BLACKETT MAGUIRE+ GOLDSMITH

BCA ASSESSMENT REPORT

NEW RESOURCE AND RESEARCH CENTRE FOR MOORE COLLEGE
CARILLON AVE, NEWTOWN

Prepared for: Allen Jack and Cottier

Revision: 1

Date: August 2013

Project No.: 120469

Address
Suite 2.01,
22-36 Mountain St
Ultimo NSW 2007

Contact
Ph: 02 9211 7777
Fax: 02 9211 7774

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REPORTING STATUS				
DATE	**VERSION**	**STATUS**	**PREPARED BY**	**REVIEWED**
6.08.2013	0	Initial BCA Assessment	Brian Maguire	Dean Goldsmith
26.08.2013	1	Final BCA Assessment	Brian Maguire	Dean Goldsmith

Prepared by:

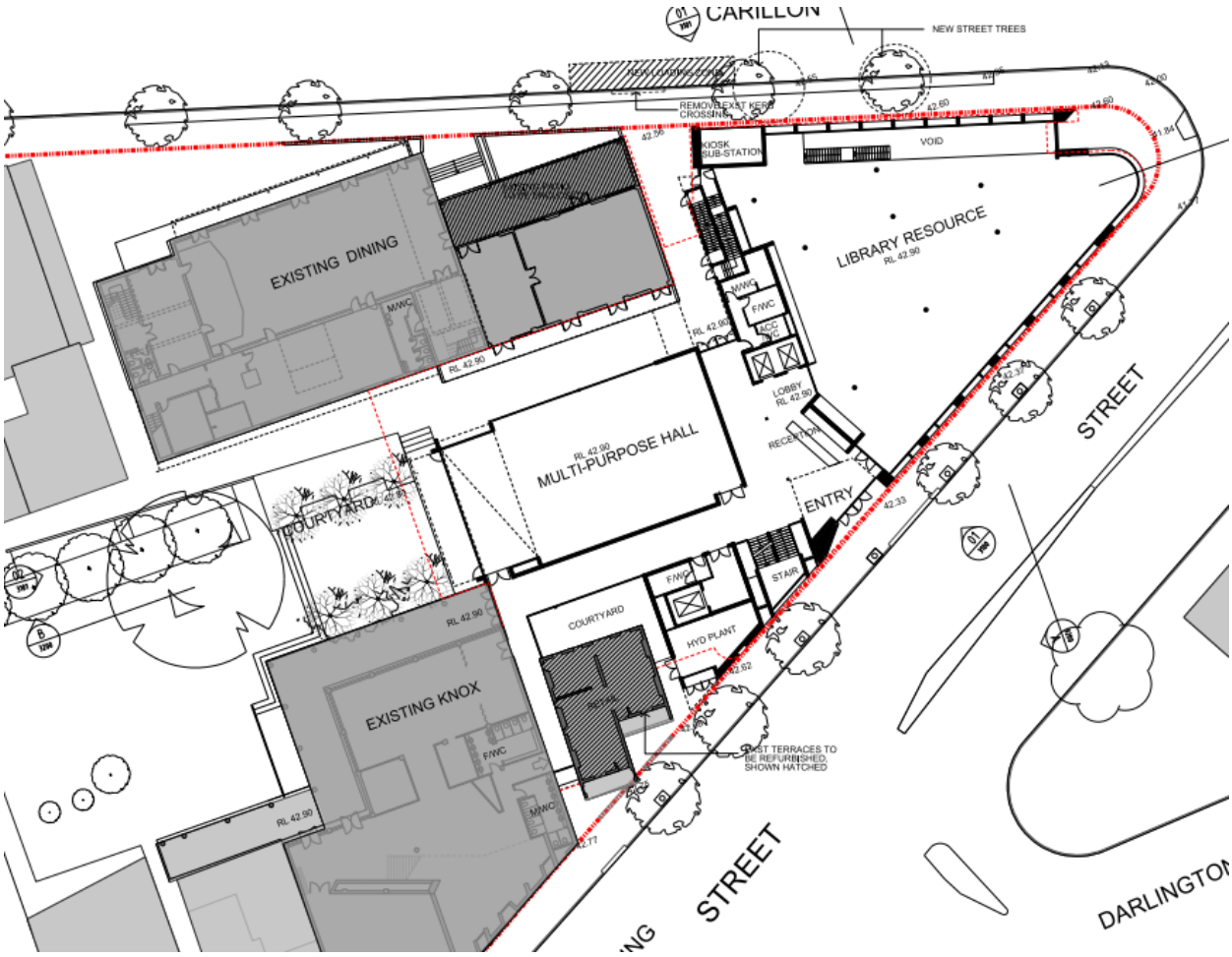
Director
Blackett Maguire + Goldsmith

Reviewed by:

Director
Blackett Maguire + Goldsmith

1.0 INTRODUCTION

Blackett Maguire + Goldsmith Pty Ltd (BM+G) have been commissioned by Allen Jack and Cottier Pty Ltd to undertake an assessment of the current architectural drawings for the proposed new Resource and Research Centre for Moore College against the relevant provisions of the Building Code of Australia 2013 (BCA). This development has undergone amendments since first assessed by BM+G in 2009, and this report is to accompany the application for modification of the current project approval.



The proposal is subject to a S75W application to modify the Major Projects Approval from the Department of Planning.

2.0 AIM

The aim of this report is to:

- Undertake an assessment of the proposed development against the deemed-to-satisfy provisions of the BCA;
- Prepare an assessment report to accompany a S75W application to modify the project approval;
- Identify matters that are to be required to be addressed by Alternative Solutions;
- Identify essential fire safety measures applicable to the subject building;

3.0 PROPOSED DEVELOPMENT

This report has been prepared to assess compliance of the new building works against the Building Code of Australia 2013, in which a summary of all relevant clauses is attached.

The proposed development consists of the construction of a multi storey library building at Moore College Newtown Campus (inclusive of demolition of the 3 storey existing library and teaching facility). The building is typified by a triangular shape at the intersection of Carillon Ave and King Streets, Newtown, and the interface with the existing buildings to remain on the site (namely the Knox building and the existing dining building). A summary of the proposed usage layout is highlighted below:

- Basement Level - Library space; Lecture theatre
- Ground Floor – Library resource area; Main entry from King Street; Multi-purpose hall; retention of a detached 2 storey dwelling to be converted to retail space; Connection to the Knox building;
- First Floor – Faculty staff area; Tutorial rooms; uncovered link from Dining building; connection to the Knox building; upper level of the terrace building to be used as retail.
- Levels 2, 3, 4 and 5 – Administration floors;
- Level 6 – Plant area (including lift overrun).

Note: Basement, Ground and First Floor plans are proposed ot be provided with a sprinkler system throughout.

4.0 REFERENCED DOCUMENTATION

The following documentation has been reviewed, referenced and/or relied upon in the preparation of this report:

+ Building Code of Australia 2013 (BCA).
+ The Guide to the Building Code of Australia 2013 (BCA).
+ Architectural Plans prepared by Allen Jack and Cottier Pty Ltd numbered:

Drawing Number	Issue	Date
PA 1001	P3	23.08.2013
PA 1100	P2	23.08.2013
S75W-2001	P3	23.08.2013
S75W-2100	P3	23.08.2013
S75W-2101	P3	23.08.2013
S75W-2102	P3	23.08.2013
S75W-2103	P3	23.08.2013
S75W-2104	P3	23.08.2013
S75W-2105	P3	23.08.2013
S75W-2106	P3	23.08.2013
S75W-2107	P3	23.08.2013
S75W-3100	P3	23.08.2013
S75W-3101	P3	23.08.2013

5.0 APPLICABLE LEGISLATION

Pursuant to clause 145 of the Environmental Planning and Assessment (EPA) Regulation 2000 all new building work must comply with the current BCA however the existing features of an existing building need not comply with the BCA unless upgrade is required by other clauses of the legislation.

Clause 143(3) of the EPA Regulation 2000 prevents a certifying authority from issuing a construction certificate if the proposed new work will result in a reduction to the fire protection and structural capacity of the building.

BCA 2013 will be the applicable Building Code Regulation applicable to the development if an application for Construction Certificate is received by a Certifying Authority prior to 1 May 2014.

6.0 ASSESSMENT METHODOLOGY

The BCA assessment was carried out in tabulated form in Appendix 1 below. The documents were assessed against the BCA 2013 requirements and the findings were detailed under the 'Comment' column.

7.0 LIMITATIONS AND EXCLUSIONS

The limitations and exclusions of this report are as follows:

+ No assessment has been undertaken with respect to the Disability Discrimination Act 1992 (DDA). The building owner should be satisfied that their obligations under the DDA have been addressed.
+ BM+G has not undertaken an assessment of any Alternative Solution Reports at the time of the preparation of this report.
+ The Report does not address matters in relation to the following Local Government Act and Regulations:
  i. Occupational Health and Safety Act and Regulations.
  ii. Work Cover Authority requirements.
  iii. Water, drainage, gas, telecommunications and electricity supply authority requirements.
  iv. Disability Discrimination Act 1992.
+ Blackett Maguire + Goldsmith Pty Ltd cannot guarantee acceptance of this report by Local Council, Fire & Rescue NSW or other approval authorities.
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8.0 REPORT TERMINOLOGY

Alternative Solution – A Building Solution which complies with the Performance Requirements other than by reason of satisfying the DtS Provisions.

Building Code of Australia - Document published on behalf of the Australian Building Codes Board. The BCA is a uniform set of technical provisions for the design and construction of buildings and other structures throughout Australia and is adopted in NSW under the provisions of the Environmental Planning & Assessment Act & Regulation.

