

# BCA COMPLIANCE CAPABILITY REPORT

### PREPARED FOR

Fox Johnston 1/268A Devonshire Street SURRY HILLS NSW 2010

### PREMISES 120C Old Canterbury Road, Lewisham

DATE 05 June 2020

### PROJECT NO. J200035

#### BCA FIRE LEGAL

T0297152555Einfo@viclilli.com.auLocked Bag 3013 Burwood NSW 1805. DX 8505Document Set ID: 33989845Wwww.viclilli.com.auSuite 7. Level 2. 1–17 Elsie Street. Burwood NSW 2134Version: 1. IVersion Date: 25/09/2020Pty LtdABN 84 158 874 812



### Contents

	Page No.
CONTENTS	2
1.0 EXECUTIVE SUMMARY	3
2.0 REPORT SUMMARY	4
2.1 – Location 2.2 –Description of Works 2.3 – Report Purpose 2.5 – Building Description	4 4 4 5
3.0 – BUILDING CODE OF AUSTRALIA ASSESSMENT	6
<ul> <li>3.1 – STRUCTURAL PROVISIONS (SECTION B, BCA)</li></ul>	
4.0 FIRE SAFETY MEASURES	
5.0 CONCLUSION	
5.1 – CONCLUSION	28
6.0 REFERENCES	
6.1 – Basis of Report	29

This revision register documents the development and issue of this and each subsequent report undertaken by Vic Lilli & Partners Pty Ltd.

REVISION	DATE	COMMENT	PREPARED BY
01	16.04.2020	Draft	CG
02	02.06.2020	Final	CG
03	05.06.2020	Final	CG



# **1.0 Executive Summary**

This report identifies the extent of compliance achieved by the architectural documentation against the relevant provisions of the Building Code of Australia (BCA) 2019 and adopted standards.

The proposed development of 120C Old Canterbury Road, Lewisham NSW 2049 as detailed in the Development Application comprises construction of a building containing the following:

- 57 residential apartments comprising of two inter-connected residential towers over a podium level,
- A podium consisting of 3 levels of residential car parking and a small retail and commercial component.

This report will provide a BCA analysis to assist in the process of design development and to assist the consent authority in the determination of the Development Application relating to the works.



## 2.0 Report Summary

#### 2.1 – Location

The subject building is to be located at 120C Old Canterbury Road, Lewisham NSW 2049 directly adjacent to the proposed local centre and with southern side boundary facing to Old Canterbury Road. The proposed development is to be located to the rear of the existing light rail line.

#### 2.2 – Description of Works

The construction of a building containing the following:

- 57 Sole Occupant Units on levels nine.
- Three levels of underground car parking.
- Three Retail tenancies, and
- One Commercial tenancies.

#### 2.3 – Report Purpose

This report has been prepared to identify aspects of the proposed design that require further consideration and to identify aspects of the design that may be altered subsequent to the issue of a Development Consent.

This report has been prepared on the basis of an assessment of compliance only and should not be construed as being design advice.



### 2.5 – Building Description

<b>_</b>		
Classification	Class 2 – Sole-Occupancy Units Class 5 – Commercial Class 6 – Retail Class 7a – Carpark	
Rise in Storeys	The building has a rise of Nine (9) storeys.	
No. of Storeys	The development will contain a total of Twelve (12) storeys.	
Effective Height	The building will have an effective height of less than 25m (approximately 24.7m).	
Type of Construction	The building is to adopt Type A construction throughout	
Floor Area Limitations	<ul> <li>Floor area limitations are not applicable to Class 2 and 7a portions that hare sprinkler protected.</li> <li>6 – Max floor area – 5,000m<sup>2</sup></li> <li>6 retail portions do not exceed the maximum size of fire compartment in part C2.2 of the BCA 2019.</li> <li>Class 5 - Max floor area—8 000 m<sup>2</sup></li> <li>Class 5 Commercial portion does not exceed the maximum size of fire compartment in part C2.2 of the BCA 2019.</li> </ul>	
Volume Limitations	<ul> <li>Floor volume limitations are not applicable to Class 2 7a portions that hare sprinkler protected.</li> <li>6 – Max floor volume – 30,000m<sup>3</sup></li> <li>6 retail portions do not exceed the maximum size of fire compartment in part C2.2 of the BCA.</li> <li>Class 5 - Max volume—48 000 m<sup>3</sup></li> <li>Class 5 Commercial portion does not exceed the maximum size of fire compartment in part C2.2 of the BCA 2019.</li> </ul>	
Population	<ul> <li>Class 2 Residential levels are not populated in accordance with BCA Clause D1.13.</li> <li>Class 5 commercial tenancies can accommodate a rate of one person per 10m<sup>2</sup> allow a total of 8 occupants</li> <li>Class 6 retail tenancies can accommodate a rate of one person per 1m<sup>2</sup> allow the following total; <ul> <li>Level one retail = 90 Occupants,</li> <li>Level three retails = 59 &amp; 56 Occupants.</li> </ul> </li> </ul>	



