

BUILDING CODE OF AUSTRALIA 2019 AMENDMENT 1 ASSESSMENT

NEW RESIDENTIAL BUILDING & RETAIL SHOP DEVELOPMENT

291-293 CONDAMINE STREET, MANLY VALE NSW 2093

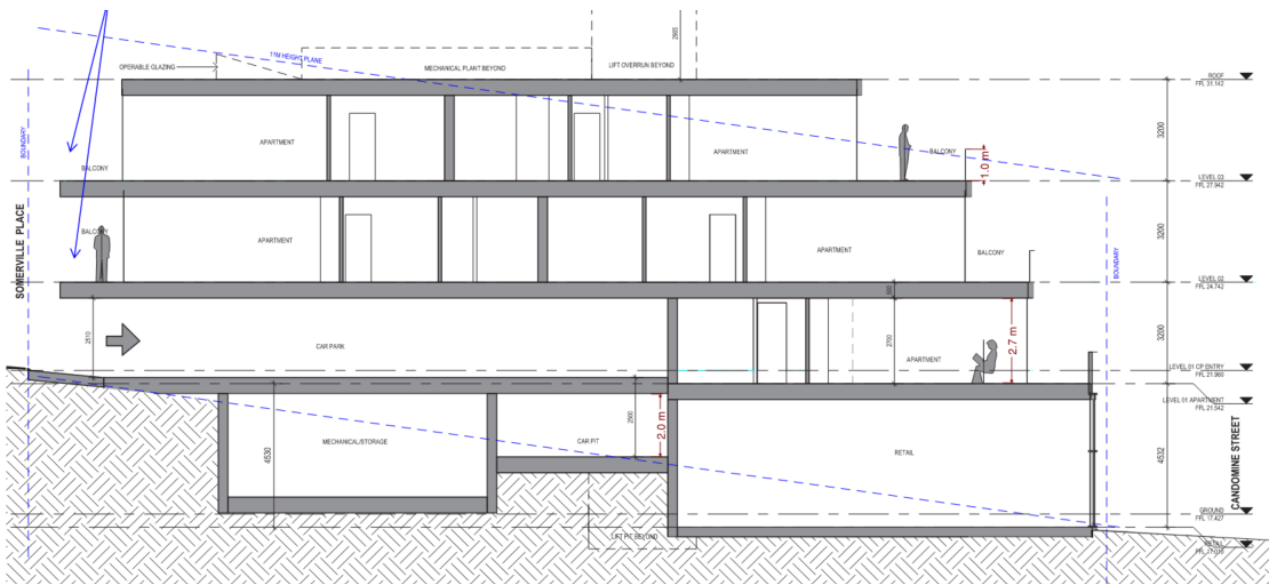
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REVISION HISTORY

Revision No.	Prepared by	Description	Date
R01	Manisha Kerai / Philip Smillie	BCA Report	25/11/21



Introduction

At the request of Eastview (Australia), we offer comments in respect to Building Code of Australia 2019 Amendment 1 compliance for the proposed four storey residential apartment building containing a retail tenancy on Ground Floor and 9 residential units across three storeys at 291-293 Condamine Street, Manly Vale NSW 2093.

This report has been prepared to assess compliance with the relevant requirements of the Building Code of Australia 2019 Amendment 1, as required by Clause 145(1)(b) of the Environment Planning and Assessment Regulation 2000. We have made every attempt to assess the main Deemed-to-Satisfy requirements under Parts A, B, C, D, E, F, G and J of the Building Code of Australia. Areas of the design are still being refined so that compliance will be further assessed prior to the issue of a Construction Certificate for the works.

This report does not assess the impact of the Disability Discrimination Act (DDA) which is outside the scope of the BCA.

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The documentation assessed includes the following Architectural drawings prepared by RFA Architects:

Discipline	Drawing	Date
Architectural	Cover Page, Survey, Proposed Ground Floor, First Floor, Second Floor, Third Floor, Roof Plan, Section.	29/10/21

The non compliances are identified throughout the report in **bold italic text**.