Climatic Zone – Is an area defined in BCA Figure A1.1 and in Table A1.1 for specific locations, having energy efficiency provisions based on a range of similar climatic characteristics.

Construction Certificate – Building Approval issued by the Certifying Authority pursuant to Part 4A of the EP&A Act 1979.

Construction Type – The construction type is a measure of a buildings ability to resist a fire. The minimum type of fire-resisting construction of a building must be that specified in Table C1.1 and Specification C1.1, except as allowed for—

(i) certain Class 2, 3 or 9c buildings in C1.5; and

(ii) a Class 4 part of a building located on the top storey in C1.3(b); and

(iii) open spectator stands and indoor sports stadiums in C1.7.

Note: Type A construction is the most fire-resistant and Type C the least fire-resistant of the types of construction.

Deemed-to-Satisfy (DTS) *Provisions of the BCA* – Means the prescriptive provisions of the BCA which are deemed to satisfy the performance requirements.

Effective Height – The height to the floor of the topmost storey (excluding the topmost storey if it contains only heating, ventilating, lift or other equipment, water tanks or similar service units) from the floor of the lowest storey providing direct egress to a road or open space.

Entertainment Venue – as defined in the Environmental Planning and Assessment Regulation 2000;

"Entertainment venue means a building used as a cinema, theatre or concert hall or an indoor sports stadium".

Fire Resistance Level (FRL) – The grading periods in minutes for the following criteria-

(a) structural adequacy; and

(b) integrity; and

(c) insulation,

and expressed in that order

Fire Source Feature (FSF) - The far boundary of a road adjoining the allotment; or a side or rear boundary of the allotment; or an external wall of another building on the allotment which is not a Class 10 building.

National Construction Code Series (NCC) – The NCC was introduced 01 May 2011 by the Council of Australian Governments. The BCA Volume One (Class 2 to 9 Buildings) is now referenced as the National Construction Code Series Volume One — BCA.

Occupation Certificate **(OC)** – Building Occupation Approval issued by the Principal Certifying Authority pursuant to Part 4A of the EPA Act 1979.

Open Space - Means a space on the allotment, or a roof or other part of the building suitably protected from fire, open to the sky and connected directly with a public road.

Performance Requirements of the BCA - A Building Solution will comply with the BCA if it satisfies the Performance Requirements. A Performance requirement states the level of performance that a Building Solution must meet.

Compliance with the Performance Requirements can only be achieved by-

(a) complying with the Deemed-to-Satisfy Provisions; or

(b) formulating an Alternative Solution which-

(i) complies with the Performance Requirements; or

(ii) is shown to be at least equivalent to the Deemed-to-Satisfy Provisions; or

(c) a combination of (a) and (b).

Sole Occupancy Unit – means a room or other part of a building for occupation by one or joint owner, lessee, tenant, or other occupier to the exclusion of any other owner, lessee, tenant, or other occupier and can include a dwelling and/or office suite

9.0 BUILDING CHARACTERISTICS

9.1 *PROPOSED DEVELOPMENT*

The proposed development consists of the construction of a new six (6) storey multi-purpose, Library building and administration building at Moore College, Newtown. The building is signified by a triangular shape at the intersection of King and Carillon Streets, and its interface with the existing buildings on the site.

The building is classified as follows:

▪ **BCA Classification:**	**Class 5** (administration at Levels 2 to 5); **Class 6** (terrace building proposed as retail); **Class 9b** (assembly at Basement; Ground and Level 1 – *previously known as B, L1 and L2*).
▪ **Rise in Storeys:**	Six (6). *Note: The roof top plant room does not constitute a Rise in Storeys if it contains only heating, ventilating or lift equipment, water tanks or similar service units or equipment*
▪ **Effective Height:**	**18.4m** (61.30 – 42.90) being greater than 12 metres and less than 25m
▪ **Type of Construction:**	Type A Construction (and Type C Construction for Retail terrace conversion)
▪ **Floor Area/Volume**	The maximum compartment size of the building must not exceed 8,000m^2 and 30,000m^3.
▪ **Climate Zone:**	Zone 5

9.2 *LIST OF DESIGNATED EXITS*

Designated Exits: The exits from the building have been identified as follows:

- Basement – Ascending stair (1.5m wide); 2 x fire isolated exit stairs (1m clear each); ascending stair from the Library resource (1m);
- Ground floor – outward swing double leaf doors at the following locations
    - The main entry (x 2);
    - The doors to the colonnade of the Knox Building (x 2);
    - Horizontal Exit double door leading to Knox Building;
    - The doors to the north wall providing northerly access (x 2);
    - Fire isolated exit stair from Library Resource.
    - Main entry of the retail terrace building.
- Level 1 – Descending stair from breakout areas (1.5m); 2 x fire isolated exits; Horizontal Exit through to the Knox Building.
- Level 2 to Level 5 – 2 x fire isolated exits.
- Plant Level - TBA

10.0 SUMMARY OF KEY COMPLIANCE ISSUES

The following comprises a summary of the key compliance issues identified under the clause-by-clause assessment in Appendix 1 of this report that will be addressed prior to the issue of the Construction Certificate for the project.

10.1 MATTERS REQUIRING CONFIRMATION, REDESIGN OR ADDITIONAL INFORMATION:

BCA (DtS) Clause		Description
1.	**C2.7**	Details of proposed fire walls between the new building and the adjoining Knox and terrace building is to be provided.
2.	**D1.7**	Protection of openings along the path of travel once discharged from the fire isolated exits
3.	**D2.21**	Doors in a path of travel within the class 9b areas are to have panic bars and swing in the direction of egress.
4.	**D3.2**	Further assessment of door widths, threshold gradients; door hardware, circulation space, wheelchair spaces in theatres, etc will be assessed during Construction Certificate stage.
5.	**E1.3**	Location of fire services rooms and assemblies is to be addressed, i.e. potential location impacts upon building façade.
6.	**F2.3**	Staff and student sanitary facilities are to be separated so sharing of facilities is not required.
7.	**General –** Retail conversion from residential dwelling	The following general matters will need to be addressed for the upgrade of the terrace dwelling into a retail tenancy: • Access for people with a disability (door and corridor widths, level entry; accessible WC; upper storey); • Stair widths; • Balustrades.

10.2 MATTERS REQUIRING FIRE SAFETY ENGINEERED ALTERNATIVE SOLUTIONS:

BCA (DtS) Clause		Description	BCA Performance Requirements
1.	**C2.6**	Spandrels are not proposed to the levels that contain sprinklers.	CP1 & CP2
2.	**C2.8**	The retail area, where currently proposed as separate building, may be assessed as a fire engineered alternative solution for reduced FRLs if included as part of the new.	CP1 and CP2
3.	**C3.2**	An alternative solution will be pursued for the separation between the new building and the existing Dining building facing Carillon Ave, based on the fire rating of the new external wall providing the fire separation of both buildings.	CP2
4.	**D1.3**	The interconnecting stair between Basement level to Level 1 is not enclosed in a fire rated shaft, based on the provision of sprinklers through those levels only. In this instance, a concession for stairs to connect 3 storeys in a class 9 building is permitted when sprinklers are provided throughout the building.	DP5
5.	**D1.4**	The plant space at the rear of the Basement Level Lecture Theatre exceeds 20m to a point of choice where alternative exits are available.	DP4 and EP2.2

	BCA (DtS) Clause	Description	BCA Performance Requirements
6.	D1.6	Aggregate exit width at basement level is less than what is required, i.e.: • Basement – 625 persons (350 Lecture Theatre, 275 Library). 6m width required and 4.5 currently provided.	DP4 and EP2.2

11.0 CONCLUSION

This report contains an assessment of the referenced architectural documentation for the proposed new Resource and Research Centre at Moore College against the deemed-to-satisfy provisions of the Building Code of Australia 2013. (BCA).

Arising from the assessment, key compliance issues have been identified that require further resolution, either by way of fire engineered Alternative Solutions or plan amendments prior to the Construction Certificate determination.

Notwithstanding the above, it is considered that the proposed development can readily achieve compliance with the BCA subject to resolution of the matters identified under Section 10.0 & Appendix 1 of this report.

APPENDIX 1

CLAUSE-BY-CLAUSE BCA ASSESSMENT

KEY:

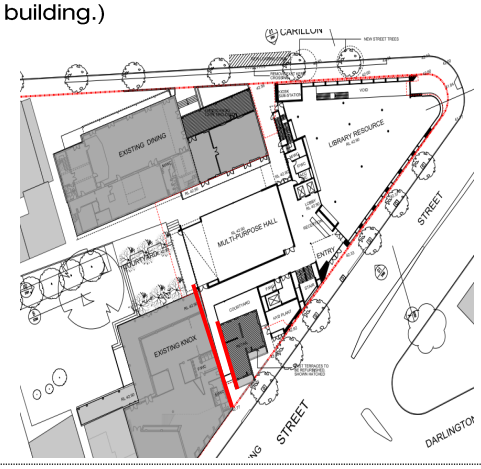
- **Complies**: The referenced plans show compliance with this clause
- **Compliance Readily Achievable**: The referenced plans do not show sufficient information to establish compliance with this clause. Further details and/or design certification, should be submitted with the application for the Section 109R Approval
- **Alternative Solution**: The referenced plans do not comply with this clause and an Alternative Solution is required/proposed to demonstrate compliance with the Performance Requirements
- **Noted**: Provisions contained within this BCA clause are provided for guidance, or are to be read in conjunction with other BCA clauses
- **Not applicable**: This clause is not applicable to the proposed development
- **Does Not Comply** The proposal does not comply with this clause and redesign is required.

