

BUILDING CONTROL GROUP



Project: **NORTH CRONULLA SURF LIFESAVING CLUB,
62 PRINCE STREET CRONULLA NSW 2230**

Report: **Updated BCA AUDIT REPORT**

Reference: 160299 -BCA Audit Report (03)

Date: 5th February 2019

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DOCUMENT CONTROL

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TABLE OF CONTENTS

	PAGE
PART 1 BASIS OF ASSESSMENT	4
1.1 Location and Description	4
1.2 Audit Objectives.....	4
1.3 Audit Scope and Criteria.....	5
1.4 Limitations of the Audit	6
1.5 Date of Audit.....	6
1.6 Audit Client.....	6
1.7 Access.....	6
1.8 Future Building Alterations.....	6
1.9 FRNSW Referrals.....	6
PART 2 BUILDING DESCRIPTION	7
2.1 Rise in Storeys (Clause C1.2).....	7
2.2 Classification (Clause A3.2).....	7
2.3 Effective Height (Clause A1.1)	7
2.4 Type of Construction Required (Table C1.1)	8
2.5 Floor Area and Volume Limitations (Table C2.2).....	8
2.6 Fire Compartments.....	8
2.7 Exits	8
PART 3 ESSENTIAL FIRE SAFETY MEASURES.....	9
PART 4 ASSESSMENT OF THE FIRE SAFETY MATTERS	10
4.1 Discretion	10
4.2 Performance Based Design – Alternate Solutions.....	10
4.3 Clause by Clause Assessment	10
PART 5 PROPOSED UPGRADE STRATEGY.....	24
5.1 General	24
5.2 Base Building Upgrading Works	24

PART 1 BASIS OF ASSESSMENT

1.1 Location and Description

This audit report was originally prepared at the request of *Bergstrom Architects Pty Ltd* for the **North Cronulla Surf Club** at 62 Prince Street Cronulla as shown below. This report comprises a Building Code of Australia 2016 audit assessment of the existing buildings as represented at an inspection by the author of this report on **11th July 2016** and is understood to be primarily for the purposes of Parts C, D and E of the BCA.

This report has been updated as a result of further design development during the development application process with Sutherland Shire Council.

The interconnected buildings comprise/propose a bar, multi-purpose function rooms, retail tenancies, commercial kitchen, general store rooms, lifeguard facilities, ancillary offices, changing rooms/sanitary facilities, gym, swimming pool and a caretaker's residence.



This report also aids in support of recent legislation changes regarding fire safety matters for existing buildings to identify any significant fire safety issues that may be brought to council's attention through the lodgement of any Part 4A Certificates or Complying Development Certificates (CDC's) by a Certifying Authority.

1.2 Audit Objectives

The purpose of this report is to assess the existing building against the Deemed-to-Satisfy (DTS) provisions of **Sections of C, D and E** of the BCA 2016, and to clearly outline those areas where compliance is not achieved in relation to fire and life safety.

If the proposed buildings are to be considered for a **Change of Use** in the future, Category 1 fire safety measures must be considered and implemented into the proposed design in accordance with Clause 143 - Fire protection and structural capacity, as applicable.

Category 1 Fire Safety measures are as follows:

- i. **EP1.3:** A fire hydrant system.
- ii. **EP1.4:** An automatic fire suppression system.
- iii. **EP1.6:** Suitable facilities must be provided to the degree necessary in a building to co-ordinate fire brigade intervention.
- iv. **EP2.1:** Sleeping Accommodation, occupants must be provided with automatic warning on the detection of smoke.
- v. **EP2.2:** Conditions in any evacuation route must be maintained for the period of time occupants take to evacuate
- vi. **EP3.2:** One or more passenger lifts fitted as emergency lifts to serve each floor served by the lifts in a building must be installed to facilitate the activities of the fire brigade and other emergency services personnel.

Details of the above will need to be identified on the Building Fire Safety Schedule/Statement as present. If not present, these measures will need to be installed in the building, as applicable to the proposed works.

This report will also aid in support of recent legislation changes regarding fire safety matters for existing buildings and to identify any **significant fire safety matters** that should be brought to council's attention through the lodgement of any Part 4A certificates and/or Complying Development Certificates (CDC's) by the Certifying Authority in accordance with clauses 129D and 162D of the Environmental Planning and Assessment Regulation 2000.

Typical examples of issues that may be considered 'significant' for fire safety include:

- a) *Inadequate fire-resistance of building elements*
- b) *Inadequate fire compartmentalisation*
- c) *Multi-storey buildings with only a single exit, when two or more would be expected*
- d) *Open stairways connecting multiple storeys when fire-isolated stairways would be expected*
- e) *Buildings with obvious unauthorised and unacceptable modifications*
- f) *Missing or damaged fire safety measures of significance*
- g) *Obstructions to major escape routes*
- h) *Obstructions to access or facilities for fire fighters*
- i) *Excessive combustible materials*
- j) *Overcrowding*
- k) *Buildings with obvious unacceptable uses.*

The report will identify any fire safety issues and the parts of the building affected by the issues, (if any) and is a proof of concept report for the approval of the Council as a part of a possible future Fire Order Process, should Council issue an order under Section 121B of the Environmental Planning and Assessment Act.

Please note that this report is not a tender specification and is not to be used for tendering purposes.

1.3 Audit Scope and Criteria

The scope and criteria of the audit is limited to:

- A. A visual (non-destructive) inspection of the buildings, with no inspection of ceiling cavities, shafts, and the like unless specifically mentioned; and
- B. An assessment of documentation as provided by *Bergstrom Architects*.
- C. The Deemed-to-Satisfy provisions of the National Building Code of Australia 2016 (including the NSW variations where applicable), with a focus of Parts C, D and E of the BCA.

1.4 Limitations of the Audit

This report does not include nor imply any detailed assessment for design, compliance or upgrading for:

- (a) BCA Sections B, F*, H, G, I and J for the existing building;
- (b) external areas of the property (unless specifically referred to);
- (c) all inaccessible parts of a tenanted space/s;
- (d) the structural adequacy or design of the buildings;
- (e) the inherent derived fire-resistance ratings of any existing structural elements of the buildings (unless specifically referred to); and
- (f) the design basis and/or operating capabilities of any existing or proposed electrical, mechanical or hydraulic fire protection services;

This report does not include, or imply compliance with:

- The National Construction Code – Plumbing Code of Australia Volume 3;
- The Disability Discrimination Act, including the Disability (Access to Buildings) Standards 2010;
- Demolition Standards not referred to by the BCA;
- Work Health and Safety Act;
- Construction Safety Act
- Occupational Health and Safety Act and Regulations.
- Local Government Act and Regulations.
- The Swimming Pools Act 1992;
- Requirements of other Regulatory Authorities including, but not limited to, Telstra, Water Supply Authority, Electricity Supply Authority, WorkCover, RMS, Council and the like; and
- Any conditions of any Development Consent.
- *Building Control Group Pty Ltd* cannot guarantee acceptance of this report by the Local Council, NSW Fire Brigades or other approval authorities.

1.5 Date of Audit

The audit was carried out on the 16th July 2016.

1.6 Audit Client

The audit was carried out on behalf of Cecille Cura of *Bergstrom Architects Pty Ltd*.

1.7 Access

Access was provided to the majority of areas nominated on the referenced plans.

1.8 Future Building Alterations

Where further building alterations or a further change of occupancy occurs, the validity of this upgrade strategy may be compromised, and further analysis may be required.

