3 November 2009

Allen Jack + Cottier Architects Pty Ltd
Sydney Office
79 Myrtle Street
CHIPPENDALE NSW 2008

Attention: Mark Louw
Email: mark.louw@architectsajc.com

Dear Mark

Reference: MOORE THEOLOGICAL COLLEGE, 1 KING STREET NEWTOWN
BUILDING CODE OF AUSTRALIA COMPLIANCE STATEMENT

This compliance statement is to verify that Blackett Maguire + Goldsmith Pty Ltd have undertaken an assessment of the design documentation for the proposed new Moore Theological College against the requirements of the Building Code of Australia 2009 (BCA 2009).

Project Description:

We understand that it is proposed to demolish the existing Moore College building located at 1 King Street Newtown and construct a seven (7) storey building, which comprises of basement carparking & storage, office / administration area, library and teaching areas.

We note that the proposed development will form part and be used in conjunction with the existing college and will in certain areas connect into the existing college buildings.

Compliance Statement Objectives

The objective of this compliance statement is to:

1. Accompany submission of the Part 3a Certification to enable the Consent Authority to be satisfied that subsequent compliance with the fire & life safety and health & amenity requirements of the BCA, will not give rise to design changes to the building which may necessitate the submission of an amended application; and

2. Enable the certifying authority to satisfy its statutory obligations under Clause 145 of the Environmental Planning and Assessment Regulation 2000.

This review is not intended to identify all issues of compliance or non compliance with the BCA, as these will be identified accordingly at the Construction Certificate application stage.

Referenced Documentation:

The comments contained within this report have been based upon the following documentation:

- Architectural Drawing Nos. 2001(A), 2002(A), 2101(A), 2102(A), 2103(A), 2104(A), 2105(A), 2106(A), 2107(A), 2108(A), 3100(A), 3101(A), 3200(A), 3201(A) and 3202(A) dated 9 November 2009, as prepared by your office - against the Deemed-to-Satisfy (DtS) provisions of the Building Code of Australia 2009 (BCA).The Building Code of Australia (BCA) 2009, Volumes 1 & 2

BLACKETT MAGUIRE + GOLDSMITH
PO BOX 167, BROADWAY NSW 2007. SUITE 2.01, 22-36 MOUNTAIN ST
ULTIMO NSW 2007 PH: 02 9211 7777 FAX: 02 9211 7774
ABN: 18 408 985 851 EML: admin@bmplusg.com.au

- The Guide to the Building Code of Australia (BCA) 2009.
- *Environmental Planning and Assessment Act 1979*
- *Environmental Planning and Assessment Regulation 2000*.

Building Description

• BCA Classification:	Class 5 (Office / Administration) Class 7a (Car parking) Class 7b (Storage) Class 9b (Assembly building)
• Rise in storeys:	Seven (7).
• Type of Construction:	Type A Construction
• Effective Height:	Approx 23.2m
• Floor Area limitations:	(Class 5 & 9b) Less than 8,000m^2 & 48,000m^3
•	(Class 7a & 7b) Less than 5,000m^2 & 30,000m^3
• Climate Zone:	Zone 5

Note: We have assumed that the building will not be used for the purposes of a Place of Public Entertainment.

Section B – Structural Provisions

1. We understand that the structural adequacy and FRL's of the proposed building elements will comply with Part B of the BCA 2009.

The Structural Engineer will provide specification and other detail together with a specific design statement that demonstrates the structural adequacy of the proposed new works will be in accordance with Part B of the BCA. In this regard, we note that structural details relating to the new building will be provided.

Section C – Fire Resistance and Compartmentation:

The proposed works will generally satisfy the DTS provisions of Section C of the BCA subject to the following:

2. All building elements will need to comply with the FRL's detailed in the following table. The architectural drawings submitted for the Construction Certificate are to clearly detail the relevant FRL's.

