

16 November 2021

**Our Ref:** 210183

**Ogi Rakic**

C/- PBD Architects  
Level 2 – 52 Albion Street  
SURRY HILLS NSW 2010

Dear Mr. Rakic,

**BUILDING CODE OF AUSTRALIA ASSESSMENT**  
**10 LETHBRIDGE STREET PENRITH NSW 2750**

We have assessed the proposed construction of a 6-storey residential flat building comprising 36 apartments and two levels of basement parking at the above-mentioned premises for compliance with the Building Code of Australia.

We note that full details of compliance will be provided at Construction Certification Stage to the appointed Certifying Authority.

**1. INTRODUCTION**

**1.1 General**

The proposed works which are the subject of this report, is located at 10-14 Lethbridge Street, Penrith NSW 2750 with principal entry point located along the street frontage to the building.

The subject property is located within the local government area of the Penrith City Council.

**1.2 Purpose of the Report**

This report has been prepared, on behalf of Fobupu Pty Ltd, to establish compliance to the Building Code of Australia and relevant Acts and Regulations of the development application documentation for the proposed construction of a 6-storey residential flat building comprising 36 apartments and two levels of basement parking at the above-mentioned premises.

**1.3 Report Basis**

This report is based on:

- i. The Building Code of Australia 2019<sub>amdt 1</sub> Volume One, inclusive of NSW variations (See Note below).
- ii. Environmental Planning and Assessment Act 1979.
- iii. Environmental Planning and Assessment Regulation 2000.
- iv. Structural Set of Plans prepared by Dunnings Consulting Engineers as identified on Appendix 1.

**Note:** Building Code of Australia (BCA) 2019<sub>amdt 1</sub> was adopted in NSW on 1<sup>st</sup> of July 2020. The amendment of the BCA in force at the date of lodgement is the version called up by Clause 98 of the Environmental Planning & Assessment Regulation 2000. Comments will be subject to change upon updated revisions of the Building Code of Australia.

## 1.4 Exclusions

This report does not consider the following except where specifically mentioned;

- Structural Design.
- The Disability Discrimination Act 1992 (access for people with disabilities has been assessed in accordance with Part D3 of the BCA, however additional measures may be required to be provided subject to the Disability Discrimination Act 1992)
- Disability (Access to Premises – Building) Standards 2010.

## 2. BUILDING DESCRIPTION

2.1 The building classification relevant to the proposed use is Class 2 & 7a.

2.2 The building has an effective height of 18.40m taken from Ground Floor RL 46.40 & Roof Terrace 'Communal Open Space' RL 64.80

2.3 The required type of construction under C1.1 of the BCA is **Type A**. This is the highest resistant type of construction required by the BCA.

2.4 The building has a **rise in storeys** of seven (7) taken from Ground Floor to Roof Terrace.

### 2.5 Floor Area and Volume Limitations (Table C2.2)

The building is subject to maximum floor area and volume limits of:-

- The Class 2 portions of the building are not subject to floor area and volume limitations of C2.2 as Table 3 of Specification C1.1 and Clause C3.11 of the BCA regulates the compartmentation and separation provisions applicable to buildings, or building portions, of Class 2 classifications.
- The Class 7a part of the carpark area does not exceed the area and volume limitations of C2.2

### 2.6 Exits

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

- Fire Stairs 'FS-2 & FS-3' located on Basement 1 & 2 floor plans
- Fire Stairs 'FS-1' discharging into a covered area on the ground floor (Subject to fire engineering mentioned below)
- Front and rear (north & south) exit doors from the residential lobby on the ground floor.
- Western exit door on the ground floor adjacent the loading bay.
- Fire Stair 'FS-1' located on each residential level above ground floor

## 3. STRUCTURAL PROVISIONS

3.1 The proposal is required to be designed in accordance with Section B of the BCA and the relevant standards.

3.2 Structural engineer is to provide design certification to confirm that the proposed building elements have been designed to the relevant Australian Standards.