Building Code of Australia 2019 Amendment 1 Comments

1. Building Assessment –

Building Classification(s)	Ground Floor – Class 6, Class 7b First Floor – Class 2, Class 7a Second Floor – Class 2 Third Floor – Class 2
Rise in Storeys	4
Type of Construction	Type A
Effective Height (m)	10.52m

Section C – Fire Resistance / Compartmentation / Separation

2. **Type of Construction** -The proposed building will have a rise in storey of 4 and must be of Type A construction as per Table C1.1 - *The proposed building will need to comply with BCA Table 3 for Type A Construction: FRL of Building Elements (See appendix A).*

- Class 2 residential parts – 90 minutes
- Class 6 retails parts – 180 minutes
- Class 7a carpark parts – 120 minutes
- Class 7b storage parts – 240 minutes (having greater than 10% of overall ground floor area)



3. **Clause 3.5 of Spec C1.1** - A roof need not comply with Table 3 if its covering is non-combustible and the building—
 - (a) has a sprinkler system complying with Specification E1.5 installed throughout or,
 - (b) has a rise in storeys of 3 or less; or
 - (c) **is of Class 2; or**
 - (d) has an effective height of not more than 25 m and the ceiling immediately below the roof has a resistance to the incipient spread of fire to the roof space of not less than 60 minutes. *Architect to note roof does not need an FRL if the covering is non-combustible. However top of lift shaft does need an FRL of 90/90/90.*
4. **Non-combustible building elements** – In a building of Type A construction, External walls and common walls, non-loadbearing internal walls where they are required to be fire-resisting must not be constructed of combustible materials. This includes all components incorporated within them. Flooring and floor framing of lift pits are also to be of non-combustible building elements. *Architect to note. Aluminum Composite Cladding may not be used unless it is fully non-combustible.*
5. **Ancillary elements** – Ancillary elements 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 non-combustible or an item listed under this Clause in the BCA. *Architect to note.*
6. **Fire hazard properties** - All new surface finishes, assemblies and linings are to comply with BCA Clause C1.10 (Specification C1.10) with regard to Fire Hazard Properties. *Compliance achievable.*
7. **Fire compartmentation** – Pursuant to Spec C1.1 Table 3, the retail part is required to be fire separated from the remainder of the building with construction achieving an FRL of 180 minutes.

Area	Floor area m ²	Approx Volume m ³
Ground Floor – Retail Class 6	88 m ²	352 m ³
Ground Floor – Bin Storage, Mechanical/Storage Class 7b	98 m ²	344 m ³

Note – no fire separation of retail and storage needed if the entire ground floor achieves 4 hours FRL.

Compliance achievable – All fire compartment sizes for Class 6 and 7 portions are below the Clause C2.2 maximum allowable areas and volumes for Type A Construction being less than 5000m²area / 30,000m³ volume.

Fire compartment size limitations do not apply to Class 2 portions.

8. **Vertical separation of openings in external walls (C2.6)** – *This clause is not applicable on the basis the building is required to be fully sprinkler protected.*
9. **Separation of classifications in different storeys** – If parts of different classification are located one above the other in adjoining storeys, the floor separating the Class 2 part from the Class 6 part below must have an FRL of not less than that prescribed in Specification C1.1 for the classification of the lower storey. *Details needed at CC stage – 3 hour fire separation required.*
10. **Separation of lift shafts** – Any lift connecting more than 2 storeys, or more than 3 storeys if the building is sprinklered must be separated from the remainder of the building by enclosure in a shaft in which the walls have the relevant FRL prescribed by Specification C1.1; and openings for lift landing doors and services must be protected in accordance with the DTS Provisions of Part C3. *Details to be provided at CC stage.*
11. **Separation of public corridors** - In a Class 2 building, a public corridor, if more than 40m in length, must be divided at intervals of not more than 40m with smoke-proof walls complying with Clause 2 of Specification C2.5. *Complies, the length of public corridor is less than 40m.*
12. **Separation of equipment** - The following equipment (if applicable) is to be fire separated from the remainder of the building via a 120/120/120 FRL: Boilers, Batteries, lift motors, emergency generators, central smoke control plant and pump room. *No such equipment shown at present. Architect to note.*



