BCA Assessment Report

Unit 1/4-10 Inman Road, Cromer

Project:	Unit 1/4-10 Inman Road, Cromer
Reference No:	115475-BCA-r1
Date:	13 January 2022
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Document Control

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115475-BCA-r1	18 January 2022	Preliminary BCA Assessment Report	
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EXECUTIVE SUMMARY

This document provides an assessment of the architectural design drawings for the proposed change of use to an indoor recreation facility;

- Construction fit-out works (internal) including:
- Two (2) swimming pools including associated pump and mechanical equipment;
- Amenities for patrons including change rooms, showers and seating areas;
- Associated reception area and staff area; at Unit 1/4-10 Inman Road, Cromer, 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
Performance Solutions Required		
1.	Lift access will not be provided to first floor area which has a floor area of greater than 200m^2	BCA Clause D3.1
2.	Common washbasins will be provided in lieu of separate facilities for male/female occupants.	BCA Clause F2.3(a)

1 BASIS OF ASSESSMENT

1.1. Location and Description

The building development, the subject of this report, is located at Unit 1/4-10 Inman Road, Cromer, legally defined as Lot 3 DP 516470 and located within the LGA of Northern Beaches Council.

The Development Application pertains to;

- The proposed change of use to an indoor recreation facility;
- Construction fit-out works (internal) including:
- Two (2) swimming pools including associated pump and mechanical equipment;
- Amenities for patrons including change rooms, showers and seating areas;
- Associated reception area and staff area.

Access to the vehicular and pedestrian access is provided to the site via Inman Road and South Creek Road.

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 Solution 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 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:

i. the National Construction Code – Plumbing Code of Australia Volume 3

ii. the Disability Discrimination Act 1992 including the Disability ((Access to Premises – Buildings) Standards 2010 – unless specifically referred to), (

iii. Demolition Standards not referred to by the BCA;

iv. Work Health and Safety Act 2011;

v. Requirements of Australian Standards unless specifically referred to;

vi. 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

vii. 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 three (3)

2.2. Classification (Clause A6.0)

The building has been classified as follows.

Table 1. Building Classification

Class	Level	Description
9b	Ground	Assembly Building
7a	Basement	Carpark

2.3. Effective Height (Clause A1.0)

The building has an *effective height* of of less than 25 metres and more than 12 metres.

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

The building is required to be of Type A Construction.

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

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

Class 9b	Maximum Floor Area	8,000m^2
	Maximum Volume	48,000m^3
Class 7a	The carpark is to be provided with a sprinkler system (other than a FPAA101D or FPAA101H system) complying with Specification E1.5) and as such there are no maximum floor area or volume limitations for this area.	

2.6. Fire Compartments

The following *fire compartments* have been assumed:

(a) Unit 4 tenancy is considered a single fire compartment

(b) The carpark is considered a single fire compartment

2.7. Exits

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

Ground Floor

a. Main entry/exit discharging to roof as open

b. Exit door discharging to the northern allotment boundary.

First Floor

a. The first riser of the non-fire-isolated stair.

2.8. Climate Zone (Clause A1.0)

The building is located within Climate Zone 5

2.9. Location of Fire-source features

The fire source features for the subject development are:

North: The allotment boundary adjoining Lot 2 DP 1220196

South: The far boundary of South Creek Road

East The allotment boundary adjoining Lot 1 DP1220196

West The Existing Heritage Cottage

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 F of the report.

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

The existing construction is considered to comply with the relevant requirements for the building type (Type A) and classification (Class 9b).

The building has been designed as a Class 7b and therefore, the FRL's are greater than that required for a 9b Classification.

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

The external walls and all components of the wall, in a building of Type A construction, are required to be non-combustible. There are no changes to the external wall construction.

However, the architectural drawings indicate external cladding, in accordance with BCA Clause C1.14, any ancillary items attached to the external wall are required to be constructed of non-combustible materials.

At this stage, sufficient details have not been provided for assessment, test reports and product specification are to be provided at Construction Certificate Stage for further assessment.

3.3. Compartmentation and Separation – Part C2

The current building has been designed to ensure that the wider development complies with the requirements of Part C2.

The tenancy is considered a single fire compartment and when assessed the floor area and volume of these compartments is less than that permitted by Clause C2.2 of the BCA As such compliance with the provisions of the BCA for compartmentation is readily achieved.