## **3.0 – Building Code of Australia Assessment**

### 3.1 – Structural Provisions (Section B, BCA)

Item	Comment
Resistance to actions	<ul> <li>The resistance of a building and its structure must be greater than the most critical action effect resulting from different combinations of actions;</li> <li>the most critical action effect on a building or structure is determined in accordance with B1.2 and the general design procedures contained in AS/NZS 1170.0; and</li> <li>the resistance of a building or structure is determined in accordance with B1.4.</li> </ul>
Determination of individual actions	<ul> <li>The magnitude of the buildings actions must be determined in accordance with the following:</li> <li>Permanent and Imposed Actions – AS 1170.1,</li> <li>Wind and earthquake actions – AS 1170 Part 2 and 4.</li> </ul>
Determination of structural resistance of materials and forms of construction	<ul> <li>The structural resistance of the building and materials and forms of construction must be determined in accordance with the following, as appropriate:</li> <li>Masonry – AS 3700,</li> <li>Concrete – AS 3600, AS 5146.1 &amp; AS 5216,</li> <li>Steel Construction – AS 4100 &amp; AS 4600,</li> <li>Composite steel and concrete - AS 2327,</li> <li>Aluminium construction - AS1664.1 or AS 1664.2,</li> <li>Piling – AS 2159, and</li> <li>Glazing – AS 2047.</li> </ul>



### 3.2 – Fire Resistance and Stability (Section C, BCA)

Item	Comment		
Fire Resistance	The proposed building structure, k columns and the various shafts ar required fire resistance levels as Clause 2 & 3 of Specification C1.1 Table 3 of Specification C1.1 for t Required fire resistance levels (FR	being reinforced concrete floors, nd cores, is to comply with the specified in Clause C1.1 and 1 for Type A construction. Refer to he specific FRL's. RL) are generally as follows;	
	Class		
		120/120/120	
		120/120/120	
	Class 0	180/180/180	
	Where lightweight fire rated cons system must comply with Spec manufactures tested specification Columns protected with lightweig subject to mechanical damage m filled in accordance with Clause C	truction is proposed for walls, the cification C1.8 of BCA and the	
Compartmentation	In accordance with BCA Clause C2.7, C2.8 and Table 3 of Specification C1.1 the required FRL for all internal walls boundir sole occupancy units are as follows:		
	<ul> <li>90/90/90 FRL (Loadbearing was -/60/60 FRL (Non-loadbearing</li> </ul>	alls in Class 2) walls in Class 2)	
	In accordance with BCA Clause C C1.1 the floor to the following part than that as follows;	2.9 and Table 3 of Specification ts must have an FRL of not less	
	<ul> <li>120/120/120 between Baseme all Class 2 portions and 180/12 the Basement car park level all</li> <li>90/90/90 between remaining remaing remaining rema</li></ul>	ent Carpark and Ground Floor for 80/180 for the portion separating nd retail level; and esidential floors.	
	In accordance with BCA Table 3 of walls separating the Class 6 retail have a walls with the FRL of not le	of Specification C1.1, the following and Class 5 Commercial must ess than that as follows;	
	<ul> <li>180/180/180 between the reta</li> <li>120/120/120 Between the con</li> </ul>	il tenancy and SOUs; and nmercial tenancy and SOUs.	
	The proposed development can a requirements which will be confirm phase. Please refer to Table 3 fro required FRL related to the propo	chieve the required prescriptive ned at the construction certificate m Specification C1.1 for all the sed works;	



	Structural adequacy/Integrity Insulation		on	
	2, 3 or 4 part	5, 7a or 9	6	7b or 8
EXTERNAL WALL (including any	column and other bu	uilding element incor	porated within it) or	other external buil
element, where the distance from	any fire-source featur	re to which it is expo	sed is—	
For loadbearing parts—				
less than 1.5 m	90/ 90/ 90	120/120/120	180/180/180	240/240/240
1.5 to less than 3 m	90/ 60/ 60	120/ 90/ 90	180/180/120	240/240/180
3 m or more	90/ 60/ 30	120/ 60/ 30	180/120/ 90	240/180/ 90
For non-loadbearing parts-		•		
less than 1.5 m	-/ 90/ 90	-/120/120	-/180/180	-/240/240
1.5 to less than 3 m	-/ 60/ 60	-/ 90/ 90	-/180/120	-/240/180
3 m or more	_/_/_	-/-/-	_/_/_	_/_/_
EXTERNAL COLUMN not incorpo	prated in an external v	wall—	•	
For loadbearing columns-	90/-/-	120/-/-	180/_/_	240/_/_
For non-loadbearing columns-	_/_/_	_/_/_	_/_/_	_/_/_
COMMON WALLS and FIRE	90/ 90/ 90	120/120/120	180/180/180	240/240/240
WALLS-				
INTERNAL WALLS—	•	•		
Fire-resisting lift and stair shafts-				
Loadbearing	90/ 90/ 90	120/120/120	180/120/120	240/120/120
Non-loadbearing	-/ 90/ 90	-/120/120	-/120/120	-/120/120
Bounding public corridors, public I	obbies and the like-			
Loadbearing	90/ 90/ 90	120/-/-	180/_/_	240/-/-
Non-loadbearing	-/ 60/ 60		_/_/_	_/_/_
Between or bounding sole-occupa	incy units-			
Loadbearing	90/ 90/ 90	120/-/-	180/_/_	240/-/-
Non-loadbearing	-/ 60/ 60		_/_/_	_/_/_
Ventilating, pipe, garbage, and like	e shafts not used for t	he discharge of hot	products of combusti	on—
Loadbearing	90/ 90/ 90	120/ 90/ 90	180/120/120	240/120/120
Non-loadbearing	-/ 90/ 90	-/ 90/ 90	-/120/120	-/120/120
OTHER LOADBEARING INTERN	AL WALLS, INTERN	AL BEAMS, TRUS	SES	
and COLUMNS—	90/-/-	120/-/-	180/_/_	240/-/-
FLOORS	90/ 90/ 90	120/120/120	180/180/180	240/240/240
Building element	1	Class of building	— FRI : (in minutes	:)
Danang dement		Structural adequa	cv/Integrity/Insulati	on
	2, 3 or 4 part	5, 7a or 9	6	7b or 8
ROOES	90/ 60/ 30	120/ 60/ 30	180/60/30	240/90/60



