DESIGN CONFIDENCE

BCA Design Assessment Report

Collaroy Vet Hospital

1121 Pittwater Road
COLLAROY NSW 2097

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The following report register documents the development and issue of this and each subsequent report(s) undertaken by Design Confidence (Sydney) Pty Ltd.

Revision History:

OUR REFERENCE	REMARKS	ISSUE DATE
P220_451-1 (BCA) LB	DRAFT report issued to stakeholders for review and comment	27 November 2020
P220_451-2 (BCA) LB	Report updated to FINAL reflecting updated drawings	17 December 2020

EXECUTIVE SUMMARY

This BCA Design Assessment report has been prepared by Design Confidence at the request of Big City Design and relates to the proposed change of use and additions to the existing building to create a veterinary hospital located at 1121 Pittwater Road Collaroy NSW.

Compliance would be achieved via a mixture of adopting a performance-based approach as well as complying with the relevant deemed-to-satisfy requirements as outlined within the BCA, compliance via the performance-based approach could occur without significant changes to the proposed design.

With respect to the assessment undertaken, the following areas in particular need further review as the project develops –

NO.	ITEMS FOR FURTHER CONSIDERATION	RESPONSIBILTY
1.	The main stairway serving the first floor is required to be accessible and therefore required to have a handrail each side. Further details of how this will be achieved whilst still maintaining 1m clear width is to be provided for assessment. There may be a concession to be afforded under D3.4 of the BCA to the first floor given the nature of the duties of the vets and nurses, however this would be at the discretion of the certifier and would require details from the client as to the exact duties performed.	Project Architect
2.	For the new portion of the building a test report from a Registered Testing Authority must be provided to certify that the façade / external walls achieve compliance with BCA FP1.4 and FV1.	Project Architect

In addition to undertaking a detailed assessment of the design against the perspective requirements of the BCA a preliminary performance based assessment has also been undertaken. The purpose of the assessment was to look at the incorporation of a performance based design may add value in-lieu of complying with the prescriptive (DtS) provisions.

Table 2 below lists scenarios where we believe the adoption of a performance design may add value to development and can be addressed at the Construction Certificate phase of the project–

NO.	DESIGN EFFICIENCIES	DTS Clause	Performance requirement
FIRE SAFETY			
1.	Extended travel distance occurs from level 01 staff deck whereby travel to the non fire-isolated stairway is 24m in lieu of 20m.	D1.4	DP4 & EP2.2

Be advised that the adoption of performance solutions for fire safety matters may be subject to consultation with the NSW Fire Brigade as part of the Construction Certificate process under Clause 144 of the Environmental Planning & Assessment Regulation 2000.

1.0 INTRODUCTION

1.1 General

This BCA Design Assessment report has been prepared at the request of Big City Design and relates to the proposed fit-out of an existing heritage building, including extending the top floor and changes to ground floor footprint for use as a vet hospital at 1121 Pittwater Road Collaroy NSW.

1.2 Purpose of Report

The purpose of this report is to identify the extent to which the architectural design documentation complies with the relevant prescriptive provisions of the Building Code of Australia (BCA) Volume 1, edition 2019 Amendment 1.

This report is based upon, and limited to, the information depicted in the documentation provided for assessment, and does not make any assumptions regarding 'design intention' or the like.

1.3 Documentation Provided for Assessment

This assessment is based upon the Architectural documentation prepared by Big City Design and listed within Appendix 1.

1.4 Report Exclusions

It is conveyed that this report should not construed to infer that an assessment for compliance with the following has been undertaken:

(i) Work Health & Safety Act and Regulations;

(ii) WorkCover Authority requirements;

(iii) Structural and Services Design Documentation;

(iv) The individual requirements of service authorities (i.e. Telecommunication Carriers, Sydney Water, Energy Australia);

(v) The Disability (Access to Premises - Buildings) Standards 2010;

(vi) The Disability Discrimination Act (DDA) 1992; and

(vii) The relevant Accessibility and Energy Efficiency Provisions as contained within the BCA.

2.0 DEVELOPMENT DESCRIPTION

2.1 General

In accordance with the BCA, the assessment undertaken relates to the proposed vet hospital at 1121 Pittwater Road Collaroy NSW.

For the purpose of the BCA the subject development may be described as contained below.

