GROUPDLA

Building Code of Australia 2019 Amendment 1

Report for BCA Compliance

PROJECT NAME: Residential Development at 33-35 Fairlight Street, Fairlight NSW
PROJECT NUMBER: **GDL210412**
DATE: **23/11/2021**

TABLE OF CONTENTS

REVISION HISTORY

Revision	Date	Details	Authorised	
			Name/Position	Signature
A	23/11/2021	DA Submission	Prepared: Mike Gooley Associate	
			Reviewed: Brett Clabburn Director	

Table 1 – Revision History

1.0 EXECUTIVE SUMMARY

The report is for the assessment of the proposed residential development at 33-35 Fairlight Street, Fairlight to assess compliance with the Building Code of Australia 2019 Amendment 1 ("BCA").

The purpose of this report is to supplement the development application submission to demonstrate to the consent authority that compliance is readily achieved with the BCA.

Compliance with the BCA for these specific is capable of being achieved by a combination of compliance with the deemed-to-satisfy (DTS) provisions and the provision/documentation of performance solutions in accordance with Clause A5.2 of the BCA by a suitably qualified consultant/s to achieve compliance with the performance provisions of the BCA, the provision and assessment of these reports/documents will occur at the Construction Certificate (CC) stage.

Further consideration and review with respect to compliance with the Disabled Access, and Section J Energy Efficiency provisions has been undertaken by suitably qualified consultants which will form part of the CC Documentation.

I wish to confirm that matters pertaining to compliance with the BCA for the new works will be suitably assessed by the Certifying Authority prior to the issue of the Construction Certificate in accordance with Clause 98 of the Environmental Planning and Assessment Regulations 2000.

The design documentation will require further assessment as the design progresses towards the application for a construction certificate.

2.0 INTRODUCTION

The subject BCA review has been limited to a desktop assessment of the proposed residential development which are detailed within the preliminary Architectural Drawings against the provisions of the Building Code of Australia. Amendment 1.

The report is prepared based on a review of the documentation listed in Table 6 and the information provided by the client and is intended for their use only.

2.1 Reporting Team

The information contained within this report was prepared by Mike Gooley, Accredited Building Surveyor – Unrestricted (BDC0143) and reviewed by Brett Clabburn – Unrestricted Building Surveyor (BDC0064) from Group DLA.

2.2 Current Legislation

The applicable legislation governing the design of buildings is the Environmental Planning and Assessment Act 1979.

The provisions of this act require that all new building works are carried out in accordance with the Building Code of Australia (BCA). The applicable version of the BCA to be adopted will be the current version when the Construction Certificate is issued.

The BCA is now updated every three (3) years, the next updated will be BCA 2022 which is anticipated to come into force on the 1st May 2022.

2.3 Latest BCA 2019 Amendment 1 Changes – Synopsis

Section A – Governing Requirements

- A2.2 Performance Solution – The addition of clause A2.2(4), which details further requirements which must be met when addressing a performance solution in the BCA, and additional explanatory note.
- A5.7 Labelling of aluminium composite panels – An aluminium composite panel must be labelled in accordance with SA TS 5344.

Section C – Fire Resistance

- Specification C1.1 Fire Resisting Construction – Specification C1.1 Clause 4.3(a) has been replaced.

Section D – Access and Egress

- DV3 – The gravitational constant within this verification method had been replaced with g the gravitational constant equal to 9.8 m/s^2
- D1.18 – Clause D1.18 and associated explanatory information has been added.

Section E – Services and Equipment

- EP4.1 – Performance requirement EP4.1 (b), (c), (d) & (e), have been replaced with new performance requirement EP4.1 (b).

Section F – Health and Amenity

- F2.4 – Clause F2.4 has been updated to reflect the requirements of “unisex” accessible sanitary facilities.
- Specification F2.9 – Clause 4 (v) of this specification has been amended to allow the toilet seat to have a luminance contrast against the wall ***or*** floor as opposed to the wall ***and*** floor.

Section H – Special Use Buildings

- NSW H101.11.1 Number of Seats – The number of seats permitted has been increased where aisles are provided at both ends of the row.

Section J – Energy Efficiency

- J1.5 – The heading to table J1.5 has been replaced with *" Table J1.5 Maximum Wall Glazing Construction – Solar Admittance – Class 3 & 9c Buildings or class 9a ward areas".*
- J5.4 Fan Systems – The requirements of J5.4 (b) (i) have been replaced with new requirements.