Non-combustible building elements	<ul> <li>In a Type A and B Construction building, the following elements are required to be Non-combustible;</li> <li>External walls and common walls, including all components incorporated in them including the facade covering, framing and insulation,</li> <li>The flooring and floor framing of lift pits,</li> <li>Non-loadbearing internal walls where they are required to be fire-resisting, and</li> <li>A shaft, being a lift, ventilating, pipe, garbage, or similar shaft that is not for the discharge of hot products of combustion, that is non-loadbearing, must be of non-combustible.</li> </ul>
	<ul> <li>In accordance with BCA Specification C1.1 Clause 2.4, a combustible material may be used as an external finish or lining to a wall which has the required FRL if –</li> <li>The material is exempted under BCA Clause C1.10 or complies with the fire hazard properties prescribed in Specification C1.10; and</li> <li>It is not located near or directly above a required exit so as to make the exit unusable in a fire; and</li> <li>It does not otherwise constitute an undue risk of fire spread via the façade of the building</li> </ul>
	Also, all 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 one of the following items listed in C1.14.
	The proposed development can achieve the required prescriptive requirements which will be confirmed at the construction certificate phase.
Protection of Openings	In buildings of this type, openings in an external wall (i.e. a wall that is required to have a fire resistance level) must if situated less 3.0m from a fire-source feature to which it is exposed must be protected in accordance with Part C3 of the BCA.
	Assessment of the plans has revealed that the building has window and door openings that stand closer than 3.0 metres to the western side boundaries facing the light rail.
	Further details are required to be provided during the Construction Certificate stage.
Fire hazard properties	The fire hazard properties of all materials, assemblies, fixtures and linings are to comply with Specification C1.10 of the BCA, as applicable.



	Further details are required to be provided during the Construction Certificate stage.
Vertical separation of openings	As the building is required to be provided with a sprinkler system complying with Specification E1.5 and AS 2118.1, the requirements of C2.6 (a) do not apply to the building required prescriptive requirements which will be confirmed at the construction certificate phase.
Fire sealing of penetrations	All service penetrations must be sealed to the requirements of BCA Clause C3.12 and C3.15. Garbage rooms and garbage service shafts, (including walls, floors, ceilings. doors and shutters) must be protected in accordance with BCA Clauses C3.12 and C3.13. Further details are required to be provided during the Construction Certificate stage.
Protection of equipment.	<ul> <li>The following equipment is to be fire separated with construction complying with BCA Clause C2.12 (d).</li> <li>lift motors and lift control panels; or</li> <li>emergency generators used to sustain emergency equipment operating in the emergency mode; or</li> <li>central smoke control plant; or</li> <li>boilers; or</li> <li>a battery system installed in the building that has a total voltage of 12 volts or more and a storage capacity of 200 kWh or more.</li> <li>Separation of on-site fire pumps must comply with the Prescriptive requirements of BCA Clause E1.3 and AS 2419.1-2005.</li> <li>Further details are required to be provided during the Construction Certificate stage.</li> </ul>
Electricity supply	Electrical equipment located within the building must be separated from the remainder of the building by construction achieving compliance with BCA Clause C2.13.
Class 2 corridor length	In a Class 2 building, a public corridor, if more than 40m in length, must be provided at intervals of not more than 40m with smoke-proof walls complying Clause 2 of Specification C2.5. Corridor lengths do not exceed 40m and comply with BCA Part C2.14.



