BUILDING CODE OF AUSTRALIA
COMPLIANCE ASSESSMENT REPORT FOR DA SUBMISSION

PROPOSED BALUSTRADE ALTERATIONS TO EXISTING RESIDENTIAL UNIT BUILDING

22 CENTRAL AVENUE, MANLY

DATE ►06/07/2023

REPORT NO. ►7375_R02_FINAL

PREPARED FOR ►Four Towns Planning

PREPARED BY ► AE&D

AEDGROUP

Innovation & expertise in building regulations

CONTENTS

REVISION STATUS				
REPORT NO/REV	DATE	STATUS	WRITTEN	CHECKED
7375_R01	16/06/2023	DRAFT FOR COMMENT	EDM	BM
7375_R02	06/07/2023	FINAL	EDM	BM

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1.0 EXECUTIVE SUMMARY AND RECOMMENDATIONS

This report provides a Building Code of Australia (BCA) 2022 assessment of proposed balustrade alterations to an existing residential unit building, located at 22 Central Avenue, Manly, for the purposes of Development Application (DA) submission.

The primary purpose of this report is to identify the non-compliance matters contained in the proposed design against the current Deemed-to-Satisfy (DTS) Provisions of the BCA and to provide compliance recommendations to overcome the DTS non-compliances.

The proposed works are readily capable of complying with the Building Code of Australia (BCA) 2022 and are considered acceptable for the purposes of DA submission. AED note that the plans are required to be developed at CC stage to address the compliant items noted within the body of this report.

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2.0 INTRODUCTION

This report provides a Building Code of Australia (BCA) 2022 assessment of proposed balustrade alterations to an existing residential unit building, located at 22 Central Avenue, Manly, for the purposes of Development Application (DA) submission.

This report provides a BCA assessment table in Section 3.0 that summarises the identified non-compliance matters and offers specific recommendations.

2.1 Basis of Report

The key basis of this report is to address compliance with the Building Code of Australia (BCA) 2022. The scope of services is limited to Sections C – "Fire Resistance", Section D – "Access & Egress", Section E – "Services & Equipment", Section F "Health and Amenity", Section G "Ancillary Provisions" and Section I "Special use Buildings"

This report is based on a desktop assessment of the proposed plans, with specific reference to the following:

- Architectural plans prepared by Urbaine Architecture, Project No. NA Drawing Numbers:

Drawing Title	Drawing No.	Revision	Dated
East Elevation	A001	-	16/05/2023
Existing to Demolish	A002	-	16/05/2023
New Balustrade Proposal	A003	-	16/05/2023
Photomontage 1	A004	-	16/05/2023
Photomontage 2	A005	-	16/05/2023
Photomontage 3	A006	-	16/05/2023
Photomontage 4	A007	-	16/05/2023
Sample Balustrade	A008	-	16/05/2023

- The Building Code of Australia 2022, prepared by the Australian Building Codes Board.
- The Guide to the BCA 2022, prepared by the Australian Building Codes Board.
- Site Inspection completed by Edward Di Michiel of AED Consulting on the 02/06/2023.

2.2 Purpose of the Report

The purpose of this report is to assess the following:

- Assessment under the current Building Code of Australia 2022 and list any departures from the BCA 2022.
- Provide recommendations to address identified non-compliances, and/or identify potential alternative solutions.

2.3 Limitations of the Report

This report does not assess the following:

- Access and facilities for people with disabilities is addressed however compliance with Disability Discrimination Act 1992 (DDA) is outside the scope of this report. It should be noted that BCA compliance does not necessarily meet the requirements of the Disability Discrimination Act (DDA).
- Reporting on hazardous materials, OH&S matters or site contamination
- Assessment of any structural elements or geotechnical matters relating to the building, including any structural or other assessment of the existing fire-resistant levels of the building
- Consideration of any fire services operations (including hydraulic, electrical or other systems)

