BUILDING CODE OF AUSTRALIA
COMPLIANCE ASSESSMENT REPORT FOR DA SUBMISSION

PROPOSED LOADING DOCK ALTERATIONS

22 CENTRAL AVENUE, MANLY

DATE ►06/07/2023

REPORT NO. ►7375.1_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	21/06/2023	DRAFT FOR COMMENT	EDM	BM
7375_R01A	28/06/2023	DRAFT FOR COMMENT	EDM	BM
7375_R02	06/07/2023	FINAL	EDM	BM

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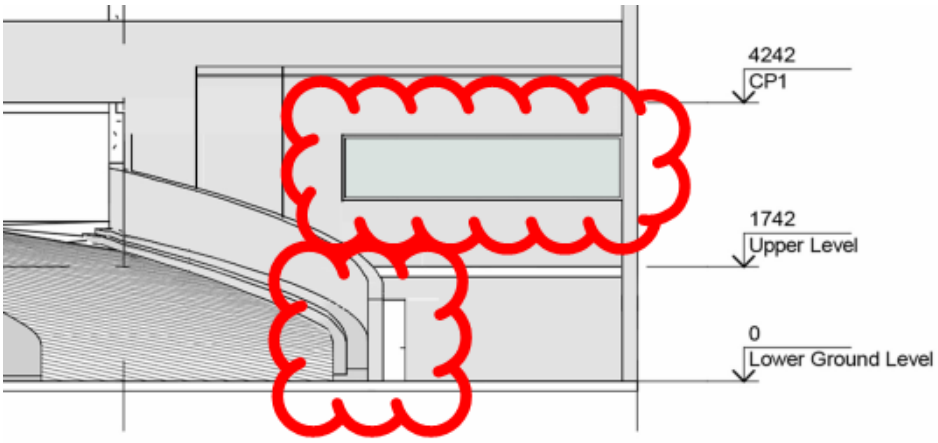
1.0 EXECUTIVE SUMMARY AND RECOMMENDATIONS

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.

1.1 Recommendations

The following is a list of Deemed-to-Satisfy Provisions that should be addressed either by design amendments, additional information **OR** by way of a Performance Solution:

BCA Clause	Deemed-to-Satisfy Provision to be addressed
C3D7 Vertical separation of openings in external walls [2019: C2.6]	(1) If in a building of Type A construction, 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— (a) a spandrel which— (i) is not less than 900 mm in height; and (ii) extends not less than 600 mm above the upper surface of the intervening floor; and (iii) is of non-combustible material having an FRL of not less than 60/60/60; or **Compliance commentary** **Note:** Concession under part (2)(c) cannot be applied as the existing sprinkler system is not installed throughout the building. • The proposed window opening within the eastern external wall of the building managers office, must be protected from the door opening below in accordance with this clause. Details demonstrating compliance shall be included in the CC plans. AED recommend that a spandrel is incorporated into the design in accordance with part (1)(a) of this clause. 
C3D9 Separation of classifications in the same storey	(1) If a building has parts of different classifications located alongside one another in the same storey— (a) each building element in that storey must have the higher FRL prescribed in Specification 5 for that element for the classifications concerned; or

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BCA Clause	Deemed-to-Satisfy Provision to be addressed
[2019: C2.8]	**(b) the parts must be separated in that storey by a fire wall.**

Compliance commentary

Where compliance with part (1)(a) of this clause is not achieved—

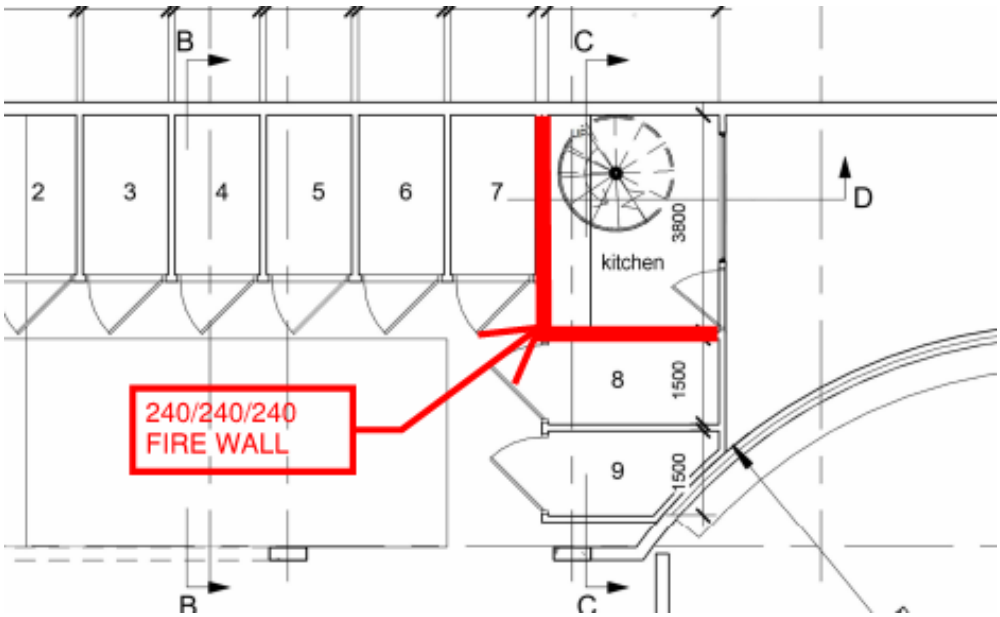
- The Class 5 office is required to be separated from the Class 7b storage area / loading dock by a fire wall achieving an FRL of not less than 240/240/240 where loadbearing, or -/240/240 where non-loadbearing. AED recommend that a fire engineer is engaged to rationalise this FRL.

Note: Fire stopping systems achieving an FRL of -/240/240 for service penetrations through walls are not currently available. Hence, a performance solution should be obtained where services are proposed to penetrate the fire wall. Furthermore, rationalising the FRL will improve constructability.

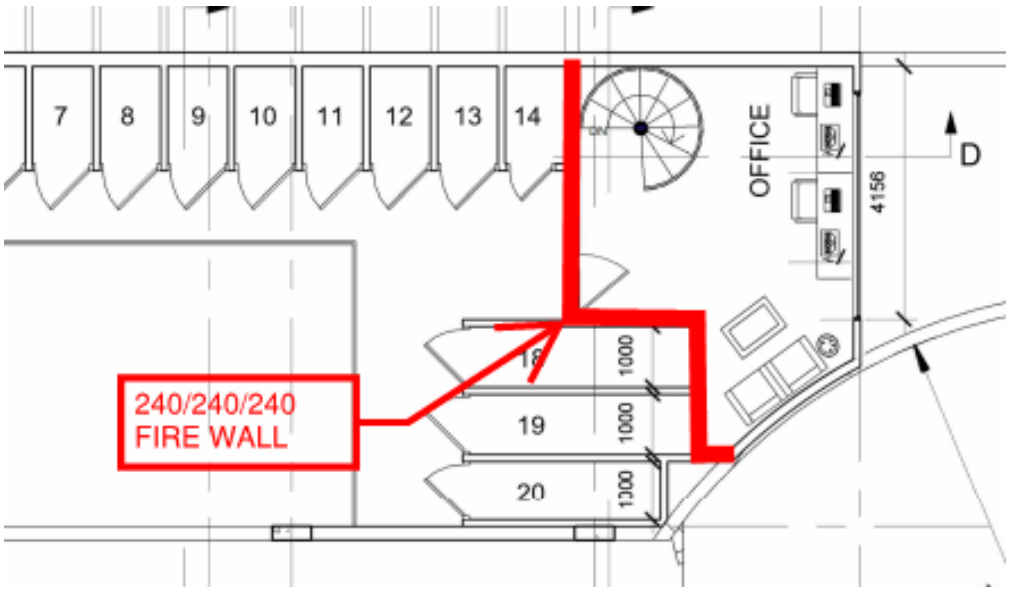
Note 2: There are more than 2 classifications on both the basement level and ground level, as such the exemption under Clause A6G1 cannot be applied. Class 5, 6, 7a, and 7b.

Note 3: The requirements of this clause only apply to the internal walls separating classifications, being the Class 5 office part and Class 7b storage / loading dock.

Basement Level



Ground Level



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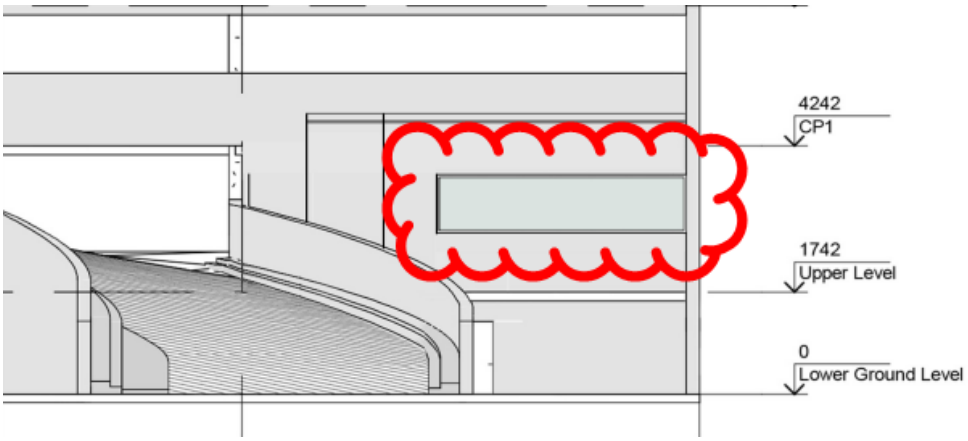
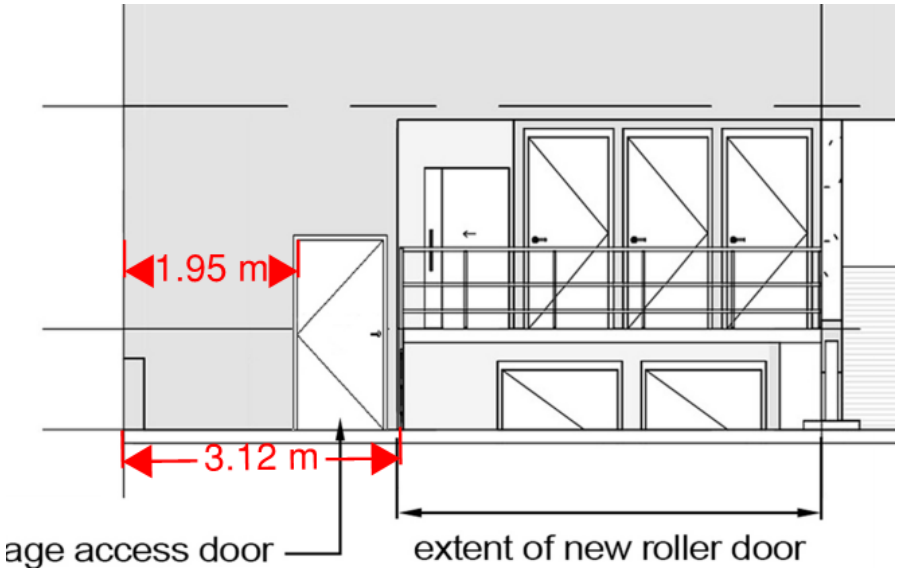
BCA Clause	Deemed-to-Satisfy Provision to be addressed
C4D3 Protection of openings in external walls [2019: C3.2]	**Compliance commentary** • The window opening on the east elevation of the proposed building managers office is located within 3 m of the side allotment boundary and requires protection in accordance with BCA Clause C4D5. Alternatively, a wall can be constructed along the allotment boundary having an FRL of not less than 30/-/- to obstruct the horizontal straight-line exposure to the fire source feature in accordance with Specification 5, Clause S5C2.  • The doorway proposed on the western elevation is located within 3 m of the side allotment boundary and requires protection in accordance with BCA Clause C4D5. Alternatively, a wall can be constructed along the allotment boundary having an FRL of not less than 30/-/- to obstruct the horizontal straight-line exposure to the fire source feature in accordance with Specification 5, Clause S5C2. 
D2D3 Number of exits required [2019: D1.2]	**Compliance commentary** • The location of the exit doorway on the western elevation has not been shown on the basement and ground floor plans provided. The exit doorway (indicated on the elevation plan) should be clearly shown on the floor plans so that compliance can be assessed.
D2D5 Exit travel distances [2019: D1.4]	**Compliance commentary** • The ground plan is only provided with 1 exit, noting that a spiral stairway cannot be used as a required exit. On this basis, travel distances from the Class 5 building managers office must be not more than 30 m to an exit and not more than 20 m to a single exit from the Class 7b storage / loading dock part.