13. **Electricity supply system** - Any electrical substation and the main switchroom located within the building must be separated from any other part of the building by construction having an FRL of not less than 120/120/120 and have self-closing fire doors with a fire rating of -/120/30. *No such equipment shown at present. Architect to note*
14. **Protection of openings** - Any openings within 3 meters of the side boundaries or 6 metres from the far boundary of a road or 6 metres from another building on the allotment that is not Class 10 are to be protected in accordance with Clause C3.4. – ***Applies to openings along the Northern, Southern and Western boundaries. Architect to amend plans or fire safety engineer to address.***

Roof skylight over stair to be deleted or made into a vertical window. Otherwise seek a fire engineered performance solution.

15. **Bounding construction – C3.11: Class 2** - All sole-occupancy unit doors providing access to a public corridor, public lobby or the like are to be protect via a self-closing fire door with an FRL of -/60/30. – *Applies to all doors opening into the public corridors of Class 2 parts of the building.*

Section D – Access and Egress

16. **Number of exits required** – Clause D1.2 states that for Class 2 and 6 parts that a minimum of one exit is required from each storey of the building – *Complies, at least one exit is provided from each level.*
17. **Fire-isolated exits (D1.3)** – every stairway or ramp serving as a required exit must be fire-isolated unless it connects, passes through or passes by not more than 3 consecutive storeys in a Class 2 building and one more storey of any classification may be added if the building is sprinkler protected. – *Complies, a non-fire isolated exit is proposed. The building is not required to have fire-isolated exits.*
18. **Exit Travel Distances**

Class 2

- 6m from doorway to an exit or to a point of choice – *Complies.*
- 20m from a room not within a SOU – *Complies.*
- The distance between alternative exits must not be more than 45m apart but not less than 9m apart – *Complies where an alternative exit is proposed on the first floor.*

Class 6

- The distance to a single exit serving a storey at the level of access to a road or open space may be 30m – *Complies, retail tenancy exits directly to road / open space.*

Class 7

- 20m to an exit or to a point of choice – *Complies.*
- The distance between alternative exits must not be more than 60m apart but not less than 9m apart – *Complies where an alternative exit is proposed on the first floor.*

19. **Dimensions of exits and paths of travel to exits** – A 1m clear path of travel must be retained throughout the building and in all exit paths. All corridors must be sufficient to provide safe passage for occupant egress – *compliance readily achievable. Plans currently comply.*
20. **Travel via non-fire isolated exits** – In a Class 2 building, the distance between the doorway of a room or SOU and the point of egress to a road or open space via a non-fire isolated stairway must not exceed 60m. ***Architect to note and verify.***

In a Class 2 building, a non-fire isolated stairway must discharge at a point not more than 15m from a doorway providing egress to a road or open space. ***Does not comply, distance to exit is 17m in lieu of 15m on the first floor. Architect to amend plans to comply or fire engineer to address.***