2.4 Regulatory Framework

The following table summaries the key statutory issues relating to fire safety and the BCA in relation to the certification of new buildings.

Issue	Legislative Reference	Comment
New Work	EPAR 145	All new works must comply
Existing Building Fire Safety	EPAR 94	Council may require upgrading in some circumstances
Alterations and additions – change in building use	143(1)	Fire safety to be upgraded in affected part of the building Structural adequacy to be signed off Category 1 fire safety provisions t be upgraded. (Hydrants, sprinklers, fire control centres, smoke detection, smoke hazard management, emergency lifts).
Alterations and additions – no change in use	EPAR 143(3)	No reduction in the level of safety permitted
New Work	EPAR 145	All new works must comply
Access to premises	Disability (Access to Premises – Buildings) Standards 2010	Upgrade of the "Affected Part" to provide access for people with disabilities.

2.5 Fire Brigade

Fire & Rescue NSW ("FRNSW"): The BCA Clause A2.2(4) requires liaison with relevant stakeholders for any Performance Solutions as defined by the author of the proposed Performance Solution, it is not the role of the BCA Consultant to identify the stakeholders that is the responsibility of the persons preparing / undertaking the Performance Based Assessment under this clause.

It should be noted that Fire &Rescue NSW have put forward a policy on their website https://www.fire.nsw.gov.au/page.php?id=9154 where they want to be a stakeholder in all fire engineering performance solutions which will need to be followed no matter the approval pathway.

Fire & Rescue NSW ("FRNSW"): The EP&A Regulations 2000, Clause 144, requires buildings the subject of Construction Certificate approval to be referred to FRNSW. Clause 144 refers to EP&A Regs defined Category 2 Fire Safety Provisions[1]. If any of these measures are required to be considered as a performance solution due to DtS non-compliances identified within a design, and the floor area of a fire compartment exceeds 2000 m^2 or the floor area of the building exceeds 6000 m^2, the Clause 144 referral to the FRNSW is required**.**

2.6 Limitations

This report does not constitute or include, nor imply or audit any assessment of the following;

- This assessment is limited to the developed documentation at the date of this report and as referenced within the "Documentation Assessed" section of the Report.
- This report does not include assessment of the documentation against the provisions of the Disability Discrimination Act 1992 or (Access to Premises Buildings) Standards 2010.
- Any roof top plant or the like has been assessed (assumed) as open to the sky. Covered areas to roof tops may constitute an extra storey thus BCA requirement for the entire building may change.
- Travel distances have been assessed on an open plan basis with an allowance made for travel around pending fixed structures. No consideration has been given to any future fixed structures and accordingly, further assessment will be required in the event of floor plan or fixture amendments.
- The compliance of the design or building, with the performance provisions of the BCA, except those listed in the report.
- Generally, the assessment does not include a detailed assessment of Australian Standards.
- Requirements of other Regulatory Authorities including, but not limited to, Telstra, Telecommunications Supply Authority, Water Supply Authority, Electricity Supply Authority, Work Cover, Roads and Maritime Services (RMS), Local Council, ARTC, Department of Planning and the like; and
- Demolition Standards not referred to by the BCA;
- Work Healthy and Safety Act 2011 (Safety in Design);
- Liquor Licensing Act 1997;
- The National Construction Code – Plumbing Code of Australia Volume 3;
- The capacity of design of any Electrical, Fire, Hydraulic or Mechanical Services;
- Structural and services drawings have not been reviewed, nor any consideration given to the structural capacity (or inherent FRL's) of the building;

3.0 BUILDING DESCRIPTION

3.1 Building Development

The proposed development will include the construction of four (4) storey residential apartment building consisting of 6 sole occupancy units with basement carpark via a car lift from level 3 to the lower levels.

The development site is located 33–35 Fairlight Street, Fairlight. The land falls from north to south towards the rear with a cross fall from west to east.