Bounding construction	<ul> <li>All doorways within a class 2 building must be provided with access from the SOU to one of the following;</li> <li>A public corridor, public lobby, or the like; or</li> <li>A room not within a sole-occupancy unit; or</li> <li>The landing of an internal non fire-isolated stairway that serves as a required exit; or</li> <li>Another sole-occupancy unit</li> </ul>
	<ul> <li>All doorways within the class 2 portion of the building that provide access to the following need to be protected;</li> <li>Public corridor, public lobby, or the like; or</li> <li>The landing of an internal non fire-isolated stairway that serves as a required exit.</li> <li>For type A construction, the acceptable method of protect is a self-closing –/60/30 fire door.</li> </ul>



### 3.3 – Access & Egress (Section D, BCA)

Item	Comment
Number of exits required	<ul> <li>For a building less than 25m in effective height the number of exits required is:</li> <li>One exit from each above ground storey,</li> <li>Two exits from each below ground storey.</li> </ul>
Exit travel distances	Assessment of the plans has revealed the following; <u>Class 7a</u> The travel distance to a points of choice within the carpark floor exceeds 20m and the distance to one of the alternative exits is not more than 40m.
	<ul> <li>The following Distances to a point of choice are greater than 20m;</li> <li>Basement level 3 –Travel distance to a point of choice is 27m in lieu of 20m.</li> <li>Basement level 2 - Travel distance to a point of choice is 27m in lieu of 20m.</li> <li>Basement level 1 - Travel distance to a point of choice is 27m in lieu of 20m.</li> </ul>
	<u>Class 6</u> The travel distance from all points of the retail are within 20m from an exit, or a point of choice from which travel in two different directions is available and the distance to one of the alternative exits is not more than 40m.
	<u>Class 5</u> The travel distance from all points of the commercial are within 20m from an exit, or a point of choice from which travel in two different directions is available and the distance to one of the alternative exits is not more than 40m
	<u>Class 2</u> The exit travel distances on the residential levels do not exceed 6 metres to an exit, or a point of choice from which travel in two different directions is available.
	<u>Class 2 – Non SOU areas;</u> no point on the floor of a room which is not in a sole-occupancy unit must be more than 20 m from an exit or from a point at which travel in different directions to 2 exits is available.
	Level seven non-residential area has a travel distance of 24m to a point of choice in lieu of 20m.



	Client has advised the non-compliances will be assessed through a performance solution by a C10 accredited fire safety engineer.
Fire-isolated stairways	Class 2 building, all stairways serving as a required exit must fire-isolated if it connects three consecutive storeys in a Class 2 building.
	<ul> <li>The proposed building has two stairways connecting 12 storeys, requiring both to be fire-isolated with the FRL of the following;</li> <li>-/60/60, if non-loadbearing; and</li> <li>90/90/90, if loadbearing; and</li> <li>no opening that could permit the passage of fire or smoke.</li> </ul>
Distance between alternative exits	The distance between alternative exits is not greater 60m and not closer than the minimum of 9m permitted by BCA Clause D1.5.
	As the building is less that 25m in effective height, only one exit is required for each residential storey.
Dimensions of exits	Exits and paths of travel to exits are to comply with BCA Clause D1.6. Generally exits widths are 1m in width clear of any obstruction including hand rails or other fixtures.
	<ul> <li>Aggregate egress widths are considered to comply for the expected populations at each level as specified;</li> <li>Level one retail requiring 1m Aggregate egress widths,</li> <li>Level two commercial requiring 1m Aggregate egress widths each tenancy Aggregate egress widths,</li> <li>Level three retail requiring 1m Aggregate egress widths for each tenancy.</li> </ul>
Pedestrian ramps	<ul> <li>All ramps serving as required exits must;</li> <li>Be in accordance with AS 1428.1; or</li> <li>Have a gradient not steeper than 1:8.</li> </ul>
	The floor surface of a ramp must have a slip-resistance classification not less than that listed in Table D2.14 when tested in accordance with AS 4586.



ltem	Comment
Travel via fire isolated exits	BCA Clause D1.3 requires a stairway in this building serving as a required exit be fire-isolated if it passes by more than 3 consecutive storeys above ground storeys, and more than 2 consecutive storeys below ground storeys.
	The stairways appear to be a fire isolated stairway. Compliance with BCA Specification C1.1 Clause D1.3 will need to be achieved. Further details are required to be provided during the construction certificate stage.
	<ul> <li>Both the fire isolated exit discharging onto level two and force occupants to egress pass the external wall and opening within the building requiring;</li> <li>an FRL of not less than 60/60/60; and</li> <li>any openings protected internally in accordance with C3.4,</li> </ul>
	For a distance of 3 m above or below, as appropriate, the level of the path of travel, or for the height of the wall, whichever is the lesser.
	<ul> <li>Also, all fire isolated exit on level 2 discharge to a cover area requiring the covered area to comply with the following;</li> <li>Open for at least 1/3 of its perimeter; and</li> <li>Has an unobstructed clear height throughout, including the perimeter openings, of not less than 3m; and</li> <li>Provides an unimpeded path of travel from the point of discharge to the road or open space of not more than 6m.</li> </ul>
Discharge from exits	Both fire isolated exit discharge on to level two that is at a different level than the public road to which it is connected, the path of travel to the road must be by;
	<ul> <li>A ramp or other incline having a gradient not steeper than 1:8 at any part, or not steeper than 1:14 if required by the Deemed-to-Satisfy Provisions of Part D3.</li> </ul>
	Further details are required to be provided during the construction certificate stage.



