Building Code of Australia

Assessment Report

Project Address: 8 Forest Road, Warriewood NSW 2102 – Stage 2

Client: Warriewood Vale Pty Ltd
Report Number: 200091.1 (BCA)
Revision: 01

11 SEPTEMBER 2020

REPORT REVISION HISTORY

Revision	Date Issued	Revision Description	
01	11/09/2020	Revision tracking notes	
		Prepared by	**Verified by**
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This report is and shall remain the property of City Plan Services P/L and has been prepared with input from a number of other expert consultants (if relevant). To the best of our knowledge, the information contained herein is neither false nor misleading and the contents are based on information and facts that were correct at the time of writing. City Plan Services P/L accepts no responsibility or liability for any errors, omissions or resultant consequences including any loss or damage arising from reliance in information in this publication.

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1. INTRODUCTION

We have assessed the architectural plans for the construction of a three-storey residential flat building containing 63 apartments with basement parking and Communal Landscape Zones proposed at 8 Forest Road, Warriewood NSW 2102 for compliance with the Building Code of Australia (BCA) 2019 Amendment 1.

1.1. General

The development, the subject of this report, is for the construction of a three-storey residential flat building containing 63 apartments with basement parking and Communal Landscape Zones proposed at 8 Forest Road, Warriewood NSW 2102.

The property is situated within the local government area of Northern Beaches Council (Pittwater – Warriewood Valley).

1.2. Description

The proposed building contains 4 storeys and consists of:

Basement	Class 7a Carpark
Ground Floor	Class 2 Residential
Level 1 & 2	Class 2 Residential

1.3. Purpose of Report

This report has been prepared, on behalf of Warriewood Vale Pty Ltd, to establish compliance to the Building Code of Australia and relevant Acts and Regulations of the development application documentation for the proposed works.

1.4. Report Basis

This report is based on:

- Architectural plans prepared by Jackson Teece, as identified in the attached Appendix 1.
- The Building Code of Australia 2019 Amendment 1, inclusive of NSW variations (See Note 1).
- Environmental Planning and Assessment Act 1979.
- Environmental Planning and Assessment Regulation 2000.

Note1: Building Code of Australia (BCA) 2019 Amendment 1 was adopted in NSW on 01 July 2020. The amendment of the BCA in force at the date of lodgement of a Construction Certificate is the version called up by Clause 98 of the Environmental Planning & Assessment Regulation 2000 for the purpose of the building design. Therefore, comments

may be subject to changes to comply with updated versions of the Building Code of Australia.

1.5. Exclusions and Limitations

1. This report has been prepared by City Plan for Warriewood Vale Pty Ltd and may only be used and relied on by Warriewood Vale Pty Ltd for the purpose agreed between City Plan and Warriewood Vale Pty Ltd.
2. City Plan otherwise disclaims responsibility to any person other than Warriewood Vale Pty Ltd arising in connection with this report. City Plan also excludes implied warranties and conditions, to the extent legally permissible.
3. City Plan Services Pty Ltd undertakes no duty, nor accepts any responsibility, to any third party who may rely upon or use this document.
4. The services undertaken by City Plan in connection with preparing this report are limited to those specifically detailed within the report and subject to scope limitations as set out in the report but specifically exclude:
   - Structural design in any form or content.
   - The Disability Discrimination Act 1992.
   - Disability (Access to Premises – Building) Standards 2010.
   - The existing level of Building Code of Australia compliance unless specifically identified within this report.
   - The operational capabilities or compliance of any existing services installed within the building.
   - Assessment of any existing Performance Solutions, including Fire Safety, addressing compliance with the Performance Requirements of the BCA.
5. This report is not a Part 4A compliance certificate under the Environmental Planning & Assessment Act 1979 or Regulation 2000.
6. The opinions, conclusions and any recommendations within this report are based on conditions encountered and information reviewed at the date of preparation of the report. City Plan has no responsibility or obligation to update this report to account for events or changes occurring after the date that the report was prepared.
7. The methodologies adopted within this report specifically relate to the subject building and must not be used for any other purpose.
8. City Plan has prepared this report based on information provided by others, including but not limited to Architectural Plans and Annual Fire Safety Statements. City Plan has not independently verified or checked beyond the agreed scope of work the validity of the documentation prepared and provided by others. City Plan accepts no liability in connection with such unverified

information, including errors and omissions in the report which were caused by errors or omissions within the information relied upon.

