IVAN BOULLE CONSULTING

ACCREDITED CERTIFIERS & BUILDING CODE CONSULTANTS

Address:	**68A QUEENSCLIFF ROAD, QUEENSCLIFF NSW 2096**
Property:	Alterations and additions to a mixed use development
Report:	**BCA ASSESSEMENT REPORT FOR DA**
Reference:	190011
Date:	23 July 2019
To:	Classic Plans 1 Maxwell Avenue Maroubra NSW 2035
Contact:	Erol Ordirik classicplans@optusnet.com.au

P 02 9352 9655
E info@ivanboulleconsulting.com.au
A Level 1, 11 Lord Street, Botany NSW 2019
M PO Box 115, Botany NSW 1455

ABN 11 621 300 589

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DRAFT	4/04/2019		**Prepared by:**	**Checked by:**
FINAL	23/07/2019	**Name:**	Ivan Boulle Accredited Certifier Grade A1, No BPB0041 Director	Ivan Boulle Accredited Certifier Grade A1, No BPB0041 Director
		Signature:		
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TABLE OF CONTENTS

PART 1 BASIS OF ASSESSMENT

1.1 Location and Description

The property the subject of this report is located at 68A Queenscliff Road, Queenscliff NSW 2096. The proposed development consists of construction of a (4) four storey mixed use development.

Figure 1: Subject site indicated (Source: Six Maps, 2018).

1.2 Purpose

The purpose of this report is to assess the current design proposal against the Deemed-to-Satisfy Provisions of **BCA 2019**, 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 requirements of BCA 2019. Such assessment against relevant performance requirements will need to be addressed by means of a separate Performance Based Fire Safety Engineered Assessment Report to be prepared under separate cover.

*As BCA 2019 comes into force on 1st May 2019, it is highly unlikely any Development Consent will be approved before this date and therefore any Construction Certificate application submitted.

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 Edition (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.

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) Demolition Standards not referred to by the BCA;

(c) Work Health and Safety Act 2011;

(d) Requirements of other Regulatory Authorities including, but not limited to, Telstra, Water Supply Authority, Electricity Supply Authority, Work Cover, Roads and Maritime Services (RMS), Council and the like; and

(e) 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.

PART 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 four (4).

2.2 Classification (Clause A3.2)

The building has been classified as follows.

Class	Level	Description
Class 7a	Basement Level	Carparking
Class 5/6	Ground Floor Level	Commercial / Retail
Class 2	First / Second Floor Level	Residential

2.3 Effective Height (Clause A1.1)

The building has an effective height of **9.265m** [RL 33.68 – 24.415].

2.4 Type of Construction Required (Table C1.1)

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 2 — The Class 2 portions of the building are not subject to floor area and volume limitations of C2.2.
- Class 5 — Maximum Floor Area 8,000m^2; Maximum Volume 48,000m^3
- Class 6 & 7 — Maximum Floor Area 5,000m^2; Maximum Volume 30,000m^3

2.6 Fire Separation

The building has been assessed based on the following fire separation:

a) Basement level
b) Commecial / Retail at ground floor level

2.7 Exits

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

a) All non fire-isolated stairways
b) All exit doorways at Ground Level.

2.8 Climate Zone (Clause A1.1)

The building is located within Climate Zone 5.

ESSENTIAL FIRE SAFETY MEASURES

The following **draft** fire safety measures are required to be installed in the building.

	Proposed Essential Fire Safety Measure	Minimum Standard of Performance
1.	Access panels, doors and hoppers to fire resisting shafts	BCA 2019 Clause C3.13
2.	Automatic fire detection and alarm system (incl. Building Occupant Warning System)	BCA 2019 Clause E2.2a, Clause 3, 4, 5, 6 of Specification E2.2a and AS1670.1-2015
3.	Emergency lighting	BCA 2019 Clauses E4.2 & E4.4, AS2293.1-2018
4.	Exit signs	BCA 2019 Clauses E4.5, E4.6 & E4.8, AS2293.1-2018
5.	Fire doors	BCA 2019 Spec C3.4, AS1905.1-2015
6.	Fire hose reel system	BCA 2019 Clause E1.4, AS2441-2005
7.	Fire hydrant system	BCA 2019 Clause E1.3, AS2419.1-2005
8.	Fire seals protecting openings in fire resisting components of the building	BCA 2019 Clause C3.15, AS1530.4-2005
9.	Lightweight Fire Rated Construction	BCA 2019 Clause / Specification C1.8
10.	Mechanical air handling systems	BCA 2019 Clause F4.5, F4.11, F4.12, AS 1668.1-2015 & AS/NZS1668.2-2012
11.	Paths of travel, stairways, passageways or ramps	BCA 2019 Section D
12.	Portable fire extinguishers	BCA 2019 Clause E1.6, AS2444-2001
13.	Sprinklers (Building has 4 or more storeys)	BCA 2019 Clause E1.5 & Specification E1.5a, AS2118.1-2017, AS2118.4-2012, FPAA101D, FPAA101H
14.	Warning and operational signs	BCA 2019 Clause D2.23, EP&A Reg. 2000 Clause 183
15.	Fire Engineered Alternative Solution	TBC