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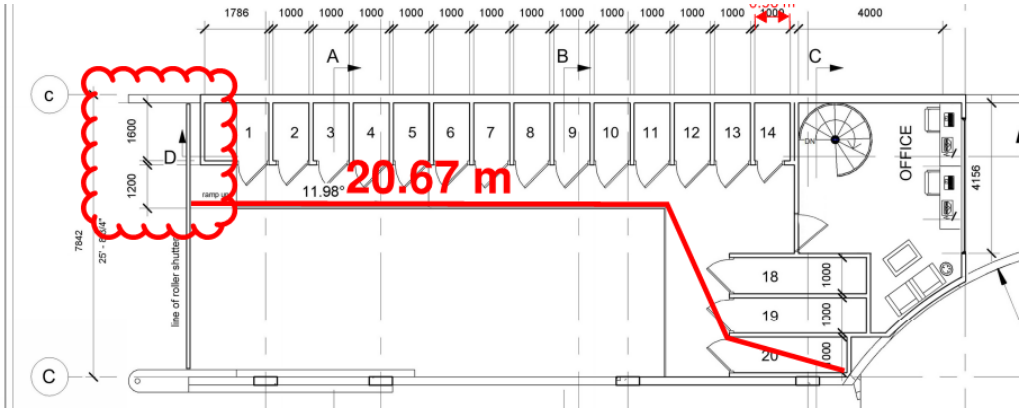
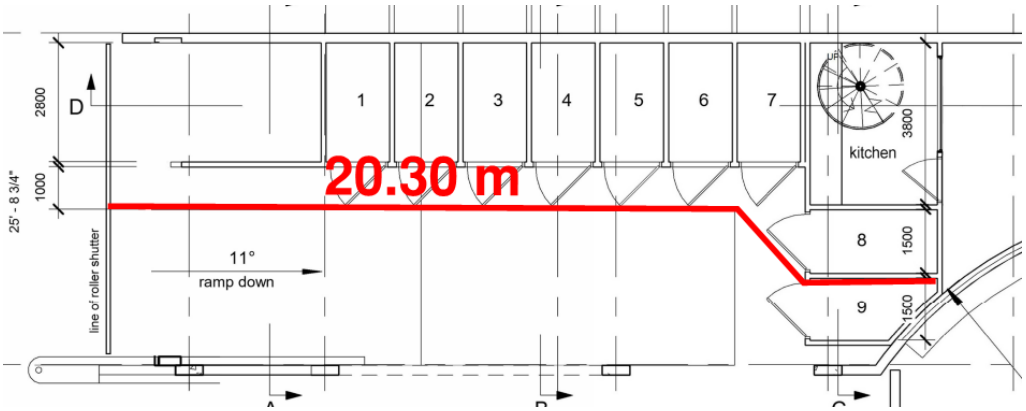
BCA Clause	Deemed-to-Satisfy Provision to be addressed
	• The travel distance from storage cage 20 on ground level to an exit exceeds 20 m (measures 20.7 m) which does not comply with part (3)(a) of this clause. AED recommend that a performance solution is obtained, alternatively, the storage rooms may be reconfigured to ensure that there is no point more than 20 m from the exit. **Note**: this measurement is subject to change pending the location of the exit being shown on the plans.  • The travel distance from storage cage 9 on basement level to an exit exceeds 20 m (measures 20.3 m) which does not comply with part (3)(a) of this clause. AED recommend that a performance solution is obtained, alternatively, the storage rooms may be reconfigured to ensure that there is no point more than 20 m from the exit.  **Note 2:** this measurement is subject to change pending the location of the exit being shown on the plans. **Note 3:** It is not clear if there are additional exits available on the basement level, to be clarified if this is the case. • The location of the exit doorway on the western elevation has not been shown on the basement and ground floor plans provided. The exit doorway (indicated on the elevation plan) should be clearly shown on the floor plans so that compliance can be assessed.
D2D8 Width of exits and paths of travel to exits [2019: D1.6(b), (c), (d) and (e)]	**Compliance commentary** • 1 m clear path of travel has not been provided to the spiral stairway contained within the building managers office (measured 840 mm), which does not comply with this clause.

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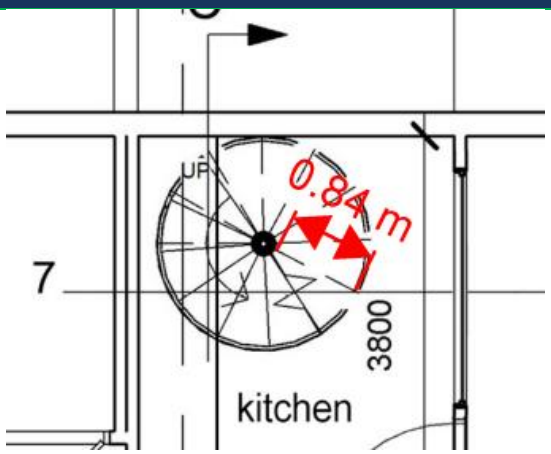
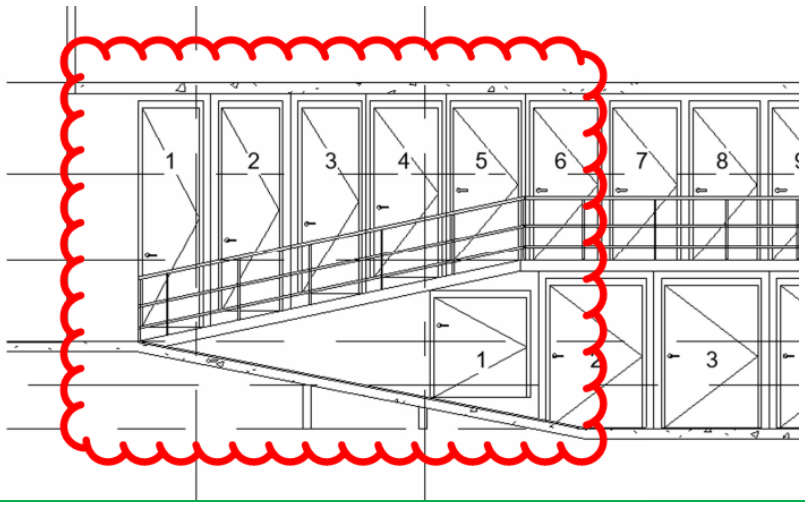
BCA Clause	Deemed-to-Satisfy Provision to be addressed
	
D3D11 Pedestrian ramps [2019: D2.10]	**Compliance commentary** • The ramp shown on the ground plan indicates a gradient of 11.98 degrees, which translates to approximately 1:8. • AED note that an accessible path of travel is required to be provided to each storage cage and to the building managers office. AED recommend that an Access Report is obtained to assess the accessibility compliance against Part D4 of the BCA and AS 1428.1.
D3D14 Goings and risers [2019: D2.13]	**Compliance commentary** • Architect to develop plans for the spiral stairway at CC stage demonstrating compliance with this clause. • For the purposes of this assessment, AED have assumed that the spiral stairway is not required for travel distances / egress purposes, on this basis, the stairway is considered non-required.
D3D15 Landings [2019: D2.14]	**Compliance commentary** • Architect to provide detail on the plans of a 750 mm landing provided at the top and bottom of the proposed spiral stairway. It is not clear on the plans if compliance is achieved.
D3D16 Thresholds [2019: D2.15]	**Compliance commentary** • Architect to detail the location of the exit doorway on the western elevation so that compliance with this clause can be determined. • The doorways to storage cages 1, 2, 3, 4, & 5 (Ground) and 1 & 2 (Basement) are located along a ramped section of the proposal and incorporate steps within the threshold of the doorways. AED recommend that a performance solution is obtained to address these non-compliances. 

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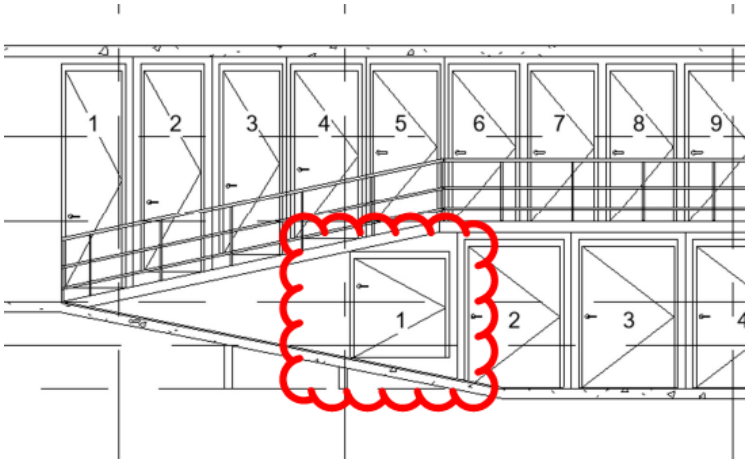
BCA Clause	Deemed-to-Satisfy Provision to be addressed
F4D4 Facilities in Class 3 to 9 buildings [2019: F2.3]	**Compliance commentary** • Provide clarification on the sanitary facilities available for the building managers office.
F5D2 Height of rooms and other spaces [2019: F3.2]	**Compliance commentary** • Head heights for the storage rooms need to be shown on the plans so that compliance can be determined. Part (8)(a) of this clause requires that the storage rooms achieve a minimum head height of 2.1 m. • Storage room 1 (basement level), will not likely achieve a minimum head height of 2.1 m as required by part (8)(a) of this clause, which will not comply.  • The head height above the stairway must be clearly shown on the plans to achieve a head height not less than 2 m. This could not be determined as compliant. • The corridors along the storage rooms must be shown on plans to have a head height of not less than 2.1 m in accordance with part (3)(b) of this clause. • The lower level of the building managers office has been calculated to have a head height less than 2.4 m, which does not comply with part (3)(a) of this clause. • The upper level of the building managers office must achieve a head height not less than 2.4 m, this could not be determined on the plans.

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2.0 INTRODUCTION

This report provides a Building Code of Australia (BCA) 2022 assessment of proposed loading dock 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
Site Plan	A000	-	10/05/2023
Elevations	A001	-	10/05/2023
Basement Plan	A002	-	10/05/2023
Ground Plan	A003	-	10/05/2023
Sections	A004	-	10/05/2023
Internal Elevation	A005	-	10/05/2023
3D Views	A006	-	10/05/2023
3D Views	A007	-	10/05/2023

- The Building Code of Australia 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)
- Assessment of plumbing and drainage installations, including stormwater

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- 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.
- The plans provided are not to scale, therefore commentary provided with respects

2.4 Location of Fire Source features

The potential *fire source features* to be considered for this building are the external wall of another building on the allotment which is not a Class 10 building, the side or rear of the allotment boundary or the far side of the road.