The carpark is provided with a sprinkler system, therefore the carpark is not the subject of floor area and volume limitations under the provision of clause C2.2 of the BCA.

The carpark is not required to have sprinklers, and therefore is subject to the floor area and volume limitations of the BCA.

The current configuration of the openings in the external walls is such that compliance with BCA Clause C2.6 have been satisfied.

3.4. Protection of Openings – Part C3

3.4.1. Openings in external walls

The exit door located within 3m of the allotment boundary is required to be provided with a -/60/30 fire door. Sufficient details have not been provided at this stage however, it is assumed compliance is readily achievable.

Further details to be provided at CC stage for further assessment.

3.4.2. Openings in Floors for Services and Service Installations

Where 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. A 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

All parts of the building are provided with a sufficient number of exits and are located throughout the tenancy to ensure that no point on the floor is more than 20m from and 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.

The distance between alternative exits is required by Clause D1.6 of the BCA to be no closer than 9m and no further apart than 60m when measured through the point of choice. The travel distances and distances between exits comply with the above requirements.

The building has no more than 3 storeys connected by a stairway, and therefore under the provisions of Clause D1.3 of the BCA, the building is permitted to have non fire isolated stairways.

An Existing Performance Solution has been provided to address travel via roof as open space

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.

In accordance with BCA Clause D2.21 (NSW Variation) as the total population of the building exceeds 100 persons, a door in the path of travel or an exit must be readily openable—

i. without a key from the side that faces a person seeking egress; and

ii. by a single hand pushing action on a single device such as a panic bar located between 900 mm and 1.2 m from the floor; and

iii. where a two-leaf door is fitted, the provisions of (i) and (ii) need only apply to one door leaf if the appropriate requirements of D1.6 are satisfied by the opening of that one leaf; and (iv) where the door is a door in a path of travel providing re-entry to the building from a balcony, terrace or the like, it may be fitted with key-operated fastenings only, the tongues of which must be locked in the retracted position whenever the building is occupied by the public, so the door can yield to pressure.

Compliance is readily achievable however; sufficient details have not been provided at this stage to demonstrate compliance.

A door schedule including door hardware details is required to be provided at CC stage for assessment.

3.6. Access for people with disabilities

Clause D1.3 of the BCA requires access to the building as follows:

Class 7a	To and within any level containing accessible carparking spaces.
Class 9b	To and within all areas normally used by the occupants

Access has been provided from the basement carpark facility to the ground level of the assembly building via a common area lift.

However, access has not been provided to level one (office area), the client has advised that a Performance Solution will be provided to omit disabled access to level one office area, including the omission of the requirements for an accessible bathroom and ambulant facilities.

Accessible and ambulant sanitary facilities have been provided within the ground floor which are capable of complying with the requirements of AS1428.1-2009 subject to further assessment at CC stage.

In accordance with BCA Clause D3.10 an accessible entry/exit is required to be provided to the pool.

The architectural drawings detail a sling-style swimming pool lift, further details are required to be provided at CC stage to demonstrate compliance with BCA Spec D3.10.

It is important to note that the permitter is exactly 70 meters, where the pool perimeter is greater than 70 metres a sling-style swimming pool lift may not be installed.

3.7. Services and equipment- Parts E1, E2 and E4

Fire Hydrant System

The building will be provided with an existing fire hydrant system in accordance with BCA Clause E1.3 & AS2419.1-2005

Fire Hose Reel System

The existing building is provided with a fire hose reel system in accordance with AS2441:2001, where the system is altered to comply with the proposed fit out, the system shall be designed and installed in accordance with the relevant BCA Clause and Australian Standard.

Sprinkler System

Parts of the building will be provided with a sprinkler system, however, the proposed tenancy is not provided with a sprinkler system and will be separated from the sprinkler protected parts of the building in accordance with AS2118.1-2017 as part of the base building works.

Smoke Detection and Alarm System

The building is provided with a Smoke Detection and Alarm system in accordance with AS1670.1-2018.

It is assumed that the tenancy fit out will have implications for the spacing and location of smoke alarms. The system shall be designed in accordance with BCA Spec E2.2a & AS1670.1-2017 and any relevant Fire Engineering Performance Solution.

