -/60/30 fire door or hopper; or (c) an access panel having an FRL of not less than -/60/30; or (d) if the shaft is a garbage shaft - a door or hopper of non-combustible construction 	Note														
C3.15	Openings for service penetrations	<p>Penetrations in floor slabs for electrical, mechanical, plumbing etc should be protected to maintain the fire rating of the slab. This may be via a tested system such as intumescent mastic or fire collars, or for ventilation – fire dampers.</p>	Note														

C3.16	Construction joints	Construction joints, spaces and the like in and between building elements required to be fire-resisting with respect to integrity and insulation must be protected in a manner identical with a prototype tested in accordance with AS 1530.4 to achieve the required FRL.	Note
C3.17	Columns protected with lightweight construction to achieve an FRL	Please provide details of any proposed lightweight construction methods to be used to achieve FRL Engineer is to consider in design and provide design verification documentation	Note

134 Fire-Resisting Construction (Specification C1.1)

BCA Clause	Title	Assessment & Comment	Status
2.1	Exposure to fire-source features	Fire source features are boundaries to the front, sides and rear of the building or other buildings on the same site.	Capable of Compliance
3	Type A fire resisting construction	The Building is required to comply with the FRL of Table 3 for Type A construction Please see a full list of all required FRLs for the building in the appendix	Note

14 Access & Egress (BCA Section D)

14.1 Provisions for Escape (Part D1)

BCA Clause	Title	Assessment & Comment	Status
D1.2	Number of exits required	Every building must have at least one exit from each storey. Additional exits are required; The	Note
D1.3	When fire-isolated stairways & ramps are required	Fire Isolated exits are required when passes through or by not more than 2 consecutive storeys and one extra storey of any classification may be included if –	Note
D1.4	Exit travel distances	No point on the floor must be more than 20m from an exit or from a point in which travel in two different directions to two (2) exits is available in which case the maximum distance to one of those exits is 40m	Does Not Comply
D1.5	Distance between alternative exits	Alternative exits are to be not less than 9m apart and not more than Class 2,3, 9a – 45m In all other cases – 60m	Does Not Comply
D1.6	Dimension of exits & paths of travel to exits	See Clause D1.13 for the occupancy calculations Exits widths are to be the unobstructed clear width and height and may be reduced at doorways as advised Level G market place Required 6.00 m Provided unknown Level 1 Required 2.50m Provided : 2.0 See appendix for exit width calculations	Does Not Comply
D1.9	Travel by non-fire-isolated stairways or ramps	Please detail stairs construction	Capable of Compliance
D1.10	Discharge from exits	An exit must not be blocked at the point of discharge and where necessary, suitable barriers must be provided to prevent vehicles from blocking the exit, or access to it.	Note

D1.13	Number of persons accommodated	See appendix	Note
D1.14	Measurement of distance	The nearest part of an exit means in the case of— (a) a fire-isolated stairway, fire-isolated passageway, or fire-isolated ramp, the nearest part of the doorway providing access to them; and (b) a non-fire-isolated stairway, the nearest part of the nearest riser; and (c) a non-fire-isolated ramp, the nearest part of the junction of the floor of the ramp and the floor of the storey; and (d) a doorway opening to a road or open space, the nearest part of the doorway; and (e) a horizontal exit, the nearest part of the doorway.	Note
D1.17	Access to lift pits	Access to lift pits must— (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”	Note

