



Newland Wood
BUILDING CERTIFICATION

BCA Report

41 McLaren Street Redevelopment, North Sydney

Ref: NW17/1970 Rev 2: 31.07.17

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	14.06.17	Initial Draft for Client Comment	Leon Newland	Robert Wood	Robert Wood
					
2	31.07.17	Following Client meeting on 27.07.17			

Executive Summary

- 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 works are for the redevelopment of existing building and construction of forty- seven (47 storey mixed used development including six basement parking levels, two levels of commercial, five levels of office, residential podium level and thirty-seven (37) residential levels.
- 1.3 The following items are to be addressed either by amended plans or as part of a Performance Solution by a fire engineer therefore, deemed capable of 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
D1.2	DP4	<u>Number of exits required</u> The exits shown from the food and beverage commercial area on the ground floor are less than 9m apart
D1.6	DP6	<u>Dimensions of exits and paths of travel to exits</u> Exits widths cannot reduce in the direction of travel to an exit <ul style="list-style-type: none"> • Carpark entry level the change room bike store converges into the escape passage reducing 2 m of exit width into 1 m • The upper level of the food and beverage commercial area requires 4 m of exit the stairs only provide 3130 mm at the smallest point (note: this is without handrails) • Hallway outside toilets on level 7 gym appears to be less than 1m (950 mm)
D1.7	DP5	<u>Travel via fire isolated exits</u> Door from switch room on carpark entry-exit plan cannot open into a fire isolated passage way.

- 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 buildings are to be located at 41 McLaren Street, North Sydney NSW 2060. The subject property is located within the local government area North Sydney Council.

The project consists redevelopment of existing building and construction of 53 storey building consisting of six (6) basement levels, seven (7) commercial and office levels, thirty (37) residential levels, residential podium level and three (3) levels of plant room

Purpose of the Report

This report has been prepared, on behalf of CCS Group, 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 Harry Seidler & Associates 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.
- v) Design team meeting at Harry Seidler & Associates at 28.07.17.

Statutory Approvals

This project is subject to the Development Application to the North Sydney Council.

Planning conditions relating to building work

This section can be completed once Development Consent (or Notice of Determination) is obtained.

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 – the design meets the deemed-to-satisfy provisions of the relevant clause of the BCA; or
- 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 – the relevant clause is not relevant to the project.
- 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.		X		

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.

General Information

Item / Clause		Description or Requirement
BCA Version		2016
A1.1	Effective Height	153.0m
A1.1	Climate Zone	5
A3.2	Classification	2, 5, 6, 7a, 9, 10b
C1.1	Type of Construction	A
C1.2	Rise in Storeys	47
C2.2	Approximate Floor Areas (m ²)* *Class 2 & Class 7a (sprinkler protected carpark) parts are not considered in floor area calculations	Carpark Entry/LG: 2122m ² Ground: 2269m ² Level 1: 2083m ² Level 2: 2084m ² Level 3: 1867m ² Level 4: 1389m ² Level 5: 1389m ² Level 6: 1404m ² Level 7: 1334m ² Level 8: 410m ² Level 36: 233m ² Level 37: 780m ²

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.		X		

Section C – Fire Safety

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		X		
C1.2	Calculation of rise in storeys	The rise in storeys is 47 – the top most story is only plant and not counted in the rise in story	-	-	-	-
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.				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 – shown at this stage of the design.		X		
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.		X		