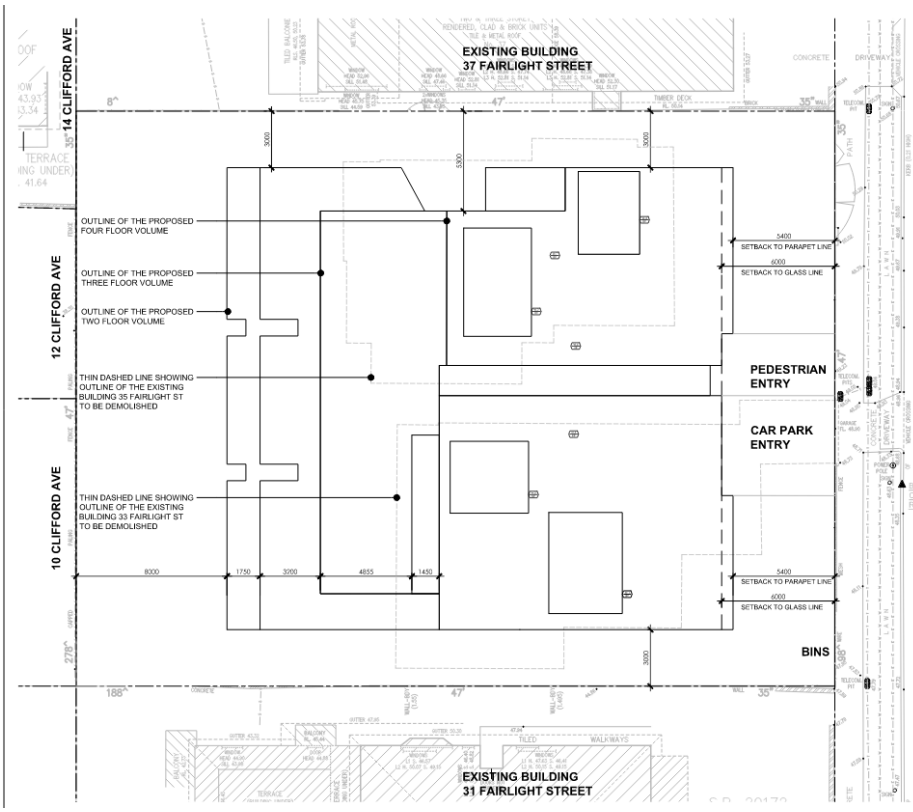

Figure 2 – Proposed development

3.2 Building Description

Class	Level	Description
2 and 7a	Ground to 3rd Floor Level	Residential Units and carpark

Table 4 – Building Class (or part)

Characteristic	Description
Type of Construction:	Type A
Floor Area of Building:	< 2,000m^2
Max Fire Compartment Size:	< 800m^2
Rise in Storeys:	4
Levels Contained:	4
Effective Height:	9.40m (less than 25.0m)
Fire Compartments:	Carpark levels – single fire compartment
Required Exits:	One (1) exit from each storey
Climate Zone:	5
Sprinkler Protection:	Class 2 building with rise in storey of 4 or more must be protected by an automatic sprinkler system.

Table 5 – Building Characteristic

Note: The definition of the effective height of a building changed on 1 May 2016 thus any Construction Certificate submitted after this date will need to comply with the new definition. The BCA 2019 Amendment 1 definition is the following –

"Effective height means the vertical distance between the floor of the lowest storey included in a determination of rise in storeys and 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)."

3.3 Documentation Assessed

This report is based on the following documentation prepared by Platform Architects (revision A, dated Oct 2021):

Description	Drawing No.
Site Analysis	1.01
Site Plan	1.02
Ground Floor	1.03
Level 1	1.04
Level 2	1.05
Level 3	1.06
Roof Plan	1.07
Prelim Elevations	2.01
Prelim Elevations	2.01
Prelim Elevations	2.03
Prelim Sections	2.04
GFA Calculation	3.01
Shadow Diagrams Sheet 1	4.01
Shadow Diagrams Sheet 2	4.02
Shadow Diagrams Sheet 3	4.03
Shadow Diagrams Sheet 4	4.04
External Finishes Schedules	5.01
Window Schedule – East & West	6.01
Window Schedule – North & South	6.02

Table 6 – Documentation Assessed

4.0 BCA NON-COMPLIANCES & DESIGN CONSIDERATIONS

The following assessment will provide an overview of the compliance with the BCA and identify issues (non-compliances) that will need to be addressed at the construction certificate stage.

Section B – Structure

- Structural Engineer to review and provide compliant design in accordance with Part B, Part C and Clauses D2.2, D2.3 of BCA 2019 Amendment 1, and all listed / referenced Australian Standards .
- Structural Engineer is to outline and provide (Façade designer, Architect and Services Consultants) the calculated expected Earthquake actions and expected forces expected on non-structural components to be designed for, from Section 8 of AS 1170.4-2007 as referenced in BCA 2019 Amendment 1.
- Services Consultants to provide confirmation of compliance of non-structural elements in accordance with Sections 8 of AS1170.4-2007 or alternatively Structural Engineer to provide specific design statement referencing non-structural elements as outlined in Section 8 of AS1170.4-2007 Note: This may require input from Structural engineer as per Item 2 above.
- Architect to provide confirmation of compliance of non-structural elements in accordance with Sections 8 of AS1170.4-2007 or alternatively Structural Engineer to provide specific design statement referencing non-structural elements as outlined in Section 8 of AS1170.4-2007. Note: This may require input from Structural engineer as per Item 2 above.

