

# **BCA Report**

Mixed Use Development

24-26 Railway Parade, Westmead NSW

Ref: BA1592 Rev 5: 24.10.2018

National Construction Code, Volume One, Building Code of Australia 2016

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#### **Revision History**

Revision	Date	Comment	Prepared By	Reviewed By	Approved By
1	06.03.17	For client comment and/or DA submission	Robert Wood	Leon Newland	Robert Wood
			Riva.	1- D.	Ruh.
2	19.08.17	Following client feedback and Pre-lodgment meetings	Robert Wood	Leon Newland	Robert Wood
			Riva.	1-AD.	Riva.
3	13.12.17	Following client feedback	Robert Wood	Leon Newland	Robert Wood
			Riva.	1- A.D.	RWa.
4	22.05.18	Following design changes	Robert Wood	Ryan Dillon	Robert Wood
			RWa.	Byr Man	RWa.

# **Revision History**

Revision	Date	Comment	Prepared By	Reviewed By	Approved By
5	24.10.18	Following design changes	Robert Wood	Ryan Dillon	Robert Wood
		indicated by Sissons Architects on 24.10.18	Riva.	Byr Win	River

- 1.1 This report documents the relevant clause by clause assessment of the proposed works against the deemed to satisfy requirements of the National Construction Code, Volume One: Building Code of Australia 2016, or BCA as now referred to in this report.
- 1.2 The proposed development is for the construction of a new 16-storey mixed use development comprising of:
  - a) 3 levels of basement car parking B2-B4;
  - b) Tenancy, storage areas on Level B1 and hotel back of house areas;
  - c) Supermarket, retail/commercial on the upper ground floor;
  - d) Food and Beverage Precinct, Tavern on Level 01
  - e) Medical Centre/Commercial on level 02;
  - f) 5 storeys of Hotel and;
  - g) Plant on Level 08;
  - h) 6-storeys of residential units.
- 1.3 The following items are brought to your attention and are to be addressed by a Fire Engineer as a Performance Solution, therefore deemed capable to compliance with the BCA 2016. Please refer to the relevant clause in the body of the report for detailed information.

BCA Clause	Performance Requirement	Summary
C3.2	CP2	<ul> <li>There are openings of the building within 3 m of side or rear boundaries in the following areas:</li> <li>a) Tavern Entry and Tenancy 002 to West boundary</li> <li>b) Public amenities and Tavern Stairs to West boundary</li> <li>c) Tenancy 004 to North boundary</li> <li>d) Public amenities (Level 01)</li> </ul>

BCA Clause	Performance Requirement	Summary						
C3.2	CP2	e) Medical Centre/Food & Beverage to North boundary (Level 01 & 02)						
Cont		f) Medical Centre/Commercial to West boundary						
		g) Reception & Lift Lobby (Level 02) to West boundary						
		h) Plant on Level 03 to West boundary						
		Openings will require to be appropriately protected in accordance with C3.4						
D1.4	DP4	Exit travel distances						
		1. Travel distances from the following areas exceed the maximum 20 m to a single exit or point of choice:						
		LB1 Store Loading Dock Plan						
		a) Within Portable Cold-Water Break Tanks & Cold Tank Water Pump Room (28 m)						
		Lower Ground – Ashley Lane						
		Within sprinkler and hydrant tank room (23 m)						
		<u> Upper Ground – Railway Parade</u>						
		c) From public open space to road (60 m)						
		d) From tenancy 002 exceeds to road (41 m)						
		e) From tenancy 004 exceeds to road (64 m)						
		f) From Apartment lobby to road (33 m)						
		g) From Hotel Lobby to road (28 m)						
		Level 01 – Tavern/Medical Centre						
		h) Within the F&B Tenancy 2 & 4 Centre <i>may</i> exceed max 20 m from GL F-7 (internal layout unknown)						

BCA Clause	Performance Requirement	Summary
D1.4 Cont	DP4	<ul> <li>2. Travel distances from the following units exceed the maximum 6 m to a single exit or point of choice:</li> <li><u>Level 03 – Hotel Lobby</u> <ul> <li>i) One-bedroom Units # (top left – south) (8 m)</li> </ul> </li> <li><u>Level 04-07 – Hotel</u> <ul> <li>j) Units # at end of South corridors (8 m)</li> <li>k) Units # at end of North corridors (9 m)</li> </ul> </li> </ul>
D1.7	DP4	Travel via fire-isolated exits         The fire stairs discharge within Apartment lobby which is a cover area that does not meet compliance with D1.7(b)(iii). The covered area must — <ul> <li>(A) adjoin a road or open space; and</li> <li>(B) is open for at least 1/3 of its perimeter; and</li> <li>(C) has an unobstructed clear height throughout, including the perimeter openings, of not less than 3 m; and</li> <li>(D) provides an unimpeded path of travel from the point of discharge to the road or open space of not more than 6 m.</li> </ul> <li>The fire stairs also discharge within 6 m of building therefore FRL 60/60/60 required to building and openings protected to C3.4</li>

BCA Clause	Performance Requirement	Summary
E1.5	EP1.3	Fire Hydrants The hydrant and sprinkler booster is not within sight of the main entrance and is within 10 m of the main switch room.
E1.8	EP1.6	The Fire Control Centre must be in a separate fire control room. The proposed fire control room is not in accordance with Spec E1.8.

1.4 There is insufficient information at this stage to show compliance with the BCA, however subject to the items highlighted in this report being incorporated in the scheme, then general BCA compliance could be achieved. Full compliance with certain BCA clauses cannot be ascertained without additional information being provided and typically at Construction Certificate stage, as indicated in this report.

#### Introduction

#### General

The proposed development is to be located at 24-26 Railway Parade, Westmead NSW and is located within the local government area of Parramatta City Council.

The proposed development is for the construction of a new 16-storey mixed use development with 3 levels of basement car parking.

#### **Purpose of the Report**

This report has been prepared, on behalf of Drill Pty Ltd, to establish compliance to the Building Code of Australia (BCA) 2016.

#### **Basis of the assessment**

This report is based on:

- i) Desk top assessment of Architectural plans prepared by Sissons Architects as detailed in the Appendix 3;
- ii) The National Construction Code Building Code of Australia (BCA) Volume 2016, prepared by the Australian Building Codes Board;
- iii) Disability (Access to Premises) Standards 2010;
- iv) Relevant provisions of Australian Standards as referenced in this Report.

#### **Statutory Approvals**

This project is subject to the Development Application to Parramatta City Council.