Clause	Reference	Comment
SECTION A	**GENERAL PROVISIONS**	
Part A3.1	Principles of Classification	The classification of a building or part of a building is determined by the purpose for which it is designed, constructed or adapted to be used.
Part A3.2	Classification	See table above, i.e. Class 5 applies to the upper floor 3 storeys of Administration areas; Class 9b assembly building for the lower 3 storeys of lecture theatres, tutorial spaces, multi-purpose hall, Library areas; a Class 6 for the retail building.
Part A3.3	Multiple Classifications	Each part of a building must be classified separately and where these parts have different purposes – If not more than 10% of the floor area of a storey – being the minor use, is used for a purpose which is a different classification applying to the major use, may apply to the whole storey. Note: This provision does not apply to certain minor uses as set out in this clause. Note 1: This provision does not apply to certain minor uses as set out in this clause, such as class 2, 3 or a laboratory. Note 2: A plant room, lift room, boiler room or the like must take the classification of the part of the building in which it is situated. **Refer to comments in Section C**

Clause	Reference	Comment
SECTION B	**STRUCTURE**	
Part B1	***Structural Provisions***	
B1.2	Structural engineering details prepared by an appropriately qualified structural engineer to be provided to demonstrate compliance with Part B1 in relation to the new structural elements of the building.	**CRA.** Design Statement is to be provided confirming that the design achieves compliance with the following is required at the time of application for a Construction Certificate, inclusive of reference to the following Australian Standards (where relevant): AS 1170.0 – 2002 General Principles AS 1170.1 – 2002, including certification for balustrading (dead and live loads) AS 1170.2 – 2002, Wind loads AS 1170.4 – 2007, Earthquake loads AS 3700 – 2001, Masonry code AS 3600 – 2009, Concrete code AS 4100 – 1998, Steel Structures and/or AS 4600 – 2005, Cold formed steel. AS 2047 – 1999, Windows in buildings. AS 1288 – 2006, Glass in buildings
B1.4	Materials & Forms of Construction	Noted

Clause	Reference	Comment
SECTION C	**FIRE RESISTANCE**	
Part C1	***Fire Resistance and Stability***	
C1.1 – Type of construction required	The minimum type of fire-resisting construction of a building must be that specified in Table C1.1 and Specification C1.1 except as allowed for in this clause	**CRA** Type A Construction is required for this building. The retail building has a Rise in Storeys of 2 and can therefore be considered Type C Construction (subject to fire separation from the new development)
C1.2 – Calculation of Rise In Storeys	The rise in storeys of a building is the sum of the greatest number of storeys at any part of the external walls of the building and any storeys within the roof space calculated in accordance with the requirements set out in this clause.	The building has a rise in storeys of six (6). The roof top plant room does not constitute a Rise in Storeys if it contains **only** heating, ventilating or lift equipment, water tanks or similar service units or equipment
C1.3 – Buildings of multiple classification	In a building of multiple classifications, the type of construction required for the building is the most fire-resisting type resulting from the application of Table C1.1 on the basis that the classification applying to the top storey applies to all storeys. This clause also contains exceptions in relation to Class 4 parts.	**Note.** The Fire Resisting Construction requirements for Class 5 and Class 9b are the same in this instance. The requirements for a Type C Construction building (retail) is 90/90/90 for an external wall that is located less than 1.5m from a fire source feature, and 60/60/60 when located between 1.5m and 3m from a fire source feature.
C1.4 – Mixed types of construction	A building may be of mixed types of construction where it is separated in accordance with C2.7 and the type of construction is determined in accordance with C1.1 or C1.3.	**CRA** This may apply to the 2 storey terrace building, however it will be subject to further assessment.

Clause	Reference	Comment
C1.5 – Two storey Class 2, 3 or 9c buildings	A building having a rise in storeys of 2 may be of Type C construction provided that it complies with the requirements set out in this clause.	N/A
C1.6 – Class 4 parts of buildings	For the type of construction required by C1.3, a Class 4 part of a building requires the same FRL for building elements and the same construction separating the Class 4 part from the remainder of the building as a Class 2 part in the same type of construction.	N/A
C1.7 - Open Spectator Stands & Indoor Sports Stadiums	An open spectator stand or indoor sports stadium may be of Type C construction subject to the provisions set out in sub-clauses (a) & (b)	N/A
C1.8 - Lightweight Construction	Lightweight construction must comply with Specification C1.8 if used in a wall system in accordance with sub-clauses (a) & (b).	N/A
C1.9	*Repealed*	
C1.10 - Early Fire Hazard Properties	The fire hazard properties of the following linings, materials and assemblies in a Class 2 to 9 building must comply with Specification C1.10	**CRA.** Details of floor, wall and ceiling lining is to be provided with the application for Construction Certificate to confirm compliance.
C1.11 - Performance of External walls in Fire	Concrete external walls that could collapse as complete panels (e.g. tilt-up & pre-cast concrete), in a building having a rise in storeys of not more than 2, must comply with Specification C1.11	N/A
C1.12 - Non-Combustible Material	The materials as set out in sub-clauses (a) to (f) of this clause, though combustible or containing combustible fibres, may be used wherever a non-combustible material is required.	Note
Part C2	***Fire Compartmentation & Separation***	
C2.1 - Application of Part	C2.2, C2.3 & C2.4 do not apply to a carpark provided with a sprinkler system complying with Specification E1.5, an open deck carpark or an open spectator stand	Note
C2.2 - General Floor Area Limitations	This clause sets out the parameters for the area and volume of Class 5, 6, 7, 8 & 9 buildings as required by sub-clauses (a), (b) & (c).	**See table above in clause 11.2.** The building does not exceed the maximum floor area thresholds (i.e. 8,000m^2) or the volume thresholds (30,000m^3). See Clause C2.7 below for fire walls
C2.3 - Large Isolated Buildings	The size of a fire compartment in a building may exceed that specified in Table C2.2 where the provisions of sub-clauses (a), (b) & (c) of this Part apply.	N/A
C2.4 - Requirements for Open Spaces and Vehicular Access	An open space and vehicular access required by C2.3 must comply with the requirements of sub-clauses (a) & (b) of this Part, i.e. generally an unobstructed path of 6m in width is to be provided around all buildings. Differences apply whether the building is provided with a sprinkler system.	N/A
C2.5 Class 9a & 9c Buildings	Class 9a and Class 9c buildings must comply with the provisions of sub-clauses (a) & (b) of this Part and the NSW Provisions of the Code.	N/A

Clause	Reference	Comment
C2.6 Vertical separation of openings in external Walls	If in a building of Type A construction, any part of a window or other opening in an external wall is above another opening in the storey next below and its vertical projection falls no further than 450 mm outside the lower opening (measured horizontally), the openings must be separated by a horizontal or vertical spandrel with an FRL of 60/60/60, and for the purposes of C2.6, window or other opening means that part of the external wall of a building that does not have an FRL of 60/60/60 or greater.	**CRA** Spandrel protection is required throughout the building, given that sprinklers are only being provided throughout the lower 3 levels. **Alternative Solution** Notwithstanding, where spandrels are not proposed to the levels that contain sprinklers it is understood that a fire safety engineering assessment will be undertaken at the Construction Certificate application stage.
C2.7 - Separation by fire walls	C2.7 (a) sets out the requirements for the construction of fire walls that are to provide the separation of buildings and fire compartments as indicated in sub-clauses (b) & (c). C2.7 (b) Indicates the extent a fire wall divides a building into separate buildings for the purposes of the Deemed-to-Satisfy provisions of Sections C, D & E. C2.7(c) Clarifies that a wall built in accordance with C2.7(a) can be considered to divide a building into different fire compartment for the purposes of Sections C, D & E.	**CRA** Walls between the Knox building and the new work are required to be fire walls in accordance with BCA Clasue C2.7. See appendix 4 of this report for additional details for fire separation of fire walls (and also discussion relating to the retail building.) 
C2.8 - Separation of Classifications in the Same Storey	If a building has parts of different classifications located alongside one another in the same storey, each element must have the required higher FRL for the classifications concerned. Alternatively, the parts must be separated by a fire wall having the higher FRL for the classifications prescribed in Table 3 or 4 of BCA Specification C1.1 (for Type A or Type B Construction), or Table 5 for Type C Construction. Concessions are available for some carparks.	**CRA / Alternative Solution** Relates to the retail area (see above), where currently proposed as separate building, however may be assessed as a fire engineered alternative solution for reduced FRLs if included as part of the new development rather than fire separated. See appendix 4 for discussion.
C2.9 - Separation of Classifications in different Storeys	This clause specifies the required separation between parts of a building which are of a different classification, situated one above another, to minimise the risk of a fire in one classification causing the failure of building elements in another classification in a different storey.	**Complies.** Separation is not required due to the same FRL being applied throughout the building (i.e. the class 5 part on Level 5 requires the same fire resistance level as the class 9b).
C2.10 - Separation of lift shafts	This clause applies to all classes of buildings and specifies the protection requirements for openings for lift shafts and lift landing doors. The requirements are set out in sub-clauses (a), (b) (c) & (d) which relate to openings in Type A, B and C construction. Also note the Deemed to Satisfy Provisions of Part C3.	**CRA**. The lift is contained in a shaft within the central core of the building.