In this instance the following setbacks are determined in respect to the fire source features applicable to the building

- North – side boundary of the allotment.
- South – side boundary of the allotment
- East – far boundary of Central Avenue
- West – far boundary of Short Street

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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 5 – Office Class 6 – Retail Tenancies Class 7a – Carparking Class 7b – Loading Dock
Building rise in storeys:	18 (including 13 split levels) (advised by applicant).
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. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification (and structural details)***
Section C Fire resistance					
Part C2 Fire resistance and stability					
C2D2 Type of construction required [2019: C1.1]				X	(1) The minimum Type of fire-resisting construction of a building must be determined in accordance with Table C2D2. (2) Each building element must comply with Specification 5 as applicable. **Compliance commentary** • The CC plans are to demonstrate compliance with Specification 5 for Type A Construction, ensuring that the minimum FRL's are achieved. • External walls, floors, supporting elements, fire walls, and others, are to be designed to achieve the minimum FRL's required by Specification 5. The structural engineer and designing architect will need to coordinate these requirements and adequately detail them within the CC plans and specifications.

Rise in storeys	Class of building 2, 3, 9	Class of building 5, 6, 7, 8
4 of more	**A**	**A**
3	A	B
4	B	C
1	C	C

C2D9 Lightweight construction [2019: C1.8]				X	(1) Lightweight construction must comply with Specification 6 if it is used in a wall system— (a) that is required to have an FRL. (2) If lightweight construction is used for the fire-resisting covering of a steel column or the like, and if— (a) the covering is not in continuous contact with the column, then the void must be filled solid, to a height of not less than 1.2 m above the floor to prevent indenting; and (b) the column is liable to be damaged from the movement of vehicles, materials or equipment, then the covering must be protected by steel or other suitable material.

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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
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. (c) Non-loadbearing internal walls where they are required to be fire-resisting. (3) A loadbearing internal wall and a loadbearing fire wall, including those that are part of a loadbearing shafts, must comply with Specification 5. (4) The requirements of (1) and (2) do not apply to the following: (a) Gaskets. (b) Caulking. (c) Sealants. (d) Termite management systems. (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. (g) Damp-proof courses. (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.

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BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS

(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.

(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

- Building elements specified under part (1) of this clause are required to be non-combustible having been tested in accordance with AS 1530.1. Except where exempt under parts (4), (5) and (6) of this clause.

Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification

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BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
C2D11 Fire hazard properties [2019: C1.10]				X	(1) The fire hazard properties of the following internal linings, materials and assemblies within a Class 2 to 9 building must comply with Specification 7: (a) Floor linings and floor coverings. (b) Wall linings and ceiling linings. (c) Air-handling ductwork. (d) Lift cars. (f) Non-required non fire-isolated stairways or pedestrian ramps subject to Specification 14. (g) Sarking-type materials. (h) Attachments to floors, ceilings, internal walls, common walls, fire walls and to internal linings of external walls. (i) Other materials including insulation materials other than sarking-type materials. (2) Paint or fire-retardant coatings must not be used in order to make a material comply with a *required fire hazard property*, except in respect of a material referred to in NSW Specification 7, Table S7C4 and to which Notes 4 and 5 are applicable. (3) The requirements of (1) do not apply to a material or assembly if it is— (a) plaster, cement render, concrete, terrazzo, ceramic tile or the like; or (b) a fire-protective covering; or (c) a timber-framed window; or (d) a solid timber handrail or skirting; or (e) a timber-faced door; or (f) an electrical switch, socket-outlet, cover plate or the like; or (g) a material used for— (i) a roof insulating material applied in continuous contact with a substrate; or (ii) an adhesive; or (iii) a damp-proof course, flashing, caulking, sealing, ground moisture barrier, or the like; or (h) a paint, varnish, lacquer or similar finish, other than nitro-cellulose lacquer; or (i) a clear or translucent roof light of glass fibre-reinforced polyester if— (i) the roof in which it is installed forms part of a single storey building required to be Type C construction; and (ii) the material is used as part of the roof covering; and (iii) it is not closer than 1.5 m from another roof light of the same type; and (iv) each roof light is not more than 14 m2 in area; and (v) the area of the roof lights per 70 m2 of roof surface is not more than 14 m2; or (j) a face plate or neck adaptor of supply and return air outlets of an air handling system; or (k) a face plate or diffuser plate of light fitting and emergency exit signs and associated electrical wiring and electrical components; or (l) a joinery unit, cupboard, shelving, or the like; or

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					(m) an attached non-building fixture and fitting such as— (i) a curtain, blind, or similar decor, other than— (A) a proscenium curtain required by Specification 32; or (B) in a Class 9b building used as an entertainment venue, a material regulated under NSW Table S7C4; and (ii) a whiteboard, window treatment or the like; or (n) timber treads, risers, landings and associated supporting framework installed in accordance with D3D30 where the Spread-of-Flame Index and the Smoke-Developed Index of the timber does not exceed 9 and 8 respectively; or (o) any other material that does not significantly increase the hazards of fire. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
C2D14 Ancillary elements [2019: C1.14]				X	An ancillary element must not be fixed, installed, attached to or supported by the concealed internal parts or external face of an external wall that is required to be non-combustible unless it is one of the following: (a) An ancillary element that is non-combustible. (b) A gutter, downpipe or other plumbing fixture or fitting. (c) A flashing. A grate, grille or similar cover not more than 2 m^2 (d) in area associated with a building service. (e) An electrical switch, socket-outlet, cover plate or the like. (f) A light fitting. (g) A required sign. (h) A sign other than one provided under (a) or (g) that— (i) achieves a group number of 1 or 2; and (ii) does not extend beyond one storey; and (iii) does not extend beyond one fire compartment; and (iv) is separated vertically from other signs permitted under (h) by at least 2 storeys. (i) An awning, sunshade, canopy, blind or shading hood other than one provided under (a) that— (i) meets the relevant requirements of Table S7C7 as for an internal element; and (ii) serves a storey— (A) at ground level; or (B) immediately above a storey at ground level; and (iii) does not serve an exit, where it would render the exit unusable in a fire. (j) A part of a security, intercom or announcement system. (k) Wiring. (l) Waterproofing material installed in accordance with AS 4654.2 and applied to an adjacent floor surface, including vertical upturn, or a roof surface. (m) Collars, sleeves and insulation associated with service installations.

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					(n) Screens applied to vents, weepholes and gaps complying with AS 3959. (o) Wiper and brush seals associated with doors, windows or other openings. (p) A gasket, caulking, sealant or adhesive directly associated with (a) to (o). **Compliance commentary** • Attachments to the external walls (ancillary elements) are required to be non-combustible having been tested in accordance with AS 1530.1. Except where exempt under this clause. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
Part C3 Compartmentation and separation					
C3D7 Vertical separation of openings in external walls [2019: C2.6]				X	(1) If in a building of Type A construction, 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— (a) a spandrel which— (i) is not less than 900 mm in height; and (ii) extends not less than 600 mm above the upper surface of the intervening floor; and (iii) is of non-combustible material having an FRL of not less than 60/60/60; or (b) part of a curtain wall or panel wall that complies with (a); or (c) construction that complies with (a) 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 (d) a slab or other horizontal construction that— (i) projects outwards from the external face of the wall not less than 1100 mm; and (ii) extends along the wall not less than 450 mm beyond the openings concerned; and (iii) is non-combustible and has an FRL of not less than 60/60/60. (2) The requirements of (1) do not apply to— (a) an open-deck carpark; or (c) a building which has a sprinkler system (other than a FPAA101D or FPAA101H system) complying with Specification 17 installed throughout; or (e) openings in external walls where the floor separating the storeys does not require an FRL with respect to integrity and insulation. (3) For the purposes of C3D7, window or other opening means that part of the external wall of a building that does not have an FRL of 60/60/60 or greater. **Compliance commentary**

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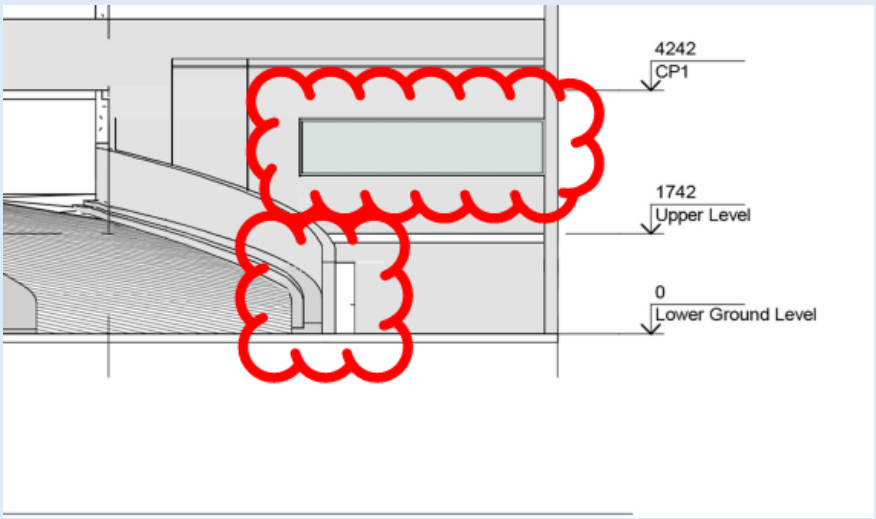
					Note: Concession under part (2)(c) cannot be applied as the existing sprinkler system is not installed throughout the building. • The proposed window opening within the eastern external wall of the building managers office, must be protected from the door opening below in accordance with this clause. Details demonstrating compliance shall be included in the CC plans. AED recommend that a spandrel is incorporated into the design in accordance with part (1)(a) of this clause. 
C3D8 Separation by fire walls [2019: C2.7]				X	(1) Construction — A fire wall must be constructed in accordance with the following: (a) The fire wall has the relevant FRL prescribed by Specification 5 for each of the adjoining parts, and if these are different, the greater FRL, except where S5C18(c), S5C21(3) and S5C24(3) permit a lower FRL on the carpark side. (b) Any openings in a fire wall must not reduce the FRL required by Specification 5 for the fire wall, except where permitted by the Deemed-to-Satisfy Provisions of Part C4. (c) Building elements, other than roof battens with dimensions of 75 mm x 50 mm or less or sarking- type material, must not pass through or cross the fire wall unless the required fire-resisting performance of the fire wall is maintained. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
C3D9 Separation of classifications in the same storey [2019: C2.8]				X	(1) If a building has parts of different classifications located alongside one another in the same storey— (a) each building element in that storey must have the higher FRL prescribed in Specification 5 for that element for the classifications concerned; or **(b) the parts must be separated in that storey by a fire wall.** (2) A fire wall required by (1)(b) must have the FRL prescribed in accordance with Specification 5 as applicable for that element for the Type of construction and the classifications concerned. (3) For the purposes of (2), the FRL in Specification 5 must be either— (a) the higher FRL prescribed in Tables S5C11a to S5C11g or S5C21a to S5C21f; or (b) the FRL prescribed in Tables S5C24a to S5C24e.