2.2 Building Description

PART OF PROJECT	
Classification	Class 5 (veterinary hospital)
Number of Storeys	Two (2)
Rise In Storeys	Two (2)
Type of Construction	Type C
Effective Height (m)	<25m

Summary of the floor areas and relevant populations where applicable: -

PART OF PROJECT	APPROX. FLOOR AREA (m^2)	APPROXIMATE VOLUME (m^3)	ASSUMED POPULATION
Sub-floor	22 m^2	53 m^3	
Ground Floor)	390m^2	1053m^3	10 staff + 10 clients
First Floor	340 m^2	918m^3	

Notes:

1. The above population numbers has been counted off number of workstations/ consult rooms, client has confirmed total staff number will be less than 10;

2. The floor areas have been adjusted without ancillary areas such as sanitary facilities, corridors, shelving and or racking layouts in storage areas.

2.3 BCA Assessment – Interpretation Notes

To provide the reader with additional context, the following information regarding the assessment methodology used in this assessment is provided below:

(i) Travel to alternative exits from the point of choice have been treated as being ≥45° apart on the ground floor;

(ii) It has been assessed this fit-out will result in a change of use from a Class 6 commercial space, to a Class 5 professional space;

(iii) For AS1670.1, AS1670.3 and AS1670.4; notwithstanding A4.0(5) of the BCA, until 1 May 2022 either the current edition or the previous editions of the documents listed in Table 1.8 of AS1670.1, AS1670.3 and AS1670.4 may be used to meet the requirements of AS1670.1, AS1670.3 and AS1670.4 as applicable.

3.0 BCA ASSESSMENT SUMMARY – CLASS 2-9 BUILDINGS

3.1 General

The following table summarises the compliance status of the architectural design in terms of each *applicable* prescriptive provision of the BCA and indicates a capability for compliance with the BCA.

Although, it should be recognised that instances exist where 'Prescriptive non-compliance' occurs, or 'Additional design input' is required.

Such instances should not necessarily be considered BCA deficiencies; but matters which need to be considered by the design team and any assessment authority at relevant stages of design and/or assessment.

For those instances of either 'prescriptive non-compliance' or 'additional design input', a detailed analysis and commentary is provided within Part 4 of this report.

3.2 Section B - Structure

BCA CLAUSE		COMPLIES	DOES NOT COMPLY	DESIGN DETAIL
B1.1	resistance to actions			✓
B1.2	determination of individual actions			✓
B1.4	materials and form of construction			✓

3.3 Section C - Fire Resistance

BCA CLAUSE		COMPLIES	DOES NOT COMPLY	DESIGN DETAIL
C1.1	fire resisting construction			✓
C1.8	structural tests for lightweight construction			✓
C1.10	fire hazard properties			✓
C1.14	ancillary elements			✓
C2.2	general floor area and volume limitations	✓		
C2.7	separation by fire walls			✓

BCA CLAUSE		COMPLIES	DOES NOT COMPLY	DESIGN DETAIL
C3.2	protection of openings in external walls			✓
C3.4	acceptable methods of protection			✓
C3.12	openings in floors and ceilings for services			✓
C3.13	openings in shafts			✓
C3.15	openings for service installations			✓
C3.16	construction joints			✓

BCA CLAUSE		COMPLIES	DOES NOT COMPLY	DESIGN DETAIL
C3.17	columns protected with lightweight construction to achieve an FRL			✓

3.4 Section D - Access and Egress

BCA CLAUSE		COMPLIES	DOES NOT COMPLY	DESIGN DETAIL
D1.2	number exits required	✓		
D1.3	when fire-isolated stairways and ramps are required	✓		
D1.4	exit travel distances		✓	
D1.5	distance between alternative exits	✓		
D1.6	dimensions of exits and paths of travel to exits	✓		
D1.10	discharge from exits			✓
D2.7	Installations in exits and paths of travel			✓
D2.19	doorways and doors			✓
D2.20	swinging doors			✓
D2.21	operation of latch			✓
D3.4	exemptions			✓

3.5 Section E - Services and Equipment

BCA CLAUSE		COMPLIES	DOES NOT COMPLY	DESIGN DETAIL
E1.3	fire hydrants			✓
E1.4	fire hose reels			✓
E1.6	portable fire extinguishers			✓
E2.2	general provisions			**n/a**
E3.1	lift installations			✓
E3.3	warning against the use of lifts in fire			✓
E3.5	landings	✓		
E4.2	emergency lighting requirements			✓
E4.5	exit signs			✓
E4.6	direction signs			✓

3.6 Section F - Health & Amenity

BCA CLAUSE		COMPLIES	DOES NOT COMPLY	DESIGN DETAIL
F1.7	waterproofing of wet areas in buildings			✓
F1.13	glazed assemblies			✓
F2.3	facilities in class 3 to 9 buildings			✓
F2.5	construction of sanitary compartments			✓
F3.1	heights of rooms and other spaces	✓		
F4.4	artificial lighting			✓
F4.5	ventilation of rooms			✓
F4.8	restriction of position of water closets and urinals	✓		
F6.1	pliable building membranes			✓
F6.2	flow rate and discharge of exhaust systems			✓
F6.3	ventilation of roof spaces			✓

4.0 BCA DETAILED ASSESSMENT – CLASS 2-9 BUILDINGS

4.1 General

With reference to the 'BCA Assessment Summary' contained within Part 3.1 of this report, the following detailed analysis and commentary is provided.

