



**PRIVATE
CERTIFIERS
AUSTRALIA**

Certainty through precision

Building Code of Australia

BCA Audit Report

Class 2 – Dual Occupancy

VIEWTHRU PTY LTD

7 NAILON PLACE, MONA VALE 2103

Revision History & Quality Management



DATE	REVISION	STATUS	AUTHOR	SIGNATURE	PEER REVIEWED	SIGNATURE
05/04/2019	B	FINAL	SB		GH	

TABLE OF CONTENTS

1	Introduction	3
2	Building Characteristics	6
3	BCA Assessment	7
4	Conclusion	9
5	Appendixes	10

1 Introduction

1.1 Background / Proposal

Private Certifiers Australia Pty Ltd (PCA) have been commissioned by Viewthru Pty Ltd to provide a BCA Audit Report. The proposal is for additions and alterations to an existing dwelling house, resulting in the creation of a dual occupancy dwelling.

1.2 Aim

The purpose of this report is to provide a BCA Audit Report for the submission of the Development Application.

1.3 The Project Team

The following PCA team members have contributed to this report:

- Grant Harrington, Director, Grade A1 Unrestricted BPB 0170
- Shane Barr, Accredited Certifier, Grade A3, BPB 3108

1.4 Documentation

The following documentation has been reviewed, referenced and/or replied upon in the preparation of this report

- BCA 2016
- Guide to the BCA 2016
- Viewthru Pty td Drawings;

Drawing No.	Drawing Title	Revision
DA // 00	Drawing Register & Location Plan	○
DA // 01	Perspective Views // Existing	○
DA // 02	Compliance Table	○
DA // 03	Areas Calculation Plans	○
DA // 04	Site Layout Plan // Existing	○
DA // 05	Site Analysis Plan	○
DA // 06	Ground Floor Plan // Existing	○
DA // 07	Ground Floor Plan // Proposed	○
DA // 08	First Floor Plan // Existing	○
DA // 09	First Floor Plan // Proposed	○
DA // 10	Roof Plan // Proposed	○
DA // 11	Elevations // North Existing & Proposed	○
DA // 12	Elevations // South Existing & Proposed	○
DA // 13	Elevations // East Existing & Proposed	○
DA // 14	Elevations // West Existing & Proposed	○
DA // 15	Sections // Existing & Proposed	○
DA // 16	Perspective Views // Proposed	○
DA // 17	External Door & Window Schedule	○
DA // 18	External FinishesSchedule	○

1.5 Regulatory Framework

Pursuant to clause 145 of the Environmental Planning and Assessment (EPA) Regulation 200 all new building work must comply with the current BCA however the existing features of an existing building need not comply with the BCA unless upgrade is required by other clauses of the legislation.

Clause 143(3) of the EPA Regulation 2000 prevents a certifying authority from issuing a construction certificate if the proposed new work will result in a reduction to the fire protection and structural capacity of the building.

1.6 Limitation & Exclusions

The limitations and exclusions of this report are as follows:

- The following assessment is based upon a review of the architectural documentation.

- No assessment has been undertaken with respect to the Disability Discrimination Action (DDA) 1992. The building owner should be satisfied that their obligations under the DDA have been addressed.

The report does not address matters in relation to the following:

1.6.1.1.1 Local Government Act and Regulations.

- a) NSW Public Health Act 1991 and Regulations
 - b) Occupation Health and Safety (OH&S) Act and Regulations
 - c) Work Cover Authority requirements.
 - d) Water, drainage, gas, telecommunications and electricity supply authority requirements.
- PCA do not guarantee acceptance of this report by Local Council, NSW Fire Brigades or other approval authorities.
 - Local planning policies and/or guidelines
 - No part of this document may be reproduced in any form or by any means without written permission from PCA. This report is based solely on client instructions, and therefore, should not be used by any third party without prior knowledge of such instructions.

1.7 Terminology

Alternative Solution

A building solution which complies with the Performance Requirements other than by reason of satisfying the DtS Provisions.

Building Code of Australia (BCA)

Document published on behalf of the Australian Building Codes Board. The BCA is a uniform set of technical provisions for the design and construction of buildings and other structures throughout Australia and is adopted in NSW (NSW) under the provisions of the EPA Act and Regulation. Building regulatory legislation stipulates that compliance with the BCA Performance Requirements must be attained and hence this reveals BCA's performance based format.

Construction Certificate

Building Approval issued by the Certifying Authority pursuant to Part 4A of the EP&A Act 1979.