9. The documentation relied upon has been reviewed only to the degree reasonable as pertaining to City Plan's scope, as defined within the contract and fee agreement. It is expressly not City Plan's responsibility to:
   - Familiarise ourselves with all information and documentation relating to the project, or the potential BCA, Access, or fire safety aspect derivatives thereof,
   - Conduct a "full BCA audit or compliance assessment" in any way defined, implied, or assumed, for matters outside of City Plans scope.
   - Prepare a holistic BCA, Access or Fire Safety strategy for the building or carry out a full assessment of all information and documentation relating to the project, or the potential BCA, Access, or Fire Safety aspect derivatives thereof.

2. BUILDING DESCRIPTION

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

2.2. The building has an effective height of 6.2m*.

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

2.4. The building has a rise in storeys (RIS) of 3*.

2.5. The proposed fire safety schedule is provided in Attachment 2.

*Refer to Section 3.

3. RISE IN STOREYS

The current design incorporates a driveway entry on the northern elevation which has a finished floor level of 21.4m at the external wall which results in the basement being counted in the RIS which increases the RIS to 4 and triggers the requirements for sprinkler protection throughout the residential portion of the development as per E1.5 of the BCA. In order to maintain a RIS of 3, the finished floor level at the basement entry, (figure 1) needs to be raised to a height of 23.4m, so that the height of the finished floor level, measured at the external wall, is located less than 1000mm from the underside of the basement soffit, as per C1.2 of the BCA.

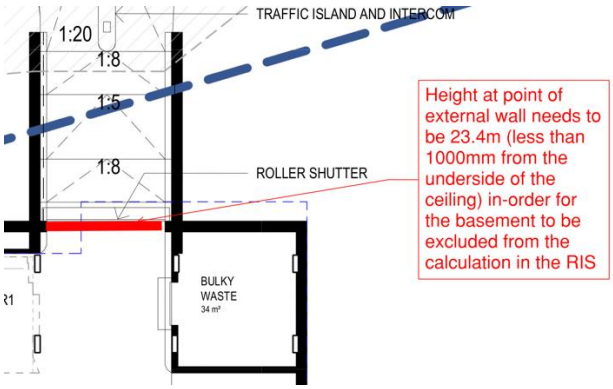

Figure 1

In addition, the external ground level located in the north eastern corner of the building and on either side of the basement carpark entry (figure 2 & 3), also needs to achieve a height of 23.4m at the external

wall (less than 1000mm from the soffit of the basement) in order for the basement carpark storey to be excluded from the calculation in the Rise in Storeys.