PART 3 FIRE RESISTANCE LEVELS

The following fire resistance levels (FRL's) are required for the various structural elements of the building, 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

Item	Class 2	Class 6	Class 5 / 7a
Loadbearing External Walls: • less than 1.5m to a fire source feature • 1.5 – 3m from fire source feature; • more than 3m from a fire source feature.	90/90/90 90/60/60 90/60/30	180/180/180 180/180/120 180/120/90	120/120/120 120/90/90 120/60/30
Non-Loadbearing External Walls: • less than 1.5m to a fire source feature • 1.5 – 3m from fire source feature; • more than 3m from a fire source feature.	-/90/90 -/60/60 -/-/-	-/180/180 -/180/120 -/-/-	-/120/120 -/90/90 -/-/-
External Columns • Loadbearing • Non-loadbearing	90/-/- -/-/-	180/-/- -/-/-	120/-/- -/-/-
Fire Walls	90/90/90	180/180/180	120/120/120
Stair and Lift Shafts • Loadbearing • Non loadbearing	90/90/90 -/90/90	180/120/120 -/120/120	120/120/120 -/120/120
Internal walls bounding sole occupancy units • Loadbearing • Non loadbearing	90/90/90 -/60/60	180/-/- -/-/-	120/-/- -/-/-
Internal walls bounding public corridors, hallways and the like: • Loadbearing • Non loadbearing	90/90/90 -/60/60	180/-/- -/-/-	120/-/- -/-/-
Ventilating, pipe garbage and the like shafts: • Loadbearing • Non loadbearing	90/90/90 -/90/90	180/120/120 -/120/120	120/90/90 -/90/90
Other loadbearing internal walls, beams trusses and columns	90/-/-	180/-/-	120/-/-
Floors	90/90/90	180/180/180	120/120/120
Roofs [1]	90/60/30	180/60/30	120/60/30

PART 4 BCA ASSESSMENT

We provide the following comments having regard to the relevant Deemed to Satisfy provisions of the Building Code of Australia 2019:

Structural Provisions - Enviromental Plannaing & Assessment Regulations 2000

The proposed building works will activate, clause 143 of the Environmental Planning and Assessment Regulation 2000. In this respect, a structural engineer's certificate will be required, prior to the issue of a Constrcution Certificate, to ensure the fire protection and the structural capacity of the existing building will not be reduced.

BCA Section B – STRUCTURE

1. **Part B: Structural Provisions**

Structural drawings and design certification confirming compliance with this part is required to be provided by the Structural Engineer prior to the issue of the Construction Certificate for all structural works.

Note: Glazing assemblies in the external wall of the building are required to comply with AS1288 & AS 2047.

BCA Section C – Fire Resistance

2. **Clause C1.9: Non-combustible building elements**

Building elements and their components in a building of Type A constuction are required to be non-combustible. Additional details are to be submitted at the Construction Certificate stage.

3. **Clause C1.10: Fire Hazard Properties**

The fire hazard properties of all new building materials and assemblies used in the development must comply with the requirements of Specification C1.10 of the BCA and all new floor materials, floor coverings, wall and ceiling lining materials must comply with Specification C1.10 of the BCA.

Test sheets of new floor, wall and ceiling linings, air handling ductwork and linings within the lift are to be provided prior to the issue of the Occupation Certificate.

4. **Clause 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, unless it is any item listed in (a) to (m) of this Clause.