Clause	Reference	Comment
C2.11 Stairways and Lifts in one shaft	A stairway and lift must not be in the same shaft if either the stairway or the lift is required to be in a fire-resisting shaft.	**Complies** Fire isolated exits are not located within the same shaft as the lift.
C2.12 - Separation of equipment	Equipment as listed below must be separated from the remainder of the building with construction that achieves an FRL of 120/120/120 and doorways being self-closing -/120/30 fire doors: + Lift motors and lift control panels; or + Emergency generators used to sustain emergency equipment operating in the emergency mode; or + Central smoke control plant; or + Boilers; or + A battery or batteries installed in the building that have a voltage exceeding 24 volts and a capacity exceeding 10 ampere hours. Separation of on-site fire pumps must comply with the requirements of AS 2419.1.	**CRA** Additional information will be provided at the construction certificate stage.
C2.13 - Electricity supply system	To ensure certain types of electrical equipment to operate during an emergency the requirements of sub-clauses (a), (b) (c), (d) & (e) must be complied with relating to sub-stations, sub-mains and main switchboards.	**CRA** The electrical switchroom is to be enclosed in concrete block construction to achieve an FRL of 120/120/120 with self closing -/120/30 fire door. Electrical substations are to comply with the energy providers requirements.
C2.14 - Public Corridors in Class 2 and 3 Buildings	In a Class 2 or 3 building a public corridor, if more than 40m in length, must be divided at intervals of not more than 40m with smoke-proof walls complying with Clause 2 of Specification C2.5.	N/A
Part C3	***Protection of Openings***	
C3.1 - Application of Part	Openings listed in C3.1(a) need not comply with the Deemed-to-Satisfy Provisions of Part C3.	Note
C3.2 - Protection of openings in external walls	Openings in an external wall that is required to have an FRL must – (a) If the distance between the opening and the fire-source feature to which it is exposed is less than – (i) 3 m from a side or rear boundary of the allotment; or (ii) 6 m from the far boundary of a road, river, lake or the like adjoining the allotment, if not located in a storey at or near ground level; or (iii) 6 m from another building on the allotment that is not a Class 10, be protected in accordance with C3.4 and if wall-wetting sprinklers are used, they are located externally; and (b) If required to be protected under (a), not occupy more than 1/3 of the area of the external wall of the storey in which it is located unless they are in a Class 9b building used as an open spectator stand.	**CRA** The building is adjoining the Knox Building and the Terrance building, and is also within 6m of the Dining room building fronting Carillon Ave. **Alternative Solution** An alternative solution will be pursed for the separation between the new building and the existing Dining building facing Carillon Ave, based on the fire rating of the new external wall providing the fire separation of both buildings.

Clause	Reference	Comment
C3.3 - Protection of Openings in External Walls in Different Fire Compartments	The distance between parts of external walls and any openings within them in different fire compartments separated by a fire wall must be not less than that set out in Table C3.3 unless- (a) Those parts of each wall have an FRL not less than 60/60/60; and (b) Any openings protected in accordance with C3.4.	N/A
C3.4 - Acceptable Methods of Protection	Where protection is required, doorways, windows and other openings must be protected as follows: + Doorways – (a) Internal or external wall-wetting sprinklers as appropriate used with doors that are self-closing or automatic closing; or (b) -/60/30 fire doors that are self-closing or automatic closing. + Windows – (a) Internal or external wall-wetting sprinklers as appropriate used with windows that are automatic closing or permanently fixed in the closed position; or (b) -/60/- automatic closing fire shutters. + Other openings – (a) Excluding voids – internal or external wall-wetting sprinklers, as appropriate; or (b) Construction having FRL not less than -/60/-.	**CRA** Additional information will be provided during design development.
C3.5 - Doorways in Fire Walls	Openings in fire walls, that are not part of a horizontal exit, must be protected in accordance with one of the methods set out in this clause.	**CRA**
C3.6 - Sliding Fire Doors	C3.6(a) If a doorway in a fire wall is fitted with a sliding fire door which is open when the building is in use it must be activated in accordance with the requirements of this clause and warning signs must be installed on either side of the doorway. C3.6(b) The devices used must operate in accordance with C3.6(b)(i) & (ii).	N/A
C3.7 - Protection of Doorways in Horizontal Exits	Horizontal exits must be protected by a single fire door unless the subject building is a Class 7 or 8. The doors are to have an FRL as required by Specification C1.1 for the wall. The doors must be self closing or automatic-closing.	**CRA**
C3.8 - Openings in Fire Isolated Exits	Specifies that the doorways that open into fire-isolated exits must be protected by -/60/30 fire doors that are self-closing or automatic. This clause also details the deemed-to-satisfy methods of activation. This does not apply to doors opening to a road or open space. A window in the external walls of fire-isolated exits must be protected in accordance with C3.4 if it is within 6m of and exposed to a window or other opening in a wall of the same building other than in the same fire-isolated enclosure.	**CRA** It is noted that there are no window openings or other openings shown in the external walls that are exposed to windows in fire isolated exits.

Clause	Reference	Comment
C3.9 - Service Penetrations in Fire Isolated Exits	Fire isolated exits must not be penetrated by any services other than electrical wiring as permitted by D2.7(e), ducting associated with a pressurisation system or water supply pipes for fire services.	**CRA**
C3.10 - Openings in Fire Isolated Lift Shafts	If lift shafts are required to be fire-isolated an entrance doorway must be protected by -/60- fire doors and the lift indicator panels must backed by construction having an FRL of not less than -/60/60 if it exceeds 35000mm²	**CRA**
C3.11 - Bounding Construction for Class 2, 3 and 4 Buildings	Protection is required to the bounding walls of sole-occupancy units or public corridors in Class 2 & 3 buildings and Class 4 portions of buildings of Types A, B & C Construction. Namely: + Doorways must be protected if providing access from an SOU to a: o Public corridor; o A room not within an SOU; or o The landing of an internal non-fire isolated stairway that serves a required exit; or o Another SOU + A doorway must be protected if it provides access from a room not within an SOU to a public corridor or the like; or to the landing on a non-fire isolated stairway that serves as a required exit. + Protection of the doorway must be -/60/30 self closing fire door in Type A Construction, and a self-closing tight fitting solid core door in Type B or Type C Construction. Note: Concessions are available for some Class 3 buildings.	N/A
C3.12 - Openings in floors and Ceilings for services	This clause applies to the floors and ceilings in buildings of Types A, B & C Construction and sets out the methods required to limit the spread of fire through openings in these building elements, required to resist the spread of fire.	**CRA**
C3.13 Openings in Shafts	This clause specifies that in buildings of Type A Construction, openings in shafts must be protected (generally with 1 hour fire rated shafts and doors).	**CRA**
C3.14	*Repealed*	
C3.15 Openings for service installations	The clause details the requirements for protection of service openings in building elements that have an FRL, to prevent the spread of fire. C3.15 applies only to an element required to have an FRL with respect to integrity or insulation. Specification C3.15 prescribes materials and methods of installation for services that penetrate walls, floors and ceilings required to have an FRL. Where the mechanical ventilation system penetrates floors or walls that require an FRL the installation is to comply with AS/NZS 1668.1.	**CRA**

Clause	Reference	Comment
C3.16 Construction Joints	Construction joints, spaces and the like in and between building elements required to be fire-resisting with respect to integrity and insulation must be protected in a manner identical with a prototype tested in accordance with AS 1530.4 to achieve the required FRL.	Note
C3.17 Columns Protected with Lightweight Construction to Achieve an FRL	A column protected by lightweight construction to achieve an FRL which passes through a building element that is required to have an FRL or a resistance to the incipient spread of fire, must be installed using a method and materials identical with a prototype assembly of the construction which has achieved the required FRL or resistance to the incipient spread of fire.	N/A
Spec.	***Specifications***	
Spec C1.1 Fire Resistance Construction	The new building works are required to comply with the requirements detailed under Table 3 of Specification C1.1 for Type A Construction.	**CRA / Alternative solution** See Clause C2.7 above

Clause	Reference	Comment
SECTION D	**ACCESS AND EGRESS**	
Part D1	***Provisions for Escape***	
D1.2 - Number of exits required	This clause requires the provision of sufficient exits to enable safe egress in case of an emergency. D1.2 provides that all buildings must have at least one exit from each storey and sets out circumstances in which more than one exit may be required (particularly in relation to Class 9 buildings). Note: Not less than 2 exits must be provided from each storey if the building has an effective height of more than 25m Note: Not less than 2 exits must be provided from any storey that involves a vertical rise within the building of more than 1.5m unless the floor area of the storey is not more than 50m^2 and the distance of travel from any point on the floor to a single exit is not more than 20m.	**See the list of designated exits at 11.3 above.** A minimum of 2 exits is required for a Class 9b building that accommodates more than 50 persons. The existing dining building is provided with a bridge link to Level 1 Tutorial break out area as a replacement for the existing bridge link currently connected eastward to the existing building to be demolished. The building complies with the minimum requirements for numbers of exits.
D1.3 - When Fire isolated exits are required	This clause indicates when fire isolated stairways and ramps are required to enable safe egress from a building in the case of a fire, setting out the limits to which non-fire isolated exits can be used in Class 2, 3, 5, 6, 7, 8 and 9 buildings. Particular exceptions apply to Class 9a patient care and also Class 9c aged care buildings. Class 5, 6 and 9b – every stairway must be fire isolated if it connects more than 2 consecutive storeys. Concessions apply to inclusion of an additional storey, or sprinklers, as per the above.	**Alternative Solution** The exit stairs that are proposed for the upper levels of the building are designed in fire isolated shafts. The interconnecting stair between Basement level to Level 1 is not enclosed in a fire rated shaft, based on the provision of sprinklers through those levels only. In this instance, a concession for stairs to connect 3 storeys in a class 9 building is permitted when sprinklers are provided throughout the building.