Construction of Stairways.	Stairway design and construction shall comply with the requirements specified in BCA Clause D2.13. Riser (R) dimensions shall be between 115mm-190mm and going (G) dimensions between 250mm -355mm. The quantity (2R+G) shall be between 550mm-700mm.
	Stairway landing design and construction shall comply with the requirements specified in BCA Clause D2.14. Generally, landings shall be not less than 750mm long and a maximum gradient of 1:50.
	Threshold design and construction shall comply with the requirements specified in BCA Clause D2.15. Generally, the threshold of a doorway must not incorporate a step or ramp at any point closer than the width of the door leaf. It is important to note that BCA Clause D2.15(c) requires a threshold ramp complying with AS 1428.1-2009.
	<ul> <li>Both fire-isolated stairways are stairways serving as exits for the basement carpark levels and residential levels. Each stairway is requiring to contain no direct connection between;</li> <li>A flight rising from a storey below the lowest level of access to a road or open space; and</li> <li>A flight descending from a storey above that level.</li> </ul>
	<ul> <li>The separation is required to be constructed in accordance with the required bellows;</li> <li>Non-combustible; and</li> <li>Smoke proof in accordance with Clause 2 of Specification C2.5.</li> </ul>
	Further details are required to be provided during the construction certificate stage.
Electrical distribution boards	Electrical distribution boards located in the path of travel to an exit must be enclosed in a non-combustible enclosure and sealed to prevent the escape of smoke.
	Further details are required to be provided during the construction certificate stage.

Γ



Item	Comment
Egress Doors	All required doorways are to swing in the direction of egress and will be provided with the appropriate hardware in accordance with BCA Clauses D2.20 & D2.21.
	Final discharge doors for all fire isolated stairs are to swing in the direction of egress and any automatic door located in a path of travel will be required to be fitted with fail safe operation.
	The exit doors serving the fire isolated stairway within the non- residential area of level seven does not swing in path of egress.
Balustrades	Balustrades must be provided for all areas where it is possible to fall more than 1m. Balustrades are to be designed in accordance with BCA Clause D2.16.
	Balustrades protecting a difference in levels of over 4m must not have horizontal elements between 150mm and 760mm of the floor that facilitate climbing.
Signage	Signage must be provided to all fire safety doors (except those doorways providing access to sole occupancy units) and to doors leading from enclosed stairways as required BCA Clause D2.23.
Handrails	Handrail design and construction shall comply with the requirements specified in BCA Clause D2.17.
	Generally, handrails must be provided to all stairways at a height not less than 865mm measured above the nosings of the stair treads.
Protection of openable windows	Window openings where the floor is more than 2m above the surface beneath must be protected in accordance with BCA Clause D2.24 in the bedrooms for the Class 2 part of the building.



Item	Comment
Access for people with disabilities.	<ul> <li>The building is to comply with:</li> <li>The Disability Discrimination Act 1992;</li> <li>The Disability (Access to Premises — Buildings),Standards 2010;</li> <li>Part D3 of the BCA;</li> <li>Australian Standard AS 1428.1-2009.</li> <li>Buildings and parts of buildings must be accessible as</li> </ul>
	required by BCA Table D3.1, unless exempted by BCA Clause D3.4, which requires access as follows:
	<u>Class 2 – Common areas</u> From a pedestrian entrance required to be accessible to at least 1 floor containing sole-occupancy units and to the entrance doorway of each sole-occupancy unit located on that level. To and within not less than 1 of each type of room or space for use in common by the residents, including a cooking facility, sauna, gymnasium, swimming pool, common laundry, games room, TV room, individual shop, dining room, public viewing area, ticket purchasing service, lunch room, lounge room, or the like
	<ul> <li>Where a ramp complying with AS 1428.1 or a passenger lift is installed—</li> <li>to the entrance doorway of each sole-occupancy unit; and</li> <li>to and within rooms or spaces for use in common by the residents, located on the levels served by the lift or ramp.</li> </ul>
	Class 5 & 6 - To and within all areas normally used by the occupants.
	<u>Class 7a –</u> 1 accessible space for every 100 car parking spaces or part thereof is required. An accessible path of travel must be provided from any <u>required</u> accessible car parking space on the allotment to the associated SOU's.
	The building is capable of compliance subject to detailed design. Full documentation is to be provided for assessment at the Construction Certificate stage.



### 3.4 – Services and Equipment (Section E, BCA)

Item	Comment
Hydrant System	The building will be provided with a hydrant system in accordance with the provisions of BCA Clause E1.3 and AS 2419.1- 2005.
	Where an on-site fire hydrant system is required, a fire brigade booster facility is to be detailed on the plans to serve the building in compliance with AS 2419.1-2005.
	The fire hydrant system is to be designed and certified by a hydraulic engineer or other competent hydraulic designer at the construction certificate stage.
Hose Reel System	The building will be provided with a fire hose reel system in accordance with the provisions of BCA Clause E1.4 and AS 2441 - 2005. This system must cover the car park levels as well as all storeys relating to retail tenancies.
	The fire hose reel system is to be designed and certified by a hydraulic engineer or other competent hydraulic designer at the construction certificate stage.
Sprinklers	The development will require a sprinkler system throughout the entire building complying with BCA Specification E1.5 and AS2118.1- 2017.
	As the building is less than 25m in effective height and required to be provided with a sprinkler system, the Specification E1.5a concession apply to the building.
	The design of the service will be subject to review by a fire services consultant.
Portable Fire Extinguishers	Fire extinguishers will be provided in accordance the provisions of BCA Clause E1.6 and AS2444 - 2001.
	Further details shall be provided for compliance assessment during the construction certificate design phase.



