



BCA Assessment Report

Balgowlah King Living



Project:	Balgowlah King Living
Reference No:	115853-BCA-r1
Date:	25 October 2022
Client:	King Living
Client Contact:	David Dent
Email:	David@centricarchitects.com.au
BCA Logic Contact:	Warwick Hunter
Direct:	8484 4036
Email:	Warwick.hunter@jensenhughes.com

Document Control

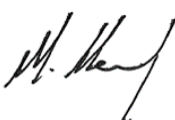
Revision	Date	Description	
115853-BCA-r1	25 October 2022	BCA Assessment Report (Design Stage)	
		Prepared by	Verified by
		Warwick Hunter	Warwick Hunter
		Registered Certifier Grade A1, No. BDC 2417 Building Regulations Consultant	Registered Certifier Grade A1, No. BDC 0208 Building Regulations Consultant
			

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EXECUTIVE SUMMARY

This document provides an assessment of the architectural design drawings for the proposed retail building development at Balgowlah King Living, against the Deemed-to-Satisfy provisions of the Building Code of Australia (BCA) 2019, Volume 1 Amendment 1.

Part 3 'Matters for Further Consideration' of this report outlines the identified BCA compliance issues that require further information or consideration and/or assessment as Performance Solutions.

Any Performance Solution will need to be detailed in a separate report and must clearly indicate methodologies for achieving compliance with the relevant BCA Performance Requirements.

Item	Description	BCA Provision
Fire Engineered Performance Solutions Required		
1.	Openings to driveway are exposed to the southern boundary and are not protected	BCA Clause C3.2
2.	Escalators to be used for egress to upper level. an escalator is not defined as an exit.	BCA Clause D1.4
3.	Exit travel distance from ground floor rear carpark relies upon re-entry to the building via travel along driveway and results in a travel distance in excess of 40 metres. (73 metres).	BCA Clause D1.4
4.	Distance between alternative exits at ground floor level exceeds 60 metres (80 metres between front entrance of open space via driveway)	BCA Clause D1.5
5.	To permit discharge of fire isolated stair to within the building whereby the driveway is not open for at least 2/3rds of its perimeter.	BCA Clause D1.7
6.	Fire hydrant is not to be protected with FRL90/90/90 fire rated wall. Instead the fire hydrant will be located 90 degrees to the street and exposed to the driveway.	BCA Clause E1.3
Non-Fire Engineered Performance Solutions Required		
7.	The construction of external walls is such that they will prevent the penetration of water that could cause unhealthy or dangerous conditions or loss of amenity to occupants and undue dampness or deterioration of building elements.	No DtS Provisions – FP1.4 Performance Provisions Only
Further Information Required		
1.	Provide an additional exit/ break out door to the rear of the showroom. This is needed due to extended exit travel distance to ground floor showroom. Note: the provision of the break out door addresses exit travel distance non-compliance but triggers a separate performance solution due to distance between alternative exits being greater than 60m. In summary the design will need a performance solution either for extended travel within the showroom (ie 33m to a single exit) OR performance solution for distance between alternative exits (ie 80 metres) This can be firmed up at Construction Certificate stage depending upon the preference of the fire engineer of which solution is easier to justify. and which solution better	BCA Clause E1.4

Item	Description	BCA Provision
	complements the fire compartmentation requirements to the rear doors.	
2.	Fire compartmentation provided to the rear doorway at ground floor level is proposed to ensure Type C Construction is achieved. Further details of fire shutter/curtain to be provided to demonstrate fire compartmentation is achieved.	BCA Clause C2.2
3.	The fire isolated stair shall be extended to ensure distance from the point of discharge is not more than 20 metres. The stair to be extended approximately 1m towards Condamine Street	BCA Clause D1.7

1 BASIS OF ASSESSMENT

1.1. Location and Description

The building development, the subject of this report, is located at Balgowlah King Living. The proposed works involve the demolition of existing building and construction of a new two storey furniture sales building with central atrium between storeys.

The building is open plan with two escalators serving first floor level. The first floor level is split level with small stairs connecting levels.

The building has a driveway located to the southern end of the building connected to carparking at the rear of the building.



Perspective courtesy of Centric Architects

1.2. Purpose

The purpose of this report is to assess the current design proposal against the Deemed-to-Satisfy Provisions of BCA 2019, Amendment 1, and to clearly outline those areas (if any) where compliance is not achieved, where areas may warrant redesign to achieve strict BCA compliance or where areas may be able to be assessed against the relevant performance criteria of BCA 2019. Such assessment against relevant performance criteria will need to be addressed by means of a separate Performance Based Fire Safety Engineered Assessment Report to be prepared under separate cover.