1.9 FRNSW Referrals

In accordance with Clause 144 of the EP & A Regulations 2000, where a building is proposed to have a fire compartment size greater than 2,000m² or a building with total floor area of more than 6,000m² and is subject to an application for a Construction Certificate for erection, rebuilding, alteration, enlargement or extension and include an alternative solution to meet the performance requirements contained in any one or more of the Category 2 fire safety provisions (CP9, EP1.3, EP1.4, EP1.6, EP2.2 and EP3.2). An application for an Initial Fire Safety Report is required to be lodged with FRNSW by the Accredited Certifier / PCA.

PART 2 BUILDING DESCRIPTION

For the purposes of the Building Code of Australia (BCA) the development may be described as follows.

2.1 Rise in Storeys (Clause C1.2)

The building has a maximum rise-in-storeys of three (3).

2.2 Classification (Clause A3.2)

The existing building has been classified as follows:

Class	Level	Description	Floor Area* ² (m ²)	Population
6	Ground Floor	Kiosk	76	25
6	Ground Floor	BBQ Bar	12	8 seats
7b	Ground Floor	Eq. Store	470	16
9b	Ground Floor	First Aid	38	4
9b* ¹	Ground Floor	Changing Rooms / Sanitary Facilities	N/A	TBC* ¹
9b	Ground Floor	Ex. Gym	129	43
5	Ground Floor	Ex. Office / Reception	40	4
10b	Ground Floor	Ex. Swimming Pool	268	TBC* ¹
6	First Floor	'Commercial' (Restaurant)	450 + 92.5 (-30%)* ³	380* ³
9b	First Floor	Nippers Area & Training Area	110	37
9b	First Floor	Ex. Function Room	157	157
6/9b* ¹	First Floor	Ex. Kitchen / Store / Sanitary Facilities	N/A	TBC* ¹
4	First Floor	'Operational'	N/A	2
6/9b	Second Floor	Function Room / Bar / Terrace	225	225
6/9b*	Second Floor	Kitchen / Store / Sanitary Facilities	N/A	TBC* ¹

*Note:

- 1) Use of area is classified as **ancillary to the primary use**. It has been assessed that there is no permanent occupation of these areas and the final use / proposed staff numbers are to be confirmed.
- 2) Approximate GFA calculations have been included and should be used for any other purposes other than demonstrating BCA Compliance. Final area calculations are to be confirmed by the Architect or alternatively maximum permissible occupant numbers are to be confirmed by the Tenants/Owner.
- 3) Allowances have been applied (30%) to consider un-occupiable area such as equipment, furnishings and transient areas (corridors etc.).

2.3 Effective Height (Clause A1.1)

The building has an effective height of less than 12m, being:

Second Floor RL 15.275 – Ground Floor RL 7.50 = 7.775m

2.4 Type of Construction Required (Table C1.1)

The buildings are required to be of Type A Construction, noting that a Function Room (Class 9b) is proposed to the top storey.

2.5 Floor Area and Volume Limitations (Table C2.2)

The building is subject to maximum floor area and volume limits of:-

• Class 6, 7, 8 -	Maximum Floor Area	5,000m ²
	Maximum Volume	30,000m ³
• Class 5, 9b -	Maximum Floor Area	8,000m ²
	Maximum Volume	48,000m ³

2.6 Fire Compartments

The fire compartments have yet to be confirmed. However, at present it is perceived that the building will be considered as a single fire compartment due to the connection of the non-fire isolated stairs and lift shafts.

Where further information is provided detailing fire walls with respect to additional BCA requirements, the design will need to be re-assessed.

2.7 Exits

The following points in the building have been considered as the exits:

- i. Fire Isolated Stairs (Ex Stair 1 & 2, Egress Stair)
- ii. Non-fire isolated stairs (Egress Stair 1, Stair 4 to 'Nippers' & Stair 3)
- iii. External exit perimeter door

PART 3 ESSENTIAL FIRE SAFETY MEASURES

The following fire safety measures are likely to be required as part of the proposed works.

Upon presentation of the building's Annual Fire Safety Statement it will be possible to confirm the standard of performance to which the existing services have installed to.

Item	Current Essential Fire Safety Measure	Minimum Standard of Performance
1.	Access Panels, doors and hoppers to fire resisting shaft	BCA C3.13 & AS1905.1-2005
2.	Automatic fail-safe devices	BCA Part D2.19 & D2.21
3.	Automatic fire suppression system	BCA E1.5, Spec E1.5 & AS 2118.1-1999
4.	Emergency lighting	BCA E4.2, E4.4 & AS/NZS 2293.1-2005
5.	Exit signs	BCA E4.5, E4.6. & E4.8, AS/NZS 2293.1-2005
6.	Fire hydrant systems	BCA E1.3 AS2419.1-2005
7.	Fire seals protecting openings in fire resisting components of the building	BCA C3.12, C3.15, Spec. C3.15
8.	Hose reel system	BCA E1.4 & AS2441-2005
9.	Lightweight construction	BCA C1.8 & Spec C1.8
10.	Mechanical air handling system	BCA E2.2, Spec E2.2b & AS/NZS 1668.1-2015
11.	Portable fire extinguishers	BCA E1.6 & AS2444-2001

PART 4 ASSESSMENT OF THE FIRE SAFETY MATTERS

4.1 Discretion

The primary objective of any upgrading works is to achieve a means of fire and occupant safety within the context of the objectives of the Building Regulations (i.e. the BCA) namely: -

- (i) to protect persons using the building and to facilitate their egress from the building in the event of a fire, and
- (ii) to restrict the spread of fire from the building to other buildings nearby

The items referred to within the following pages clearly identify the existing deficiencies when the deemed-to-satisfy provisions of BCA are applied prescriptively to the existing building.

With existing buildings strict compliance with the prescriptive deemed-to-satisfy provisions of the BCA is often unlikely and/or impractical without carrying out significant reconfiguration of the existing building due to the age, use or the existing architectural design of the building.

In addition, and with respect to an existing building, Council have discretion under Sections 93 and 94 of the *Environmental Planning and Assessment Act 1979* as to the level of upgrading required, if any, at the Development Consent Stage for any future works, or discretion is available under a Council Fire Order.

4.2 Performance Based Design – Alternate Solutions

Based on a review of all available documentation no existing Fire Engineered Alternate Solutions have been identified within the building. Thus, it has been assumed for the purposes of this report that the original base building and subsequent internal alterations and modifications have been undertaken in accordance with the Deemed-to-Satisfy provisions of the BCA and/or the original prescriptive requirements of the BCA/Ordinance 70 unless otherwise advised.

4.3 Clause by Clause Assessment

Outlined below is a detailed fire safety audit checklist of the Deemed-to-Satisfy Provisions of the Building Code of Australia (BCA) including the State variations where applicable.

The abbreviations outlined below have been used in the following tables.

N/A	-	Not Applicable. The Deemed-to-Satisfy clause does not apply to the subject building.
Complies	-	The relevant provisions of the Deemed-to-Satisfy clause have been generally satisfied or a reasonable level of compliance has been achieved to warrant no further upgrade.
CRA	-	'COMPLIANCE READILY ACHIEVABLE'. It is considered that there was not enough information included in the documentation to accurately determine strict compliance with the individual clause requirements. However, subject to noting the requirements of each clause, compliance can be readily achieved.

This information may be included in other documentation, which was not forwarded to this office for assessment, such as door schedules, electrical, mechanical and hydraulic design documentation or architectural specifications.