#### Introduction

#### Limitations

a) This report does not consider the following except where specifically mentioned;

- i) Local Consenting Authority Plumbing and Drainage.
- ii) Local Consenting Authority Trade waste.
- iii) The Disability Discrimination Act 1992.
- iv) Occupational Health & Safety Act and Regulations;
- v) Reporting on hazardous materials, OH&S matters or site contamination
- vi) Structural and Services Design Documentation;
- b) This report is based on plans listed in Appendix 3 only.
- c) The assessment is limited to a desktop assessment only, and includes no site assessment or physical assessment of the site in.
- d) No provision of any Part 4A Certificates of the Environmental Planning & Assessment Act 1979 are made.

#### **Building Assessment**

The report is set out so each BCA clause is listed and provided with assessment comments, along with a 'status' to indicate whether the design documentation either:

i)	Complies	<ul> <li>the design meets the deemed-to-satisfy provisions of the relevant clause of the BCA; or</li> </ul>
ii)	Capable of compliance	- insufficient details have been provided at this stage but compliance could be achieved, details will
		be required prior to the issue of the Construction Certificate.
iii)	Does Not Comply	- the design does not meet the deemed-to-satisfy provisions of the relevant clause of the BCA;
iv)	Not Applicable	<ul> <li>the relevant clause is not relevant to the project.</li> </ul>
v)		- 'Note' or 'for reference only'

For example:

Clause	Title & clause summary	Assessment Comments	Complies	Capable of Compliance	Does Not Comply	Not Applicable
B1.1, 1.2 & 1.4	Structural Provisions	Full structural drawings and design certificates for all new structural works, will be required to show compliance with these Clauses. e.g. piling, footings, slab, frame, glazed assemblies, termite protection etc.		х		

For ease of reference, each of the status has been assigned a colour and is also marked with an 'X' for clarity. Only one box is coloured and marked with an 'X' in each case. The remaining boxes are left blank.

Where the boxes are mark with an 'PS', this indicates that a Performance Solution is proposed to meet the Performance Requirements of the BCA 2016.

### **General Information**

#### **General Information**

BCA	Item / Clause Version	Description or Requirement 2016 One Amdt 1
A1.1	Effective Height	50.20 m
A1.1	Climate Zone	5
A3.2	Classification	Class 2 (apartments), Class 3 (hotel), Class 5 (offices, Medical Centre), Class 6 (Supermarket, Food & Beverage, Tavern), Class 7a (car park)
C1.1	Type of Construction	A
C1.2	Rise in Storeys	16

#### **Section B – Structural Provisions**

Resistance to actions (B1.1), Determination of individual actions (Part B1.2), Determination of structural resistance of materials and forms of construction (B1.4)

Clause	Title & clause summary	Assessment Comments	Complies	Capable of Compliance	Does Not Comply	Not Applicable
B1.1, 1.2 & 1.4	Structural Provisions	Full structural drawings and design certificates for all new structural works, will be required to show compliance with these Clauses e.g. piling, footings, slab, frame, glazed assemblies, termite protection etc. Details will be required prior to the issue of the Construction Certificate.		x		

#### Fire Resistance & Stability (Part C1)

Clause	Title & clause summary	Assessment Comments	Complies	Capable of Compliance	Does Not Comply	Not Applicable
C1.1	Type of construction required	The type of construction applicable is Type A. Architectural and structural details should indicate compliance with this Clause and Specification C1.1 <i>Details will be required prior to the issue of the Construction Certificate.</i>		х		
C1.2	Calculation of rise in storeys	The rise in storeys is 16	-	-	-	-
C1.3	Buildings of multiple classification	Type A construction applies.	-	-	-	-
C1.4	Mixed types of construction	Mixed types of construction must comply with this clause. Assumed that all Type A.				x
C1.5	Two storey Class 2, 3 or 9c buildings	Not a 2-storey building.				x
C1.6	Class 4 parts of buildings	No Class 4 parts.				Х
C1.7	Open spectator stands and indoor sports stadiums	Not an open spectator stand or indoor sports stadium.				x
C1.8	Lightweight construction	Lightweight construction must comply with this clause. Details will be required prior to the issue of the Construction Certificate.		х		

Clause	Title & clause summary	Assessment Comments	Complies	Capable of Compliance	Does Not Comply	Not Applicable
C1.10	Fire hazard properties	This Clauses permits the use of certain types of materials achieving the required fire hazard properties. Details will be required at Construction Certificate stage.		x		
C1.11	Performance of external walls in fire	Considered not applicable – no tilt up panels proposed.				x

#### Compartmentation and Separation (Part C2)

C2.2	General floor area & volume limitations	The Building is Class 2 and Type A Construction. Compartment size only applies to all floors other than the hotel and apartment levels. Therefore, the maximum allowable fire compartment size is 5,000 m <sup>2</sup> and the Maximum volume allowed is 48,000m <sup>3</sup> . Compartment sizes are within limits.	Х		
C2.3	Large isolated buildings	Not a Large isolated building.			Х
C2.4	Requirements for open space and vehicular access	Not a Large isolated building.			x
C2.5	Class 9a and 9c buildings	Not a Class 9a or 9c building.			X

Clause	Title & clause summary	Assessment Comments	Complies	Capable of Compliance	Does Not Comply	Not Applicable
C2.6	Vertical separation of openings in external walls	Vertical separation is not required as the building is sprinkler protected throughout.				x
C2.7	Separation by firewalls	This Clause provides guidance on the construction requirements where they are installed to separate fire compartments (in this instance). <i>Details will be required at Construction Certificate stage.</i>		х		
C2.8	Separation of classifications in the same storey	<ul> <li>Different classifications on different storeys exist.</li> <li>Separation will be required between different classifications on floors: <ol> <li>LB1</li> <li>Lower ground floor</li> <li>Upper ground floor</li> <li>Level 01</li> </ol> </li> <li>Separation is required in accordance with Type A construction.</li> <li>Details will be required at Construction Certificate stage.</li> </ul>		x		
C2.9	Separation of classifications in different storeys	Different classifications on different storeys exist between basement and ground floor and ground floor and first floor. The fire resistance level (FRL) of all floors must be in accordance with Type A construction. As the basement will be sprinkler protected the FRL of the floors and walls can in accordance with Table 3.9. Details will be required at Construction Certificate stage.		x		

