



NATIONAL CONSTRUCTION CODE REPORT

Construction of a Mixed Use Building 1129-1131 Pittwater Road, Collaroy NSW 2097

Dated: 01 April 2020

Prepared for: Lotus Project Management

Prepared by: **Private Building Certifiers NSW Pty Ltd**
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Date	Revision Number	No. of pages	Issue or Description of Amendment	Checked By	Approved By	Date Approved
30/03/20	A	17	DA	Kasy Coombs	Max Gelder	01/04/20



Executive Summary

As Accredited Certifiers, we have reviewed architectural design documents prepared by (refer appendix A) for compliance with the Nation Construction Code 2019.

The assessment of the design documentation has revealed that the following areas are required to be assessed against the relevant performance requirements of the BCA. The submission for Construction certificate will need to include verification from a suitably accredited fire engineer: -

DTS Clause	Description of Non- Compliance	Performance Requirement
C3.2	Openings in external walls that is less than 3m is required to have an FRL.	CP2,CP8
D1.7(b)	Travel via fire-isolated exits - discharge directly to an easement that is open for at least 2/3 of its perimeter.	DP5

The fire engineered solution relating to CP9, EP1.3, EP1.4, EP1.6, EP2.2 and EP3.2 will need to be approved after consultation with the NSW Fire Brigade as part of the Construction Certificate process.

The documentation will need further detailing such as door hardware, specifications, service design, as outlined in Appendix D of this report.

The application for Construction Certificate shall be assessed under the relevant provisions of the Environmental Planning & Assessment Act 1979 (As Amended) and the Environmental Planning & Assessment Regulation 2000.

Assessed By

Kasy Coombs
Building Surveyor



1.0 Introduction

The proposed development comprises of a new mixed-use development with ground floor retail and residential dwellings on upper levels.

The site is located on 1129-1131 Pittwater Road, Collaroy NSW 2097.

2.0 Building Assessment Data

Summary of Construction Determination: -

Classification	3, 6 & 7a
Number of Storeys Contained	5
Rise In Storeys	4
Type of Construction	A
Effective Height (m)	9.1m (14.0m-4.9m)



3.0 Structural Provisions

Any new structural works are to comply with the applicable requirements of AS/NZS 1170.1.

Glazing is to comply with AS1288, and AS2047.

Prior to the issue of the Construction Certificate structural certification is required to be provided.

4.0 Fire Resistance

The buildings should be constructed generally in accordance with Table 3 specification C1.1 of the National Construction Code 2019.

The building has been assessed on the basis of the following fire separation/ compartmentation within the development;

- Bounding construction to the sole occupancy units of 90 minutes,
- Separation between the carpark levels and the retail portions of 180 minutes,

Other passive fire protection issues that will need to be addressed in detailed documentation phase include:

- Electricity supply,
- Hydrant Pump rooms,
- Sprinkler Pump rooms

To be separated from the remainder of the building by construction achieving a minimum fire resistance level of 120 minutes.

The fire hazard properties of fixed surface linings and mechanical ductwork will also need to be addressed within the detailed documentation phase pursuant to specification C1.10 Building Code of Australia.

5.0 Egress

The egress provisions for the proposed building are provided fire isolated stairways & non-fire isolated stairways.

Other detailing issues that will need to be addressed include:

- Door Hardware
- Exit door operation
- Stair construction
- Handrail and balustrade construction
- Discharge from the Fire Isolated Exits
- Details of the egress provisions to the Road.



Exit Travel Distances

The locations of the proposed exits would appear to indicate that the deemed to satisfy requirements in terms of travel distances, distances between alternative exits and egress widths will need to be assessed as part of the alternate solution.

The travel distances to exits should not exceed:

Class 6, 7a

- 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
- exits shall be located to not be more than 60m apart and not closer than 9m

Class 3

- 6m from an exit or from a point of choice
- 20m from a single exit at the level of egress to a road or open space
- Alternate exits not more than 45m apart

Dimensions of Exits

Minimum dimensions of 1000mm and 2000mm height to be provided within exits, with the paths of travel should provide a minimum width of 1000mm (note that all maintenance access, cat walks, etc. may comply with AS1657 in which case a 600mm clear width is required).

The exit width provided is sufficient for the proposed populations.

Doorways are permitted to contain a clear opening width of the required width of the exit minus 250mm with a height of 1980mm as part of egress requirements. Access for persons with disabilities however requires a clear doorway opening width of 850mm (i.e. minimum 870 mm doors).