- Discretion - Given the physical and practical constraints and limitations that are present within the existing building, it would not be unreasonable for Council to apply its discretion in relation to this matter.
- FI - Further Information is necessary to determine the compliance potential of the building.
- PS - A Performance Solution with respect to this Deemed-to-Satisfy Provision is necessary to satisfy the relevant Performance Requirements to justify the existing building non-compliance.
- DNC - Does Not Comply – Upgrading works required, see Part 5.2 and 5.3 of this report

Clause	Comment	Status
SECTION C: FIRE RESISTANCE		
PART C1 – FIRE RESISTANCE AND STABILITY		
C1.0: Deemed-to-Satisfy Provisions	Noted	-
C1.1: Type of Construction Required	The building is required to be of Type A Construction.	Noted
C1.2: Calculation of Rise in Storeys	The base building has a rise-in-storeys of three (3).	Noted
C1.3: Buildings of Multiple Classification	Not Applicable to development.	N/A
C1.4: Mixed Types of Construction	The building is considered to be of a single type of construction, (Type A).	Noted
C1.5: Two Storey Class 2, 3 or 9c Buildings	Not Applicable to development.	N/A
C1.6: Class 4 Parts of Buildings	Not Applicable to development.	N/A
C1.7: Open Spectator Stands and Indoor Sports Stadiums	Not Applicable to development.	N/A
C1.8: Lightweight Construction	Based on the onsite inspection, lightweight construction has potentially been used throughout the development. Structural Engineer is to confirm if any lightweight construction has been used for the fire resisting covering of any structural elements.	Refer Part 5 of Report.
C1.10: Fire Hazard Properties	All new materials are to comply with Fire hazard indices as per Specification C1.10 and to be verified with any future proposed refurbishment works.	CRA
C1.11: Performance of External Walls in Fire	Not Applicable to development.	N/A
C1.12: Non-combustible Materials	For information only.	Noted
PART C2 - COMPARTMENTATION AND SEPARATION		
C2.0: Deemed-to-Satisfy Provisions	Noted	-
C2.1: Application of Part	Noted	-
C2.2: General Floor Area and Volume Limitations	All fire compartments are within area and volume limitations requiring no further compartmentation or separation for the purposes of this clause.	Complies
C2.3: Large Isolated Buildings	The building has not been considered as a large isolated building under this clause.	N/A
C2.4: Requirements for Open Spaces and Vehicular Access	Not Applicable to development	N/A
C2.5: Class 9a and 9c Buildings	Not Applicable to development	N/A
C2.6: Vertical Separation of Openings in External Walls	As the existing building is provided with a sprinkler, spandrel separation is not required to be provided. It is our understanding that all new proposed works will also incorporate sprinkler protection.	Complies

Clause	Comment	Status
SECTION C: FIRE RESISTANCE		
C2.7: Separation by Fire Walls	See further comments with regards to BCA Clause C2.7 - Separation of Classifications in the Same Storey. Where fire walls are proposed the FRLs as specified in Table 3 of Spec. C1.1 are to be proposed.	Refer Part 5 of Report.
C2.8: Separation of Classifications in the Same Storey	Due to the separate classifications on each floor it is recommended that a Fire Engineer is consulted to review and address the different FRLs required for each classification. Where an alternative solution is not proposed to rationalise FRLs in adjacent classifications, firewalls will be required to separate different classifications with FRLs as specified in Table 3 of Spec. C1.1.	Refer Part 5 of Report.
C2.9: Separation of Classifications in Different Storeys	Separation of classifications is required to be provided to each floor in conjunction with any future refurbishment works. Timber floors were noted to numerous parts of the building and it is perceived that the requirements of Spec. C1.1 will not be achieved for FRLs & Non-Combustible Construction. Where DtS construction and/or FRLs cannot be achieved it is recommended that a Fire Engineer is consulted to review and address any non-compliances.	Refer Part 5 of Report.
C2.10: Separation of Lift Shafts	The lift is not required to be located in a fire isolated shaft as the lift only connects 3 storeys and the existing building is sprinkler protected.	Complies
C2.11: Stairways and Lifts in One Shaft	The lift and the stairways appear to be in separate shafts. However, as the building is provided with a sprinkler system neither are required to be provided in separate fire isolated shafts.	Complies
C2.12: Separation of Equipment	(a) Equipment other than that described in (b) and (c) must be separated from the remainder of the building with construction complying with (d), if that equipment comprises— (i) lift motors and lift control panels; or (ii) emergency generators used to sustain emergency equipment operating in the emergency mode; or (iii) central smoke control plant; or (iv) boilers; or (v) a battery or batteries installed in the building that have a voltage exceeding 24 volts and a capacity exceeding 10 ampere hours. (b) Equipment need not be separated in accordance with (a) if the equipment comprises— (i) smoke control exhaust fans located in the air stream which are constructed for high temperature operation in accordance with Specification E2.2b; or (ii) stair pressurising equipment installed in compliance with the relevant provisions of AS/NZS 1668.1; or (iii) a lift installation without a machine-room; or (iv) equipment otherwise adequately separated from the remainder of the building. (c) Separation of on-site fire pumps must comply with the requirements of AS 2419.1. (d) Separating construction must have— (i) except as provided by (ii)— (A) an FRL as required by Specification C1.1, but not less than 120/120/120; and (B) any doorway protected with a self-closing fire door having an FRL of not less than –/120/30; or (ii) when separating a lift shaft and lift motor room, an FRL not less than 120/–/–.	Noted

Clause	Comment	Status
SECTION C: FIRE RESISTANCE		
C2.13: Electricity Supply System	Access was not achievable to all ancillary areas therefore the Electrical Consultant is to confirm the presence and compliance for any existing/proposed electricity supply systems.	Noted
C2.14: Public Corridors in Class 2 and 3 Buildings	Not applicable to development.	N/A
PART C3 – PROTECTION OF OPENINGS		
C3.0: Deemed-to-Satisfy Provisions	Noted	-
C3.1: Application of Part	Noted	-
C3.2: Protection of Openings in External Walls	Boundary lines are to be clearly notated on the Architectural Plans to ensure there are no openings located within 3m of a side/rear boundary.	FI Refer Part 5 of Report.
C3.3: Separation of External Walls and Associated Openings in Different Fire Compartments	The entire building has been considered as a single fire compartment. Where the building is no longer considered as a single fire compartment the requirements of this clause will be required to be re-assessed.	N/A
C3.4: Acceptable Methods of Protection	Where nominated elsewhere in this report, the options adopted under this clause should be applied.	Noted
C3.5: Doorways in Fire Walls	At present fire walls separating different portions of the building are not proposed and therefore do require protection of doorways covered by this clause. Where fire walls are proposed the requirements of this clause will be required to be re-assessed.	N/A
C3.6: Sliding Fire Doors	There are no sliding fire doors evident to the development.	N/A
C3.7: Protection of Doorways in Horizontal Exits	There are no required horizontal evident to the development.	N/A
C3.8: Openings in Fire-isolated Exits	Fire-isolated exits are not required.	N/A
C3.9: Service Penetrations in Fire-isolated Exits	Not applicable to development.	N/A
C3.10: Openings in Fire-isolated Lift Shafts	Not Applicable to development, however, any future proposed internal lift is to comply with this clause.	N/A
C3.11: Bounding Construction: Class 2, 3 and 4 Buildings	Not applicable to development.	N/A
C3.12: Openings in Floors and Ceilings for Services	There was no evidence of shafts within the building; however, a separate audit should be undertaken by a fire protection consultant to determine the extent of compliant service penetrations through floors and ceilings given the building warrants Type A construction.	Refer Part 5 of Report.
C3.13: Openings in Shafts	Where shafts exist, a separate audit should be undertaken by a fire protection specialist to determine the extent of compliant service penetrations through floors and ceilings given the building warrants Type A construction.	Refer Part 5 art 4 of Report.
C3.15: Openings for Service Installations	Where services (e.g. hydraulic, mechanical, plumbing, electrical) penetrate a building element that is required to achieve an FRL with respect to integrity or insulation or a resistance to the incipient spread of fire then that installation must be protected / sealed (e.g. fire collars, fire dampers etc) by material that is identical to tested prototypes and in accordance with AS4072.1 and AS1530.4, and having achieved the required FRL or resistance to the incipient spread of fire or other specified method. It is recommended that a detailed audit of the building is undertaken by an appropriately qualified fire protection consultant to confirm upgrade/remediate all such	Refer Part 5 of Report.