If applicable, it is recommended where any external cladding is proposed, test sheets and specifications of the selected product is discussed with the nominated PCA to ensure the product is compliant prior to issuing the Construction Certificate.

5. **Clause C2.2 General floor area and volume limitations**

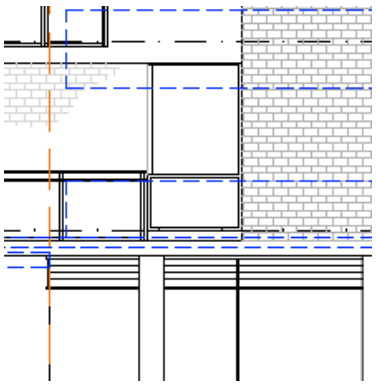
The floor area and volumes do not exceed that permitted by this Clause.

6. Clause C2.6: Vertical Separation of Openings in External Walls

In a building of Type A construction, which is not provided with a sprinkler system, any part of a window or other opening in an external wall which is above another opening in the storey next below and its vertical projection falls no further than 450 mm outside the lower opening (measured horizontally), the openings must be separated by

- A vertical spandrel with a minimum height of 900mm, extending not less than 600mm above the intervening floor and be of non-combustible construction achieving a minimum FRL of 60/60/60, or
- A horizontal spandrel with a minimum depth of 1100mm, extending not less than 450mm either side of the opening, be of non-combustible construction and achieving a minimum FRL of 60/60/60.
- The construction of the balcony balustrades as shown shall be confirmed as achieving a minimum FRL of 60/60/60 where they provide spandrel separation with the Construction Certificate.

In this regard a number of openings were noted as not being provided with a spandrel as per the above requirements. Furthermore, the construction of the balcony balustrades shall be confirmed as achieving 60/60/60 where they provide spandrel separation.



Opening between ground and first floor
on eastern elevation

7. Clause C2.9: Separation of Classifications in Different Storeys

If parts of different classifications are situated one above the other in adjoining storeys they must be separated by floors having the FRL prescribed in Spec C1.1 for the classification of the lower storey.

In this regard, the required FRL's for the floor slabs located over each classification is as follows:

- The floor separating the Class 5 & 7a part/s requires a FRL of not less than 120/120/120.
- The floor separating the Class 6 part/s requires a FRL of not less than 180/180/180.
- The floor separating the Class 7a part/s requires a FRL of not less than 240/240/240.

The FRL's of the floor slabs are to be detailed on the Architectural and Structural Drawings with the Construction Certificate submission.

8. Clause C2.10: Separation of Lift Shafts

Any lift connecting more than 2 storeys must be separated in construction having an FRL complying with Specification C1.1.

Note: The lift shaft is required to be enclosed at the top with construction having a FRL of not less than 90/90/90.

9. Clause C2.12: Separation of Equipment

Where lift motors and control panels, emergency generators used to sustain emergency equipment, central smoke control plant, or boilers, or batteries (with a voltage exceeding 24 volts and a capacity exceeding 10 ampere hours) are proposed to be located in the building, the equipment is required to be separated in construction that achieves an FRL of 120/120/120. Any doorway to the enclosure is to be a self-closing -/120/30 fire door.

Note: The current design does not detail any of the equipment listed under this clause.

10. Clause C2.14: Public Corridors in Class 2 Buildings

Public corridors in the Class 2 Residential part of the building must be divided at intervals of not more than 40m with smoke proof walls complying with Clause 2 of Specification C2.5.

In this instance, the public corridor does not exceed 40 metres.

11. Clause C3.2: Protection of Openings in External Walls

Openings in external walls that are required to have an FRL must be protected under C3.4 where the openings are located less than 3 metres from a side of rear boundary or 6 metres from the boundary on the far side of a roadway. In this regard, it is noted that the following openings are located within 3 metres from the allotment boundary:

The current design does not have any openings requiring protection.

12. Clause C3.11: Bounding Construction

The doors to the Residential Sole Occupancy Units opening to the public corridors are required to be self-closing -/60/30 fire doors and FRLs confirming bounding construction are to be detailed on the plans.

13. Clause C3.13: Openings in Shafts

Openings to the service shafts are required to be protected by -/30/30 panel (if in a sanitary compartment), or a self-closing -/60/30 fire door, or a -/60/30 access panel.

If the shaft is a garbage shaft, a door hopper of non-combustible construction is permitted to be installed.