Fire Isolated Exits

Each fire-isolated stairway or fire-isolated ramp must provide independent egress from each storey served and discharge directly, or by way of its own fire-isolated passageway to:

- A road or open space; or
- To a point within the confines of the building, that is used only for pedestrian movement, car parking or the like and is open for at least 2/3 of its perimeter; and from which an unimpeded path of travel, not further than 20 m, is available to a road or open space; or
- Into a covered area that adjoins a road or open space, is open for at least 1/3 of its perimeter, has an unobstructed clear height throughout, including the perimeter openings, of not less than 3 m and provides an unimpeded path of travel from the point of discharge to the road or open space of not more than 6 m.

Where a path of travel from the point of discharge of a fire-isolated exit necessitates passing within 6m of any part of an external wall of the same building, measured horizontally at right angles to the path of travel, that part of the wall must have an FRL of not less than 60/60/60 and any openings protected internally in accordance with C3.4, 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. This would be required at the discharge point of each fire-isolated stair on the ground floor for a distance of 3m.



Balustrading and Handrail

Balustrading to a height of 1000mm with a maximum opening of 125mm in any direction should be provided adjacent to balconies, landings, corridors etc. where located adjacent to a change in level exceeding 1000mm.

Where it is possible to fall more than 4m to the finished floor below, the balustrade shall not contain any horizontal or near horizontal members that facilitate climbing.

Any windows with a sill height of less than 1.7m in bedrooms or 865mm in all other cases with a fall of more than 2m for windows, 4m for all other cases, openings are to be restricted or a protective barrier that does not allow a 125mm sphere to pass through.

Walls adjacent to windows and balustrades which are required to be not climbable are to be clear of climbable elements for a distance of 1m from the balustrade. This includes GPO's, gas outlets, climbable window and doors sills and the like.

Handrails should generally be provided at a minimum height of 865mm alongside of all ramps and stairs.

The main public stairs and ramps should be designed in accordance with the requirements of AS1428.1 for persons with disabilities. This requires a handrail on each side of the stair and ramp and for the handrail to extend approximately 550mm – 600mm past the last tread / end of ramp.

6.0 Access for Persons with a Disability

Access for people with disabilities shall be provided to and within the building in accordance with the requirements of Clause D3.2, D3.3 and D3.4 of the NCC 2019. Parts of the building required to be accessible shall comply with the requirements of AS1428.1-2009.

The design would generally comply with the prescriptive provisions of the NCC with additional ongoing review being undertaken as to door widths, circulation, etc. Further details are to be provided or access to these areas is to be assessed by an access consultant.

Where the main public entrance is via a ramp, tactile indicators shall be provided in accordance with AS 1428.4 at the top and bottom. Parking shall be provided for people with disabilities in accordance with in accordance with Clause D3.5 of the BCA. Facilities services and features of the building accessible to people with disabilities shall be identified by signage complying with Clause D3.6 of the BCA.

General

Access to be provided to and within the building pursuant to AS1428.1-2009 as follows:

- Via the principle public entry and at least 50% of all other entrances
- From designated car parking spaces for the use of occupants with a disability.
- All areas used by the public.



7.0 Fire Services & Equipment

The following fire services will need to be provided throughout the building:

- An automatic sprinkler system in accordance with the relevant provision of clause E1.5 of the BCA and AS 2118.1-2017, AS 2118.6-2012 throughout the building.
- Fire hydrants in accordance with clause E1.3 of the BCA and AS 2419.1-2005,
- Fire hose reels in accordance with clause E1.4 of the BCA and AS 2441-2005,
- Portable Fire Extinguishers in accordance with Clause E1.6 of the BCA and AS 2444-2001,
- Emergency Warnings & Intercommunication system in accordance with AS 1670.4-2018.
- Emergency lighting, exit signage and directional exit signage is required throughout the building in accordance with Part E of the BCA and AS/NZS 2293.1-2018.

A fire control centre is not required for this building, however facility for the co-ordination of fire brigade operations shall be provided within the building.

A Hydraulic Engineer is to confirm requirements for Hydrant & Sprinkler pumps.

Fire Hydrants

A system of Fire Hydrants is required to be provided to BCA Clause E1.3 and AS 2419.1-2005.

A booster assembly is required as part of the fire hydrant requirements. The booster is required to be located attached to the building within sight of the main entrance lobby and adjacent to the vehicular access.

Fire hydrants are to be provided within fire isolated stairs/within 4.0m of required exits.

Fire Hose Reels

A Fire Hose Reel System is required to BCA Clause E1.4 and AS2441 to all non-residential portions.

To be located within 4m of exits and provide coverage within the building based on a 36m hose length.

Please note that fire hose reel coverage cannot pass through fire or smoke doors.