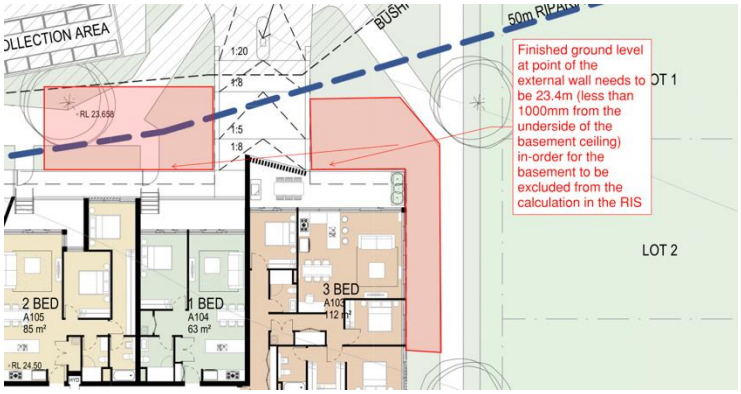

Figure 2

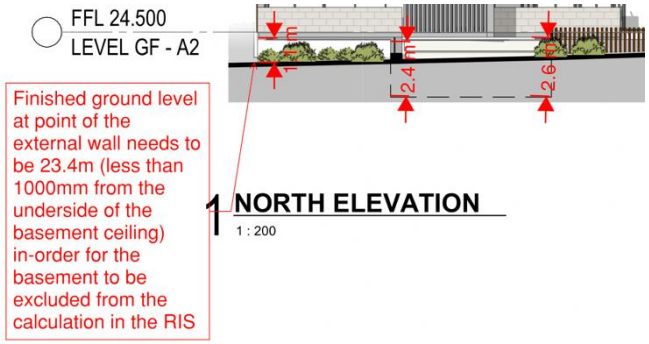

Figure 3

This report has been prepared on the assumption that the basement carpark entry and external ground level will be adjusted so that the basement is not counted in the Rise in Storeys and the building achieves a RIS of 3. **Design modification required.**

4. STRUCTURAL PROVISIONS

4.1. The structural elements and forms of construction are required to be designed in accordance with BCA Section B and the relevant standards.

4.2. Termite risk management is required in accordance Clause B1.4(i) and AS 3660.1-2014 Amdt 1, if any primary building elements are constructed from timber.

4.3. If the site is in a Flood Hazard Area, as defined by the BCA, the building must be designed in accordance with the ABCB Standard for Construction of Buildings in Flood Hazard Areas.

5. FIRE RESISTANCE

5.1. In accordance with Table 3.1 of Specification C1.1 and Clause 2.8, the building elements throughout the development are generally required to achieve a fire resistance level of 90 minutes. Some internal non-loadbearing walls, for example, walls bounding Sole Occupancy Unit,

are permitted to achieve a reduced FRL of -/60/60. Full details demonstrating compliance with Spec C1.1 are to be included within the Construction Certificate Documentation.

5.2. Internal loadbearing walls must be concrete or masonry.

5.3. Lightweight fire resisting construction is to comply with BCA C1.8.

5.4. 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.

The external façade includes a number of different products including timber soffits and timber looking louvers. All materials must be tested in accordance with AS1530.1-1994 and deemed non-combustible. Final product details demonstrating compliance are to be included within the Construction Certificate documentation.

5.5. Fire Hazard properties of internal linings, materials or assemblies used in the building are required to comply with C1.10 and Specification C1.10 of the BCA.

5.6. An 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, except were permitted by C1.14 of the BCA.

5.7. Vertical separation of openings in external walls is required in accordance with BCA Clause C2.6. Full height glazing identified with glazed spandrels, as indicated in figure 4 below, require

compliance spandrels achieving an FRL of 60/60/60. The current documentation does not contain this level of detail and construction documentation is to demonstrate compliance.

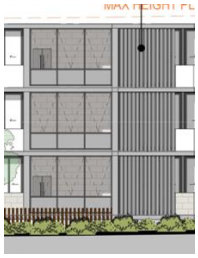

Figure 4

5.8. Doorways of SOU's are required to be protected in accordance with C3.11 of the BCA with self-closing -/60/30 fire doorsets.

5.9. The proposed garbage / recycling rooms opening into the residential lobbies are required to be separated from the remainder of the building with 60min construction and self-closing -/60/30 fire doorsets as per C3.11(b).

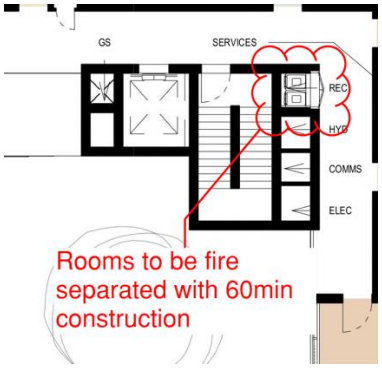

Figure 5

5.10. Openings for service penetrations in fire rated building elements are to be fire stopped/protected in accordance with BCA Clause C3.15.