14. Clause C3.15: Openings for Service Installations

Where new service installations penetrate building elements required to have an FRL, with respect to integrity and insulation or the resistance to the incipient spread of fire, they are to be protected by fire seals having an FRL of the building element concerned. Fire seals are required to comply with Specification C3.15, or for new Mechanical penetrations comply with AS/NZS 1668.1.

15. Specification C1.1: Fire Resisting Construction

Type A Construction

The proposed building is required to comply with the requirements detailed under Table 3 of Specification C1.1 for Type A Construction, as included in Part 4 of this report.

Note 1: The concession granted under Clause 3.5 of Specification C1.1 does not require the roof of the residential levels to have an FRL provided that it is a non-combustible material.

Note 2: Where a combustible material is used as a finish or lining to a wall or roof, or sunscreen, or awning, or to a building element required to have an FRL, the material must be exempted or comply with the fire hazard properties prescribed under C1.10 and does not otherwise constitute an undue risk of fire spread via the façade of the building.

Note 3: External walls and common walls must be non-combustible construction.

Note 4: A load bearing internal wall must be constructed of concrete or masonry.

Note 5: Under Clause 3.1(c) of Spec C1.1, internal walls required to have an FRL must extend between floor slabs or to the underside of the roof.

BCA SECTION D – ACCESS AND EGRESS

16. Clause D1.2: Number of Exits Required

At least one exit is required to be provided to the residential & commercial levels and two from the basement. The current design satisfies the requirements of this Clause.

17. Clause D1.3: When Fire Isolated Stairways are Required

Every required exit serving a building must be fire isolated if the exit stair connects and/or passes through more than 3 consecutive storeys. The proposed non-fire isolated stair complies with this clause as the exit connects 3 consecutive storeys.

18. Clause D1.4: Exit Travel Distances

The exit travel distances from the entrance doorway of a residential sole occupancy unit to an exit must not be more than 6 metres to a single exit or a point of choice to different exits where available.

No point on the floor in the commercial/retail part must be more than 30 metres to an exit as they are situated at a level which provides access to a road or open space.

The basement must have 20m to an exit or point of choice at which travel in different directions to 2 exits is available to a maximum of 40m.

The current design satisfies the above requirements.

19. Clause D1.5: Distances Between Alternative Exits

Exits that are required as alternative means of egress must be not less than 9 m apart and not more than 45m in residential part and 60 m apart in the retail/commercial and basement levels.

The current design complies.

20. Clause D1.6: Dimensions of Exits

The unobstructed height in a required exit must be not less than 2 metres, except for a doorway which may be reduced to 1980mm. The width of the exits and any path of travel are required to be not less than 1 metre.

21. Clause D1.9: Travel via Non Fire Isolated Exits

A non-fire-isolated stairway or non-fire-isolated ramp serving as a required exit must provide a continuous means of travel by its own flights and landings from every storey served to the level at which egress to a road or open space is provided

Travel distances from the doorway of a room or sole-occupancy unit to a road or open space by way of a non fire isolated stairway must not exceed 60 m.

A non-fire-isolated stairway must discharge at a point not more than 15 m from a road or open space or 30 m from one of 2 such doorways if travel to each of them from the non-fire-isolated stairway or non-fire-isolated ramp is in opposite or approximately opposite directions.

22. Clause D1.10: Discharge from Exits

If a required exit leads to open space, the path of travel to the roadway must have an unobstructed width throughout of not less than 1 metre or the minimum width of the required exit. In this instance, the design can achieve compliance.

23. Clause D2.4: Separation of Rising and Descending Stair Flights

In a stairway required to be fire-isolated, there must be no direct connection between a flight rising from a storey below the lowest level of access to a road or open space and a flight descending from a storey above that level. Any construction that separates or is common to the rising and descending flights must be non-combustible and smoke proof in accordance with Clause 2 of Specification C2.5.

Not applicable.

