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CSO
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Final Pre DA BCA/NCC Compliance assessment of the plans for Catherine McAuley Catholic College Development at Medowie

1. Introduction

This report is an assessment of the plans for the proposed Childcare, Primary School, High Schools and associated Office and Chapel at the above address to determine if construction shown generally complies with the (NCC/BCA) Building Code of Australia 2016

Plans for the proposed building work were assessed against the Deemed-to-Satisfy (DTS) Provisions of the BCA. As per below plans.

Drawn by Webber Architects – See attached ("Drawing Schedule")

The assessment relates to the BCA/NCC 2016 and NSW Environmental Planning and Assessment legislation current at the time and therefore does not necessarily infer building compliance with the same legislation at some other point in time. The assessment relates specifically to the building the subject of this report and therefore should not be construed to apply to any other building.

Generally the report only comments on non-compliances, or where insufficient detail is shown to confirm compliance. Other comment may be made where necessary to explain requirements for interrelated elements and systems of the building. The use of notes and diagrams from BCA and relevant Australian Standards on CC issue plans may address some of the requirements listed below.

- **Items in Green are BCA Compliance measures that are important to note and will require consideration at CC stage**

2. Description of Building/s

Location:	**Lot 412 & 413 DP: 1063902**	
Use of Buildings:	Childcare, Primary School, High Schools and associated Office and Chapel	
Classification:	5/9b	(A3.2/A3.3)
Rise in Storeys:	1 and 2	(C1.2)
Effective Height:	less than 25m	(A1.1)

3. Fire-Resisting Construction

Note: All non structural (concrete/steel or masonry) fire resisting building elements/ FRLs should be referenced as notes on CC issue Architectural Plans with relevant tested systems that achieve required FRL's and where tested systems are not adopted a Strucatual Engineer would provide appropriate design

(a) General Requirements –

- **external walls of all Type B (2 storey buildings only) and the flooring, floor framing of lift pits must be non-combustible**
- **loadbearing internal walls of all Type B (2 storey buildings only) (including those that are part of a loadbearing shaft) must be of concrete or masonry**
- **If any stair shaft support the 1st floor in any 2 storey building the floor or part must have an FRL of 60/-/- OR the junction of the stair shaft must be constructed so that the floor or part is free of sag or fail in a fire without causing structural damage to the shaft**
- **Attachments to fire resisting construction/ wall cladding: lightweight cladding panels to be non-combustible construction. (e.g.. Wall cladding to external parts of building) excludes single storey buildings**
- **non-loadbearing—**
  internal walls required to be fire-resisting *(as listed below)*; and lift, ventilating, pipe, garbage, or similar shaft, must be of non-combustible construction

(Specification C1.1)

(b) FRL REQUIREMNTS OF BUILDING ELEMENTS (TABLE 3 of SPECIFICATION C1.1 BCA NCC) -

(i) ALL (2 Storey) School/ Library/ Office/ Chapel Buildings (TYPE B CONSTRUCTION)

Building elements require the following fire resistance levels (FRLs):

- Loadbearing external walls: 3m or more from any boundary or other building on same alotment must achieve and FRL of: 120/30/30
- Internal loadbearing walls: Bounding public lobbies: 120/-/- (GROUND FLOOR ONLY)
- Other loadbearing internal walls: 120/-/- (GROUNDFLOOR ONLY)
- Internal columns: loadbearing: 120/-/- (GROUND FLOOR ONLY)
- External loadbearing columns not incorporated in an external wall: 120/-/-

(ii) ALL (1 Storey) buildings i.e. Primary School, Science, TAS, Childcare, Office

Building elements require the following fire resistance levels (FRLs): NIL N/A

(Specification C1.1)

Any electrical substations and/or main switchboards (that sustain emergency equipment) located **within** the building must be separated from any other part of the building by construction with an FRL of 120/120/120 with any openings protected with a self-closing fire door having an FRL of not less than -/120/30. Fire Hydrant pump rooms located within building will also require the above FRL with access via a Fire Isolated Passageway achieving 120/120/120
Note: A Hydraulic Engineer is to provide advice in relation to compliance in this regard

Switchboards which sustain electrical supply to emergency equipment such as fire hydrant booster pumps and occupant warning must be separated from non-emergency equipment switchgear by metal partitions to minimise spread of a fault (C2.13)