Construction Type

The construction type is a measure of a buildings ability to resist a fire. The minimum type of fire resisting construction of a building must be that specified in Table C1.1 and Specification C1.1 except as follows for:

- 1.7.1.1.1 Certain Class 2, 3 or 9c buildings in C1.5; and
- 1.7.1.1.2 A Class 4 part of a building located on the top storey in C1.3(b); and
- 1.7.1.1.3 Open spectator stands and indoor sports stadiums in C1.7.

Note: Type A construction is the most fire-resistant and Type C the least fire-resistant of the types of construction.

Climatic Zone

An area defined in BCA Figure A1.1 and in Table A1.1 for specific locations, having energy efficiency provision based on a range of similar climatic characteristics

Deemed to Satisfy Provisions (DtS)

Provisions which are deemed to satisfy the Performance Requirements.

Effective Height

The height to the floor of the topmost storey (excluding the topmost storey if it contains only heating, ventilating, lift or other equipment, water tanks or similar service units) from the floor of the lowest storey providing direct egress to a road or open space.

Fire Resistance Level (FRL)

The grading periods in minutes for the following criteria:

- a) structural adequacy; and
 - b) Integrity; and
 - c) Insulation,
- and expressed in that order.

Fire Source Feature (FSF)

The far boundary of a road which adjoins the allotment; or a side or rear boundary of the allotment; or an external wall of another building on the allotment which is not a Class 10 building.

National Construction Code Series (NCC)

The NCC was introduced 1 May 2011 by the Council of Australian Governments. The BCA Volume One (Class 2 to 9 Buildings) is now referenced as the National Construction Code Series Volume One – BCA.

Occupation Certificate

Building Occupation Approval issued by the Principal Certifying Authority pursuant⁵ to Part 4A of the EPA Act 1979.

Open Space

A space on the allotment, or a roof or other part of the building suitably protected from fire, open to the sky and connected directly with a public road.

Performance Requirements of the BCA

A Building Solution will comply with the BCA if it satisfies the Performance Requirements. A Performance Requirement states the level of performance that a Building Solution must meet.

Compliance with the Performance Requirements can only be achieved by:

- a) Complying with the DtS Provisions; or
- b) Formulating and Alternative Solution which –
 - (i) Complies with the Performance Requirements; or
 - (ii) Is shown to be at least equivalent to the DtS Provisions; or
- c) A combination of a) and b).

Sole Occupancy Unit (SOU)

A roof or other part of a building for occupation by one or joint owner, lessee, tenant, or other occupier to the exclusion of any other owner, lessee, tenant, or other occupier and includes a dwelling.

2 Building Characteristics

PCA can confirm they have undertaken a desktop review of the design and have undertaken a site inspection at 7 Nailon Place, Mona Vale.

2.1 Building Classification

The following table presents a summary of relevant building classification items of the proposed building development:

Table 1 – Building Characteristics

• BCA Classification:	Class 2
• Proposed Use:	Primary dwelling, secondary dwelling and private garage
• Rise in Storeys:	Rise in storeys of two (2)
• Type of Construction:	Type C Construction

2.1 Fire Source Feature

The distances from the nearest Fire Source Features are:

Table 2 – Distance from lot boundaries

Boundary	Distance to Fire Source Feature (approx. metres)
North	5.45m
South	7.70m
East	1.25m (to new WC extension – external face of wall)
West	1.30m (to new part of garage extension external face of wall)

3 BCA Assessment

3.1 BCA Deemed to Satisfy Compliance

The following comments have been made in relation to the relevant BCA provisions relating to the compliance associated with the proposed new Class 2 Dual Occupancy.

The general BCA requirements applicable to this project are listed and discussed below;

- *BCA C1.1 – The proposed building will be Class 2 (Dual Occ) and a Class 10 (Private Garage), of TYPE C Construction, with a Rise in Storeys of two (2) – calculated under BCA 2016 Vol 1 C1.2.*
- *BCA Table C1.1 - The building elements are required to comply with Table 5 – FRL of Building Elements. Refer Attachment 1 for FRL requirements to external wall, internal wall bounding other classifications, floor between sole occupancy units and structural columns.*

Note - the external wall including sarking and insulation must be non- combustible and FRL's achieved in both directions of building element.

The only parts of the building <1.5m from the boundary, therefore requiring FRL protection to 90/90/90 are the parts detailed in 'Table 2 – Distance from Lot Boundaries'.

PCA have formed the view that compliance with the BCA via DtS or a performance solution is readily achievable for the construction of the external walls and achieving FRL at required points of the external wall.

The wall which separates the two SOUs must achieve an FRL of no less than 60/60/60 as noted on Viewthru drawing DA07.