#### 4. FIRE RESISTANCE

4.1 The building should generally achieve the following Fire-Resistant Level as outlined in Specification C1.1 of the BCA for Type A construction

- Residential - 90 minute construction
- Carpark - 120 minute construction

Internal walls separating sole occupancy units (SOU) and separating a SOU from the public corridor are to have an FRL of 90/90/90 (loadbearing) or -/60/60 (non-loadbearing). Doors in such walls are to be protected by -/60/30 fire doors.

4.2 In a building required to be of Type A construction, the following building elements and their components must be non-combustible:

- a) External walls and common walls, including all components incorporated in them including the facade covering, framing and insulation.
- b) The flooring and floor framing of lift pits.
- c) Non-loadbearing internal walls where they are required to be fire-resisting.

Your attention is drawn to the above Clause C1.9, whereby the properties for **non-combustibility** are to be clarified to the satisfaction of the appointed Certifying Authority at the Construction Certificate

4.3 Any proposed lightweight fire resisting construction is to comply with BCA C1.8.

4.4 Fire Hazard properties of any material or assembly used in the building are required to comply with C1.10 and Specification C1.10 of the BCA.

4.5 Any part of a window or other opening in an external wall is above another opening in the storey next below and its vertical projection falls no further than 450 mm outside the lower opening (measured horizontally), the openings must be separated by—

- i. a spandrel which is not less than 900mm in height; and extends **not less than 600mm above the upper surface** of the intervening floor; and is of non-combustible material having an **FRL of not less than 60/60/60**, or
- ii. part of a curtain wall or panel wall that complies with (i); or
- iii. construction that complies with (i) behind a curtain wall or panel wall and has any gaps packed with a non-combustible material that will withstand thermal expansion and structural movement of the walling without the loss of seal against fire and smoke; or
- iv. a slab or other horizontal construction that projects outwards from the external face of the wall **not less than 1100mm**; and extends along the wall not less than 450mm beyond the openings concerned; and is non-combustible and has an FRL of **not less than 60/60/60**.

**Note:** Concessions to the above may be afforded should an **AS2118.1 system** be installed throughout the development.

4.6 The lift shafts are required to be fire rated in accordance with BCA C2.10 and Spec C1.1 Table 3.1. Openings in lift shafts are required to achieve the fire rating specified in BCA C3.10.

4.7 Fire separation of certain equipment is required in an accordance with C2.12 & C2.13.

4.8 **FS-1 & FS-2** are required to be to be fire isolated stairs. Doors to fire isolated stairs are to have the fire rating specified in BCA C3.8. Fire isolated stairs are only to be penetrated by services permitted by BCA C3.9. It is noted that FS-3 connects two levels of basement carpark and therefore is not strictly required to be fire-isolated however it is acknowledged it may be designed and constructed as such.

- 4.9 Openings for service penetrations in fire rated building elements are to be fire stopped/protected in accordance with BCA Clause C3.15.
- 4.10 In accordance with BCA Clause C3.5, the aggregate width of openings for doorways in a fire wall, which are not part of a horizontal exit, must not exceed  $\frac{1}{2}$  of the length of the fire wall, and each doorway must be protected by—
- (i) 2 fire doors or fire shutters, one on each side of the doorway, each of which has an FRL of not less than  $\frac{1}{2}$  that required by Specification C1.1 for the fire wall except that each door or shutter must have an insulation level of at least 30; or
  - (ii) a fire door on one side and a fire shutter on the other side of the doorway, each of which complies with (i); or
  - (iii) **a single fire door** or fire shutter which has an FRL of not less than that required by Specification C1.1 for the fire wall except that each door or shutter must have an insulation level of at least 30.

**Comment**

The firewall separating the carpark from the residential part of the building on the ground floor, extract below, incorporates **two fire doors** in lieu of a single fire door in accordance with Clause C3.5(a)(iii) of the BCA. Where a deemed-to-satisfy design proposal is not achieved, a Fire-Engineered Performance Solution will need to be prepared by a C10 Accredited Fire Engineer at the Construction Certificate stage to justify the non-compliance and is to address the relevant Performance Requirements of the BCA accordingly.