Section C – Fire Resistance

- Structural Engineer to review and provide compliant design with respect to required FRL's for a Type A, Class 2 and 7a structure, including all loadbearing structures which provide direct vertical or lateral support to those elements with a required FRL.
- Lift Shaft – should the lift shaft/s be designed to be non-loadbearing; the Structural engineer is to provide the required Earthquake information to the consultant designing the lift shafts to meet the requirements of Section 8 of AS 1170.4-2007 as referenced in BCA 2019 Amendment 1.
- Architect / Façade Consultant is to provide a Detailed statement outlining each part/element contained in the makeup of the external wall system and any other elements required to be non-combustible in accordance with Clause C1.9 (external walls) & C1.14 (Ancillary Elements). Current fire test reports required to be provided in accordance with AS1530.1 for each element required to be non-combustible in accordance with C1.9 & C1.14.

Section D – Access & Egress

- Extended travel distances identified to a point of choice, to required exit and between exits, as per the table below:

Level	Distance to a PoC	Distance to required exit	Distance between exits
Ground floor level - carpark	N/A	22m in lieu 20m	N/A
Level 1 – carpark	N/A	29m in lieu 20m	N/A

- Extended travel distances to required exit will be subject to a performance solution from an accredited fire engineer at the construction certificate stage.

- The stairway from ground floor to level 3 must be designed as a fire-isolated stairway in accordance with Clause D1.7 of the BCA. There is no shaft top to the fire-isolated stairway at level 3. This non-compliance will be addressed by a performance solution from an accredited fire engineer at the construction certificate stage.

Section E – Fire Services & Equipment

The building must be served by the following essential fire safety services:

a. Hydrant system to BCA Clause E1.3 and AS 2419.1-2005.

b. Fire Hose Reel system to serve the class 7a portion in accordance with Clause E1.4 and AS 2441 – 2005.

c. Portable Extinguishers to BCA Clause E1.6 and AS 2444-2001.

d. Automatic sprinkler system throughout the building in accordance with E1.5, spec. E1.5a and AS 2118.1-2005.

e. Class 2 part of the building being served by an automatic smoke detection and alarm system complying with specification E2.2a of the BCA.

Sprinkler value room must be provided with direct access from the fire-isolated stairway. A fire-isolated passageway to be provided which connects plant area and sprinkler value room to the fire-isolated stairway. Architectural plans being suitably updated at the construction certificate stage.

Section F – Health and Amenity

- Performance solution required to address BCA anomaly for water proofing of external walls in accordance with FP1.4
- Residential apartment must be provided with sound transmission to walls, floors and ceiling to satisfy the requirements of Part F5 of the BCA.

Section J – Energy Efficiency

1. The sole-occupancy units of a class 2 building must comply with Section J, except where compliance is not required with BCA provisions of J0.2a as those matters are regulated under BASIX Certificate for the development. BASIX commitments must be incorporated into the design at the construction certificate stage.

5.0 PERFORMANCE SOLUTIONS PROPOSED

The following items have been noted as items of interest at this stage of the review. The items have been considered non-compliant and require further review against the detailed design, or may be able to be justified as a Performance Solution:

Item	Query or DTS Non- Compliance	Suggested Resolution	BCA Clause	BCA Performance Requirements
1.	**Travel Distance to Required Exits:** • The travel distance to require exit exceed 20m within ground floor level - carpark (i.e., up to 22m); • The travel distance to required exit exceed 20m within level 1 – carpark (i.e. up to 29m from switchroom).	The extended travel distance being addressed by documentation of performance solution from a fire engineer.	D1.4	DP4 & EP2.2
2.	**Fire-isolated Stairway:** A fire-isolated stairway is required to be within a shaft which is fully enclosed. The fire-isolated stairway is open at the top (level 3). Compliance will not be achieved with Clause D1.7 and spec. C1.1 (clause 2.7 – shafts)	Fire Engineer to document a performance solution.	Spec. C.1 (clause 2.7) and D1.7	DP5
2.	**Weatherproofing – External Walls:** External wall water proofing Design detail report / Performance Solution: External walls must prevent the penetration of water that could cause unhealthy or dangerous conditions, or loss of amenity for occupants; and undue dampness or deterioration of building elements.	Performance Solution required by Architect/ Façade Consultant	-	FP1.4

6.0 ESSENTIAL FIRE SAFETY MEASURES (EFSM)

Below is a list of essential fire safety services that are required/expected to be installed / designed for the building, and the relevant standards of performance for each measure to be designed/constructed to. This table may be required to be updated as the design develops.