1.3. Building Code of Australia

This report is based on the Deemed-to-Satisfy Provisions of the National Construction Code Series Volume 1 – Building Code of Australia, 2019, Amendment 1 (BCA) incorporating the Victorian State variations where applicable. Please note that the version of the BCA applicable to new building works is the version applicable at the time of the lodgement of the Construction Certificate application to the Accredited Certifying Authority. The BCA is updated generally on a three-yearly cycle, starting from the 1st of May 2016.

1.4. Limitations

This report does not include nor imply any detailed assessment for design, compliance or upgrading for:

- (a) the structural adequacy or design of the building;
- (b) the inherent derived fire-resistance ratings of any proposed structural elements of the building (unless specifically referred to); and

- (c) the design basis and/or operating capabilities of any proposed electrical, mechanical or hydraulic fire protection services.

This report does not include, or imply compliance with:

- (a) the National Construction Code – Plumbing Code of Australia Volume 3
- (b) the Disability Discrimination Act 1992 including the Disability ((Access to Premises – Buildings) Standards 2010 – unless specifically referred to)
- (c) The deemed to satisfy provisions of Part D3 and F2.4 of BCA2019;
- (d) Demolition Standards not referred to by the BCA;
- (e) Work Health and Safety Act 2011;
- (f) Requirements of Australian Standards unless specifically referred to;
- (g) Requirements of other Regulatory Authorities including, but not limited to, Telstra, Telecommunications Supply Authority, Water Supply Authority, Electricity Supply Authority, Work Cover, Roads and Maritime Services (RMS), Local Council, ARTC, Department of Planning and the like; and
- (h) Conditions of Development Consent issued by the Local Consent Authority.

1.5. Design Documentation

This report has been based on the Design plans and Specifications listed in Annexure A of this Report.

2 BUILDING DESCRIPTION

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

2.1. Rise in Storeys (Clause C1.2)

The building has a rise in storeys of two (2).

Note: the upper split level is deemed to be a single storey

2.2. Classification (Clause A6.0)

The building has been classified as follows.

Table 1. Building Classification

Class	Level	Description
Class 6	Ground, First floor	Retail showroom
Class 7a	Ground floor	Carpark

2.3. Effective Height (Clause A1.0)

The building has an *effective height* of less than 12 metres (RL17,200 – RL10,900 = 7.3m)

2.4. Type of Construction Required (Table C1.1)

The building is required to be of Type C Construction.

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

The building is subject to maximum floor area and volume limits of:-

Class 6/7a	Maximum Floor Area	2 000 m ²
	Maximum Volume	12 000 m ³

2.6. Fire Compartments

The building is separated into three (3) fire compartments.

• FIRE COMPARTMENT No1: 01 + 04	1,903.48 m ² 10,008.20 m ³	<2,000 m ² <12,000 m ³
• FIRE COMPARTMENT No2: 02 + 05	508.71 m ² 2,314.18 m ³	<2,000 m ² <12,000 m ³
• FIRE COMPARTMENT No3: 03+06	24.70 m ² 109.94 m ³	<2,000 m ² <12,000 m ³

2.7. Exits

The following points in the building have been considered as the exits:

Ground Floor

The entry/exit sliding door to front entrance

Open space at the front of the driveway leading to Condamine Street

First level

- (a) The fire isolated stair
- (b) The top riser of both escalators (as permitted by proposed fire engineering report).

2.8. Climate Zone (Clause A1.0)

- (c) The building is located within Climate Zone 7
- (d)

2.9. Location of Fire-source features

The fire source features for the subject development are:

North: The side boundary

South: The side boundary

East: The rear boundary

West: The far side of Condamine Street

In accordance with Clause 2.1 of Specification C1.1, a part of a building element is exposed to a *fire-source feature* if any of the horizontal straight lines between that part and the fire-source feature, or vertical projection of the feature, is not obstructed by another part of the building that–

- (a) has an FRL of not less than 30/–/–; and
- (b) is neither transparent nor translucent.

3 BCA ASSESSMENT

3.1. Introduction

The assessment undertaken is in relation to the plans prepared for the development consent application. The technical details required for a development consent are far less than that required for a construction certificate and as such, this assessment is designed to address a higher-level assessment of the building against the provisions of the BCA.

The main purpose of this report is to address any major design changes required to the building, services required to be installed, and the fundamentals of design required by sections C, D, E, F, G and H (where applicable) of the BCA. This report does not address the design requirements for the structure of the building (Section B), or for the detailed design of services (Section E).