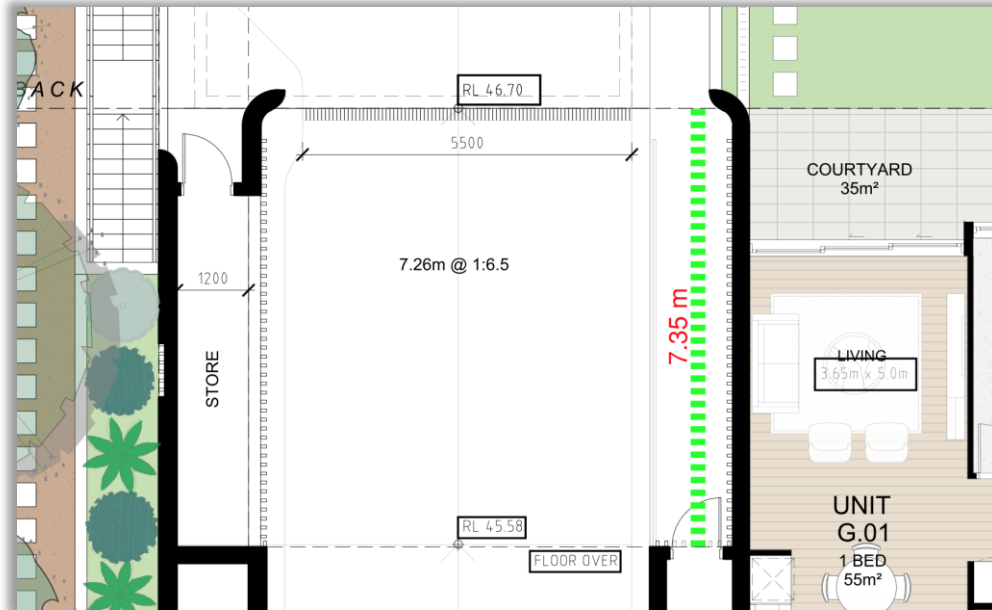
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**5. ACCESS AND EGRESS**

5.1 In accordance with BCA Clause D1.7, 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;

**Comment**

Fire Isolated Stair 1 (FS1) does not discharge into open space, FS1 discharges into a covered area that is not open for at least 1/3 of its perimeter and is more than 6m (**7.35m**) to open space.



5.2 The path of travel connecting the exits (i.e. stairway and walkways) to the public road are required to comply with a minimum 1m unobstructed width as per BCA Clause D1.6.

5.3 Goings and risers are required to be design to comply with D2.13 of the BCA. Particular attention is required to to ensure that compliance in accordance with Table D2.13 is achieved. Refer to below extract.

**Table D2.13 Riser and going dimensions**

Stairway location	Riser (R)	Going (G) <sup>Note 3</sup>	Quantity (2R+G)
Public	Max: 190 mm Min: 115 mm	Max: 355 mm Min: 250 mm	Max: 700 mm Min: 550 mm
Private <sup>Note 1</sup>	Max: 190 mm Min: 115 mm	Max: 355 mm Min: 240 mm	Max: 700 mm Min: 550 mm

5.4 Treads must have—

- a) a surface with a slip-resistance classification not less than that listed in Table D2.14 when tested in accordance with AS 4586; or
- b) a nosing strip with a slip-resistance classification not less than that listed in Table D2.14 when tested in accordance with AS 4586.

5.5 Landings must comply with BCA Clause D2.14.

5.6 Handrails are to be provided to stairs and ramps in accordance with BCA D2.17. Handrails must comply with Clause 12 of AS1428.1.

## 6. SERVICES AND EQUIPMENT

6.1 The building is required to be served by a hydrant system in accordance with BCA Clause E1.3 and AS2419.1-2005

6.2 The building is required to be served by an Automatic fire suppression system (sprinkler system) in accordance with BCA Clause E1.5, Specification E1.5, Specification E1.5a

6.3 The building is required to be served by a Fire Monitoring System in accordance with BCA Specification E1.5a and Clause 3 of Specification E2.2d

6.4 Fire hose reels are required to serve the carpark parts of the building in accordance with BCA E1.4 & AS 2441.

6.5 Portable fire extinguishers must be provided in accordance with BCA clause E1.6 and AS2444-2001.

6.6 The following smoke hazard management systems are required:

- The building must be provided with a smoke detection and alarm system in accordance with BCA Spec E2.2a
- Smoke detection system, in a accordance with BCA Spec E2.2a, to operate smoke control systems
- Building Occupant warning system in a accordance with BCA Spec E2.2a
- monitoring of smoke detection system in accordance with BCA Spec E2.2a
- The carpark mechanical ventilation system must comply with BCA Table E2.2a 'Class 7a Buildings'.