Furthermore, where the tenancy is must be provided with automatic shutdown of any air handling system (other than non-ducted individual room units with a capacity not more than 1000 L/s and miscellaneous exhaust air systems installed in accordance with Sections 5 and 6 of AS 1668.1) which does not form part of the smoke hazard management system, on the activation of—

(i) smoke detectors installed complying with Clause 6 of Specification E2.2a;

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.

3.8. Lift Installations – Part E3

There are no proposed lifts as part of the tenancy fit out.

The lifts within the building are assumed to comply with the relevant parts of BCA part E3 and relevant Australian Standard.

3.9. Emergency lighting and Exit signage- Part E4

The tenancy shall be provided with an emergency light and exit system designed and installed in accordance with BCA part 4 and AS2293.1-2018.

Design Certification and Electrical drawings are to be provided at CC stage for further assessment.

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

The number of facilities required have been calculated in accordance with Clause F2.2 and Clause D1.13.(total 132 persons)

The operators provided the following table nominating the expected occupants as identified below.

The number of toilet facilities shown on the plans are sufficient to satisfy the requirements of Clause F2.3 and the requirements for ambulant and accessible facilities. (except where identified that a Performance Solution will be provided)

Furthermore, BCA Clause F2.3(a) requires separate sanitary facilities to be provided for male/female occupants, however, the current design allows for a space where common washbasins will be provided. Again, the client has advised that a Performance Solution will be provided at CC stage to address variations to the DtS requirements of the BCA.

Gender	Design Occupancy	User Group	Closet Pans	Urinals	Washbasins	Showers
Male	**6**	employees	**1**	**0**	**1**	NA
Female	**6**	employees	**1**	**NA**	**1**	NA
Male	**60**	spectators or patrons	2	-	1	NA
Female	**60**	spectators or patrons	2	**NA**	1	NA
Male	**20**	participants	3	-	**2**	**2**
Female	**20**	participants	**2**	**NA**	**2**	**2**
Total Required	**Male**		6	-	4	2
	Female		5	NA	4	2
Total Provided	**Male**		**7**	**-**	**9 (in total)**	**7**
	Female		**5**	**-**		**7**

As discussed within Part D3, it is proposed not to provide disabled access to level one office area and therefore as part of that solution it is also proposed to omit the requirement for accessible and ambulant sanitary facilities. The client has advised that a Performance Solution will be provided at CC stage.

3.11. Room Heights – Part F3

The ceiling heights have been assessed in accordance with Part F3 of the BCA which has indicated that compliance is readily achievable within all habitable spaces, corridors and the like.

Further assessment is required at CC stage upon confirmation of floor and ceiling finishes.

3.12. Light and Ventilation – Part F4

For class 5 and 9b building artificial lighting and mechanical ventilation are required and these systems can be readily installed in the building in accordance with AS/NZS 1680.0 and AS 1668.2 respectively.

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 CC 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 SBA Architects			
Drawing Number	**Revision**	**Date**	**Title**
DA200	J	18.01.21	Floor Plan- Ground Level
DA200	E	18.01.21	Floor Plan Mezzanine Level

ANNEXURE B ESSENTIAL SERVICES

Annexure B - Essential Services

The following fire safety measures and Performance Solutions have been identified as part of the scope for the base building works. The proposed fire schedule has been updated to reflect any new/modified essential fire safety measures to be to be installed in the tenancy. 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 doors	**BCA2019 C2.12** (Separation of Equipment) **BCA2019 C3.4** (Acceptable methods of Protection) **BCA2019 C3.5** (Doors in Fire Walls) AS1735.11- 1986 **BCA2019 C3.13** (Opening in Shafts) Spec C3.4 AS1905.1: 2015 **& proposed Fire Engineering Performance Solution Report**
2.	Fire seals protecting openings in fire resisting components of the building	**BCA2019 C3.15** (Openings for service installations) **BCA2019 C3.16** (Construction joints) **BCA2019 Spec C3.15** AS1530.4:2014 & AS4072.1-2005
3.	Fire shutters	**BCA2019 C3.4** (Acceptable methods of protection) **BCA2019 Spec. C3.4** AS1905.2-2005 **& proposed Fire Engineering Performance Solution Report**
4.	Lightweight construction	**BCA2019 C1.1, Spec. C1.1** **BCA2019 C1.8, Spec C1.8** **BCA2019 C2.7** (Fire Walls) **BCA2019 C2.8** (Separation – same storey) **BCA2019 C2.12** (Separation of Equipment) AS1530.4:2014
General		
5.	Portable fire extinguishers	**BCA2019 E1.6**