Clause	Title & clause summary	Assessment Comments	Complies	Capable of Compliance	Does Not Comply	Not Applicable
C2.10	Separation of lift shafts	The lift shafts are required to be fire separated in accordance with Type A construction i.e. FRL 90/90/90 load-bearing or -/90/90 non load-bearing. <i>Details will be required at Construction Certificate stage.</i>		х		
C2.11	Stairways and lifts in one shaft	No instances where this occurs.				Х
C2.12	Separation of equipment	The lift motors and lift control panels; or emergency generators used to sustain emergency equipment operating in the emergency mode; boilers; or certain types of batteries will need to be fire separated from the rest of the building. <i>Details will be required at Construction Certificate stage.</i>		x		
C2.13	Electricity supply system	The enclosures to the MSB Room and Substation shown of the Lower Ground Plan must have an FRL 120/120/120 with an FRL -/120/30 self- closing fire door <i>Details will be required at Construction Certificate stage.</i>		х		
C2.14	Public corridors in Class 2 & 3 building	Subdivision of the corridors noted on levels 03-07. Smoke walls and doors shall be designed and installed in accordance with this Clause. Details will be required prior to issue of a Construction Certificate.		x		

#### Protection of openings (Part C3)

Clause	Title & clause summary	Assessment Comments	Complies	Capable of Compliance	Does Not Comply	Not Applicable
C3.2	Protection of openings in external walls	<ul> <li>There are openings of the building within 3 m of side or rear boundaries in the following areas:</li> <li>a) Tavern Entry and Tenancy 002 to West boundary</li> <li>b) Public amenities and Tavern Stairs to West boundary</li> <li>c) Tenancy 004 to North boundary</li> <li>d) Public amenities (Level 01)</li> <li>e) Medical Centre/Food &amp; Beverage to North boundary (Level 01 &amp; 02)</li> <li>f) Medical Centre/Commercial to West boundary</li> <li>g) Reception &amp; Lift Lobby (Level 02) to West boundary</li> <li>h) Plant on Level 03 to West boundary</li> <li>Openings will require to be appropriately protected in accordance with C3.4</li> <li>Details will be required prior to issue of a Construction Certificate.</li> </ul>		x		
C3.3	Separation of external walls and associated openings in different fire compartments	No instances where this occurs.				х
C3.4	Acceptable Methods of protection	The clause gives guidance on acceptable methods of protection e.g. fire windows, fire shutter, wall-wetting sprinklers.	-	-	-	-
C3.5	Doorways in fire walls	No fire walls.				х

Clause	Title & clause summary	Assessment Comments	Complies	Capable of Compliance	Does Not Comply	Not Applicable
C3.6	Sliding fire doors	No sliding fire doors.				Х
C3.7	Protection of doorways in horizontal exits	No horizontal exits.				X
C3.8	Openings in fire isolated exits	Doors on to the fire isolated exits are required to have an FRL -/60/30. <i>Details will be required at Construction Certificate stage.</i>		х		
C3.9	Service penetrations in fire isolated exits	Service penetrations must be limited to services indicated in this Clause. Details will be required at Construction Certificate stage.		х		
C3.10	Openings in fire isolated lift shafts	Clause gives guidance on acceptable openings in fire isolated lift shafts Details will be required at Construction Certificate stage.		х		
C3.11	Bounding Construction: Class 2, 3 and 4 buildings	Bounding construction to the SOU will be required to show compliance with Table 3 of Spec C1.1 (Type A construction). Details will be required at Construction Certificate stage.		х		
C3.12	Openings in floors and ceilings for services	Openings in floors and ceilings will be required to be appropriately protected. Details will be required at Construction Certificate stage.		x		
C3.13	Openings in shafts	Openings in shafts will be required to be appropriately protected. Details will be required at Construction Certificate stage.		х		

Clause	Title & clause summary	Assessment Comments	Complies	Capable of Compliance	Does Not Comply	Not Applicable
C3.15	Openings for service installation	This clause gives guidance on suitable means to protect penetrations.		х		
C3.16	Construction Joints	Construction joints are to show compliance with this Clause. Details will be required at Construction Certificate stage.		х		
C3.17	Columns protected with lightweight construction to achieve an FRL	This clause gives guidance on lightweight construction to protect columns requiring FRL.		х		

#### Provision for escape (Part D1)

Clause	Title & clause summary	Assessment Comments	Complies	Capable of Compliance	Does Not Comply	Not applicable
D1.1	Application of part	The provisions of Part D1 apply subject to concessions within residential sole- occupancy units.	-	-	-	-
D1.2	Number of exits required	The number of exits is sufficient.	х			
D1.3	When fire isolated exits are required	Required fire isolated stairs are shown on plans.	х			
D1.4	Exit travel distances	1. Travel distances from the following areas exceed the maximum 20 m to a single exit or point of choice:				
		LB1 Store Loading Dock Plan				
		<ul> <li>a) Within Portable Cold-Water Break Tanks &amp; Cold Tank Water Pump Room (28 m)</li> </ul>		PS		
		Lower Ground – Ashley Lane				
		b) Within sprinkler and hydrant tank room (23 m)				

Clause	Title & clause summary	Assessment Comments	Complies	Capable of Compliance	Does Not Comply	Not applicable
D1.4	Exit travel distances	Upper Ground – Railway Parade         c)       From public open space to road (60 m)         d)       From tenancy 002 exceeds to road (41 m)         e)       From tenancy 004 exceeds to road (64 m)         f)       From Apartment lobby to road (33 m)         g)       From Hotel Lobby to road (28 m)         Level 01 – Food & Beverage Precinct         a)       Within the F&B Tenancy 2 & 4 Centre may exceed max 20 m from GL F-7 (internal layout unknown)         2.       Travel distances from the following units exceed the maximum 6 m to a single exit or point of choice:         Level 03 – Hotel Lobby       b)         b)       One bedroom Units # (top left – south) (8 m)         Level 04-07 – Hotel         c)       Units # at end of South corridors (8 m)         d)       Units # at end of North corridors (9 m)	<u>S</u>	PS	<u>°</u>	G C
		Solution by a Fire Engineer under Performance Requirements DP4 and required prior to issue of a Construction Certificate.				