24. Clause D2.7: Installations in Exits and Paths of Travel

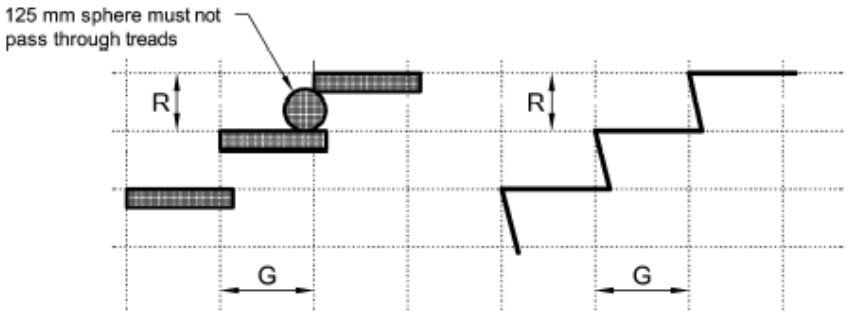
Gas or other fuel services must not be installed in a required exit

Electrical or telecommunications distribution boards, electric motors that are proposed to be located in a path of travel to an exit are required to be enclosed in non-combustible construction and smoke sealed.

25. Clause D2.13: Treads and Risers

A stairway is required to satisfy the requirements of Table D2.13 below having regards to the dimensions for treads and risers.

	Riser (R)		Going (G)[b]		Quantity (2R+G)	
	Max	Min	Max	Min	Max	Min
Public stairways	190	115	355	250	700	550
Private stairways[a]	190	115	355	240	700	550



In addition, the proposed stair is required to satisfy the following requirements:

- The goings and risers must be constant throughout each flight.
- A stairway must not have more than 18 risers in each flight.
- Treads and Risers are required to satisfy 2R+G as detailed in the table above.
- Treads must be provided with a non-slip finish or nosing in accordance with AS4586
- Risers must not have openings that would permit a 125mm sphere to pass through between treads. (Also see requirements under Part D3 having regards to the requirement for opaque stair risers).

26. Clause D2.14: Landings

In a stairway, each landing must be not less than 750mm long, and where this involves a change in direction, the length is measured 500mm from the inside edge of the landing and have a non-slip finish throughout or a non-skid strip near the edge of the landing. In this regard, the design can achieve compliance.

27. Clause D2.15: Thresholds

The threshold of a doorway must not incorporate a step or ramp at any point closer to the doorway than the width of the door leaf unless the doorway opens to an external stair landing, external balcony or a road or open space and the door sill is not more than 190mm.

28. Clause D2.16: Balustrades

Where there is a drop of more than 1 metre a balustrade must have a height of not less than 1 metre in height measured above floor and landings and not more than 865mm above the stair nosings. In addition, there must be no gaps in the balustrade that would permit a 125mm sphere from passing through any point.

In addition, where the drop is greater than 4 metres, there must be no climbable elements located between 150mm and 760mm.

Note: Balustrades are to meet the structural requirements under AS 1170 and be certified on completion by a Structural Engineer.

29. Clause D2.17: Handrails

Handrails are required to be provided to both sides of the non-fire isolated stairs and maintain a minimum width of 1m. Final details are to be provided in accordance with the requirements of AS1428.1-2009 prior to the issue of the Construction Certificate.

Note: Also see the requirements for handrails under Part D3 associated with access for people with disabilities.

30. Clause D2.20: Swinging Doors

A swinging door in a required exit must not encroach at any part of its swing by more than 500mm on the required width of a stairway or passageway, and when fully open, by more than 100mm on the required width of the required exit and must swing in the direction of egress where it serves an area greater than 200m^2.

In this regard the entrance door to the residential lobby shall swing in the direction of egress.

31. Clause D2.21: Operation of Latch

An exit door, or a door in the path of travel to an exit, is required to be readily openable without a key from the side that faces a person seeking egress, by a single downward action or pushing action on a device located between 900mm and 1100mm above floor level.

32. Clause D2.24: Protection of Openable Windows

A window must be provided with protection, if the floor below the window is 2m or more above the surface beneath in a Class 2 building.

Where the lowest level of the window opening is less than 1.7m above the floor, a window opening must be protected with a device to restrict the window opening or a screen with secure fittings.

Note: A device or screen required to be fitted to a window must not permit a 125mm sphere to pass through the window opening or screen and resist an outward horizontal action of 250N against the window restrained by a device or screen protecting the opening. In addition, have a child resistant release mechanism if the screen or device is able to be removed, unlocked or overridden.

A barrier with a height of not less than 865mm above the floor is required to an openable window where a child resistant release mechanism is required and for windows located 4m or more above the surface beneath. Please note that the required barrier must not permit a 125mm sphere to pass through it and have no climbable elements between 150mm and 760mm.