142 Construction of Exits (Part D2)

BCA Clause	Title	Assessment & Comment	Status
D2.3	Non-fire isolated stairways & ramps	In a building having a rise in storeys of more than 2, required stairs and ramps (including landings and any supporting building elements) which are not required to be within a fire-resisting shaft, must be constructed according to D2.2, or only of— (a) reinforced or prestressed concrete; or (b) steel in no part less than 6 mm thick; or (c) timber that— (i) has a finished thickness of not less than 44 mm; and (ii) has an average density of not less than 800 kg/m ³ at a moisture content of 12%; and (iii) has not been joined by means of glue unless it has been laminated and glued with resorcinol formaldehyde or resorcinol phenol formaldehyde glue.	Capable of Compliance
D2.7	Installations in exits and paths of travel	Access to service shafts and services on a path of travel requires protection of smoke seals and non combustible backed door	Note
D2.8	Enclosure of space under stairs & ramps	Non- Fire Isolated Stair: If it is intended to enclose the space below a stair to form a cupboard store or the like, the wall and ceiling of the cupboard have a FRL of 60/60/60 and access doors must have a rating of -/60/30. Fire Isolated Stair: No cupboard is allowed to be formed under a fire isolated stairway or external stair in lieu of.	Note
D2.9	Width of required stairways and ramps	A required stairway or ramp that exceeds 2 m in width is counted as having a width of only 2 m unless it is divided by a handrail or barrier continuous between landings and each division has a width of not more than 2 m.	Note
D2.13	Goings & risers	Provide details of new stairs for assessment New stairs are to comply with the clause. For example, goings, risers etc. In particular, the goings and risers should be within the BCA maximum and minimum dimensions and should be constant throughout the flight. Particular care should be given to the top and bottom risers where floor coverings may trigger non-compliance. Tread surfaces to have a slip resistance OR the nosing to have a slip resistance complying with table D14.a in the appendix The area is considered Dry/Wet for the purpose of minimum slip resistance.	Capable of Compliance
D2.16	Barriers to prevent falls	Where there is a change in level greater than 1m, balustrades are required to a minimum height of 1. It is highly recommended that an additional 50mm is provided to allow a construction tolerance for adjacent flooring or tiling etc. Additionally, no openings greater than 125mm are permitted in the balustrade. Where the change in level is greater than 4m (e.g. from balconies), there must be no horizontal elements which would facilitate climbing between 150-760mm in height. In particular, care should be taken to ensure that air conditioning units and power outlets are not installed in this zone, as they may be considered climbable.	Capable of Compliance

		Stair balustrades are required to be not less than 865mm in height, except at landings where the 1m requirement applies. If the stair is fire isolated and is primarily for emergency purposes, rails may be used at a height of not more than 150mm above the nosings with the space between rails not more than 460mm. The space between balusters must be not more than 300mm. If the stair is used for general circulation, openings greater than 125mm are not permitted.	
D2.17	Handrails		Capable of Compliance
D2.21	Operation of latch	A door in a required exit, forming part of a required exit or in the path of travel to a required exit must be readily openable without a key from the side that faces a person seeking egress, by— (i) a single hand downward action on a single device which is located between 900 mm and 1.1 m from the floor and if serving an area required to be accessible by Part D3—	Note
D2.23	Signs on doors	A sign, to alert persons that the operation of certain doors must not be impaired, must be installed where it can readily be seen on, or adjacent to, a- (i) required fire door providing direct access to a fire-isolated exit, and (ii) required smoke door, (iii) door leading from a fire isolated exit to a road or open space, on each side of the door. on the side of the door that faces a person seeking egress and, if the door is fitted with a device for holding it in the open position, on either the wall adjacent to the doorway or both sides of the door. (b) A sign referred to in (a) must be in capital letters not less than 20 mm high in a colour contrasting with the background and state- (i) for an automatic door held open by an automatic hold-open device- "FIRE SAFETY DOOR-DO NOT OBSTRUCT" ; or (ii) for a self-closing door- "FIRE SAFETY DOOR DO NOT OBSTRUCT DO NOT KEEP OPEN" ; or (iii) for a door discharging from a fire-isolated exit- "FIRE SAFETY DOOR-DO NOT OBSTRUCT"	Note