6. ACCESS AND EGRESS

6.1. The number of exits provided complies.

6.2. The exit stairs serving both the basement and residential portion of the building are not required to be fire-isolated under the requirements of D1.3 of the BCA, however the stair serving the hydrant pump room is required to be fire-isolated under the requirements of AS2419.1-2005.

6.3. The egress travel distances within the development exceed the DTS limitations and are proposed to be addressed via a fire engineered **performance solution**. Extended travel distances include;

- Basement – 22m to a point of choice, 60m to the closest exit and 80m between alternative exits, when measures therough the point of choice. .
- Ground Floor – 24m to an exit.
- Level 1 & 2 – 16m to an exit (B309).
- Level 1 & 2 – 11m to an exit.

Justification is to be included with the Construction Certificate documentation.

6.4. The dimensions of exits and paths of travel are capable of complying.

6.5. Travel by the non-fire isolated exits complies.

6.6. The discharge of the fire-isolated stair serving the hydrant pump rooms discharges directly to open spaced and complies with the requirements of D1.7 of the BCA.

6.7. The discharge of exits are capable of complying with BCA D1.10.

6.8. Non-fire isolated exits are required to be constructed of materials complying with BCA Clause D2.3.

6.9. Installations in exits and paths of travel are to comply with BCA D2.7.

6.10. 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 4586-2013 Amdt 1.

6.11. Goings and risers of stairways are required to be designed to comply with D2.13 of the BCA, including slip resistance requirements.

6.12. Landings of stairways and ramps must comply with BCA D2.14, including slip resistance requirements.

6.13. Thresholds at doorways are to comply with BCA D2.15.

6.14. Barriers to prevent falls are to be provided in accordance with BCA D2.16.

6.15. Handrails are to be provided to stairs and ramps in accordance with BCA D2.17. Handrails must comply with Clause 12 of AS 1428.1-2009 Amdt 1.

6.16. Door hardware is to comply with BCA D2.21.

6.17. Signage is required to fire stair doors in accordance with BCA D2.23.

6.18. Fall protection from openable windows is to be provided in accordance with BCA D2.24.

6.19. Access for people with disabilities is required is required in accordance with Part D3 & AS 1428.1-2009 Amdt 1 & 2. Refer to separate access report.

6.20. Braille and tactile signage are to be provided to exit doors in accordance with D3.6.

6.21. Tactile indicators are required to all the stairs and ramps throughout the development in accordance with BCA D3.8 and sections 1 & 2 of AS/NZS 1428.4.1-2009 Amdt 1 & 2.

7. SERVICES AND EQUIPMENT

7.1. The building is required to be served by a hydrant system in accordance with BCA Clause E1.3 and AS 2419.1-2005 Amdt 1. The hydrant pumproom located within the basement is required to be connected via a fire-isolated stair and is capable of complying.

7.2. The hydrant booster location is not currently documented but is likely to require fire engineered **performance justification** as the booster is unlikely to be visible from the main entrance of the building.

7.3. Fire hose reels are required top be installed within the basement carpark in accordance with BCA E1.4 & AS 2441-2005 Amdt 1.

7.4. The basement is required to be protected by a sprinkler system in accordance with BCA E1.5.

7.5. As outlined in section 3, this report is based on a Rise in Storeys of 3. Should the RIS not be maintained at 3, and increased to 4, the residential portion of the building is required to be

protected with a sprinkler system complying with Spec E1.5a of the BCA. Alternatively, the use of sprinkler protection could be justified via a fire engineered performance solution.

7.6. Portable fire extinguishers must be provided in accordance with BCA clause E1.6 and AS 2444-2001.

d) Smoke detection and alarm system in accordance with BCA Spec E2.2a and AS1670.1.
e) The carpark mechanical ventilation system must comply with BCA Table E2.2a 'Class 7a Buildings'.
f) Building Occupant warning system in accordance with BCA Spec E2.2a.

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

a) Compliance with Specification E3.1
b) Warning signs in accordance with BCA E3.3
c) Accessible lift types and features for people with disability requirements of BCA E3.6
d) Fire service controls in accordance with BCA E3.7, E3.9 & E3.10.

