BLACKETT MAGUIRE+ GOLDSMITH

BCA ASSESSMENT REPORT

ST MARY'S RUGBY LEAGUES CLUB HOTEL
FORRESTER ROAD AND BORONIA ROAD, ST MARYS

FDC Construction & Fitout Pty Ltd

Revision 2

Date: 05.05/2016

Project No.: 160041

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REPORT STATUS				
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A. INTRODUCTION

A.1 BACKGROUND / PROPOSAL

Blackett Maguire + Goldsmith Pty Ltd (BM+G) have been commissioned by FDC Construction and Fitout Pty Ltd to undertake a Building Code of Australia (BCA) 2016 assessment for the proposed hotel development located at St Marys Leagues Club, pursuant to the provisions of clause 145 of the *Environmental Planning & Assessment Regulation 2000* and clause 18 of the *Building Professionals Regulation 2007*.

It is noted that the proposed project includes the Construction of a six (6) storey hotel consisting of ground floor lobby, reception, hotel rooms on levels 1 - 5, loading area, roof plant room, under croft car parking and associated on grade car parking areas within the existing St Mary's Leagues Club site.

A.2 AIM

The aim of this report is to:

+ Undertake an assessment of the proposed hotel building against the Deemed-to-Satisfy (DtS) Provisions of the BCA 2016.
+ Identify any BCA compliance issues that require resolution/attention for the proposed development as part of the Construction Certificate Application.

A.3 PROJECT TEAM

The following BM+G team members have contributed to this report:

+ Dean Goldsmith (Director)
+ Tony Heaslip (Director)

A.4 DOCUMENTATION

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

+ NCC BCA 2016
+ Guide to the NCC BCA 2016.
+ Architectural plans prepared by WMK Architects:

Drawing No.	Rev	Date	Drawing No.	Rev	Date
DA001	A	27.04.2016	DA104	A	27.04.2016
DA002	A	27.04.2016	DA105	A	27.04.2016
DA002	A	27.04.2016	DA106	A	27.04.2016
DA010	A	27.04.2016	DA107	A	27.04.2016
DA100	A	27.04.2016	DA500	A	27.04.2016
DA101	A	27.04.2016	DA501	A	27.04.2016
DA102	A	27.04.2016	DA501	A	27.04.2016
DA103	A	27.04.2016			

A.5 REGULATORY FRAMEWORK

Pursuant to clause 145 of the Environmental Planning and Assessment (EPA) Regulation 2000 all new building work must comply with the current BCA however the existing features of an existing building need not comply with the BCA unless upgrade is required by other clauses of the legislation.

A.6 LIMITATIONS & EXCLUSIONS

The limitations and exclusions of this report are as follows:

+ The following assessment is based upon a review of the architectural documentation.
+ No assessment has been undertaken with respect to the Disability Discrimination Act (DDA) 1992, other than the Access to Premises Standards that are equivalent to the BCA specified minimum standard of compliance in Parts D3 and F2 and AS1428.1-2009.
+ The Report does not address matters in relation to the following:
  i. Local Government Act and Regulations.
  ii. NSW Public Health Act 1991 and Regulations.
  iii. Occupational Health and Safety (OH&S) Act and Regulations.
  iv. Work Cover Authority requirements.
  v. Water, drainage, gas, telecommunications and electricity supply authority requirements.
  vi. DDA 1992.
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A.7 TERMINOLOGY

Alternative Solution
A Building Solution which complies with the Performance Requirements other than by reason of satisfying the DtS Provisions.

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

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

Construction Type
The construction type is a measure of a buildings ability to resist a fire. The minimum type of fire-resisting construction of a building must be that specified in Table C1.1 and Specification C1.1, except as allowed for—

(i) certain Class 2, 3 or 9c buildings in C1.5; and

(ii) a Class 4 part of a building located on the top storey in C1.3(b); and

(iii) open spectator stands and indoor sports stadiums in C1.7.

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

Climatic Zone
Is an area defined in BCA Figure A1.1 and in Table A1.1 for specific locations, having energy efficiency provisions based on a range of similar climatic characteristics.

Deemed to Satisfy Provisions (DtS)
Provisions which are deemed to satisfy the Performance Requirements.

Effective Height
The vertical distance between the floor of the lowest storey included in the calculation of rise in storeys and the floor of the topmost storey (excluding the topmost storey if it contains only heating, ventilating, lift or other equipment, water tanks or similar service units)

Fire Resistance Level (FRL)
The grading periods in minutes for the following criteria-

(a) structural adequacy; and

(b) integrity; and

(c) insulation,

and expressed in that order.

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

National Construction Code Series (NCC)
The NCC was introduced 01 May 2011 by the Council of Australian Governments. The BCA Volume One (Class 2 to 9 Buildings) is now referenced as the National Construction Code Series Volume One — BCA.

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

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

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

Compliance with the Performance Requirements can only be achieved by-

(a) complying with the DtS Provisions; or

(b) formulating an Alternative Solution which-

(i) complies with the Performance Requirements; or

(ii) is shown to be at least equivalent to the DtS Provisions; or

(c) a combination of (a) and (b).

Sole Occupancy Unit (SOU)
A room or other part of a building for occupation by one or joint owner, lessee, tenant, or other occupier to the exclusion of any other owner, lessee, tenant, or other occupier and includes a dwelling. In the case of a Class 3 building each room that is separately keyed is deemed to be a single/separate sole occupancy unit.

B. BUILDING CHARACTERISTICS

B.1 BUILDING CLASSIFICATION

The following table presents a summary of relevant building classification items of the proposed serviced apartment residential building:

▪ **BCA Classification:**	Class 3 (Hotel) Class 9b (Lobby / Reception Area) Class 7a (Under Croft Carpark)
▪ **Rise in Storeys:**	The building has a rise in storeys of Six (6).
▪ **Effective Height:**	The building has an effective height of 17.4m (< 25m) – TBC (Note details of the proposed roof level plant room are to be provided to confirm that this storey can be excluded from the effective height calculation)
▪ **Type of Construction:**	Type A Construction
▪ **Climate Zone:**	Zone 6

B.2 FIRE SOURCE FEATURE

The distances from the nearest Fire Source Features are:

BOUNDARY	DISTANCE TO FIRE SOURCE FEATURE
Northern Façade	>3m
Southern Façade	>3m
Eastern Façade	>3m
Western Façade	<3m (to existing club building – see notes below)

BCA ASSESSMENT

C.1 BCA DEEMED-TO-SATISFY COMPLIANCE ISSUES:

The following comments have been made in relation to the relevant BCA provisions relating to the compliance issues associated with the proposed serviced apartment building located at St Marys Leagues Club.

Note: *The following is a précis of the provisions and should be read in conjunction with the BCA.*

SECTION B - STRUCTURE

1. Part B1 – Structural Provisions

Structural engineering details prepared by an appropriately qualified structural engineer to be provided to demonstrate compliance with Part B1. This will include the following Australian Standards (where relevant):

1. AS 1170.0 – 2002 General Principles
2. AS 1170.1 – 2002, including certification for balustrades (dead and live loads)
3. AS 1170.2 – 2011, Wind loads
4. AS 1170.4 – 2007, Earthquake loads
5. AS 3700 – 2001, Masonry code
6. AS 3600 – 2009, Concrete code
7. AS 4100 – 1998, Steel Structures and/or
8. AS 4600 – 2005, Cold formed steel.
9. AS 2159 – 2009, Piling Design &Installation
10. AS 1720 – 2010, Design of Timber Structure
11. AS/NZS 1664.1 & 2 – 1997, Aluminium Structures
12. AS 2047 – 1999, Windows in buildings.
13. AS 1288 – 2006, Glass in buildings.

AS 3660.1 – 2000, Termite control (or confirmation no primary building elements are timber).

Comments: Structural design and certification will be required at CC application stage.

SECTION C – FIRE RESISTANCE

Part C1 Fire Resistance and Stability

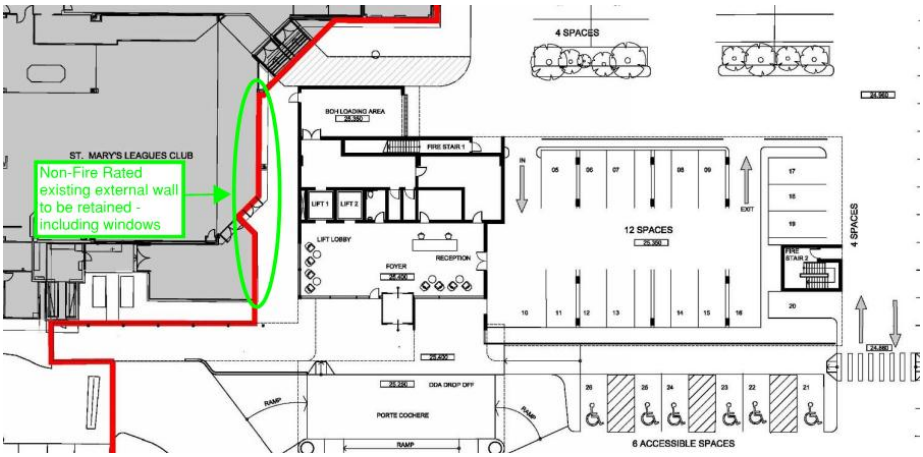
2. Clause C1.1 – Type of Construction Required

The minimum type of fire-resisting construction of a building must be that specified in Table C1.1 and Specification C1.1 except as allowed for in this clause.