Clause	Comment	Status
SECTION C: FIRE RESISTANCE		
	penetrations, including any fire dampers and their effective operation.	
C3.16: Construction Joints	Construction joints are to be installed in accordance with a tested prototype in accordance with AS1530.4.	Note
C3.17: Columns Protected with Lightweight Construction to Achieve an FRL	Based on the onsite inspection, lightweight construction has potentially been used throughout the development. Structural is to confirm if any lightweight construction has been used for the fire resisting covering of any structural elements.	Refer Part 5 of Report.
SPECIFICATION C1.1 – FIRE-RESISTING CONSTRUCTION		
2.0: General Requirements	Noted	-
2.1: Exposure to Fire-Source Features	A part of a building element is exposed to a fire-source feature if any of the horizontal straight lines between that part and the fire-source feature, or vertical projection of the feature, is not obstructed by another part of the building that— - has an FRL of not less than 30/—/—; and - is neither transparent nor translucent. A part of a building element is not exposed to a fire-source feature if the fire-source feature is— - an external wall of another building that stands on the allotment and the part concerned is more than 15 m above the highest part of that external wall; or - a side or rear boundary of the allotment and the part concerned is below the level of the finished ground at every relevant part of the boundary concerned. If various distances apply for different parts of a building element— - the entire element must have the FRL applicable to that part having the least distance between itself and the relevant fire-source feature; or - each part of the element must have the FRL applicable according to its individual distance from the relevant fire-source feature, but this provision does not override or permit any exemption from Clause 2.2. For Information Only	Noted
2.2: Fire Protection for a Support of Another Part	Where a part of a building required to have an FRL depends upon direct vertical or lateral support from another part to maintain its FRL, that supporting part must have an FRL not less than that required by other provisions of this Specification; and if located within the same fire compartment as the part it supports have an FRL in respect of structural adequacy the greater of that required for the supporting part itself and for the part it supports. For Information Only	Noted
2.3: Lintels	No lintels required to possess any FRL on site as all external walls are deemed to be non loadbearing.	N/A
2.4: Attachments Not to Impair Fire-resistance	All attachments to the external façade are of non-combustible materials being metal and glazed construction.	Noted
2.5: General Concessions	Noted.	Noted
2.6: Mezzanine Floors: Concession	There are no mezzanine floors contained within the development.	N/A
2.7: Enclosure of Shafts	Fire rated shafts are required to be enclosed, at the top and bottom, with construction having a FRL required for the walls of a non-load-bearing shaft in the same building, unless the shaft extends beyond the roof covering, with the exception of fire isolated stair and lift shafts that are to have lids with a FRL regardless.	Noted

Clause	Comment	Status
SECTION C: FIRE RESISTANCE		
	The fire isolated stairs appeared to be suitably constructed with a concrete lid.	
2.8: Carparks in Class 2 and 3 Buildings	Not Applicable to development	N/A
2.9: Residential Aged Care Building: Concession	Not Applicable to development	N/A
3.0: Type A Fire-resisting Construction	Noted	-
C3.1: Fire-resistance of Building Elements	Based on the existing construction of this building it is evident that parts of the floors are constructed of timber. Whilst the full extent of timber flooring was not determined at the time, this building has initially been assessed as Type A construction, which requires a fire rating of the floor to achieve at least an FRL for the following areas: - Class 4 – Residential/Caretakers 90mins - Class 5 – Commercial/Office 120mins - Class 6 – Retail/Café/Bar 180mins - Class 7b – Storage FRL 240mins - Class 9b – Assembly Building/Function Areas 120mins It is recommended that a Fire Engineer reviews the above proposal to confirm that a performance-based solution may be prepared to address timber construction and a rationalisation of FRLs.	Refer Part 5 of Report.
3.2: Concessions for Floors	Noted	Noted
3.3: Floor Loading of Class 5 and 9b Buildings: Concession	For information only.	Noted
3.4: Roof Superimposed on Concrete Slab: Concession	The entire rooftop slab is likely to be of concrete construction. Thus, clause is not applicable.	N/A
3.5: Roof: Concession	This concession may apply where the entire building is provided with a sprinkler system.	Noted
3.6: Rooflights	Not applicable to development as there are no roof lights apparent.	N/A
3.7: Internal Columns and Walls: Concession	Building is less than 25m in effective height and therefore may be applied.	Noted
3.8: Open Spectator Stands and Indoor Sports Stadiums: Concession	Not applicable to development	N/A
3.9: Carparks	Noted	Noted
3.10: Class 2 and 3 Buildings: Concession	Not Applicable to development.	N/A
SPECIFICATION C3.4 – FIRE DOORS, SMOKE DOORS, FIRE WINDOWS AND SHUTTERS		
1. Scope	Noted	-
2. Fire Doors	There were no existing fire doors noted in this vicinity.	N/A
3. Smoke Doors	There are currently no required smoke doors installed within the development.	N/A
4. Fire Shutters	There are currently no fire shutters to the development	N/A
SPECIFICATION C3.15 – PENETRATION OF WALLS, FLOORS AND CEILINGS BY SERVICES		
1. Scope	Noted	-
2. Application	A detailed audit of the building is recommended to upgrade all such services penetrations, as appropriate.	Refer Part 5 of Report.
3. Metal Pipe Systems		
4. Pipes Penetrating Sanitary Compartments		
5. Wires and Cables		

Clause		Comment	Status
SECTION C: FIRE RESISTANCE			
6.	Electrical Switches and Outlets		
7.	Fire-stopping		
SECTION D: ACCESS AND EGRESS			
PART D1 – PROVISION FOR ESCAPE			
D1.0:	Deemed-to-Satisfy Provisions	Noted	-
D1.1:	Application of Part	Noted	-
D1.2:	Number of Exits Required	For Class 9b buildings, not less than 2 exits must be provided from each storey.	Complies
D1.3:	When Fire-Isolated Stairways and Ramps are Required	Fire isolated stairs are not required to be provided, as no stair connects more than 3 storeys <u>and the building is provided with a sprinkler system.</u>	N/A <i>On the basis a sprinkler system is installed.</i>
D1.4:	Exit Travel Distances	Exit travel distances have been assessed and general compliance appears to be achieved.	Complies
D1.5:	Distance Between Alternative Exits	Storeys requiring two or more exits, are to have exits distributed no further than 60m and no less than 9m apart.	Complies
D1.6:	Dimensions of Exits and Paths of Travel to Exits	In a required exit or path of travel, the unobstructed height throughout must be not less than 2.7m where the corridor serves a population of more than 100 persons or alternatively 2.4m where the corridor serves a population of less than 100 persons, except the unobstructed height of any doorway must be reduced to not less than 1980mm. The unobstructed width of each exit or path of travel to an exit except a doorway must not be less than 1m. The unobstructed width must be measured clear of all obstructions such as handrails, projecting parts of balustrades or other barriers and the like. Ex Fire Stair 2 was noted as having an approximate width of 900-950mm and Ex. Fire Stair 1 was noted as having an approximate width of 600-650mm in lieu of the required 1m. It was also noted that this stair is currently used as a general access stair therefore it is recommended to be upgraded to comply with AS1428.1-2009 which will thereby further reduce the clear width of the stair. It should be generally noted that a higher number of occupants will be expected due to the public assembly nature of the building, please see the below egress width calculations for areas where it is expected for the population to exceed 100 persons.	Refer Part 5 of Report.