BUILDING ELEMENT	Class 5, 7a & 9b	Class 7b
EXTERNAL WALL (including any column and other building element incorporated therein) or other external building element, where the distance from any fire-source feature to which it is exposed is –		
For *load bearing* parts-		
less than 1.5m	120/120/120	240/240/240
1.5m to less than 3m	120/90/90	240/240/180
3m or more	120/60/30	240/180/90
For *non-load bearing* parts-		
less than 1.5m	-/120/120	-/240/240
1.5m to less than 3m	-/90/90	-/240/180
3m or more	-/-/-	-/-/-
EXTERNAL COLUMN not incorporated in an external wall, where the distance from any fire source feature to which it is exposed is –		
Less than 3m	120/-/-	240/-/-
3m or more	-/-/-	-/-/-
COMMON WALLS & FIRE WALLS	120/120/120	240/240/240
INTERNAL WALLS		
Fire Resisting lift and stair shafts –		
Loadbearing	120/120/120	240/120/120
Non-loadbearing	-/120/120	-/120/120
Bounding public corridors, public hallways		
and the like –		
Loadbearing	120/-/-	240/-/-
Non-loadbearing	-/-/-	-/-/-
Between or bounding SOU's –		
Loadbearing	120/-/-	240/-/-
Non-loadbearing	-/-/-	-/-/-
Ventilating, pipe, garbage, and the like shafts not used for the		
discharge of hot products of combustion –		
Loadbearing	120/90/90	240/120/120
Non-loadbearing	-/90/90	-/120/120
OTHER LOADBEARING INTERNAL WALLS & COLUMNS	120/-/-	240/-/-
FLOORS	120/120/120	240/240/240
ROOFS	120/60/30	240/90/60

3. All internal walls that are required to have a fire rating must extend to the underside of the slab above or to the underside of the non combustible roof covering if located on the upmost floor level.

4. All loadbearing internal walls are required to be constructed of concrete or masonry.

5. External walls are required to be constructed of non-combustible material.

6. Due to the fact that the building is required to be constructed of Type A Construction, the FRL to the external walls applies in both directions i.e. FRL must be achieved from both sides of the external wall.

7. All fire rated shafts i.e. stairs, lift shafts etc must be enclosed at the top and bottom by a construction having an FRL of not less than -/120/120 (tested in both directions).

   In this regard, all fire isolated stairways must be enclosed by fire rated construction achieving and FRL of not less than 120 minutes. If materials other than concrete or masonry are to be used then details are to be provided in relation to the construction of the fire rated lid.

8. The maximum floor area and volume limitations within the building must not exceed 8,000m^2 and 48,000m^3 for the library and office areas, while the carparking basement levels must not exceed 5,000m^2 and 30,000m^3.

   We note that the proposed new building may be required to be separated from the existing buildings in order to comply with the maximum fire compartment limitations. Confirmation of compliance will need to be provided with the Construction Certificate documentation.

9. Openings located in the external walls of the building that are required to achieve a Fire Resistance Level, must be protected if they are situated less than 3m from a side or rear boundary or 6m from another building on the allotment that is not a Class 10 building.

   Note: A fire source feature is deemed to be an adjoining allotment boundary and/or an external wall of another building on the same allotment of land which is not a Class 10 building.

   In this regard, we note that while the proposed development is bounded by public roads along the northern and eastern elevations, the proposed development will be located adjacent to existing college buildings (over multiple levels) located within the southern and western elevation.

   In this instance, the openings within the existing and new buildings will be required to be protected in accordance with clause C3.4 (i.e. drenchers to fixed or self closing windows, fire doors, fire shutters or the like), to prevent the spread of fire from adjoining buildings or alternatively addressed via the formulation of a Fire Engineered Alternative Solution report.

10. All internal non loadbearing walls that are required to be fire resisting including a lift, ventilating, pipe, garbage or similar shaft that is not for the discharge of hot products of combustion is required to be constructed of non combustible construction.

11. Spandrel (vertical and/or horizontal) separation is required between openings at consecutive floors in the external walls to minimise the risk of fire spreading from one level to another.

    We note that this requirement applies where the building is <u>not proposed</u> to be sprinkler protected throughout.

12. Any proposed main switchboard is to be adequately fire separated from the remainder of the building with construction achieving a minimum FRL of 120/120/120 and have self closing --/120/30 fire door-sets provided.

<u>Section D – Access and Egress:</u>

13. A minimum number of two (2) exits must be provided from every storey of the building as it has been determined that each storey in the Class 9 portion can facilitate more than 50 persons. The architectural plans indicate compliance in this regard.

14. Travel distances must not exceed more than 20m to an exit or to a point where a choice to two alternative exits are available, in which case the maximum distance to one of those exits does not exceed 40m.

In this regard, we note that there may be excessive travel distance non compliances located within the basement carparking levels. A further assessment of the travel distances will be carried out to determine compliance, prior to the issuing of the Construction Certificate.

Note: The above non compliances may be addressed via plan modifications or alternatively may be addressed via the formulation of an Alternative Solution report prepared by a suitably qualified Fire Safety Engineer. Notwithstanding, should an Alternative Solution report be provided then this will need the concurrence of the NSW Fire Brigades under a Clause 144 referral. Sprinkler protection throughout the building may enhance the justification of extended travel distances throughout the building.