143 Access for People with a Disability (Part D3)

BCA Clause	Title	Assessment & Comment	Status
D3.1	General building access requirements	Buildings and parts of buildings must be accessible as required by Table D3.1, unless exempted by D3.4.	Note
D3.2	Access to buildings	An accessway must be provided to a building required to be accessible— (i) from the main points of a pedestrian entry at the allotment boundary; and (ii) from another accessible building connected by a pedestrian link; and (iii) from any required accessible carparking space on the allotment.	Capable of Compliance
D3.3	Parts of buildings to be accessible	The following areas are required to be accessible and comply with the requirements of AS1428.1-2009; All used by the staff and public	Note
D3.4	Exemptions	The following areas are not required to be accessible: (a) An area where access would be inappropriate because of the particular purpose for which the area is used. (b) An area that would pose a health or safety risk for people with a disability. (c) Any path of travel providing access only to an area exempted by (a) or (b).	Note
D3.5	Accessible carparking	Carparks are to be allocated in accordance with table D3.5 and comply with AS/NZS 2890.6	Note
D3.6	Signage	Accessible, clear and legible Braille and tactile signage complying with Specification D3.6 and incorporating the international symbol of access or deafness or other symbol as appropriate, in accordance with AS 1428.2009 must identify sanitary facility and lifts. <ul style="list-style-type: none"> Identify each door required by E4.5 to be provided with an exit sign and state Exit and Level followed by floor level and number <p>Note the following requirements for signage:</p> <ul style="list-style-type: none"> It should be on the latch side of the door, or if this is not possible, on the door itself; and Leading edge of the sign to be 50-300mm from the architrave; and To be white on blue in colour; and Signage to indicate left or right hand pan transfer (LH or RH). <p>The path of travel from the principal public entrance to these features and facilities should be where their location is not apparent to the building occupant.</p>	Note
D3.7	Hearing augmentation	A hearing augmentation system must be provided where an inbuilt amplification system, other than one used only for emergency warning, is installed	Note
D3.8	Tactile indicators	(a) For a building required to be accessible, tactile ground surface indicators must be provided to warn people who are blind or have a vision impairment that they are approaching— (i) a stairway, other than a fire-isolated stairway; and (ii) an escalator; and (iii) a passenger conveyor or moving walk; and	Note

		<p>(iv) a ramp other than a fire-isolated ramp, step ramp, kerb ramp or swimming pool ramp; and</p> <p>(v) in the absence of a suitable barrier—</p> <p>(A) an overhead obstruction less than 2 m above floor level, other than a doorway; and</p> <p>(B) an accessway meeting a vehicular way adjacent to any pedestrian entrance to a building, excluding a pedestrian entrance serving an area referred to in D3.4, if there is no kerb or kerb ramp at that point, except for areas exempted by D3.4.</p> <p>(b) Tactile ground surface indicators required by (a) must comply with sections 1 and 2 of AS/NZS 1428.4.1.</p> <p>(c) A hostel for the aged, nursing home for the aged, a residential aged care building, Class 3 accommodation for the aged, Class 9a health-care building or a Class 9c aged care building need not comply with (a)(i) and (iv) if handrails incorporating a raised dome button in accordance with AS/NZS 1428.4.1 are prov</p>	
D3.12	Glazing on an accessway	On an accessway, where there is no chair rail, handrail or transom, all frameless or fully glazed doors, sidelights and any glazing capable of being mistaken for a doorway or opening, must be clearly marked in accordance with AS 1428.1.	Note

15 Services & Equipment (BCA Section E)

15.1 Fire-Fighting Equipment (Part E1)

BCA Clause	Title	Assessment & Comment	Status
E1.3	Fire hydrants	A Form design certificate and relevant drawings are required from the fire services consultant (including hydrant plans, H patterns, pump room details, boosters etc). Note new requirement for booster location between 3.5m-10m where protection is provided	Capable of Compliance
E1.4	Fire hose reels	A Form design certificate and relevant drawings are required for fire hose reels.	Capable of Compliance
E1.5	Sprinklers	Assuming the carpark can comply with the open deck carpark requirements then no sprinklers are required	Note
E1.6	Portable fire extinguishers	Portable fire extinguishers to cover buildings where not protected by fire hose reels and in accordance with table E1.6	Note
E1.9	Fire precautions during construction	In a building under construction— (a) not less than one fire extinguisher to suit Class A, B and C fires and electrical fires must be provided at all times on each storey adjacent to each required exit or temporary stairway or exit; and (b) after the building has reached an effective height of 12 m— (i) the required fire hydrants and fire hose reels must be operational in at least every storey that is covered by the roof or the floor structure above, except the 2 uppermost storeys; and (ii) any required booster connections must be installed.	Note

152 Smoke Hazard Management (Part E2)

BCA Clause	Title	Assessment & Comment	Status
E2.2	General requirements	The following smoke hazard management systems are required: 1) Automatic smoke exhaust system	Capable of Compliance
E2.3	Provision for special hazards	Additional smoke hazard management measures may be necessary due to the— (a) special characteristics of the building; or (b) special function or use of the building; or (c) special type or quantity of materials stored, displayed or used in a building; or (d) special mix of classifications within a building or fire compartment, which are not addressed in Tables E2.2a and E2.2b.	Note