Clause	Title & clause summary	Assessment Comments	Complies	Capable of Compliance	Does Not Comply	Not applicable
D1.4 Cont	Exit travel distances	Note: Travel distances within the supermarket will require further assessment is design progress. Currently travel distance to exits are within the allowable 30 m however this does not allow for any flexibility for future fitout.		PS		
D1.5	Distance between alternative exits	Distance between exits are sufficient.	Х			
D1.6	Dimensions of exits and paths of travel to exits	Dimensions of exits are shown as 1 m or more at this stage of design				
D1.7	Travel via Fire-isolated exits	<ul> <li>The fire stairs discharge within Apartment lobby which is a cover area that does not meet compliance with D1.7(b)(iii). The covered area must —</li> <li>(A) adjoin a road or open space; and</li> <li>(B) is open for at least 1/3 of its perimeter; and</li> <li>(C) has an unobstructed clear height throughout, including the perimeter openings, of not less than 3 m; and</li> <li>(D) provides an unimpeded path of travel from the point of discharge to the road or open space of not more than 6 m.</li> </ul>		x		

Clause	Title & clause summary	Assessment Comments	Complies	Capable of Compliance	Does Not Comply	Not applicable
D1.7	Travel via Fire-isolated exits	This will need to be addressed as an Performance Solution by a Fire Engineer under Performance Requirements DP4 and required prior to issue of a Construction Certificate.				
		The fire stairs also discharge within 6 m of building therefore FRL 60/60/60 required to building and openings protected to C3.4		PS		
		Details will be required at Construction Certificate stage.				
D1.8	External Stairs or ramps in lieu of Fire-isolated exits	No external stairs in lieu of fire-isolated exits.				x
D1.9	Travel via non-fire-isolated stairways or ramps	No instances where this occurs.				x
D1.10	Discharge from exits	The exits appear not to be blocked at this stage of design.	х			
D1.11	Horizontal exits	No horizontal exits.				X
D1.12	Non-required stairways, ramps or escalators	No non-required stairs.				x

Clause	Title & clause summary	Assessment Comments		Complies	Capable of Compliance	Does Not Comply	Not applicable
D1.13	Number of persons accommodated	indicative only as D1.13 allows occur	nd retail/commercial areas only. This is bancy numbers in relation to the seating able means of assessing its capacity.				
		been calculated at 30 m <sup>2</sup> /person, co	the purposes of this assessment the occupancy number for car park has n calculated at 30 m <sup>2</sup> /person, commercial/retail at 3 m <sup>2</sup> /person, Tavern at $^{2}$ and Medical Centre at 10 m <sup>2</sup> /person. Therefore:				
		Basement 1-3 Car Park:	66 people <i>(per level)</i>				
		Supermarket:	290 people				
		Tenancy 001:	40 people	-	-	-	-
		Tenancy 002:	28 people				
		Tenancy 004:	22 people				
		Tavern:	613 people				
		Food & Beverage Level 01:	91 people				
		Medical Centre Level 02:	152 people				
		Hotel Reception/Breakfast:	50 seats				
D1.14	Measurement of distances	This clause provides guidance on the application of the BCA.		-	-	-	-
D1.15	Method of measurement	This clause provides guidance on the	e application of the BCA.	-	-	-	-

Clause	Title & clause summary	Assessment Comments	Complies	Capable of Compliance	Does Not Comply	Not applicable
D1.16	Plant rooms and lift machine rooms:	No ladder access shown for plant rooms and lift machine rooms at this stage of design. <i>Details will be required at Construction Certificate stage.</i>		х		
D1.17	Access to lift pits	No Lift pits shown at this stage of design. Details of access to the lift pit will be required to show compliance with this Clause. <i>Details will be required at Construction Certificate stage.</i>		x		

#### Construction of exits (Part D2)

D2.1	Application of part	This clause provides guidance on the application of the BCA	-	-	-	-
D2.2	Fire-isolated stairways and ramps	Fire isolated stairs are to be constructed in accordance with this Clause. Details will be required at Construction Certificate stage.		х		
D2.3	Non-fire isolated stairs and ramps	Non-fire isolated stairs and ramps are to be constructed in accordance with this Clause. Details will be required at Construction Certificate stage.		x		
D2.4	Separation of rising and descending stair flights	Separation of rising and descending stair flights is required. Details will be required at Construction Certificate stage.		x		

Clause	Title & clause summary	Assessment Comments	Complies	Capable of Compliance	Does Not Comply	Not applicable
D2.5	Open access ramps and balconies	No open access ramps and balconies.				x
D2.6	Smoke lobbies	No smoke lobbies required at this stage of design.				x
D2.7	Installation in exits and paths of travel	The cupboards/risers located within the residential lobbies and corridors are to be enclosed with non-combustible construction or a fire rated protective covering with doorways or openings suitably sealed against smoke spreading from the enclosure, if they are services or equipment listed in this Clause e.g. distribution boards. <i>Details will be required at Construction Certificate stage.</i>		x		
D2.8	Enclosure of space under stair	No enclosures permissible to fire isolated stairs.		x		
D2.9	Width of stairways	Considered not applicable – no stairs over 2 m.				x
D2.10	Pedestrian ramps	No pedestrian ramps				x
D2.11	Fire-isolated passageways	The fire-isolated passageways that lead from the fire stairs are required to have the same FRL as the stair enclosures i.e. FRL 120/120/120. <i>Details will be required at Construction Certificate stage.</i>		x		

Clause	Title & clause summary	Assessment Comments	Complies	Capable of Compliance	Does Not Comply	Not Applicable
D2.12	Roof as open space	No instances where this occurs.				Х
D2.13	Goings & risers	All stairs are required to be designed to show compliance with this Clause. Details will be required at Construction Certificate stage.		х		
D2.14	Landings	Landings are to be constructed as per this clause, See Appendix 3 for guidance on slip resistance. Details will be required at Construction Certificate stage.		x		
D2.15	Thresholds	This clause gives guidance on the only area a threshold can be incorporated at a doorway. Details will be required at Construction Certificate stage.		x		
D2.16	Barriers to prevent falls	Barriers to balconies and stair landings are to be designed and installed in accordance with this Clause. Details will be required at Construction Certificate stage.		x		
D2.17	Handrails	Handrails are required to comply with this Clause. Reference should also be made to AS1428.1. Details will be required at Construction Certificate stage.		х		
D2.18	Fixed Platforms and walkways	No instances where this occurs.				Х