Fire Safety Measure	Standard of Performance	BCA Clause(s)	Existing Fire Safety Measures	Proposed Fire Safety Measures
Access panels, doors & hoppers to fire resisting shafts	AS 1530.4 – 2014	C3.13	☐	☑
Automatic fire detection & alarm systems	AS 1670.1 – 2018 AS 1668.1 – 2015	Spec E2.2b, G3.8	☐	☑
Automatic fire suppression systems	AS 2118.1 – 2017	E1.5, Spec E1.5, NSW Table E2.2b, G3.8	☐	☑
Emergency lighting	AS 2293.1 – 2018	E4.2, E4.4	☐	☑
Exit signs	AS 2293.1 – 2018	E4.5, NSW E4.6 & E4.8, EP4.2	☐	☑
Fire alarm monitoring system	AS 1670.3 – 2018	Spec E2.2, Spec E1.5	☐	☑
Fire dampers	AS 1668.1 – 2015	Spec E2.2a	☐	☑
Fire doors	AS 1905.1 – 2015	Spec C3.4, C3.10	☐	☑
Fire hose reel systems	AS 2441 – 2005	E1.4, EP1.1	☐	☑
Fire hydrant systems	AS 2419.1 – 2005	E1.3, EP1.3	☐	☑
Fire seals (protecting openings in fire resisting components of the building)	AS 4072.1 – 2005 AS 1530.4 – 2014	C3.12, C3.13, C3.15	☐	☑
Lightweight construction	--	C1.8, Spec C1.8, CP1, CP2	☐	☑
Mechanical air handling systems • Auto shutdown • Stair pressurisation • Smoke exhaust	AS 1668.1 – 2015 AS 1668.2 –2012	E2.2, Spec E2.2a, Spec E2.2b	☐	☑
Portable fire extinguishers & fire blankets	AS 2444 – 2001	E1.6	☐	☑
Warning and operational signs	--	C3.6, E3.3, D2.23 & Spec E1.8	☐	☑
Paths of Travel	--	D1.6, DP4, DP5, DP6, EP2.2	☐	☑

Table 7 – Essential Fire Safety Measures (EFSM)

Appendix A:

Fire Resistance Levels (FRL's)

Specification C1.1, BCA Table No. 3 – Type A Construction: FRL of Building Elements

Item	Class 2	Class 7a
Loadbearing External Walls • Less than 1.5m to a fire source feature • 1.5 – less than 3m from a fire source feature; • 3m or more from a fire source feature	90/90/90 90/60/60 90/60/30	120/120/120 120/90/90 120/60/30
Non-Loadbearing External Walls • Less than 1.5m to a fire source feature • 1.5 – less than 3m from a fire source feature; • 3m or more from a fire source feature	-/90/90 -/60/60 -/-/-	-/120/120 -/90/90 -/-/-
External Columns • Loadbearing • Non-loadbearing	90/-/- -/-/-	120/-/- -/-/-
Common Walls & Fire Walls	90/90/90	120/120/120
Stair and Lift Shafts required to be fire-resisting • Loadbearing • Non-loadbearing	90/90/90 -/90/90	120/120/120 -/120/120
Internal walls bounding sole occupancy units • Loadbearing • Non-loadbearing	90/90/90 -/60/60	120/-/- -/-/-
Internal walls bounding public corridors, public lobbies and the like: • Loadbearing • Non-loadbearing	90/90/90 -/60/60	120/-/- -/-/-
Ventilating, pipe, garbage and like shafts: • Loadbearing • Non-loadbearing	90/90/90 -/90/90	120/90/90 -/90/90
Other loadbearing internal walls, beams trusses and columns	90/-/-	120/-/-
Floors	90/90/90	120/120/120
Roofs	90/60/30	120/60/30

Note: See concessions in Spec C1.1 for concessions to these above tabulated requirements, as this may reduce or remove fire rating requirements subject to certain criteria and haven't been captured in this report.

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