Clause	Title & clause summary	Assessment Comments	Complies	Capable of Compliance	Does Not Comply	Not Applicable
C1.10	Fire hazard properties	This Clause permits the use of certain types of materials achieving the required fire hazard properties.		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	<p>The Building is Class 2, 5, 6, 7a, 9b, 10a and Type A Construction.</p> <p>Compartment size only applies to commercial Class 6, office Class 5 areas only:</p> <p>Class 5 maximum allowable fire compartment size is 8,000 m² and the Maximum volume allowed is 48,000m³.</p> <p>Class 6 maximum allowable fire compartment size is 5,000 m² and the Maximum volume allowed is 30,000m³.</p> <p>G & L1 class 5 & 6 1379 m² x 6.25 m = 8618m³</p> <p>L2 Class 5 = 1628 m³ x 3.0 m = 4884 m³</p> <p>L3 Class 5 = 1129 m² x 3.0 m = 3387 m³</p> <p>L4 Class 5 = 1179 m² x 3.0 m = 3737 m³</p> <p>L5 Class 5 = 1179 m² x 3.0 m = 3737 m³</p> <p>L6 = Class 5 = 1016 m² x 3.0 m = 3048 m³</p> <p>Compartment sizes are within limits.</p>	X			
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Clause	Title & clause summary	Assessment Comments	Complies	Capable of Compliance	Does Not Comply	Not Applicable
C2.3	Large isolated buildings	Not a Large isolated building.				X
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
C2.6	Vertical separation of openings in external walls	Vertical separation is not applicable to a sprinkler protected building		X		
C2.7	Separation by firewalls	Fire walls must be constructed in accordance with this clause.		X		
C2.8	Separation of classifications in the same storey	Separation of classifications occurs on several stories the fire resistance level (FRL) must achieve the level of the higher classification for Type A construction and be in accordance with Table 3.		X		
C2.9	Separation of classifications in different storeys	Different classifications on different storeys exist. The fire resistance level (FRL) of this floor 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		X		
C2.10	Separation of lift shafts	The lift shaft is required to be fire separated in accordance with Type A construction and achieve the FRL of the applicable classification it is bounding in accordance with Table 3.		X		
C2.11	Stairways and lifts in one shaft	No instances where this occurs.				X

Clause	Title & clause summary	Assessment Comments	Complies	Capable of Compliance	Does Not Comply	Not Applicable
C2.12	Separation of equipment	Any lift motors and lift control panels; or emergency generators, fire pump rooms 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.		X		
C2.13	Electricity supply system	Substations and a switch room are shown within the carpark entry level Walls to the substations and switch room must have an FRL of not less than 120/120/120 with a self-closing fire door with an FRL of not less than - /120/30		X		
C2.14	Public corridors in Class 2 & 3 building	Corridors are less than 40 m.	X			

Protection of openings (Part C3)

C3.2	Protection of openings in external walls	There is insufficient detail at this stage of the design however there appear to be openings within 3m of the side and rear boundary. Any openings within 3m of a side or rear boundary or 6m from the far boundary of a road require protection in accordance with this clause.		X		
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Clause	Title & clause summary	Assessment Comments	Complies	Capable of Compliance	Does Not Comply	Not Applicable
C3.3	Separation of external walls and associated openings in different fire compartments	The openings at the North and South end of the public corridors within the minimum distance of the class 2 unit openings must be protected in accordance with this clause and protected by an approved method of protection in accordance with C3.4		X		
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	Doorways in fire walls must be constructed and show compliance with this clause		X		
C3.6	Sliding fire doors	No sliding fire doors shown at this stage of the design				X
C3.7	Protection of doorways in horizontal exits	No horizontal exits shown at this stage of the design				X
C3.8	Openings in fire isolated exits	Doors on to the fire isolated exits are required to have an FRL -/60/30 and be self-closing.		X		
C3.9	Service penetrations in fire isolated exits	Service penetrations must be limited to services indicated in this Clause which is primarily for emergency purposes.		X		
C3.10	Openings in fire isolated lift shafts	Clause gives guidance on acceptable openings in fire isolated lift shafts		X		
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).		X		

Clause	Title & clause summary	Assessment Comments	Complies	Capable of Compliance	Does Not Comply	Not applicable
C3.12	Openings in floors and ceilings for services	Openings in floors and ceilings will be required to be appropriately protected in a shaft complying with specification C1.1		X		
C3.13	Openings in shafts	Openings in shafts will be required to be appropriately protected in accordance with this clause		X		
C3.15	Openings for service installation	This clause gives guidance on suitable means to protect penetrations, with a tested approved system complying with this clause, AS4072.1 and AS1530.4 and specification C3.15.		X		
C3.16	Construction Joints	Construction joints are to show compliance with this Clause.		X		
C3.17	Columns protected with lightweight construction to achieve an FRL	This clause gives guidance on lightweight construction to protect columns requiring FRL. Engineer must consider in design and details to be provided		X		