This commentary is formulated to enable the design documentation to be further progressed, for the purpose of evidencing the attainment of compliance with the relevant provisions of the BCA.

4.2 Section B – Structure

B1.1	If any internal works undertaken alter or replace existing structural components the resistance of a building or structure shall be greater than the most critical action effect determined by B1.2 of the BCA, AS/NZS 1170.0-2002 and B1.4 of the BCA.
B1.2	The structural design of the building is required to be determined in accordance with the varying "actions" considerations contained within this clause (i.e. permanent actions, imposed actions, wind / snow / earthquake actions).
B1.4	The structural resistance of materials and forms of construction shall be determined in accordance with the following: (i) Masonry - AS3700-2018 (ii) Concrete construction - AS3600-2018 (iii) Footings and slabs – AS2870-2011 (iv) Steel construction - AS4100-1998 or AS/NZS 4600-2005 (v) Termite Risk Management - AS3660.1-2014 (vi) Piling - AS2159-2009 (vii) Glazed assemblies - AS2047-2014-amendments 1 & 2 (external), and/or AS1288-2006 (internal)

4.3 Section C – Fire Resistance

C1.1	The building elements are required to achieve the nominated FRLs as nominated within BCA Spec C1.1 as applicable, these FRLs have been summarised within Table A2.1 as contained within Appendix 2. In addition to the FRLs contained within the Appendix A2 the following information details the construction methodology and concessions available to the subject building. ❑ *General notes* (i) Internal walls required to have an FRL must extend: ▪ To the underside the floor next above;

C1.1 *Cont'd*

- To the underside of a roof covering if it is non-combustible and must not be crossed by timber or other combustible building elements, expect for roof battens with dimensions of 75mm x 50mm or less or sarking-type material; or
- A ceiling that is immediately below the roof and has a resistance to the incipient spread of fire to the roof space between the ceiling and the roof of not less than 60 minutes;

(ii) Any loadbearing internal wall and a loadbearing fire wall (including shafts) is required to be of concrete or masonry or fire-protected timber;

(iii) A non-loadbearing internal wall required to achieve an FRL is required to be of non-combustible construction;

(iv) A shaft which is not for the discharge of hot products of combustion and not load-bearing is required to be of non-combustible construction;

(v) The bottom of any shafts is required to be non-combustible and laid directly on the ground unless otherwise enclosed by construction having an FRL not less than that required for the walls; and

(vi) Building elements are required to achieve an FRL from both sides.

❑ *Method of attachment not to reduce the fire-resistance of building elements*

The method of attaching or installing a finish, lining, ancillary element or service installation to a building element must not reduce the fire-resistance of that element to below that required.

Any new structural works as a result of the proposed works will need to comply with the provisions of Specification for a Type C building.

C1.8 Any lightweight construction to internal walls required to achieve an FRL or protection to steel columns required achieve an FRL are required to be tested for resistance in accordance with this clause.

C1.10 The fire hazard properties for materials proposed to be provided have been summarised within Table A3.1 as contained within Appendix 3.

C2.2

The maximum floor area and volume limitations of a fire compartment as nominated in the deemed to satisfy provisions are as follows:

CLASSIFICATION		TYPE OF CONSTRUCTION		
		A	B	C
5, 9b or 9c aged care building	Max floor area (m^2)	8,000	5,500	3,000
	Max volume (m^3)	48,000	33,000	18,000
6, 7, 8 or 9a (except for patient care areas)	Max floor area (m^2)	5,000	3,500	2,000
	Max volume (m^3)	30,000	21,000	12,000

The proposed alterations do not increase the floor area of the building above the parameters outlined within this clause.

C3.2

The subject development is located on the Northern boundary which is considered a fire-source feature. The boundary walls are required to have an FRL and are proposed to have openings located within.

These openings are required to be protected under the provisions of C3.4, plans note that fire rated glass is proposed to protect the window on ground floor. Doorway on the first floor is to be a self-closing fire door in accordance with C3.4.