21. **Enclosure of space under stairs and ramps** – A space below the non fire-isolated stairs must not be enclosed to form a cupboard unless the enclosing walls, ceiling and doors are protected with construction achieving and FRL of 60 minutes. *Compliance achievable.*
22. **Barriers and Handrails** – Barriers and handrails are required to prevent fall – *ensure to provide barriers to balconies and stairs in accordance with D2.16, D2.17 of the BCA and AS1428.1-2009. – Compliance achievable.*
23. **Swinging doors** – Must swing in the direction of egress. In a required exit or forming part of a required exit, swinging doors must not encroach at any part of its swing by more than 500mm – **Does not comply where main entrance on Ground Floor swings against the direction of egress. Architect to amend plans to comply. The retail tenancy doors may swing inward. Cannot swing over the footpath as shown – amendment needed.**
24. **Operation of Latch** – Exit doors and doors within a path of travel to an exit are to be openable via a single handed pushing action on a single device such as a panic bar located between 900-1100mm above the floor – *To comply.*
25. **Signs on doors** – Certain doors must be installed with appropriate signage in accordance with BCA D2.23 and AS 1428.1-2009. *Compliance readily achievable to the fire stair and exit doors.*
26. **Protection of openable windows** – If the floor below the window is 2m or more above the surface beneath in a bedroom of a Class 2 building where the lowest level of window of opening is less than 1.7m above the floor, the window must be protected in accordance with BCA D2.24 – *to comply.*
27. **Access for people with a disability** – Access for people with a disability is to meet the requirements of AS 1428.1-2009 generally as follows:
 - a) **General building access (D3.1)** - The main entry point of the building is required to be accessible from the street and to and within all areas normally used by the occupants. All common areas must also be made accessible. *Plans appear to comply.*
 - b) **Access to buildings (D3.2)** - An accessway must be provided to the building from the main entry and accessible carparking spaces – *plans appear to comply.*
 - c) **Stairways and ramps (D3.3)** - *All stairs and ramps to be designed in accordance with AS 1428.1-2009 i.e. handrails to both sides, tactiles to bottom and top landings, the correct gradients to ramps and 50mm conspicuous nosing strips to stair treads – to comply.*
 - d) **Passenger lifts (D3.3)** - Passenger lifts must meet BCA Clause E3.6 and AS1735.12 requirements - *See Appendix B for the required dimensions.*
 - e) **Accessways (D3.3)** - Access for disabled persons is to meet the requirements of AS 1428.1-2009. There must be no ramps steeper than 1:14. – *Compliance achievable. The gradient of the ramp leading to the carpark is to be nominated on plans.*
 - f) **Accessible carparking** – *Complies. There are 6 carpark spaces including 1 accessible space. The shared space beside the nominated accessible car space will need a bollard.*
 - g) **Circulation space at doorways** to accessible areas must comply with AS 1428.1-2009 or a performance solution is required. A door schedule will need to show the clear opening width of accessible doors is not less than 850mm. To achieve this, a minimum 920mm wide door leaves are required generally throughout. **Generally complies except where the handrail proposed to the ramp leading to the carpark obstructs the latch side clearance.**
 - h) **Clause D3.6 signage** – needed to all common area toilet doors as well as external exit doors and fire stair exit doors that require an exit sign. Must meet BCA Spec D3.6.



Section E – Services and Equipment

28. **Fire Hydrant** – As the proposed building is 924m² (exceeds 500m²) it must be served with fire hydrants complying with the requirements of AS 2419.1-2005 – *Compliance achievable. Services consultant to provide details for CC.*
29. **Fire Hose-reels** – It is presumed internal Hydrants are to be installed in which case the carpark, retail and storage areas of the building must be provided with hose-reel coverage complying with the requirements of BCA Clause E1.4 and AS 2441-2005. Hose-reels are to be located within 4m of an exit or an internal fire hydrant – *Compliance achievable. Services consultant to provide details for CC.*
30. **Sprinklers** – A sprinkler system complying with Specification E1.5 required throughout the whole building as it is a class 2 building with a rise in storeys of 4. *Compliance achievable. Services consultant to provide details for CC.*
31. **Extinguishers** – Fire extinguishers need to be provided to Class 2 Buildings and all locations which are deemed a potential risk to the occupants of the building,
Portable fire extinguishers provided in a Class 2 building must be—
(i) an ABE type fire extinguisher; and (ii) a minimum size of 2.5 kg; and (iii) distributed outside a sole-occupancy unit—
(A) to serve only the storey at which they are located; and (B) 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.
Details to be shown for CC.
32. **Exit and emergency lighting** – Exit signs and emergency lights must be provided throughout the proposed building in accordance with AS 2293.1-2018 - *Compliance achievable. Services consultant to provide details for CC.*
33. **Smoke Hazard Management** - For buildings not more than 25m in effective height - the compliance requirement options are: -