Section D – Access & Egress

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	In a building over 25 m two exits are required from every floor. The exits shown from the food and beverage commercial area on the ground floor are less than 9 m apart. <i>Plans are to be amended or this can be addressed as a Performance Solution by a fire engineer.</i>		X		
D1.3	When fire isolated exits are required	The building is over 25m and all exit stairs shown are to be fire isolated		X		
D1.4	Exit travel distances	Travel distance in the following areas exceed 20m to a single exit or a point of choice where two exits are available <ul style="list-style-type: none"> Level 37 Plant (25.5m to a single exit) Roof (29m to POC) <i>Plans are to be amended or this can be addressed as a Performance Solution by a fire engineer.</i>		X		
D1.5	Distance between alternative exits	The distance between exits are within limits. Class 2 portion greater than 9 m and less than 45 m Class 7a portion greater than 9 m and less than 60 m	X			

Clause	Title & clause summary	Assessment Comments	Complies	Capable of Compliance	Does Not Comply	Not applicable
D1.6	Dimensions of exits and paths of travel to exits	<p>Dimensions of exits are shown as 1 m or more.</p> <p>Exits widths cannot reduce in the direction of travel to an exit</p> <ul style="list-style-type: none"> • Carpark entry level the change room bike store converges into the escape passage reducing 2 m of exit width into 1 m • The upper level of the food and beverage commercial area requires 4 m of exit the stairs only provide 3130 mm at the smallest point (note: this is without handrails) • Hallway outside toilets on level 7 gym appears to be less than 1m (950 mm) <p><i>Plans are to be amended or this can be addressed as a Performance Solution by a fire engineer.</i></p>		X		
D1.7	Travel via Fire-isolated exits	<p>Note: all discharge points of the fire-isolated exits on ground floor necessitate passing within 6 m of the external wall of the same building, therefore that part of the wall must have an FRL 60/60/60 and any openings suitably protected in accordance with C3.4</p> <p>The door from the switch room on carpark entry-exit plan cannot open into a fire isolated passage way</p> <p><i>Plans are to be amended or this can be addressed as a Performance Solution by a fire engineer.</i></p>		X		
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	Occurs from the Lobby area and food and beverage commercial area. Non-fire isolated stairs must comply with this clause		X		

Clause	Title & clause summary	Assessment Comments	Complies	Capable of Compliance	Does Not Comply	Not applicable
D1.10	Discharge from exits	Exits discharging on Harnett street must not be able to be blocked and required to be protected with bollards or other measures to ensure the exits remain unobstructed at the discharge point		X		
D1.11	Horizontal exits	No horizontal exits.				X
D1.12	Non-required stairways, ramps or escalators	No non-required stairs.				X
D1.13	Number of persons accommodated	<p>Occupant numbers does not apply to class 2 SOU</p> <p>This Clause applies to the car-park, plant and commercial & retail areas</p> <p>For the purposes of this assessment the occupancy number are calculated as per m²/person given in Table D1.3, therefore:</p> <p>B6 = 35 occupants</p> <p>B5-5a = 60 occupants</p> <p>B4-4a = 60 occupants</p> <p>B3-3a = 60 occupants</p> <p>B2-2a = 60 occupants</p> <p>B1-1a = 35 occupants</p> <p>G/L1 = Restaurant & Kitchen = 720 occupants + 10 staff (this may change with seating plans)</p> <p>G/L offices = 28 occupants</p> <p>L1 Offices = 38 occupants</p> <p>L2 Offices = 150 occupants</p>	-	-	-	-