Comments: *Type A construction applies to this building as it has a rise in storeys of more than 3. Refer to comments under Spec. C1.1 below and Appendix 1.*

NOTE 1: All external walls are required to be of non-combustible construction as a minimum.

NOTE 2: The proposed building is located within 3m of the existing club facility – see mark-up below. The proximity of the proposed building requires fire rating to the external walls of the new building and also the existing structure. As there is no proposal to upgrade the fire rating of facade of the existing building an alternative solution will be required from the fire engineer to retain the existing non-fire rated external wall structure and provide all required fire separation within the new building only – in this regard the relevant Performance Requirements are CP1 and CP2. In addition an awning is proposed to connect the two buildings – see further comments under C3.2 below.



3. Clause C1.10 – Fire Hazard Properties

The fire hazard properties of the following linings, materials and assemblies in a Class 2 to 9 building must comply with **Specification C1.10** and the additional requirements of the **NSW Provisions** of the Code.

Comments: *Architect to note. Details for compliance will be required at the Occupation Certificate stage. Any proposed aluminium composite panels to the facades are only permitted as a lining to a non-combustible external wall – details are to be provided at CC application stage.*

Part C2 Compartmentation and Separation

4. Clause C2.2 – General Floor Area and Volume Limitations

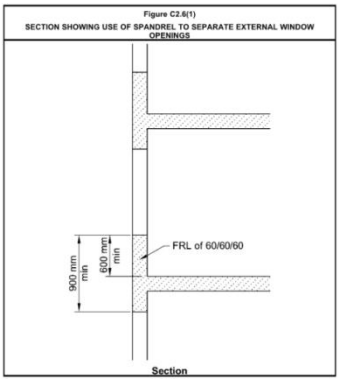
Sets out the parameters for the area and volume of Class 5, 6, 7, 8 & 9 buildings as required by sub-clauses (a), (b) & (c).

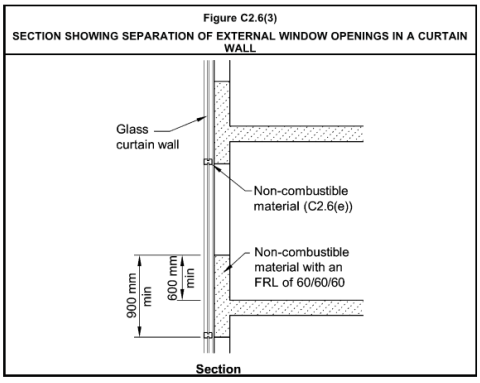
Comments: *The proposed compartmentation in the new building will comply with Type A Construction requirements of Table C2.2. Floor area and volume limitations do not apply to the Class 3 areas. The Class 9b part proposed to the ground floor will not exceed the maximum floor area/volume of 5,000m^2 and 30,000m^3.*

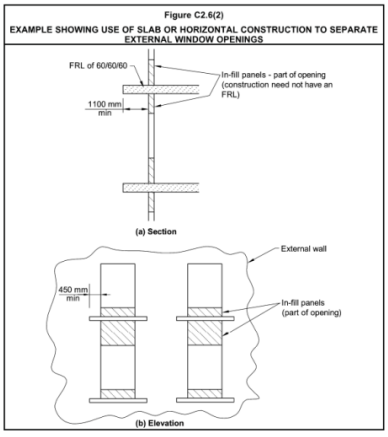
5. Clause C2.6 – Vertical Separation of Openings in External Walls

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 and horizontal or vertical spandrel with an FRL of 60/60/60, and for the purposes of C2.6, 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.

Comments: *Where sprinkler protection is not proposed in the residential portions of the building, spandrel protection is required throughout in accordance with this Clause C2.6 (see diagrams from the Guide to the BCA below).*







It is noted that the design appears capable of complying with the spandrel requirements, however, further details must be provided for review prior to CC.

6. Clause C2.8 – Separation of Classifications in the Same Storey

If a building has parts of different classifications located alongside one another in the same storey, each element must have the required higher FRL for the classifications concerned.

Alternatively, the parts must be separated by a fire wall having the higher FRL for the classifications prescribed in Table 3 or 4 of BCA Specification C1.1 (for Type A or Type B Construction), or Table 5 for Type C Construction.

Concessions are available for some carparks.

Comments: *As the ground floor office is less than 10% of the floor area of the storey it can be considered ancillary to the Class 9b office area and is not required to be fire separated. The FRLs for the Class 7a and the Class 9b are the same (120/120/120) and as such the provisions of C2.8 (a) can be implemented and the higher FRL can be implemented to all areas. Thus, no separation of the different classifications is required in this instance.*

The Class 9b Gym and meeting rooms on the first floor (Phase 1) are required to be separated from the Class 3 areas by an FRL of 120/120/-. If an alternative solution is proposed to delete this separation of classifications, OR reduce the FRLs, the relevant Performance Requirements are CP1 and CP2.

7. Clause C2.9 – Separation of Classification in Different Storeys

This clause specifies the required separation between parts of a building which are of a different classification, situated one above another, to minimise the risk of a fire in one classification causing the failure of building elements in another classification in a different storey.

Comments: *The floor between ground floor Class 9b / Class 7a areas and the Class 3 residential levels above is to achieve an FRL of 120/120/120. Details demonstrating compliance are to be included on the CC Application plans.*

8. Clause C2.10 – Separation of Lift Shafts

Applies to all classes of buildings and specifies the protection requirements for openings for lift shafts and lift landing doors. The requirements are set out in sub-clauses (a), (b) (c) & (d) which relate to openings in Type A, B and C construction. Also note the Deemed to Satisfy Provisions of Part C3.

Comments: *The lift is required to be enclosed in a fire rated shaft achieving an FRL in accordance with Table 3 of Specification C1.1.*

9. Clause C2.11 – Stairways and Lift in One Shaft

A stairway and a lift must not be in the same *shaft* if either the stairway or the lift is *required* to be in a *fire-resisting shaft.*

Comments: *The current design complies with this requirement*. Details are to be provided at CC application stage.

10. Clause C2.12 – Separation of Equipment

Equipment as listed below must be separated from the remainder of the building with construction that achieves an FRL of 120/120/120 and doorways being self-closing -/120/30 fire doors:

+ Lift motors and lift control panels; or
+ Emergency generators used to sustain emergency equipment operating in the emergency mode; or
+ Central smoke control plant; or
+ Boilers; or

+ A battery or batteries installed in the building that have a voltage exceeding 24 volts and a capacity exceeding 10 ampere hours.

Separation of on-site fire pumps must comply with the requirements of AS 2419.1.

Comments: *Architect to note. Details are to be provided at CC application stage*

11. Clause C2.13 – Electricity Supply System

To ensure certain types of electrical equipment to operate during an emergency the requirements of sub-clauses (a), (b) (c), (d) & (e) must be complied with relating to sub-stations, sub-mains and main switchboards.

(a) An electricity substation located within a building must –
  (i) Be separated from any other part of the building by construction having an FRL of not less than 120/120/120; and
  (ii) Having any doorway in that construction protected with a self-closing fire door having an FRL of not less then -/120/30
(b) A main switchboard located within the building which sustains emergency equipment operating in the emergency mode must –
  (i) Be separated from any other part of the building by construction having an FRL of not less than -/120/30.
  (ii) Have any doorway in that construction protected with a self-closing fire door having an FRL of not less than -/120/30.
(c) Electrical conductors located within a building that supply –
  (i) A substation located within the building which supplies a main switchboard covered by (b); or
  (ii) A main switchboard covered by (b),

Must –

  (iii) Have a classification in accordance with AS/NZS 3013 of not less than –
    (A) If located in a position that could be straight to damage by motor vehicles – WS53W; or
    (B) Otherwise – WS52W; or
  (iv) Be enclosed or otherwise protected by construction having an FRL of not less than 120/120/120

Comments: *Confirmation is to be provided for the respective fire rating on the CC plans, and also for the design of the required electrical services with the construction certificate application documentation.*

Note: Also refer to comments under BCA D2.8 below

12. Clause C2.14 – Public Corridors in Class 2 & 3 Buildings

In a Class 2 or 3 building, a public corridor more than 40m in length, must be divided at intervals of not more than 40m with smoke-proof walls complying with Clause 2 of Specification C2.5.

Comments: *The proposed corridors serving the Class 3 SOU's exceed 40m and as such a smoke door will be required within the corridor on each level to reduce the total width down to 40m or less. The current plans do not show a smoke door - If an Alternative Solution is to be proposed to delete the smoke doors, the relevant Performance Requirement is EP2.2.*

PART C3: PROTECTION OF OPENINGS

13. Clause C3.2 – Protection of Openings in External Walls

Openings in external walls that are required to have an FRL, which are to be exposed to a fire-source feature, are required to be protected in accordance with C3.2(a) & C3.2(b).

Openings in an external wall that is required to have an FRL must –

(a) If the distance between the opening and the fire-source feature to which it is exposed is less than –
  (i) 3 m from a side or rear boundary of the allotment; or
  (ii) 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

(iii) 6 m from another building on the allotment that is not a Class 10, be protected in accordance with C3.4 and if wall-wetting sprinklers are used, they are located externally; and

(b) If the required to be protected under (a), 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.