33. Part D3: Access for People with Disabilities

The proposed building is subject the requirements under Part D3 associated with access for people with disabilities.

Under Table D3.1, the subject building must be accessible as follows:

Class of Building	Access Requirements
Class 2	Access is required from the pedestrian entrance to at least 1 floor containing SOUs and each SOU on that floor.
Class 5 & 6	To and within all areas normally used by the occupants.

All doorways are required to have a clear width of not less than 850mm and satisfy the circulation space requirements under AS 1428.1 – 2009.

All frameless glass panels or fully glazed doors on an accessway are to be clearly marking in accordance with AS 1428.1. In this instance, all frameless glass panel or fully glazed doors, including glazing capable of being mistaken for a doorway or opening, shall be marked with a full width solid non transparent contrast line not less than 75mm wide is required to be located between 900mm and 1000mm above floor level.

All stairways and ramps not located within a SOU or a fire isolated stair must be provided with contrasting non-slip nosing strips, tactile indicators and handrails in accordance with AS1428.1-2009.

Note: AS1428.1-2009 requires end of corridor widths to achieve a minimum 1540mm refer to extract below.The ground floor corridors do not comply.

Design Certification from a qualified access consultant is to be provided prior to the issue of the Construction Certificate.

BCA SECTION E – SERVICES AND EQUIPMENT

34. Clause E1.3: Hydrants

A Hydrant system is required to be designed in accordance with AS 2419.1 – 2005.

Internal Hydrants are to be located within 4 metres of an exit / non-fire isolated stair. Please note that the location of the Hydrants must not reduce the egress width of the stairs/passageway that it is located within.

The Hydrant Booster Assembly (if applicable) must be located within sight of the main entry of the building, located between 3.5m to 10m of the building, adjacent to a fire-rated freestanding wall having an FRL of not less than 90/90/90, spanning 1 metre either side of the outermost fire hydrant booster risers and extend to a height of not less than 2m.

Where the design is not amended to comply with DtS provisions an alternative solution addressing Performance Requirements EP1.3 will be required to be prepared by a C10 Fire Engineer.

Design Certification from a qualified hydraulic engineer is to be provided prior to the issue of the Construction Certificate.

35. Clause E1.4: Hose Reels

Fire hose reels will be required if internal fire hydrants are required to be installed and are required to comply with AS 2441- 2005.

Hose reels are required to be located within 4 metres of an exit or adjacent to internal Hydrants. Where system coverage cannot be provided, additional hose reels may be installed in a path of travel to an exit to achieve coverage.

Design Certification from a qualified hydraulic engineer is to be provided prior to the issue of the Construction Certificate.

Note 1: Hose Reels are not required to be provided to serve a Class 2 part of a building. See comments under E1.6 below for the additional requirements for Portable Fire Extinguishers.

36. Clause E1.5: Sprinklers

A sprinkler system in accordance with Specification E1.5a must be installed to any Class 2 building with a rise in storeys of 4 or more.

Design Certification from a qualified hydraulic engineer is to be provided prior to the issue of the Construction Certificate.

37. Clause E1.6: Portable Fire Extinguishers

If internal fire hydrants are provided, Portable fire extinguishers are to be installed within the residential part of the building in accordance with Clause E1.6 and AS 2444.

Portable Fire Extinguishers provided in a Class 2 building/part must be ABE type fire extinguishers, minimum size of 2.5kg and distributed outside a SOU to serve only the storey they are located and so that the travel distance from any entrance to a SOU to the nearest fire extinguisher is not more than 10m.

Portable fire extinguishers are also required to be provided to any retail space.

38. Clause E2.2: Smoke Hazard Management

The subject building is required to be provided with the following Smoke Hazard Management requirements under E2.2:

- An automatic smoke detection and alarm system complying with Clause 3 and/or 4 and 6 of Specification E2.2a is required to be provided in the building.

39. Part E3: Lift Installations

A warning sign must be provided at every call button stating “DO NOT USE LIFTS IF THERE IS A FIRE”.

In addition, the lift is required to be provided with the following features as detailed under AS 1735.12:

- Handrail; and
- Minimum clear door opening of 900mm; and
- Passenger protection system; and
- Lift car and landing control buttons; and
- Lighting.

