21 September 2016

Our Ref: J130671

Farrell Coyne Projects Pty Ltd
Suite 3 & 4, 18 Hickson Road
WALSH BAY NSW 2000

Attn: Robert Farrell

Dear Robert,

Re: MLC Senior School Centre
Development Application Submission
BCA Capability Report

Please find enclosed our BCA Capability Report for inclusion with the Development Application submission.

Should you require any further information please do not hesitate to contact the undersigned.

Yours faithfully

Mariusz Para
for Vic Lilli & Partners

BCA CAPABILITY REPORT

FOR

Project:	**45 Park Road, Burwood**
Prepared For:	**Farrell Coyne Projects P/L**
Prepared By:	**Vic Lilli and Partners**
Date:	**21 September 2016**
Our Ref:	**J130671**

VIC LILLI & PARTNERS - Accredited Building Certifiers
T 02 9715 2555 E info@viclilli.com.au Locked Bag 3013 Burwood NSW 1805. DX 8505
F 02 9715 2333 W www.viclilli.com.au Suite 7, Level 2, 1-17 Elsie Street Burwood NSW 2134
A division of Mondan Management Pty Ltd ABN 60 119 432 094

TABLE OF CONTENTS

VIC LILLI &PARTNERS

CONTENTS **Page No.**

1.0 – Executive Summary

This report has been prepared so as to assess the architectural design and documentation as prepared by BVN Donovan Hill Architects in accordance with the Building Code of Australia (BCA) 2015 and relevant adopted standards.

The proposal being the subject of the development application relates to the construction of new learning building and extension to the existing middle school located at MLC School Burwood.

This report will provide the consent authority with a BCA analysis to assist in the determination of the development application.

2.0 – Report Summary

2.1 – Basis of Assessment

Building Location

The subject building is to be located at MLC School site in Burwood, the site is bounded by Park Road to the east, Rowley Street to the south and Grantham Street to the west

The site is within the jurisdiction of Burwood City Council for the purposes of the development consent authority.

Basis of Report

This BCA Capability Report has been prepared on the basis of the following-

(i) Architectural Plans as noted within Section 6 of this report.

(ii) Building Code of Australia (BCA) 2015, including NSW Variations and relevant Australia Standards;

(iii) Environmental Planning and Assessment Act, 1979, and Regulations.

(iv) Disability (Access to Premises - Buildings) Standards 2010

2.2 – Report purpose

This report has been prepared to identify the extent of compliance achieved by the architectural documentation depicting the proposed basement and teaching spaces against the relevant provisions of the Building Code of Australia (BCA) 2015.

This report has been prepared for submission with the Section 96 modification to the Development Application to NSW Planning and Environment for the approval of the works at the subject property.

2.3 – Report methodology

The report intends to broadly identify aspects of compliance with the BCA to the extent that compliance can be achieved with the BCA by means of either deemed-to-satisfy or performance based approaches. The outcome of which is to support the proposed design such that alteration to accommodate compliance with the BCA will not be required and a future amendment to the development consent would not be required on this basis.

2.4 – Exclusions

This report does not imply, nor make reference to structural design or operating capability or design of any electrical, fire hydraulic or mechanical services or compliance with the Disability Discrimination Act 1992.

2.5 - Building Description

Use/Classification	Classification being: - • Class 9b - School
Rise in Storeys	Maximum rise of five (5) storeys
Floor Area and Volume Limitations	The proposed building will be compliant within the following limitations: • floor area maximum 8000m^2 • volume maximum 48,000m^3 It is noted the compartment limitations will not be exceeded.
Effective Height	The building will have an effective height of 12 meters.
Type of Construction (BCA)	Type A Construction required.
Population	Population numbers were provided by BVN Donovan Hill Architects and were advised by MLC. Basement – 75-in accordance with Table D1.13 of the BCA Level 00 – 260 Level 01 – 288 Level 02 – 283 Level 03 – 283

3.0 - Building Code of Australia Assessment

3.1 – Fire Resistance and Stability (Section C, BCA)

Item	***Comment***
Fire Resistance	The buildings are to be constructed to comply with the provisions of Table 3 of Specification C1.1. Floors are to be fire rated to achieve a FRL of 120/120/120 minimum. Roof for sprinkled buildings shall have non-combustible covering.
Compartmentation and Separation	Fire compartmentation to form separate fire compartments is not proposed or required as the total floor area/volume does not exceed the maximum limits for type A construction and separate classifications are not present within the building.
Protection of Openings	Adequate levels of separation are provided between site boundaries and proposed openings.
Separation of equipment	The following equipment is to be fire isolated from the building with construction having an FRL not less than 120/120/120, doors accessing the spaces are to be self-closing –/120/30 fire doors: • Lift motors and lift control panels • Emergency generators or central smoke control plant • Boilers • Batteries