The Fire Hazard Properties required for construction materials, carpets/vinyls/internal linings, etc. are as follows: TBA (Construction Certificate Stage)

(Specification C1.10)

4. Access and Egress

General requirement for all doors

A door in a required exit forming part of a required exit or in the path of travel to a required exit must be readily openable without a key from the side that faces a person seeking egress, by—
(i) a single hand downward action on a single device which is located between 900 mm and 1.1 m from the floor and;

(A) be such that the hand of a person who cannot grip will not slip from the handle during the operation of the latch; and

(B) have a clearance between the handle and the back plate or door face at the centre grip section of the handle of not less than 35 mm and not more than 45 mm; or

(ii) a single hand pushing action on a single device which is located between 900 mm and 1.2 m from the floor.

(D2.21)

NOTE: Concession for Child Care Centre – The general requirements above do not apply to any doors provided that they can be immediately unlocked –

(i) By operating a fail safe control switch, not contained within a protective enclosure , to actuate a device to unlock the door: or

(ii) By hand, by a person or persons, specifically nominated by the owner, properly instructed as to the duties and responsibilities involved and available at all times when the building is lawfully occupied so that the persons in the building or part may immediately escape if there is a fire or

(iii) Is fitted with a fails safe device that immediately unlocks the door upon the activation of a smoke orr other detector complying with AS1670 installed throughout the building

(a) Any outdoor play space in a Class 9b *early childhood centre* must be enclosed on all sides with a barrier which complies with AS 1926.1.

(b) For the purposes of **(a)**, AS 1926.1 is applied as if there is a *swimming pool* located outside the outdoor play space, so that the barrier restricts children from exiting the premises without the knowledge of staff in the centre.
(c) The requirements of **(a)** do not apply to a wall, including doors and *windows*, which form part of the Class 9b *early childhood centre*.

Installations in exits and paths of travel - Services or equipment comprising:

Electricity meters, distribution boards or ducts, telecommunication distribution boards, electrical motors, or any other motors or equipment may be installed in paths of travel to an exit if enclosed by non-construction or construction with a fire protective covering with doorways suitable sealed against smoke spread.

5. Provision of Services and Equipment

Emergency lighting complying with AS 2293.1 is required in any room or space to which there is public access in every storey of the building. (E4.2(f))

Emergency lighting complying with AS 2293.1 must be installed in every passageway or corridor that is part of the path of travel to an exit, any room with a floor area more than 100m² that does not open to a corridor or space that has emergency lighting or to a road or open space, i.e. and any room that has a floor area more than 300m² (E4.2(b))

As per recent changes braille exit signage is required to be provided for each exit door to comply with D3.6 (a)(ii) of BCA.

Emergency lighting complying with AS 2293.1 must also be installed in all exit stairways. (E4.2)

Exit signs complying with AS 2293.1 are required over exit doors and in appropriate positions in corridors, hallways and the like indicating the direction to a required exit where exits are not readily apparent to persons occupying or visiting the building. In particular and dependant on egress path chosen from areas on all levels and carpark, directional signage will be required to direct people egressing to at least 2 exits to road or open space.

(E4.5, E4.6)

The proposed building requires the provision of the following fire fighting equipment:

- Fire hydrants (all buildings over 500m2 in floor area) and fire hose reels (excludes all classroom and associated hallways
- Portable Fire Extinguishers

(Part E1)

Fire hydrants must be provided to the building in accordance with AS 2419.1. On-site hydrants have coverage of 70m and if external must not be located closer than 10 m to a building unless shielded by fire-rated construction. (E1.3)

Automatic shutdown (IF APPLICABLE): This building must be provided with automatic shutdown of any air-handling system (other than non-ducted individual room units with a capacity not more than 1000 l/s on the activation of— (i) smoke detectors installed complying with Clause 5 of Specification E2.2a; and (ii) any other installed fire detection and alarm system

The proposed buildings require the provision of the following fire fighting equipment:

- Fire hydrants (all buildings)
- Fire hose reels (office/admin/childcare/ multipurpose areas only)
- Portable Fire Extinguishers must be provided in accordance with Part E1.6 of the BCA and AS2444.