Item	Comment
Smoke Hazard Management	<u>Class 2</u> The building will be provided with an automatic smoke detection and alarm system in accordance with the provisions of BCA Table E2.2a and Specification E2.2a. <u>Class 7</u> As the building has a fire-isolated stairway serving the Class 2 parts also serves more and one storeys of Class 7a parts, the fire-silated stairways and fire isolated passageways must be provided with;
	<ul> <li>automatic air pressurization system for fire-isolated exits in accordance with AS 1668.1.</li> <li>Alternatively, The Class 7 parts can be provided with be provided with;</li> <li>an automatic smoke detection and alarm system complying with Specification E2.2a; or</li> <li>a sprinkler system complying with Specification E1.5 and AS 2118.</li> </ul>
	<ul> <li><u>Class 5 and 6</u></li> <li>The commercial and retail tenancies within the building must be provided with one of the following; <ul> <li>an automatic smoke detection and alarm system complying with Specification E2.2a; or</li> <li>a sprinkler system complying with Specification E1.5 and AS 2118.</li> </ul> </li> <li>The design of the service will be subject to review by a fire</li> </ul>
Lifts	A stretcher lift in accordance with BCA Clause E3.4 is required as the building has an effective height of greater than 12m. A sign must be provided in accordance with BCA Clause E3.3 warning against the use of lifts in a fire.
	The proposed lifts shall also comply with all requirements nominated by AS1735.12 and BCA Clause E3.6 with regards to facilities for people with disabilities.
Emergency Lighting	Emergency lighting will be provided throughout the building in accordance with BCA Clauses E4.2 & E4.4 and AS2293.1 - 2018. The design of the service will be subject to review by a fire services consultant.



Exit Signs	Exit signs will be provided throughout the building in accordance with BCA Clauses E4.5, E4.6 & E4.8 and AS2293.1- 2018.
	The design of the service will be subject to review by a fire services consultant.



### 3.5 – Health and Amenity (Section F, BCA)

Item	Comment
Damp & Weatherproofing	Adequate measures must be employed to ensure compliance with BCA Part F1 is achieved in terms of weatherproofing.
Sanitary & Other Facilities	<ul> <li>Facilities will be provided in accordance with the provisions of BCA Clause F2.1.</li> <li>A building which contains, in total more than 10 sole-occupancy units must provide a closet pan and washbasin in a compartment or room at or near ground level accessible to employees.</li> <li>Assessable sanitary facilities serving the retail areas on level 1 &amp; 3 needs to be in accordance with AS 1428.1</li> <li>Also, both sanitary facilities within he retails area must be provided within the following as they open directly into a dining or food premises area;</li> <li>Access must be by an airlock, hallway or other room with a floor area of not less than 1.1 m2 and fitted with self-closing doors at all access doorways; or</li> <li>The sanitary compartment must be provided with mechanical exhaust ventilation and the doorway to the room adequately screened from view.</li> <li>A common area sanitary facility has not been provided to serve the proposed building.</li> </ul>
Room Heights	<ul> <li>The following minimum building ceiling heights must be maintained.</li> <li>Common kitchen, laundry or the like – 2.1m</li> <li>Corridor, passageway or the like – 2.1m</li> <li>Bathroom, shower, sanitary compartment or the like – 2.1m</li> <li>Habitable rooms excluding a kitchen – 2.4m</li> <li>Stairways – 2.0m</li> <li>Car parking areas – 2.1m</li> <li>Disabled car parks – 2.5m including a 2.3m path of travel height.</li> </ul>
Ventilation	The building is required to be provided with ventilation in accordance with the provisions of BCA Clause F4.5. Ventilation may be provided by natural means or a mechanical system complying with AS 1668.2- 2012. The residential areas of the building must be provided with natural or mechanical ventilation as required by Part F4 of the BCA.



	Further details are required to be provided for assessment during the construction certificate stage.
Lighting	The development needs to provide natural light to all habitable rooms contained within the Class 2 portions of the development. This include all rooms classified as studies.
	Artificial lighting may be provided throughout the remained of the building in accordance with the provisions of BCA Clause F4.4 and AS1680.1.
	Further details are required to be provided for assessment during the construction certificate stage.
Sound insulation	The floor separating the residential units and separating the sole occupancy units from public areas must achieve a sound insulation rating of Rw+Ctr (airborne) of not less than 50 and an Ln,w+Ci (impact) not more than 62.
	Walls separating units must achieve a sound insulation rating of Rw+Ctr (airborne) of not less than 50.
	Walls separating units from plant rooms, lift shafts, stairways corridors or other public areas must have an insulation rating of Rw (airborne) not less than 50.
	Walls separating a bathroom, sanitary compartment, laundry or kitchen in one sole occupancy unit from a habitable room in another or separating a unit from a lift shaft must be of discontinuous construction.
	The doorway separating to sole occupancy unit from the public area must have an Rw not less than 30
	Soil, waste & stormwater services must be separated by construction having an Rw+Ctr (airborne) not less than
	<ul><li>40 if the room is a habitable room</li><li>25 if the room is a non-habitable room</li></ul>