Comments: *As indicated under Clause C1.1 above the proposed building is located within 3m of the existing club facility and as such the external walls and subsequent openings in both the new and existing buildings require fire rating/protection. In this regard (and as noted under C1.1) the existing openings in the façade of the club building are not proposed to be upgraded to comply with C3.2 & C3.4, however, protection of openings will be required to the new building. In addition, there is a new awning structure that is to be integrated into the Porte Cochere of the new building that interconnects the structure of the existing club building. The interface of the new awning structure and the existing building, is also subject to compliance with C3.2/C3.4 and as such is non-compliant given the lack of protection proposed.*

The above non-compliance in the existing building and the new awning structure will be required to be addressed by an alternative solution. In this regard the relevant BCA Performance Requirement is CP2.

14. Clause C3.4 – Acceptable Methods of Protection

(a) Where protection is required, doorways, windows and other openings must be protected as follows:
  (i) Doorways –
    (A) Internal or external wall- wetting sprinklers as appropriate used with doors that are self-closing or automatic closing; or
    (B) -/60/30 fire doors that are self-closing or automatic closing.
  (ii) Windows –
    (A) Internal or external wall-wetting sprinklers as appropriate used with windows that are automatic closing or permanently fixed in the closed position; or
    (B) -/60/- automatic closing fire shutters.
  (iii) Other openings –
    (A) Excluding voids – internal or external wall-wetting sprinklers, as appropriate; or
    (B) Construction having FRL not less than -/60/-.

(b) Fire doors, fire windows and fire shutters must comply with **Specification C3.4.**

Comments: *Details demonstrating compliance are to be included on the CC Application plans.*

15. Clause C3.8 – Openings in Fire-isolated Exits

Specifies that the doorways that open into fire-isolated exits must be protected by -/60/30 fire doors that are self-closing or automatic. This clause also details the deemed-to-satisfy methods of activation. This does not apply to doors opening to a road or open space.

A window in the external walls of fire-isolated exits must be protected in accordance with C3.4 if it is within 6m of and exposed to a window or other opening in a wall of the same building other than in the same fire-isolated enclosure.

Comments: *Details of the proposed fire doors to the fire stairs are to be provided with the CC application plans in accordance with this requirement.*

16. Clause C3.9 – Service Penetrations in Fire-isolated Exits

Fire isolated exits must not be penetrated by any services other than electrical wiring as permitted by D2.7(e), ducting associated with a pressurisation system or water supply pipes for fire services.

Comments: *Architect/Services Consultants to note and ensure compliance with regards to restriction of services penetrating the fire isolated stairs and passageway.*

17. Clause C3.10 – Openings in Fire-isolated Lift Shafts

If lift shafts are required to be fire-isolated an entrance doorway must be protected by -/60- fire doors and the lift indicator panels must backed by construction having an FRL of not less than -/60/60 if it exceeds 35,000mm²

Comments: Certification from the lift consultant to confirm compliance is to be provided with the construction certificate application.

18. Clause C3.11 – Bounding Construction: Class 2, 3 & 4 Buildings

Protection is required to the bounding walls of sole-occupancy units or public corridors in Class 2 & 3 buildings and Class 4 portions of buildings of Types A, B & C Construction. Namely:

- Doorways must be protected if providing access from an SOU to a:
  - Public corridor;
  - A room not within an SOU; or
  - The landing of an internal non-fire isolated stairway that serves a required exit; or
  - Another SOU
- A doorway must be protected if it provides access from a room not within an SOU to a public corridor or the like; or to the landing on a non-fire isolated stairway that serves as a required exit.
- Protection of the doorway must be -/60/30 self-closing fire door in Type A Construction, and a self-closing tight fitting solid core door in Type B or Type C Construction.

Comments: Compliance with the above bounding construction provisions are to be detailed on the construction certificate application plans/documentation. In addition, details are to be provided for the interface of the bounding walls and the floor at the external walls at CC application stage.

19. Clause C3.12 – Openings in Floors & Ceilings for Services

This clause applies to the floors and ceilings in buildings of Types A, B & C Construction and sets out the methods required to limit the spread of fire though openings in these building elements, required to resist the spread of fire.

Comments: Certification will be required at OC application stage.

20. Clause C3.13 – Openings in Shafts

This clause specifies that in buildings of Type A Construction, openings in shafts must be protected (generally with 1 hour fire rated shafts and doors).

Comments: Compliance is to be demonstrated with the construction certificate application documentation.

21. Clause C3.15 – Openings for Service Installations

The clause details the requirements for protection of service openings in building elements that have an FRL, to prevent the spread of fire. C3.15 only applies only to an element required to have an FRL with respect to integrity or insulation.

Specification C3.15 prescribes materials and methods of installation for services that penetrate walls, floors and ceilings required to have an FRL. Where the mechanical ventilation system penetrates floors or walls that require an FRL the installation is to comply with AS/NZS 1668.1.

Comments: Compliance is to be demonstrated with the construction certificate documentation.

SPECIFICATIONS.

22. Specification C1.1 – Fire Resisting Construction

The new building works are required to comply with the requirements detailed under Table 3 of Specification C1.1 for Type A Construction. (See Appendix 1)

Comments: *Compliance is readily achievable for the requirements of Type A construction. (See Appendix 1 at the end of the report for the required FRL's applicable to the building).*

SECTION D – ACCESS & EGRESS

Part D1 Provision for Escape

23. Clause D1.2 – Number of Exits Required

This clause requires the provision of sufficient exits to enable safe egress in case of an emergency. D1.2 provides that all buildings must have at least one exit from each storey and sets out circumstances in which more than one exit may be required (particularly in relation to Class 9 buildings).

Note: Not less than 2 exits must be provided from each storey if the building has an effective height of more than 25m.

Note: Not less than 2 exits must be provided from any storey that involves a vertical rise within the building of more than 1.5m unless the floor area of the storey is not more than 50m^2 and the distance of travel from any point on the floor to a single exit is not more than 20m.

Comments: *The current configuration is compliant with the requirements of this clause.*

24. Clause D1.3 – When Fire-isolated Stairways & Ramps are Required

This clause indicates when fire isolated stairways and ramps are required to enable safe egress from a building in the case of a fire, setting out the limits to which non-fire isolated exits can be used in Class 2, 3, 5, 6, 7, 8 and 9 buildings. Particular exceptions apply to Class 9a patient care and also class 9c aged care buildings.

Class 3 – an exit stair must be fire isolated when it connects or passes by more than 2 consecutive storeys. An extra storey of any classification can be included if it is only for the accommodation of motor vehicles, etc; the building has a sprinkler system throughout; or if the stair is not providing access from or egress to the additional storey, and is separated by construction achieving an FRL of 60/60/60, and is smoke proof.

Class 9b – every stairway must be fire isolated if it connects more than 2 consecutive storeys. Concessions apply to inclusion of an additional storey, or sprinklers, as per the above.

Comments: The exit stairs from the building are required to be fire isolated as they connect more than 2 levels in the Class 3 residential storeys. Note: see comments under D1.7 below

25. Clause D1.4 – Exit Travel Distances

This clause specifies the permitted travel distances allowable from Class 2 to Class 9 buildings, specifying the maximum distances to be taken into account for the various uses in each Class of building.

The following applies:

+ In a Class 2 or 3 building
    + The entrance of any SOU must be not more than:
        - 6m from an exit or from a point which travel in 2 different directions to 2 exits is available; or
        - 20m from a single exit serving the storey at the level of egress to a road or open space.
    + No point on the floor of a room which is not within a SOU must be more than 20m to an exit, or a point from which travel in different directions to 2 exits is available.

+ In a Class 5, 6 and 7a building:

  - No point on the floor must be more than 20m to 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 40m;
  - For the Class 5 and 6, the distance to a single exit serving a storey at the level of access to a road or open space may be increased to 30m.

Comments: *The exit travel distances within the building comply with the requirements of this clause.*

26. Clause D1.5 – Distances Between Alternative Exits

This clause specifies the minimum and maximum permitted distances between alternative exits. Class 5, 7a and 9b and 9c allows a maximum 60m between alternative exits when measured back through the designated point of choice (and to be no closer than 9m apart, and not converge so as to be less than 6m apart).

Exits required as alternative exits 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

  i. not less than 9m apart; and

  ii. not more than –

    - in a Class 2 or 3 building - 45m apart; or
    - In a Class 9a health-care building, if such required exit serves a patient care area – 45m apart; or
    - In all other cases, i.e. the non-patient care areas – 60m apart.

(b) Located so that the alternative paths of travel do not converge such that they become less than 6m apart.

Comments: *The travel distances between the alternative exits within the building comply with the requirements of this clause.*

27. Clause D1.6 – Dimensions of Exits

This clause specifies the minimum dimensions such as height and width of paths of travel from Class 2 to 9 buildings. It also specifies the minimum dimensions of doorways from the various compartments and the width of exit doors from buildings depending on the uses and functions carried out within them.

Comments: *Exit corridors and stairs and other paths of travel are to be a minimum 1m in width and 2m in height clear of any obstructions. The unobstructed height of any doorway may be reduced to not less than 1980mm. The total available exit width is considered adequate to achieve compliance with D1.6 (b) & (c).*

Note: See items further into the report in relation to the minimum ceiling heights for habitable and non-habitable spaces.

28. Clause D1.7 – Travel via Fire Isolated Exits

Sets out the requirements for safe discharge from various compartments and areas within a building, into a fire isolated stairway or passageway or ramp.

Note: a ramp for changes of level in a fire isolated passageway is required in a Class 9 building.

Where a path of travel from the point of discharge of a fire isolated exit necessitates passing within 6m of any part of an external wall of the same building, measured horizontally at right angles to the path of travel, that part of the wall must have –

+ an FRL of not less than 60/60/60; and

- Any openings protected internally in accordance with BCA Clause C3.4,
- For a distance of 3m above or below, as appropriate, the level of the path of travel, or for the height of the wall, whichever is the lesser.