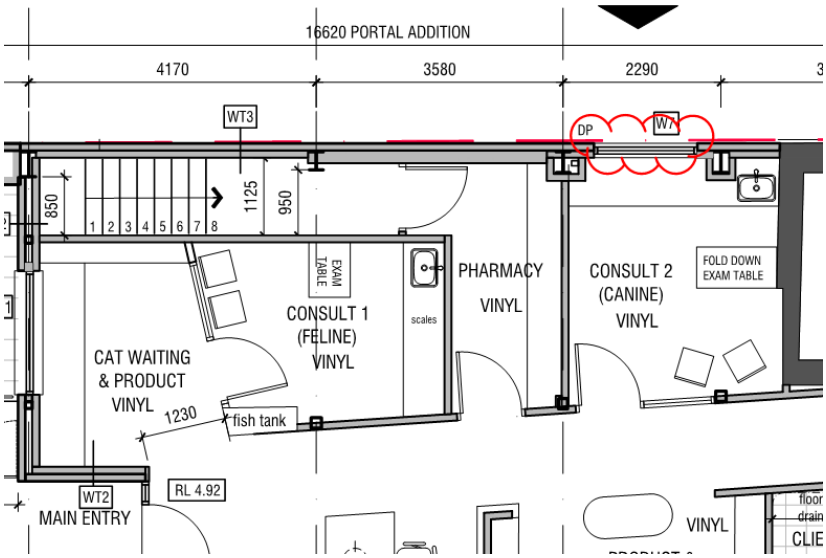

Figure 1 Opening on the ground floor requiring protection.

C3.2 *Cont'd*

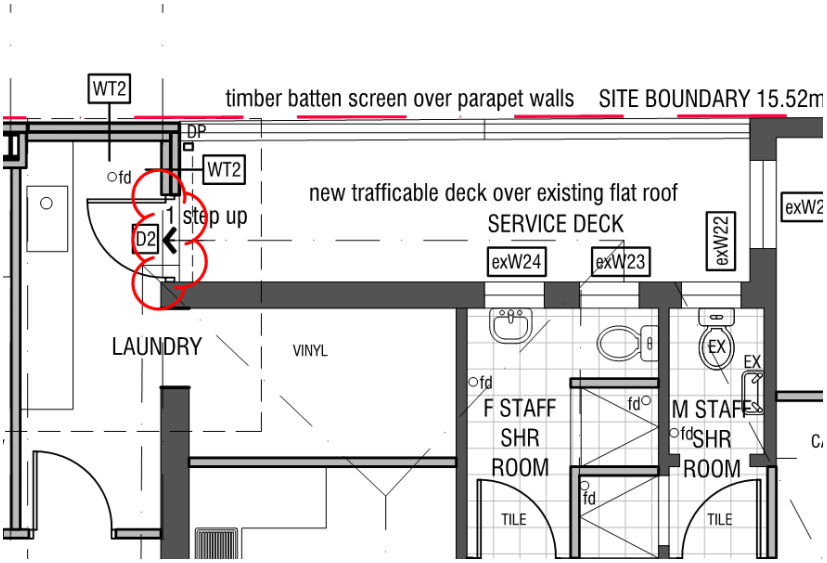

Figure 2 Openings within 3m of the boundary on the first floor, clouded new opening requires protection in accord with C3.4

On the first floor, there are existing openings located in theatre 2 and in adjoining shower rooms, as these are existing openings they are considered to fall outside the scope of works.

C3.15 Any openings for service installations (electrical, mechanical, plumbing, etc.) that penetrates a building element which is required to be of fire resisting construction is required to be protected (i.e. fire seals).

C3.16 Construction joints, spaces and the like in and between building elements required to be fire-resisting with respect to integrity and insulation are required to be protected in a manner identical with a prototype tested in accordance with AS1530.4-2014 to achieve the required FRL.

C3.17 Where a column is protected by lightweight construction to achieve the required FRL defined by C1.1 passes through a building element that is also required to have an FRL it is required to be installed using a method and materials identical with the prototype assembly of the construction which has achieved the required FRL.

4.4 Section D – Access and Egress

D1.2 Under the provisions of this clause, both storeys, plus the basement are required to be provided with a minimum of one exit on the first and basement and two exits will be provided to the ground floor.

The basement is permitted to have a single exit as it is less than 50m^2 and the exit can be reached within 20m.

D1.3 The stairway has been treated as a non fire-isolated stairway and is not required to be fire-isolated under the provisions of this clause.