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- Assessment of plumbing and drainage installations, including stormwater
- Assessment of mechanical plant operations, electrical systems or security systems
- Heritage significance
- Consideration of energy or water authority requirements
- Consideration of Council's local planning policies
- Environmental or planning issues
- Requirements of statutory authorities
- Pest inspection or assessment building damage caused by pests (general/visual pest invasion or damage will be reported, however invasive or intrusive inspections have not be carried out)
- Provision of any construction approvals or certification under Part 6A of the Environmental Planning & Assessment Act 1979.
- Glazing, shading, lighting calculations and the like required by Section J of the BCA not been carried out
- This assessment excludes BCA clauses D4D1-D4D13 (Inclusive), E3D7-E3D8 and F4D5-F4D7 (inclusive). Refer to separate access report.
- This assessment excludes Section J. Refer to separate energy consultant's report.
- BCA 2022 does not directly specify slip-resistance classification(s) for all *accessible paths of travel*; however, we highlight the need under AS 1428.1-2009 for all *accessible paths of travel* to have a slip-resistant surface. We recommend you should seek surface finish advice from an independent specialist slip safety consultant.

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3.0 BCA ASSESSMENT DATA

The following data is provided in respect to review of the building under the Building Code of Australia 2022 in respect to the compliance assessment of the proposed balustrade alterations to an existing residential unit building, located at 22 Central Avenue, Manly.

BCA Building Classifications:	Class 2 – Residential Class 6 – Retail Tenancies Class 7a – Carparking
Building rise in storeys:	>15 (determined in accordance with C1.2 of the BCA).
Type of Construction:	Type A (determined in accordance with C1.1 of the BCA)
Effective Height (m):	>25 m

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4.0 BCA ASSESSMENT SUMMARY

The following table details the BCA compliance of the assessed design.

BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
Section B Structure					
Part B1 Structural provisions					
B1D1 Deemed-to-Satisfy Provisions [2019: B1.0]				X	(1) Where a Deemed-to-Satisfy Solution is proposed, Performance Requirements B1P1 to B1P4 are satisfied by complying with B1D2 to B1D6. (2) Where a Performance Solution is proposed, the relevant Performance Requirements must be determined in accordance with A2G2(3) and A2G4(3) as applicable. **Compliance commentary** • Structural engineer to design the balustrading system to comply with Part B1 of the BCA and all relevant Australian Standards. • Structural engineer to ensure that the system proposed to support the glass panels, spigots or the like, comply with BCA Clause D3D20. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification (and structural details)***
B1D4 Determination of structural resistance of materials and forms of construction [2019: B1.4]				X	The structural resistance of materials and forms of construction must be determined in accordance with the following, as appropriate: (h) Glazed assemblies: (ii) All glazed assemblies not covered by (i) and the following glazed assemblies must comply with AS 1288: (A) All glazed assemblies not in an external wall. (I) Glazing used in balustrades and sloping overhead glazing. **Compliance commentary** • Details demonstrating compliance are to be obtained at CC stage, that all glazing proposed to be used in the balustrades will comply with AS 1288. ***Details demonstrating compliance with this clause must be incorporated into the Structural Engineering plans / specification***
Section C Fire resistance					
Part C2 Fire resistance and stability					
C2D10 Non-combustible building elements [2019: C1.9]				X	(1) 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. (4) The requirements of (1) do not apply to the following: (a) Gaskets. (b) Caulking. (c) Sealants.

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BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
					(e) Glass, including laminated glass, and associated adhesives, including tapes. (f) Thermal breaks associated with— (i) glazing systems; or (ii) external wall systems, where the thermal breaks— (A) are no larger than necessary to achieve thermal objectives; and (B) do not extend beyond one storey; and (C) do not extend beyond one fire compartment. (h) Compressible fillers and backing materials, including those associated with articulation joints, closing gaps not wider than 50 mm. (i) Isolated— (i) construction packers and shims; or (ii) blocking for fixing fixtures; or (iii) fixings, including fixing accessories; or (iv) acoustic mounts. (j) Waterproofing materials applied to the external face, used below ground level and up to 250 mm above ground level. (k) Joint trims and joint reinforcing tape and mesh of a width not greater than 50 mm. (l) Weather sealing materials, applied to gaps not wider than 50mm, used within and between concrete elements. (m) Wall ties and other masonry components complying with AS 2699 Part 1 and Part 3 as appropriate, and associated with masonry wall construction. (n) Reinforcing bars and associated minor elements that are wholly or predominately encased in concrete or grout. (o) A paint, lacquer or a similar finish or coating. (p) Adhesives, including tapes, associated with stiffeners for cladding systems. (q) Fire-protective materials and components required for the protection of penetrations. (5) The following materials, when entirely composed of itself, are non-combustible and may be used wherever a non-combustible material is required: (a) Concrete. (b) Steel, including metallic coated steel. (c) Masonry, including mortar. (d) Aluminium, including aluminium alloy. (e) Autoclaved aerated concrete, including mortar. (f) Iron. (g) Terracotta. (h) Porcelain. (i) Ceramic. (j) Natural stone. (k) Copper. (l) Zinc.