Comments: The discharge from the western fire stair will necessitate passing within 6m of the external wall of the building (the external wall of the accessible WC). The part of the external wall of the building required to be passed within 6m to reach the road must achieve an FRL of not less than 60/60/60 for a minimum height of 3m above the egress path. Details of the fire rating shall be provided with the construction certificate plans/documentation OR an alternative solution will be required to be prepared by the Fire Engineer (the relevant Performance Requirement is DP5).

The discharge of the eastern fire stair discharges within the carpark which is open for more than 2/3 of its perimeter and the path is not greater than 20m to road or open space and thus is compliant with the requirements of this clause.

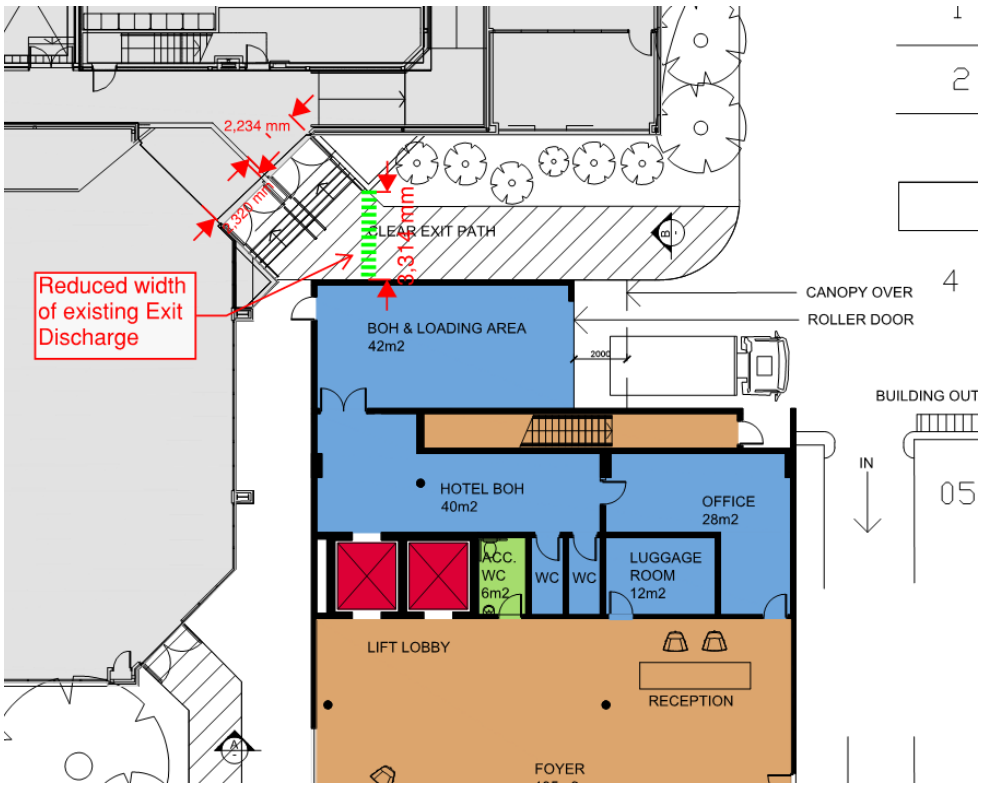
29. Clause D1.10 – Discharge From Exits

This clause requires that an exit must not be blocked at the point of discharge. Barriers such as bollards must be installed to prevent vehicles from blocking the discharge from exits.

This clause also provides the methods of construction, location and separation, at exit discharge points for all building Classes.

Comments: The pathways from exit discharges points around the site to the public road are to be detailed to comply with the requirements of this clause on the CC Application plans, noting where a change in level is present, compliant stairways or ramps not steeper than 1:8 are required.

In addition to the above, the discharge path from the existing double exit doors from the Club building adjacent to the Loading Area of the new facility has a reduced width that is less than the width of the exits in question. This reduced width arrangement – shown in the mark-up below is non-compliant with D1.10(b) and as such requires the provision of an alternative solution from the Fire Engineer to demonstrate compliance with Performance Requirement DP4 and DP6.



30. Clause D1.13 – Number of Persons Accommodated

Clause D1.13 and Table D1.13 are used to calculate the anticipated number of people in particular types of buildings so that minimum exit widths and the required number of sanitary and other facilities can be calculated. This clause and table are not to be used for non-BCA purposes.

Comments: *The use of the Class 9b spaces shall be further clarified to determine the population, however, based on D1.13 population per square metre rates the following has been calculated (for the purposes of D1.6 assessment and amenities calculations – see F2.3 below) and the upper floors for the purposes of D1.6 assessment only:*

- Lobby / Reception Area – 20 persons & 4 staff
- Level 1 Meeting Rooms – 34 persons (Phase 1)
- Level 1 Gym – 19 persons (Phase 1)
- Class 3 Apartment Areas – 240 persons

31. Clause D1.17 – Access to Lift Pits

This clause provides the requirements for access to lift pits not more than 3m deep and the requirements of construction of access for lift pits that are more than 3m deep. The requirement for signage to lift pits is also set out.

Comments: *Lift Contractor to note. Details are to be provided with the construction certificate documentation.*

PART D2 CONSTRUCTION OF EXITS

32. Clause D2.2 – Fire-isolated Stairways & Ramps

A stairway or ramp, including landings that are required to be within a fire-resisting shaft must be constructed of non-combustible materials to protect the structural integrity of the shaft.

Comments: *Certification will be required at CC application stage.*

33. Clause D2.7 – Installations in Exits & Paths of Travel

This clause restricts the installation of certain services in fire-isolated exits, non-fire-isolated exits and certain paths of travel to exits. It prescribes which services shall not be installed as well as the circumstances in which certain services may be installed in fire-isolated and non-fire-isolated exits.

If installed in a path of travel to an exit, electrical distribution boards, communication cupboards and the like containing motors, etc are to be enclosed with non-combustible construction, and doors are to be provided with smoke seals to the perimeter.

Comments: *Architect to note. Details are to be provided with the construction certificate documentation.*

34. Clause D2.10 – Pedestrian Ramps

A fire-isolated ramp may be substituted for a fire-isolated stairway if the construction enclosing the ramp and the dimensions comply with the requirements for a fire-isolated stairway. The ramp must also comply with the access requirements of D3 and AS1428.1, not have a gradient steeper than 1:8 and have a non-slip finish.

Comments: *Details of slip resistance for the ramp finish to be provided with the occupation certificate documentation.*

35. Clause D2.13 – Goings & Risers

This clause sets out the detailed requirements for the construction and geometry of the goings and risers in required stairways. These details are set out in sub-clauses (a) to (c) and *Table D2.13 Riser and Going Dimensions*.

Comments: *All stairs are to have solid risers, and are to have contrasting nosings, slip resistant surfaces throughout in accordance with clause 11 of AS2419.1-2009. (See diagram in Part D3 below). Refer to the slip resistance requirements for stairs below under Clause D2.14.*

Riser and Going Dimensions (mm)			
	Riser (R)	**Going (G)**	**Quantity (2R + G)**
Maximum	190	355	700
Minimum	115	250	550

36. Clause D2.14 – Landings

The dimensions and gradients of landings in stairways are set out in this clause; the configuration will depend on the proposed use of a building. Landing surfaces must be slip resistant surfaces OR slip resistant nosing not less than that listed in Table D2.14 when tested in accordance with AS4586.

Table D2.14 SLIP-RESISTANCE CLASSIFICATION

Application	**Surface conditions**	
	Dry	**Wet**
Ramp steeper than 1:14	P4 or R11	P5 or R12
Ramp steeper than 1:20 but not steeper than 1:14	P3 or R10	P4 or R11
Tread or landing surface	P3 or R10	P4 or R11
Nosing or landing edge strip	P3	P4

Comments: *Details to be confirmed with the occupation certificate documentation.*

37.Clause D2.15 – Thresholds

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 –

(a) In patient care areas in a class 9a health-care building, the door sill is not more than 25mm above the finished floor level to which the doorway opens: or

(b) In a Class 9c aged care building, a ramp is provided with a maximum gradient of 1;8 for a maximum height of 25mm over the threshold.

Comments: *There are no steps or ramps permitted within the door thresholds, except at the discharge from the fire stairs on the ground floor level respectively.*

Note: This provision relates primarily to door openings from the exit stairs, given the requirements for accessibility throughout other areas of the building.

38. Clause D2.16 – Balustrades or Other Barriers

This clause details where balustrades are required to be provided and sets out in specific detail the construction requirements for different building uses.

This clause details where balustrades are required to be provided and sets out in specific detail the construction requirements. Typically the following will apply to this class of building:

+ Balustrades are required where the fall to the level below is more than 1m in height. The minimum height of a balustrade is 1m above the floor of the landing, walkway or the like; and 865mm above the floor of a stairway or a ramp.
+ For a fall of more than 4m to the surface level below, a window sill must be a minimum of 865mm in height above the height of eth floor surface.
+ Where the floor is more than 4m above the surface beneath the balustrade any horizontal or near horizontal members between 150mm and 760mm above the floor must not could facilitate climbing.
+ Balustrades must be constructed so as to not permit a sphere of 125mm diameter to pass through. The exception to this is within fire isolated exits within the building, or within a class 7 or 8 building, where the rails can be positioned a maximum of 460mm

apart, so long as a bottom rail is located so a sphere of 150mm cannot pass through the opening between the nosing of the stair treads and the rail or between the floor of the landing, balcony or the like.