6.7 Lifts are required to be designed in accordance with BCA Part E3, in particular:

- Compliance with Specification E3.1
- Stretcher facility accordance with BCA E3.2
- Warning signs in accordance with BCA E3.3
- Access for people with disability requirements of BCA E3.6
- Fire service controls in accordance with BCA E3.7, E3.9 & E3.10.

6.8 The residential lift serving each floor is to be of a size that can accommodate a stretcher in accordance with BCA E3.2.

6.9 Emergency lighting must be provided in accordance with BCA Part E4 & AS 2293.1-2018.

6.10 Exit signs are required in accordance with BCA Part E4 and & AS 2293.1-2018

## 7. HEALTH & AMENITY

- 7.1 In accordance with FP1.4 external walls (except for wall to carpark) must prevent the penetration of water that could cause—
- a) unhealthy or dangerous conditions, or loss of amenity for occupants; and
  - b) undue dampness or deterioration of building elements.
- 7.2 Waterproofing membranes for external above ground use must comply with AS 4654.1 and AS 4654.2.
- 7.3 Stormwater drainage must comply with AS/NZS 3500.3-2015
- 7.4 Roof coverings must comply with BCA F1.7.
- 7.5 Waterproofing of wet areas must comply with BCA F1.7 & AS 3740.
- 7.6 Floor wastes must be provided as required by BCA F1.11.
- 7.7 Glazed assemblies are to comply with BCA F1.13 & AS 2047.
- 7.8 Damp-proofing of walls is required to prevent rising damp in accordance with BCA clause F1.9. Where existing external walls are to be utilized, verification of compliance with this clause is required.
- 7.9 In any building, the height above a stairway, ramp, landing or the like must achieve a minimum of 2 m measured vertically above the nosing line of stairway treads or the floor surface of the ramp, landing or the like
- 7.10 The carpark must be provided with AS 1668.2 mechanical ventilation
- 7.11 Artificial lighting is required to be provided in accordance with F4.4 and installed in accordance with AS/NZS 1680.0.
- 7.12 Sound transmission and insulation between residential sole occupancy units and separating sole occupancy units from common areas are required to be designed in accordance with BCA Part F5.
- 7.13 The floors of residential sole occupancy units are required to be constructed to achieve an  $R_w + C_{tr}$  not less than 50 and an  $L_{n,w} + C_I$  not more than 62. (Refer to attachments)
- 7.14 The walls bounding sole occupancy units are required to have an  $R_w + C_{tr}$  not less than 50.
- 7.15 Where a wall separates a bathroom, sanitary compartment, laundry or kitchen of one sole occupancy unit from a habitable area of another sole occupancy units or a walls of residential sole occupancy unit from a lift shaft or plant room, the walls are required to achieve an  $R_w + C_{tr}$  not less than 50 and be of discontinuous construction.
- 7.16 The doorways of the residential units opening to the carpark and entry doors of residential units opening to the public lobby are required to have an  $R_w$  not less than 30.

## 8. ANCILLARY PROVISIONS

- 8.1 Part G6 of the BCA contains *Deemed-to-Satisfy Provisions* which are additional to those contained in Sections C, D, E, F and G for occupiable outdoor areas.

**Occupiable outdoor is defined as a space on a roof, balcony or similar part of a building—**

- (a) that is open to the sky; and*
- (b) to which access is provided, other than access only for maintenance; and*
- (c) that is not open space or directly connected with open space.*

**Comment:** The communal roof top & balconies are to consider the requirements of this Part and documentation to be provided to the satisfaction of the Certifying Authority at the Construction Certificate stage.