Clause	Title & clause summary	Assessment Comments	Complies	Capable of Compliance	Does Not Comply	Not applicable
D1.13 cont..	Number of persons accommodated	L3 Offices = 102 occupants L4&5 Offices = 107 occupants L6 Offices = 90 occupants Level 8 Plant Rooms = 10 occupants Level 36 Plant Rooms = 7 Level 37 Plant Room = 24 occupants Roof Plan = 26 occupants	-	-	-	-
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 application of the BCA.	-	-	-	-
D1.16	Plant rooms and lift machine rooms:	No ladder access shown for plant rooms and lift machine rooms at this stage of design.				X
D1.17	Access to lift pits	Lift pit is shown. Details of access to the lift pit will be required to show compliance with this Clause.		X		

Construction of exits (Part D2)

Clause	Title & clause summary	Assessment Comments	Complies	Capable of Compliance	Does Not Comply	Not applicable
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.		X		
D2.3	Non-fire isolated stairs and ramps	Non-fire isolated stairs and ramps are to be constructed in accordance with this Clause.		X		
D2.4	Separation of rising and descending stair flights	No instances where this occurs.				X
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.		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

Clause	Title & clause summary	Assessment Comments	Complies	Capable of Compliance	Does Not Comply	Not applicable
D2.10	Pedestrian ramps	Ramps meet compliance with this Clause. Also, see Appendix 3 for guidance on slip resistance.		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.		X		
D2.12	Roof as open space	No instances where this occurs.				X
D2.13	Goings & risers	All public and private stairs are required to be designed to show compliance with this Clause. Stairs are to also comply with slip resistance requirements and contrasting nosing etc		X		
D2.14	Landings	Landings are to be constructed as per this clause, See Appendix 3 for guidance on slip resistance.		X		
D2.15	Thresholds	This clause gives guidance on the only area a threshold can be incorporated at a doorway.		X		
D2.16	Barriers to prevent falls	Barriers to balconies and stair landings are to be designed and installed in accordance with this Clause. There is insufficient detail to ascertain compliance at this stage of the design		X		
D2.17	Handrails	All accessible stairs require handrails on both sides of the stair handrails are required to comply with this Clause. Reference should also be made to AS1428.1. Currently several stairs do not show handrails		X		

Clause	Title & clause summary	Assessment Comments	Complies	Capable of Compliance	Does Not Comply	Not Applicable
D2.18	Fixed Platforms and walkways	No instances where this occurs at this stage of the design.				X
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.		X		
D2.20	Swinging doors	All required exit doors swing in the direction of egress and doors to the fire stairs do not appear to encroach more than 500 mm on egress paths at this stage of design.		X		
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.		X		
D2.22	Re-entry from fire isolated exits	<p>Doors of a fire isolated exit must not be locked from the inside as follows</p> <p>(a) In a fire-isolated exit serving any storey above an effective height of 25 m throughout the exit</p> <p>(b) The requirements of (a) do not apply to a door fitted with a fail-safe device that automatically unlocked the door on activation of a fire alarm and-</p> <p>(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</p> <p>(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</p>		X		

Clause	Title & clause summary	Assessment Comments	Complies	Capable of Compliance	Does Not Comply	Not Applicable
D2.23	Signs on doors	This clause gives guidance on required signage for exit doors. Signage is also to comply with the requirements of clause D3.6		X		
D2.24	Protection of Openable Windows	Appropriate protection measure is required to the windows of the Class 2 bedrooms.		X		
D2.25	Timber Stairway Concession	This clause gives guidance on concession for the use of timber stairways		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	<p>Lift access is to be provided to all floors and general access to SOU doors is required.</p> <p>Accessible facilities and features to be assessed as design progresses, some items to be addressed prior to issue of the Construction Certificate:</p> <ul style="list-style-type: none"> • End of trip facilities on basement entry level are required to be accessible with accessible features • Level 7 gym requires ambulant cubicles • All doors in a building required to be accessible are to provide minimum unobstructed 850mm clear width – depending on the construction method this typically requires minimum 920mm doors 		X		
D3.2	Access to buildings	<p>There is insufficient detail to determine if compliant access is provided to the building—</p> <ul style="list-style-type: none"> (i) from the main points of a pedestrian entry at the allotment boundary; and (ii) from any required accessible carparking space on the allotment. (iii) Revolving doors are not a compliant accessible entry <p>Accessway are to be designed to AS1428.1.</p>		X		
D3.3	Parts of the buildings to be accessible	<p>This Clause gives guidance on some of the general access requirements under the provisions of the BCA and AS 1428.1-2009.</p> <p>Note: the designer should refer to North Sydney DCP for any further requirements for 'Access' over and above the BCA.</p>		X		