153 Lift Installations (Part E3)

BCA Clause	Title	Assessment & Comment	Status
E3.1	Lift installations	An electric passenger lift installation and an electrohydraulic passenger lift installation must comply with Specification E3.1.	Note
E3.3	Warning against the use of lifts in fire	A warning sign must— (a) be displayed where it can be readily seen— (i) near every call button for a passenger lift or group of lifts throughout a building; except (ii) a small lift such as a dumb-waiter or the like that is for the transport of goods only; and (b) comply with the details and dimensions of Figure E3.3 and consist of— (i) incised, inlaid or embossed letters on a metal, wood, plastic or similar plate securely and permanently attached to the wall; or (ii) letters incised or inlaid directly into the surface of the material forming the wall.	Note
E3.5	Landings	Access and egress to and from liftwell landings must comply with the Deemed-to-Satisfy Provisions of Section D.	Note
E3.6	Passenger lifts	In an accessible building, every passenger lift must— (a) be one of the types identified in Table E3.6a, subject to the limitations on use specified in the Table; and (b) have accessible features in accordance with Table E3.6b; and (c) not rely on a constant pressure device for its operation if the lift car is fully enclosed.	Note

154 Visibility in Emergency, Exit Signs & Warning Systems (Part E4)

BCA Clause	Title	Assessment & Comment	Status
E4.2	Emergency lighting requirements	To be designed and installed in accordance with AS2293.1 – provide form 15 design certificate and relevant drawings from consultant	Capable of Compliance
E4.3	Measurement of distance	To be designed and installed in accordance with AS2293.1 – provide form 15 design certificate and relevant drawings from consultant Distances, other than vertical rise, must be measured along the shortest path of travel whether by straight lines, curves or a combination of both.	Capable of Compliance
E4.4	Design and operation of emergency lighting	To be designed and installed in accordance with AS2293.1 – provide form 15 design certificate and relevant drawings from consultant	Capable of Compliance
E4.5	Exit signs	An exit sign must be clearly visible to persons approaching the exit, and must be installed on, above or adjacent to each— (a) door providing direct egress from a storey to— (i) an enclosed stairway, passageway or ramp serving as a required exit; and (ii) an external stairway, passageway or ramp serving as a required exit; and (iii) an external access balcony leading to a required exit; and (b) door from an enclosed stairway, passageway or ramp at every level of discharge to a road or open space; and (c) horizontal exit; and (d) door serving as, or forming part of, a required exit in a storey required to be provided with emergency lighting in accordance with E4.2.	Capable of Compliance
E4.6	Direction signs	If an exit is not readily apparent to persons occupying or visiting the building then exit signs must be installed in appropriate positions in corridors, hallways, lobbies, and the like, indicating the direction to a required exit.	Capable of Compliance
E4.8	Design & Operation of exit signs	Every required exit sign must comply with— (a) AS/NZS 2293.1; or (b) for a photoluminescent exit sign, Specification E4.8; and be clearly visible at all times when the building is occupied by any person having the right of legal entry to the building. To be designed and installed in accordance with AS2293.1 – provide form 15 design certificate and relevant drawings from consultant	Capable of Compliance

16 Health & Amenity (BCA Part F)

16.1 Damp & Weatherproofing (Part F1)

BCA Clause	Title	Assessment & Comment	Status
F1.1	Stormwater drainage	Stormwater drainage must comply with AS/NZS 3500.3. Please provide a Form 15 design certificate and relevant plans for stormwater drainage. <i>Note: If a siphonic system is proposed this will need to be justified by way of alternative design solution</i>	Capable of Compliance
F1.4	External above ground membranes	Waterproofing membranes for external above ground use must comply with AS 4654 Parts 1 & 2	Note
F1.5	Roof coverings	A roof to be covered in accordance with AS 2049, AS2050 or AS1562	Note
F1.6	Sarking	Sarking-type materials used for weatherproofing or roofs and walls must comply with AS/NZS 4200 Parts 1 & 2	Note
F1.7	Waterproofing in wet areas	Building elements in wet areas of Class 2 parts and class 5/6 parts to be waterproofed in accordance with AS 3740 and table F1.7	Note
F1.9	Damp-proofing	(a) Except for a building covered by (c), moisture from the ground must be prevented from reaching— (i) the lowest floor timbers and the walls above the lowest floor joists; and (ii) the walls above the damp-proof course; and (iii) the underside of a suspended floor constructed of a material other than timber, and the supporting beams or girders. Note requirements MCC would suggest that the Car park areas are considered.	Note
F1.10	Damp-proofing of floors on the ground	If a floor of a room is laid on the ground or on fill, moisture from the ground must be prevented from reaching the upper surface of the floor and adjacent walls by the insertion of a vapour barrier in accordance with AS 2870.	Note
F1.13	Glazed assemblies	Glazed assemblies to AS2047	Note