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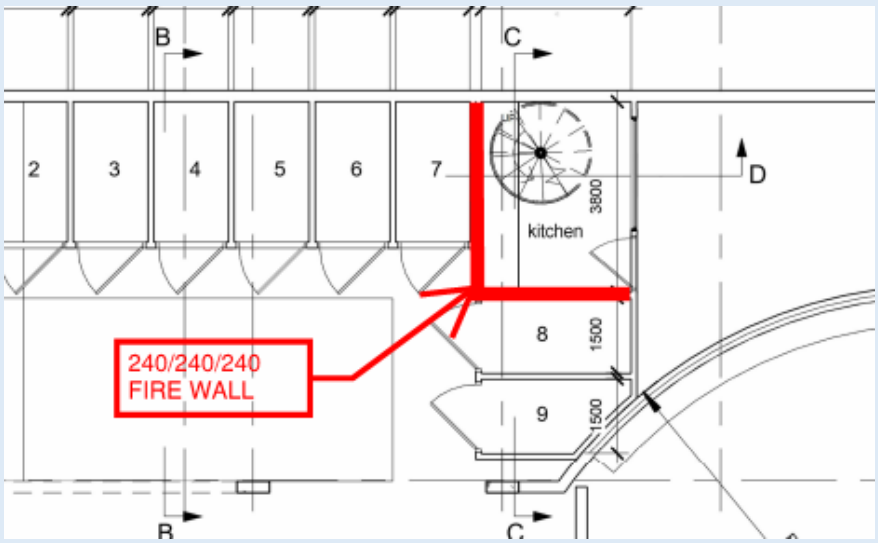
					(4) For the purposes of (1), where one part is a carpark complying with S5C19, S5C22 and S5C25, the parts may be separated by a fire wall complying with the appropriate Clause. **Compliance commentary** Where compliance with part (1)(a) of this clause is not achieved— • The Class 5 office is required to be separated from the Class 7b storage area / loading dock by a fire wall achieving an FRL of not less than 240/240/240 where loadbearing, or -/240/240 where non-loadbearing. AED recommend that a fire engineer is engaged to rationalise this FRL. **Note:** Fire stopping systems achieving an FRL of -/240/240 for service penetrations through walls are not currently available. Hence, a performance solution should be obtained where services are proposed to penetrate the fire wall. Furthermore, rationalising the FRL will improve constructability. **Note 2:** There are more than 2 classifications on both the basement level and ground level, as such the exemption under Clause A6G1 cannot be applied. Class 5, 6, 7a, and 7b. **Note 3:** The requirements of this clause only apply to the internal walls separating classifications, being the Class 5 office part and Class 7b storage / loading dock. **Basement Level**  **Ground Level**

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					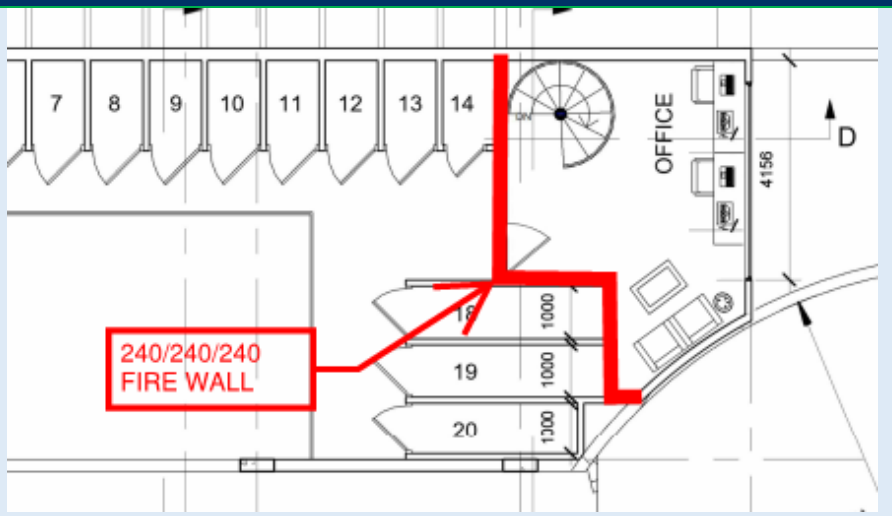 ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specifications.***
C3D10 Separation of classifications in different storeys [2019: C2.9]			X		If parts of different classification are situated one above the other in adjoining storeys they must be separated as follows: (a) Type A construction — The floor between the adjoining parts must have an FRL of not less than that prescribed in Specification 5 for the classification of the lower storey. **Compliance commentary** • It is assumed that the existing slab between the loading dock and the next storey above achieves the required FRL. Noting that the proposed works would not necessitate an upgrade of FRL's between these parts.
Part C4 Protection of openings					
C4D2 Application of Part [2019: C3.1]			X		(1) The Deemed-to-Satisfy Provisions of this Part do not apply to the following: (a) Control joints, weep holes and the like in external walls of masonry construction and joints between panels in external walls of pre-cast concrete panel construction if, in all cases they are not larger than necessary for the purpose. (b) Non-combustible ventilators for subfloor or cavity ventilation, if each does not exceed 45 000 mm2 in face area and is spaced not less than 2 m from any other ventilator in the same wall. (c) Openings in the vertical plane formed between building elements at the construction edge or perimeter of a balcony or verandah, colonnade, terrace, or the like. (d) In a carpark floor other than a floor that separates a part not used as a carpark, and subject to the following openings in a carpark floor: (i) Service penetrations. (ii) Openings formed by a vehicle ramp. (e) The requirements of (d) only apply where the connected carpark levels comply as a single fire compartment for the purposes of all other requirements of the Deemed-to-Satisfy Provisions of Sections C, D and E. (2) For the purposes of the Deemed-to-Satisfy Provisions of this Part, openings in building elements required to be fire-resisting include

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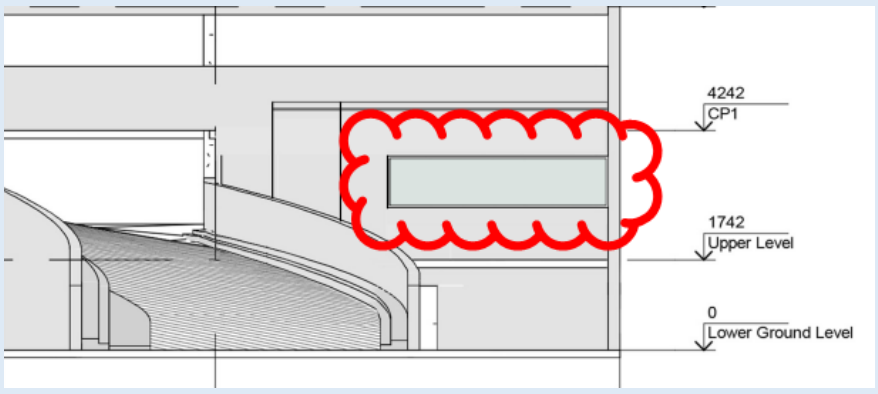
					doorways, windows (including any associated fanlight), infill panels and fixed or openable glazed areas that do not have the required FRL. (3) For the purposes of the Deemed-to-Satisfy Provisions of this Part, openings, other than those covered under (1)(c), between building elements such as columns, beams and the like, in the plane formed at the construction edge or perimeter of the building, are deemed to be openings in an external wall.
C4D3 Protection of openings in external walls [2019: C3.2]		X			(1) Subject to (2), openings in an external wall that is required to have an FRL must be protected in accordance with C4D5, and if wall-wetting sprinklers are used they must be located externally. (2) The requirements of (1) only apply if the distance between the opening and the fire-source feature to which it is exposed is less than— (a) 3 m from a side or rear boundary of the allotment; or (b) 6 m from the far boundary of a road, river, lake or the like adjoining the allotment, if not located in a storey at or near ground level; or (c) 6 m from another building on the allotment that is not Class 10. (3) Openings in an external wall that is required to have an FRL, if required to be protected under (1), must not occupy more than 1/3 of the area of the external wall of the storey in which it is located unless they are in a Class 9b building used as an open spectator stand. **Compliance commentary** • The window opening on the east elevation of the proposed building managers office is located within 3 m of the side allotment boundary and requires protection in accordance with BCA Clause C4D5. Alternatively, a wall can be constructed along the allotment boundary having an FRL of not less than 30/-/- to obstruct the horizontal straight-line exposure to the fire source feature in accordance with Specification 5, Clause S5C2.  • The doorway proposed on the western elevation is located within 3 m of the side allotment boundary and requires protection in accordance with BCA Clause C4D5. Alternatively, a wall can be constructed along the allotment boundary having an FRL of not less than 30/-/- to obstruct the horizontal straight-line exposure to the fire source feature in accordance with Specification 5, Clause S5C2.

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					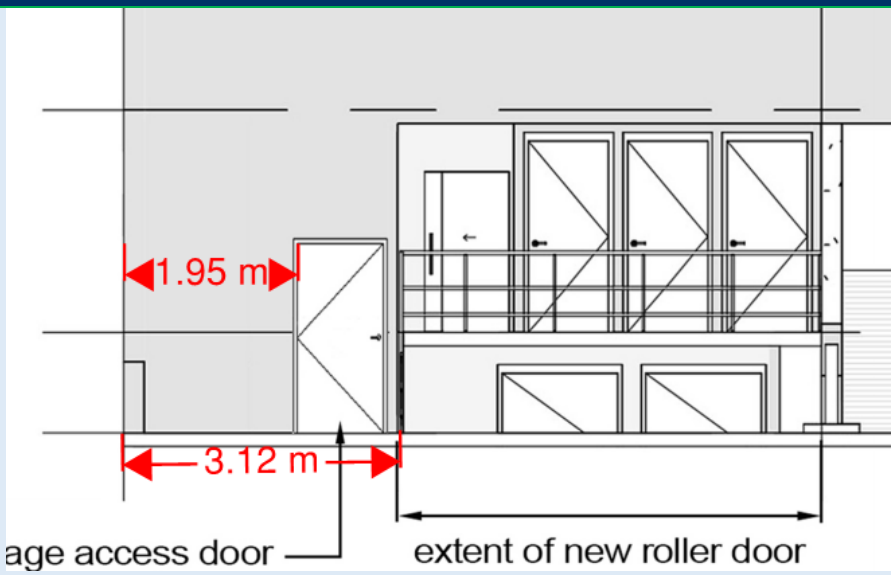 ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
C4D4 Separation of external walls and associated openings in different fire compartments [2019: C3.3]				X	The distance between parts of external walls and any openings within them in different fire compartments separated by a fire wall must not be less than that set out in Table C4D4, unless— (a) those parts of each wall have an FRL not less than 60/60/60; and (b) any openings protected in accordance with C4D5. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
C4D5 Acceptable methods of protection [2019: C3.4]			X		(1) Where protection is required, doorways, windows and other openings must be protected as follows: (a) Doorways— (i) internal or external wall-wetting sprinklers as appropriate used with doors that are self-closing or automatic closing; or (ii) –/60/30 fire doors that are self-closing or automatic closing. (b) Windows— (i) internal or external wall-wetting sprinklers as appropriate used with windows that are automatic closing or permanently fixed in the closed position; or (ii) –/60/– fire windows that are automatic closing or permanently fixed in the closed position; or (iii) –/60/– automatic closing fire shutters. (c) Other openings— (i) excluding voids — internal or external wall-wetting sprinklers, as appropriate; or (ii) construction having an FRL not less than –/60/–. (2) Fire doors, fire windows and fire shutters must comply with Specification 12.