Comments: *Details of the proposed balustrades are to be provided with the application for the construction certificate for assessment detailing the above.*

39. Clause D2.17 – Handrails

This Clause sets out the requirements regarding the location, spacing and extent of handrails required to be installed in buildings. Handrails are required both sides of a public corridor in a Class 9c building.

This Clause sets out the requirements regarding the location, spacing and extent of handrails required to be installed in buildings. A Class 9a building must be provided along at least one side of every passageway or corridor used by patients and must be:

+ Fixed not less than 50mm clear of the wall; and
+ Where practicable, continuous for their full length.

Comments: *Details of the proposed handrails are to be provided for assessment with the application for the construction certificate. It is noted that no stairs are proposed within the SOU's. See also Part D3 requirements below -for additional provisions for handrails associated with accessible compliant stairways.*

40. Clause D2.19 – Doorways & Doors

This clause applies to all doorways and refers to the types of doors that cannot be used in buildings of prescribed uses, the use of power operated doors and the force required to operate sliding doors.

If the door is also power operated, it must be opened manually under a force of not more than 110N if there is a malfunction or failure to the power source; or upon the activation of a fire or smoke alarm anywhere in the fire compartment served by the door.

Comments: *Applicable to the Class 9b areas on ground floor level. Certification will be required at CC application stage.*

41. Clause D2.20 – Swinging Doors

A swinging door in a required exit or forming part of a required exit must swing in the direction of egress and must not otherwise impede egress. In addition, the door must not encroach at any part of its swing by more than 500mm on the required width of the exit (with the exception of airlocks and sanitary compartments, and with the exception of buildings or building parts that are less than 200m^2).

Comments: *The exit doors within the building comply with the requirements of this clause with the exception of the exit door from stair 2 and the exit door adjacent to the air lock which must swing outwards. Details are to be provided with the CC application.*

42. Clause D2.21 – Operation of Latch

A door in a required exit or forming part of a required exit and in a 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 single downward action or pushing action on a single device which is located between 900mm & 1100mm from the floor. This clause prohibits the use of devices such as deadlocks and knobs (rather, lever latches are required). D2.21 also sets out exceptions in relation to buildings where special security arrangements are required in relation to the uses carried out.

Where fitted with a fail-safe device which automatically unlocks the door upon the activation of a sprinkler system or detection system, the above need not apply.

Comments: *Architect to note. Compliance must be demonstrated at OC application stage.*

43. Clause D2.23 – Signs on Doors

This clause requires the use of signs to alert persons that the operation of certain doors, that are required for evacuation in an emergency, must not be impaired and must be installed where they can be readily seen.

Sub-clauses (a) & (b) provide the requirements for the installation of such signs, the detail contained in them.

Doors of a fire-isolated exit must not be locked from the inside in a Class 9a health-care building, a Class 9c aged care building and in a fire-isolated exit serving a storey above 25m effective height, throughout the exit.

This clause details the exceptions to the above requirements if the doors are fitted with an automatic failsafe device or where sub-clauses (i) & (ii) apply

Comments: Certification will be required at OC application stage.

Any new self-closing fire and/or smoke doors leading into the fire stair or forming part of a Horizontal Exit or smoke compartment are to be provided with signage as follows:

Any new automatic closing fire and/or smoke doors which are held on hold open devices that leads into the fire stair or forming part of a Horizontal Exit or smoke compartment are to be provided with signage as follows:

44. Clause D2.24 – Protection of Openable Window

This clause relates to the protection of openable windows in a class 9b early childhood centre, or openable windows in a bedroom in a class 2 or 3 building or a class 4 part of a building, where the floor level is more than 2m above the surface level beneath. The intent of this clause is to limit the risk of a person (especially a young child) falling through an openable window, however it does not apply to such a window where the lowest level of its window opening is less than 1.7m above the floor. Details for protection include the following:

- Openable portion of the window must have a device to restrict the window opening; or
- Be fitted with a screen with secure fittings;
- Not permit a sphere of 125mm to pass through;
- Resist outward horizontal action of 250N;
- Have a child resistant release mechanism if the screen or device is able to be removed, unlocked or overridden.

In addition to the above, and for floors that are more than 4m above the surface level below, a barrier with a height not less than 865mm above the floor is required for all openable windows. The barrier must permit a sphere of 125mm to pass through, and must not have any horizontal or near horizontal elements between 150mm and 760mm above the floor that facilitate climbing.

Comments: Details are to be provided with the construction certificate documentation.

ACCESS FOR PEOPLE WITH A DISABILITY

45. Clause D3.1 – General Building Access Requirements.

The extent of access required depends on the classification of the building. Buildings and parts of buildings must be accessible as set out in Table D3.1 unless exempted by Clause D3.4.

Class 3 Residential parts: In a building required to be accessible, access for persons with disabilities must be provided from a pedestrian entrance required to be accessible to a minimum of 1 floor and to the entrance doorway of each SOU on that level and any other common room used by the residents. Notwithstanding, where a passenger lift is installed, access must be provided to every level served by the lift. In addition, as there are 71 sole occupancy units proposed, a minimum of 4 compliant accessible SOU's must be provided.

Class 9b: Access is required to and within all areas normally used by the occupants.

Comments: *The current design complies with the requirements of this clause as five (5) compliant accessible SOUs are provided in the proposed building.*

46. Clause D3.2 – General Building Access Requirements for People with Disabilities

This part requires accessways to be provided to accessible buildings from the main points of pedestrian entry at the allotment boundary and any accessible car parking space or accessible associated buildings connected by a pedestrian link.

Access must be provided to and within all areas normally used by occupants (as required by Clause D3.1) within this building from the main points of pedestrian entry at the allotment boundary; from another accessible building connected by a pedestrian link; and any accessible car parking space.

Accessways are to be provided to accessible buildings from the main points of pedestrian entry at the allotment boundary and any accessible car parking space or accessible associated buildings connected by a pedestrian link.

Access must be provided through the principal pedestrian entrance and through not less than 50% of all pedestrian entrances (including the principal pedestrian entry).

In addition, as the building is greater than 500m2, the non-accessible entrance must not be greater than 50m from an accessible entrance.

The minimum width of an accessible doorway must have a clear opening width of not less than 850mm in accordance with AS1428.1.

Comments: *An accessible pathway from the street must be provided and should not be through the carpark driveway. Details are to be provided at CC stage – the current site plan appears to be readily able to achieve compliance in this regard.*

47. Clause D3.3 – Parts of the Building to be Accessible

This part specifies the requirements for accessways within buildings which must be accessible and compliant with the requirements of AS 1428.1-2009.

In accordance with Clause D3.3; the non-fire-isolated stairways must comply with Clause 11 of AS 1428.1-2009 and the passenger lift must comply with Clause E3.6.

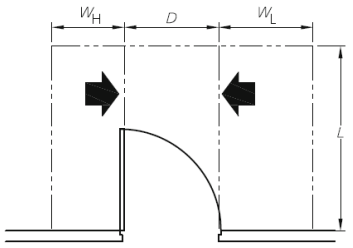
Clause D3.3(g) and (h) requires that the pile height or pile thickness shall not exceed 11mm and the carpet backing thickness shall not exceed 4mm. Moreover, the carpet pile height or pile thickness dimension shall not exceed 11mm, the carpet backing thickness dimension shall not exceed 4mm and their combined dimension shall not exceed 15mm.

Comments: *The following is a summary of some of the key matters which need to be considered in all areas required to be accessible/compliant with AS 1428.1-2009:*

- *Access for persons with disabilities must be provided, at a minimum, to and within all areas normally used by the occupants. This includes to and within all common areas.*
- *The minimum width of an accessible doorway must have a clear opening width of not less than 850mm.*
- *Turning Spaces and Passing Spaces are required to be provided in all common corridors and circulation spaces throughout the building in accordance with Sections 6.4 & 6.5 of AS 1428.1-2009.*
- *All doorways on a continuous path of travel (i.e. throughout the common areas of the class 2 parts) shall have a minimum luminance contrast of 30% provided between: door leaf and door jamb; or door leaf and adjacent wall; or architrave and wall; or door*

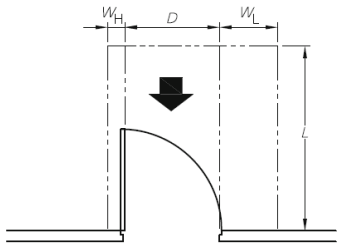
leaf and architrave; or door jamb and adjacent wall. The minimum width of the area of luminance contrast shall be 50mm.