(Part E1)

6. DRAFT List of statutory required Fire Safety Measures

Emergency Lighting	**BCA Clauses E4.2/E4.4 & AS/NZS 2293.1-2005**
Exit Signs	**BCA Clauses E4.5/NSW E4.6/E4.7/E4.8 and AS/NZS 2293.1-2005**
Fire Hydrant Systems	**BCA Clause E1.3 & AS 2419.1-2005**
Hose Reel System (serving office/admin/childcare area only)	**BCA Clause E1.4 & AS 2441-2005**
Mechanical Air Handling Systems **1. Automatic Shutdown (where applicable)**	**BCA Clauses E2.2a AS/NZS 1668.1- 1998**
Path of Travel for stairways, passageway and ramps	**EP&A Reg. 2000 Clauses 184-186**
Smoke Detectors (Associated with Auto Shutdown if required)	**BCA Spec. E2.2 and AS 3786-1993**
Portable Fire Extinguishers	**BCA Clause E1.6 and AS 2444-2001**

Note: The above measures will require design by appropriately qualified persons.

7. Stairways and balustrades

Stair construction is to comply with BCA D2.13, D2.16 and D2.17 including riser and going dimensions, slope relationship, construction of landings and handrails. Stairs to have Risers: max 190 min 115; Goings: max 355 min 240; Slope Relationship (2R +G) max 700 min 550. Each flight must have not more than 18 nor less than 2 risers. The riser opening must not allow a 125 mm sphere to pass through between treads. Landings are to be not less than 750 mm long.

All treads of ALL stairways must have —

(A) a Luminous contrasting nosing (includes fire isolated stairways); and

(B) a surface with a slip-resistance classification not less than that listed in Table D2.14 when tested in accordance with AS 4586; OR

(A) a nosing strip with a slip-resistance classification not less than that listed in Table D2.14 when tested in accordance with AS 4586

All landings of ALL stairways must have —

(A) a surface with a slip-resistance classification not less than that listed in Table D2.14 when tested in accordance with AS 4586; OR

(B) a strip at the edge of the landing with a slip-resistance classification not less than that listed in Table D2.14 when tested in accordance with AS 4586, where the edge leads to a flight below.

All ramps will require slip resistance classification as per above.

The balustrades to landings, decks, balconies and the like must have a height of not less than 1 m above finished surfaces. All balustrades must have openings that do not permit a 125 mm sphere to pass through it and for stairs, the space is tested above the nosing line. Balustrades must also comply with Part B of the BCA in terms resistance to impact, forces and the like.

For balustrades and windows more than 4 m above the surface beneath, any horizontal or near horizontal elements between 150 mm and 760 mm above the floor must not facilitate climbing.

Handrails for PRIMARY SCHOOL areas

(a) have one handrail fixed at a height of less than 865mm and
(b) have a second handrail fixed at a height between 665mm and 750mm

7. Sanitary and Other Facilities

Fully enclosed sanitary compartments must have doors that open outwards, slide or are readily removable from outside of the sanitary compartment unless there is a clear space of at least 1.2m between the door hinge and the closet pan. Plans are not fully dimensioned and this requirement may apply to some SOU's which have inward swinging doors

Specific Requirements for Early Childhood Centre

An ECC must be provided with a kitchen or food preparation area with a kitchen sink, separate hand washing facilities, space for a refrigerator and space for cooking facilities, requires that—

(A) the facilities protected by a door or gate with child proof latches to prevent unsupervised access to the facilities by children younger than 5 years old; and

(B) the ability to facilitate supervision of children from the facilities if the *early childhood centre* accommodates children younger than 2 years old; and

An ECC must be provided with –

(ii) one bath, shower or shower-bath; and

(iii) if the centre accommodates children younger than 3 years old—

(A) a laundry facility comprising a washtub and space in the same room for a washing machine; and

(B) a bench type baby bath, which is within 1 m of the nappy change bench; and

(C) a nappy changing bench which—

(aa) is within 1 m of separate adult hand washing facilities and bench type baby bath; and

(bb) must be not less than 0.9 m^2 in area and at a height of not less than 850 mm, but not more than 900 mm above the finished floor level; and

(cc) must have a space not less than 800 mm high, 500 mm wide and 800 mm deep for the storage of steps; and

(dd) is positioned to permit a staff member changing a nappy to have visibility of the play area at all times.