The wall which separates the SOUs and Private garage must achieve an FRL of no less than 60/60/60.

Any internal wall required to have an FRL must extend to the underside of the floor next above if that floor has an FRL of at least 30/30/30 or a fire protective covering to the underside of the floor.

Any internal wall required to have an FRL and is of lightweight construction must comply with BCA Spec C1.8

- *BCA C2.9 – The floor separating two SOUs Class 2 must have an FRL of not less than that prescribed in C2.9 (b) (i), (ii) or (iii).*

This requirement relates to the required fire rating of the ceiling, which acts as a fire resistant barrier between the two SOUs.

Any part of the secondary dwelling ceiling, which has an SOU located directly above, must achieve an FRL or be incipient to the spread of fire as per C2.9 (b) (i), (ii) or (iii).

There is a requirement here to do one of the following in this instance;

- (b) Type B or C construction — If one of the adjoining parts is of Class 2, 3 or 4, the floor separating the part from the storey below must—
 - (i) be a floor/ceiling system incorporating a ceiling which has a *resistance to the incipient spread of fire* to the space above itself of not less than 60 minutes; or
 - (ii) have an FRL of at least 30/30/30; or
 - (iii) have a *fire-protective covering* on the underside of the floor, including beams incorporated in it, if the floor is *combustible* or of metal.

Upon inspection, PCA has formed the view that construction achieving required FRL of the ceiling is readily achievable on site.

- *BCA C3.2 – Window and door openings in external walls required to have an FRL must be protected in accordance with BCA C3.4.*

There are no openings in an external wall required to have an FRL (within 1.5m from the allotment boundary) – please ensure the WC door is located no less than 1.5m on final CC drawings at construction stage.

NOTE: any opening for mechanical ventilation (which is required to ventilate unnaturally ventilated bathroom – windowless) will also need to be set back no less than 1.5m from the boundary or the vent opening will be required to be fitted with a fire damper.

- *BCA C3.4 – Where protection is required doorways they must be protected by internal or external wall-wetting sprinklers as appropriate used with doors that are self-closing or automatic closing; or -/60/30 fire doors that are self-closing or automatic closing.*

N/A

- *BCA C3.12 – For Type C construction, where a service passes through a floor that is required to have an FRL or a ceiling that is required to have resistance to the incipient spread of fire, the service must be protected by a shaft that will not reduce the fire performance of the building element it penetrates OR be protected in accordance with BCA C3.15.*

PCA have formed the view that the protection of any service opening is readily achievable during the construction phase and any appropriate documentation can be compiled at Construction certificate stage.

- *BCA 3.15 - Where an electrical, electronic, plumbing, mechanical ventilation, air-conditioning or other service penetrates a building element, (other than an external wall or roof) that is required to have an FRL with respect to integrity or insulation or a resistance to the incipient spread of fire, that installation must comply with any one of the following:*

- (a) *Tested System – in accordance with AS4072.1 and AS1530.4*

- (b) *Ventilation or Air Conditioning – must comply with AS1668.1*
- (c) *Compliance with BCA Specification C3.15*

- *BCA D1.10 - Where the exit from the sole occupancy unit discharges to open space 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 a ramp or other incline having a gradient not steeper than 1:8 at any part, or a stairway complying with Part D2 of the BCA.*

The exit from the secondary dwelling at the western boundary should be serviced by a path no less than 850mm wide which runs to the front of the allotment boundary.

- *BCA E2.2 – Each sole occupancy unit must be provided with a smoke alarm system complying with Clause 3 of BCA Specification E2.2a and AS 3786-2014. Where more than one smoke alarm is located within a sole occupancy unit they must be interconnected.*
- *BCA F1.7 – Waterproofing of wet areas must comply with AS 3740-2006.*
- *BCA F1.11 – Floor waste must be provided to the bathroom and laundry where located over another sole occupancy unit.*
- *BCA F2.1 – The laundry to the ground floor sole occupancy unit must be provided with a separate wash basin.*
- *BCA F4.2 – Habitable rooms must be provided with minimum natural light requirements of this clause – generally 10%.*
- *BCA F5.4 – The floor between sole occupancy units must have an $R_w + C_{tr}$ (airborne) not less than 50 and $L_{n,w}$ (impact) not more than 62.*

PCA have formed the view that construction in accordance with this requirement is readily achievable on-site at the construction stage and can be demonstrated at the Construction Certificate stage.