Clause	Title & clause summary	Assessment Comments	Complies	Capable of Compliance	Does Not Comply	Not Applicable
D3.4	Exemptions	This Clause provides guidance on when Exemptions can be applied.	-	-	-	-
D3.5	Car parking	There is insufficient information to assess minimum required clearance in relation to the approach and clearance above accessible parking bays. Accessible parking spaces are to be in accordance with AS2890.6 The current design does not indicate any accessible spaces on the plans.		X		
D3.6	Identification of accessible facilities, services and features	Signage will be required to identify the lifts, accessible facilities and all exit doors levels in the building.		X		
D3.7	Hearing augmentation	No instances where this occurs.				X
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.		X		
D3.9	Wheelchair spaces in a class 9b assembly building	Not a Class 9b building.				X

Clause	Title & clause summary	Assessment Comments	Complies	Capable of Compliance	Does Not Comply	Not Applicable
D3.10	Swimming Pools	<p>The perimeter of the swimming pool is greater than 40m (60m) an accessible means of pool entry/exit will be required</p> <ul style="list-style-type: none"> a) a fixed or movable ramp and an aquatic wheelchair or b) zero depth entry at a max grad of 1:14 and aquatic wheelchair or c) a platform swimming pool lift and aquatic wheelchair or d) a sling style swimming pool lift 		X		
D3.11	Ramps	No instances where this occurs.				X

Section E – Services & Equipment

Firefighting equipment (Part E1)

Clause	Title & clause summary	Assessment Comments	Complies	Capable of Compliance	Does Not Comply	Not applicable
E1.3	Fire hydrants	A fire hydrants system is required and must comply with AS 2419.1.		X		
E1.4	Fire hose reels	A fire hose reel system required and must comply with AS 2441, to serve the basements, commercial, residential common area level and plant areas		X		
E1.5	Sprinklers	Sprinklers are required to the entire building must comply with AS2118.1-2005.		X		
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 building. No fire extinguishers are shown on plan.		X		
E1.8	Fire control centres	Fire control room is shown and must comply with Spec E1.8.		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.		X		
E1.10	Provision for special hazards	No instances where this occurs.				X

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		
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Clause	Title & clause summary	Assessment Comments	Complies	Capable of Compliance	Does Not Comply	Not applicable
E2.3	Provision for special hazards	<p>An automatic smoke detection and alarm system is required to class 2 portions. This should be installed to specification E2.2a and AS1670.1-2005.</p> <p>Automatic air pressurization system for fire isolated exits in accordance with AS/NZS 1668.1</p> <p>Zone smoke control system to be provided to class 5 & 6 parts in accordance with AS/NZS 1668.1</p>		X		

Lift installations (Part E3)

E3.2	Stretcher facility in lifts	A stretcher facility is required as the building has an effective height of more than 12 m.		X		
E3.3	Warning against use of lifts in fire	Lift signage is required. This clause gives guidance on the type of signage.		X		
E3.4	Emergency lifts	<p>Building has an effective height of more than 25 m.</p> <p>Two emergency lifts in fire isolated shafts are required complying with this clause and the requirements of a building over 75m.</p>		X		
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.		X		
E3.7	Fire service controls	As the lifts serve any storey above an effective height of 12 m, fire service controls are required.		X		