7.8. Emergency lighting and exit signs must be provided in accordance with BCA Part E4 & AS 2293.1-2018.

8. HEALTH AND AMENITY

8.1. The 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

8.2. Stormwater drainage must comply with AS/NZS 3500.3-2018.

8.3. Waterproofing membranes for external above ground use must comply with AS 4654.1-2012 & AS 4654.2 -2012.

8.4. Roof coverings must comply with BCA F1.7.

8.5. Sparking type materials used for weatherproofing of roofs and walls must comply with AS/NZS 4200.1-1994 Amdt 1 & AS/NZS 4200.2-1994.

8.6. Waterproofing of wet areas must comply with BCA F1.7 & AS 3740-2010 Amdt 1.

8.7. Damp-proofing of walls is required to prevent rising damp in accordance with BCA clause F1.9.

8.8. Damp-proofing of floors on ground is required (except for carpark) to prevent moisture from the ground from reaching the upper surface of the floor and adjacent walls by the insertion of a vapour barrier in accordance with AS 2870-2011.

8.9. Floor wastes must be provided as required by BCA F1.11.

8.10. Glazed assemblies are to comply with BCA F1.13 & AS 2047-2014 Amdt 1 & 2 for the resistance of water penetration.

8.11. Where sanitary compartment doors swing into the sanitary compartment room and the hinge side of the door is less than 1.2 m from the WC pan, lift off hinges are required to the door (BCA F2.5(b)).

8.12. The ceiling height must comply with BCA F3.1.

8.13. Natural light must be provided in accordance with BCA F4.

8.14. Artificial lighting is required to be provided in accordance with BCA Clause F4.4 and AS/NZS 1680.0- 2009.

8.15. Rooms not provided with natural ventilation in accordance with BCA Clause F4.6, are required to be ventilated in accordance with AS 1668.2-2012 Amdt 1.

8.16. The carpark must be provided with mechanical ventilation in accordance with AS1668.2-2012.

8.17. Sound transmission and insulation provisions are required in accordance with BCA Part F5.

9. ANCILLARY PROVISIONS

9.1. The building is required to be design in accordance with AS3859 for the applicable bushfire BAL level and Planning for Bushfire Protection requirements. Details are to be included within the construction documentation as applicable.

10. ENERGY EFFICIENCY

10.1. The Class 2 building must be designed in accordance with energy efficiency measures as outlined the NSW variation of the BCA Part J(A). Your attention is drawn to the following provisions:

a) BASIX requirements
b) Building fabric including insulation (BCA Part J(A)1)
c) Building sealing (BCA Part J(A)2)
d) Air conditioning and ventilating systems (BCA Part J(A)3)
e) Heated water supply (BCA Part J(A)4
f) Facilities for energy monitoring (BCA Part J(A)5)

11. CONCLUSION

The design as proposed is capable of complying with the Building Code of Australia and will be subject to construction documentation that will provide appropriate details to demonstrate compliance. This report has identified areas of non-compliance with the deemed-to-satisfy provisions and indicates the design intent to modify the design or demonstrate compliance with the Performance Requirements of the BCA. Whilst the performance-based solutions are to be design developed, it is my view that the solutions will not impact on the current design.

ATTACHMENT 1

Assessed plans prepared by Jackson Teece Architects:

Plan Title	Drawing No	Revision	Date
Existing Demolition Plans	DA-020	A	21.08.2020
Site Plan	DA-030	D	21.08.2020
Floor Plan – Basement 1	DA-109	E	21.08.2020
Floor Plan – Ground Floor	DA-110	D	21.08.2020
Floor Plan – Level 1 & 2	DA-112	C	17.07.2020
Floor Plan – Roof Plan	DA-120	B	21.08.2020
Elevations – North & South	DA-201	A	21.08.2020
Elevations – East & West	DA-202	A	21.08.2020
Elevations – Courtyard North & South	DA-203	A	21.08.2020
Elevations – Courtyard East & West	DA-204	A	21.08.2020
Sections - 01	DA-300	B	03.06.2020
Perspectives & Axonometric 3D View 1	DA-400	A	31.07.2020
Perspectives & Axonometric 3D View 2	DA-401	A	31.07.2020
Adaptable Apartment Layouts 1	DA-500	A	17.07.2020
Adaptable Apartment Layouts 2	DA-501	A	17.07.2020