D1.4	The travel distances to exits should not exceed the following - <u>Class 5-9</u> (i) 20m to a single exit or point of choice and where two exits are provided, a maximum of 40m to one of those exits; and (ii) exits shall be located to not be more than 60m apart and not closer than 9m A preliminary assessment of the floor plans has revealed travel distances are exceeded on the first floor up to a maximum of 24m To ensure compliant travel distances and egress afforded within the tenancy, an additional exit will need to be provided to the storey, or alternatively a performance solution may be sought to assess against the performance provisions of the BCA by a registered fire engineer.

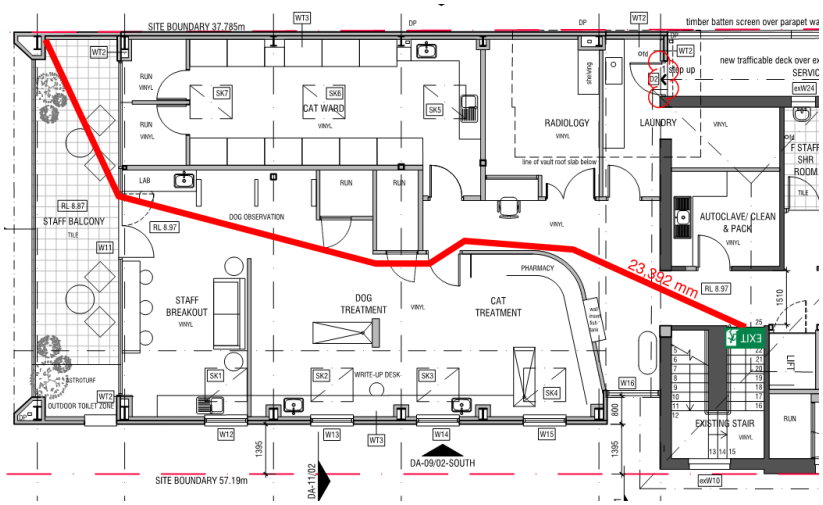

Figure 3 *Extended travel distances on the first floor*

D1.5	Distance between alternative exits are to be within a maximum 60m and a minimum of 9m. The proposed exits on the ground floor comply with these provisions.
D1.6	The path of travel to an exit and any required exit is to have an unobstructed height throughout of not less than 2m (except a doorway, which can be 1980mm) and an unobstructed width not less than 1m (except a doorway, which can be 750mm in an area not required to be accessible and 850mm in an area required to accessible).
D1.13	Reference should be made to the projected / proposed occupant loads detailed within Section 2.2. The client / end user is to be provide confirmation that the numbers specified are true and correct.

D2.7

(i) Gas or other fuel services shall not be installed within the required exits; and

(ii) Any services or equipment (being electrical meters, distribution boards or the like) installed within the hallway are required to be enclosed by non-combustible construction or a fire-protective covering (i.e. 1 layer of 13mm fire-protective grade plasterboard) with doorway(s) or opening(s) suitably sealed against smoke spreading from the enclosure.

D2.13

The going, riser and steepness dimension of the stairways are required to be designed within the following range:

Stairway location	Riser (R)	Going (G)	Quantity (2R + G)
Public	Max: 190mm Min:115mm	Max:355mm Min: 250mm	Max: 700mm Min:550mm

(i) The risers and goings are required to be constant throughout the flight except variations of no greater than 5mm are permitted between adjacent risers or goings and no greater than 10mm are permitted between the smallest and largest goings or risers in a flight; and

The stair treads are required to have a surface or nosing strip achieving a slip-resistance classification of P3 or R10 in dry or P4 or R11 in wet tested in accordance with AS4586-2013 (amendment 1).

The main stairway serving the first floor, if not complying is to be brought into compliance.

D2.14

Stair landings are required to be a minimum of 750mm long with a gradient not steeper than 1:50 and have a slip-resistance surface or strip.

The surface or strip is required to achieve a slip-resistance classification of P3 or R10 in dry or P4 or R11 in wet tested in accordance with AS4586-2013 (amendment 1).

The main stairway serving the first floor, if not complying is to be brought into compliance.

D2.15

In the case of a raised floor being utilised, the threshold of a doorway is not permitted to incorporate a step or ramp at any point closer to the doorway than the width of the door leaf.

At the doorway opening directly to the street it is permissible for the doorway to contain a threshold or step ramp in accordance with AS1428.1.