+ *Circulation space to the new doorways that are required to be accessible are to comply with Section 13 of AS1428.1-2009, including as follows:*



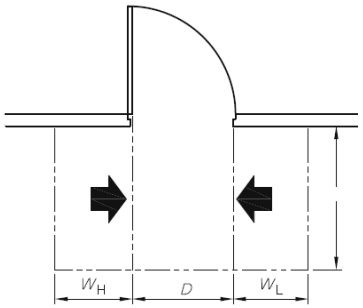
Dimension D	Dimension L	Dimension W_H	Dimension W_L
850	1670	660	900
900	1670	610	900
950	1670	560	900
1000	1670	510	900

(g) Either side approach, door opens towards user



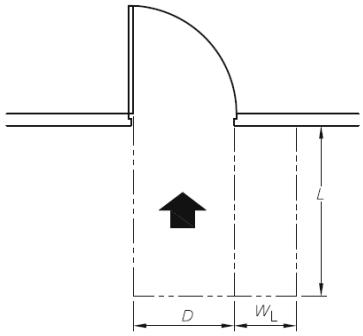
Dimension D	Dimension L	Dimension W_H	Dimension W_L
850	1450	110	530
900	1450	110	530
950	1450	110	530
1000	1450	110	530

(h) Front approach, door opens towards user



Dimension D	Dimension L	Dimension W_H	Dimension W_L
850	1240	560	660
900	1210	510	660
950	1175	460	660
1000	1155	410	660

(c) Either side approach, door opens away from user



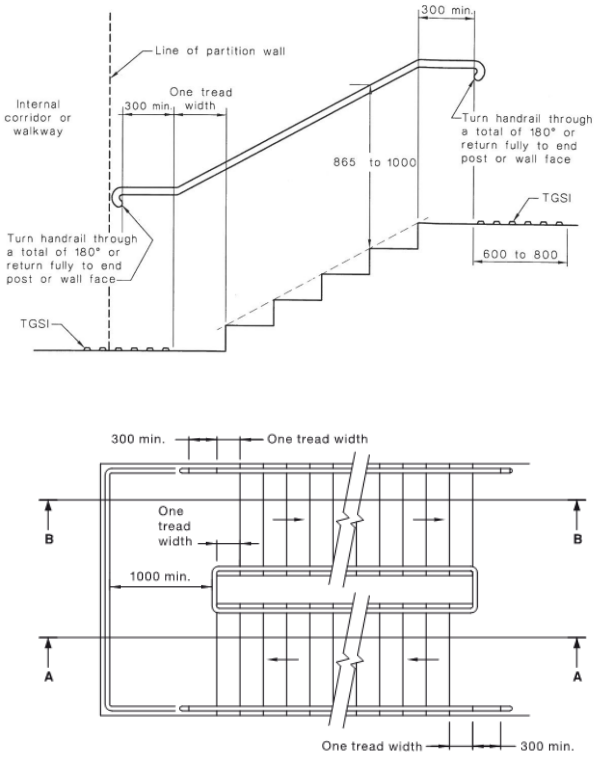
Dimension D	Dimension L	Dimension W_H	Dimension W_L
850	1450	0	510
900	1450	0	510
950	1450	0	510
1000	1450	0	510

(d) Front approach, door opens away from user

Circulation space requirements at doorways

Stairways

+ *Every common area stairway must be constructed in accordance with Clause 11 of AS1428.1, except if they are within a fire isolated exit. Note: If the main stairs within the class 3 portions of the building are to be used as a circulation stair as well as the fire stair, the stairways must be designed to comply with the accessibility requirements of Clause 11 of AS1428.1-2009 and details will need to be confirmed on the plans for CC. This should be reviewed prior to submission.*

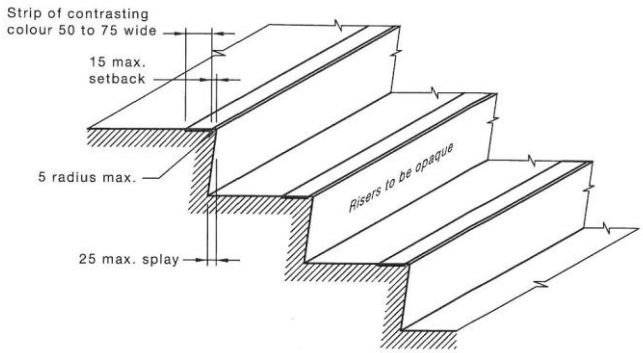


(a) Plan

DIMENSIONS IN MILLIMETRES

Stairway and handrail requirements

- *Stairs shall have opaque risers (i.e. Solid)*
- *Stair nosing's shall comply with the following diagram, which achieve a colour contrast luminance of 30% to the background (tread):*



NOTE: A chamfered nosing 5 x 5 mm may be used.

DIMENSIONS IN MILLIMETRES

FIGURE 27(A) A TYPICAL STAIR NOSING PROFILE WITH NOSING STRIP

Stairway nosing requirements

- *Stairways are to be served by Tactile Ground Surface Indicators in accordance with AS1428.4.1, except if they are within a fire isolated exit.*

Handrails

- *Handrails shall be installed along stairways as follows:*
  - *Shall be continuous through the flight and where practicable, around landings and have no obstruction on or above up to a height of 600mm,*
  - *Installed along both sides of the stairway (giving consideration also to 1m unobstructed width),*
- *BCA Clause D3.3(g) requires that any proposed carpets within the building are to have a pile height or pile thickness not exceeding 11mm and the carpet backing thickness shall not exceed 4mm (total thickness shall not exceed 15mm).*
- *All door handles and related hardware to swinging doorways are required to be a type 'D' handle which allows the door to be unlocked and opened with one hand in accordance with Clause 13.5.2.*

48. Clause D3.8 – Tactile Indicators

This clause provides for the installation of tactile indicators in buildings required to be accessible and must be provided to warn people who are blind or have a vision impairment that they are approaching a stairway, escalator , passenger conveyor, ramp, overhead obstruction or an accessway meeting a vehicular way, except for areas exempted by D3.4.

Comments: *Stairways and ramps serving the building will need to be provided with Tactile Ground Surface Indicators in accordance with AS1428.4. Refer to Access Consultant Report.*

49. Clause D3.12 – Glazing on an Accessway

This part requires the provision of a contrasting strip, chair rail, handrail or transom across all frameless or fully glazed doorways and surrounding glazing capable of being mistaken for an opening.

Comments: *Refer to Access Consultant Report.*

SECTION E – SERVICES AND EQUIPMENT

PART E1 FIRE FIGHTING EQUIPMENT

50. Clause E1.3 - Fire Hydrants

A fire hydrant system must be provided to serve a building having a total floor area greater than 500m² and where a fire brigade is available to attend a building fire, installed in accordance with the provisions of AS2419.1-2005.

The hydrant booster assembly and any external fire hydrants are required to be located greater than 10 metres from an external wall of the building, or affixed to the external wall and protected by a radiant heat shield that has an FRL of 90/90/90 located 2 metres either side and 3 metres above the outlets.

Any gas meter must be located a minimum of 10 metres from the hydrant booster outlet.

A required fire services pump room is required to be accessible directly from the road or open space, or from a door opening from a fire isolated exit.

Comments: *Detailed plans showing the location of the hydrants (and booster assembly) providing coverage to all areas of the building and a design certificate to AS2419.1-2005 is to be provided with the application for a construction certificate. Hydrant booster assemblies are required to be located within sight of the main entry of the building.*

NOTE: An alternative solution may be necessary if the new building is to be serviced by the existing hydrant system on the site serving the site. In this regard the hydrant booster assembly is located on Forrester Rd and is not within sight of the new building.

51. Clause E1.4 – Fire Hose Reels

A fire hose reel system must be provided to serve a building where one or more internal fire hydrants are installed or in a building with a floor area greater than 500m².

Fire Hose Reels are to be located within 4m of an exit, or located adjacent to an internal hydrant (other than one within a fire isolated exit). Where system coverage is not achieved by the above, additional FHR may be located in paths of travel to an exit.

We note that BCA 2014 does not require the installation of Fire Hose Reels to service the Class 3 parts of the building subject to compliance with the requirements of Clause E1.6 relating to the installation of portable fire extinguishers.

A fire hose reel system must be provided to serve a building where one or more internal fire hydrants are installed or in a building with a floor area greater than 500m² and for the purposes of this clause, a sole-occupancy unit in a Class 2, 3 building or a Class 4 part is considered to be a fire compartment.

Comments: A plan shall be provided with the construction certificate documentation together with a design certificate to AS2441-2005 that details the coverage provided by the fire hose reels required in the Class 9b portions of the building.

Note: fire hose reels are not required in the Class 3 portions of the building.

52. Clause E1.5 – Sprinklers

A sprinkler system must be installed in a building or part of a building when required by Table E1.5 and comply with Specification E1.5.

Sprinkler alarm valves must be located in a secure room or enclosure which has direct egress to a road or open space.

Table E1.5 sets out which types of building occupancies and Classes which require having sprinkler systems installed in them.

Comments: As the building has effective height of less than 25m, there is no requirement for sprinkler protection.

53. Clause E1.6 – Portable Fire Extinguishers

Portable fire extinguishers must be provided as listed in Table E1.6 and must be selected, located and distributed in accordance with Sections 1, 2, 3 and 4 of AS 2444.

In Class 2 or 3 building, portable fire extinguishers must be provided where internal fire hydrants are installed or where the fire compartment size is greater than 500m². Installation of the portable fire extinguishers required in a Class 2 or 3 building must comply with the following criteria

- Must be an ABE type fire extinguisher,
- Must have a minimum size of 2.5L
- Must be installed on the storey to which they serve, within 10m of all entrance doorways of the SOU's on that storey.

Comments: In the Class 3 component of the building portable extinguishers are required to be installed in accessible enclosures (or equivalent) in locations that are no greater than 10m from the entry door of each SOU. Details demonstrating compliance are to be included on the CC Application plans.

Part E2 Smoke Hazard Management

54. Clause E2.2 – General Requirements

Class 2 to 9 buildings must comply with the provisions of this Clause to remove smoke during a fire, to control the operation of air handling systems and to prevent the spread of smoke between compartments.

Buildings must comply with the provisions of **Table E2.2a**, as applicable to Class 2 to 9 buildings and Table **E2.2b** as applicable to Class 6 and 9b buildings. It deals with the design and construction of air handling systems that are part of a smoke hazard management system and air handling system that are not part of a smoke hazard management system.