Item	Comment
Condensation	
management	For class 2 building, the following are applicable to the proposed development;
	<ul> <li>Pliable building membrane, if installed within an external wall, must comply with the requirements below; <ul> <li>Comply with AS/NZS 4200.1; and</li> <li>Be installed in accordance with AS 4200.2; and</li> <li>Be a vapour permeable membrane for climate zones 6, 7 and 8; and</li> <li>Be located on the exterior side of the primary insulation layer of wall assemblies that form the external envelope of a building.</li> </ul> </li> </ul>
	<ul> <li>All exhaust systems installed in a kitchen bathroom, sanitary compartment or laundry must have a minimum flow rate of—</li> <li>25 L/s for a bathroom or sanitary compartment; and</li> <li>40 L/s for a kitchen or laundry.</li> </ul>
	<ul> <li>Exhaust from a kitchen must be discharged directly or via a shaft or duct to outdoor air and exhaust from a bathroom, sanitary compartment, or laundry must be discharged to one of the following;</li> <li>directly or via a shaft or duct to outdoor air; or</li> <li>to a roof space that is ventilated in accordance with F6.4</li> </ul>
	All exhaust system covered above must discharge directly or via a shaft or duct into a roof space, the roof space must be ventilated to outdoor air through evenly distributed openings.
	Openings required by (a) must have a total unobstructed area of 1/300 of the respective ceiling area if the roof pitch is greater than 22°, or 1/150 of the respective ceiling area if the roof pitch is less than or equal to 22°.
	30% of the total unobstructed area required by (b) must be located not more than 900 mm below the ridge or highest point of the roof space, measured vertically, with the remaining required area provided by eave vents.



### 3.6 – Ancillary provisions (Section G, BCA)

Item	Comment
Cleaning of windows	<ul> <li>All external windows located 3 or more storeys above ground level are to be provided with a safe manner of cleaning windows as follows:</li> <li>All windows are to be capable of being cleaned wholly from within the building (i.e. pivot or reversible windows etc.); or</li> <li>By a method complying with the Occupational Health and Safety Act 2000 and regulations made under that Act.</li> <li>Further details are required to be provided for assessment during the construction certificate stage.</li> </ul>
Occupiable outdoor areas	<ul> <li>All lining, material or assembly in an occupiable outdoor area must comply with C1.10 as for an internal element.</li> <li>The following fire hazard properties of a lining, material or assembly in an occupiable outdoor area are not required to comply with C1.10: <ul> <li>Average specific extinction area.</li> <li>Smoke-Developed Index.</li> <li>Smoke development rate.</li> <li>Smoke growth rate index (SMOGRARC).</li> </ul> </li> <li>Also, all construction of exits must comply with part D2 and except for Clause 7(b)(i) of Specification E1.5, for the purposes of the Deemed-to-Satisfy Provisions of Part E1, a reference to a storey includes an occupiable outdoor area.</li> </ul>



### 3.7 – Energy Efficiency (Section J, BCA)

## Note: The residential Class 2 part of the building is to be designed to comply with two mandatory requirements for energy efficiency. They are:

- A BASIX assessment and a BASIX certificate will be required to be lodged with the development application.
- In addition to the BASIX certificate compliance with NSW J (A) is required for the Class 2 part. The applicable sections of NSW Section J (A) are to be complied with, these clauses are:
  - NSW J(A) 1.0 Building Fabric,
  - NSW J(A) 2.0 Building Sealing
  - NSW J(A) 3.0 Air Conditioning and ventilating systems
  - NSW J(A) 4.0 Hot Water Supply
  - NSW J(A) 5.0 Access For Maintenance

## Note: The following BCA Section J provisions will be applicable to the car parking levels and non-residential areas.

Item	Comment
Building Fabric	The external fabric to the retail portion of the development with a conditioned space will be insulated in accordance with Part J1 of the BCA.
Building Sealing	The external fabric of the development with a conditioned space will be appropriately sealed in accordance with Part J3 of the BCA.
Air-Conditioning and Ventilation System	The air-conditioning and ventilation system of the development with a conditioned space will be designed to comply with Part J5 of the BCA.



Item	Comment
Artificial Lighting and Power	The building is to maintain maximum lighting power levels and control systems as applicable. The design of lighting systems must comply with BCA Part J6.
	<ul> <li>The following maximum lighting power loads (W/m²) are applicable to the building</li> <li>1. Car park - 6</li> <li>2. Car park entry zone (20m) - 25</li> <li>3. Common rooms, corridors - 8</li> <li>4. Entry lobby from outside - 15</li> <li>5. Control room, switch room - 9</li> <li>6. Plant room - 5</li> <li>7. Service areas &amp; store rooms - 5</li> <li>8. Retail - 22</li> </ul>
	These rates are able to be adjusted as detailed in BCA Clause Table J6.2 where daylight or motion sensors or dimming systems are provided or in particularly small rooms.
Hot Water Supply	Hot water supply systems will be installed in accordance with Part J7 of the BCA and AS/NZS 3500.4.
Facilities for energy monitoring	The building is to have facilities for maintenance and energy monitoring in compliance with BCA Part J8 and the NSW variations.