D2.16	Balustrades are required to be constructed as follows: (i) To a height not less than 865mm above the nosings of the stair treads or the floor of a ramp; (ii) 1000mm above the floor of any access path, balcony, landing or the like; (iii) Any opening does not permit a 125mm sphere to pass through it and for stairs, the space is measured above the nosings; (iv) For floors more than 4m above the surface beneath, any horizontal or near horizontal elements between 150mm and 760mm must not facilitate climbing; and
D2.17	Handrails are required along one (1) side of each stairway flight and ramp, unless required to assist people with a disability. The handrails are required to fixed at a height of not less than 865mm measured above the nosings of the stair treads or ramp and be continuous such that no obstruction on or above them will tend to break a hand hold. The main stairway serving the first floor is required to be accessible and therefore required to have a handrail each side. Further details of how this will be achieved whilst still maintaining 1m clear width is to be provided for assessment.
D2.19	A doorway serving as a required exit or forming part of a required exit – (i) Must not be fitted with a revolving door; (ii) Must not be fitted with a roller shutter or tilt-up door unless – ▪ It serves the Class 6 part with a floor area not more than 200m^2; and ▪ The doorway is the only required exit from the building or part; and ▪ It is held in the open position while the building part is lawfully occupied; and (iii) Must not be fitted with a sliding door unless – ▪ It leads directly to a road or open space; and ▪ The door is able to be opened manually under a force of not more than 110N; and (iv) If fitted with a door which is power-operated – ▪ It must be able to be opened manually under a force of not more than 110N if there is a malfunction or failure of the power source; and ▪ If it leads directly to a road or open space it must open automatically if there is a power failure to the door or on the activation of a fire or smoke alarm anywhere in the fire compartment served by the door.

D2.21	Any door in a required exit, forming part of a required exit or in the path of travel to a required exit are required to be readily operable without a key from the side that faces a person seeking egress and: (i) By a single hand pushing or downward action on a single device located between 900mm and 1100mm from the floor; ▪ Be such that the hand of a person who cannot grip will not slip from the handle during the operation of the latch; and ▪ Have a clearance between the handle and the back plate or door face at the centre grip section of the handle of not less than 35mm nor more than 45mm; or ▪ A single hand pushing action on a single device which is located between 900mm and 1.2m above the floor. (ii) Where the latch operation device referred to above is not located on the door leaf itself – ▪ Manual controls to power-operated doors must be at least 25mm wide, proud of the surrounding surface and located- a. Not less than 500mm from an internal corner; and b. For a hinged door, between 1m and 2m from the door leaf in any position; and c. For a sliding door, within 2m of the doorway and clear of a surface mounted door in the open position ▪ Braille and tactile signage complying with Clause 2 and 6 of Specification D3.6 must identify the latch operation (iii) Fitted with a fail-safe device which automatically unlocks the door upon the activation of any sprinkler system or detection system deemed suitable in accordance with AS1670.1-2018 installed throughout the building.
D3.4	Discussion with the client has revealed a number of areas may be afforded an exemption under D3.4 due to the nature of the duties performed within the veterinary facility. If the owner provides a statement there may be scope to give a concession for the first floor and ward areas on the ground floor. This will be at the certifiers discretion.

4.5 Section E – Services & Equipment

E1.3	A fire hydrant system complying with AS2419.1-2005 is required to serve the building. Confirmation from a hydraulic consultant is to be sought as to whether street hydrants can be relied upon.
E1.4	A hose reel system is not required to serve the tenancy as building is a Class 5 building.

E1.6	Portable extinguishers must be provided in accordance with Table E1.6 to cover risk classes within the subject fit out. Portable fire extinguishers complying with AS2444-2001 are required as follows: (i) To cover Class A fire risks associated with a Class 5 part of a building.
E2.2	There are no requirements for smoke hazard management within the building.
E3.1	The electric passenger lift installation or an electrohydraulic passenger lift installation are required to comply with Specification E3.1.
E3.2	Warning signage shall be displayed near every call button for the passenger lifts.
E3.5	The circulation spaces at the lift well landings are noted as being no less than 1.5m x 1.5m and considered compliant for the provisions of this clause.
E4.2	Emergency lighting complying with AS2293.1-2018 is required to be installed throughout.
E4.5	Exit signage complying with AS2293.1-2018 are required installed above or adjacent to any doorways serving as required exits from the building and final doors from stairways.
E4.6	If an exit is not readily apparent to persons occupying or visiting either the building, then exit signs complying with AS2293.1-2018 are required to be installed in appropriate positions in corridors, hallways, lobbies and the like, indicating the direction to a required exit.