The summary below is to be read in conjunction with the BCA specification contained in Annexure E of the report.

3.2. Fire Resistance and Stability – Part C1 & Specification C1.1

The required fire resistance levels for the building elements are outlined in **Annexure C** of this report.

The building contains solely Class 6 throughout. With Class 7a carpark at the rear of the site. In accordance with BCA Clause C1.1, as the building development contains two (2) storeys and the split level at first floor level being deemed to be a single storey, the building is deemed to be Type C Construction.

Furthermore, as the floor area and volume of the largest fire compartment across ground and first floor being less than 2000m² & 12,000m³ the building is required to be Type C Construction.

External walls require FRL 90/90/90 (external) where located within 3 metres to the boundary in accordance with Specification C1.1. For an approval stage assessment of the construction of the proposed development, there are not enough details available to confirm compliance and is to be further assessed at Construction Certificate stage with design development.

As Type C Construction there are no non-combustibility requirements applicable in accordance with BCA Clause C1.9 and therefore, the vertical green wall construction proposed is permitted.

Subject to the required FRL's being provided for a building of Type C Construction, the proposed building is capable of complying with the requirements of the BCA with respect to fire resistance.

3.3. Compartmentation and Separation – Part C2

The building development has been assessed and it has been determined that the floor area of the Class 6 "part" of the building is less than 2000m² (1903m²) and volume is less than 12,000m³ (19,008m³) therefore, the building is permitted to be Type C Construction. This correlates with the smoke hazard management requirements of Clause E2.2 whereby smoke exhaust is not necessary to the building.

Compliance with Part C2 of the BCA can be readily achieved by the proposal.

3.4. Protection of Openings – Part C3

3.4.1. Openings in external walls

The building is located against the northern and southern boundaries.

North Elevation

To the window and door openings located within 3 metres of the northern boundary it is possible to protect with wall wetting drenchers to fixed glazing and a fire door to the ground floor waste room.

South Elevation

Similarly for openings located within 3 metres of the southern boundary wall wetting drenchers can be applied to fixed windows to upper levels, however, at ground floor level the driveway openings are considered openings requiring protection in accordance with BCA Clause C3.2. A fire engineered performance solution will be required to permit the driveway openings to remain unprotected. The driveway is a non-combustible zone in which fire would not spread.

Where proposed, details of drenchers to be provided at Construction Certificate stage to ensure drenchers provide sufficient coverage / protection for entirety of exposed opening, and designed / constructed complying with BCA Clause C3.4.

Compliance in accordance with Part C3 of the Building Code of Australia is assumed to be readily achievable at this stage.

3.4.2. Openings in Floors for Services and Service Installations

To external walls and fire rated elements, electrical, plumbing, mechanical or other services pass through an element of construction that is required to achieve a fire resistance level (FRL), the service installation shall not compromise the fire resistance level of the element. As such, the service installation must be fire sealed with a compliant system such as fire collar on PVC pipes or fire rated mastic on electrical cables.

3.5. Occupant Access and Egress – Section D

3.5.1. Egress from the building – Part D1

Egress from the retail building is required in sufficient numbers and location to ensure that no point on the floor is more than 20m from an exit, or a point of choice of two exits, in which case the distance to one of those exits is not more than 40m, as required by clause D1.4 of the BCA. On the ground floor, the distance to a single exit is permitted to be 30m. However, due to travel more than 30m it is necessary for a second exit via the rear carpark and driveway to Condamine Street.

Ground Floor

Exit travel to the ground floor level requires an alternative egress path of travel to the rear carpark and via the driveway to Condamine Street. The distance between alternative exits exceeds 60 metres (80 metres) and will require a fire engineered performance solution.

Exit travel distance from the rear carpark relies upon egress via the driveway to Condamine Street. This is due to a fire shutter being provided across the rear showroom doors for fire compartmentation purposes. The exit travel distance is up to 75m to Condamine Street. However, the carpark is considered to be open space with re-entry through the building via the driveway which is similar to a fire isolated passageway.

A fire engineered performance solution will be needed at Construction Certificate stage.

First Floor

The upper floor is split level however, is considered to be a single storey therefore, the small stairs are not considered exits. This level is served by a fire isolated exit stair and two (2) escalators.

An escalator is not defined as an exit by the BCA2019 and therefore, egress via escalators will need to be subject of a fire engineered performance solution at Construction Certificate stage.