Clause	Reference	Comment
D1.4 - Exit Travel Distances	This clause specifies the permitted travel distances allowable from Class 2 to Class 9 buildings. Sub-clauses (a) to (f) specify the maximum distances to be taken into account for the various uses in each Class of building, i.e. for Class 5, 6 or 9b: • Maximum 20m to an exit or 20m to a point of choice where alternative exits are available. • Maximum distance to one of those exits is 40m	**Alternative Solution** The plant space at the rear of the Basement Level Lecture Theatre exceeds 20m to a point of choice where alternative exits are available. **Complies** Remainder of building
D1.5 Distances between alternative exits	Exits required as alternative exits must be – (a) distributed as uniformly as practicable within or around the storey served and in positions where unobstructed access to at least 2 exits is readily available from all points on the floor including lift lobby areas; and (i) not less than 9m apart; and (ii) not more than – • in a Class 2 or 3 building - 45m apart; or • In a Class 9a health-care building, if such required exit serves a patient care area – 45m apart; or • In all other cases, i.e. the non-patient care areas – 60m apart. (b) Located so that the alternative paths of travel do not converge such that they become less than 6m apart.	**Complies.**
D1.6 Dimensions of exits	This clause specifies the minimum dimensions such as height and width of paths of travel from Class 2 to 9 buildings. It also specifies the minimum dimensions of doorways from the various compartments and the width of exit doors from buildings depending on the uses and functions carried out within them.	**CRA / Alternative Solution** The following population numbers are proposed: • Basement – 625 persons (350 Lecture Theatre, 275 Library). **6m width required (4.5m provided).** • Ground Floor – 700 persons (being 425 in Multi-Purpose Hall, and 275 in Library). **7m width required** • Level 1 – 200 persons (eg. tutorial space 110-140, Faculty Staff eg. 60). **2m width required** • Level 2 to Level 5 – 100 persons max. **2m width required**. Accordingly, the proposed exits throughout the ground floor (see table above) demonstrates that compliance is readily achievable, with the exception of the basement level which will be subject to a fire engineered alternative solution. Fire Engineered alternative solutions may also be pursued where population increases to the numbers currently identified are proposed.

Clause	Reference	Comment
D1.7 Travel via Fire Isolated Exits	Sets out the requirements for safe discharge from various compartments and areas within a building, into a fire isolated stairway or passageway or ramp. Note: a ramp for changes of level in a fire isolated passageway is required in a Class 9 building. Where a path of travel from the point of discharge of a fire isolated exit necessitates passing within 6m of any part of an external wall of the same building, measured horizontally at right angles to the path of travel, that part of the wall must have – + an FRL of not less than 60/60/60; and + Any openings protected internally in accordance with BCA Clause C3.4, + For a distance of 3m above or below, as appropriate, the level of the path of travel, or for the height of the wall, whichever is the lesser.	**CRA** Discharge from the northern fire isolated exits necessitates passing within 6m of the openings in the external wall. The fire doors are to be self closing -/60/30 fire doors, and the external wall is to be fire rated in accordance with Type A Construction. Double doors discharging from the northern wall of the Reception area are to be self closing and are to be provided with internal wall wetting drenchers
D1.8 External stairways in lieu of fire-isolated exits	D1.8(a) An external stairway or ramp may serve as a required exit in lieu of a fire-isolated exit serving a storey below an effective height of 25m provided that it is constructed in accordance with the requirements of sub-clauses (a) to (d). The provisions also set out the requirements of protection for external required exits.	N/A
D1.9 Travel by non-fire isolated stairways or ramps	Sub-clauses (a) to (f) set out the prescribed travel distances to be provided in required exits of Class 2 to 9 buildings and Class 4 parts of buildings. The sub-clauses set out the maximum distances to be taken into account for the various uses in each Class of building.	**Complies** This applies to the terrace conversion to retail, and also the 2 stairs in the class 9b part. Each of these stairs complies with the requirements of this clause, i.e. no more than 80m total distance travelled; stairs discharge within 20m of a door leading to a road or open space (or to a fire isolated passage).
D1.10 Discharge from exits	Requires that an exit must not be blocked at the point of discharge. Barriers such as bollards must be installed to prevent vehicles from blocking the discharge from exits. This clause also provides the methods of construction, location and separation, at exit discharge points for all building classes.	**CRA** The path of travel to the road from the open space must be way of a ramp with a gradient of no more than 1:8, or a stair.
D1.11 Horizontal Exits	Horizontal exits must not be counted as required exits between sole-occupancy units or in an early childhood centre, primary or secondary school. Horizontal exits may be counted as required exits in Class 9a-health care building or a Class 9c aged care building if the path of travel from a fire compartment leads by one or more horizontal exits directly into another fire compartment which has at least one required exit which is not a horizontal exit. In addition, horizontal exits must have a clear area on the side of the fire wall to which occupants are evacuating, to accommodate the total number of persons serviced by the horizontal exit of not less than 2.5m^2 per patient.	**Complies** This relates to the door in the wall of the Knox Building.

Clause	Reference	Comment
D1.12 Non Required Stairways, Ramps and Escalators	This clause sets out the requirements for the application of non-required exits and the circumstances under which they may be utilised. Clause D1.12 only applies to escalators, moving walkways and travelators, non-required, non-fire-isolated stairways and non-required, non fire-isolated ramps. A non-required stairway cannot be used to connect patient care areas in a Class 9a building or resident use areas in a Class 9c building.	N/A
D1.13 Number of persons accommodated	Clause D1.13 and Table D1.13 are used to calculate the anticipated number of people in particular types of buildings so that minimum exit widths and the required number of sanitary and other facilities can be calculated. This clause and table are not to be used for non-BCA purposes.	Note. For a Library the following apply: • Reading areas – 1 person per 2sqm • Storage racks – 1 person per 30sqm • Administration– 1 person per 10sqm.
D1.14 Measurement of distances	This clause describes the point at which an exit commences with respect to both non-fire-isolated and fire-isolated exits providing the parameters for measuring travel distance.	Noted
D1.15 Method of measurement	This clause sets out the method of measuring travel distance to an exit in various circumstances by determining the path that a person would walk.	Noted
D1.16 Plant rooms & lift motor rooms Concession	A ladder may be used in lieu of a stairway to provide egress from a plant room with a floor area of not more than 100m^2; or all but one point of egress from a plant room or a lift machine room with a floor area not more than 200m^2. Sub-clause (b) sets out the parameters for the ladders permitted to be used in this circumstance.	**CRA**
D1.17 Access to Lifts Pits	This clause provides the requirements for access to lift pits not more than 3m deep and the requirements of construction of access for lift pits that are more than 3m deep. The requirements for signage to lift pits are also set out.	**CRA**
PART D2	***Construction of Exits***	
D2.1 Application of Part	With the exception of specified clauses in this part the Deemed-to-Satisfy Provisions of this Part do not apply to the internal parts of sole-occupancy units Class 2 & Class 3 buildings and Class 4 parts of buildings.	Note
D2.2 Fire Isolated Stairways & Ramps	A stairway or ramp, including landings that are required to be within a fire-resisting shaft must be constructed of non-combustible materials to protect the structural integrity of the shaft.	**CRA**
D2.3 Non-Fire-Isolated stairways and ramps	This clause requires that required non-fire-isolated stairways and ramps must be either constructed in accordance with D2.2 or the alternative options set out in D2.3(a) to (c).	**CRA**

Clause	Reference	Comment
D2.4 Separation of Rising & Descending Stairs	If a stairway serving as an exit is required to be fire-isolated there must be no direct connection between the rising and descending flights of stairs at the level from which egress is obtained. This clause also prescribes the level of construction required.	**Complies**
D2.5 Open Access Ramps & Balconies	This clause allows the use of an open access ramp to meet the smoke hazard management requirements of Table E2.2(a) by allowing smoke to vent naturally through an open access ramp or balcony before it reaches a fire-isolated exit. Sub-clauses (a) and (b) set out the ventilation requirements if this method is used in lieu of stairwell pressurisation.	N/A
D2.6 Smoke Lobbies	This clause only applies to a smoke lobby required by D1.7. A smoke lobby required by D1.7 must be constructed in accordance with each of the requirements of sub-clauses (a) to (d)	N/A
D2.7 Installations in exits and paths of travel	If installed in a path of travel to an exit, electrical distribution boards, communication cupboards and the like containing motors, etc. are to be enclosed with non-combustible construction, and doors are to be provided with smoke seals to the perimeter.	**CRA**
D2.8 Enclosure of space under stairs and ramps	The space below a required fire-isolated stairway or ramp in a fire-isolated shaft must not be enclosed to form a cupboard or other enclosed space. If the required stairway or ramp is non-fire-isolated, (including an external stairway) any cupboard underneath must have an FRL of 60/60/60, with a self-closing -60/30 door.	**CRA** There are no enclosures beneath the stairs
D2.9 Width of stairways	A required stairway or ramp that exceeds 2m in width is counted as having a width of only 2m unless it is divided by a handrail, balustrade or other barrier continuous between landings and each division has a width of not more than 2m.	N/A
D2.10 Pedestrian ramps	A fire-isolated ramp may be substituted for a fire-isolated stairway if the construction enclosing the ramp and the dimensions comply with the requirements for a fire-isolated stairway. The ramp must also comply with the access requirements of D3 and AS1428.1, not have a gradient steeper than 1:8, and have a non-slip finish.	N/A
D2.11 Fire Isolated Passageways	A fire-isolated passageway must have a FRL at least equivalent to the part of the building in which it is situated and in any case not less than 60/60/60. A concession in relation to the construction of the top of a fire-isolated passageway under certain circumstances.	N/A
D2.12 Roof as Open Space	If an exit discharges to a roof of a building, the roof must have an FRL of not less than 120/120/120; and not have any rooflights or other openings within 3m of the path of travel of persons using the exit to reach a road or open space.	N/A