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BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
					(m) Lead. (n) Bronze. (o) Brass. (6) The following materials may be used wherever a non-combustible material is required: (a) Plasterboard. (b) Perforated gypsum lath with a normal paper finish. (c) Fibrous-plaster sheet. (d) Fibre-reinforced cement sheeting. (e) Pre-finished metal sheeting having a combustible surface finish not exceeding 1 mm thickness and where the Spread-of-Flame Index of the product is not greater than 0. (f) Sarking-type materials that do not exceed 1 mm in thickness and have a Flammability Index not greater than 5. (g) Bonded laminated materials where— (i) each lamina, including any core, is non-combustible; and (ii) each adhesive layer does not exceed 1 mm in thickness and the total thickness of the adhesive layers does not exceed 2 mm; and (iii) the Spread-of-Flame Index and the Smoke-Developed Index of the bonded laminated material as a whole do not exceed 0 and 3 respectively; and (iv) when located externally, are fixed in accordance with C2D15. **Compliance commentary** • AED note that it is proposed to demolish and remove the upper element of the existing concrete balustrade. Where the removal of this element impacts the external wall of the building, any patching / rectification works required to the external wall must comply with this clause. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
Section D Access and Egress					
Part D3 Construction of exits					
D3D17 Barriers to prevent falls [2019: D2.16(a), (b) and (c)]				X	(1) A continuous barrier must be provided along the side of— (c) a floor, corridor, hallway, balcony, deck, verandah, mezzanine, access bridge or the like; if the trafficable surface is 1 m or more above the surface beneath. (3) A barrier required by (1) must be constructed in accordance with D3D18, D3D19, D3D20 and, if a wire barrier is used, D3D21. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
D3D18 Height of barriers [2019: Table D2.16a]				X	(1) The height of a barrier required by D3D17 must be not less than the following: (d) 1m. (2) For a barrier provided under (1) —

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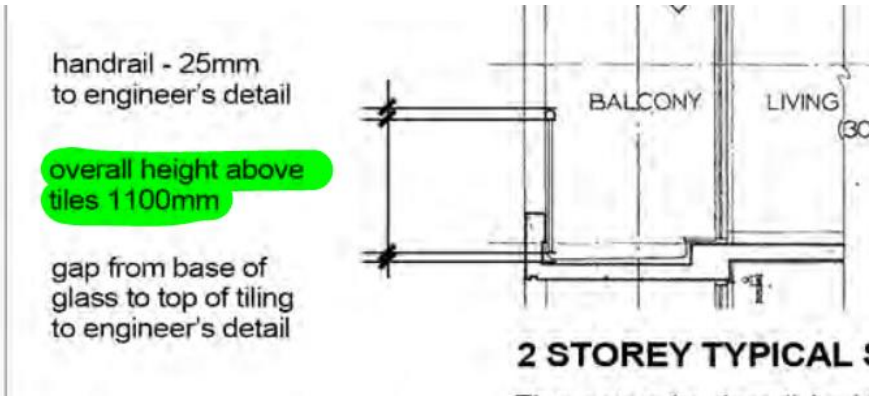
BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
					(a) barrier heights are measured vertically from the surface beneath; and **Compliance commentary** • The plans indicate the balustrading will have an overall height 1100 mm measured from the tiles, which will comply with the requirements of this clause.  ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
D3D19 Openings in barriers [2019: Table D2.16a]				X	(1) Except where allowed by (2), openings in a required barrier must not allow a 125 mm sphere to pass through. (5) For a barrier provided under (1), the maximum 125 mm barrier opening for a stairway, such as a non fire-isolated stairway, is measured above the nosing line of the stair treads. (6) Where a required barrier is fixed to the vertical face forming an edge of a landing, balcony, deck, stairway or the like, the opening formed between the barrier and the face must not exceed 40 mm. (7) For the purposes of (6), the opening is measured horizontally from the edge of the trafficable surface to the nearest internal face of the barrier. **Compliance commentary** • The openings between the proposed glass panels, and between the glass panels and intersecting walls, must not exceed 10 mm due to the exiting hob behind the balustrade located within the 150 mm – 760 mm non-climbable zone. CC architectural plans are to be developed to demonstrate compliance. • AED note that compliance is readily achievable, however specifications detailing complying with this clause should be developed at CC stage.