The fire isolated stair serving first floor level discharges to the ground floor level driveway and the exit travel distance to the street is greater than 20 metres (20.5 metres)

Details of treads and risers, landings, thresholds, balustrades and handrails have not been provided however compliance is readily achievable. The design of these elements can be assessed at the CC stage.

Electrical distribution cupboards are to be provided with smoke separation to satisfy the requirements of BCA D2.7. The doors are to be lined internally with fire grade plasterboard or metal backing sheets and

smoke seals provided to all four sides, including drop down seals on the bottom. All penetrations from the enclosure are to be suitable sealed against smoke spread by sealing with fire mastic.

3.5.2. Access for people with disabilities – Part D3

Access to be assessed in separate report.

3.6. Services and Equipment- Part E

The building is required to be provided with the services and equipment set out in Annexure B of this report. The annexure also outlines the standard of performance to be achieved by the services and equipment.

3.6.1. Fire Fighting Equipment – Part E1

Fire Hydrant

The building development is deemed a single fire compartment and contains a total floor size exceeding 500m². As a result, the subject development is required to be served by a fire hydrant system complying with BCA Clause E1.3.

It is proposed to install a fire hydrant booster to the southern elevation of the development at 90 degrees to the street and exposed to the building whereby no FRL90/90/90 construction is provided. Due to the lack of fire exposure from the driveway zone it is necessary to obtain a fire engineered performance solution at Construction Certificate stage.

Fire Hose Reels

The building development is required to be provided with fire hose reels to serve the Class 6 showroom in accordance with BCA Clause E1.4 and it is assumed that compliance can be readily achieved with fire hose reels located within 4m of exits in accordance with AS2441-2005 subject to further design development at Construction Certificate stage.

3.6.2. Smoke Hazard Management – Part E2

The building development does not require a smoke detection system in accordance with BCA Clause E2.2a due to the proposed development containing a Class 6 "part" not exceeding 2000m² and having a floor area of 1924m².

However, it is likely that a smoke hazard management system will be required by the fire engineered performance solution report which addresses numerous exit travel deviations from the Deemed to Satisfy Provisions. This will need to be further assessed and co-ordinated at Construction Certificate stage.

3.6.3. Lift Installations – Part E3

A single passenger lift is proposed to serve the first floor level showroom. As the lift connects two storeys it is not required to be within a fire rated shaft in accordance with BCA Clause C2.10/C3.10.

The lift will require signage in accordance with Clause E3.3 and have accessible features in accordance with BCA Clause/Table E3.6.

The lift is required to have minimum lift car dimensions of 1100x1400mm which appears to be achieved by the proposed lift shaft.

3.7. Health and Amenity – Part F

The building is required to be provided with health and amenity provisions which are designed and constructed in accordance with Part F and as set out in Annexure B of the report. As the development contains solely Class 6 parts (and ancillary class 7a carparking), the requirements under Part F5 (acoustic) and Part F6 (condensation) are not applicable to this building development.

3.7.1. Damp and weatherproofing – Part F1

There are not enough details available at this stage to confirm if design and construction meeting damp and weatherproofing requirements of Part F1 are readily compliant. However, it is assumed compliance can be readily achieved subject to further design development at Construction Certificate stage.

3.7.2. Facilities in Class 3 to 9 buildings – Part F2

The number of facilities required have been calculated in accordance with Clause F2.2 and D1.3.

Based upon an assessment of the floor plans, the sanitary facilities provided to the building can serve up to 40 employees calculated in accordance with Table F2.3 for a Class 6 building.

As a result, the number of toilet facilities shown on the plans are sufficient to satisfy the requirements of Clause F2.3 as there will not likely be more than 10 staff to the showroom.

3.8. Room Heights – Part F3

Based on available floor plans, the ceiling heights have been assessed and measured to be in accordance with Part F3 of the BCA and as a result indicated that compliance is readily achievable within all habitable spaces, corridors and the like due to heights of at least 2400mm being indicated.

3.9. Light and Ventilation – Part F4

As the internal portions of the building are solely Class 6, artificial lighting and mechanical ventilation are required, although such details are not readily available at this stage for assessment, it is assumed these systems can be readily installed in the building and compliance can be readily achieved.

4 STATEMENT OF COMPLIANCE

The plans assessed were developed to a standard suitable for submission as a development application and do not contain all the details necessary to allow a Building Permit to be issued. As such, this assessment was limited to the major items of the BCA with the view of identifying any items that may result in a modified development consent being required, or additional key items that need to be included in the design.