## 4.0 Fire safety Measures

### 4.1 – Proposed Fire Safety Measures

In terms of the proposed building the following fire safety measures may be required:

Fire Safety Measure	Standard of Performance		
Access panels, doors and hoppers	BCA 2019 Clause C3.13 and AS 1530.4-		
to fire resisting shafts	2014		
Automatic Fire Detection and Alarm	BCA 2019 Spec. E2.2a & AS 1670.1 -		
System	2018, AS/NZS 1668.1 - 2015		
	BCA 2019 Spec. E1.5, Spec E1.5a & AS		
Automatic Fire Suppression System	2118.1 – 2017		
	BCA 2019 Spec. E1.5, BCA Spec. E2.2a &		
Building Occupant warning System	AS 1670.1 – 2018		
Emorgonov Lighting	BCA 2019 Clause E4.2, E4.4 & AS/NZS		
	2293.1 – 2018		
Exit Signs	BCA Clauses E4.5 & E4.8 and AS/NZS		
	2293.1 – 2018 Amdt 1 & 2		
Fire Dampors	BCA 2019 Clause C3.15, AS/NZS 1668.1 -		
	2015 & AS 1682.1&2 - 2015		
Fire Doors	BCA 2019 Clause C3.2, C3.4, Spec C3.4		
	and AS 1905.1 – 2015		
Fire Hose Reels	BCA 2019 Clause E1.4 & AS 2441 – 2005		
Fire Lludrent Quetern	BCA 2019 Clause E1.3 & AS 2419.1 -		
File Hydrani System	2005		
Fire seals	BCA 2019 Clause C3.15 and AS 1530.4-		
	2014 and AS 4072.1-2005 and installed in		
	accordance with the tested prototype.		
Portable Fire Extinguishers	BCA 2019 Clause E1.6 & AS 2444 – 2001		
Mechanical air handling system	BCA 2019 Table E2.2a and Clause 5.5 of		
(carpark mechanical ventilation	AS/NZ 1668.1-2015 and fans with metal		
system)	blades suitable for operation at normal		
	temperature may be used and the electrical		
	power and control cabling need not be fire		
	rated		
Wall-Wetting Sprinkler and	BCA 2019 Clause C3.4 & AS 2118.2 –		
Drencher Systems	2010		
Warning and Operational Signs	EP&A Reg 2000 Clause 183, BCA Clause		
	D2.23, E3.3		



## **5.0 Conclusion**

#### 5.1 – Conclusion

It is the opinion of this office that, on satisfaction of the above recommendations, the proposed building is capable of achieving compliance with the requirements of the Building Code of Australia (BCA) 2019 and relevant adopted standards without undue modification to the design or appearance of the building.

Author,

Cgabriel

Charbel Gabriel Vic Lilli & Partners



### 6.0 References

#### 6.1 – Basis of Report

This BCA Capability report has been prepared on the basis of the following-

(i) Architectural Plans as prepared by Fox Johnston Architects.

Drawing No.	Title	Revisio n	Date
A – 000-000	Cover Sheet	DA11	22.05.20
A – 100-001	Site Analysis Plan	DA11	22.05.20
A – 100-002	Site Plan	DA11	22.05.20
A – 200-002	Basement 2 & Basement 3	DA11	22.05.20
A – 200-003	Basement 1 & Ground Floor	DATT	22.05.20
A – 200-003			22.05.20
A - 200-004			22.05.20
A = 200-003 A = 200-006			22.05.20
A - 200-000	Roof Level	DA11	22.05.20
A – 300-001	East Elevations	DA11	22.05.20
A – 300-002	West Elevations	DA11	22.05.20
A – 300-003	South & North Elevations	DA11	22.05.20
A – 300-004	Section A	DA11	22.05.20
A – 300-005	Section B & C – Ramp & Driveway Levels	DA11	22.05.20
A – 400-001	Photomontage	DA11	22.05.20
A – 500-001	Schedules, Legend & Finishes	DA11	22.05.20
A – 500-002	GFA Diagram L1- L4	DA11	22.05.20
A – 500-003	Solar Access	DA11	22.05.20
A – 500-004	Cross Ventilation	DA11	22.05.20
A – 500-005	Deep Soil_Landscape Areas	DA11	22.05.20
A – 500-006	Adaptable Apartments	DA11	22.05.20
A – 500-007	Adaptable Apartments	DA11	22.05.20
A – 600-001	Shadow Diagrams	DA11	22.05.20
A – 600-002	VFS Proposed 9_00-11_45	DA11	22.05.20
A – 600-003	VFS Proposed 12_00-14_45	DA11	22.05.20
A – 600-004	VFS Proposed 15_00 & Solar Access Tally	DA11	22.05.20
A – 600-005	VFS Existing & Proposed 12_00-13_15	DA11	22.05.20
A – 600-006	VFS Existing & Proposed 13_30-14_45	DA11	22.05.20
A – 600-007	VFS Existing & Proposed 15_00	DA11	22.05.20
A – 600-008	Elevational Overshadow Diagram	DA11	22.05.20

(ii) Building Code of Australia (BCA) 2019;

(iii) Environmental Planning and Assessment Act, 1979, and Regulations 2000