3.2 – Access & Egress (Section D, BCA)

Item	***Comment***
Number of exits required	The number exits to the proposed building will comply with the provisions of Clause D1.2 of the BCA with. • The building requires a minimum of 2 exits from each storey.
Fire Isolated Exit	Stairs/Exits passing through > 2 storeys (no sprinklers) or > 3 storeys (sprinklers) are required to be contained within fire isolated shafts. Exits are to be isolated with shaft walls achieving an FRL as indicated to Specification C1.1 If proposed, alternative design should be equivalent to the BCA Deemed-to-satsify-compliant benchmark design.
Exit travel distances.	Generally, exit travel distances are able to be achieved in compliance with the provisions of Clause D1.4 of the BCA, with the exception of the following areas: **Main Building:** • The distance of travel to an exit and between alternate exist generally comply with the deemed-to-satisfy provisions of the BCA. **Middle School:** • The egress travel distance to the point of choice is 26m in lieu of 20m, however distance to one of the exits does not exceed 40m. The non-compliance with the Deemed to Satisfy Provisions will be subject to an alternative solution to address the relevant Performance Requirements of the BCA, as advised by the Client.
Distance between alternative exits.	The distance between alternative exits generally comply with Clause D1.5 of the BCA.

Item	***Comment***
Dimensions of exits.	The aggregative egress width required for the Main Building ground, first and second floors were calculated at 3m as per Clause D1.6 of the BCA and it appears that 3.0m (width of stairs) of aggregative width is provided. The design complies with the clause. The aggregative exit widths were based on population numbers provided by BVN Donovan Hill Architects and were advised by MLC.
Egress Doors.	All doors acting as exits shall swing in the required direction and are required to be provided with the appropriate hardware in accordance with Clauses D2.20 & D2.21 of the BCA. Note: Basement door shall swing in the direction of egress. Sliding doors shall be fitted with a fail-safe device which automatically unlocks the door upon the activation of sprinkler system or detection system in accordance with AS 1670.1
Access for people with Disabilities	Disabled access is to be provided throughout the building and to all areas normally accessed by the occupants. The proposed lift is to comply with AS 1735.12 and Table E3.6b of the BCA in this regard to facilitate access between levels. All internal and external stairs shall comply with clause 11 and 12 of AS 1428.1-2009 and include tactile indicators in accordance with AS 1428.4.1-2009. It is recommended that a separate report from a suitable qualified access consultant would be suggested to demonstrate compliance with all mentioned applicable provisions.

3.3 – Services and Equipment (Section E, BCA)

Item	***Comment***
Hydrant Systems	The building is required to be provided with a hydrant system in accordance with the provisions of Clause E1.3 of the BCA and AS 2419.1.2005 Compliance of the design is to be confirmed by a suitable hydraulic engineer at the Construction Certificate stage.
Hose Reel Systems	The building will require a hose reel system in accordance with the provisions of Clause E1.4 of the BCA and AS 2441. Fire hose reel coverage shall be provided to basement level only. Compliance of the design is to be confirmed by a suitable hydraulic engineer at the Construction Certificate stage.
Sprinklers	The development will require the sprinkler system to comply with Specification E1.5 of the BCA and AS 2112.1-1999. Compliance of the design is to be confirmed by a suitable hydraulic engineer at the Construction Certificate stage.
Smoke Hazard Management	the following smoke hazard management will be required in accordance with Table E2.2a and its relevant specification: • Automatic fire sprinkler system compliant with Spec E1.5 and AS 2118.1-1999, • Smoke exhaust system in accordance with AS1668.1. • Automatic shutdown of mechanical ventilation compliant with Section 6 of AS1668.1 The design of the services will be subject to the review by a fire services consultant.
Portable Fire Extinguishers	The building requires fire extinguishers in accordance with the provisions of Clause E1.6 of the BCA and AS 2444 to protect the main switch supplying power to control and indicating equipment and to cover class A fire risk in classrooms and associated corridors.

Item	Comment
Emergency Lighting	Emergency lighting is required within the development in accordance with Clauses E4.2 and E4.4 of the BCA and AS 2293.1-2005. Compliance of the design is to be confirmed by a suitable electrical engineer at the Construction Certificate stage.
Exit Signs	Exit signs are required throughout the development in accordance with Part E of the BCA and AS 2293.1-2005. Compliance of the design is to be confirmed by a suitable electrical engineer at the Construction Certificate stage.