162 Sanitary & Other Facilities (Part F2)

BCA Clause	Title	Assessment & Comment	Status
F2.1	Facilities in residential buildings	Note: details for facilities in class 2,3,4 & 9c buildings	Note
F2.2	Calculation of number of occupants & facilities	<p>(a) The number of persons accommodated must be calculated according to D1.13 if it cannot be more accurately determined by other means.</p> <p>(b) Unless the premises are used predominantly by one sex, sanitary facilities must be provided on the basis of equal numbers of males and females.</p> <p>(c) In calculating the number of sanitary facilities to be provided under F2.1 and F2.3, a unisex facility required for people with a disability (other than a facility provided under F2.9) may be counted once for each sex.</p> <p>(d) For the purposes of this Part, a unisex facility comprises one closet pan, one washbasin and means for the disposal of sanitary products.</p>	Note
F2.4	Accessible sanitary facilities	WC and other facilities for people with disabilities to comply with AS1428.1	Note
F2.5	Construction of sanitary compartments	<p>Doors to fully enclosed sanitary compartments to open outwards, slide, or be readily removable from the outside unless a 1.2m clear space within the compartment and closet pan is not provided</p> <p>Note it is a requirement of AS1428.1 that doors be readily removable from the outside.</p>	Note

163 Room Heights (Part F3)

BCA Clause	Title	Assessment & Comment	Status
F3.1	Height of rooms & other spaces	<p>a) The ceiling heights must not be less than:</p> <p>Class 5/6 generally 2.4m habitable areas 2.1 in corridors and the like</p> <p>Class 9b classroom or assembly building 2.4m <100 persons</p> <p>Theatre, public hall or other assembly building 2.7m >100 persons</p> <p>A corridor 2.4m <100 persons – 2.7m >100 persons</p>	Note

164 Light & Ventilation (Part F4)

BCA Clause	Title	Assessment & Comment	Status
F4.5	Ventilation of rooms	A habitable room, office, shop, factory, workroom, sanitary compartment, bathroom, shower room, laundry and any other room occupied by a person for any purpose must have- <ul style="list-style-type: none"> a) natural ventilation comply with F4.5; or b) a mechanical ventilation or air-conditioning system complying with AS 1668.2 and AS/NZS 3666.1 	Note
F4.6	Natural ventilation	5 % of the floor area of the room	Note
F4.12	Kitchen local exhaust ventilation	A commercial kitchen must be provided with a kitchen exhaust hood complying with AS/NZS 1668.1 & AS 1668.2 where- <ul style="list-style-type: none"> a) any cooking apparatus has- <ul style="list-style-type: none"> (i) a total maximum electrical power input exceeding 8 kW; or (ii) a total gas input exceeding 29 MJ/h; or b) the total maximum power input to more than one apparatus exceeds- <ul style="list-style-type: none"> (i) 0.5 kW electrical power; or (ii) 1.8 MJ gas, per m ² of floor area of the room or enclosure	Note