Automatic audible information within the lift car to identify the level each time the car stops and audible and visual indication at each lift landing to indicate arrival of the lift car. All audible information must be provided at a range between 20-80 dB(A) at a frequency of 1500hz.

Furthermore, under Clause E3.7, the Lift is to be provided with a fire control switch complying with E3.9 and a fire service drive control switch complying with E3.10.

40. Clause E4.2: Emergency Lighting

Emergency Lighting is required in the building in accordance with AS 2293.1 -2005.

41. Clause E4.5: Exit Signs

Exit signs are required to be installed in the building in accordance with AS 2293.1 -2005.

Note: Exit signs must be located so they are not higher than 2.7 metre above floor level.

BCA SECTION F – HEALTH & AMENITY

42. Clause F1.7: Waterproofing of Wet Areas

Wet areas in the building are required to comply with AS 3740.

43. Clause F1.11: Provision of Floor Wastes

Floor wastes are required to be provided within the floor of each bathroom and laundry located on any level above a sole occupancy unit and must be graded to permit drainage to a floor waste.

44. Clause F1.13: Glazed Assemblies

Glazed assemblies in an external wall of a building are required to comply with AS 2047 requirements for resistance to water penetration.

45. Clause F2.1: Facilities in Residential Buildings

Each sole occupancy unit is required to be provided with a kitchen sink with facilities for cooking, a bath or shower, a closet pan and washbasin, a washtub and a space for a washing machine and drier. In this regards the design complies.

Details are to be provided on the Construction Certificate drawings.

46. Clause F2.3: Facilities in Class 3 to 9 buildings

The sanitary facilities serving the commercial tenancies on the Ground Floor can be determined upon determination of the use of the tenancies. Notwithstanding, based on the current design, the single unisex accessible facility allocated to the retail/commercial parts can accommodate a maximum of 10 employees. The single unisex accessible facility allocated to the commercial part can accommodate a maximum of 10 employees. Furthermore, sanitary facilities need not be provided for patrons if the total number of persons accommodated in the commercial tenancy is not more thean 20. In this respect the design is capable of complying.

47. Clause F2.4: Accessible Sanitary Facilities

In a Class 5, 6, 7, 8 or 9 building accessible unisex sanitary compartments are to be provided on every storey containing sanitary compartments. Accessible sanitary fcilities are provided on the Ground Floor level of the building to serve the commercial tenancies in accordance with this clause.

Note 1: Accessible toilets and ambulant facilities are to meet the requirements under AS 1428.1 – 2009. In addition, the accessible toilet facility is to be provided with a shelf or a bench top and adequate means of disposal of sanitary towels.

Note 2: Where two or more of each type of accessible toilet facility is provided, the number of left and a right-handed mirror image facilities must be provided as evenly as possible.

48. Clause F2.5: Facilities in Residential Buildings

Removable hinges are to be provided to sanitary compartment doors where closet plans are located within 1.2m.

49. Clause F3.1: Height of Rooms and other Spaces

The floor to ceiling heights in the Class 2 Residential part of the building must not be less than 2.4 metres in habitable rooms and 2.1 metres in kitchens, laundries, and bathrooms.

Furthermore, the floor to ceiling heights in the Retail / commercial parts must be not less than 2.4m above finished floor level and 2.1m in corridors and toilets.

50. Part F4: Light and Ventilation

Natural light complying with F4.2, is required to be provided to all habitable rooms in the Class 2 Residential Part of the building. In this instance, the design complies. Natural light may be borrowed from adjoining rooms in accordance with F4.3 where a room does not have provision for natural light.

Artificial lighting to the Retail Tenancies, bathrooms, laundries is required in accordance with AS/NZS 1680.0. Details and design certification is required from the Electrical Consultant.

A habitable room is required to be ventilated in accordance with the requirements for natural ventilation under F4.6 or in accordance with AS 1668.2.

51. Clause F5.3: Determination of Impact Sound Insulation Ratings

The bounding walls to the SOUs are required to have an impact sound insulation rating must be of discontinuous construction.

Design Certification from a qualified acoustic engineer is to be provided prior to the release of the Construction Certificate.

Note: Discontinuous construction means a wall having a minimum 20mm cavity between 2 separate leaves, and for masonry, wall ties are of a resilient type. For all other construction there is no mechanical link between leaves except at the periphery.