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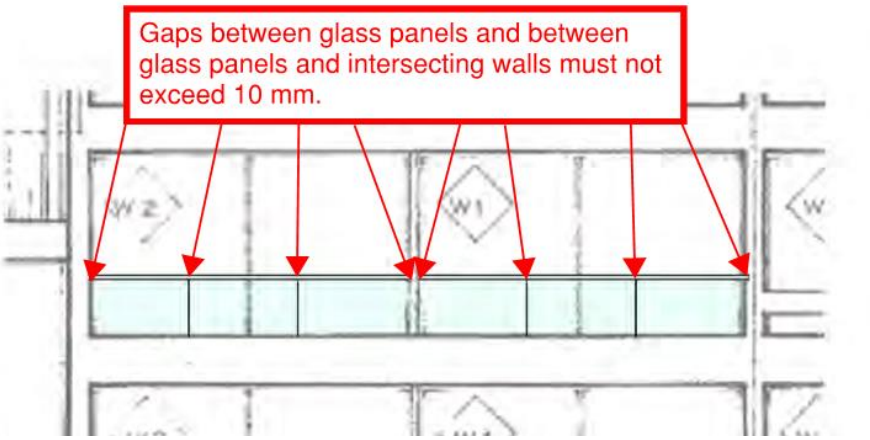
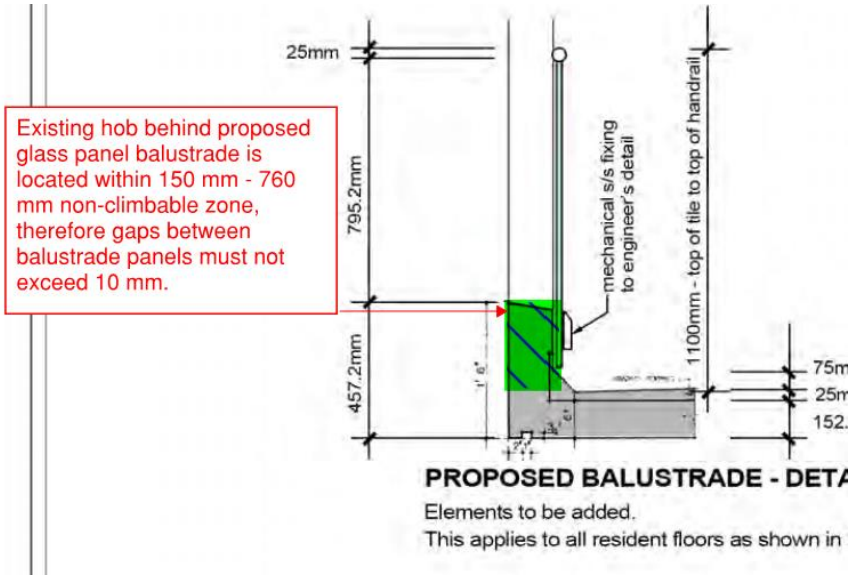
					 ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
D3D20 Barrier climbability [2019: Table D2.16a]				X	(1) A barrier required by D3D17, located on a floor more than 4 m above the surface beneath, must not incorporate horizontal or near horizontal elements that could facilitate climbing between 150 mm and 760 mm above the floor. **Compliance commentary** • The hob behind the proposed balustrade is located within the 150 mm – 760 mm non-climbable zone, as such the balustrade must be designed and installed such that the gaps in the balustrade do not exceed 10 mm. • AED note that compliance is readily achievable, however specifications detailing complying with this clause should be developed at CC stage.  • Where the spigots supporting the glass panel balustrade system are located between 150 mm – 760 mm above the finished floor level, they must not have a horizontal surface greater than 10 mm such that they can be used as a foothold to climb the barrier.