Portable Fire Extinguishers

Portable fire extinguishers are required to be installed in accordance with Table E1.6 of the BCA and AS 2444-2001. In addition, extinguishers are to be provided to the class 2 portions of the building in accordance with the below:

- an ABE type fire extinguisher is to be installed with a minimum size of 2.5 kg; and
- extinguishers are to be distributed outside a sole-occupancy unit
 - to serve only the storey at which they are located; and
 - so that the travel distance from the entrance doorway of any sole-occupancy unit to the nearest fire extinguisher is not more than 10 m.



Automatic Sprinkler Protection

An Automatic Fire Suppression System is required to Specification E1.5 and AS2118.1-2017 throughout the building. Sprinklers are required throughout the carpark and all portions of the tower.

An occupant warning system that is triggered upon activation of the sprinkler system should be provided in accordance with BCA Specification E1.5.

A Hydraulic Engineer is to select the appropriate required fire sprinkler system for the building in accordance with Specification E1.5.

8.0 Ventilation and Smoke Hazard Management

Smoke hazard management shall be provided throughout the building by means of the following systems:

Carpark Portions:

- Mechanical ventilation system in accordance with AS 1668.2 must comply with clause 5.5 of AS/NZS 1668.1 except that fans with metal blades suitable for operation at normal temperature may be used and the electrical power and control cabling need not be fire rated.

Residential Portions:

- Smoke detection and alarm system complying with AS 3786 to be provided within each sole occupancy unit.
- Smoke detection and alarm system complying with AS 1670.1 to be provided to the public areas in residential portions of the building.
- Automatic Air Pressurisation to all fire isolated exits to AS/NZS 1668.1-2015
- Automatic Fire Suppression System (Sprinklers) to AS 2118.1-2017

A fire indicator panel is required as part of the detection system. This panel is to be located within 4m of the main entry and should be incorporated within the fire control room. Any variation to the prescriptive provisions will require the consent of the fire brigade and should form part of the fire safety engineering report to verify the performance requirements of the BCA.

Throughout the development the provision of natural or mechanical ventilation is required to all habitable rooms in accordance with F4.5 Building Code of Australia and AS 1668 and AS/NZS 3666.1.

9.0 Lift Services

The passenger lifts to be installed are to be: -

- Fitted with warning signs, fire service controls in accordance with Clauses E3.3, E3.7, E3.9 and E3.10 of the BCA
- Be provided with the following: -
 - A handrail in accordance with AS 1735.12
 - Minimum internal floor dimensions as specified in AS 1735.12,
 - Fitted with a series of door opening sensory devices which will detect a 75mm diameter or across the door opening between 50mm and 1550mm above floor level,
 - Have a set of buttons for operating the lift located at heights above level complying with AS 1735.12.



10.0 Sanitary Facilities

Sanitary facilities are to be provided in accordance with AS1428.1-2009. Please note that unisex facilities provided for people with disabilities may be counted once for each sex.

Residential Apartment - Each sole occupancy unit is to be provided with:

- A kitchen sink and facilities for preparation and cooking of food; and
- A bath or shower; and
- A closet pan and wash basin; and
- Clothes washing facilities (tub and space for washing machine); and
Clothes drying facilities (either 7.5m of clothes line or space for a dryer).

11.0 Sound Transmission & Insulation

The sound transmission and insulation requirements for the Class 2 portions shall be provided in accordance with Part F5 of the NCC 2019 for the following elements:

Floors

A floor separating sole-occupancy units or a sole-occupancy unit from a plant room, lift shaft, stairway, public corridor, public lobby or the like, or parts of a different classification:

- $R_w + C_{tr}$ (airborne) not less than 50
- $L_{n,w} + C_I$ (impact) not more than 62

Walls

A wall separating sole-occupancy units:

- $R_w + C_{tr}$ (airborne) not less than 50,

A wall separating a sole-occupancy unit from a plant room, lift shaft, stairway, public corridor, public lobby or the like, or parts of a different classification:

- R_w (airborne) not less than 50,

A wall separating a bathroom, sanitary compartment, laundry or kitchen in one sole-occupancy unit from a habitable room (other than a kitchen) in an adjoining unit; or a sole-occupancy unit from a plant room or lift shaft:

- R_w (airborne) not less than 50
- Discontinuous Construction

A door assembly separating a sole-occupancy unit from a stairway, public corridor, public lobby or the like:

- R_w not less than 30

All walls required to have an impact sound insulation rating are to be of discontinuous construction.



12.0 Energy Efficiency

The proposed development shall be provided insulation Building sealing and services in accordance with NSW Part J of the NCC 2019.