Clause	Title & clause summary	Assessment Comments	Complies	Capable of Compliance	Does Not Comply	Not Applicable
D2.19	Doorways and doors	All doors shown on required exits are swing doors. Opening forces should be designed to show compliance with this Clause. <i>Details will be required at Construction Certificate stage.</i>		x		
D2.20	Swinging doors	All required exit doors swing in the direction of egress and doors to the fire stairs must not encroach more than 500 mm on egress paths at this stage of design. Details will be required at Construction Certificate stage.		Х		
D2.21	Operation of latch	Details of door hardware to required exit doors or doors forming part of require exist are to show compliance with the operation of latch requirements. Details will be required at Construction Certificate stage.		х		
D2.22	Re-entry from fire isolated exits	<ul> <li>As the fire isolated stairs serving the residential levels serve a storey above an effective height of 25 m, the fire-isolated exits must not be locked from the inside throughout the exit.</li> <li>However, this requirement does not apply to a door fitted with a fail-safe device that automatically unlocks the door upon the activation of a fire alarm and— <ul> <li>(i) on at least every fourth storey, the doors are not able to be locked and a sign is fixed on such doors stating that re-entry is available; or</li> </ul> </li> </ul>		x		

Clause	Title & clause summary	Assessment Comments	Complies	Capable of Compliance	Does Not Comply	Not Applicable
D2.22 Cont	Re-entry from fire isolated exits	<ul> <li>(ii) an intercommunication system, or an audible or visual alarm system, operated from within the enclosure is provided near the doors and a sign is fixed adjacent to such doors explaining its purpose and method of operation</li> <li>Details will be required at Construction Certificate stage.</li> </ul>		x		
D2.23	Signs on doors	This clause gives guidance on required signage for exit doors. Details will be required at Construction Certificate stage.		х		
D2.24	Protection of Openable Windows	Appropriate protection measures are required to the windows of the Class 2 & 3 bedrooms. Details will be required at Construction Certificate stage.		x		

#### Access for people with disabilities (Part D3)

Clause	Title & clause summary	Assessment Comments	Complies	Capable of Compliance	Does Not Comply	Not Applicable
D3.1	General Building access requirements	Lift access is provided to all floors with general accessibility provided to sole occupancy units. There is a requirement to provide 10% accessible/adaptable units, therefore 4 units be required to be adaptable. The design should be in accordance with AS4299 or we could consider providing accessible units in accordance with silver level requirements to Livable Housing Design Guide.	х			
D3.2	Access to buildings	<ul> <li>An accessway is capable of being provided to the building, required to be accessible— <ul> <li>(i) from the main points of a pedestrian entry at the allotment boundary; and</li> <li>(ii) from any required accessible carparking space on the allotment.</li> </ul> </li> <li>Accessways are to be designed to AS1428.1.</li> <li>Both public stairs i.e. separate tavern entry from southwest corner of building and from public open space to arrive at L1 F&amp;B precinct will require to be accessible stairs to AS1428.1.</li> <li>Details will be required at Construction Certificate stage.</li> </ul>		x		
D3.3	Parts of the buildings to be accessible	This Clause gives guidance on some of the general access requirements under the provisions of the BCA and AS 1428.1-2009. <i>Details will be required at Construction Certificate stage.</i>		x		
D3.4	Exemptions	This Clause provides guidance on when Exemptions can be applied.	-	-	-	-

Clause	Title & clause summary	Assessment Comments	Complies	Capable of Compliance	Does Not Comply	Not Applicable
D3.5	Car parking	8 designated accessible parking spaces are shown on plan. These are to be designed and install in accordance with AS2890.6 Slab to ceiling height on all carpark levels appears to be 2700 mm.	x			
D3.6	Identification of accessible facilities, services and features	Signage will be required to identify the lifts. Details will be required at Construction Certificate stage.		x		
D3.7	Hearing augmentation	No instances where this occurs.				Х
D3.8	Tactile indicators	This clause gives guidance on the requirements of tactile indicators and the location that they are required. No tactile indicators shown at this stage of design. Details will be required at Construction Certificate stage.		х		
D3.9	Wheelchair spaces in a class 9b assembly building	Not a Class 9b building.				x
D3.10	Swimming Pools	No swimming pools.				Х
D3.11	Ramps	No instances where this occurs.				x

#### Firefighting equipment (Part E1)

Clause	Title & clause summary	Assessment Comments	Complies	Capable of Compliance	Does Not Comply	Not applicable
E1.3	Fire hydrants	<ul> <li>Fire hydrants not shown on plans at this stage of design.</li> <li>A fire hydrants system is required and should comply with AS 2419.1.</li> <li>The hydrant and sprinkler booster is not within sight of the main entrance and is within 10 m of the main switch room.</li> <li>The location will need to be addressed as a Performance Solution by a Fire Engineer. Details will be required at Construction Certificate stage.</li> </ul>		PS		
E1.4	Fire hose reels	A fire hose reel system required and should comply with AS 2441, to all areas except the Class 2 (apartments) and Class 3 parts. <i>Details will be required at Construction Certificate stage.</i>		х		
E1.5	Sprinklers	Sprinklers are required throughout the building and should comply with AS2118.1-2005. Details will be required at Construction Certificate stage.		х		
E1.6	Portable fire extinguishers	This clause gives guidance on the type and location of fire extinguishers required on every floor of the class 2 and 3 parts. No fire extinguishers are shown on plan at this stage of design. <i>Details will be required at Construction Certificate stage.</i>		x		

Clause	Title & clause summary	Assessment Comments	Complies	Capable of Compliance	Does Not Comply	Not applicable
E1.8	Fire control centres	The building has an effective height of greater 50 m therefore, the Fire Control Centre must be in a separate fire control room, in accordance with Clauses 6- 12 of Spec E1.8. <i>Details will be required at Construction Certificate stage.</i>		x		
E1.9	Fire precautions during construction	This clause gives guidance on the requirements of certain fire-fighting equipment during construction, at all times and when the building gets to an effective height of 12 m. <i>Details will be required at Construction Certificate stage.</i>		x		
E1.10	Provision for special hazards	No instances where this occurs.				Х

#### Smoke hazard management (Part E2)

E2.2	General Requirements	Any air-handling system which does not form part of a smoke hazard management system and which recycles air from one fire compartment to another fire compartment should be designed to show compliance with this Clause.	x	
		Details will be required at Construction Certificate stage.		