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C4D6 Doorways in fire walls [2019: C3.5]				X	(1) The aggregate width of openings for doorways in a fire wall, which are not part of a horizontal exit, must not exceed ½ of the length of the fire wall, and each doorway must be protected by— (a) 2 fire doors or fire shutters, one on each side of the doorway, each of which has an FRL of not less than ½ that required by Specification 5 for the fire wall except that each door or shutter Must have an insulation level of at least 30; or (b) a fire door on one side and a fire shutter on the other side of the doorway, each of which complies with (a); or (c) a single fire door or fire shutter which has an FRL of not less than that required by Specification 5 for the fire wall except that each door or shutter must have an insulation level of at least 30. (2) A fire door or fire shutter required by (1)(a), (b) or (c) must be self-closing. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
C4D13 Openings in floors and ceilings for services [2019: C3.12]				X	(1) Where a service passes through— (a) a floor that is required to have an FRL with respect to integrity and insulation; or (b) a ceiling required to have a resistance to the incipient spread of fire, the service must be installed in accordance with (2). (2) A service must be protected— (a) in a building of Type A construction, by a shaft complying with Specification 5; or (c) in accordance with C4D15. (3) Where a service passes through a floor which is required to be protected by a fire-protective covering, the penetration must not reduce the fire performance of the covering. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
C4D14 Openings in shafts [2019: C3.13]				X	In a building of Type A construction, an opening in a wall providing access to a ventilating, pipe, garbage or other service shaft must be protected by— (a) if it is in a sanitary compartment — a door or panel which, together with its frame, is non-combustible or has an FRL of not less than –/30/30; or (b) a self-closing –/60/30 fire door or hopper; or (c) an access panel having an FRL of not less than –/60/30; or (d) if the shaft is a garbage shaft — a door or hopper of non-combustible construction. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
C4D15 Openings for service installations [2019: C3.15]				X	(1) The requirements of (2) apply 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. (2) An installation mentioned in (1) must comply with any one of the following: (a) Tested systems — the following applies:

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					(i) The service, building element and any protection method at the penetration— (A) are identical with a prototype assembly of the service, building element and protection method which has been tested in accordance with AS 4072.1 and AS 1530.4 and has achieved the required FRL or resistance to the incipient spread of fire; or (B) differ from a prototype assembly of the service, building element and protection method in accordance with Section 4 of AS 4072.1. (ii) It complies with (i) except for the insulation criteria relating to the service if— (A) the service is a pipe system comprised entirely of metal (excluding pipe seals or the like); and (B) any combustible building element is not located within 100mm of the service for a distance of 2 m from the penetration; and (C) combustible material is not able to be located within 100 mm of the service for a distance of 2m from the penetration; and (D) it is not located in a required exit. (iii) The determination of the required FRL must be confirmed in a report from an Accredited Testing Laboratory in accordance with Specifications 1 and 2. (b) Ventilation and air-conditioning — in the case of ventilating or air-conditioning ducts or equipment, the installation is in accordance with AS 1668.1. (c) Compliance with Specification 13 — the following applies: (i) The service is a pipe system comprised entirely of metal (excluding pipe seals or the like) and is installed in accordance with Specification 13 and it— (A) penetrates a wall, floor or ceiling, but not a ceiling required to have a resistance to the incipient spread of fire; and (B) connects not more than 2 fire compartments in addition to any fire-resisting service shafts; and (C) does not contain a flammable or combustible liquid or gas. (ii) The service is sanitary plumbing installed in accordance with Specification 13 and it— (A) is of metal or UPVC pipe; and (B) penetrates the floors of a Class 5, 6, 7, 8 or 9b building; and (C) is in a sanitary compartment separated from other parts of the building by walls with the FRL required by Specification 5 for a stair shaft in the building and a self-closing –/60/30 fire door. (iii) The service is a wire or cable, or a cluster of wires or cables installed in accordance with Specification 13 and it—

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					(A) penetrates a wall, floor or ceiling, but not a ceiling required to have a resistance to the incipient spread of fire; and (B) connects not more than 2 fire compartments in addition to any fire-resisting service shafts. (iv) The service is an electrical switch, outlet, or the like, and it is installed in accordance with Specification 13. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
C4D16 Construction joints [2019: C3.16]				X	(1) Construction joints, spaces and the like in and between building elements required to be fire-resisting with respect to integrity and insulation must be protected in a manner— (a) identical with a prototype tested in accordance with AS 4072.1 and AS 1530.4 to achieve the required FRL; or (b) that differs from a prototype in accordance with Section 4 of AS 4072.1 and achieves the required FRL. (2) The determination of the required FRL must be confirmed in a report from an Accredited Testing Laboratory in accordance with Specifications 1 and 2. (3) The requirements of (1) do not apply where joints, spaces and the like between fire-protected timber elements are provided with cavity barriers in accordance with Specification 9. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
C4D17 Columns protected with lightweight construction to achieve an FRL [2019: C3.17]				X	A column protected by lightweight construction to achieve an FRL which passes through a building element that is required to have an FRL or a resistance to the incipient spread of fire, must be installed using a method and materials identical with a prototype assembly of the construction which has achieved the required FRL or resistance to the incipient spread of fire. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
Section D Access and Egress					
Part D2 Provision for escape					
D2D3 Number of exits required [2019: D1.2]				X	(1) All buildings — Every building must have at least one exit from each storey. (2) Class 2 to 8 buildings — (a) Not less than 2 exits must be provided from the following: (i) Each storey if the building has an effective height of more than 25 m. (b) The requirements of (a)(i) do not apply to a part of a storey that— (i) is provided with direct egress to a road or open space; and (ii) satisfies D2D5 by the provision of 1 exit. (7) Access to exits — Without passing through another sole-occupancy unit every occupant of a storey or part of a storey must have access to— (a) an exit; or (b) at least 2 exits if 2 or more exits are required. **Compliance commentary**

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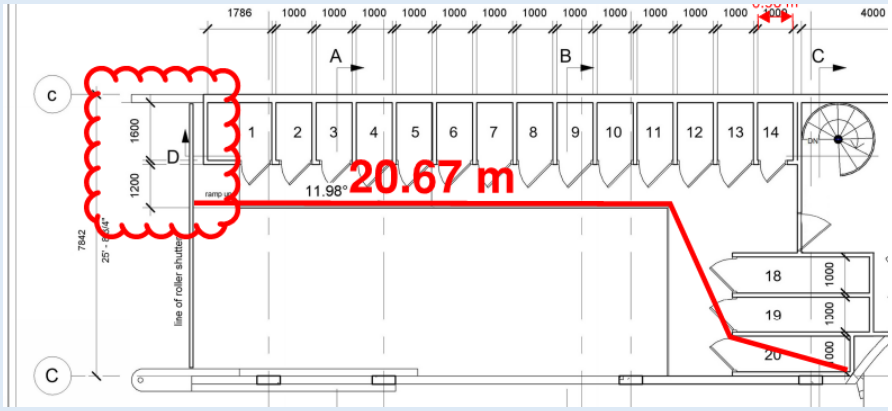
BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
					• The location of the exit doorway on the western elevation has not been shown on the basement and ground floor plans provided. The exit doorway (indicated on the elevation plan) should be clearly shown on the floor plans so that compliance can be assessed. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
D2D4 When fire-isolated stairways and ramps are required [2019: D1.3]			X		(2) Class 5, 6, 7, 8 or 9 buildings — Every stairway or ramp serving as a required exit must be fire-isolated unless— (c) it connects, passes through or passes by not more than 2 consecutive storeys. **Compliance commentary** • The proposed stairway connects not more than 2 storeys and is not required to be fire-isolated in accordance with this clause.
D2D5 Exit travel distances [2019: D1.4]		X			(3) Class 5, 6, 7, 8 or 9 buildings — (a) no point on a floor must be more than 20 m from an exit, or a point from which travel in different directions to 2 exits is available, in which case the maximum distance to one of those exits must not exceed 40 m; and (b) in a Class 5 or 6 building, the distance to a single exit serving a storey at the level of access to a road or open space may be increased to 30 m. **Compliance commentary** • The ground plan is only provided with 1 exit, noting that a spiral stairway cannot be used as a required exit. On this basis, travel distances from the Class 5 building managers office must be not more than 30 m to an exit and not more than 20 m to a single exit from the Class 7b storage / loading dock part. • The travel distance from storage cage 20 on ground level to an exit exceeds 20 m (measures 20.7 m) which does not comply with part (3)(a) of this clause. AED recommend that a performance solution is obtained, alternatively, the storage rooms may be reconfigured to ensure that there is no point more than 20 m from the exit. **Note**: this measurement is subject to change pending the location of the exit being shown on the plans.  • The travel distance from storage cage 9 on basement level to an exit exceeds 20 m (measures 20.3 m) which does not comply with part (3)(a) of this clause. AED recommend that a performance solution is obtained, alternatively, the storage rooms may be

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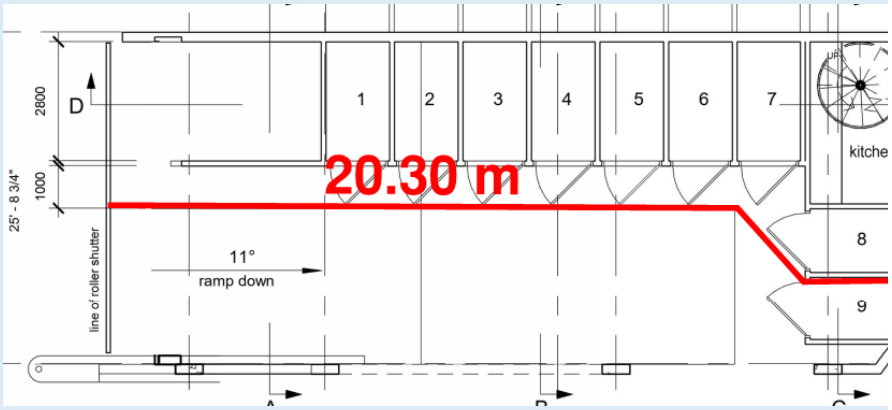
					reconfigured to ensure that there is no point more than 20 m from the exit.  **Note 2:** this measurement is subject to change pending the location of the exit being shown on the plans. **Note 3:** It is not clear if there are additional exits available on the basement level, to be clarified if this is the case. • The location of the exit doorway on the western elevation has not been shown on the basement and ground floor plans provided. The exit doorway (indicated on the elevation plan) should be clearly shown on the floor plans so that compliance can be assessed. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
D2D6 Distance between alternative exits [2019: D1.5]				X	Exits that are required as alternative means of egress must be— (a) distributed as uniformly as practicable within or around the storey served and in positions where unobstructed access to at least 2 exits is readily available from all points on the floor including lift lobby areas; and (b) not less than 9 m apart; and (c) not more than— (i) in a Class 2 or 3 building — 45 m apart; or (ii) in a Class 9a health-care building, if such required exit serves a patient care area — 45 m apart; or (iii) in all other cases — 60 m apart; and (d) located so that alternative paths of travel do not converge such that they become less than 6m apart. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
D2D7 Height of doorways in exits and paths of travel to exits [2019: D1.6(a)]				X	In a required exit or path of travel to an exit the unobstructed height throughout must be not less than 2 m, except the unobstructed height of any doorway may be reduced to not less than 1980 mm. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
D2D8 Width of exits and paths of travel to exits		X			(1) The unobstructed width of each required exit or path of travel to an exit, must be not less than— (a) 1 m. **Compliance commentary**

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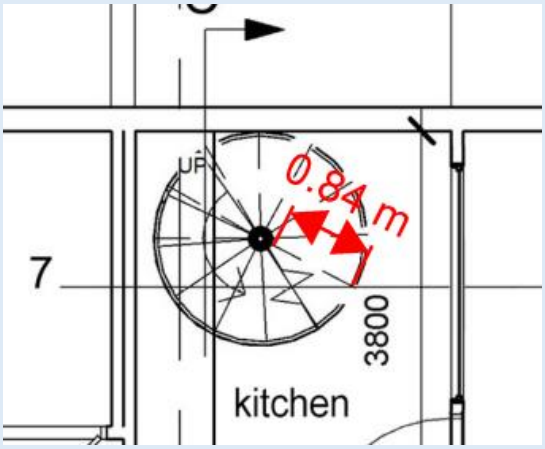
[2019: D1.6(b), (c), (d) and (e)]					• 1 m clear path of travel has not been provided to the spiral stairway contained within the building managers office (measured 840 mm), which does not comply with this clause.  ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
D2D9 Width of doorways in exits or paths of travel to exits [2019: D1.6(f)]				X	In a required exit or path of travel to an exit, the unobstructed width of a doorway must be not less than— (c) the unobstructed width of each exit provided to comply with D2D8(1), (2), (3) or (4), minus 250 mm; or (e) in any other case except where it opens to a *sanitary compartment* or bathroom — 750 mm wide. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
D2D10 Exit width not to diminish in direction of travel [2019: D1.6(g)]				X	The unobstructed width of a required exit must not diminish in the direction of travel to a road or open space, except where the width is increased in accordance with D2D8(1)(b) or D2D9(a)(i). ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
D2D11 Determination and measurement of exits and paths of travel to exits [2019: D1.6(h) and (i)]				X	For the purposes of D2D7 to D2D10 the following apply: (a) The required width of a stairway or ramp in a required exit or path of travel to an exit must— (i) be measured clear of all obstructions such as handrails projecting parts of barriers and the like; and (ii) extend without interruption, except for ceiling cornices, to a height not less than 2m vertically above a line along the nosings of the treads or the floor surface of the ramp or landing. (b) To determine the aggregate unobstructed width, the number of persons accommodated must be calculated according to D2D18. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
D2D14 Travel by non-fire-isolated stairways or ramps [2019: D1.9]				X	(1) A non-fire-isolated stairway or non-fire-isolated ramp serving as a required exit must provide a continuous means of travel by its own flights and landings from every storey served to the level at which egress to a road or open space is provided.