15. The travel distances between alternative exits must be located so that they are not less than 9m and not more than 60m apart.

16. A fire isolated exit must provide independent egress from each storey served and discharge directly or by way of its own fire isolated passageway to a road or open space or to a point in a storey which is open for at least $^{2/3}$ of its perimeter.

Note: The above non compliances may be addressed via plan modifications or alternatively may be addressed via the formulation of an Alternative Solution report prepared by a suitably qualified Fire Safety Engineer. Notwithstanding, should an Alternative Solution report be provided then this will need the concurrence of the NSW Fire Brigades under a Clause 144 referral. Sprinkler protection throughout the building may enhance the justification of extended travel distances throughout the building.

17. The northern fire isolated stairway serving the upper storeys appears to contain glazed construction located within the external walls of the stairway. In this regard we note that openings located in a fire isolated stairway must not be exposed to other window openings located in the external wall of the building within a distance of 6m. Subject to minor plan amendments the stair can readily achieve compliance.

18. Should the discharge point from a fire isolated stairway (or the like) necessitate occupants passing within 6m of openings in the external walls of the building (measured at 90°), then the openings located in the external wall will either need to be protected internally in accordance with C3.4 or be addressed via the formulation of an alternative solution report.

19. All fire isolated stairways and paths of travel to a required exit must have a clear unobstructed width of not less than 1m i.e. measured clear of handrails or the like.

20. Balustrades where located more than 4m above the ground level surface below (i.e. any storey located above level 2) cannot contain any horizontal members between 150mm and 760mm that would facilitate climbing. In addition to the above, all balustrades are to be constructed so that any opening does not facilitate a 125mm sphere to pass through it.

21. Any openable windows situated within the building are to contain a minimum sill height of 865mm with no climbable elements within 150 and 760mm above the floor at level 2.

22. Door thresholds must not incorporate a step or ramp within the door threshold unless the door opens to a road or open space in which case the door sill is to be located not more than 190mm above the finished surface of the ground.

Note: Notwithstanding the above, the above provisions do not apply where disabled access is required to those areas including, balconies, external pathways and main entry.

23. All required exit doors are required to swing in the direction of egress. The plans indicate compliance in this regard.

24. In relation to access for a person with a disability, we note the following preliminary comments for your attention:

- All doorways that are required to be accessible within non resident use areas are required to have a clear unobstructed width of 870mm.
- The door thresholds cannot contain any step or change in level exceeding 5mm.

- Access is required to be provided to each of the balconies. In this instance at least one of the door leafs must have a clear unobstructed width of 800mm i.e. 870mm door set.
- Circulation space is required to be provided to all doorways, common areas which lead to offices, meeting rooms etc within each storey of the building.
- The accessible sanitary facilities are to be designed in accordance with AS 1428.1.
- At least one car parking space for a person with a disability is required to be provided for every 100 spaces provided.
- The lift is required to be designed and constructed in accordance with AS 1735.12.

25. Access for people with disabilities is required to and within the building in accordance with AS 1428.1. We note that two accessible lifts are proposed to serve each storey served.

Section E – Essential Fire Safety Systems

26. Based on the architectural documentation submitted thus far we note the following essential fire safety measures will be required to be installed within the building in accordance with the DTS provisions of the BCA.

Statutory Fire Safety Measure	Design/Installation Standard
Access Panels, Doors & Hoppers	BCA Clause C3.13 & AS 1530.4 - 2005
Alarm Signalling Equipment	AS1670.3 – 2004
Automatic Fail Safe Devices	BCA Clause D2.21
Automatic Fire Detection & Alarm System	BCA Spec. E2.2a & AS 1670.1 - 2004.
Automatic Fire Suppression Systems (basement carpark as a minimum >40 vehicles) + Throughout building	BCA Spec. E1.5 & AS2118.1 - 1999
Building Occupant Warning System activated by the Sprinkler System / Automatic Fire Detection & Alarm System	BCA Spec E1.5 Clause 8 and/ or Clause 3.22 of AS 1670.1 – 2004
Emergency Lighting	BCA Clause E4.4 & AS 2293.1 – 2005
Exit Signs	BCA Clauses E4.5, E4.6 & E4.8 and AS 2293.1 – 2005
Fire Blankets (kitchens)	AS 3504 - 1995 & AS 2444 – 1995
Fire Dampers	BCA Clause C3.15, AS 1668.1 - 1998 & AS 1682.1 & 2 - 1990
Fire Doors	BCA Clause C3.2, C3.4, C3.5, C3.6 & C3.7, C3.8, C3.11 and AS 1905.1 – 1997
Fire Hose Reels	BCA Clause E1.4 & AS 2441 - 2005
Fire Hydrant Systems	Clause E1.3 & AS 2419.1 - 2005
Fire Seals	BCA Clause C3.15 & AS 1530.4 - 1997