Clause	Title & clause summary	Assessment Comments	Complies	Capable of Compliance	Does Not Comply	Not applicable
E2.3	Provision for special hazards	An automatic smoke detection and alarm system is required. This should be installed to Clause 3 or 4 (or combination of both of Spec E2.2a) and AS1670.1-2005. As the fire-isolated stairways serve a storey above an effective height of 25 m; and more than 2 below ground storey, an automatic air pressurisation system for fire-isolated exits in accordance with AS/NZS 1668.1. <i>Details will be required at Construction Certificate stage.</i>		x		

#### Lift installations (Part E3)

Clause	Title & clause summary	Assessment Comments	Complies	Capable of Compliance	Does Not Comply	Not applicable
E3.2	Stretcher facility in lifts	A stretcher facility is required as the building has an effective height of more than 12 m. Details will be required at Construction Certificate stage.		х		
E3.3	Warning against use of lifts in fire	Lift signage is required. This clause gives guidance on the type of signage. Details will be required at Construction Certificate stage.		х		
E3.4	Emergency lifts	An Emergency lift is required as the effective height of the building is more than 25 m. Details will be required at Construction Certificate stage.		x		

Clause	Title & clause summary	Assessment Comments	Complies	Capable of Compliance	Does Not Comply	Not applicable
E3.5	Landings	Access and egress to and from lift well landings must comply with Section D above.		x		
E3.6	Passenger lifts	The lifts should be designed to show compliance with AS1735.12. <i>Details will be required at Construction Certificate stage.</i>		х		
E3.7	Fire service controls	As the lifts serve a storey above an effective height of 12 m, fire service controls are required. Details will be required at Construction Certificate stage.		x		
E3.8	Aged care building	Not an aged care building.		х		
E3.9	Fire service recall operation switch	This clause provides guidance on the fire service recall control switch required by E3.7 Details will be required at Construction Certificate stage.		x		
E3.10	Lift car fire service drive control switch	This clause provides guidance on the Lift car fire service drive control switch required by E3.7 Details will be required at Construction Certificate stage.		x		

# **Section E – Services & Equipment**

#### Emergency lighting, exit signs and warning systems (Part E4)

Clause	Title & clause summary	Assessment Comments	Complies	Capable of Compliance	Does Not Comply	Not applicable
E4.2	Emergency lighting requirements	An emergency lighting system is required to all areas other than within the Class 2 & 3 SOUs.		х		
E4.3	Measurement of distance	This clause provides guidance on the application of the BCA.	-	-	-	-
E4.4	Design and operation of emergency lighting	The emergency lighting system should be provided in accordance with AS2293.1-2005.		х		
		Details will be required at Construction Certificate stage.				
E4.5	Exit signs	Exits are required to all areas other than within Class 2 & 3 SOUs.		х		
E4.6	Direction Signs	This clause provides guidance on the installation of direction signs.		х		
E4.7	Class 2 and 3 buildings and class 4 parts: Exemptions	As per E4.2 and E4.5 above.		х		
E4.8	Design and operation of exit signs	The exit signs should be provided in accordance with AS2293.1-2005. <i>Details will be required at Construction Certificate stage.</i>		х		
E4.9	Sound systems and intercom systems for emergency purposes	A sound system and intercom system for emergency purposes must be provided complying with AS 1670.4, as the building has an effective height of more than 25 m. <i>Details will be required at Construction Certificate stage.</i>		х		

#### Damp & Weatherproofing (Part F1)

Clause	Title & clause summary	Assessment Comments	Complies	Capable of Compliance	Does Not Comply	Not applicable
F1.1	Stormwater drainage	A stormwater drainage system in accordance with AS/NZS 3500 is required. Note if a siphonic drainage system is proposed, this is to be treated as a Performance Solution. <i>Details will be required at Construction Certificate stage.</i>		x		
F1.5	Roof coverings	The concrete roof coverings are to comply with the requirement of this Clause. Details will be required at Construction Certificate stage.		x		
F1.6	Sarking	Any sarking proposed should show compliance with AS/NZS 4200 Parts 1 & 2. Details will be required at Construction Certificate stage.		x		
F1.7	Waterproofing wet areas	Waterproofing to wet areas is required and comply with this Clause and AS3470. Details will be required at Construction Certificate stage.		x		
F1.9	Damp-proofing	Damp proofing is required to be provided in compliance with this Clause. Details will be required at Construction Certificate stage.		x		

Clause	Title & clause summary	Assessment Comments	Complies	Capable of Compliance	Does Not Comply	Not applicable
F1.10	Damp-proofing of floors on ground	Damp proofing of the basement required to be provided in compliance with this Clause. Details will be required at Construction Certificate stage.		x		
F1.11	Floor wastes	Floor wastes are required within the Class 2 & 3 SOU's in accordance with this Clause. Details will be required at Construction Certificate stage.		x		
F1.12	Sub-floor ventilation	Considered not applicable due to the basement.				х
F1.13	Glazed assemblies	This clause gives guidance on the compliance requirements of glazed assemblies. Details will be required at Construction Certificate stage.		x		

#### Sanitary & other facilities (Part F2)

F2.1	Facilities in residential buildings	This clause also gives the minimum required facilities for a Class 2 SOU, it would appear compliance is achieved at this stage of design.	х			
F2.2	Calculation of the number of occupants and facilities	This Clause provides guidance on the calculation of the number of occupants and facilities.	-	I	-	-
F2.3	Facilities in Class 3-9 Buildings	The numbers and location of sanitary and accessible sanitary facilities should be reviewed to ensure compliance to retail and commercial areas. Limited numbers are shown at this stage of design. <i>Details will be required at Construction Certificate stage.</i>		х		

Clause	Title & clause summary	Assessment Comments	Complies	Capable of Compliance	Does Not Comply	Not applicable
F2.4	Facilities for people with disabilities	The numbers and location of sanitary and accessible sanitary facilities is required to be reviewed to ensure compliance.				
		Accessible sanitary facilities are located on LB1 GYM and Level 01. Ambulant cubicles are provided in the public amenities on Level 01.		Х		
		Details will be required at Construction Certificate stage.				
F2.5	Construction of sanitary compartments	Doors to sanitary compartments where the WC pan is less than 1.2 m from the door, are to be removable from the outside as they are inward opening. <i>Details will be required at Construction Certificate stage.</i>		х		
F2.6	Interpretation; Urinals and washbasins	This clause provides guidance on the application of the BCA.	-	-	-	-
F2.7	****	****	-	-	-	-
F2.8	Slop hoppers	Slop hoppers not required in Class 2 building.				x

#### Room Sizes (Part F3)

F3.1	Height of rooms and other spaces	This Clause provided minimum room height requirements for the Class 2, 3 and 7a (car park) parts. Details will be required at Construction Certificate stage.		x			
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#### Light and Ventilation (Part F4)