The architectural design documentation as referred to in report has been assessed against the applicable provisions of the Building Code of Australia, (BCA) and it is considered that such documentation complies or is capable of complying with that Code.

ANNEXURE A

DESIGN DOCUMENTATION

Annexure A – Design Documentation

This report has been based on the following design documentation.

Table 3. Architectural Plans

Architectural Plans Prepared by Centric Architects			
Drawing Number	Revision	Date	Title
0000	J	30/09/2022	COVER PAGE
0001	B	30/09/2022	SITE ANALYSIS PLAN
0002	C	30/09/2022	NEIGHBOURING SITES
0003	G	30/09/2022	3D IMAGES
0004	B	30/09/2022	HEIGHT CONTROL ISSUE
2000	A	30/09/2022	SITE PLAN
3000	A	30/09/2022	EXISTING & DEMOLITION PLAN
3100	B	30/09/2022	SUB-FLOOR UNDERCROFT PLAN
4000	H	30/09/2022	PROPOSED PLAN - LEVEL 1
4001	I	30/09/2022	PROPOSED PLAN - LEVEL 2
4002	C	30/09/2022	ROOF PLAN
5000	I	30/09/2022	EXTERNAL ELEVATIONS
5001	H	30/09/2022	EXTERNAL ELEVATIONS
6000	H	30/09/2022	SECTIONS
6001	C	30/09/2022	SECTIONS

ANNEXURE B

ESSENTIAL SERVICES

Annexure B - Essential Services

The following fire safety measures are required to be installed in the building. The following table may be required to be updated as the design develops and options for compliance are confirmed.

Table 4. Essential Fire Safety Measures

Item	Essential Fire and Other Safety Measures	Standard of Performance
Fire Resistance (Floors – Walls – Doors – Shafts)		
1.	Fire seals protecting openings in fire resisting components of the building	BCA2019 C3.15 (Openings for service installations) AS1530.4:2014 & AS4072.1-2005
2.	Protection of openings	BCA2019 C3.2/C3.4 (Acceptable methods of protection) Proposed fire engineering report
3.	Wall construction	Proposed fire engineering report
General		
4.	Portable fire extinguishers	BCA2019 E1.6 AS 2444–2001
General Egress		
5.	Operation of Door latches > Failsafe	D2.21 (Operation of Latch) AS 1670.1:2018
6.	Warning & operational signs	BCA2019 D3.6 (Braille Exit Signs) (Note: E4.5 (Exit Signs)) BCA2019 E3.3 (Lift Signs)
7.	Paths of travel	Proposed fire engineering report
Lifts		
8.	Access to Lift Pits > Located at lowest level or if >3m provided through an access door	BCA2019 D1.17 (Access to Lift Pits) 'DANGER LIFT WELL – ENTRY OF UNAUTHORISED PERSONS PROHIBITED – KEEP CLEAR AT ALL TIMES'
Electrical Services		
9.	Smoke detection and alarm system	Proposed fire engineering report
10.	Automatic fail-safe devices	BCA2019 D2.21 (Operation of Latches) AS1670.1:2018 (Fire)
11.	Emergency lighting	BCA2019 E4.2, E4.4 AS/NZS 2293.1:2018

Item	Essential Fire and Other Safety Measures	Standard of Performance
12.	Exit signs	BCA2019 E4.5 (Exit Signs) BCA2019 E4.6 (Direction Signs) BCA2019 E4.8 (Design and Operation - Exits) AS/NZS 2293.1:2018
Hydraulic Services		
13.	Fire hydrant systems	BCA2019 E1.3 AS 2419.1:2005 Proposed fire engineering report
14.	Hose reel systems	BCA2019 E1.4 AS 2441:2005
15.	Wall-wetting sprinkler / drenchers (Where required)	BCA2019 C3.4 AS 2118.2: Wall-wetting sprinkler / drenchers

ANNEXURE C

FIRE RESISTANCE LEVELS

Annexure C - Fire Resistance Levels

The following fire resistance levels (FRL's) are required for the various building elements, with a fire source feature being the far boundary of a road adjoining the allotment, a side or rear boundary or an external wall of another building on the allotment except a Class 10 structure.

Type C Construction

Table 5. Type C Construction

Item	Class 6
External Walls	
- Less than 1.5m to a fire-source feature	90/90/90
- 1.5 – less 3m from fire-source feature	60/60/60
- 3m or more from a fire-source feature	-/-/-
External Column not incorporated in an external wall	
- Less than 1.5m to a fire source feature	90/-/-
- 1.5 – less 3m from fire source feature;	60/-/-
- 3m or more from a fire source feature	-/-/-
Common Walls and Fire Walls	90/90/90
Internal walls bounding sole occupancy units	-/-/-
Internal walls bounding public corridors, hallways and the like	-/-/-
Internal walls bounding a stair if required to be fire rated	60/60/60

Note: An external wall that is required to have an *FRL* need only be tested from the outside to satisfy the *FRL* requirement.