3.4 – Health and Amenity (Section F, BCA)

Item	Comment
Damp and Weatherproofing	The development will comply with Part F1 of the BCA.
Sanitary & other facilities	The accessible facilities on level 00, 01, 02 and 03 are to be a unisex accessible and shall comply with AS 1428.1-2009 At each bank of toilets, a sanitary compartment for people with ambulant disability shall be provided in accordance with AS 1428.1-2009 Clause 16. Based on student numbers and staff levels it appears that adequate number of sanitary facilities will be provided. Above numbers were provided by BVN Donovan Hill Architects and were advised by MLC.
Ventilation	The building it required to be provided with ventilation in accordance with the provisions of Clause F4.5 of the BCA. Ventilation may be provided by natural means or a mechanical system complying with AS 1668.2. Compliance will be achieved following the design of the system by the appropriate consulting engineer.

Item	Comment
Lighting	Artificial lighting is required to be provided throughout the building in accordance with the provisions of Clause F4.4 of the BCA and AS 1680.1 to non habitable parts. Compliance will be achieved following the design of the system by the appropriate consulting engineer.

3.5 – Atrium Construction (Section G, BCA)

Item	Comment
Atriums Affected by This Part	The atrium to the main building does not meet the deemed-to-satisfy provisions of Part G3 of the BCA. The non-compliance with the Deemed to Satisfy Provisions will be subject to an alternative solution to address the relevant Performance Requirements of the BCA, as advised by the Client.

3.6 – Energy Efficiency (Section J, BCA)

Item	Comment
Building Fabric	External walls are to generally achieve an R value of 2.8 and roof/ceiling 3.2, internal walls bounding conditioned and non conditioned spaces are to achieve a R value if 1.8 minimum. Compliance can be readily achieved
External Glazing	Glazing that forms part of the external building fabric is to be capable of achieving compliance with clause J2.4 of the BCA.
Building Sealing	The method of construction of the envelope will incorporate sealing of gaps etc to prevent loss of conditioned air and subject to clauses J3.2 – J3.7

3.0 - BUILDING CODE OF AUSTRALIA ASSESSMENT

Item	***Comment***
Air-conditioning and Ventilation	Mechanical ventilation systems are to comply with Part J5 of the BCA.
Artificial Lighting	Internal lighting is capable of achieving compliance with Part J6 of the BCA.
Hot Water Systems	Hot water systems will comply with Section 8 of AS/NZS 3500.4 as applicable.
Facilities for Energy Monitoring	Facilities for energy monitoring is to be provided in accordance with Clause J8.3 of the BCA.

4.0 – Fire Safety Measures

4.1 – Proposed Fire Safety Measures

In terms of the proposal the following fire safety measures are required to serve the building: -

Measure	Installation Standard
Automatic fire sprinkler system	BCA Spec E1.5, AS 2118.1-1999
Emergency lighting	BCA Clause E4.2 & E4.4, AS 2293.1-2005
Exit signs	BCA Clause E4.5 & E4.8, AS 2293.1-2005
Fire doors	BCA Spec C3.4, AS 1905.1-2005
Fire Engineering	TBD
Fire hydrant systems	BCA Clause E1.3, AS 2419.1-2005
Fire hose reel system	BCA Clause E1.4, AS 2441-2005
Lightweight construction	BCA Clause C1.8, BCA Spec C1.8
Mechanical air handling systems (automatic shut down)	BCA Clause E2.2, Table E2.2b and AS/NZS 1668.1-1998
Fire dampers	BCA C3.12 & C3.15, AS/NZS1668.1-1998, AS1668.2-1991
Portable fire extinguishers	BCA Clause E1.6, AS 2444-2001
Smoke detectors and heat detectors	AS/NZS1668.1-1998 (Automatic shutdown of air handling equipment)
Sound system and intercom system for emergency purposes	BCA Clause E4.9, AS 1670.4-2004

5.1 – Conclusion

It is the opinion of this office that, on satisfaction of the above recommendations, the proposed building is capable of achieving compliance with the requirements of the Building Code of Australia (BCA) 2015 and relevant adopted standards without undue modification to the design or appearance of the building.

Signed,

Mariusz Para

Vic Lilli & Partners

6.0 – Referenced Drawings

This BCA Capability report has been prepared on the basis of the following-

(i) Architectural Plans as prepared by BVN Donovan Hill Architects.

Drawing No.	Title	Revision
AR-AR-A-XX-01	Cover Sheet	D
AR-AR-B-00-02	Floor Plan Level-00	F
AR-AR-B-01-03	Floor Plan Level-01	F
AR-AR-B-02-04	Floor Plan Level-02	F
AR-AR-B-03-05	Floor Plan Level-03	D
AR-AR-B-04-06	Roof Plan	A
AR-AR-C-XX-01	Elevations-Main Building	E
AR-AR-D-XX-02	Sections 2	D

(ii) Building Code of Australia (BCA) 2015;

(iii) Disability (Access to Premises - Buildings) Standards 2010

(iii) Environmental Planning and Assessment Act, 1979, and Regulations.