Class 2 – A Class 2 building or part of a building must be provided with an automatic smoke detection and alarm system complying with Specification E2.2a;

Class 6 – A building with a rise in storeys of more than 2 and contains a Class 6 or 7b part must be provided with a sprinkler system complying with Spec E1.5 or an automatic smoke detection and alarm system complying with Spec E2.2a.

Compliance achievable. Fire Services consultant to provide details prior to CC.
34. **Passenger lifts (E3.6)** - Passenger lifts must meet BCA Clause E3.6 and AS1735.12 requirements - *Provide lift details for compliance assessment. See Appendix B for the required dimensions being a lift with floor dimension of not less than 1100 mm x 1400 mm (only travels 4.2m).*

Section F – Health and Amenity

35. **Sanitary facilities** - Sanitary facilities for Class 2 buildings must be provided in accordance with BCA Table F2.1 as shown below:

Class 2

Within each sole-occupancy unit, provide —

- (A) a kitchen sink and facilities for the preparation and cooking of food; and
- (B) a bath or shower; and
- (C) a closet pan; and
- (D) a washbasin.



- (ii) For laundry facilities, provide either—
- (A) in each sole-occupancy unit—
- (aa) clothes washing facilities, comprising at least one washtub and a space for a washing machine; and
- (bb) clothes drying facilities comprising clothes line or a hoist with not less than 7.5 m of line, or space for one heat operated drying cabinet or appliance in the same room as the clothes washing facilities;

Complies. Each SOU has it's own kitchen, laundry and bathroom.

36. For the Class 6 retail part at ground floor, if not more than 10 people are employed, a unisex accessible facility may be adequate. Sanitary facilities need not be provided for patrons if the total number of persons accommodated in the building in not more than 20. Sanitary facilities for staff needed.
37. **Room heights** – In a Class 2 building, the minimum ceiling height of 2.4m is required to all habitable rooms excluding kitchens.– *Current drawings appear to comply. Note - SEPP 65 requires 2.7m ceiling height.*
38. **Natural light** - Natural light must be provided to all habitable rooms within the apartments in accordance with Clause F4.2 of the BCA. The windows should have an aggregate light transmitting area of not less than 10% of the floor area of the room – *Compliance achievable. Architect to confirm compliance – as the south side bedroom windows appear small.*
39. **Artificial lighting** - Artificial lighting must be provided if natural lighting is not available to all sanitary compartments, bathrooms, shower rooms, airlocks, laundries, common stairways and other spaces used in common by the occupants of the building.
- Artificial lighting must comply with Clause F4.4 of the BCA and AS/NZS 1680.0-1998.
40. **Mechanical ventilation** - Each residential apartment will have bedrooms provided with natural ventilation. Bathrooms will have mechanical ventilation systems complying with Part F.5 of the BCA. Mechanical ventilation must comply with AS 1668.2 - *Mechanical consultant to provide mechanical drawings for compliance assessment at CC stage.*
41. **Acoustic Requirements** – Each residential sole occupancy unit internal walls and ceilings must comply with BCA Part F5. *Acoustic report to confirm compliance for CC.*
42. **Section G5 Bushfire Prone areas** – not applicable, the site does not appear to be bushfire affected.

NSW Section J – Energy Efficiency

43. The Class 2 SOU parts are subject to BASIX requirements. *BASIX Certificate needed at DA and CC stage.*
44. The common area of a Class 2, Class 6 and 7 building parts must comply with Section J (Energy Efficiency) of BCA 2019 Amendment 1 as it is applicable to the proposed development.