The details relating to the installation and operation of the systems are set out in **Specifications E2.2a**, **E2.2b** and **E2.2c**.

Comments: A smoke detection and alarm system is required to be provided throughout the building in accordance with Table E2.2a and Spec. E2.2a Clause 4. It is to be connected to a building occupant warning system which is compliant with AS 1670.1.

Design certification shall be provided with the documentation submitted with the construction certificate application, however, it is to be noted that if a "multi-sensor" detection system is proposed with the Class 3 SOU's an alternative solution to the requirements of Spec. E2.2a will be required from the fire engineer – such an alternative solution will need to detail the required operation of this type of detection system and demonstrate compliance with Performance requirements EP2.2.

PART E3 LIFT INSTALLATIONS

55. Clause E3.2 – Stretcher Facility in Lifts

Stretcher facilities, complying with this clause, must be provided in lifts in at least one emergency lift as required by E3.4 or in a storey above an effective height of 12m.

A stretcher facility must accommodate a raised stretcher with a patient lying on it horizontally by providing a clear space not less than 600mm wide x 2000mmm long x 1400mm high above the floor level.

Comments: The lifts within the building serve storeys above an effective height of 12m and as such one of the lifts is required to be provided to accommodate a stretcher in accordance with the requirements of the clause above. A design certificate from the lift supplier shall be provided with the documentation submitted with the construction certificate application.

56. Clause E3.3 – Warning Against use of Lifts in Fire

Warning signs required be provided must be displayed where they can be readily seen and must comply with the details and dimensions of **Figure 3.3**.

Comments: Compliance is readily achievable. Details to be confirmed with the documentation provided with the construction certificate application.

57.Clause E3.5 – Landings

E3.5(a) The provisions of clause 12.2 – "Access" of AS 1735.2 do not apply.

E3.5(b) The provisions of Clause A3.2 – "Access to landings" of Appendix A of AS 1735.1 do not apply.

E3.5(c) Access and egress to and from lift well landings must comply with the Deemed-to-Satisfy Provisions of Part D.

Comments: Design certification from the lift supplier shall be provided with the documentation submitted with the construction certificate application.

58. Clause E3.6 – Passenger Lifts

In an accessible building, every passenger lift must be one of the types identified in **Table E3.6a,** have accessible features in accordance with **Table E3.6b** and not rely on a constant pressure device for its operation if the lift car is fully enclosed.

Comments: The passenger lifts are required to be designed to comply with AS1735.2 and AS1735.12. Design documentation shall be provided with the application for the construction certificate.

59. Clause E3.7 – Fire Service Controls

In passenger lifts designed in accordance with AS 1735 Parts 1 and 2, all lift cars serving any storey above an effective height of 12m must be provided with fire service controls.

Comments: Design certification from the lift supplier shall be provided with the documentation submitted with the construction certificate application.

60. Clause E3.9 – Fire Service Recall Operations Switch

Each group of lifts must be provided with one fire service control switch (required by Clause E3.7 above) that activates the fire service recall operation. This clause details the switch, the labelling, the key and operation procedures for a fire service recall operation.

Comments: *Design certification from the lift supplier shall be provided with the documentation submitted with the construction certificate application.*

61. Clause E3.10 – Lift Care Fire Service Drive Control Switch

The lift car fire service drive control switch required by E3.7 must be activated from within the lift car. This clause details the switch, the initiation, the labelling and operation for the fire service drive control switch.

Comments: *Design certification from the lift supplier shall be provided with the documentation submitted with the construction certificate application.*

EMERGENCY LIGHTING, EXIT SIGNS AND WARNING SYSTEMS

62. Clause E4.2 – Emergency Lighting Requirements

This clause details when emergency lighting must be installed in Class 2 to 9 buildings. The requirements for buildings and parts of buildings are detailed in sub-clauses (a) to (i) and each sub-clause must be considered as more than one may apply to any single building

Comments: *Design details shall be provided with the documentation provided with the occupation certificate application.*

63. Clause E4.5 – Exit Signs

An exit sign must be clearly visible to persons approaching the exit and must be installed on, above or adjacent to each door providing egress form a building. Sub-clauses (a) to (d) set out the situations where exit signs are required to be installed.

Comments: *Design details shall be provided with the documentation provided with the occupation certificate application.*

64. Clause E4.6 – Direction Signs

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.

Comments: *Design details shall be provided with the documentation provided with the occupation certificate application.*

65. Clause E4.8 – Design & Operation of Exit Signs

Every required exit sign must comply with AS/NZS 2293.1 and be clearly visible at all times when the building is occupied by any person having the legal right of entry into the building.

Comments: *Design details shall be provided with the documentation provided with the occupation certificate application.*

SECTION F – HEALTH & AMENITY

PART F1 DAMP AND WEATHERPROOFING.

66. Clause F1.1 – Stormwater drainage

Stormwater drainage must comply with AS/NZ 3500.3.

Comments: *Design statements to be provided with the construction certificate application.*

67. Clause F1.7 – Waterproofing of Wet Areas

This clause requires that wet areas in Class 2 to 9 buildings must be waterproofed. It prescribes the standards to which the work must be carried on the construction of rooms containing urinals and their installation.

Comments: *Details to be provided with the application for the construction certificate.*

68. Clause F1.11 – Provision of Floor Wastes

In a Class 2 or 3 building or Class 4 part of a building, the floor of each bathroom and laundry located above a sole-occupancy unit or public space must be graded to permit drainage to a floor waste.

Comments: *Details to be provided with the application for the construction certificate.*

PART F2 SANITARY AND OTHER FACILITIES

69. Clause F2.1 – Facilities in Residential Buildings

Sanitary and other facilities for Class 2 and 3 buildings and Class 9c aged care buildings and for Class 4 parts of buildings must be provided in accordance with **Table F2.1**.this Table details the facilities required to be provided in residential buildings.

Comments: *Current provisions are compliant with the requirements of this clause. Final Design Details will be required to be submitted at CC Application Stage.*

70. Clause F2.2 – Calculation of Number of Occupants & Facilities

This clause sets out the requirements for the calculation of the number of occupants and the number of sanitary facilities required to be installed in Class 2 to 9 buildings. The parameters for the calculation are set out in sub-clauses (a) to (d).

Comments: See D1.13 above.

71. Clause F2.3 – Facilities in Class 3 to 9 Buildings

This clause provides the requirements for sanitary facilities to be installed in Class 3, 5, 6, 7, 8 and 9 buildings in accordance with Table F2.3.

When accessible sanitary facilities are provided, they account once for each sex.

Comments: *Based on the population numbers listed for the Class 9b areas under D1.13, the proposed sanitary facilities comply with the requirements of this clause.*

72. Clause F2.4 – Accessible Sanitary Facilities

Accessible unisex sanitary compartments must be provided, in accordance with **Table F2.4(a)** and unisex showers must be provided in accordance with **Table F2.4(b)**, in buildings or parts that are required to be accessible. The details for the provision of disable facilities and the standard, AS 1428.1, are set out in sub-clauses (a) to (i).

Comments: *The accessible sanitary facility provided to the Ground Floor and the proposed gym sanitary facility shall comply with the requirements of AS1428.1-2009. Design certification shall be provided with the documentation submitted with the construction certificate application.*

73. Clause F2.5 – Construction of Sanitary Compartments

Other than in an early childhood centre, sanitary compartments must have doors and partitions that separate adjacent compartments and extend –

- from floor level to the ceiling in the case of a unisex facility; or
- a height of not less than 1.5m above the floor if primary school children are the principal users; or
- 1.8m above the floor in all other cases.

The door to a fully enclosed sanitary compartment must open outwards; or slide: or be readily removable from the outside of the sanitary compartment, unless there is a clear space of at least 1.2m, measured in accordance with Figure F2.5 between the closet pan within the sanitary compartment and the doorway.

Comments: Details to be provided at CC application stage.

PART F3 ROOM HEIGHTS

74. Clause F3.1 Height of Rooms and other spaces

The ceiling heights in Class 2 to 9 buildings must not be less than required in sub-clauses (a) to (f) of this clause.

The ceiling heights are prescribed and should be checked for all classes and parts during assessment or the design process.

The ceiling minimum heights for a Class 6 building are as follows:

- Corridor or passage – 2.1m;
- Bathroom, storeroom, etc – 2.1m
- Remainder – 2.4m.

The ceiling minimum heights for a Class 2 or 3 building are as follows:

- Kitchen, laundry or the like – 2.1m;
- Corridor, passageway or the like – 2.1m
- Habitable rooms excluding the kitchen – 2.4m.

Comments: Architect to ensure compliance with the above criteria. Details demonstrating compliance are to be provided with CC Application plans.

PART F4 LIGHT AND VENTILATION

75. Clause F4.1 – Provision of natural Light

Natural lighting must be provided in:

- Class 2 buildings and Class 4 parts of buildings – to all habitable rooms.
- Class 3 buildings – all bedrooms and dormitories.

Comments: Detailed plans to be reviewed with the construction certificate application and certification provided.

76. Clause F4.2 - Methods & Extent of Natural Lighting

Sub-clauses (a), (b) & (c) set out the requirement that natural light must be provided by windows and the size and location of such windows. Natural light can also be provided by the use of rooflights in accordance with the provisions of this Clause.