ANNEXURE D

DEFINITIONS

Annexure D - Definitions

Average specific extinction area

Average specific extinction area means the average specific extinction area for smoke as determined by AS 5637.1:2015.

Critical radiant flux

Critical radiant flux (CRF) means the critical heat flux at extinguishment (CHF in kW/m²) as determined by AS ISO 9239.1:2003.

Designated bushfire prone area

Designated bushfire prone area means land which has been designated under a power of legislation as being subject, or likely to be subject, to bushfires.

Effective height

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

Envelope

Envelope, for the purposes of Section J in Volume One, means the parts of a building's fabric that separate a conditioned space or habitable room from—

- (a) the exterior of the building; or
- (b) a non-conditioned space including—
 - (i) the floor of a rooftop plant room, lift-machine room or the like; and
 - (ii) the floor above a carpark or warehouse; and
 - (iii) the common wall with a carpark, warehouse or the like.

Exit

Exit means –

- (a) Any, or any combination of the following if they provide egress to a road or open space—
 - (i) An internal or external stairway.
 - (ii) A ramp.
 - (iii) A fire-isolated passageway.
 - (iv) A doorway opening to a road or open space.
 - (v) A horizontal exit or a fire-isolated passageway leading to a horizontal exit.

Fire compartment

Fire compartment means –

- (a) the total space of a building; or
- (b) when referred to in—
 - (i) the Performance Requirements — any part of a building separated from the remainder by barriers to fire such as walls and/or floors having an appropriate resistance to the spread of fire with any openings adequately protected; or

- (ii) the Deemed-to-Satisfy Provisions — any part of a building separated from the remainder by walls and/or floors each having an FRL not less than that required for a fire wall for that type of construction and where all openings in the separating construction are protected in accordance with the Deemed-to Satisfy Provisions of the relevant Part.

Fire-resistance level (FRL)

Fire-resistance level (FRL) means the grading periods in minutes determined in accordance with Specification A2.3, for the following criteria—

- (a) structural adequacy; and
 - (b) integrity; and
 - (c) insulation,
- and expressed in that order.

Note: A dash means that there is no requirement for that criterion. For example, 90/–/– means there is no requirement for an FRL for integrity and insulation, and –/–/– means there is no requirement for an FRL.

Fire-source feature

- (a) the far boundary of a road, river, lake or the like adjoining the allotment; or
- (b) a side or rear boundary of the allotment; or
- (c) an external wall of another building on the allotment which is not a Class 10 building

Fire wall

Fire wall means a wall with an appropriate resistance to the spread of fire that divides a storey or building into fire compartments.

Flammability index

Flammability Index means the index number as determined by AS 1530.2:1993.

Group number

Group number means the number of one of 4 groups of materials used in the regulation of fire hazard properties and applied to materials used as a finish, surface, lining, or attachment to a wall or ceiling.

Horizontal exit

Horizontal exit means a required doorway between 2 parts of a building separated from each other by a fire wall.

Loadbearing

Intended to resist vertical forces additional to those due to its own weight.

Non-combustible

Non-combustible means—

- (a) applied to a material — not deemed combustible as determined by AS 1530.1:1994 — Combustibility Tests for Materials; and
- (b) applied to construction or part of a building — constructed wholly of materials that are not deemed combustible

Occupiable outdoor area

Occupiable outdoor area means a space on a roof, balcony or similar part of a building—

- (a) that is open to the sky; and
- (b) to which access is provided, other than access only for maintenance; and
- (c) that is not open space or directly connected with open space.

Open space

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

Performance Requirement

Performance Requirement means a requirement which states the level of performance which a Performance Solution or Deemed-to-Satisfy Solution must meet.

Performance Solution

Performance Solution means a method of complying with the Performance Requirements other than by a Deemed-to-Satisfy Solution.

Sarking-type material

Sarking-type material means a material such as a reflective insulation or other flexible membrane of a type normally used for a purpose such as waterproofing, vapour management or thermal reflectance.

Smoke developed index

Smoke developed index means the index number for smoke as determined by AS/NZS 1530.3.

Smoke development rate

Smoke development rate means the development rate for smoke as determined by testing flooring materials in accordance with AS ISO 9239.1.