Clause	Reference	Comment
D2.13 Goings and risers	This clause sets out the detailed requirements for the construction and geometry of the goings and risers in required stairways. These details are set out in sub-clauses (a) to (c) and Table D2.13 riser and going dimensions.	**CRA**
D2.14 Landings	The dimensions and gradients of landings in stairways are set out in this clause; the configuration will depend on the proposed use of a building.	**CRA**
D2.15 Thresholds	The threshold of a doorway must not incorporate a step or ramp at any point closer to the doorway than the width of the door leaf unless – (a) In patient care areas in a Class 9a health-care building, the door sill is not more than 25mm above the finished floor level to which the doorway opens: or (b) In a Class 9c aged care building, a ramp is provided with a maximum gradient of 1:8 for a maximum height of 25mm over the threshold.	**CRA**
D2.16 Balustrades	This clause details where balustrades are required to be provided and sets out in specific detail the construction requirements. Typically the following will apply to a Class 5 and 9b building: + Balustrades are required where the fall to the level below is more than 1m in height. The minimum height of a balustrade is 1m above the floor of the landing, walkway or the like; and 865mm above the floor of a stairway or a ramp. + For a fall of more than 4m to the surface level below, a window sill must be a minimum of 865mm in height above the height of the floor surface. + Where the floor is more than 4m above the surface beneath the balustrade any horizontal or near horizontal members between 150mm and 760mm above the floor must not facilitate climbing. + Balustrades must be constructed so as to not permit a sphere of 125mm diameter to pass through. The exception to this is within fire isolated exits within the building, or within a Class 7 or 8 building, where the rails can be positioned a maximum of 460mm apart, so long as a bottom rail is located so a sphere of 150mm cannot pass through the opening between the nosing of the stair treads and the rail or between the floor of the landing, balcony or the like.	**CRA**
D2.17 Handrails	This Clause sets out the requirements regarding the location, spacing and extent of handrails required to be installed in buildings.	**CRA**

Clause	Reference	Comment
D2.18 Fixed platforms, walkways stairways and ladders	A fixed platform, walkway, stairway, ladder, any going and riser, any balustrade or other barrier attached thereto may comply with AS1657 if it only serves a machinery or plant room or non-habitable part of a sole-occupancy unit in a Class 2 building or Class 4 part	N/A
D2.19 Doorways and doors	This clause applies to all doorways and refers to the types of doors that cannot be used in buildings of prescribed uses, the use of power operated doors and the force required to operate sliding doors. If the door is also power operated, it must be opened manually under a force of not more than 110N if there is a malfunction or failure to the power source; or upon the activation of a fire or smoke alarm anywhere in the fire compartment served by the door.	**CRA** The automatic opening of any entry automatic sliding door set is to be linked to automatic open upon activation of sprinkler or smoke detector.
D2.20 Swinging doors	A swinging door in a required exit or forming part of a required exit must swing in the direction of egress and must not otherwise impede egress. In addition, the door must not encroach at any part of its swing by more than 500mm on the required width of the exit (with the exception of airlocks and sanitary compartments, and with the exception of buildings or building parts that are less than 200m^2).	**CRA**
D2.21 Operation of latch	A door in a required exit or forming part of a required exit and in a path of travel to a required exit must be readily openable without a key from the side that faces a person seeking egress, by a single downward action or pushing action on a single device which is located between 900mm & 1100mm from the floor. This clause prohibits the use of devices such as deadlocks and knobs (rather, lever latches are required). D2.21 also sets out exceptions in relation to buildings where special security arrangements are required in relation to the uses carried out. Where fitted with a fail-safe device which automatically unlocks the door upon the activation of a sprinkler system or detection system, the above need not apply.	**CRA** Doors located in a path of travel to an exit within the class 9b assembly building are required to swing in the direction of egress (and be provided with panic bars).
D2.22 Re-entry from Fire Isolated Exits	Doors of a fire-isolated exit must not be locked from the inside in a Class 9a health-care building, a Class 9c aged care building and in a fire-isolated exit serving a storey above 25m effective height, throughout the exit. This clause details the exceptions to the above requirements if the doors are fitted with an automatic failsafe device that automatically unlocks the door upon the activation of a fire alarm as follows: + 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 + 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.	N/A The class 5 and 9b building does not exceed an effective height of 25m

Clause	Reference	Comment
D2.23 Signs on doors	This clause requires the use of signs to alert persons that the operation of smoke doors and fire doors and doors discharging from fire isolated exits, must not be impaired and must be installed where they can be readily seen.	**CRA** See Appendix 5 attached
D2.24 Protection of openable window	This clause relates to the protection of openable windows in a class 9b early childhood centre, or openable windows in a bedroom in a class 2 or 3 building or a class 4 part of a building, where the floor level is more than 2m above the surface level beneath. The intent of this clause is to limit the risk of a person (especially a young child) falling through an openable window, however it does not apply to such a window where the lowest level of its window opening is less than 1.7m above the floor. Details for protection include the following: • Openable portion of the window must have a device to restrict the window opening; or • Be fitted with a screen with secure fittings; • Not permit a sphere of 125mm to pass through; • Resist outward horizontal action of 250N; • Have a child resistant release mechanism if the screen or device is able to be removed, unlocked or overridden. In addition to the above, and for floors that are more than 4m above the surface level below, a barrier with a height not less than 865mm above the floor is required for all openable windows. The barrier must permit a sphere of 125mm to pass through, and must not have any horizontal or near horizontal elements between 150mm and 760mm above the floor that facilitate climbing.	N/A This is not a class 2 or 3 building or class 4 part, nor is it a class 9b child care facility.

PART D3	Access for People with Disabilities	
D3.1 General Building Access Requirements	Clause D3.1 requires an accessway to be provided to and within all areas normally used by occupants including wheelchair spaces provided pursuant to Clause D3.9. AS 1428.1-2009 provides the standard of performance for access and mobility to and within buildings; the applicable requirements of this standard are defined.	**CRA**
D 3.2 Access to buildings	This part requires accessways to be provided to accessible buildings from the main points of pedestrian entry at the allotment boundary and any accessible car parking space or accessible associated buildings connected by a pedestrian link. Access must be provided to and within all areas normally used by occupants (as required by Clause D3.1) within this building from the main points of pedestrian entry at the allotment boundary; from another accessible building connected by a pedestrian link; and any accessible car parking space.	**CRA** This mater is being addressed by an independent accessibility consultant. Note: the terrace conversion to retail is to be upgraded in line with the Disability (Access to Premises – Buildings) Standard 2010
D3.3 Parts of buildings to be accessible	This part specifies the requirements for accessways within buildings which must be accessible. In accordance with Clause D3.3; the non-fire-isolated stairways must comply with Clause 11 of AS 1428.1-2009 and the passenger lift must comply with Clause E3.6. Clause D3.3(g) and (h) requires that the pile height or pile thickness shall not exceed 11mm and the carpet backing thickness shall not exceed 4mm. Moreover, the carpet pile height or pile thickness dimension shall not exceed 11mm, the carpet backing thickness dimension shall not exceed 4mm and their combined dimension shall not exceed 15mm.	**CRA** Confirmation of compliance matters and specific design details contained within BCA Part D and AS1428.1-2009 can be assessed during design development stage
D3.4 Concessions	This part provides exemptions to the Deemed-to-Satisfy provisions for access by people with a disability. This part provides details on buildings or parts of buildings not required to be accessible under the BCA where providing access would be inappropriate because of the nature of the area or the tasks undertaken.	Noted Applicable to the upper level plant room
D3.5 Car Parking	This part provides details of the number of accessible carparking spaces required in a carpark depending on the classification of the building.	N/A There is no carparking proposed with this development.
D 3.6 Identification of accessible facilities, services and features	This section provides requirements for signage in buildings required to be accessible By Part D3	**CRA**

D3.7 Hearing augmentation	This part provides requirements for provision of hearing augmentation in accessible buildings, i.e. to be provided where an in-built amplification system (other than one used for emergencies), is installed: + In a room in a Class 9b building; + In an auditorium, conference room, meeting room, or room for judiciary purposes. + At any ticket office, teller's booth, reception area or the like where the public is screened from the service provider. This part provides requirements for provision of hearing augmentation in accessible buildings	**CRA**. Design statement is to be provided with the documentation submitted with the Construction Certificate application.
D 3.8 Tactile indicators	This clause provides for the installation of tactile indicators in buildings required to be accessible and must be provided to warn people who are blind or have a vision impairment that they are approaching a stairway, escalator , passenger conveyor, ramp, overhead obstruction or an accessway meeting a vehicular way, except for areas exempted by D3.4	**CRA**
D3.9 – Wheelchair Seating Spaces in Class 9b Assembly Buildings	This part provides requirements for the provision of wheelchair seating spaces in Class 9b Assembly buildings where fixed seating is provided and includes the number of spaces to be provided in theatres, cinemas and the like.	**CRA** Applies to the fixed seating within the basement level auditorium. It is understood that there is no fixed seating proposed for the multi-purpose hall on Ground level or the tutorial rooms on Level 1.
D3.10 – Swimming Pools	This part provides the requirements for making swimming pools accessible to people with disabilities required by Table D3.1 to be accessible and must be constructed in accordance with Specification D3.10	N/A
D3.11 – Ramps	Ramps may be used as part of an accessway where there is a change of level and must comply with the requirements set out in AS1428.1	N/A.
D3.12 – Glazing on an Accessway	This part requires the provision of a contrasting strip, chair rail, handrail or transom across all frameless or fully glazed doorways and surrounding glazing capable of being mistaken for an opening	**CRA**