Part	GFA m2	Proposed Population.	Seating	Exit Width Proposed	Max. Population
Level 1					
Commercial (Restaurant)	380	380	-	Ex. Stair 1, 2, Egress Stair 1, 2, Western & Southern Stair	-
Nippers Area & Training Area	110	37	-		
Ex. Function Room	157	157	-		
Ex. Kitchen / Store / Sanitary Facilities	TBC	TBC	-		
'Operational'	N/A	2	-		
Total	647	576	-	6.5m*	740 Persons
Level 2					
Function Room / Bar / Terrace	225	225	-	Ex. Stair 1, 2 & Egress Stair 1	-
Kitchen / Store / Sanitary Facilities	TBC*1	TBC*1	-		
Total	225	225	-	2.5m*	260 Persons
*Note: Ex Fire Stair 1 & 2 egress widths have been included for the purposes of this assessment, however, due to the reduction of width to these stairs being less than 1m, it is recommended that a Fire Engineer reviews the above proposal to confirm that a performance-based solution may be prepared.					
D1.7: Travel via Fire-Isolated Exits		Fire isolated stairs are not required on the basis a sprinkler system is installed. To be confirmed at the Construction Certificate stage.			N/A On the basis a sprinkler system is installed.
D1.8: External Stairways or Ramps In lieu of Fire-Isolated Exits		External stairways are not proposed.			N/A
D1.9: Travel by Non-Fire-Isolated Stairways or Ramps		All stairways have been considered as non-fire isolated stairs, in which the discharge of each stair is required to within 20m form a doorway to a road or open space of 4m from 2 such doorways if the travel is in opposite directions.			Complies
D1.10: Discharge from Exits		Generally, the discharge of the nominated exits complies with the BCA in respect of this clause.			Complies
D1.11: Horizontal Exits		Not Applicable to development			N/A
D1.12: Non-Required Stairways, Ramps or Escalators		There are no non-required stairs to the development.			N/A
D1.13: Number of Persons Accommodated		Final confirmation of occupancy numbers is to be provided.			Refer Part 5 of Report.
D1.14: Measurement of Distances		Information only.			Noted
D1.15: Method of Measurement		Information only.			Noted
D1.16: Plant Rooms, Lift Motor Rooms and electricity network substations: Concession		There were no plants rooms that required access in accordance with this clause.			N/A
D1.17: Access to Lift Pits		Not Applicable to development			N/A
PART D2 – CONSTRUCTION OF EXITS					
D2.0: Deemed-to-Satisfy Provisions		Noted			-
D2.1: Application of Part		Noted			-
D2.2: Fire-Isolated Stairways and Ramps		Fire isolated stairs are not required.			N/A
D2.3: Non-Fire-Isolated Stairways and Ramps		All stairs appear to be of masonry construction			Complies
D2.4: Separation of Rising and Descending Stair Flights		Not applicable to the development.			N/A
D2.5: Open Access Ramps and Balconies		Not Applicable to development			N/A
D2.6: Smoke Lobbies		Not Applicable to development			N/A

D2.8: Storage under Stairs:	A space below a fire isolated stair must not be enclosed to form a cupboard or shaft or where located beneath a non-fire isolated stair be enclosed with construction achieving an FRL of 60/60/60. A storage cupboard was noted beneath the stair of the existing Northern Stair.	Refer Part 5 of Report.
D2.10: Pedestrian Ramps	The floor surface of a ramp must have a slip-resistance classification complying with Table D2.14 when tested in accordance with AS 4586.	Noted
D2.11: Fire-Isolated Passageways	Not Applicable to development	N/A
D2.12: Roof as Open Space	There are no portions of the development that are deemed to be roof as open space under this clause.	N/A
D2.13: Goings and Risers	Stair treads are to have a surface with a slip-resistance classification complying with Table D2.14 when tested in accordance with AS 4586 or a nosing strip with a slip-resistance classification complying with Table D2.14 when tested in accordance with AS 4586.	Refer Part 5 of Report.
D2.14: Landings	Landings to have either a surface with a slip-resistance classification complying with Table D2.14 when tested in accordance with AS 4586 or a strip at the edge of the landing with a slip-resistance classification complying with Table D2.14 when tested in accordance with AS 4586 where the edge leads to a flight below.	Refer Part 5 of Report.
D2.15: Thresholds	A 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 the door opens to a road or open space, external stair landing or external balcony and the doorsill is not more than 190mm above the finished surface of the ground balcony or the like to which the door opens. Also, as the buildings are required to be accessible under Part D3 of the BCA they must open to a road or open space and be provided with a threshold ramp or step ramp in accordance with AS1428.1 (2009). Multiple level changes which incorporated non-compliant thresholds were noted throughout the building contrary to the requirements of this clause.	Refer Part 5 of Report.
D2.16: Barriers to prevent falls	All balustrades are required to be a min. 1.0m in height.	Refer Part 5 of Report.
D2.17: Handrails	Singled handrails were noted as being provided to all the stairs, however double-sided handrails in accordance with AS1428.1-2009 would be generally required to all stairs.	Refer Part 5 of Report.
D2.18: Fixed Platforms, Walkways Stairways and Ladders	Not Applicable to development	N/A
D2.19: Doorways and Doors	A roller shutter may not be used as a required exit where the area it serves exceeds 200m ² . All automatic doors must fail safe open upon the activation of any detection system or power failure, these doors must also be capable of being manually opened under a force of no more than 110N.	Refer Part 5 of Report.
D2.20: Swinging Doors	A swinging door must not encroach more than 500mm on the required width of an exit or 100mm when fully open. A number of doors entering the existing stairs were noted encroaching greater more than 500mm.	Refer Part 5 of Report.
D2.21: Operation of Latch	Panic bar levers are required to be provided to any area accommodating more than 100 occupants or where the area serves less than 100 occupants lever type handles. Currently some of the required exit doors are provided with knob-style door handles and/or can only be operable with the use of a key or security device, contrary to the requirements of the BCA.	Refer Part 5 of Report.
D2.22: Re-entry from Fire-Isolated Exits	Not applicable to this development.	N/A

D2.23: Signs on Doors	Not applicable to this development.	N/A
D2.24: Protection of Openable Windows	A barrier with a height not less than 865 mm above the floor is required to an openable window— (i) in addition to window protection, when a child resistant release mechanism is required by this clause; and (ii) where the floor below the window is 4 m or more above the surface beneath.	Refer Part 5 of Report.
NSW D2.101: Doors in Path of Travel in a Place of Public Entertainment	Not Applicable to development	NA

PART D3 - ACCESS FOR PEOPLE WITH A DISABILITY

D3.0: Deemed-to-Satisfy Provisions	Disability (Access to Premises - Buildings) Standards 2010 is to be read in conjunction with the BCA. <i>Please refer to Design Confidence Access Report</i>	Refer Part 5 of Report.
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SECTION E: SERVICES AND EQUIPMENT