The deemed-to-satisfy provisions of the NCC only apply to thermal insulation in a class 3 building or class 4 part where a development consent or a Complying Development certificate specifies that the insulation is to be provided as part of the development.

The Class 7a (carpark) and 6 (commercial/retail) portions of the proposed development shall be provided with insulation, building sealing and services in accordance with NSW Part J of the BCA where conditioned.

The deemed-to-satisfy provisions of the BCA only apply to thermal insulation in a class 3 building where development consent or a Complying Development certificate specifies that the insulation is to be provided as part of the development.

The residential (Class 3) portions of the building are subject to BASIX, and a BASIX Certificate will be required prior to the issuance of the Construction Certificate for the works.

The Class 7a (carpark) and 6 (commercial/retail) portion of the proposed development shall comply with Part J of the BCA. To achieve compliance, there are two options available:

Option 1.

The building can comply with the deemed-to-satisfy provisions of the BCA, relating to the following areas:

- Building Fabric
- Glazing
- Building Sealing
- Air Conditioning & Ventilation Systems
- Artificial Lighting & Power
- Hot Water Supply

Option 2.

The building can be verified against a reference building as per Verification Method JV3. This requires that the proposed building and its services be shown to have an annual energy consumption of equal or less than the reference building which has been modelled as per the requirements of Part J of the BCA.

Certification from an appropriately qualified engineer should be provided for either option with a report / computations outlining how compliance is achieved.

Access for maintenance is to be provided to the building in accordance with the requirements of BCA Part J8.



Appendix A - Design Documentation

The following documentation was used in the assessment and preparation of this report: -

Drawing No.	Title	Date	Drawn By	Revision
A02	Basement Floor Plan	19/03/2020	Barry Rush & Associates P/L	DA
A03	Ground Floor Plan	19/03/2020	Barry Rush & Associates P/L	DA
A04	First Floor Plan	19/03/2020	Barry Rush & Associates P/L	DA
A05	Second Floor Plan	19/03/2020	Barry Rush & Associates P/L	DA
A06	Third Floor Plan	19/03/2020	Barry Rush & Associates P/L	DA
A07	Roof Plan	19/03/2020	Barry Rush & Associates P/L	DA
A08	East & North Elevation	19/03/2020	Barry Rush & Associates P/L	DA
A09	West & South Elevations	19/03/2020	Barry Rush & Associates P/L	DA
A10	Sections A-A & B-B	19/03/2020	Barry Rush & Associates P/L	DA



Appendix B - Draft Fire Safety Schedule

	Essential Fire Safety Measures	Standard of Performance
1.	Access Panels, Doors and Hoppers	BCA Clause C3.13
2.	Automatic Fail Safe Devices	BCA Clause D2.19 & D2.21
3.	Automatic Fire Detection and Alarm System	BCA Clause E2.2 & Spec. E2.2a, AS1670.1 – 2018 & AS1670.3 – 2018
4.	Automatic Fire Suppression System	BCA Clause E1.5 & Spec. E1.5 & AS2118.1 – 2017, AS2118.6 – 2012 (Combined sprinkler & hydrant)
5.	Building Occupant Warning System activated by the Sprinkler System	BCA Clause E1.5 & Spec. E1.5, AS1670.1 – 2018 & AS1670.3 – 2018 AS670 – 2004
6.	Emergency Lighting	BCA Clause E4.2, E4.4 & AS/NZS2293.1 – 2018
7.	EWIS	BCA Clause E4.9 & AS1670.4 – 2018
8.	Emergency Evacuation Plan	AS 3745 – 2010
9.	Exit Signs	BCA Clauses E4.5, E4.6 & E4.8 and AS/NZS2293.1 – 2018
10.	Fire Blankets	AS2444 – 2001
11.	Fire Dampers	BCA Clause C3.15, AS1668.1 – 2015 & AS1682.1 & 2 – 2005
12.	Fire Doors	BCA Clause C3.2, C3.4, C3.5, C3.6, C3.7 & C3.8 and AS1905.1 – 2015
13.	Fire Hose Reels	BCA Clause E1.4 & AS2441 – 2005
14.	Fire Hydrant System	Clause E1.3 & AS2419.1 – 2005
15.	Fire Shutters (optional)	BCA Spec. C3.4 & AS1905.2 – 2005
16.	Fire Windows (optional)	BCA Spec. C3.4
17.	Lightweight Construction	BCA Clause C1.8 & AS/NZS1530.3 – 1999
18.	Mechanical Air Handling System	BCA Clause E2.2, AS/NZS1668.1 – 2015 & AS1668.2 – 2012
19.	Paths of Travel	EP&A Reg 2000 Clause 186
20.	Portable Fire Extinguishers	BCA Clause E1.6 & AS2444 – 2001
21.	Smoke Alarm System	BCA Spec. E2.2a & AS3786 – 2014
22.	Wall-Wetting Sprinklers (optional)	BCA Clause C3.4 & AS 2118.2 – 2010
23.	Warning and Operational Signs	Section 183 of the EP & A Regulations 2000, AS 1905.1 – 2015, BCA Clause C3.6, D2.23, E3.3
24.	Fire Engineering Report – TBA (CC stage)	