Clause	Title & clause summary	Assessment Comments	Complies	Capable of Compliance	Does Not Comply	Not applicable
E3.8	Aged care building	Not an aged care building.				X
E3.9	Fire service recall operation switch	This clause provides guidance on the fire service recall control switch required by E3.7		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		X		

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

E4.2	Emergency lighting requirements	An emergency lighting system is required to all areas other than within the Class 2 SOUs.		X		
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.		X		
E4.5	Exit signs	Exits are required to all areas other than within Class 2 SOUs.		X		
E4.6	Direction Signs	This clause provides guidance on the installation of direction signs.		X		

Clause	Title & clause summary	Assessment Comments	Complies	Capable of Compliance	Does Not Comply	Not applicable
E4.7	Class 2 and 3 buildings and class 4 parts: Exemptions	As per E4.2 and E4.5 above.		X		
E4.8	Design and operation of exit signs	The exit signs should be provided in accordance with AS2293.1-2005.		X		
E4.9	Sound systems and intercom systems for emergency purposes	Building is greater than 25 m therefore as sound system and intercom system for emergency purposes complying where applicable with AS 1670.4 must be installed.		X		

Section F – Health & Amenity

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 an Alternate Solution.		X		
F1.5	Roof coverings	The concrete roof coverings are to comply with the requirement of this Clause.		X		
F1.6	Sarking	Any sarking proposed should show compliance with AS/NZS 4200 Parts 1 & 2.		X		
F1.7	Waterproofing wet areas	Waterproofing to wet areas is required and comply with this Clause and AS3470.		X		
F1.9	Damp-proofing	Damp proofing is required to be provided in compliance with this Clause.		X		
F1.10	Damp-proofing of floors on ground	Damp proofing of the basement required to be provided in compliance with this Clause.		X		
F1.11	Floor wastes	Floor wastes are required within the Class 2 SOU's in accordance with this Clause.		X		
F1.12	Sub-floor ventilation	Considered not applicable due to the basement.				X
F1.13	Glazed assemblies	This clause gives guidance on the compliance requirements of glazed assemblies.		X		

Sanitary & other facilities (Part F2)

F2.1	Facilities in residential buildings	A closet pan and washbasin is provided at ground level. This clause also gives the minimum required facilities for a Class 2 SOU. It does not appear that any laundry facilities are provided for the class 2 SOU's		X		
F2.2	Calculation of the number of occupants and facilities	This Clause provides guidance on the calculation of the number of occupants and facilities.	-	-	-	-
F2.3	Facilities in Class 3-9 Buildings	Separate facilities for males, females and employees must be provided within the building with sufficient number and type provided.		X		
F2.4	Facilities for people with disabilities	The PWD design does not appear to comply in particular the location of the wash basin		X		
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. Most doors to unit bathrooms are within 1.2mtr of the pan which will require doors with lift off hinges this also applies to the toilets on commercial levels		X		
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, 5, 6 and 7a parts. Ceiling heights to be indicated on elevations to ensure compliance		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 habitable rooms.	X			
F4.2	Methods and extent of natural lighting	This clause provides guidance on the achieving natural light requirements.		X		
F4.3	Natural light borrowed from adjoining room	The clause provides guidance and the minimum requirements for the provisions of borrowed natural light.		X		
F4.4	Artificial Lighting	The artificial lighting system to comply with AS1680.0.		X		
F4.5	Ventilation of rooms	A habitable room, sanitary compartment, bathroom, shower room, laundry and any other room occupied by a person for any purpose must have— (a) natural ventilation complying with F4.6; or (b) a mechanical ventilation or air-conditioning system complying with AS 1668.2		X		
F4.6	Natural Ventilation	Where natural ventilation is proposed this should comply with the requirements of this Clause. Architect must confirm opening sizes provides adequate natural ventilation which is not less than 5% of the floor area of the room required to be ventilated		X		