Clause	Title & clause summary	Assessment Comments	Complies	Capable of Compliance	Does Not Comply	Not applicable
F4.1	Provision of natural light	Natural light is required to class 2 & 3 habitable rooms.	Х			
F4.2	Methods and extent of natural lighting	This clause provides guidance on the achieving natural light requirements. Confirmation from the architect will also be required of the provision of adequate window sizes to provide natural light. <i>Details will be required at Construction Certificate stage.</i>		х		
F4.3	Natural light borrowed from adjoining room	No instances where this is required.				x
F4.4	Artificial Lighting	The artificial lighting system to comply with AS1680.0. Details will be required at Construction Certificate stage.		х		
F4.5	Ventilation of rooms	<ul> <li>A habitable room, sanitary compartment, bathroom, shower room, laundry and any other room occupied by a person for any purpose must have—</li> <li>(a) natural ventilation complying with F4.6; or</li> <li>(b) a mechanical ventilation or air-conditioning system complying with AS 1668.2</li> <li>Details will be required at Construction Certificate stage.</li> </ul>		x		

Clause	Title & clause summary	Assessment Comments	Complies	Capable of Compliance	Does Not Comply	Not applicable
F4.6	Natural Ventilation	Where natural ventilation is proposed this should comply with the requirements of this Clause. Details will be required at Construction Certificate stage.		x		
F4.7	Ventilation borrowed from adjoining room	In any instances where this occurs details to show compliance with this Clause will be required.		x		
F4.8	Restriction on position of water closets and urinals	No instances where this occurs.	х			
F4.9	Airlocks	No requirement for airlocks.				х
F4.10	****	This clause has deliberately been left blank.	-	-	-	-
F4.11	Car parks	Ventilation of the carpark will be required to show compliance with this Clause (natural ventilation to AS1668.4 or mechanical to AS1668.2). <i>Details will be required at Construction Certificate stage.</i>		x		
F4.12	Kitchen local exhaust ventilation	No instances where this occurs.				x

#### Sound Transmission and insulation (Part F5)

Clause	Title & clause summary	Assessment Comments	Complies	Capable of Compliance	Does Not Comply	Not applicable
F5.1	Application of part	This part applies walls and floors enclosing the Class 2 & 3 parts.	-	-	-	-
F5.2	Determination of airborne sound insulation ratings	This clause provides guidance on determination of airborne sound insulation ratings.	-	-	-	-
F5.3	Determination of impact sound insulation ratings	This clause provides guidance on determination of impact sound insulation ratings. Note discontinuous construction is required to the walls enclosing the Class 2 & 3 parts.		х		
F5.4	Sound insulation rating of floors	This clause provides guidance on the requirements of the sound insulation rating of floors to be achieved. Details will be required at Construction Certificate stage.		х		
F5.5	Sound insulation rating of walls	This clause provides guidance on the requirements of the sound insulation rating of floors to be achieved. Details will be required at Construction Certificate stage.		x		
F5.6	Sound insulation rating of services	Services passing through more than one sole occupancy unit must be separated by construction with an Rw + Ctr. Details will be required at Construction Certificate stage.		x		
F5.7	Sound insulation of pumps	This clause provides guidance on the requirements on flexible coupling connections. Details will be required at Construction Certificate stage.		x		

## **Section G – Ancillary Provisions**

#### Minor Structures and Components (Part G1)

Clause	Title & clause summary	Assessment Comments	Complies	Capable of Compliance	Does Not Comply	Not applicable
G1.1	Swimming pools	No swimming pools.				x
G1.2	Refrigerated Chambers, Strong Rooms and Vaults	No instances where this occurs at this stage of design.				x
G2	Heating appliances, fireplaces, chimneys and flues	No instances where this occurs at this stage of design.				x
G1.101	Provisions for Cleaning Windows	As the building is 16-storey a safe manner of cleaning any windows located on top storey is required. This clause gives guidance on requirements for window cleaning and safety regulations.		x		

#### Atrium Construction (Part G3)

This Part is not applicable to this building – no Atriums

#### **Bushfire Prone Areas (Part G5)**

This Part is not applicable to this building - the site is not within a designated bushfire prone area.

### Section H – Special Use Buildings

#### Theatres, Stages and Public Halls (Part H1)

This Part is not applicable to this building – not a Theatre, Stage or Public Hall

#### Public Transport Buildings (Part H2)

This Part is not applicable to this building – not a Public Transport Building

## Section J – Energy Efficiency

The following Table applies to the Class 5, 6 and 7a part.

Clause	Title & clause summary	Assessment Comments	Complies	Capable of Compliance	Does Not Comply	Not applicable
J1-J3	Energy Efficiency	DA Energy & BASIX Report received from LCI Consultants (Aust) Pty Ltd indicating the minimum Deemed-to-Satisfy requirements can be achieved. <i>CC Revision will be required at Construction Certificate stage.</i>		х		
J5	Air conditioning and ventilation systems	Air conditioning and ventilation to comply with Part J5. Details will be required at Construction Certificate stage.		х		
J6	Artificial lighting and power	Lighting to comply with part J6. Details will be required at Construction Certificate stage.		х		
J7	Hot water supply	Hot water supply to comply with Part J7. Details will be required at Construction Certificate stage.		х		
J8	Access for maintenance and facilities for monitoring	<ul> <li>Access must be provided to all plant, equipment and components of services that rely on maintenance to continue to perform.</li> <li>A building or sole-occupancy unit with a floor area of more than 500 m<sup>2</sup> must have the facility to record the consumption of gas and electricity.</li> <li>Details will be required at Construction Certificate stage.</li> </ul>		x		

# **Section J – Energy Efficiency**

The following Table applies to the Class 2 & 3 parts.

Clause	Title & clause summary	Assessment Comments	Complies	Capable of Compliance	Does Not Comply	Not applicable
J(A)1	Building Fabric	A BASIX certificate has been provided. Architectural details should reflect the requirements, <i>details will be required at Construction Certificate stage</i> .		х		
J(A)2	Building Sealing	The proposed building is required to comply with the requirements of this Clause. Details will be required at Construction Certificate stage.		х		
J(A)3	Air conditioning and ventilation systems	A BASIX certificate has been provided. Services plans should reflect the requirements, <i>details will be required at Construction Certificate stage</i> .		Х		
J(A)4	Hot water supply	A BASIX certificate has been provided. Services plans should reflect the requirements, <i>details will be required at Construction Certificate stage</i> .		х		
J(A)5	Access for maintenance and facilities for monitoring	Access must be provided to all plant, equipment and components of services that rely on maintenance to continue to perform. A building or sole-occupancy unit with a floor area of more than 500 m <sup>2</sup> must have the facility to record the consumption of gas and electricity.		х		

### Conclusion

This report has assessed the architectural plans for the Development Application submission for the proposed mixed-use development to be located at 24-26 Railway Parade Westmead, against the provisions of the Building Code of Australia (BCA) 2016.