Note: *the Guide to the BCA, as part of the commentary under* ***F4.2****, contains an example for determining proportional combination of windows and rooflights.* ***Figure F4.2(1)*** *in the Guide to the BCA contains an elevation showing method of measuring distance of window from boundary.* ***Figure F4.2(2)*** *contains an illustration of window sill in aged care building.*

Comments: Detailed plans to be reviewed with the construction certificate application and certification is to be provided at CC application stage.

77. Clause F4.4 – Artificial Lighting

Artificial lighting is required where it is necessary to minimise the hazard to occupants during an emergency evacuation. Sub-clauses (a), (b) & (c) sets out the places where artificial lighting is always required in all classes of buildings and the standard to which it must be installed.

Comments: Compliance is readily achievable. Design documentation shall be provided with the construction certificate application.

78. Clause F4.5 – Ventilation of Rooms

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 natural ventilation complying with F4.6 **or** a mechanical or air-conditioning system complying with AS1668.2 and AS/NZS 3666.1.

Comments: Detailed review of any window openings to be undertaken with the application for the construction certificate. Design documentation shall be provided from the mechanical consultant for all ventilation to the building with the construction certificate documentation.

79. Clause F4.6 – Natural Ventilation

Natural ventilation provided in accordance with F4.5(a) must consist of permanent openings, windows, doors or other devices which can be opened in accordance with sub-clauses (a), (b) & (c).

Comments: Detailed review of any window openings to be undertaken with the application for the construction certificate. Design documentation shall be provided from the mechanical consultant for all ventilation to the building with the construction certificate documentation.

PART F5 SOUND TRANSMISSION AND INSULATION

80. Clause F5.4 – Sound Insulation Rating of Floors

The sound rating of floors in a Class 2 or 3 building must be calculated in accordance with the requirements of sub-clause (a) and the floors in a Class 9c aged care building must be calculated in accordance with sub-clause (b). The deemed-to-satisfy construction requirements are set out in **Specification F5.2**. **Table 3A** of the Specification prescribes Acceptable Forms of Construction for Floors.

Comments: Details to be provided with the construction certificate documentation. It is recommended that an Acoustic Consultant be engaged to confirm compliance with the requirement of this clause have been achieved.

81. Clause F5.5 – Sound Insulation Rating of Walls

The sound rating required for walls in Class 2 and 3 buildings and Class 9c aged care buildings is set out in sub-clauses (a) to (f). The deemed-to-satisfy construction requirements are set out in **Specification F5.2. Table 2A** of the Specification prescribes Acceptable Forms of Construction for Walls.

Comments: *Details to be provided with the construction certificate documentation. It is recommended that an Acoustic Consultant be engaged to confirm compliance with the requirement of this clause have been achieved.*

82. Clause F5.6 – Sound Insulation Rating of Services

This clause details the separation requirements for services. The requirements only apply to services which pass through more than one sole-occupancy unit or are located in a wall or floor cavity which separates sole-occupancy units. F5.6 does not apply if the pipe is only located in a single unit or any part of a Class 2, 3 or 9c building which is not part of a sole-occupancy unit.

Comments: Details to be provided with the construction certificate documentation. It is recommended that an Acoustic Consultant be engaged to confirm compliance with the requirement of this clause have been achieved.

83. Clause F5.7 – Sound Isolation of Pumps

A flexible coupling must be used at the point of connection between the service pipes in a building and any circulating or other pump.

Comments: Details to be provided with the construction certificate documentation. It is recommended that an Acoustic Consultant be engaged to confirm compliance with the requirement of this clause have been achieved.

SECTION J – ENERGY EFFICIENCY

84. Parts J1 to J8 – Energy Efficiency

The following energy efficiency design measures will be required to be implemented into the building design to satisfy the requirements under BCA Parts J1, J2, J3, J5, J6, and J8 for Climate Zone 5 as follows;

- Building envelope/insulation – Part J1
- Glazing (Façade) – Part J2
- Building sealing – Part J3
- Mechanical ventilation systems – Part J5
- Artificial lighting & power controls (interior and exterior lighting) – Part J6
- Access, maintenance and monitoring of energy efficiency systems – Part J8

Comments: Details are to be provided in the form of a Section J Compliance Report or certification from the design consultants for their respective disciplines for the proposed new glazing, building fabric, ventilation, electrical and hydraulic systems, confirming that compliance with the requirements of Section J has been achieved.

C. CONCLUSION

This report contains an assessment of the referenced architectural documentation for the proposed hotel building at St Mary's Leagues Club, against the Deemed-to-Satisfy Provisions of the BCA 2016. Arising from the review, it is considered that the proposed development can readily achieve compliance with the relevant provisions of the BCA.

The following fire safety measures are required for the proposed building, however, the following list may change as a result of the Alternative Solutions referenced above:

Essential Fire and Other Safety Measures	Standard of Performance
Access Panels, Doors & Hoppers	BCA Clause C3.13 & AS 1530.4 - 2005
Alarm Signaling Equipment	AS1670.3 – 2004
Automatic Fire Detection & Alarm System	BCA Spec. E2.2a & AS 1670.1 - 2004.
Emergency Lighting	BCA Clause E4.4 & AS 2293.1 - 2005
Exit Signs	BCA Clauses E4.5, E4.6 & E4.8 and AS 2293.1 – 2005
Fire Dampers	BCA Clause C3.15, AS 1668.1 - 1998 & AS 1682.1 & 2 – 1990
Fire Doors	BCA Clause C2.12, C2.13, C3.2, C3.4, C3.5, C3.6 & C3.7, C3.8, C3.11 and AS 1905.1 – 2005
Fire Hose Reels	BCA Clause E1.4 & AS 2441 – 2005
Fire Hydrant Systems	Clause E1.3 & AS 2419.1 - 2005
Fire Seals	BCA Clause C3.15 & AS 1530.4 – 2005 & AS 4072.1 – 2005
Fire Shutters (TBC)	BCA Spec. C3.4 & AS 1905.2 – 2005
Fire Windows (TBC)	BCA Spec. C3.4
Lightweight Construction	BCA Clause C1.8 & AS 1530.3 – 1999
Mechanical Air Handling Systems	BCA Clause E2.2, AS/NZS 1668.1 - 1998 & AS 1668.2 – 1991
Paths of Travel	EP & A Regulation Clause 186
Portable Fire Extinguishers	BCA Clause E1.6 & AS 2444 – 2001
Wall wetting sprinklers (TBC)	BCA Clause C3.4 & AS 2118.2 – 1995
Warning & Operational signs	Section 183 of the EP & A Regulations 2000, AS 1905.1 - 2005, BCA Clause C3.6, D2.23, E3.3

Notes:

i. *The measures included and the standards of performances nominated above may vary as a result of any proposed fire engineered alternative solutions.*

ii. *The above list is a schedule of fire safety measures required under Section E of the BCA only and does not take into consideration any other measures that may be required in the building as a result of other requirements of the BCA or other statutory standards.*

D. APPENDIX 1

TABLE 3 TYPE A CONSTRUCTION: FRL OF BUILDING ELEMENTS

Building element	Class of building — FRL: (in minutes)		
	Structural adequacy/ *Integrity*/ *Insulation*		
	2, 3 or 4 part	**5, 7a**	**6**
EXTERNAL WALL (including any column and other building element incorporated therein) or other external building element, where the distance from any *fire-source feature* to which it is exposed is—			
For *loadbearing* parts—			
less than 1.5 m	90/ 90/ 90	120/120/120	180/180/180
1.5 to less than 3 m	90/ 60/ 60	120/ 90/ 90	180/180/120
3 m or more	90/ 60/ 30	120/ 60/ 30	180/120/ 90
For non- *loadbearing* parts—			
less than 1.5 m	–/ 90/ 90	–/120/120	–/180/180
1.5 to less than 3 m	–/ 60/ 60	–/ 90/ 90	–/180/120
3 m or more	–/–/–	–/–/–	–/–/–
EXTERNAL COLUMN not incorporated in an *external wall*, where the distance from any *fire-source feature* to which it is exposed is—			
less than 3 m	90/–/–	120/–/–	180/–/–
3 m or more	–/–/–	–/–/–	–/–/–
COMMON WALLS and FIRE WALLS—	90/ 90/ 90	120/120/120	180/180/180
INTERNAL WALLS—			
Fire-resisting lift and stair *shafts*—			
Loadbearing	90/ 90/ 90	120/120/120	180/120/120
Non- *loadbearing*	–/ 90/ 90	–/120/120	–/120/120
Bounding *public corridors*, public lobbies and the like—			

Building element	Class of building — FRL: (in minutes)		
	Structural adequacy*/ *Integrity*/ *Insulation		
	2, 3 or 4 part	**5, 7a**	**6**
Loadbearing	90/ 90/ 90	120/–/–	180/–/–
Non- *loadbearing*	–/ 60/ 60	–/–/–	–/–/–
Between or bounding *sole-occupancy units*—			
Loadbearing	90/ 90/ 90	120/–/–	180/–/–
Non- *loadbearing*	–/ 60/ 60	–/–/–	–/–/–
Ventilating, pipe, garbage, and like *shafts* not used for the discharge of hot products of combustion—			
Loadbearing	90/ 90/ 90	120/ 90/ 90	180/120/120
Non- *loadbearing*	–/ 90/ 90	–/ 90/ 90	–/120/120
OTHER LOADBEARING INTERNAL WALLS, INTERNAL BEAMS, TRUSSES			
and COLUMNS—	90/–/–	120/–/–	180/–/–
FLOORS	90/ 90/ 90	120/120/120	180/180/180
ROOFS	90/ 60/ 30	120/ 60/ 30	180/ 60/ 30