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					(3) In a Class 5, 6, 7, 8 or 9 building, the distance from any point on a floor to a point of egress to a road or open space by way of a required non-fire-isolated stairway or non-fire-isolated ramp must not exceed 80 m. (5) In a Class 5 to 8 or 9b building, a required non-fire-isolated stairway or non-fire-isolated ramp must discharge at a point not more than— (a) 20 m from a doorway providing egress to a road or open space or from a fire-isolated passageway leading to a road or open space; or (b) 40 m from one of 2 such doorways or passageways if travel to each of them from the non- fire-isolated stairway or non-fire-isolated ramp is in opposite or approximately opposite directions. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
D2D15 Discharge from exits [2019: D1.10]				X	(1) An exit must not be blocked at the point of discharge and where necessary, suitable barriers must be provided to prevent vehicles from blocking the exit, or access to it. (2) If a required exit leads to an open space, the path of travel to the road must have an unobstructed width throughout of not less than— (a) the minimum width of the required exit; or (b) 1 m, whichever is the greater. (3) If an exit 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) a ramp or other incline having a gradient not steeper than 1:8 at any part, or not steeper than 1:14 if required by the Deemed-to-Satisfy Provisions of Part D4; or (b) except if the exit is from a Class 9a building, a stairway complying with the Deemed-to-Satisfy Provisions of the BCA. (4) The discharge point of alternative exits must be located as far apart as practical. (7) The number of persons accommodated must be calculated according to D2D18. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
Part D3 Construction of exits					
D3D4 Non-fire-isolated stairways and ramps [2019: D2.3]				X	In a building having a rise in storeys of more than 2, required stairs and ramps (including landings and any supporting building elements) which are not required to be within a fire-resisting shaft, must be constructed according to D3D3, or only of— (a) reinforced or prestressed concrete; or (b) steel in no part less than 6 mm thick; or (c) timber that— (i) has a finished thickness of not less than 44 mm; and (ii) has an average density of not less than 800 kg/m3 at a moisture content of 12%; and (iii) has not been joined by means of glue unless it has been laminated and glued with resorcinol formaldehyde or resorcinol phenol formaldehyde glue.

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					Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification
D3D8 Installations in exits and paths of travel [2019: D2.7]				X	(1) Access to service shafts and services other than to fire-fighting or detection equipment as permitted in the Deemed-to-Satisfy Provisions of Section E, must not be provided from a fire-isolated stairway, fire-isolated passageway or fire-isolated ramp. (2) An opening to any chute or duct intended to convey hot products of combustion from a boiler, incinerator, fireplace or the like, must not be located in any part of a required exit or any corridor, hallway, lobby or the like leading to a required exit. (3) Gas or other fuel services must not be installed in a required exit. (4) Except for in a fire-isolated exit specified in (1), services or equipment enclosed in accordance with (5) may be installed in a required exit, or in any corridor, hallway, lobby or the like leading to a required exit, where that service or equipment comprises— (a) electricity meters, distribution boards or ducts; or (b) central telecommunications distribution boards or equipment; or (c) electrical motors or other motors serving equipment in the building. (5) An enclosure for the purposes of (4) must be suitably sealed against smoke spreading from the enclosure and be— (a) non-combustible construction; or (b) a fire-protective covering. (6) Electrical wiring may be installed in a fire-isolated exit if the wiring is associated with— (a) a lighting, detection, or pressurisation system serving the exit; or (b) a security, surveillance or management system serving the exit; or (c) an intercommunication system or an audible or visual alarm system in accordance with D3D27; or (d) the monitoring of hydrant or sprinkler isolating valves. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
D3D9 Enclosure of space under stairs and ramps [2019: D2.8]			X		(2) Non fire-isolated stairways and ramps — The space below a required non fire-isolated stairway (including an external stairway) or non fire-isolated ramp must not be enclosed to form a cupboard or other enclosed space unless— (a) the enclosing walls and ceilings have an FRL of not less than 60/60/60; and (b) any access doorway to the enclosed space is fitted with a self-closing –/60/30 fire door.
D3D11 Pedestrian ramps [2019: D2.10]				X	(2) A ramp serving as a required exit must— (a) where the ramp is also serving as an accessible ramp under Part D4, be in accordance with AS 1428.1; or (b) in any other case, have a gradient not steeper than 1:8. (3) The floor surface of a ramp must have a slip-resistance classification not less than that listed in Table D3D15 when tested in accordance with AS 4586.

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					Compliance commentary • The ramp shown on the ground plan indicates a gradient of 11.98 degrees, which translates to approximately 1:8. • AED note that an accessible path of travel is required to be provided to each storage cage and to the building managers office. AED recommend that an Access Report is obtained to assess the accessibility compliance against Part D4 of the BCA and AS 1428.1. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
D3D14 Goings and risers [2019: D2.13]				X	(1) A stairway must have— (a) not more than 18 and not less than 2 risers in each flight; and (b) going (G), riser (R) and quantity (2R + G) in accordance with Table D3D14, except as permitted by (2) and (3); and (c) constant goings and risers throughout each flight, except as permitted by (2) and (3), and the dimensions of goings (G) and risers (R) in accordance with (1)(b) are considered constant if the variation between— (i) adjacent risers, or between adjacent goings, is no greater than 5 mm; and (ii) the largest and smallest riser within a flight, or the largest and smallest going within a flight, does not exceed 10 mm; and (d) risers which do not have any openings that would allow a 125 mm sphere to pass through between the treads; and (e) treads which have— (i) a surface with a slip-resistance classification not less than that listed in Table D3D15 when tested in accordance with AS 4586; or (ii) a nosing strip with a slip-resistance classification not less than that listed in Table D3D15 when tested in accordance with AS 4586; and (f) treads of solid construction (not mesh or other perforated material) if the stairway is more than 10 m high or connects more than 3 storeys; and (h) in the case of a required stairway, no winders in lieu of a landing. (2) In the case of a non-required stairway— (a) the stairway must have— (i) not more than 3 winders in lieu of a quarter landing; and (ii) not more than 6 winders in lieu of a half landing; and (b) the going of all straight treads must be constant throughout the same flight and the dimensions of goings (G) is considered constant if the variation between— (i) adjacent goings, is no greater than 5 mm; and (ii) the largest and smallest going within a flight, does not exceed 10 mm; and (c) the going of all winders in lieu of a quarter or half landing may vary from the going of the straight treads within the same flight provided that the going of all such winders is constant.

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					Compliance commentary • Architect to develop plans for the spiral stairway at CC stage demonstrating compliance with this clause. • For the purposes of this assessment, AED have assumed that the spiral stairway is not required for travel distances / egress purposes, on this basis, the stairway is considered non-required. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
D3D15 Landings [2019: D2.14]				X	In a stairway— (a) landings having a maximum gradient of 1:50 may be used in any building to limit the number of risers in each flight and each landing must— (i) be not less than 750 mm long, and where this involves a change in direction, the length is measured 500 mm from the inside edge of the landing; and (ii) have— (A) a surface with a slip-resistance classification not less than that listed in Table D3D15 when tested in accordance with AS 4586; or (B) a strip at the edge of the landing with a slip-resistance classification not less than that listed in Table D3D15 when tested in accordance with AS 4586, where the edge leads to a flight below; and **Compliance commentary** • Architect to provide detail on the plans of a 750 mm landing provided at the top and bottom of the proposed spiral stairway. It is not clear on the plans if compliance is achieved. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
D3D16 Thresholds [2019: D2.15]		X			The threshold of a doorway must not incorporate a step or ramp at any point closer to the doorway than the width of the door leaf unless— (c) in a building required to be accessible by Part D4, the doorway— (i) opens to a road or open space; and (ii) is provided with a threshold ramp or step ramp in accordance with AS 1428.1; or (d) In other cases— (i) the doorway opens to a road or *open space*, external stair landing or external balcony; and (ii) the door sill is not more than 190 mm above the finished surface of the ground, balcony, or the like, to which the doorway opens. **Compliance commentary** • Architect to detail the location of the exit doorway on the western elevation so that compliance with this clause can be determined. • The doorways to storage cages 1, 2, 3, 4, & 5 (Ground) and 1 & 2 (Basement) are located along a ramped section of the proposal and incorporate steps within the threshold of the doorways. AED recommend that a performance solution is obtained to address these non-compliances.

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					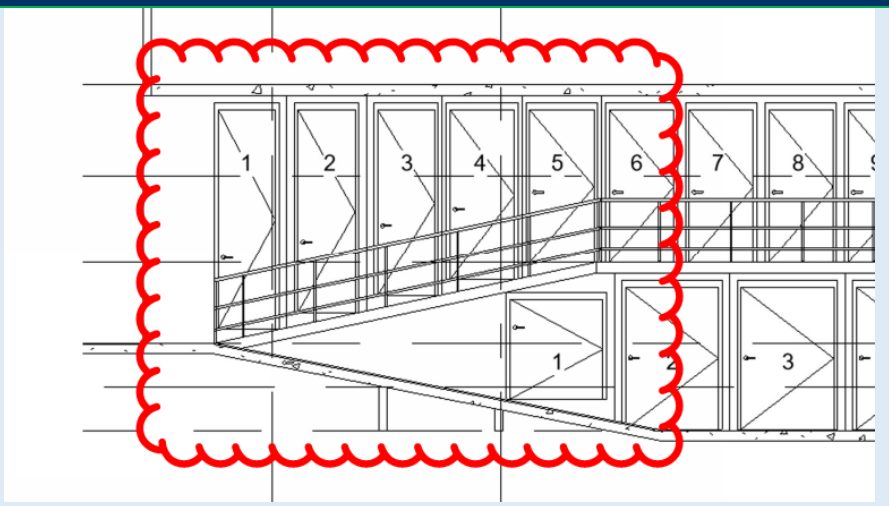 ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
D3D17 Barriers to prevent falls [2019: D2.16(a), (b) and (c)]				X	(1) A continuous barrier must be provided along the side of— (b) a stairway or ramp; and (c) a floor, corridor, hallway, balcony, deck, verandah, mezzanine, access bridge or the like; and (d) any delineated path of access to a building, 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. **Compliance commentary** • Architect to develop plans at CC stage demonstrating that the balustrading will comply with this clause. ***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: (a) For stairways or ramps with a gradient of 1:20 or steeper — 865 mm. (b) For landings to a stair or ramp where the barrier is provided along the inside edge of the landing and does not exceed 500 mm in length — 865 mm. (d) For all other locations – 1m. (2) For a barrier provided under (1) — (a) barrier heights are measured vertically from the surface beneath, except that for stairways the height must be measured above the nosing line of the stair treads; and (b) a transition zone may be incorporated where the barrier height changes from 865 mm on a stair flight or ramp to 1 m at a landing or floor. **Compliance commentary** • Architect to develop plans at CC stage demonstrating that the balustrading will comply with this clause. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***