Smoke growth rate index

Smoke growth rate index (SMOGRA RC) means the index number for smoke used in the regulation of fire hazard properties and applied to materials used as a finish, surface, lining or attachment to a wall or ceiling.

Sole-occupancy unit

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 and includes—

- (a) a dwelling; or
- (b) a room or suite of rooms in a Class 3 building which includes sleeping facilities; or
- (c) a room or suite of associated rooms in a Class 5, 6, 7, 8 or 9 building; or
- (d) a room or suite of associated rooms in a Class 9c building, which includes sleeping facilities and any area for the exclusive use of a resident.

ANNEXURE E

BCA COMPLIANCE SPECIFICATION

Annexure E – BCA Compliance Specification

The following BCA matters are to be addressed by specific BCA Design Certificate to be issued by the relevant architectural, services and engineering consultants at the Construction Certificate Stage. This schedule should be forwarded to all consultants to obtain verification that these items have and will be included in the design documentation / specifications:

Architectural Design Certification

1. Materials, floor and wall linings/coverings, surface finishes and air-handling ductwork used in the works will comply with the fire hazard properties of Clause C1.10 and Specification C1.10 of BCA2019.
2. Any 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, will comply with Specification C1.11.
3. Any ancillary elements fixed, installed or attached to the internal parts or external face of an external wall that is required to be non-combustible will comply with Clause C1.14 of BCA2019.
4. Openings in the external walls that are required to have an FRL will be in located in accordance with Clause C3.2 and C3.3 of BCA2019 or protected in accordance with Clause C3.4 of BCA2019.
5. Services penetrating elements required to possess an FRL including the floor slabs, walls, shafts, etc. will be protected in accordance with Clause C3.12, C3.13 and C3.15 and Specification C3.15 of BCA2019.
6. Construction joints, spaces and the like in and between building elements required to be fire-resisting with respect to integrity and insulation will be protected in accordance with BCA Clause C3.16.
7. Columns protected by light weight construction will achieve an FRL not less than the FRL for the element it is penetrating, in accordance with Clause C3.17 of BCA2019.
8. A lintel will have the FRL required for the part of the building in which it is situated, unless it does not contribute to the support of a fire door, fire window or fire shutter, and it spans an opening in masonry which is not more than 150 mm thick and is not more than 3m wide if the masonry is non-loadbearing; or not more than 1.8m wide if the masonry is loadbearing and part of a solid wall or one of the leaves of a cavity wall, or it spans an opening in a non-loadbearing wall of the Class 2 or 3 building, in accordance with Specification C1.1 Clause 2.3 BCA2019.
9. Where proposed, Fire shutters and fire windows will be in accordance with Specification C3.4 of BCA2019.
10. Travel distances to exits will be in accordance with Clause D1.4 of BCA2019, except as modified by proposed fire engineering report.
11. The dimensions of exits and paths of travel to exits will be provided in accordance with Clause D1.6 of BCA2019.
12. Discharge from exits will be in accordance with Clause D1.10 of BCA2019.
13. Access to the lift pit will be in accordance with Clause D1.17 of BCA2019.
14. The construction of EDB's and telecommunications distribution boards will be in accordance with Clause D2.7 of BCA2019 with the enclosure bounded by non-combustible construction or fire protective covering and smoke seals provided around the perimeter of the non-combustible doors and any openings sealed with non-combustible mastic to prevent smoke spreading from the enclosure.

15. Stair geometry to the new stairways will be in accordance with Clause D2.13 of BCA2019. Stair treads are to have a surface with a slip-resistance classification complying with Table D2.14 when tested in accordance with AS 4586:2013.
16. Landings and door thresholds throughout the development will be provided in accordance with Clause D2.14 and D2.15 of BCA2019. Landings to have either a surface with a slip-resistance classification complying with Table D2.14 when tested in accordance with AS 4586:2013 or a strip at the edge of the landing with a slip-resistance classification complying with Table D2.14 when tested in accordance with AS 4586:2013 where the edge ledge to a flight below.
17. The handrails and balustrades to all stairs and throughout the building will be in accordance with Clause D2.16, and D2.17 of BCA2019.
18. The fixed platform, walkway, stairway and ladder and any associated going and riser, landing handrail, balustrade, located within the machinery room, boiler house, lift-machine room, plant-room, or non-habitable attic/storeroom within the sole occupancy unit will comply with AS 1657:2013 or Part D2 of BCA2019.
19. The doorways and doors will be in accordance with Clause D2.19 and D2.20 of BCA2019.
20. Door latching mechanisms will be in accordance with Clause D2.21 of BCA2019
21. Fire precautions whilst the building is under construction fire precautions will be in accordance with Clause E1.9 of BCA2019.
22. External above ground waterproofing membranes will comply with Clause F1.4 of BCA2019 and AS 4654 Parts 1 & 2:2012.
23. The new roof covering will be in accordance with Clause F1.5 of BCA2019.
24. Any sarking proposed will be installed in accordance with Clause F1.6 of BCA2019.
25. Waterproofing of all wet areas to the building will be carried out in accordance with Clause F1.7 of BCA2019 and AS 3740:2010.
26. Damp proofing of the proposed structure will be carried out in accordance with Clause F1.9 and F1.10 of BCA2019.
27. Sub-floor ventilation will be provided in accordance with Clause F1.12 of BCA2019.
28. All new glazing to be installed throughout the development will be in accordance with Clause F1.13 of BCA2019 and AS 1288:2006 / AS 2047:2014.
29. Ceiling heights to the new areas will be in accordance with Clause F3.1 of BCA2019.