Clause	Reference	Comment
SECTION E	**SERVICES AND EQUIPMENT**	
Part E1	***Fire Fighting Equipment***	
E1.1	Left Blank	
E1.2	Left Blank	
E1.3 Fire Hydrants	A fire hydrant system must be provided to serve a building having a total floor area greater than 500m² and where a fire brigade is available to attend a building fire, installed in accordance with the provisions of AS2419. The hydrant booster assembly and any external fire hydrants are required to be located greater than 10 metres from an external wall of the building, or affixed to the external wall and protected by a radiant heat shield that has an FRL of 90/90/90 located 2 metres either side and 3 metres above the outlets. Any gas meter must be located a minimum of 10 metres from the hydrant booster outlet. A required fire services pump room is required to be accessible directly from the road or open space, or from a door opening from a fire isolated exit.	**CRA** Remainder of works - Fire hydrants are required to be provided throughout the building in accordance with AS2419.1-2005. Note: Where possible, external hydrants are to be provided in lieu of internal fire hydrants (not including those that are contained within a fire isolated exit). ***Alternative Solution*** *The location of the hydrant booster assembly may be subject to a fire engineered alternative solution as a result of it stability to be located at a wall that achieves the required FRL's.*
E1.4 Fire Hose Reels	A fire hose reel system must be provided to serve a building where one or more internal fire hydrants are installed or in a building with a floor area greater than 500m². Fire Hose Reels are to be located within 4m of an exit, or located adjacent to an internal hydrant (other than one within a fire isolated exit). Where system coverage is not achieved by the above, additional FHR may be located in paths of travel to an exit. E1.4 does not apply to a Class 9c aged care building or classrooms and associated corridors in a primary or secondary school. A fire hose reel system must be provided to serve a building where one or more internal fire hydrants are installed or in a building with a floor area greater than 500m² and for the purposes of this clause, a sole-occupancy unit in a Class 2, 3 building or a Class 4 part is considered to be a fire compartment.	**CRA** A Design statement is required from the fire services consultant to ensure coverage to all remaining parts of the floor is achieved.
E1.5 Sprinklers	A sprinkler system must be installed in a building or part of a building when required by Table E1.5 and comply with Specification E1.5. Sprinkler alarm valves must be located in a secure room or enclosure which has direct egress to a road or open space. Table E1.5 sets out which types of building occupancies and Classes which require having sprinkler systems installed in them.	**Complies**. The subject building does <u>not</u> require an automatic sprinkler system, however it is understood that sprinklers are proposed throughout the assembly area levels (basement, level 1 and Level 2). Design Statement required with the application for Construction Certificate from the sprinkler designer.
E1.6 Portable Fire Extinguishers	Portable fire extinguishers must be provided as listed in Table E1.6 and must be selected, located and distributed in accordance with Sections 1, 2, 3 and 4 of AS 2444	**CRA.** Portable fire extinguishers are required to serve the building.
E1.7	*Left blank*	

Clause	Reference	Comment
E1.8 Fire Control Centres	A fire control centre facility in accordance with Specification E1.8 must be provided for a building having an effective height of more than 25m and in a Class 6, 7, 8 or 9 building with a total floor area of more than 18,000m^2. Specification E1.8 describes the construction and content of required fire control centres or rooms.	N/A This building is less than 25m in effective height and does not have a floor area of more than 18,000m2.
E1.9 Fire precautions during construction	In buildings under construction at least one fire extinguisher to suit Class A, B and C fires and electrical fires must be provided at all times on each storey adjacent to a required exit and if the building has reached an effective height of 12m the required hydrant and hose reel systems must be installed, as set out in (b)(ii) and be operational and any required booster connections must be installed	Head Contractor to note
E1.10 Provisions for Special Hazards	Suitable provision must be made if special problems of fire fighting could arise because of; (a) The nature or quantity of materials stored, displayed or used in a building on the allotment; or (b) The location of the building in relation to a water supply for fire fighting purposed.	N/A
Part E2	***Smoke Hazard Management***	
E2.1 Application of Part	(a) The Deemed-to-Satisfy Provisions of this Part to not apply to any open deck carpark or open spectator stand. (b) The smoke exhaust and smoke-and-heat vent provisions of this part do not apply to any area not used by occupants for an extended period of time such as a storeroom with a floor area of less than 30m^2, sanitary compartment, plant room or the like.	Note. Smoke hazard management is applicable to this building
E2.2 General requirements for smoke hazard management (including Tables E2.2a & E2.2b)	Class 2 to 9 buildings must comply with the provisions of this Clause to remove smoke during a fire, to control the operation of air handling systems and to prevent the spread of smoke between compartments. Buildings must comply with the provisions of Table E2.2a, as applicable to Class 2 to 9 buildings and Table E2.2b as applicable to Class 6 and 9b buildings. It deals with the design and construction of air handling systems that are part of a smoke hazard management system and air handling system that are not part of a smoke hazard management system.	**CRA.** The building is required to be provided with automatic shutdown of any air-handling system that does not form part of a smoke control system (AS 1668.1). The building is required to be provided with a smoke detection and alarm system (AS1670.1) and SISSEP (AS1670.4). We note the lower 3 storeys are provided with a sprinkler system.
E2.3 – Provision for Special Hazards	Additional smoke hazard management measures may be necessary due to the nature of a buildings special characteristic, its use, the nature of materials being stored in them and special mix of classifications.	N/A

Clause	Reference	Comment
Part E3	***Lift Installations***	
E3.1	*Left blank*	-
E3.2 Stretcher Facilities in Lifts	Stretcher facilities, complying with this clause, must be provided in lifts in at least one emergency lift as required by E3.4 or in a storey above an effective height of 12m. A stretcher facility must accommodate a raised stretcher with a patient lying on it horizontally by providing a clear space not less than 600mm wide x 2000mmm long x 1400mm high above the floor level.	**CRA**
E3.3 Warning against use of lifts in fire	Warning signs required be provided must be displayed where they can be readily seen and must comply with the details and dimensions of Figure 3.3	**CRA**
E3.4 Emergency Lifts	An emergency lift (complying with AS1735.2 or Appendix A of AS1735.1) must be installed in: + A building that exceeds 25m in effective height; and + A Class 9a building which has patient care areas located on a level that does not have direct egress to a road or open space. The emergency lift must be connected to a standby power supply system where installed; be contained within a fire resisting shaft; and have the following minimum internal dimensions (measured clear of all obstructions including handrails): + Depth of car – 2280mm + Width of car – 1600mm + Floor to ceiling height – 2300mm + Door height – 2100mm + Door width – 1300mm	N/A. The development is a class 9b building that does not exceed 25m in effective height.
E3.5 Landings	E3.5(a) The provisions of clause 12.2 – "Access" of AS 1735.2 do not apply. E3.5(b) The provisions of Clause A3.2 – "Access to landings" of Appendix A of AS 1735.1 do not apply. E3.5(c) Access and egress to and from lift well landings must comply with the Deemed-to-Satisfy Provisions of Part D.	**CRA**
E3.6 Passenger lifts	In an accessible building, every passenger lift must be one of the types identified in Table E3.6a, have accessible features in accordance with Table E3.6b and not rely on a constant pressure device for its operation if the lift car is fully enclosed.	**CRA**
E3.7 Fire service controls	In passenger lifts designed in accordance with AS 1735 Parts 1 and 2, all lift cars serving any storey above an effective height of 12m must be provided with fire service controls.	**CRA**
E3.8 Aged Care Buildings	Where residents in an aged care building are on levels which do not have direct access to a road or open space a building must be provided with either at least one lift to accommodate a stretcher in accordance with E3.2(b) or a ramp in accordance with AS1428.1 and the ramp must discharge to a level providing direct access to a road or open space	N/A

Clause	Reference	Comment
E3.9 Fire Service Recall Switch	Each group of lifts must be provided with one fire service control switch (required by Clause E3.7 above) that activates the fire service recall operation. This clause details the switch, the labelling, the key and operation procedures for a fire service recall operation.	**CRA**
E3.10 Lift car fire service drive control switch	The lift car fire service drive control switch required by E3.7 must be activated from within the lift car. This clause details the switch, the initiation, the labelling and operation for the fire service drive control switch	**CRA**
Part E4	***Emergency Lighting, Exit Signage and Warning Systems***	
E4.1	*Repealed*	-
E4.2 Emergency Lighting	This clause details when emergency lighting must be installed in Class 2 to 9 buildings. The requirements for buildings and parts of buildings are detailed in sub-clauses (a) to (i) and each sub-clause must be considered as more than one may apply to any single building.	**CRA** Design statement to be provided with the application for Construction Certificate
E4.3 Measurement of distances	Distance, other than vertical rise, must be measured along the shortest path of travel whether by straight lines, curves or a combination of both.	Note
E4.4 Design and operation of emergency lighting	Every required emergency lighting system must comply with AS2293.1	Note
E4.5 Exit Signs	An exit sign must be clearly visible to persons approaching the exit and must be installed on, above or adjacent to each door providing egress from a building. Sub-clauses (a) to (d) set out the situations where exit signs are required to be installed.	**CRA** Design statement to be provided with the application for Construction Certificate
E4.6 Direction Signs	If an exit is not readily apparent to persons occupying or visiting the building then exit signs must be installed in appropriate positions in corridors, hallways, lobbies, and the like, indicating the direction to a required exit.	Note
E4.7 Class 2 & 3 Buildings and Class 4 parts exemptions.	E4.7 grants an exemption for Class 2, 3 and Class 4 parts of buildings from the need to comply with E4.5 if the provisions of sub-clauses (a) & (b) are complied with.	N/A
E4.8 Design and operation of exit signs	Every required exit sign must comply with AS/NZS 2293.1 and be clearly visible at all times when the building is occupied by any person having the legal right of entry into the building.	Note
E4.9 Sound Systems and Intercom systems for emergency purposes (EWIS)	This clause sets out the types of buildings requiring the installation of a sound system and intercom system to assist with the emergency evacuation of occupants. This clause specifies that sound and intercom systems must comply with AS 1670.4 and is to be provided within certain Class 3, Class 9a and Class 9b buildings, and also is to be installed in every building with an effective height greater than 25m.	**CRA** EWIS is required to the class 9b building as a result of area of the multi-purpose hall.