52. Clause F5.4: Sound Insulation Rating of Floors

The floors separating the sole occupancy units are required to have an airborne sound insulation rating determined in accordance with AS ISO 717.2 or comply with Specification F5.2.

Design Certification from a qualified acoustic engineer is to be provided prior to the release of the Construction Certificate.

53. Clause F5.5: Sound Insulation Rating of Walls

A wall separating a sole occupancy unit from another part of the building must have an airborne sound insulation rating of not less than 50 and be provided with discontinuous construction if it separates a bathroom, sanitary compartment, laundry, kitchen in another sole occupancy unit or a plant room or lift shaft. A door that separates a sole occupancy unit from a public corridor must have a weighted sound reduction index of not less than 30.

Design Certification from a qualified acoustic engineer is to be provided prior to the release of the Construction Certificate.

54. Clause F5.6: Sound Insulation Rating of Services

Where a duct, soil, waste or water supply pipe passes through more than one sole occupancy unit, the duct or pipe must be separated from the rooms of a sole occupancy unit by construction having an airborne

sound insulation rating of not less than 40 if the adjoining room is habitable or 25 if it is a kitchen or non-habitable room. Design Certification from a qualified acoustic engineer is to be provided prior to the release of the Construction Certificate.

55. Clause F5.7: Sound Insulation of Pumps

A flexible coupling must be used at the point of connection between the service pipes in a building and any circulating or other pump. Design Certification from a qualified acoustic engineer is to be provided prior to the release of the Construction Certificate.

SECTION G: ANCILLARY PROVISIONS

56. Clause G1.01 (NSW): Provision for Cleaning of Windows

A building must provide a safe manner of cleaning windows located 3 or more storeys above ground level. In this regard, the windows must be able to be cleaned from within the building, or provisions made for cleaning of windows by a method complying with the Work Health and Safety Act 2011 and regulations made under the Act.

SECTION J: ENERGY EFFICIENCY

57. Section J: Energy Efficiency

Having regards to the Class 2 parts of the building a BASIX Certificate is to be provided with the Construction Certificate application in which the requirements of the certificate are to be documented on the Construction Certificate drawings.

The proposed building is subject to the requirements of section J of the BCA. This will require compliance in respect to building fabric, glazing, building sealing, air-conditioning and ventilation, artificial lighting and power, hot water supply and facilities for monitoring. Details and design certification are required to be provided from the Architect, Electrical, Mechanical, Hydraulic Consultants or ESD consultants at the Construction Certificate stage.

PART 5 MATTERS FOR FURTHER CONSIDERATION

5.1 General

Assessment of the Architectural design documentation against the Deemed-to-Satisfy Provisions of the Building Code of Australia 2019 (BCA) has revealed the following areas where compliance with the BCA may require further consideration and/or may involve assessment as Performance Based (Fire Engineered) Alternative Solutions. Any Alternative Solutions would require special consideration, which clearly indicate methodologies for achieving compliance with the relevant Performance Requirements.

5.2 Performance Based Design – Alternate Solutions

There are specific areas throughout the development where Deemed-to-Satisfy BCA Compliance will not be achieved by the proposed design and site constraints. These matters may need to be addressed in a detailed Fire Safety Engineering Report to be prepared for this development separately:

Item	Description of Non-Compliance	DTS Provision
1.	**Vertical separation of openings in external walls**	**Clause C2.6**

PART 6 STATEMENT OF COMPLIANCE

The architectural design documentation as referred to in this 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 pursuant of further detailed design suitable for the Construction Certificate application.

Annexure A Design Documentation

Assessed plans prepared by Classic Plans:

Plan Title	Drawing No	Revision	Date
Site Plan & Site Analysis Plan	040/19 1 of 11	A	07/02/2019
Basement Floor Plan	040/19 2 of 11	A	07/02/2019
Site & Ground Floor Plan	040/19 3 of 11	A	07/02/2019
First Floor Plan	040/19 4 of 11	A	07/02/2019
Second Floor Plan	040/19 5 of 11	A	07/02/2019
Roof Plan	040/19 6 of 11	A	07/02/2019
North Elevation	040/19 7 of 11	A	07/02/2019
South Elevation	040/19 8 of 11	A	07/02/2019
East & West Elevations	040/19 9 of 11	A	07/02/2019
Section A-A	040/19 10 of 11	A	07/02/2019
Section B-B	040/19 11 of 11	A	07/02/2019