PART E1 – FIRE FIGHTING EQUIPMENT

E1.0: Deemed-to-Satisfy Provisions	Noted	-
E1.3: Fire Hydrants	Fire Hydrant coverage is required throughout the whole building. Hydraulic Engineer is to review and confirm compliance for the existing hydrant system to AS2419.1-2005.	Refer Part 5 of Report.
E1.4: Fire Hose Reels	Fire Hose Reel coverage is required throughout the whole building. Where proposed they are to be located within 4m of an Exit. Hydraulic Engineer is to review and confirm compliance for the existing fire hose system to AS2441-2005	Refer Part 5 of Report.
E1.5: Sprinklers	A sprinkler system was noted as being installed throughout the building, however, ordinarily a building of this nature would not require a such a system. It is perceived that the installation may have formed part of a fire safety upgrade due to the existence of timber floor construction. Nevertheless, the Fire Services Consultant is to review and confirm compliance for the existing system to AS2118.1-1999. For the purposes of the report it has been assumed that all new future works will incorporate the installation of a sprinkler system. Where this is not proposed, a complete review will be required to amend comments accordingly.	Refer Part 5 of Report.
E1.6: Portable Fire Extinguishers	Portable fire extinguishers are required to be provided in accordance with Table E1.6 of the BCA and it is acknowledged that the buildings are covered by an existing system as installed to AS 2444–2001, (being the current version of the standard).	Refer Part 5 of Report.
E1.8: Fire Control Centre	The building is less than 25m in effective height and having a total floor area less than 18,000m².	N/A
E1.9: Fire Precautions During Construction	Not Applicable to development	N/A
E1.10: Provision for Special Hazards	Not Applicable to development	N/A
PART E2 – SMOKE HAZARD MANAGEMENT		
E2.0: Deemed-to-Satisfy Provisions	Noted	-
E2.1: Application of Part	Noted	-

E2.2: General Requirements (including Tables E2.2a and E2.2b)	Automatic shutdown: A building or part of a building used as an assembly building must be provided with automatic shutdown of any air-handling system (other than non-ducted individual room units with a capacity not more than 1000 L/s and miscellaneous exhaust air systems installed in accordance with Sections 5 and 6 of AS/NZS 1668.1) which does not form part of the smoke hazard management system, on the activation of— (i) smoke detectors installed complying with Clause 5 of Specification E2.2a; and (ii) any other installed fire detection and alarm system, including a sprinkler system complying with Specification E1.5. Due to the multiple uses of the building parts which comprise of Retail, Sports Hall/Gym, Swimming Pool and Function Room it is recommended that the Fire Services Engineer is consulted for the services required to be provided. However, based on compartment sizes and due to the rise in storeys exceeding 2, an automatic smoke exhaust system or automatic smoke and heat vents system will be required to be provided. Where the above systems are not intended to be provided it is recommended that a Fire Engineer performs a review to confirm if an alternative solution may be prepared to rationalise the required services. Noting that a sprinkler system is to be provided to the entire building.	Refer Part 5 of Report.
E2.3: Provisions for Special Hazards	Additional smoke hazard management measures may be necessary due to the— (a) special characteristics of the building; or (b) special function or use of the building; or (c) special type or quantity of materials stored, displayed or used in a building; or (d) special mix of classifications within a building or fire compartment, which are not addressed in Tables E2.2a and E2.2b.	Noted
PART E3 – LIFT INSTALLATIONS		
E3.0: Deemed-to-Satisfy Provisions	Noted	-
E3.1: Lift Installations	Based on the information provided it appears to achieve the min size requirements of 1100mm x 1400mm.	Complies
E3.2: Stretcher Facility in Lifts	Not applicable	N/A
E3.3: Warning Against Use of Lifts in Fire	A warning sign must— (a) be displayed where it can be readily seen— (i) near every call button for a passenger lift or group of lifts throughout a building; except (ii) a small lift such as a dumb-waiter or the like that is for the transport of goods only; and (b) comply with the details and dimensions of Figure E3.3 and consist of— (i) incised, inlaid or embossed letters on a metal, wood, plastic or similar plate securely and permanently attached to the wall; or (ii) letters incised or inlaid directly into the surface of the material forming the wall.	CRA
E3.4: Emergency Lifts	Not applicable	N/A
E3.5: Landings	Access and egress to and from the lift well landings is to comply with the Deemed-to-Satisfy provisions of Section D of the BCA.	Noted
E3.6: Passenger Lifts	As the building is required to be accessible, it has been provided with a passenger lift, therefore, the passenger lift must:	CRA

	i. be one of the types identified in Table E3.6a of the BCA, subject to the limitations on use specified in the Table; in this instance, generally being either of the following: ii. Electric passenger lift, iii. Electrohydraulic passenger lift iv. Inclined lift, v. Small sized, low speed automatic lift have accessible features in accordance with Table E3.6b of the BCA; in this instance being; i. Handrail complying with the provisions for a mandatory handrail in AS 1735.12 ii. Lift floor dimension of not less than 1100 mm x 1400 mm iii. Minimum clear door opening complying with AS 1735.12 iv. Passenger protection system complying with AS 1735.12 (All lifts with a power operated door), v. Lift landing doors at the upper landing vi. Lift car and landing control buttons complying with AS1735.12 vii. Lighting in accordance with AS 1735.12 viii. Emergency hands-free communication, including a button that alerts a call centre of a problem and a light to signal that the call has been received.	
E3.7: Fire Service Controls	Not applicable to development	N/A
E3.8: Aged Care Buildings	Not Applicable to development	N/A
E3.9: Fire Service Recall Operation Switch	Not applicable to development	N/A
E3.10: Lift Car Service Drive Control Switch	Not applicable to development	N/A
PART E4 – EMERGENCY LIGHTING, EXIT SIGNS AND WARNING SYSTEMS		
E4.0: Deemed-to-Satisfy Provisions		
E4.2: Emergency Lighting Requirements	Emergency lighting appears to be provided to the subject buildings in accordance with Clause E4.2 of the BCA. It is recommended that a qualified electrician/ fire services consultant provide a compliance report on the system and provide recommendations for any upgrade and/or replacement as per AS2293.1-2005.	Refer Part 5 of Report.
E4.3: Measurement of Distance	To comply with AS 2293.1-2005.	Noted
E4.4: Design and Operation of Emergency Lighting	To comply with AS 2293.1-2005.	Noted
E4.5: Exit Signs	Exit signage appears to be provided to the subject buildings in accordance with Clause E4.2 of the BCA.	Refer Part 5 of Report.
E4.6: Direction Signs	To comply with AS 2293.1-2005.	CRA
E4.7: Class 2 and 3 Buildings and Class 4 Parts: Exemptions	Not applicable to development	N/A
E4.8: Design and Operation of Exit Signs	See E4.5 above.	Note
E4.9: Sound Systems and Intercom Systems for Emergency Purposes	This provision is not applicable	N/A