- *BCA F5.5 – The wall separating sole occupancy units must have an $R_w C_{tr}$ (airborne) not less than 50.*

PCA have formed the view that construction in accordance with this requirement is readily achievable on-site at the construction stage and can be demonstrated at the Construction Certificate stage given that the existing internal wall is to be stripped and retro fitted with required acoustic measures and required FRL construction.

- *BCA F5.6 – A duct, soil, waste or water supply pipe that is located in wall or floor cavity it must be separated from the rooms of any sole occupancy unit by construction with a $R_w + C_{tr}$ (airborne) not less than 40 if the adjacent room is habitable (except for a kitchen) or 25 if the adjacent is a kitchen or non-habitable.*
- *The development must comply with the energy and water efficiency requirements of BASIX.*

4 Conclusion

This report contains an assessment of the referenced architectural documentation for the proposed building works at 7 Nailon Place, Mona Vale.

PCA have formed the view that the proposed dual occupancy can readily achieve the DtS provisions of required Type C construction related to a Class 2 structure with a RIS of two (2) with each SOU having its own direct access to road or open space.

5 Appendixes

5. TYPE C FIRE-RESISTING CONSTRUCTION

5.1 Fire-resistance of building elements

In a building *required* to be of Type C construction—

- (a) a building element listed in **Table 5** and any beam or column incorporated in it, must have an FRL not less than that listed in the Table for the particular Class of building concerned; and
- (b) an *external wall* that is *required* by **Table 5** to have an FRL need only be tested from the outside to satisfy the requirement; and
- (c) a *fire wall* or an *internal wall* bounding a *sole-occupancy unit* or separating adjoining units must comply with **Specification C1.8** if it is of *lightweight construction* and is *required* to have an FRL; and
- (d) in a Class 2 or 3 building, an *internal wall* which is *required* by **Table 5** to have an FRL must extend—
 - (i) to the underside of the floor next above if that floor has an FRL of at least 30/30/30 or a *fire-protective covering* on the underside of the floor; or
 - (ii) to the underside of a ceiling having a *resistance to the incipient spread of fire* to the space above itself of not less than 60 minutes; or
 - (iii) to the underside of the roof covering if it is *non-combustible*, and except for roof battens with dimensions of 75 mm x 50 mm or less or *sarking-type material*, must not be crossed by timber or other *combustible* building elements; or
- (iv) 450 mm above the roof covering if it is *combustible*; and
- (e) in a Class 2 or 3 building, except where within the one *sole-occupancy unit*, or a Class 9a *health-care building*, or a Class 9b building, a floor separating *storeys*, or above a space for the accommodation of motor vehicles or used for storage or any other ancillary purpose, and any column supporting the floor, must—
 - (i) have an FRL of at least 30/30/30; or
 - (ii) have a *fire-protective covering* on the underside of the floor including beams incorporated in it and around the column, if the floor or column is *combustible* or of metal; and
- (f) in a Class 9c building a floor above a space for the accommodation of motor vehicles or used for storage or any other ancillary purpose, and any column supporting the floor, must—
 - (i) have an FRL of at least 30/30/30; or
 - (ii) have a *fire-protective covering* on the underside of the floor including beams incorporated in it and around the column, if the floor or column is *combustible* or of metal.

Table 5 TYPE C 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 within it) or other external building element, where the distance from any <i>fire-source feature</i> to which it is exposed is—				
Less than 1.5 m	90/ 90/ 90	90/ 90/ 90	90/ 90/ 90	90/ 90/ 90
1.5 to less than 3 m	—/—/—	60/ 60/ 60	60/ 60/ 60	60/ 60/ 60
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 1.5 m	90/—/—	90/—/—	90/—/—	90/—/—
1.5 to less than 3 m	—/—/—	60/—/—	60/—/—	60/—/—
3 m or more	—/—/—	—/—/—	—/—/—	—/—/—
COMMON WALLS and FIRE WALLS—	90/ 90/ 90	90/ 90/ 90	90/ 90/ 90	90/ 90/ 90

Table 5 TYPE C CONSTRUCTION: FRL OF BUILDING ELEMENTS — continued

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
INTERNAL WALLS—				
Bounding <i>public corridors</i> , public lobbies and the like—	60/ 60/ 60	—/—/—	—/—/—	—/—/—
Between or bounding <i>sole-occupancy units</i> —	60/ 60/ 60	—/—/—	—/—/—	—/—/—
Bounding a stair if <i>required</i> to be rated—	60/ 60/ 60	60/ 60/ 60	60/ 60/ 60	60/ 60/ 60
ROOFS	—/—/—	—/—/—	—/—/—	—/—/—

[illegible]