17 Energy Efficiency (BCA Part J) – BCA 2019 Provisions.

17.1 Parts J0 – J8 (Part J0 – J8)

BCA Clause	Title	Assessment & Comment	Status
J0	Energy Efficiency	Please provide an Energy Efficiency Report and Form 15 Design Certificate from an Energy Consultant confirming Compliance with Parts J0-J8	Capable of Compliance
J1	Building Fabric	Please provide an Energy Efficiency Report and Form 15 Design Certificate from an Energy Consultant confirming Compliance with Parts J0-J8	Capable of Compliance
J3	Building Sealing	Please provide an Energy Efficiency Report and Form 15 Design Certificate from an Energy Consultant confirming Compliance with Parts J0-J8	Capable of Compliance
J5	Air-conditioning & Ventilation Systems	Please provide an Energy Efficiency Report and Form 15 Design Certificate from an Energy Consultant confirming Compliance with Parts J0-J8	Capable of Compliance
J6	Artificial Lighting & Power	Please provide an Energy Efficiency Report and Form 15 Design Certificate from an Energy Consultant confirming Compliance with Parts J0-J8	Capable of Compliance
J7	Heated Water Supply, Swimming Pool & Spa Pool Plant	Please provide an Energy Efficiency Report and Form 15 Design Certificate from an Energy Consultant confirming Compliance with Parts J0-J8	Capable of Compliance
J8	Facilities for Energy Monitoring	Please provide an Energy Efficiency Report and Form 15 Design Certificate from an Energy Consultant confirming Compliance with Parts J0-J8	Capable of Compliance

19 Appendix 1 – Required Fire Resistance Levels

19.1 Type A Construction

Building element	Class 2, 3 or 4 part	Class 5, 7a or 9	Class 6	Class 7b or 8
EXTERNAL WALL (including any column and other building element incorporated therein) or other external building element, where the distance from any <i>fire-source feature</i> 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 <i>external wall</i> ,				
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—				
<i>Fire-resisting lift and stair shafts—</i>				
<i>Loadbearing</i>	90/ 90/ 90	120/120/120	180/120/120	240/120/120
<i>Non-loadbearing</i>	-/ 90/ 90	-/120/120	-/120/120	-/120/120
Bounding <i>public corridors</i> , public lobbies and the like—				
<i>Loadbearing</i>	90/90/90	120/-/-	180/-/-	240/-/-
<i>Non-loadbearing</i>	-/ 60/ 60	-/-/-	-/-/-	-/-/-
Between or bounding <i>sole-occupancy units—</i>				
<i>Loadbearing</i>	90/90/90	120/-/-	180/-/-	240/-/-
<i>Non-loadbearing</i>	-/ 60/ 60	-/-/-	-/-/-	-/-/-
Ventilating, pipe, garbage, and like <i>shafts</i> not used for the discharge of hot products of combustion—				
<i>Loadbearing</i>	90/ 90/ 90	120/ 90/ 90	180/120/120	240/120/120
<i>Non-loadbearing</i>	-/ 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

19.2 Open Deck carpark Requirements

Open-deck carpark means a carpark in which all parts of the parking storeys are cross-ventilated by permanent unobstructed openings in not fewer than 2 opposite or approximately opposite sides, and—

- (a) each side that provides ventilation is not less than 1/6 of the area of any other side; and
- (b) the openings are not less than 1/2 of the wall area of the side concerned.

Open space means a space on the allotment, or a roof or similar part of a building a

Table 3.9 Requirements for carparks

Building element		FRL (not less than) <i>Structural</i>
Wall		
(a)	<i>external wall</i>	
	(i) less than 3 m from a <i>fire-source feature</i> to which it is exposed:	
	<i>Loadbearing</i>	60/60/60
	<i>Non-loadbearing</i>	—/60/60
	(ii) 3 m or more from a <i>fire-source feature</i> to which it is exposed	—/—/—
(b)	<i>internal wall</i>	
	(i) <i>loadbearing</i> , other than one supporting only the roof (not used for carparking)	60/—/—
	(ii) supporting only the roof (not used for carparking)	—/—/—
	(iii) <i>non-loadbearing</i>	—/—/—
(c)	<i>fire wall</i>	
	(i) from the direction used as a <i>carpark</i>	60/60/60
	(ii) from the direction not used as a <i>carpark</i>	as required by Table 3
Column		
(a)	supporting only the roof (not used for carparking) and 3 m or more from a <i>fire-source feature</i> to which it is exposed	—/—/—
(b)	steel column, other than one covered by (a) and one that does not support a part of a building that is not used as a <i>carpark</i>	60/—/— or 26 m ² /tonne
(c)	any other column not covered by (a) or (b)	60/—/—
Beam		
(a)	steel floor beam in continuous contact with a concrete floor slab	60/—/— or 30 m ² /tonne
(b)	any other beam	60/—/—
Fire-resisting lift and stair shaft (within the <i>carpark</i> only)		60/60/60
Floor slab and vehicle ramp		60/60/60
Roof (not used for carparking)		—/—/—