4.6 Section F – Health & Amenity

F1.7	Building elements in wet areas must be water-resistant or waterproof in accordance with Table F1.7 and comply AS 3740-2010.
F2.3	The number of sanitary facilities provided for the tenancy and proposed population have been generally determined as being compliant based on the number of persons accommodated. It is assumed there will be a higher percentage of female usage, hence a ration of 1:2 male to females has been utilised in assessing facilities. The existing sanitary facility is to be nominated as a female facility. See Appendix 4 for our preliminary calculations.

F2.5	Where separate facilities are provided: (i) Sanitary compartments must have doors and partitions that separate adjacent compartments and extend 1.8m above the floor. (ii) The door to a full enclosed sanitary compartment is required to: ▪ Open outwards; ▪ Slide; or ▪ Be readily removable from the outside of the sanitary compartment (i.e. lift-off hinges). Unless there is a clear space of at least 1.2m between the closest pan within the sanitary compartment and the hinge side edge of the doorway.
F3.1	Unobstructed ceiling heights are required as follows: (i) A part or corridor that serves a part that accommodates not more than 100 persons – 2.4m; (ii) A part or corridor that serves a part that accommodates more than 100 persons – 2.7m; (iii) A bathroom, sanitary facilities, tea preparation room, store room, car parking areas or the like – 2.1m; (iv) Above a stairway, ramp, landing or the like – 2m; (v) Except as allowed above – 2.4m.
F4.4	Where natural light is not available, artificial lighting must be provided in required stairways, passageways and ramps; and to all rooms that are frequently occupied, all spaces required to be accessible, all corridors, lobbies, other circulation spaces and paths of egress. Artificial lighting must comply with AS/NZS1680.0-2009.
F4.5	Any habitable room, sanitary compartment, bathroom, laundry and any other room occupied by a person for any purpose must have either: (i) Natural ventilation (i.e. opening(s) having an openable area of 5% of the room being served) complying with F4.6; or (ii) Mechanical ventilation complying with AS1668.2-2012 (amendment 2).
F6.2	Where a pliable building membrane is installed in an external wall, it must comply with the requirements of this clause. Where a pliable membrane is not installed in an external wall, the primary water control layer must be separated from water sensitive materials by a drained cavity, except for single skin masonry and single skin concrete.

F6.3	An exhaust system installed in a kitchen, bathroom, sanitary compartment or laundry must be installed to comply with the requirements of this clause.
F6.4	Where an exhaust system is installed in a kitchen, bathroom, sanitary compartment or laundry and discharges directly or via a shaft or duct into a roof space, the roof space must be ventilated to outdoor air through evenly distributed openings in accordance with the requirements of this clause.

5.0 CONCLUSION

Based upon our detailed review of the proposed architectural drawings, it is the opinion of this office that the subject development is capable of complying with the performance provisions of the BCA. Compliance would be achieved via a mixture of adopting a performance based approach as well as complying with the relevant deemed-to-satisfy requirements as outlined within the BCA, compliance via the performance based approach could occur without significant changes to the proposed design.

Report By

Lindsay Beard
Associate | Building Regulations
For Design Confidence (Sydney) Pty Ltd

Verified By

Luke Sheehy
Principal
For Design Confidence (Sydney) Pty Ltd

APPENDIX 1

The BCA Design Assessment was based upon the following architectural documentation prepared by Big City Design, namely:

DRAWING NO.	DESCRIPTION	REVISION	DATE
DA-00	Cover Page	A	16.12.2020
DA-01	Site Analysis & Plan	A	16.12.2020
DA-02	Site Plan	A	16.12.2020
DA-03	Existing Floor Plans	A	16.12.2020
DA-04	Demolition Plan	A	16.12.2020
DA-05	Proposed Floor Plans	A	16.12.2020
DA-06	Proposed Roof Plan	A	16.12.2020
DA-07	Existing Elevations – West & South	A	16.12.2020
DA-08	Existing Elevations – East & North	A	16.12.2020
DA-09	Proposed Elevations – West & South	A	16.12.2020
DA-10	Proposed Elevations – East & North	A	16.12.2020
DA-11	Sections	A	16.12.2020

APPENDIX 2

The Table below represents the Fire Resistance Levels (FRLs) required in accordance with BCA 2019 Amendment 1 to any components altered or replaced as part of the works:

Table A2 TYPE B CONSTRUCTION: FRL OF BUILDING ELEMENTS

Building element	Class of building—FRL: (in minutes) *Structural adequacy/Integrity/Insulation*			
	2, 3 or 4 part	5, 7a or 9	6	7b or 8
EXTERNAL WALL (including any column and other building element incorporated therein) or other external building element, where the distance from any *fire-source feature* to which it is exposed is—				
For *loadbearing* parts—				
less than 1.5 m	90/ 90/ 90	120/120/120	180/180/180	240/240/240
1.5 to less than 3 m	90/ 60/ 30	120/ 90/ 60	180/120/ 90	240/180/120
3 to less than 9 m	90/ 30/ 30	120/ 30/ 30	180/ 90/ 60	240/ 90/ 60
9 to less than 18 m	90/ 30/–	120/ 30/–	180/ 60/–	240/ 60/–
18 m or more	–/–/–	–/–/–	–/–/–	–/–/–
For non-*loadbearing* parts—				
less than 1.5 m	–/ 90/ 90	–/120/120	–/180/180	–/240/240
1.5 to less than 3 m	–/ 60/ 30	–/ 90/ 60	–/120/ 90	–/180/120
3 m or more	–/–/–	–/–/–	–/–/–	–/–/–
EXTERNAL COLUMN not incorporated in an *external wall*, where the distance from any *fire-source feature* to which it is exposed is—				
less than 3 m	90/–/–	120/–/–	180/–/–	240/–/–
3 m or more	–/–/–	–/–/–	–/–/–	–/–/–
COMMON WALLS and FIRE WALLS—	90/ 90 / 90	120/120/120	180/180/180	240/240/240
INTERNAL WALLS—				
Fire-resisting lift and stair *shafts*—				
Loadbearing	90/ 90/ 90	120/120/120	180/120/120	240/120/120
Fire-resisting stair *shafts*				
Non-*loadbearing*	–/ 90/ 90	–/120/120	–/120/120	–/120/120
Bounding *public corridors*, public lobbies and the like—				
Loadbearing	60/ 60/ 60	120/–/–	180/–/–	240/–/–
Non-*loadbearing*	–/ 60/ 60	–/–/–	–/–/–	–/–/–
Between or bounding *sole-occupancy units*—				
Loadbearing	60/ 60/ 60	120/–/–	180/–/–	240/–/–
Non-*loadbearing*	–/ 60/ 60	–/–/–	–/–/–	–/–/–
OTHER LOADBEARING INTERNAL WALLS and COLUMNS—	60/–/–	120/–/–	180/–/–	240/–/–
ROOFS	–/–/–	–/–/–	–/–/–	–/–/–

APPENDIX 3

The table below represents the fire hazard properties for building materials applicable to this development.

FLOOR LININGS AND FLOOR COVERINGS CRITICAL RADIANT FLUX (CRF IN KW/M2)	
Non-Sprinkler Protected Areas	2.2
Sprinkler Protected Areas	1.2
Fire-Isolated Exits & Fire Control Rooms	1.2
Lift Cars	2.2
WALL LININGS AND CEILING LININGS TESTED TO AS5637.1	
Fire-Isolated Exits & Fire Control Rooms	Group 1
Public Corridors – Walls	Group 1
Public Corridors – Ceilings	Group 1
Specific Areas – Walls	Group 1 or 2
Specific Areas – Ceilings	Group 1 or 2
Other Areas – Walls	Group 1, 2 or 3
Other Areas – Ceilings	Group 1, 2 or 3
Lift Cars	Group 1 or 2
NOTE	In addition to achieving the group number above they too must comply with the following – ▪ a smoke growth rate index not more than 100; or ▪ an average specific extinction area less than 250m²/kg
OTHER MATERIALS OR ASSEMBLIES	
Fire-Isolated Exits & Fire Control Rooms	Spread-of Flame Index of not more than 0 Smoke-Developed Index of not more than 2
Non-fire-isolated stairs & escalators and auditorium fixed seating	Spread-of Flame Index of not more than 0 Smoke-Developed Index of not more than 5
Sarking-type material	Flammability Index of not more than 0 (fire control rooms) Flammability Index of not more than 5 (other areas)
Other materials	Spread-of Flame Index of not more than 9 Smoke-Developed Index of not more than 8 (if the Spread-of Flame Index is more than 5)

APPENDIX 4

The number of required sanitary facilities is set out below in Table A4 –

Table A4 – Required Sanitary Facilities

	OCCUPANT POPULATION NUMBER			WC REQUIRED / PROVIDED		URINAL REQUIRED / PROVIDED		BASIN REQUIRED / PROVIDED	
Staff	**10**	Male	1	***1***	*1*	***0***	*0*	***1***	*1*
		Female	1	***1***	*1*	-	-	***1***	*1*

The above includes the following -

- The existing sanitary facilitys has been assessed as unisex but each counted towards male and female.

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