Item	Essential Fire and Other Safety Measures	Standard of Performance
		AS 2444–2001
6.	Fire blankets	AS 2444–2001
General Egress		
7.	Automatic fail safe devices > Auto open Sliding Exit doors > Break Glass release	**BCA2019 D2.21** (Operation of Latches) AS 1670.1:2018 (Fire)
8.	Required Automatic Doors	**D2.19** (Doorways and Doors)
9.	Swing of Exit Doors	**D2.20** (Swinging Doors)
10.	Warning & operational signs	**BCA2019 D2.23 (**Signs on Fire Doors) **BCA2019 D3.6** (Braille Exit Signs) (Note: E4.5 (Exit Signs)) **BCA2019 E3.3** (Lift Signs)
Lifts		
11.	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		
12.	Automatic fire detection & alarm: > Incorporating a thermal detection system in the basement carpark **Note:** if there is a SSISEP or EWIS applies different dB(A) i.e. At bedheads not SOU doors.	**BCA2019 E2.2**, NSW Table E2.2a, **Spec E2.2a** **Spec E2.2a** - Clause 4 (Smoke detection system) **Spec E2.2a** - Clause 7 (BOWS) AS 1670.1:2018 (Fire) – Section 4 and 5 (Detectors) AS 1670.4:2018 (EWIS)
13.	Emergency lighting	**BCA2019 E4.2, E4.4** AS/NZS 2293.1:2018
14.	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		

Item	Essential Fire and Other Safety Measures	Standard of Performance
15.	Automatic fire suppression systems > General Sprinklers > Combined Sprinklers and Hydrant	**BCA2019 E1.5** AS 2118.1:2017 (Sprinklers) AS 2118.6:2012 (Combined Sprinklers/Hydrant)
16.	Fire hydrant systems > NSW Storz Couplings	**BCA2019 E1.3** **BCA2019 C2.12 (Separation of Equipment)** AS 2419.1:2005 FRNSW Technical Sheet D15/45534.V9 issued 10.01.19, 'Compatible Hose Connections' **& proposed Fire Engineering Performance Solution Report**
17.	Hose reel systems	**BCA2019 E1.4** AS 2441:2005
18.	System Monitoring Monitoring Required for any: > Any Sprinkler System	**BCA2019 E1.5, Spec E1.5** AS2118.1-2017 AS 1670.3:2018
Mechanical Services		
19.	Fire dampers	**BCA2019 E2.2, Spec E2.2a, Spec E2.2b** **BCA2019 C3.15** AS 1668.1:2015 (Amdt 1) AS 1682.1:2015 & AS 1682.2:2015
20.	1. Mechanical air handling systems 2. Mechanical ventilation to carpark. 3. **Auto-shutdown of Air-handling System(New)** > **(NSW Table E2.2b) - Any system in a Class 9b assembly building which does not form part of a smoke hazard management system, other than:** > **non-ducted individual room units with a capacity of not more than 1000 L/s; or** > **miscellaneous exhaust are systems installed as per Section 5 and 6 of AS 1668.1:2015.**	**BCA2019 E2.2, Table E2.2a** AS 1668.1:2015 (Amdt 1) **Note: 5.5.3 Override control** To enable manual control by attending emergency services personnel, fans that are not required to shut down on initiation of fire mode in the car park shall be provided with a control switch at the designated building entry point. **Note:** Signage should be located at the car park entry indicating the location of the control switches.
Notes:		

Item	Essential Fire and Other Safety Measures	Standard of Performance

(An air-handling system which does not form part of a smoke hazard management system in accordance with Table E2.2a or Table E2.2b and which recycles air from one *fire compartment* to another *fire compartment* or operates in a manner that may unduly contribute to the spread of smoke from one *fire compartment* to another *fire compartment* must—

(i) ((be designed and installed to operate as a smoke control system in accordance with AS 1668.1:2015; or

(ii)

(A) incorporate smoke dampers where the air-handling ducts penetrate any elements separating the fire compartments served; and

(B) be arranged such that the air-handling system is shut down and the smoke dampers are activated to close automatically by smoke detectors complying with clause 7.5 of AS 1670.1:2018; and

for the purposes of this provision, each *sole-occupancy unit* in a Class 2 or 3 building is treated as a separate *fire compartment*.