20 Appendix 2 - Slip Resistance Classification

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

21 Appendix 3 - Stair Construction – Including Fire Isolated Stairs

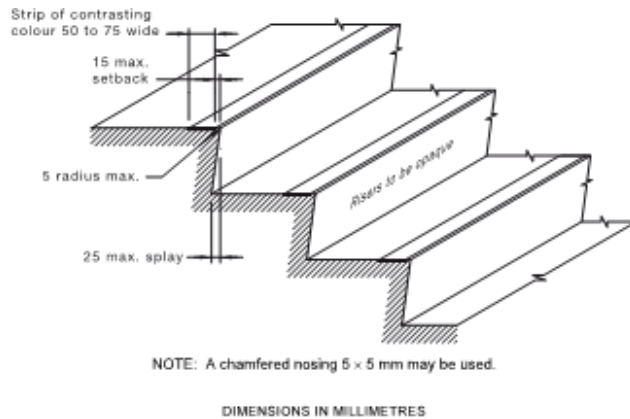


FIGURE 27(A) A TYPICAL STAIR NOSING PROFILE WITH NOSING STRIP

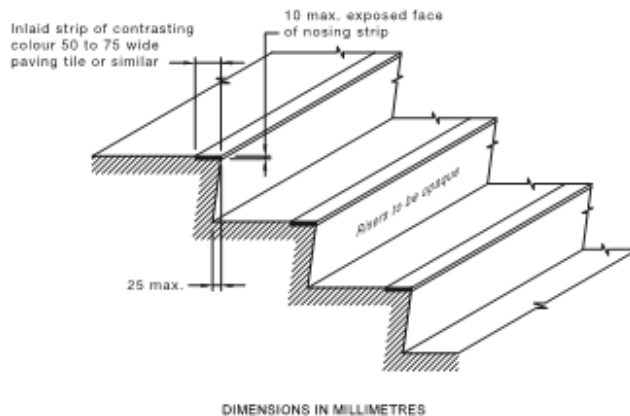


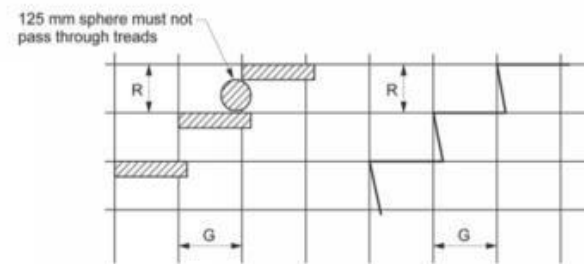
Table D2.13 Riser and going dimensions

Stairway location	Riser (R)	Going (G) ^{Note 3}	Quantity (2R+G)
Public:	Max: 190 mm Min: 115 mm	Max: 355 mm Min: 250 mm	Max: 700 mm Min: 550 mm
Private ^{Note 1}	Max: 190 mm Min: 115 mm	Max: 355 mm Min: 240 mm	Max: 700 mm Min: 550 mm

Notes to Table D2.13:

1. Private stairways are—
 - a. stairways in a *sole-occupancy unit* in a Class 2 building or Class 4 part of a building; and
 - b. in any building, stairways which are not part of a *required exit* and to which the public do not normally have access.
2. *Going* and *riser* dimensions must be measured in accordance with Figure D2.13.
3. The *going* in tapered treads (except *winders* in lieu of a quarter or half landing) in a curved or spiral stairway is measured—
 - a. 270 mm in from the outer side of the unobstructed width of the stairway if the stairway is less than 1 m wide (applicable to a *non-required* stairway only); and
 - b. 270 mm from each side of the unobstructed width of the stairway if the stairway is 1 m wide or more.

Figure D2.13 Riser and going dimensions



23 Appendix 5 – Exit Width Calculations

	Insert Population	Choose type of egress	Insert existing/proposed dimension		
Level	Population		Proposed Dimension of Exits	Required Dimensions of Exits	Shortfall
Level G	742	Dimensions of Exits (Standard)		8 6.00 m	-6.00 m
Level 1	215	Dimensions of Exits (Standard)		1 2.50 m	-2.50 m