Appendix C - Fire Resistance Levels

The table below represents the Fire resistance levels required in accordance with NCC/BCA 2019:

Table 3 TYPE A CONSTRUCTION: FRL OF BUILDING ELEMENTS

Building element	Class of building — FRL: (in minutes)			
	<i>Structural adequacy/ Integrity/ Insulation</i>			
	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 <i>fire-source feature</i> to which it is exposed is—				
For <i>loadbearing</i> 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- <i>loadbearing</i> 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 incorporated in an <i>external wall</i> , where the distance from any <i>fire-source feature</i> 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—				
<i>Fire-resisting lift and stair shafts—</i>				
<i>Loadbearing</i>	90/ 90/ 90	120/120/120	180/120/120	240/120/120
<i>Non-loadbearing</i>	-/ 90/ 90	-/120/120	-/120/120	-/120/120
Bounding <i>public corridors</i> , public lobbies and the like—				
<i>Loadbearing</i>	90/ 90/ 90	120/-/-	180/-/-	240/-/-
<i>Non-loadbearing</i>	-/ 60/ 60	-/-/-	-/-/-	-/-/-
Between or bounding <i>sole-occupancy units—</i>				
<i>Loadbearing</i>	90/ 90/ 90	120/-/-	180/-/-	240/-/-
<i>Non-loadbearing</i>	-/ 60/ 60	-/-/-	-/-/-	-/-/-
Ventilating, pipe, garbage, and like <i>shafts</i> not used for the discharge of hot products of combustion—				
<i>Loadbearing</i>	90/ 90/ 90	120/ 90/ 90	180/120/120	240/120/120
<i>Non-loadbearing</i>	-/ 90/ 90	-/ 90/ 90	-/120/120	-/120/120



OTHER LOADBEARING INTERNAL WALLS, INTERNAL BEAMS, TRUSSES and COLUMNS—	90/-/-	120/-/-	180/-/-	240/-/-
FLOORS	90/ 90/ 90	120/120/120	180/180/180	240/240/240
ROOFS	90/ 60/ 30	120/ 60/ 30	180/ 60/ 30	240/ 90/ 60



Table 3.9 REQUIREMENTS FOR CARPARKS

Building element	FRL (not less than) Structural adequacy/Integrity/Insulation
	ESA/M (not greater than)
Wall	
(a) <i>external wall</i>	
(i) less than 3 m from a <i>fire-source feature</i> to which it is exposed:	
<i>Loadbearing</i>	60/60/60
<i>Non-loadbearing</i>	-/-/60
(ii) 3 m or more from a <i>fire-source feature</i> to which it is exposed	-/-/-
(b) <i>internal wall</i>	
(i) <i>loadbearing</i> , other than one supporting only the roof (not used for carparking)	60/-/-
(ii) supporting only the roof (not used for carparking)	-/-/-
(iii) <i>non-loadbearing</i>	-/-/-
(c) <i>fire wall</i>	
(i) from the direction used as a <i>carpark</i>	60/60/60
(ii) from the direction not used as a <i>carpark</i>	as required by Table 3
Column	
(a) supporting only the roof (not used for carparking) and 3 m or more from a <i>fire-source feature</i> to which it is exposed	-/-/-
(b) steel column, other than one covered by (a) and one that does not support a part of a building that is not used as a <i>carpark</i>	60/-/- or 26 m ² /tonne
(c) any other column not covered by (a) or (b)	60/-/-
Beam	
(a) steel floor beam in continuous contact with a concrete floor slab	60/-/- or 30 m ² /tonne
(b) any other beam	60/-/-
Fire-resisting lift and stair shaft (within the <i>carpark</i> only)	60/60/60
Floor slab and vehicle ramp	60/60/60



Roof (not used for carparking)

-/-/-

Notes:

1. ESA/M means the ratio of exposed surface area to mass per unit length.
2. Refer to [Specification E1.5](#) for special requirements for a sprinkler system in a *carpark* complying with Table 3.9 and located within a multi-classified building.