Miscellaneous air-handling systems covered by Sections 5 and 6 of AS 1668.1:2015 serving more than one *fire compartment* (other than a carpark ventilation system) and not forming part of a smoke hazard management system must comply with that Section of the Standard.

A smoke detection system must be installed in accordance with Clause 5 of Specification E2.2a to operate AS 1668.1:2015 systems that are provided for zone smoke control and automatic air pressurisation for fire-isolated exits.

Performance Solutions

	Description of Performance Solution	DTS Provision
1.	The firewall on ground floor level will not extend through all parts of the building as required by BCA Clause C2.7 (c)	BCA Clause C2.7
2.	Openings in the adjoining fire compartments on basement level and ground floor level have not been provided with protection in accordance with BCA Clause C3.3. Please note where infill panels do not achieve the required FRL the walls are considered an opening in an external wall.	BCA Clause C3.3
3.	The method of protection to openings formed between external columns of the basement level carpark will vary from that prescribed by BCA Clause C3.4	BCA Clause C3.2 & C3.4
4.	Delete the 30-minute insulation required to the roller shutters located on basement level	BCA Clause C3.5
5.	Permit distance to a point of choice to measure up to 47 metres and distance between exits to measure up to 73 m	BCA Clause D1.4
6.	Permit extended distance between alternate exits up to 75m (Fire Engineer to assess maximum permitted distance between exits to allow for future fit-outs or racking layout	BCA Clause D1.5
7.	Openings will be located within 3m of the path of travel to the road including drainage openings and openings formed by the non-fire-isolated stairways	BCA Clause D2.12

Item	Essential Fire and Other Safety Measures	Standard of Performance
8.	Attack hydrants will be located within 10 metres of the building.	BCA Clause E1.3
9.	Due to multiple building entries, the fire control centre will not be located at the main entry. Furthermore, the control centre will be located greater than 300mm from street level.	BCA Clause E2.2 & Spec E2.2a

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 A Construction

Table 5. Type A Construction

Item	Class 5& 9b
Loadbearing External Walls (including columns and other building elements incorporated therein) - Less than 1.5m to a *fire- source feature* - 1.5 – less than 3m from a *fire-source feature* - 3m or more from a *fire source feature*	120/120/120 120/90/90 120/60/30
Non-Loadbearing External Walls - Less than 1.5m to a *fire-source feature* - 1.5 – less than 3m from a *fire-source feature* - 3m or more from a *fire-source feature*	-/120/120 -/90/90 -/-/-
External Columns - Loadbearing - Non-loadbearing	120/-/- -/-/-
Common Walls & Fire Walls	120/120/120
Stair and Lift Shafts required to be fire-resisting - Loadbearing - Non-loadbearing	120/120/120 -/120/120
Internal walls bounding sole occupancy units - Loadbearing - Non-loadbearing	120/-/- -/-/-
Internal walls bounding public corridors, public lobbies and the like: - Loadbearing - Non-loadbearing	120/-/- -/-/-

Item	Class 5& 9b
Ventilating, pipe, garbage and like shafts: - Loadbearing - Non-loadbearing	120/90/90 -/90/90
Other loadbearing internal walls, beams trusses and columns	120/-/-
Floors	120/120/120
Roofs[1]	120/60/30

ANNEXURE D DEFINITIONS

Annexure D - Definitions

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.

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).

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.