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D3D19 Openings in barriers [2019: Table D2.16a]				X	(1) Openings in a required barrier must not allow a 125 mm sphere to pass through. (3) In Class 7 (other than carparks) and Class 8 buildings, openings in a required barrier— (a) must not allow a 300 mm sphere to pass through; or (b) where rails are used— (i) a 150 mm sphere must not be able to pass through the opening between the nosing line of the stair treads and the rail or between the rail and the floor of the landing, balcony or the like; and (ii) the opening between the rails must not be more than 460mm. (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** • Architect to develop plans at CC stage demonstrating that the balustrading will comply with this clause. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
D3D22 Handrails [2019: D2.17]				X	(1) Except for handrails referred to in D3D23, and subject to (2), handrails must— (a) be located along at least one side of the ramp or flight; and (d) be fixed at a height of not less than 865 mm; and (e) be continuous between stair flight landings and have no obstruction on or above them that will tend to break a hand- hold; and (f) in a required exit serving an area required to be accessible, be designed and constructed to comply with clause 12 of AS 1428.1, except that clause 12(d) does not apply to a handrail required by (1)(c)(ii). (2) The height required by (1)(c) and (d) is measured above the nosings of stair treads and the floor surface of the ramp, landing or the like. (4) Handrails required to assist people with a disability must be provided in accordance with D4D4. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
D3D24 Doorways and doors [2019: D2.19]				X	(2) A doorway serving as a required exit or forming part of a required exit— (a) must not be fitted with a revolving door; and (b) must not be fitted with a roller shutter or tilt-up door unless— (i) it serves a Class 6, 7 or 8 building or part with a floor area not more than 200 m^2; and (ii) the doorway is the only required exit from the building or part; and

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					(iii) it is held in the open position while the building or part is lawfully occupied; and (c) must not be fitted with a sliding door unless— (i) it leads directly to a road or open space; and (ii) the door is able to be opened manually under a force of not more than 110 N; and (d) if fitted with a door which is power-operated— (i) it must be able to be opened manually under a force of not more than 110 N if there is a malfunction or failure of the power source; and (ii) if it leads directly to a road or open space it must open automatically if there is a power failure to the door or on the activation of a fire or smoke alarm anywhere in the fire compartment served by the door. (3) A power-operated door in a path of travel to a required exit, except for a door in a patient care area of a Class 9a health-care building as provided in (2), must be able to be opened manually under a force of not more than 110 N if there is a malfunction or failure of the power source. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
D3D25 Swinging doors [2019: D2.20]				X	(1) A swinging door in a required exit or forming part of a required exit— (b) must swing in the direction of egress unless— (i) it serves a building or part with a floor area not more than 200m^2 it is the only required exit from the building or part and it is fitted with a device for holding it in the open position; or (ii) it serves a sanitary compartment or airlock (in which case it may swing in either direction); and (c) must not otherwise impede the path or direction of egress. (2) The measurement of encroachment referred to in (1)(a) in each case is to include door handles or other furniture or attachments to the door. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
D3D26 Operation of latch [2019: D2.21]				X	(1) A door in a required exit, forming part of a required exit or in the path of travel to a required exit must be readily openable without a key from the side that faces a person seeking egress, by— (a) a single hand downward action on a single device which is located between 900 mm and 1.1 m from the floor and if serving an area required to be accessible by Part D4— (i) be such that the hand of a person who cannot grip will not slip from the handle during the operation of the latch; and (ii) have a clearance between the handle and the back plate or door face at the centre grip section of the handle of not less than 35 mm and not more than 45 mm; or (b) a single hand pushing action on a single device which is located between 900 mm and 1.2 m from the floor. (2) Where the latch operation device referred to in (1)(b) is not located on the door leaf itself—

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BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
					(a) manual controls to power-operated doors must be at least 25 mm wide, proud of the surrounding surface and located— (i) not less than 500 mm from an internal corner; and (ii) for a hinged door, between 1 m and 2 m from the door leaf in any position; and (iii) for a sliding door, within 2 m of the doorway and clear of a surface mounted door in the open position; and (b) braille and tactile signage complying with S15C3 and S15C6 must identify the latch operation device. (3) The requirements of (1) and (2) do not apply to a door that— (b) serves only, or is within— (iv) a space which is otherwise inaccessible to persons at all times when the door is locked; or ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
Part D4 Access for people with a disability					
D4D1 Deemed-to-Satisfy Provisions [2019: D3.0]			X		Informational clause. (1) Where a Deemed-to-Satisfy Solution is proposed, Performance Requirements D1P1 to D1P6, D1P8 and D1P9 are satisfied by complying with— (a) D2D2 to D2D23, D3D2 to D3D30 and D4D2 to D4D13; and (b) in a building containing an atrium, Part G3; and (c) in a building in an alpine area, Part G4; and (d) for additional requirements for Class 9b buildings, Part I1; and (e) for public transport buildings, Part I2. (2) Where a Performance Solution is proposed, the relevant Performance Requirements must be determined in accordance with A2G2(3) and A2G4(3) as applicable. (3) Performance Requirement D1P7 must be complied with if lifts are to be used to assist occupants to evacuate a building. **Compliance commentary** • This assessment excludes an assessment against the accessibility provisions of the BCA and AS 1428.1. AED recommend that a suitably qualified Access Consultant is engaged to complete an assessment.
Section E Services and equipment					
Part E1 Fire fighting equipment					
E1D2 Fire hydrants [2019: E1.3]				X	(1) A fire hydrant system must be provided to serve a building— (a) having a total floor area greater than 500 m^2; and (b) where a fire brigade station is— (i) no more than 50 km from the building as measured along roads; and (ii) equipped with equipment capable of utilising a fire hydrant. (2) The fire hydrant system must be installed in accordance with AS 2419.1. (3) Notwithstanding (2), a Class 8 electricity network substation need not comply with clause 4.2 of AS 2419.1 if—

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					(a) it cannot be connected to a town main supply; and (b) one hour water storage is provided for fire-fighting. (4) Where internal fire hydrants are provided, they must serve only the storey on which they are located except that a sole-occupancy unit— (b) of not more than 2 storeys in a Class 5, 6, 7, 8 or 9 building may be served by a single fire hydrant located at the level of egress from that sole-occupancy unit provided the fire hydrant can provide coverage to the whole of the sole-occupancy unit. **Compliance commentary** • Suitably qualified fire systems designer to be engaged at CC stage to assess the coverage to the new works, and design alterations to the system where required. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification and Hydraulic Engineer design plans, Specification and Design Certificate.***
E1D3 Fire hose reels [2019: E1.4]				X	(1) E1D3 does not apply to— (a) a Class 5 building; or (2) A fire hose reel system must be provided— (a) to serve the whole building where one or more internal fire hydrants are installed; or (b) where internal fire hydrants are not installed, to serve any fire compartment with a floor area greater than 500 m^2. (3) The fire hose reel system must— (a) have fire hose reels installed in accordance with AS 2441; and (b) provide fire hose reels to serve only the storey at which they are located, except a sole-occupancy unit of not more than 2 storeys in a Class 6, 7, 8 or 9 building may be served by a single fire hose reel located at the level of egress from that sole-occupancy unit provided the fire hose reel can provide coverage to the whole of the sole-occupancy unit. (4) Fire hose reels must be located internally, externally or in combination, to achieve the system coverage specified in AS 2441. (5) In achieving system coverage, one or a combination of the following criteria for individual internally located fire hose reels must be met in determining the layout of any fire hose reel system: (a) Fire hose reels must be located adjacent to an internal fire hydrant (other than one within a fire-isolated exit), except that a fire hose reel need not be located adjacent to every fire hydrant, provided system coverage can be achieved. (b) Fire hose reels must be located within 4 m of an exit, except that a fire hose reel need not be located adjacent to every exit, provided system coverage can be achieved. (c) Where system coverage is not achieved by compliance with (a) and (b), additional fire hose reels may be located in paths of travel to an exit to achieve the required coverage. (6) Fire hose reels must be located so that the fire hose will not need to pass through doorways fitted with fire or smoke doors, except— (a) doorways in walls referred to in C3D6(1)(e) in a Class 9a building and C3D6(5)(d) in a Class 9c building, separating ancillary use areas of high potential fire hazard; and

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					(b) doorways in walls referred to in C3D13 or C3D14 separating equipment or electrical supply systems; and (c) doorway openings to shafts referred to in C4D14. (7) Where the normal water supply cannot achieve the flow and pressures required by AS 2441, or is unreliable— (a) a pump; or (b) water storage facility; or (c) both a pump and water storage facility must be installed to provide the minimum flow and pressures required by clause 6.1 of AS 2441. **Compliance commentary** • Suitably qualified fire systems designer to be engaged at CC stage to assess the coverage to the new works, and design alterations to the system where required. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
E1D4 Sprinklers [2019: E1.5]				X	A sprinkler system must— (a) be installed in a building or part of a building when required by E1D5 to E1D12 as applicable; and (b) comply with Specification 17 as applicable. Notes NSW has requirements for fire sprinkler systems in certain residential aged care facilities. See the Department of Planning and Environment website www.planning.nsw.gov.au. **Compliance commentary** • Suitably qualified fire systems designer to be engaged at CC stage to assess the coverage to the new works, and design alterations to the system where required.
E1D14 Portable fire extinguishers [2019: E1.6 and Table E1.6]				X	(1) Portable fire extinguishers must be— (a) provided as listed in (3) and (4); and (b) for a Class 2, 3 or 5 building or Class 4 part of a building, provided— (i) to serve the whole Class 2, 3 or 5 building or Class 4 part of a building where one or more internal fire hydrants are installed; or (ii) where internal fire hydrants are not installed, to serve any fire compartment with a floor area greater than 500 m^2, and for the purposes of this clause, a sole-occupancy unit in a Class 2 or 3 building or Class 4 part of a building is considered to be a fire compartment; and (c) subject to (2), selected, located and distributed in accordance with Sections 1, 2, 3 and 4 of AS 2444. (3) In Class 2 to 9 buildings (except within sole-occupancy units of a Class 9c building), portable fire extinguishers must be provided as follows: (a) To cover Class AE or E fire risks associated with emergency services switchboards. (b) To cover Class F fire risks involving cooking oils and fats in kitchens.

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					(c) To cover Class B fire risks in locations where flammable liquids in excess of 50 litres are stored or used (not including that held in fuel tanks of vehicles). (d)To cover Class A fire risks in normally occupied fire compartments less than 500 m^2 not provided with fire hose reels (excluding open-deck carparks). (e)To cover Class A fire risks in classrooms and associated corridors in primary and secondary schools not provided with fire hose reels. (f) To cover Class A fire risks associated with a Class 2, 3 or 5 building or Class 4 part of a building. (5) For the purposes of (3) and (4): (a) Fire risks are defined in accordance with AS 2444. (b) An emergency services switchboard is one which sustains emergency equipment operating in the emergency mode. (c) A Class E fire extinguisher need only be located at each nurses' station, supervisors' station or the like. (d) Additional extinguishers may be required to cover fire risks in relation to special hazards provided for in E1D17. (e) The fire risks in a Class 2 or 3 building or Class 4 part of a building must include risks within any sole-occupancy units, however portable fire extinguishers are not required to be located within a sole-occupancy unit unless the sole-occupancy unit has a floor area greater than 500 m^2. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
Part E2 Smoke hazard management					
E2D3 Air handling systems other than as part of a smoke hazard management system [2019: E2.2]				X	(1) An air-handling system which does not form part of a smoke hazard management system in accordance with E2D4 to E2D20 and which recycles air from one fire compartment to another fire compartment or operates in a manner that may unduly contribute to the spread of smoke from one fire compartment to another fire compartment must, subject to (2), be designed and installed— (a) to operate as a smoke control system in accordance with AS 1668.1; or (b) such that it— (i) incorporates smoke dampers where the air-handling ducts penetrate any elements separating the fire compartments served; and (ii) is arranged such that the air-handling system is shut down and the smoke dampers are activated to close automatically by smoke detectors complying with clause 7.5 of AS 1670.1. (3) Miscellaneous air-handling systems covered by Sections 5 and 6 of AS 1668.1 serving more than one fire compartment (other than a carpark ventilation system) and not forming part of a smoke hazard management system must comply with these Sections of the Standard. (4) A smoke detection system must be installed in accordance with S20C6 to operate AS 1668.1 systems that are provided for zone pressurisation and automatic air pressurisation for fire-isolated exits.