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BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
					Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification
Section F Health and Amenity					
Part F1 External waterproofing, rainwater management and rising damp					
F1D5 External waterproofing membranes [2019: F1.4]			X		A roof, balcony, podium or similar horizontal surface part of a building must be provided with a waterproofing membrane— (a) consisting of materials complying with AS 4654.1; and (b) designed and installed in accordance with AS 4654.2. **Compliance commentary** • AED where advised on site that the proposed works will not impact the existing waterproofing of the balconies.
Part F3 Roof and wall Cladding					
F3D3 Sarking [2019: F1.6]				X	Sarking-type material used for weatherproofing of roofs and walls must comply with AS 4200.1 and AS 4200.2. **Compliance commentary** • AED note that it is proposed to demolish and remove the upper element of the existing concrete balustrade. Where the removal of this element impacts the external wall of the building, any patching / rectification works must not reduce the weatherproofing performance of the external wall. • AED recommend that a façade engineer or other suitably qualified person is engaged at CC stage to advise if the proposed demolition works will impact the existing weatherproofing. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
F3D5 Wall cladding [New for 2022]				X	(1) External wall cladding must comply with one or a combination of the following: (a) Masonry, including masonry veneer, unreinforced and reinforced masonry: AS 3700. (b) Autoclaved aerated concrete: AS 5146.3. (c) Metal wall cladding: AS 1562.1. **Compliance commentary** • AED note that it is proposed to demolish and remove the upper element of the existing concrete balustrade. Where the removal of this element impacts the external wall of the building, any patching / rectification works must not reduce the weatherproofing performance of the external wall. • AED recommend that a façade engineer or other suitably qualified person is engaged at CC stage to advise if the proposed demolition works will impact the existing weatherproofing. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***

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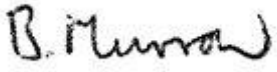
5.0 CONCLUSION

This report provides a Building Code of Australia (BCA) 2022 assessment of proposed balustrade alterations to an existing residential unit building, located at 22 Central Avenue, Manly, for the purposes of Development Application (DA) submission.

The primary purpose of this report was to identify the non-compliance matters contained in the proposed design philosophy against the current Deemed-to-Satisfy (DTS) Provisions of the BCA and to provide compliance recommendations to overcome the DTS non-compliances.

This report provided a BCA assessment table in Section 3.0 that summarises the identified non-compliance matters and offers specific recommendations that are also outlined in the Executive Summary.

Further, if compliance with the deemed-to-satisfy provisions is not achievable or desirable, Alternative Solutions could be further developed and verified by an appropriately qualified BCA Consultant or Fire Safety Engineer.

Prepared by	Reviewed by
 Edward Di Michiel Senior Building Regulations Consultant for AE&D	 Ben Murrow Senior Associate for AE&D

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6.0 ATTACHMENT A - INSPECTION & MAINTENANCE

6.1 Fire Safety Measures

The fire safety measures within the building must be maintained to ensure correct operation at all times the building is occupied. All firefighting equipment should be tagged when tested/inspected and log books kept up-to-date for all smoke detection, warning systems and sprinkler systems (where installed).

An annual fire safety certificate must be submitted to the local consent authority and the NSW Fire Brigade each year indicating satisfactory performance of the fire safety measures contained within the building. The annual fire safety statement should be displayed in a prominent place within the building (i.e. the main entry foyer)

The correct operation and maintenance of the buildings fire safety measures is critical in affording an adequate level of fire safety.

6.2 Good Housekeeping

The ongoing management of the building should ensure good housekeeping procedures. The following matters should be considered by building management:

- Ensure exits and paths of travel to exits remain unobstructed (in particular stairways)
- Avoid storage of materials in unoccupied areas
- Limit storage of flammable/combustible materials to designated and approved areas
- Prevent chocking open fire/smoke doors
- Prevent storage of materials that could hinder access to firefighting equipment

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