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

4. The FRL's of building elements for the proposed works have been designed in accordance with Table 3 of Specification C1.1 of BCA2019 for a building of Type A Construction.
5. Lightweight construction used to achieve required fire resistance levels will comply with Specification C1.8 of BCA2019.
6. Building elements, including external walls and their components, must be non-combustible in accordance with C1.9 of BCA2019.
7. 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.
8. 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.
9. 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.
10. 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.
11. Fire doors will comply with AS 1905.1:2015 and Specification C3.4 of BCA2019.
12. The number of exits provided to the building will be in accordance with Clause D1.2 of BCA2019.
13. The required exits will be fire-isolated in accordance with Clause D1.3 of BCA2019.
14. Travel distances to exits will be in accordance with Clause D1.4 of BCA2019.
15. The alternative exits will be distributed uniformly around the storey and will not be less than 9m apart, and not more 60m, in accordance with Clause D1.5 of BCA2019.
16. The dimensions of exits and paths of travel to exits will be provided in accordance with Clause D1.6 of BCA2019.
17. Discharge from exits will be in accordance with Clause D1.10 of BCA2019.
18. The non-fire isolated stairs will be constructed in accordance with Clause D2.3 of BCA2019.
19. 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.
20. New pedestrian ramps will comply with AS 1428.1:2009, Clause D2.10 and Part D3 of BCA2019. The floor surface of a ramp must have a slip-resistance classification complying with Table D2.14 when tested in accordance with AS 4586:2013.
21. The fire-isolated passageway will be in accordance with Clause D2.11 of BCA2019.

22. 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.
23. 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.
24. The handrails and balustrades to all stairs and throughout the building will be in accordance with Clause D2.16, and D2.17 of BCA2019.
25. The doorways and doors will be in accordance with Clause D2.19 and D2.20 of BCA2019.
26. Door latching mechanisms will be in accordance with Clause D2.21 of BCA2019
27. Signage will be provided on fire and smoke doors in accordance with Clause D2.23 of BCA2019.
28. The new works will be accessible in accordance with Clause D3.1 and table D3.1, D3.2, D3.3 of BCA2019, and with AS 1428.1:2009, with particular note to door circulation spaces, accessway widths, turning spaces and floor coverings, in accordance with Part D3 of BCA2019.
29. Accessible carparking will be in accordance with Clause D3.5, and Table D3.5 of BCA2019.
30. Braille and tactile signage will in accordance with Clause D3.6, and Specification D3.6 of BCA2019.
31. Tactile ground surface indicators will be provided in accordance with Clause D3.8 of BCA2019 and AS/NZS 1428.4.1:2009.
32. The entry/exit to the swimming pool will be in accordance with Clause D3.10, and Specification D3.10 of BCA2019.
33. The ramps associated with the accessway will not have a combined vertical rise of more than 3.6m and a landing for a step ramp will not overlap a landing for another step ramp of ramp in accordance with Clause D3.11 of BCA2019.
34. 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, will be clearly marked in accordance with AS 1428.1:2009 and Clause D3.12 of BCA2019.
35. Waterproofing of all wet areas to the building will be carried out in accordance with Clause F1.7 of BCA2019 and AS 3740:2010.
36. Damp proofing of the proposed structure will be carried out in accordance with Clause F1.9 and F1.10 of BCA2019.
37. 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.
38. Sanitary facilities will be provided in the building in accordance with Clause F2.1, Table F2.1, Clause F2.3 and Table F2.3 of BCA2019 except where varied via Performance Solution Report.
39. Accessible sanitary facilities will be provided in the building in accordance with Clause F2.4, Table F2.4 (a) of BCA2019 and AS1428.1:2009.
40. The construction of the sanitary facilities will be in accordance with Clause F2.5 of BCA2019.
41. Ceiling heights to the new areas will be in accordance with Clause F3.1 of BCA2019.
42. Natural ventilation will be provided in accordance with Clause F4.5, F4.6 and F4.7 of BCA2019.
43. Water closets and urinals will be located in accordance with Clause F4.8 of BCA2019.

44. The sanitary compartments will be either be provided with mechanical exhaust ventilation or an airlock in accordance with Clause F4.9 of BCA2019.
45. Essential fire or other safety measures must be maintained and certified on an ongoing basis, in accordance with the provisions of the Environmental Planning and Assessment Regulation, 2000.
46. Building Fabric and Thermal Construction will be in accordance with Part J1 of BCA2019.
47. Glazing will be in accordance with Part J1 of BCA2019.
48. Building sealing will be in accordance with Part J3 of BCA2019.
49. Facilities for Energy Monitoring will be provided in accordance with Clause J8.3 of BCA2019.