PART F2 – SANITARY AND OTHER FACILITIES				
F2.1: Facilities in residential buildings	Not applicable			N/A
F2.2: Calculation of number of occupants and fixtures	1. The number of persons accommodated must be calculated according to D1.13 if it cannot be more accurately determined by other means. 2. Unless the premises are used predominantly by one sex, sanitary facilities must be provided on the basis of equal numbers of males and females. 3. In calculating the number of sanitary facilities to be provided under F2.1 and F2.3, a unisex facility required for people with a disability may be counted once for each sex. 4. For the purposes of this Part, a unisex facility comprises one closet pan, one washbasin and means for the disposal of sanitary towels.			Note
F2.3: Facilities in Class 3 to 9 buildings	Sanitary facilities must be provided for Class 9 buildings in accordance with Table F2.3. Upon final confirmation of the proposed uses, compliance for the proposed facilities can be confirmed. Based on the facilities detailed, the maximum populations have been calculated below. Notes: 1) Final details will be required to confirm staff/patron ratio. 2) Staff and patrons may use the same facilities provided the combined requirements are provided. 3) Accessible facilities have been assumed at one per level and counted once for each sex in the above calculations. 4) A closet pan may be used in place of a urinal.			CRA
Sanitary Facilities Table				
Type	Maximum Pop.	WC	Urinals	WHB
<u>Ground Floor – Sports Venues or the like (Gym Patrons)</u>				
<u>Male</u>	-	-	-	-
<u>Female</u>	Up to 30	7	-	3
<u>Acc.</u>	-	0	-	0
<u>Ground Floor – BBQ Bar</u>				
<u>Male</u>	Up to 100	1	2	2
<u>Female</u>	Up to 100	3	-	2
<u>Acc.</u>	-	0	-	0
<u>First Floor – Restaurants, Cafes & Bars</u>				
<u>Male</u>	Up to 250	2	4*3&4	2*3
<u>Female</u>	Up to 200	4*3	-	2*3
<u>Acc.</u>	-	1	-	1
<u>Second Floor – Restaurants, Cafes & Bars</u>				
<u>Male</u>	Up to 250	2	4*3&4	2*3
<u>Female</u>	Up to 200	4*3	-	2*3
<u>Acc.</u>	-	1	-	1
F2.4: Facilities for people with disabilities	In a building required to be accessible— (a) accessible unisex sanitary compartments must be provided in accessible parts of the building in accordance with Table F2.4(a); and (b) accessible unisex showers must be provided in accordance with Table F2.4(b); and (c) at each bank of toilets where there is one or more toilets in addition to an accessible unisex sanitary compartment at that bank of toilets, a sanitary compartment suitable for a person with an ambulant disability in accordance with AS 1428.1 must be provided for use by males and females; and			Refer Part 5 of Report.

	(d) an accessible unisex sanitary compartment must contain a closet pan, washbasin, shelf or bench top and adequate means of disposal of sanitary towels; and (e) the circulation spaces, fixtures and fittings of all accessible sanitary facilities provided in accordance with Table F2.4(a) and Table F2.4(b) must comply with the requirements of AS 1428.1; and (f) an accessible unisex sanitary facility must be located so that it can be entered without crossing an area reserved for one sex only; and (g) where two or more of each type of accessible unisex sanitary facility are provided, the number of left and right handed mirror image facilities must be provided as evenly as possible; and (h) where male sanitary facilities are provided at a separate location to female sanitary facilities, accessible unisex sanitary facilities are only required at one of those locations; and <i>Please refer to Design Confidence Access Report</i>	
Part F3 Ceiling Heights:	A minimum ceiling height of 2.4m should be maintained to all areas, any areas and associated corridors that accommodate more than 100 persons is required to maintain a 2.7m ceiling height. In this regard, reduced ceiling heights were noted to the existing function room areas. Where the required ceiling heights or the required exit widths cannot be achieved, it is recommended that a Fire Engineer reviews the proposal to confirm that a performance-based solution may be prepared to address any shortfalls.	Refer Part 5 of Report.

PART 4 - HEALTH AND AMENITY		
Part F4 Light and Ventilation	For the Class 4 Part (Caretakers Residence), natural lighting must be provided to all habitable rooms. Windows (including glazed doors) must have an aggregate light transmitting area measured exclusive of framing members or obstructions of not less than 10% (or 3% where roof lights are used) of the floor area of the room. Natural lighting may be shared via adjoining rooms. For the Class 4 Part (Caretakers Residence), the habitable areas of the building must be ventilated by natural means. Windows and doors are required to have an aggregate opening or open able size not less than 5% of the floor area of the room required to be ventilated.	CRA

PART 5 PROPOSED UPGRADE STRATEGY

5.1 General

This part of the report outlines an **upgrading strategy** for the subject building, designed to either achieve compliance with DTS provisions of the BCA, or to achieve a reasonable level of compliance with the BCA, given the restraints that exist with an existing building and the areas above where discretion is applied.

5.2 Base Building Upgrading Works

In order to achieve an adequate level of fire and life safety in the subject building, it is recommended that the following works be undertaken as a part of base-building refurbishment works in accordance with the anticipated change of use to an educational facility as referenced above.

Item	BCA issue	Comment / Proposed Upgrade Works
1.	C1.8 Lightweight Construction & C3.17: Columns Protected with Lightweight Construction to Achieve an FRL Lightweight construction has potentially been used throughout the development.	<i>Structural Engineer is to confirm if any lightweight construction has been used for the fire resisting covering of any structural elements.</i>
2.	C2.7: Separation by Fire Walls & C2.8: Separation of Classifications in the Same Storey Separate classifications are located adjacent to each other in the same storey.	<i>Due to the separate classifications on each floor it is recommended that a Fire Engineer is consulted to review and address the different FRLs required for each classification.</i> <i>Please refer to Design Confidence Correspondence Ref: P216_320 dated 23 January 2017.</i>
3.	C2.9: Separation of Classifications in Different Storeys Separate classifications are situated above each other on consecutive storeys.	<i>Separation of classifications is required to be provided to each floor in conjunction with any future refurbishment works.</i> <i>Timber floors were noted to numerous parts of the building and it is perceived that the requirements of Spec. C1.1 will not be achieved for FRLs & Non-Combustible Construction.</i> <i>Please refer to Design Confidence Correspondence Ref: P216_320 dated 23 January 2017.</i>
4.	C3.2: Protection of Openings in External Walls Protection of Openings in External Walls	<i>Boundary lines are to be clearly notated on the Architectural Plans to ensure there are no openings located within 3m of a side/rear boundary.</i>
5.	C3.12: Openings in Floors and Ceilings for Services, C3.13 Openings in Shafts, C3.15: Openings for Service Installations & Spec. C3.15 – Penetration Of Walls, Floors And Ceilings By Services	<i>It is recommended that a separate audit should be undertaken by a fire protection specialist to determine the extent of service penetrations through any fire rated elements to confirm upgrade/remediate all such penetrations, including any fire dampers and their effective operation.</i>
6.	C3.1: Fire-resistance of Building Elements Based on the existing construction of this building it is evident that parts of the floors are constructed of timber. Whilst the full extent of timber flooring was not determined at the time, this building has initially been assessed as Type A	<i>It is recommended that a Fire Engineer reviews the above proposal to confirm that a performance-based solution may be prepared to address timber construction and a rationalisation of FRLs.</i> <i>Please refer to Design Confidence Correspondence Ref: P216_320 dated 23 January 2017.</i>