Clause	Title & clause summary	Assessment Comments	Complies	Capable of Compliance	Does Not Comply	Not applicable
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	The sanitary compartment opens directly onto the kitchen in the North end SOU's of the low and mid-level apartments The unisex PWD cannot open directly into the public dining room/restaurant		X		
F4.9	Airlocks	If a sanitary compartment is prohibited under F4.8 from opening directly into another room- a) In a sole-occupancy unit in a class 2 building (i) Access must be by an airlock, hallway or other room; or (ii) The sanitary compartment must be provided with mechanical exhaust ventilation; and b) In a class 5, 6, 7 or 9 part; (i) Access must be by and airlock hallway or other room with a floor area of not less than 1.1m ² and fitted with self-closing door at all access doorways; or (ii) The sanitary compartment must be provided with mechanical exhaust ventilation and the room adequately screened from view		X		
F4.10	****	This clause has deliberately been left blank.	-	-	-	-

Clause	Title & clause summary	Assessment Comments	Complies	Capable of Compliance	Does Not Comply	Not applicable
F4.11	Car parks	Every storey of a carpark must have a system of mechanical ventilation complying with AS 1668.2 or a system of natural ventilation complying with Section 4 of AS 1668.4		X		
F4.12	Kitchen local exhaust ventilation	A commercial kitchen must be provided with a kitchen exhaust hood complying with AS/NZS 1668.1 and AS 1668.2		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 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 parts.		X		
F5.4	Sound insulation rating of floors	This clause provides guidance on the requirements of the sound insulation rating of floors to be achieved.		X		
F5.5	Sound insulation rating of walls	This clause provides guidance on the requirements of the sound insulation rating of floors to be achieved.		X		
F5.6	Sound insulation rating of services	Services passing through more than one sole occupancy unit must be separated by construction with an $R_w + C_{tr}$.		X		
F5.7	Sound insulation of pumps	This clause provides guidance on the requirements on flexible coupling connections.		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	Swimming pools must have suitable barriers to restrict access to the pool by young children in accordance with AS 1926, Swimming Pools Act 1992 & Swimming Pools Regulation 2008		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 47 storeys, 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 – 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

Farm Buildings (Part H3)

This Part is not applicable to this building – not a Farm Building

Section J – Energy Efficiency

The following Table applies to the Class 5, 6, 7a, 9b parts

Clause	Title & clause summary	Assessment Comments	Complies	Capable of Compliance	Does Not Comply	Not applicable
J1-J3	Energy Efficiency	Please provide a design certificate and report from an energy efficiency consultant confirming compliance with parts J1-J3.		X		
J5	Air conditioning and ventilation systems	Air conditioning and ventilation to comply with Part J5.		X		
J6	Artificial lighting and power	Lighting to comply with part J6.		X		
J7	Hot water supply	Hot water supply to comply with Part J7.		X		
J8	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 ² must have the facility to record the consumption of gas and electricity.		X		

The following Table applies to the Class 2 parts.

Clause	Title & clause summary	Assessment Comments	Complies	Capable of Compliance	Does Not Comply	Not applicable
J(A)1	Building Fabric	Compliance is not required with the national BCA provisions of J1 as those matters are regulated under BASIX. A BASIX certificate is required and architectural details should reflect the requirements.		X		
J(A)2	Building Sealing	The proposed building is required to comply with the requirements of this Clause.		X		
J(A)3	Air conditioning and ventilation systems	Any proposed air conditioning and ventilation systems are required to be energy efficient and comply with this Part. Compliance is not required with the national BCA provisions of J5.4(b) as those matters are regulated under BASIX.		X		
J(A)4	Hot water supply	Any proposed hot water system are required to comply with this Clause. Compliance is not required with the national BCA provisions of J7.3 and J7.4 as those matters are regulated under BASIX.		X		
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 ² must have the facility to record the consumption of gas and electricity.		X		