Facilities for use by children must have each *sanitary compartment* screened by a partition which, except for the doorway, is opaque for a height of at least 900 mm but not more than 1200 mm above the floor level.

Note: Facilities for use by children must be— (a) junior pans; and (b) washbasins with a rim height not exceeding 600mm; and (c) accessible from both indoor and outdoor play areas.

8. Light and Ventilation

Mechanical ventilation may be required to satisfy this part where openable windows are not provided to a ratio of 5% opening in relation to floor area served.

Sanitary compartments without openable windows will require mechanical ventilation.

(Part F4)

9. Energy Efficiency

Conditioned spaces will require a Section J energy efficiency report for CC submission.

10. Access for people with a disability

Refer to Access Consultant Report by BCA Access Solutions (Compliance is readily achievable)

12. Conclusion

The design is in general compliance with BCA/NCC 2016 with the plans being suitable for submission for Development application. The design can readily incorporate the requirements listed in this report and as required by other specialist consultants at the Construction Certificate stage.

Scott O'Donohue
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Attachments:

Webber Architects Drawing Schedule (Subject of the assessment)

DRAWING SCHEDULE

Sheet Number	TITLE
01_0001	COVER SHEET
01_0002	GENERAL NOTES
01_0003	LOCATION ANALYSIS PLAN
01_0004	SITE ANALYSIS PLAN
01_0005	SITE STAGING PLAN
01_0006	SITE FLOOD MAPPING
02_0002	SITE PLAN - OVERALL
02_0003	SITE PLAN - NORTH
02_0004	SITE PLAN - CENTRAL
02_0005	SITE PLAN - SOUTH
02_0010	SHADOW DIAGRAMS - 01
02_0011	SHADOW DIAGRAMS - 02
02_0401	SITE ELEVATIONS - 01
02_0402	SITE ELEVATIONS - 02
02_0403	SITE ELEVATIONS - 03
02_0502	SITE SECTIONS - 02
03_0001	SITE FLOOR PLAN - GROUND - 01
03_0002	SITE FLOOR PLAN - GROUND - 02
03_0003	SITE FLOOR PLAN - LEVEL 1 - 01
03_0004	SITE FLOOR PLAN - LEVEL 1 - 02
03_0005	SITE FLOOR PLAN - LEVEL 1 - 03
03_0011	SITE FLOOR PLAN - GROUND - 01
03_0012	SITE FLOOR PLAN_GROUND - 02
03_0101	FLOOR PLAN - BLOCK A - GROUND - 01
03_0102	FLOOR PLAN - BLOCK A - GROUND - 02
03_0103	FLOOR PLAN - BLOCK A - GROUND - 03
03_0104	FLOOR PLAN - BLOCK A - LEVEL 1 - 01
03_0105	FLOOR PLAN - BLOCK A - LEVEL 1 - 02
03_0106	FLOOR PLAN - BLOCK A - LEVEL 1 - 03
03_0111	ROOF PLAN - BLOCK A - 01
03_0112	ROOF PLAN - BLOCK A - 02
03_0201	FLOOR PLAN - BLOCK B - GROUND
03_0202	FLOOR PLAN - BLOCK B - LEVEL 1
03_0301	FLOOR PLAN - BLOCK C - GROUND
03_0303	ROOF PLAN - BLOCK C
03_0401	FLOOR PLAN - BLOCK D - GROUND
03_0403	ROOF PLAN - BLOCK D - TAS
03_0501	FLOOR PLAN - BLOCK E - GROUND
03_0503	ROOF PLAN - BLOCK E
03_0601	FLOOR PLAN - BLOCK F - GROUND
03_0603	ROOF PLAN - BLOCK F
03_0701	FLOOR PLAN - BLOCK G - GROUND
03_0702	FLOOR PLAN - BLOCK G - LEVEL 1
03_0705	ROOF PLAN - BLOCK G
03_0801	FLOOR PLAN - BLOCK H - GROUND
03_0802	FLOOR PLAN - BLOCK H - LEVEL 1
03_0805	ROOF PLAN - BLOCK H
03_0901	FLOOR PLAN - BLOCK I - GROUND
03_0902	FLOOR PLAN - BLOCK I - LEVEL 1
03_0905	ROOF PLAN - BLOCK I
03_1001	FLOOR PLAN - BLOCK J - GROUND
03_1002	FLOOR PLAN - BLOCK J - LEVEL 1
03_1005	ROOF PLAN - BLOCK J
03_1201	FLOOR PLAN - BLOCK L - GROUND
03_1203	ROOF PLAN - BLOCK L
03_1301	FLOOR PLAN - BLOCK M - GROUND
03_1305	ROOF PLAN - BLOCK M
03_1401	FLOOR PLAN - BLOCK N - GROUND
03_1405	ROOF PLAN - BLOCK N
03_1501	FLOOR PLAN - BLOCK O - GROUND
03_1504	ROOF PLAN - BLOCK O
03_1601	FLOOR PLAN - BLOCK P - GROUND
03_1605	ROOF PLAN - BLOCK P
03_1701	FLOOR PLAN - BLOCK Q - GROUND
03_1705	ROOF PLAN - BLOCK Q
04_0101	ELEVATIONS - BLOCK A - 01
04_0102	ELEVATIONS - BLOCK A - 02
04_0201	ELEVATION - BLOCK B - 01