ATTACHMENT 2 - FIRE SAFETY SCHEDULE

The following table is a list of the required fire safety measures for this development. This list is to be treated as a guide as to what the buildings are considered to require.

NO	FIRE SAFETY MEASURES (AS SET OUT UNDER CLAUSE 166 OF EP&A ACT REGULATIONS)	STANDARD OF PERFORMANCE
1.	Access panels, doors & hoppers to fire resisting shaft	BCA 2019 Amdt 1 C3.13, AS 1905.1-2015 & AS 1905.2-2005
2.	Automatic fire detection and alarm system	BCA 2019 Amdt 1 E2.2, Spec E2.2a Clause 3 (smoke alarm system) Clause 6 (smoke detection for smoke control systems), AS 1670.1-2018 & AS 3786-2014 Amdt 1
3.	Automatic fire suppression system	BCA 2019 Amdt 1 E1.3, E1.5, Spec E1.5 & AS 2118.1-2017 Amdt 1;
4.	Building occupant warning system	BCA 2019 Amdt 1 Spec E2.2a (Clause 7), , AS1670.1-2018 (Clause 3.22)
5.	Emergency lighting	BCA 2019 Amdt 1 E4.2, E4.4, AS 2293.1–2018
6.	Exit signs	BCA 2019 Amdt 1 E4.5, E4.6, E4.8, Spec E4.8 & AS 2293.1-2018
7.	Fire Alarm Monitoring System	BCA 2019 Amdt 1 E2.2, Spec E1.5, Spec E2.2a (Clause 7), Spec E2.2d, & AS 1670.3-2018
8.	Fire dampers	BCA 2019 Amdt 1 C3.12, C3.15 & AS/NZS 1668.1-2015 Amdt 1, AS 1668.2-2012 Amdt 1 & 2,
9.	Fire doors	BCA 2019 Amdt 1 C2.12 (separation of equipment); C2.13 (electricity supply systems), C3.8 (openings in fire isolated exits), C3.11 (bounding construction) & AS 1905.1–2015 Amdt 1
10.	Fire rated lift landing doors	BCA 2019 Amdt 1 C3.10 & AS 1735.11-1986
11.	Fire Hose reel systems (carpark)	BCA 2019 Amdt 1 E1.4 & AS 2441-2005 Amdt 1
12.	Fire hydrant systems	BCA 2019 Amdt 1 E1.3, Spec E1.5a, & AS 2419.1-2005 Amdt 1
13.	Fire seals protecting openings in fire resisting components of the building	BCA 2019 Amdt 1, C3.12, C3.15, Spec C3.15, C3.16, D1.12, AS 1530.4.-2014 & AS 4072.1-2005 Amdt 1
14.	Lightweight construction	BCA 2019 Amdt 1 C1.8 & Spec C1.8
15.	Mechanical air handling system	Class 7a (carpark building mechanical ventilation systems) BCA 2019 Amdt 1, E2.2, Table E2.2a & AS/NZS 1668.1-2015 Amdt 1 (Clause 5.5)
16.	Portable fire extinguishers	BCA 2019 Amdt 1 E1.6 & AS 2444-2001
17.	Smoke alarms & heat alarms	BCA 2019 Amdt 1 E2.2, Spec E2.2a & AS 3786-2014 Amdt 1 & 2
18.	Smoke detectors & heat detectors	BCA 2019 Amdt 1 AS 1670.1-2015, AS 3786-2014 Amdt1 & 2
19.	Warning and operational signs	EPA Regulation 2000 (Clause 183), , D2.23 (signs on exit doors) E3.3 (lifts)