Lightweight Construction	BCA Clause C1.8 & AS 1530.3 – 1989
Mechanical Air Handling Systems (Shutdown) + Manual override systems to carpark	BCA Clause E2.2, AS/NZS 1668.1 - 1998 & AS 1668.2 – 1991
Paths of Travel	EP & A Regulation Clause 186
Portable Fire Extinguishers	BCA Clause E1.6 & AS 2444 – 2001
Warning & Operational Signs	Section 183 of the EP & A Regulations 2000, AS 1905.1 - 2005, BCA Clause C3.6, D2.23 & E3.3

27. Fire Hose Reels are required to be installed throughout the building.

28. Internal Fire Hydrants are required to be located at each storey within the fire isolated stairways.

Note: Fire Hydrants within Fire isolated stairs should be located on the landing of the floor to which the hydrant is serving and not at mid landings.

29. Verification is required as to the proposed location of the Fire Hydrant Booster Assembly. The Hydrant Booster is to be located a minimum distance of 10m from the external walls of the building, unless protected 2m either side and 3m above by construction achieving an FRL of 90/90/90.

Additionally, verification is required as to the whether the booster assembly is proposed to be housed in an enclosure.

30. The carpark is to be provided with an Automatic Fire Suppression system which is to be designed and installed in accordance with AS 2118.1.

31. In terms of Smoke Hazard Management, the building is required to be provided with the following:

- An Automatic Smoke Detection and Alarm System (throughout); and
- Automatic Shutdown of any air handling system upon activation of the Automatic Smoke Detection System and or Sprinkler System, and

32. All passenger lifts within the building are required to be able to accommodate a stretcher facility, which must be able to accommodate a raised stretcher with a patient lying on it horizontally by providing a clear space not less than 600mm wide x 2000mm long x 1400mm high above floor level.

Section F – Health and Amenity:

33. Sanitary facilities are to be provided to serve the building in accordance with table F2.3 of the Building Code of Australia. In this regard, a further assessment of the plans will need to be carried out on the Construction Certificate documentation.

34. The minimum ceiling heights throughout the building must be as follows:

- A storey which accommodates less than 50 persons – 2.4m, and
- A storey which accommodates more that 50 persons – 2.7m, and
- A corridor, passageway or the like – 2.1m; and
- A habitable room excluding a kitchen – 2.4m; and
- Bathrooms, sanitary compartments, store rooms or the like – 2.1m;

35. The building is required to be provided with a system of ventilation either through natural or mechanical means (including sanitary facilities) in accordance with AS 1668 Parts 1 & 2.

- Natural ventilation must consist of permanent openings, windows, doors or other devices which can be opened with an aggregate opening or openable size not less than 5% of the floor area of the room required to be ventilated; or
- A system of mechanical ventilation is required to be designed and constructed in accordance with AS 1668.

36. The building must be provided with a safe manner of cleaning windows. In this instance, the DTS provisions are complied with through the following:

- The windows can be cleaned wholly from within the building; or
- Provision is made for the cleaning of the windows by a method complying with the Occupational Health and Safety Act 2000 and regulations made under the Act.

Section J – Energy Efficiency:

The Construction Certificate documentation must clearly address the requirements of Section J and we would recommend that the services of an Energy Efficiency Consultant be engaged to provide a detailed report to assist further with the proposed design.

CONCLUSION

After having reviewed the DA design documentation against the BCA, we are of the opinion that the new building works can comply with DtS provisions and where it is not practicable the relevant Performance Requirements of the BCA without giving rise to any significant modifications which would render the final building design inconsistent with the DA consent.

We note the requirements of Clause 145 of the Regulation and advise that any matters pertaining to compliance with the BCA, including the assessment of any future fire engineered solutions, will be addressed to the satisfaction of the appointed Certifying Authority prior to the issue of the Construction Certificate.

We trust that the above has been of assistance to Council in the determination of the Development Application. If you have any questions regarding any of the above or would like to discuss any matter in further detail, please do not hesitate to contact the undersigned on (02) 9211 7777.

Regards

Matt Morrisey
Building Regulations Consultant
Blackett Maguire + Goldsmith Pty Ltd