Electrical Services Design Certification:

30. A smoke detection system will be installed throughout the building in accordance with Table E2.2a, and Specification E2.2a of BCA2019 and be connected to automatic failsafe device in accordance with BCA Clause D2.21, except as modified by fire engineering report.
31. Emergency lighting will be installed throughout the development in accordance with Clause E4.2, E4.4 of BCA2019 and AS/NZS 2293.1:2018.
32. Exit signage will be installed in accordance with Clause E4.5, E4.6 and E4.8 of BCA2019 and AS/NZS 2293.1:2018.
33. Artificial lighting will be installed throughout the development in accordance Clause F4.4 of BCA2019 and AS/NZS 1680.0:2009.
34. Lighting power and controls will be installed in accordance with Part J6 of BCA2019.
35. Electrical conductors located within the building that supply a main switchboard that sustains emergency equipment will comply with Clause C2.13 of BCA2019.

Hydraulic Services Design Certification:

36. Storm water drainage will be provided in accordance with Clause F1.1 of BCA2019 and AS/NZS 3500.3:2018
37. Fire hydrant system will be installed in accordance with Clause E1.3 of BCA2019 and AS 2419.1:2005, except as modified by fire engineering report.
38. Fire hose reels will be installed in accordance with Clause E1.4 of BCA2019 and AS 2441:2005.
39. Portable fire extinguishers will be installed in accordance with Clause E1.6 of BCA2019 and AS 2444:2001.

Mechanical Services Design Certification:

40. An air-handling system which does not form part of a smoke hazard management system will be installed in accordance with Clause E2.2 of BCA2019, and AS 1668.1:2015.
41. Where not naturally ventilated the building will be mechanically ventilated in accordance with Clause F4.5 of BCA2019 and AS 1668.2:2012.
42. Rigid and flexible ductwork will comply with the fire hazard properties set out in AS 4254 Parts 1 and 2.

Structural Engineers Design Certification:

43. The material and forms of construction for the proposed works will be in accordance with Clause B1.2, B1.4 and B1.6 of BCA2019 as follows:
 - a. Dead and Live Loads – AS/NZS 1170.1:2002
 - b. Wind Loads – AS/NZS 1170.2:2011
44. Earthquake actions – AS 1170.4:2007
45. Masonry – AS 3700:2018
46. Concrete Construction – AS 3600:2018
47. Steel Construction AS 4100:1998
48. Aluminium Construction – AS/NZS 1664.1 or 2:1997
49. ABCB Standard for Construction of Buildings in Flood Hazard Areas.
50. The FRL's of the structural elements for the proposed works have been designed in accordance with Specification C1.1 of BCA2019 including Table 4, for a building of Type B Construction.
51. Lightweight construction used to achieve required fire resistance levels will comply with Specification C1.8 of BCA2019.
52. The construction joints to the structure will be in accordance with Clause C3.16 of BCA2019 to reinstate the FRL of the element concerned.
53. The concrete panel external walls will be in accordance with Specification C1.11 of BCA2019.
54. Upon completion of the works, a structural engineer will be able to certify that local failure will be in accordance with Clause D2.2 of BCA2019 for the fire isolated stairs.

Lift Services Design Certification:

55. Warning signage in accordance with Clause E3.3 of BCA2019 will be provided to the lifts to advise not to use the lifts in a fire.
56. All electric passenger lifts and electrohydraulic passenger lifts shall comply with Specification E3.1 of BCA2019.