DRAWING SCHEDULE

Sheet Number	TITLE
04_0202	ELEVATION - BLOCK B - 02
04_0301	ELEVATIONS - BLOCK C - 01
04_0302	ELEVATIONS - BLOCK C - 02
04_0401	ELEVATIONS - BLOCK D - 01
04_0402	ELEVATIONS - BLOCK D - 02
04_0501	ELEVATIONS - BLOCK E - 01
04_0502	ELEVATIONS - BLOCK E - 02
04_0601	ELEVATIONS - BLOCK F - 01
04_0602	ELEVATIONS - BLOCK F - 02
04_0701	ELEVATIONS - BLOCK G - 01
04_0702	ELEVATIONS - BLOCK G - 02
04_0801	ELEVATIONS - BLOCK H - 01
04_0802	ELEVATIONS - BLOCK H - 02
04_0901	ELEVATIONS - BLOCK I - 01
04_0902	ELEVATIONS - BLOCK I - 02
04_1001	ELEVATIONS - BLOCK J - 01
04_1002	ELEVATIONS - BLOCK J - 02
04_1201	ELEVATIONS - BLOCK L - 01
04_1202	ELEVATIONS - BLOCK L - 02
04_1301	ELEVATIONS - BLOCK M - 01
04_1302	ELEVATIONS - BLOCK M - 02
04_1401	ELEVATIONS - BLOCK N - 01
04_1501	ELEVATIONS - BLOCK O - 01
04_1502	ELEVATIONS - BLOCK O - 02
04_1601	ELEVATIONS - BLOCK P - 01
04_1602	ELEVATIONS - BLOCK P - 02
04_1701	ELEVATIONS - BLOCK Q - 01
04_1702	ELEVATIONS - BLOCK Q - 02
05_0101	SECTIONS - BLOCK A - 01
05_0102	SECTIONS - BLOCK A - 02
05_0201	SECTIONS - BLOCK B - 01
05_0301	SECTIONS - BLOCK C - 01
05_0401	SECTIONS - BLOCK D - 01
05_0501	SECTIONS - BLOCK E - 01
05_0601	SECTIONS - BLOCK F - 01
05_0701	SECTIONS - BLOCK G - 01
05_0702	SECTIONS - BLOCK G - 02
05_0801	SECTIONS - BLOCK H - 01
05_0802	SECTIONS - BLOCK H - 02
05_0901	SECTIONS - BLOCK I - 01
05_0902	SECTIONS - BLOCK I - 02
05_1001	SECTIONS - BLOCK J - 01
05_1002	SECTIONS - BLOCK J - 02
05_1201	SECTIONS - BLOCK L - 01
05_1202	SECTIONS - BLOCK L - 02
05_1301	SECTIONS - BLOCK M - 01
05_1401	SECTIONS - BLOCK N - 01
05_1501	SECTIONS - BLOCK O - 01
05_1601	SECTIONS - BLOCK P - 01
05_1701	SECTIONS - BLOCK Q - 01