## 9. ENERGY EFFICIENCY

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

## 10. CONCLUSION

It is the authors opinion based on the desktop assessment of the provided documentation prepared by PBD Architects, that the proposed construction of a 6-storey residential flat building comprising 36 apartments and two levels of basement parking at the above-mentioned premises is capable of complying with the Building Code of Australia subject to considerations of the indicated commentary noted within this report.

Should you need to discuss any issues, please do not hesitate to contact the undersigned on 8347 0211.  
Yours Faithfully,

**GARY PAVLOU**  
Building Regulation Consultant  
On behalf of Building Control Group



## APPENDIX 1

Assessed plans prepared by PBD Architects received on the 11 November 2021

Plan Title	Drawing No	Revision	Date
PBD Architects	DA000	A	21/11/2010
PBD Architects	DA001	A	21/11/2010
PBD Architects	DA010	A	21/11/2010
PBD Architects	DA011	A	21/11/2010
PBD Architects	DA100	A	21/11/2010
PBD Architects	DA101	A	21/11/2010
PBD Architects	DA102	A	21/11/2010
PBD Architects	DA103	A	21/11/2010
PBD Architects	DA104	A	21/11/2010
PBD Architects	DA105	A	21/11/2010
PBD Architects	DA106	A	21/11/2010
PBD Architects	DA200	A	21/11/2010
PBD Architects	DA201	A	21/11/2010
PBD Architects	DA202	A	21/11/2010
PBD Architects	DA203	A	21/11/2010
PBD Architects	DA300	A	21/11/2010
PBD Architects	DA301	A	21/11/2010
PBD Architects	DA400	A	21/11/2010
PBD Architects	DA410	A	21/11/2010
PBD Architects	DA411	A	21/11/2010

## APPENDIX 2

The following **draft** proposed fire safety measures are required to be installed in the building, this table may be required to be updated as the design develops and options for compliance are confirmed.

Item	Proposed Essential Fire Safety Measure	Minimum Standard of Performance
1.	Automatic fire detection and alarm system	BCA 2019 <sup>Amdt 1</sup> Clause E2.2a, Clause , 4, 6, 7 & 8 of Specification E2.2a, AS3786-2014 amdt 1 & 2 and AS1670.1-2018
2.	Automatic fire suppression system (sprinkler system) – Class 2 & 3 buildings not more than 25m	BCA 2019 <sup>Amdt 1</sup> , Clause E1.5, Specification E1.5, Specification E1.5a, Specification E2.2d. & AS2118.1-2017 or AS2118.4 or FPAA101D or FPAA101H.
3.	Building Occupant Warning System	BCA 2019 <sup>Amdt 1</sup> Clause E2.2a, Clause 3, 4 & 7 of Specification E2.2a and AS1670.1-2018
4.	Emergency lighting	BCA 2019 <sup>Amdt 1</sup> Clauses E4.2 & E4.4, AS2293.1-2018
5.	Exit signs	BCA 2019 <sup>Amdt 1</sup> Clauses E4.5, E4.6 & E4.8, AS2293.1-2018
6.	Fire dampers	BCA 2019 <sup>Amdt 1</sup> Specification C3.15, AS/NZS1668.1-2015, AS1682.1 & 2
7.	Fire doors	BCA 2019 <sup>Amdt 1</sup> Spec C3.4, AS1905.1-2015
8.	Fire hydrant system	BCA 2019 <sup>Amdt 1</sup> Clause E1.3, AS2419.1-2005
9.	Fire seals protecting openings in fire resisting components of the building	BCA 2019 <sup>Amdt 1</sup> Clause C3.15, AS1530.4-2014
10.	Fire Monitoring	BCA 2019 <sup>Amdt 1</sup> Specification E1.5a and Clause 3 of Specification E2.2d.
11.	Lightweight Fire Rated Construction	BCA 2019 <sup>Amdt 1</sup> Clause / Specification C1.8
12.	Paths of travel, stairways, passageways or ramps	BCA 2019 <sup>Amdt 1</sup> Section D
13.	Portable fire extinguishers	BCA 2019 <sup>Amdt 1</sup> Clause E1.6, AS2444-2001
14.	<i>Any proposed Fire Engineering Report.</i>	<i>Where applicable, to address the outcomes of a proposed fire engineered alternative solution report pursuant of the Construction Certificate stage.</i>