Electrical Services Design Certification:

50. A smoke detection and alarm system will be installed throughout the building in accordance with Table E2.2a, and Specification E2.2a of BCA2019.
51. Emergency lighting will be installed throughout the development in accordance with Clause E4.2, E4.4 of BCA2019 and AS/NZS 2293.1:2018.
52. Exit signage will be installed in accordance with Clause E4.5, E4.7, and E4.8 of BCA2019 and AS/NZS 2293.1:2018.
53. Artificial lighting will be installed throughout the development in accordance Clause F4.4 of BCA2019 and AS/NZS 1680.0:2009.
54. Lighting power and controls will be installed in accordance with Part J6 of BCA2019.

Hydraulic Services Design Certification:

55. Storm water drainage will be provided in accordance with Clause F1.1 of BCA2019 and AS/NZS 3500.3:2018
56. Fire hose reels will be installed in accordance with Clause E1.4 of BCA2019 and AS 2441:2005.
57. Portable fire extinguishers will be installed in accordance with Clause E1.6 of BCA2019 and AS 2444:2001.

Mechanical Services Design Certification:

58. 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.
59. Rigid and flexible ductwork will comply with the fire hazard properties set out in AS 4254 Parts 1 and 2.

Structural Engineers Design Certification:

60. 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
61. Earthquake actions – AS 1170.4:2007
62. Masonry – AS 3700:2018
63. Concrete Construction – AS 3600:2018
64. Steel Construction AS 4100:1998

65. Aluminium Construction – AS/NZS 1664.1 or 2:1997
66. Timber Construction – AS 1720.1:2010
67. ABCB Standard for Construction of Buildings in Flood Hazard Areas.
68. The FRL's of the structural elements for the proposed works have been designed in accordance with Specification C1.1 of BCA2019, including Table 3 for a building of Type A Construction,
69. The lift shaft will have an FRL in accordance with Clause C2.10 and Specification C1.1 of BCA2019.
70. Lightweight construction used to achieve required fire resistance levels will comply with Specification C1.8 of BCA2019.

NSW Specification Design Certificate:

71. Materials, floor and wall linings/coverings, surface finished and air-handling ductwork used in the works will comply with the fire hazard properties in accordance with Clause C1.10, NSW Clause C1.10, Specification C1.10 and NSW Specification C1.10 of BCA2019.
72. The number of exits provided to the building will be in accordance with Clause D1.2 and NSW Clause D1.2(d)(vii) of BCA2019.
73. The discharge points of exits will be in accordance with Clause D1.10, and NSW Clause D1.10(f) of BCA2019.
74. The dimensions of exits and paths of travel to exits will be provided in accordance with Clause D1.6, and NSW Clause D1.6(f)(vi)&(j) of BCA2019.
75. Stair geometry to the new stairways will be in accordance with Clause D2.13, and NSW Clause D2.13(a)(ix)(x)(xi) 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 or a nosing strip with a slip-resistance classification complying with Table D2.14 when tested in accordance with AS 4586:2013.
76. Landings and door thresholds throughout the development will be provided in accordance with Clause D2.14 and D2.15, and NSW Clause D2.15(d)&(e) 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 leads to a flight below.
77. The handrails and balustrades to all stairs and throughout the building will be in accordance with Clause D2.16, NSW Clause D2.16 & NSW Table D2.16a 1 and D2.17 of BCA2019.
78. The doorways and doors will be in accordance with Clause D2.19, NSW Clause D2.19(b)(v) and D2.20 of BCA2019.
79. A smoke detection and alarm systems will be installed throughout the building in accordance with Table E2.2a, NSW Table E2.2a and NSW Specification E2.2a of BCA2019.
80. Exit signage will be installed in accordance with Clause E4.5, NSW Clause E4.6, E4.7, and E4.8 of BCA2019 and AS/NZS 2293.1:2018.

13 November 2019

EG Funds Management
L21 Governor Phillip Tower
1 Farrer Place
Sydney NSW 2000

Attn: Grant Flannigan

Re: Proposed Industrial Development 4 – 10 Inman Road Cromer

SBA Architects have been commissioned by EG Funds Management to prepare the architectural documentation to accompany the Development Application for the above project.

We confirm the project has been designed to the best of our knowledge to comply with the deemed to satisfy provisions of the Building Code of Australia.

As part of the Design Development process, the project will be reviewed by an accredited building regulation consultant to ensure the project achieves compliance with the BCA, and if this is not achievable identify matters requiring Alternative Solutions.

Yours Faithfully,
SBA Architects Pty Ltd

Greg Baird
Director