The primary purpose of the report is to assess the development design and identify any significant non-compliance matters in comparison to the current deemed-to-Satisfy (DTS) provisions of the BCA. Assessment is limited to those issues ascertainable from the current level of detail.

Subject to the recommendations contained in this report, the development can readily comply with the requirements of the BCA. The report has highlighted where Alternative Solutions will be required to resolve the deemed-to-satisfy non-compliances.

#### Appendix 1 – Required Fire Resistance Levels (FRLs) TYPE A CONSTRUCTION:

Building element	Class 2, 3 or 4 part	Class 5, <b>7a</b> or 9	Class 6	Class 7b or 8
<b>EXTERNAL WALL</b> (including any column and other building element incorporated therein) or other external building element, where the distance from any <i>fire-source feature</i> to which it is exposed is—				
For <i>loadbearing</i> parts—				
less than 1.5 m	90/ 90/ 90	120/120/120	180/180/180	240/240/240
1.5 to less than 3 m	90/ 60/ 60	120/ 90/ 90	180/180/120	240/240/180
3 m or more	90/ 60/ 30	120/ 60/ 30	180/120/ 90	240/180/ 90
For non-loadbearing parts—				
less than 1.5 m	-/ 90/ 90	-/120/120	-/180/180	-/240/240
1.5 to less than 3 m	-/ 60/ 60	-/ 90/ 90	-/180/120	-/240/180
3 m or more	-/-/-	-/-/-	-/-/-	-/-/-
<b>EXTERNAL COLUMN</b> not incorporated in an <i>external wall</i> , where the distance from any <i>fire-source feature</i> to which it is exposed is—				
For loadbearing columns	90/-/-	120/-/-	180/-/-	240/-/-
For non-loadbearing columns	-/-/-	-/-/-	-/-/-	-/-/-
COMMON WALLS and FIRE WALLS—	90/ 90/ 90	120/120/120	180/180/180	240/240/240
INTERNAL WALLS—				
<i>Fire-resisting</i> lift and stair <i>shafts</i> —				
Building element	Class 2, 3 or 4 part	Class 5, 7a or 9	Class 6	Class 7b or 8
Loadbearing	90/ 90/ 90	120/120/120	180/120/120	240/120/120
Non-loadbearing	-/ 90/ 90	-/120/120	-/120/120	-/120/120
Bounding public corridors, public lobbies and the like				
Loadbearing	90/90/90	120/-/-	180/-/-	240/-/-
Non-loadbearing	-/ 60/ 60	-/-/-	-/-/-	-/-/-
Between or bounding sole-occupancy units-				

# **Appendix 1 – Required Fire Resistance Levels (FRLs)**

Loadbearing	90/90/90	120/-/-	180/-/-	240/-/-
Non-loadbearing	-/ 60/ 60	-/-/-	-/-/-	-/-/-
Ventilating, pipe, garbage, and like <i>shafts</i> not used for the discharge of hot products of combustion—				
Loadbearing	90/ 90/ 90	120/ 90/ 90	180/120/120	240/120/120
Non-loadbearing	-/ 90/ 90	-/ 90/ 90	-/120/120	-/120/120
OTHER LOADBEARING INTERNAL WALLS, INTERNAL BEAMS, TRUSSES				
and COLUMNS—	90/-/-	120/-/-	180/-/-	240/-/-
FLOORS	90/ 90/ 90	120/120/120	180/180/180	240/240/240
ROOFS	90/ 60/ 30	120/ 60/ 30	180/ 60/ 30	240/ 90/ 60

# **Appendix 2 – Slip Resistance Classification**

### Appendix 2 – Slip Resistance Classification

	Surface conditions	
Application	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

#### **Appendix 3 - Drawings Assessed**

The following drawings by Sissons Architects Pty Ltd were used for the Assessment:

Drawing Name	Drawing Number	Revision
LB4 Car Park Plan	DA111	В
LB3 Car Park Plan	DA112	В
LB2 Car Park Plan	DA113	В
LB1 store_loading Dock Plan	DA114	В
Lower Ground – Ashley Lane	DA115	В
Upper Ground – Railway Parade	DA116	В
Level 01 – Tavern and F&B	DA117	В
Level 02 – Medical Centre	DA118	В
Level 03 – Hotel Lobby	DA119	В
Level 04–07 - Hotel	DA120	В

Drawing Name	Drawing Number	Revision
Level 08 – Plant	DA121	В
Level 09-11 – Apartment Floor Type A	DA122	В
Level 12-14 – Apartment Floor Type B	DA123	В
Roof Plan	DA124	В
Railway Parade Elevation	DA151	В
Ashley Lane Elevation	DA152	В
North Elevation	DA153	В
West Elevation	DA154	В
Arcades Elevation	DA155	В
Section 1	DA161	В
Section 2	DA162	В
Section 3	DA163	В
Section 4	DA164	В
Section 5	DA165	В
DCP Comparison	DA201	В

## Appendix 4 – Fire Safety Schedule

System	BCA Clause & AS/NZS
Access Panels	BCA Clause C3.13
Automatic Smoke Detection and Alarms	BCA Specification E2.2a AS 1668.1-1998 & AS 1670-2004
Automatic Suppression System	BCA E1.6 & AS2118.1-2005
Building Occupant Warning System	BCA Specification E2.2a & AS 1670-2004
Emergency Lighting	BCA Clause E4.2 and E4.4 & AS/NZS 2293.1-2005
Emergency Lifts	BCA E3.4
Exit Signs	BCA Clause E4.5 & AS/NZS 2293.1-2005
Fire Control Room	BCA Clause E1.8, Spec E1.8
Fire Hydrants	BCA Clause E1.3 & AS 2419.1-2005
Fire Hose Reels	BCA Clause E1.4 & AS 2441-2005
Fire Extinguishers	BCA Clause E1.6 & AS 2444-2001
Fire Doors	BCA Specification C3.4 & AS 1905.1-2005
Fire Seals and Collars	BCA Clause C3.15
Stair pressurization	BCA E2.2a, AS1668.1-1998
Sound systems and intercom systems for emergency purposes	BCA E2.2a, AS1670.4