	construction, which requires a fire rating of the floor to achieve at least an FRL for the following areas: Class 4 – Residential Caretakers Cottage 90mins Class 5 – Commercial/Office 120mins Class 6 – Retail/Café/Bar 180mins Class 7b –Storage FRL 240mins Class 9b – Assembly Building/Function Areas 120mins	
7.	D1.6: Dimensions of Exits and Paths of Travel to Exits In a required exit or path of travel, the unobstructed height throughout must be not less than 2.7m where the corridor serves a population of more than 100 persons or alternatively 2.4m where the corridor serves a population of less than 100 persons, except the unobstructed height of any doorway must be reduced to not less than 1980mm. Ex Fire Stair 2 was noted as having an approximate width of 900-950mm and Ex. Fire Stair 1 was noted as having an approximate width of 600-650mm in lieu of the required 1m. It was also noted that this stair is currently used as a general access stair therefore it is recommended to be upgraded to comply with AS1428.1-2009 which will thereby further reduce the clear width of the stair.	<i>Where the required ceiling heights or the required exit widths cannot be achieved, it is recommended that a Fire Engineer reviews the proposal to confirm that a performance-based solution may be prepared to address any shortfalls.</i> <i>Ex Fire Stair 1 & 2 egress widths have been included for the purposes of this assessment, however due to the reduction of width to these stairs to less than 1m it is recommended that a Fire Engineer reviews the above proposal to confirm that a performance-based solution may be prepared.</i> <i>Where the total required width for each storey is not provided in accordance with the deemed to satisfy provisions the populations no.'s will be required to be restricted to the max. permitted population or alternatively where a Fire Engineer reviews the above proposal a performance-based solution may be prepared.</i> <i>Please refer to Design Confidence Correspondence Ref: P216_320 dated 23 January 2017.</i>
8.	D2.8: Storage under Stairs: A storage cupboard was noted beneath existing stair 2.	<i>It is recommended that the area below the stair is enclosed with construction achieving a FRL of 60/60/60 and provided with a fire door achieving - /60/30</i>
9.	D2.13: Goings and Risers, D2.14: Landings	<i>Stair treads and landings are to be confirmed as having a compliant slip-resistance classification complying with Table D2.14 when tested in accordance with AS 4586</i>
10.	D2.15: Thresholds Multiple level changes which incorporated non-compliant thresholds were noted throughout the building contrary to the requirements of this clause.	<i>It is recommended that upon any refurbishment works, compliant threshold ramps as per AS1428.1-2009 are incorporated into the design.</i>
11.	D2.16: Barriers to prevent falls & D2.24 Barriers & Protection of Openable Windows All balustrades are required to be a min. 1.0m in height, unless the balustrade forms part of the pool barrier	<i>A review of all barriers, balustrades and openable windows is recommended to be undertaken. It was noted that a number of windows were not provided with a sill height of 865mm or window opening restricting devices. Where non-compliances are observed an upgrade of the existing system should occur with the proposed works. Where a window or building element forms any part of the pool barrier, a review of all requirements is to be performed so as to ensure compliance with both BCA & Australian Standard provisions.</i>
12.	D2.17: Handrails Singled handrails were noted as being provided to all the stairs, however double-sided handrails in accordance	<i>It is recommended that a review of all existing handrails be conducted and where they do not comply with the requirements of this clause and/or AS1428.1-2009, they are to be upgraded with the proposed works.</i>

	with AS1428.1-2009 would be generally required to all stairs.	
13.	D2.19: Doorways and Doors A roller shutter may not be used as a required exit where the area it serves exceeds 200m². All automatic doors must fail safe open upon the activation of any detection system or power failure, these doors must also be capable of being manually opened under a force of no more than 110N.	<i>It is recommended that swinging doors are used for all exit doors and where any security devices are installed, that a fail safe device is fitted to ensure all locks are released in the event of power failure or fire/smoke detection system activation.</i>
14.	D2.20: Swinging Doors A swinging door must not encroach more than 500mm on the required width of an exit or 100mm when fully open. A number of doors entering the existing stairs were noted encroaching greater more than 500mm.	<i>It is recommended that all existing swinging doors are reviewed for compliance and where found non-compliant upgraded to comply.</i> <i>Where compliance cannot be achieved an alternative solution addressing the performance requirements may be prepared by a Fire Engineer.</i>
15.	D2.21: Operation of Latch Panic bar levers are required to be provided to any area accommodating more than 100 occupants or where the area serves less than 100 occupants lever type handles.	<i>It is recommended a review of all existing door latches is undertaken and any non-compliances upgraded with the new works. Where an exit door forms any part of the pool barrier, a review of the door swing and latching device will be required to be performed so as to ensure compliance with both BCA & Australian Standard provisions.</i> <i>Where compliance cannot be achieved an alternative solution addressing the performance requirements may be prepared by a Fire Engineer.</i>
16.	Part D3 & Disability (Access to Premises - Buildings) Standards 2010	Please refer to Design Confidence Access Report
17.	E1.3: Fire Hydrants Fire Hydrant coverage is required throughout the whole building.	Hydraulic Engineer is to review and confirm compliance for the existing hydrant system to AS2419.1-2005.
18.	E1.4: Fire Hose Reels Fire Hose Reel coverage is required throughout the whole building.	Hydraulic Engineer is to review and confirm compliance for the existing fire hose system to AS2441-2005
19.	E1.5: Sprinklers A sprinkler system was noted as being installed throughout the building however ordinarily a building of this nature would not require a such a system. It is perceived that the installation may have formed part of a fire safety upgrade due to the existence of timber floor construction.	<i>Fire Services Consultant is to review and confirm compliance for the existing system to AS2118.1-1999.</i> <i>For the purposes of the report it has been assumed that all new future works will incorporate the installation of a sprinkler system.</i> <i>Where this is not proposed, a complete review will be required to amend comments accordingly.</i> <i>Please refer to Design Confidence Correspondence Ref: P216_320 dated 23 January 2017.</i>
20.	E1.6: Portable Fire Extinguishers Portable fire extinguishers are required to be provided	Fire Services Consultant is to review and confirm compliance for the existing system to AS 2444-2001.
21.	E2.2: General Requirements (including Tables E2.2a and E2.2b)	<i>It is recommended that the Fire Services Engineer is consulted for the services required to be provided.</i>

	Automatic shutdown is required for any air-handling system with a capacity not more than 1000 L/s. Based on compartment sizes and due to the rise in storeys exceeding 2, an automatic smoke exhaust system or automatic smoke and heat vents system will be required to be provided.	<i>Where the above systems are not intended to be provided it is recommended that a Fire Engineer performs a review to confirm if an alternative solution may be prepared to rationalise the required services. Noting that sprinkler system is to be provided to the entire building.</i>
22.	E4.2: Emergency Lighting Requirements & E4.5: Exit Signs	<i>It is recommended that a qualified electrician/ fire services consultant provide a compliance report on the system and provide recommendations for any upgrade and/or replacement as per AS2293.1-2005.</i>
23.	F2.3: Facilities in Class 3 to 9 buildings & F2.4: Facilities for people with disabilities Upon final confirmation of the proposed uses, compliance for the proposed facilities can be confirmed. An accessible sanitary facility is required to be provided to the Ground Floor bank of toilets.	<i>The proposed sanitary facilities would appear to be compliant for the intended uses on the First & Second Floor. However, it would appear that the sanitary facilities proposed to the ground floor may be sufficient for the anticipated occupant population. Please provided further details with regards to the intended occupant population for the area for a more accurate review.</i> <i>Please refer to Design Confidence Access Report</i>
24.	Part F3: Ceiling Heights: A minimum ceiling height of 2.4m should be maintained to all rooms and corridors, any rooms and associated corridors that accommodate more than 100 persons is required to maintain a 2.7m ceiling height.	<i>Where the required ceiling heights cannot be achieved, it is recommended that a Fire Engineer reviews the proposal to confirm that a performance-based solution may be prepared to address any shortfalls.</i> <i>Please refer to Design Confidence Correspondence Ref: P216_320 dated 23 January 2017.</i>
25.	AS1926.1-2012 Pool Fencing:	<i>It is recommended that the existing pool barrier is reviewed for compliance with AS1926.1-2012, Swimming Pool Act 1992 & Swimming Pool Regulation 2008 and upgraded where required with the proposed works. Where an exit door forms any part of the pool barrier, a review of the door swing and latching device will be required to be performed so as to ensure compliance with both BCA & Australian Standard provisions.</i>