Conclusion

This report has assessed the architectural plans for the Development Application submission for the proposed mixed-use development to be located at 41 McLaren Street North Sydney under 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, 7a or 9	Class 6	Class 7b or 8
EXTERNAL WALL (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	–/–/–	–/–/–	–/–/–	–/–/–
EXTERNAL COLUMN 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
<i>Loadbearing</i>	90/ 90/ 90	120/120/120	180/120/120	240/120/120
<i>Non-loadbearing</i>	-/ 90/ 90	-/120/120	-/120/120	-/120/120
Bounding <i>public corridors</i> , public lobbies and the like—				
<i>Loadbearing</i>	90/90/90	120/-/-	180/-/-	240/-/-
<i>Non-loadbearing</i>	-/ 60/ 60	-/-/-	-/-/-	-/-/-
Between or bounding <i>sole-occupancy units</i> —				
<i>Loadbearing</i>	90/90/90	120/-/-	180/-/-	240/-/-
<i>Non-loadbearing</i>	-/ 60/ 60	-/-/-	-/-/-	-/-/-
Ventilating, pipe, garbage, and like <i>shafts</i> not used for the discharge of hot products of combustion—				
<i>Loadbearing</i>	90/ 90/ 90	120/ 90/ 90	180/120/120	240/120/120
<i>Non-loadbearing</i>	-/ 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

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

Appendix 3 - Drawings Assessed

The following drawings by Harry Seidler & Associates were used for the Assessment:

Drawing Name	Drawing Number	Revision	Date
Carpark B6	-	-	Apr 2017
Carpark B5-B5A	-	-	Apr 2017
Carpark B4-B4A	-	-	Apr 2017
Carpark B3-B3A	-	-	Apr 2017
Carpark B2-B2A	-	-	Apr 2017
Carpark Entry/Exit B1-B1A	-	-	Apr 2017
Level G	-	-	-
Level 1	-	-	-
Level 2	-	-	-
Level 3	-	-	-
Level 4 & 5	-	-	-
Level 6	-	-	-
L7 Residential Recreation Pool Terrace & Plant	-	-	-
L8 Upper Level Plant Room	-	-	-
Typical Unit Plans	-	-	March 17
Typical Low Level Plan	-	-	-
Typical Mid Level Plan	-	-	-
Typical High Level Plan	-	-	-
Level 12 Plan	-	-	-
Typical Mid level & 2 storey 4 bed lower plan	-	-	-
Typical Mid level & 2 storey 4 bed upper plan	-	-	-

Drawing Name	Drawing Number	Revision	Date
Penthouse Lower Level Plan	-	-	-
Penthouse Upper Level Plan	-	-	-
Level 37 Plant Room	-	-	-
Roof Plan	-	-	-
East Elevation	-	-	-
West Elevation	-	-	-
Section AA & BB	-	-	-

Appendix 4 – Facility Calculations

These numbers are directly from table D1.13 and any reduction/change in the occupancy may result in reduced facilities on any level

Level	Occupancy Table D1.13	Type	Pan	Urinal	Basin	PWD	Shortfall
Carpark Entry	End of Trip Facilities	Male	1		1	Showers also provided. Accessible facilities are to be provided	
		Female	1		1		
Ground Restaurant	730 inclusive 10 staff	Male = 370	3	7	3	1	1 WC Pan
		Female = 370	8	-	4		1 WC Pan
GF Commercial / office	22 Staff	Male = 11	1	1	1	1	1 WC Pan & 1 Basin
		Female = 11	1		1		
Management Office	6 staff	Male = 3	1		1	1 PWD will serve all a staff	
		Female = 3					
L1 Office	38 staff	19 males	1	1	1	1	-
		19 females	2		1		-
L2 Office	150 staff	75 males	4	3	3	1	1 urinal 1 basin
		75 females	5		3		

Level	Occupancy Table D1.13	Type	Pan	Urinal	Basin	PWD	Shortfall
L3 Office	102 staff	51 males	3	3	2	1	
		51 females	4		2		
L4 Office	107 staff	54 males	3	3	2	1	
		54 females	4		2		
L4 Office	107 staff	54 males	3	3	2	1	
		54 females	4		2		
L6 Office	90	45 males	3	2	2	1	
		45 females	3		2		
Level 7	Current facilities require to be accessible and ambulant						