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					Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification
Part E4 Visibility in an emergency, exit signs and warning systems					
E4D2 Emergency lighting requirements [2019: E4.2]				X	An emergency lighting system must be installed— (b) in every storey of a Class 5, 6, 7, 8 or 9 building where the storey has an area more than 300 m2— (i) in every passageway, corridor, hallway, or the like, that is part of the path of travel to an exit; and (ii) in any room having a floor area more than 100 m2 that does not open to a corridor or space that has emergency lighting or to a road or open space; and (iii) in any room having a floor area more than 300 m2 ; and (d) in every required non-fire-isolated stairway; and ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
E4D4 Design and operation of emergency lighting [2019: E4.4]				X	Every required emergency lighting system must comply with AS/NZS 2293.1. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
E4D5 Exit signs [2019: E4.5]				X	An exit sign must be clearly visible to persons approaching the exit, and must be installed on, above or adjacent to each— (b) door from an enclosed stairway, passageway or ramp at every level of discharge to a road or open space; and (d) door serving as, or forming part of, a required exit in a storey required to be provided with emergency lighting in accordance with E4D2. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
E4D6 Direction signs [2019: E4.6]				X	If an exit is not readily apparent to persons occupying or visiting the building then exit signs must be installed in appropriate positions in corridors, hallways, lobbies, and the like, indicating the direction to a required exit. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
E4D8 Design and operation of exit signs [2019: E4.8]				X	Every required exit sign must— (a) comply with— (i) AS/NZS 2293.1; or (ii) for a photoluminescent exit sign, Specification 25; and (b) be clearly visible at all times when the building is occupied by any person having the right of legal entry to the building ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
E4D9				X	An emergency warning and intercom system complying, where applicable, with AS 1670.4 must be installed— (a) in a building with an effective height of more than 25 m; and

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Emergency warning and intercom systems [2019: E4.9]					***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					
F1D2 Application of Part [New for 2022]				X	(1) F1D4 and F1D5 do not apply to a roof with a covering complying with F3D2(a) to (d). (2) F1D3 to F1D5 do not apply to a balcony, podium or similar horizontal surface part of a building— (a) where the flooring is of timber decking or other perforated flooring; or (b) which is located directly above ground.
F1D6 Damp-proofing [2019: F1.9]				X	(1) Except for a building covered by (3), moisture from the ground must be prevented from reaching— (a) the lowest floor timbers and the walls above the lowest floor joists; and (b) the walls above the damp-proof course; and (c) the underside of a suspended floor constructed of a material other than timber, and the supporting beams or girders. (2) Where a damp-proof course is provided, it must consist of— (a) a material that complies with AS/NZS 2904; or (b) impervious sheet material in accordance with AS 3660.1. (3) The following buildings need not comply with (1): (a) A Class 7 or 8 building where in the particular case there is no necessity for compliance. (b) A garage, tool shed, sanitary compartment, or the like, forming part of a building used for other purposes. (c) An open spectator stand or open-deck carpark.
F1D7 Damp-proofing of floors on the ground [2019: F1.10]				X	(1) If a floor of a room is laid on the ground or on fill, moisture from the ground must be prevented from reaching the upper surface of the floor and adjacent walls by the insertion of a vapour barrier in accordance with AS 2870. (2) The requirements of (1) do not apply where— (a) weatherproofing is not required; or (b) the floor is the base of a stair, lift or similar shaft which is adequately drained by gravitation or mechanical means.
Part F3 Roof and wall Cladding					
F3D1 Deemed-to Satisfy Provisions [New for 2022]			X		(1) Where a Deemed-to-Satisfy Solution is proposed, Performance Requirement F3P1 is satisfied by complying with F3D2 to F3D5. (2) Where a Performance Solution is proposed, the relevant Performance Requirements must be determined in accordance with A2G2(3) and A2G4(3) as applicable.
F3D3 Sarking				X	Sarking-type material used for weatherproofing of roofs and walls must comply with AS 4200.1 and AS 4200.2.

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[2019: F1.6]					***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
F3D4 Glazed assembles [2019: F1.13]				X	(1) Subject to (2) and (3), the following glazed assemblies in an external wall, must comply with AS 2047 requirements for resistance to water penetration: (a) Windows. (b) Sliding and swinging glazed doors with a frame, including French and bi-fold doors with a frame. (c) Adjustable louvres. (d) Shopfronts. (e) Window walls with one piece framing. (2) The following buildings need not comply with (1): (a) A Class 7 or 8 building where in the particular case there is no necessity for compliance. (b) A garage, tool shed, sanitary compartment, or the like, forming part of a building used for other purposes, except where the construction of the garage, tool shed, sanitary compartment or the like contributes to the weatherproofing of the other part of the building. (3) The following glazed assemblies need not comply with (1): (a) All glazed assemblies not in an external wall. (b) Revolving doors. (c) Fixed louvres. (d) Skylights, roof lights and windows in other than the vertical plane. (e) Sliding and swinging glazed doors without a frame. (f) Windows constructed on site and architectural one-off windows, which are not design tested in accordance with AS 2047. (g) Second-hand windows, re-used windows and recycled windows. (h) Heritage windows. ***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. (2) The following buildings need not comply with (1): (a) A Class 7 or 8 building where in the particular case there is no necessity for compliance. (b) A garage, tool shed, sanitary compartment, or the like, forming part of a building used for other purposes, except where the construction of the garage, tool shed, sanitary compartment or the like contributed to the weatherproofing of another part of the building that is required to be weatherproofed. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***

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Part F4 Sanitary and other facilities					
F4D4 Facilities in Class 3 to 9 buildings [2019: F2.3]				X	(1) Except where permitted by (3), separate sanitary facilities for males and females must be provided for Class 5 or 7 buildings in accordance with Tables F4D4a to F4D4l, as appropriate. (3) If not more than 10 people are employed, a unisex facility may be provided instead of separate facilities for each sex. (5) Employees and the public may share the same facilities in a Class 6 and 9b building (other than a school or early childhood centre) provided the number of facilities provided is not less than the total number of facilities required for employees plus those required for the public. (6) Adequate means of disposal of sanitary products must be provided in sanitary facilities for use by females. (11) Not less than one washbasin must be provided where closet pans or urinals are provided. **Compliance commentary** • Provide clarification on the sanitary facilities available for the building managers office. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
Part F5 Room heights					
F5D2 Height of rooms and other spaces [2019: F3.2]		X			(3) The height of rooms and other spaces in a Class 5, 6, 7 or 8 building must be not less than— (a) except as allowed in (b) and (8) — 2.4 m; and (b) a corridor, passageway, or the like — 2.1 m. (8) The height of rooms and other spaces in any building must be not less than— (a) for a bathroom, shower room, sanitary compartment, other than an accessible adult change facility, airlock, store room, garage, car parking area, or the like — 2.1 m; and (c) above a stairway, ramp, landing or the like — 2 m measured vertically above the nosing line of stairway treads or the floor surface of the ramp, landing or the like; and **Compliance commentary** • Head heights for the storage rooms need to be shown on the plans so that compliance can be determined. Part (8)(a) of this clause requires that the storage rooms achieves a minimum head height of 2.1 m. • Storage room 1 (basement level), will not likely achieve a minimum head height of 2.1 m as required by part (8)(a) of this clause, which will not comply.

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					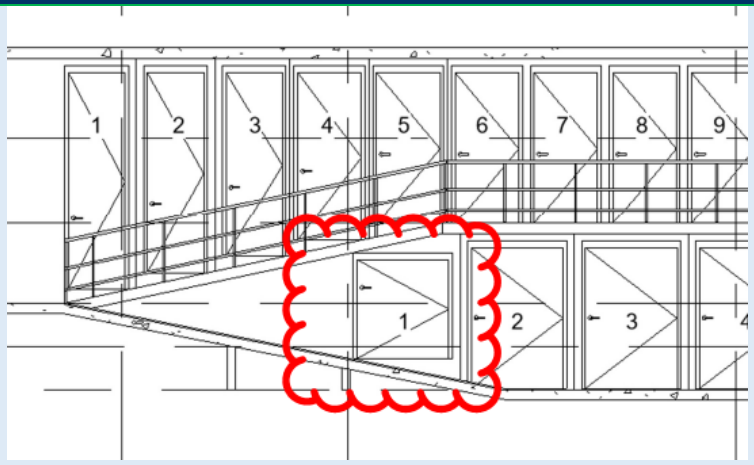 • The head height above the stairway must be clearly shown on the plans to achieve a head height not less than 2 m. This could not be determined as compliant. • The corridors along the storage rooms must be shown on plans to have a head height of not less than 2.1 m in accordance with part (3)(b) of this clause. • The lower level of the building managers office has been calculated to have a head height less than 2.4 m, which does not comply with part (3)(a) of this clause. • The upper level of the building managers office must achieve a head height not less than 2.4 m, this could not be determined on the plans. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
Part F6 Light and Ventilation					
F6D5 Artificial lighting [2019: F4.4]				X	(1) Artificial lighting must be provided— (a) in required stairways, passageways, and ramps; and (b) if natural light of a standard equivalent to that required by F6D3 is not available, and the periods of occupation or use of the room or space will create undue hazard to occupants seeking egress in an emergency, in— (iii) Class 3, 5, 6, 7, 8 and 9 buildings — to all rooms that are frequently occupied, all spaces required to be accessible, all corridors, lobbies, internal stairways, other circulation spaces and paths of egress. (2) The artificial lighting system must comply with AS/NZS 1680.0. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
F6D6 Ventilation of rooms [2019: F4.5]				X	A habitable room, office, shop, factory, workroom, sanitary compartment, bathroom, shower room, laundry and any other room occupied by a person for any purpose must have— (a) natural ventilation complying with F6D7; or (b) a mechanical ventilation or air-conditioning system complying with AS 1668.2 and AS/NZS 3666.1. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***

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BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
F6D7 Natural ventilation [2019: F4.6]				X	(1) Natural ventilation provided in accordance with F6D6(a) must consist of openings, windows, doors or other devices which can be opened— (a) with a ventilating area not less than 5% of the floor area of the room required to be ventilated; and (b) open to— (i) a suitably sized court, or space open to the sky; or (ii) an open verandah, carport, or the like; or (iii) an adjoining room in accordance with F6D8. (2) The requirements of (1)(a) do not apply to a Class 8 electricity network substation. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
F6D8 Ventilation borrowed from adjoining room [2019: F4.7]				X	Natural ventilation to a room may come through a window, opening, door or other device from an adjoining room (including an enclosed verandah) if both rooms are within the same sole-occupancy unit or the enclosed verandah is common property, and— (b) in a Class 5, 6, 7, 8 (except a Class 8 electricity network substation) or 9 building— (i) the window, opening, door or other device has a ventilating area of not less than 10% of the floor area of the room to be ventilated, measured not more than 3.6 m above the floor; and (ii) the adjoining room has a window, opening, door or other device with a ventilating area of not less than 10% of the combined floor areas of both rooms; and (c) the ventilating areas specified in (a) and (b) may be reduced as appropriate if direct natural ventilation is provided from another source ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
Section J Energy Efficiency					
Section J Energy Efficiency				X	***An assessment under Section J has not been completed. AED recommend that a suitably qualified Energy Consultant is engaged to complete this assessment.***

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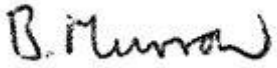
5.0 CONCLUSION

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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