The building is in Climate Zone 5. The roof must achieve min R3.7 for a downward direction of heat flow. The external walls and glazing need a U value of 2.0.

In Climate Zones 1, 2, 3, 4, 5, 6 and 7, the solar absorptance of the upper surface of a roof must be not more than 0.45. Hence the roof colour must not be dark (J1.3).

A Section J Consultants report will be required to confirm compliance at CC stage.



Conclusion

We have assessed the provided architectural drawings with respect to the Building Code of Australia 2019 Amendment 1. At present the design can meet a combination of the deemed to satisfy provisions and performance requirements of the Building Code of Australia 2019 Amendment 1.

Appendix A

Table 3 TYPE A 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 1.5m	90/90/90	120/120/120	180/180/180	240/240/240
1.5 to less than 3m	90/60/60	120/90/90	180/180/120	240/240/180
3m or more	90/60/30	120/60/30	180/120/90	240/180/90
For non-loadbearing parts				
Less than 1.5m	-/90/90	-/120/120	-/180/180	-/240/240
1.5 to less than 3m	-/60/60	-/90/90	-/180/120	-/240/180
3m 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 3m	90/-/-	120/-/-	180/-/-	240/-/-
3m 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
Non-loadbearing	-/90/90	-/120/120	-/120/120	-/120/120
Bounding public corridors, public lobbies and the like-				
Loadbearing	90/90/90	120/-/-	180/-/-	240/-/-
Non-loadbearing	-/60/60	-/-/-	-/-/-	-/-/-
Between or bounding sole-occupancy units-				
Loadbearing	90/90/90	120/-/-	180/-/-	240/-/-
Non-loadbearing	-/60/60	-/-/-	-/-/-	-/-/-
Ventilating, pipe, garbage, and like shafts not used for the discharge of hot products of combustion				
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 INTERNAL WALLS, INTERNAL BEAMS, TRUSSES and COLUMNS-				
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



Appendix B

Table E3.6B

Table E3.6b APPLICATION OF FEATURES TO PASSENGER LIFTS Feature	Application
Handrail complying with the provisions for a mandatory handrail in AS 1735.12	All lifts except—
	(a) a stairway platform lift complying with AS 1735.7 ; and
	(b) a low-rise platform lift complying with AS 1735.14 .
Lift floor dimension of not less than 1400 mm x 1600 mm	All lifts which travel more than 12 m.
Lift floor dimensions of not less than 1100 mm x 1400 mm	All lifts which travel not more than 12 m except a stairway platform lift complying with AS 1735.7 .
Lift floor dimensions of not less than 810 mm x 1200 mm	A stairway platform lift complying with AS 1735.7 .
Minimum clear door opening complying with AS 1735.12	All lifts except a stairway platform lift complying with AS 1735.7 .
Passenger protection system complying with AS 1735.12	All lifts with a power operated door.
Lift landing doors at the upper landing	All lifts except a stairway platform lift complying with AS 1735.7 .
Lift car and landing control buttons complying with AS 1735.12	All lifts except—
	(a) a stairway platform lift complying with AS 1735.7 ; and
	(b) a low-rise platform lift complying with AS 1735.14 .
Lighting in accordance with AS 1735.12	All enclosed lift cars.
(a) Automatic audible information within the lift car to identify the level each time the car stops; and	All lifts serving more than 2 levels.
(b) audible and visual indication at each lift landing to indicate the arrival of the lift car; and	
(c) audible information and audible indication <i>required</i> by (a) and (b) is to be provided in a range of between 20–80 dB(A) at a maximum frequency of 1 500 Hz	
Emergency hands-free communication, including a button that alerts a call centre of a problem and a light to signal that the call has been received	All lifts except a stairway platform lift complying with AS 1735.7 .