Clause	Reference	Comment
SECTION F	**HEALTH AND AMENITY**	
Part F1	***Damp & Weather Proofing***	
F1.1 Stormwater drainage	Stormwater drainage must comply with AS/NZ 3500.3	**CRA** Design statement to be provided from the design consultant for the new stormwater system.
F1.2	*Repealed*	
F1.3	*Repealed*	
F1.4	*Repealed*	
F1.5 Roof coverings	This clause details the materials and appropriate standards, with which roofs must be covered with. The roofing requirements are set out in sub-clauses (a), (b), (c), (d), (e) & (f) which set out the types of materials that may be used and the adopted Australian Standards that apply to their quality and installation.	**CRA** Design statement to be provided from the architect for compliance with the Australian Standards referenced.
F1.6 Sarking	Sarking-type materials used for weatherproofing of roofs must comply with AS/NZS 4200 parts 1 and 2	**CRA** Design statement to be provided from the architect
F1.7 Waterproofing of wet areas in buildings	This clause requires that wet areas in Class 2 to 9 buildings must be waterproofed. It prescribes the standards to which the work must be carried on the construction of rooms containing urinals and their installation.	**CRA** Design statement to be provided with the application for Construction Certificate
F1.8	*Left blank*	-
F1.9 Damp-proofing	(a) This sub-clause requires that moisture from the ground must be prevented from reaching certain parts of buildings as listed. (b) This sub-clause requires that all damp-proofing materials and termite shields used as damp-proofing must comply with AS/NZS 2904 and AS 3660.1. (c) This sub-clause lists the buildings and parts of building that do not need to comply with (a).	**CRA** Design statement or specification to be provided from the architect
F1.10 Damp-proofing of floors on the ground	If the floor of a room is laid on the ground or on fill, moisture from the ground must be prevented from reaching the upper surface of the floor and adjacent walls by the insertion of a vapour barrier in accordance with AS 2870. Damp-proofing need not be provided if weatherproofing is not required or the floor is the base of a stair, lift or similar shaft which is adequately drained by gravitation or mechanical means.	**CRA** Design statement or specification to be provided from the architect
F1.11 Provision of floor wastes	In a Class 2 or 3 building or Class 4 part of a building, the floor of each bathroom and laundry located above a sole-occupancy unit or public space must be graded to permit drainage to a floor waste.	We understand that floor wastes will be provided to all west areas, notwithstanding that this clause is not applicable to a class 9b building.

Clause	Reference	Comment
F1.12 Sub-floor ventilation	The sub-floor space between the suspended floor of a building and the ground must be in accordance with sub-clauses (a) to (g). This clause specifies the minimum sub-floor ventilation openings and the height of sub-floor timbers above the ground level for the three climatic zones set out in Figure F1.12 of the BCA	N/A
F1.13 Glazed Assemblies	Glazed assemblies in an external wall must comply with AS2047 requirements for resistance to water penetration for windows, sliding doors with a frame, adjustable louvres, shop fronts and windows with one piece framing	**CRA**. Design statement to be provided with the application for Construction Certificate
Part F2	***Sanitary & Other Facilities***	
F2.1 Facilities in residential buildings	Sanitary and other facilities for Class 2 and 3 buildings and Class 9c aged care buildings and for Class 4 parts of buildings must be provided in accordance with Table F2.1. This Table details the facilities required to be provided in residential buildings	N/A
F2.2 Calculation of number of occupants and fixtures	This clause sets out the requirements for the calculation of the number of occupants and the number of sanitary facilities required to be installed in Class 2 to 9 buildings. The parameters for the calculation are set out in sub-clauses (a) to (d).	Noted
F2.3 Facilities in Class 3 to 9 Buildings	This clause provides the requirements for sanitary facilities to be installed in Class 3, 5, 6, 7, 8 and 9 buildings in accordance with Table F2.3. When accessible sanitary facilities are provided, they account once for each sex.	**CRA** The College currently has a ceiling population number. Calculations of facilities for the new development have been based on the notion that when the lecture theatre and multi-purpose hall are occupied, other parts of the College will not be (i.e. the population does not occupy all parts at any one time). Therefore, the Knox building and Dining room buildings have been utilised when calculating minimum numbers of sanitary facilities. There are various uses to consider, including populations associated with a public hall, student spaces, staff areas and also the upper level administration areas. In this instance the combination of existing facilities and new facilities achieves a satisfactory number Other items of note are: • Sanitary facilities are required for the retail building. • The Level 1 facilities are to be separated so the employees and the students need not share.
F2.4 Accessible sanitary facilities	Accessible unisex sanitary compartments must be provided, in accordance with Table F2.4(a) and unisex showers must be provided in accordance with Table F2.4(b), in buildings or parts that are required to be accessible. The details for the provision of disable facilities and the standard, AS 1428.1, are set out in sub-clauses (a) to (i).	**CRA**. The design indicates ambulant facilities at one of the banks of toilets on basement and ground floor, and provided at the bank of toilets on first floor and above. It is understood that an Accessibility Consultant has been engaged to advise on compliance with AS1428.1-2009 and the Access to Premises Standard.

Clause	Reference	Comment
F2.5 Construction of sanitary compartments	Other than in an early childhood centre, sanitary compartments must have doors and partitions that separate adjacent compartments and extend – + from floor level to the ceiling in the case of a unisex facility; or + a height of not less than 1.5m above the floor if primary school children are the principal users; or + 1.8m above the floor in all other cases. The door to a fully enclosed sanitary compartment must open outwards; or slide: or be readily removable from the outside of the sanitary compartment, unless there is a clear space of at least 1.2m, measured in accordance with Figure F2.5 between the closet pan within the sanitary compartment and the doorway.	**CRA**
F2.6 Interpretation: urinals and wash basins	(a) A urinal may be an individual stall or wall-hung urinal, each 600mm length of a continuous urinal trough or a closet pan used in place of a urinal. (b) washbasin may be an individual basin or a part of a hand washing trough served by a single water tap	Noted
F2.7 Microbial Control	Hot water, warm water and cooling water systems in a building other than a system only serving a sole-occupancy unit in a Class 2, 3 or Class 4 Part of a building must be installed in accordance with AS/NZS 3666.1. **Note**: NSW Clause F2.7 – this clause is deleted in NSW as these systems are controlled under the Public Health Act 1991.	Note
F2.8 Waste Management	In a Class 9a health-care building, facilities must be provided with the following to facilitate the emptying of containers of sewage and dirty water. + At least one slop hopper or other device, other than a WC pan or urinal, must be provided on any storey containing ward areas or bedrooms to facilitate emptying of containers of sewage or dirty water; and with a flushing apparatus, tap and grating.	N/A
Part F3	***Room Sizes***	
F3.1 Height of rooms and other spaces.	The ceiling heights in Class 2 to 9 buildings must not be less than required in sub-clauses (a) to (f) of this clause. The ceiling minimum heights for a Class 9b building are as follows: + School classroom or other assembly building accommodating less than 100 persons – 2.4m (including corridors serving those parts). + Theatre, public hall or other assembly building accommodating more than 100 persons – 2.7m (including corridors serving those parts).	**CRA** Minimum heights required: • Administration – 2.4m • Reading areas – 2.7 • Sanitary facilities – 2.1m

Clause	Reference	Comment
Part F4	***Light & Ventilation***	
F4.1 Provision of Natural light	Natural lighting must be provided in: + Class 2 buildings and Class 4 parts of buildings – to all habitable rooms. + Class 3 buildings – all bedrooms and dormitories. + Class 9a and 9c buildings – all rooms used for sleeping purposes. + Class 9b buildings – to all general purpose classrooms in primary or secondary schools and all playrooms and the like for the use of children in an early childhood centre.	N/A This college does not constitute a primary or secondary school.
F4.2 Methods and Extent of Natural Lighting	Sub-clauses (a), (b) & (c) set out the requirement that natural light must be provided by windows and the size and location of such windows. Natural light can also be provided by the use of rooflights in accordance with the provisions of this Clause.	N/A
F4.3 Natural Light borrowed from adjoining rooms	Natural light may be borrowed from an adjoining room in a sole-occupancy unit in a Class 2 building, a Class 4 part of a building or a sole-occupancy unit in a Class 3 building in accordance with sub-clauses (a) & (b).	N/A
F4.4 Artificial lighting	Artificial lighting is required where it is necessary to minimise the hazard to occupants during an emergency evacuation. Sub-clauses (a), (b) & (c) sets out the places where artificial lighting is always required in all classes of buildings and the standard to which it must be installed.	**CRA** Design statement to be provided with the application for Construction Certificate from the design consultant
F4.5 Ventilation of rooms	A habitable room, office, shop, factory, workroom, sanitary compartment, bathroom, shower room, laundry and any other room occupied by a person for any purpose must have natural ventilation complying with F4.6 **or** a mechanical or air-conditioning system complying with AS1668.2 and AS/NZS 3666.1. **Note**: NSW F4.5(b) a mechanical ventilation or air-conditioning system complying with AS 1668.2 – the reference to AS/NZS 2666.1 is deleted from the BCA in NSW as the need to comply with this standard is regulated under the relevant section of the Public Health Act 1991.	**CRA** Design statement to be provided with the application for Construction Certificate from the design consultant
F4.6 Natural ventilation	Natural ventilation provided in accordance with F4.5(a) must consist of permanent openings, windows, doors or other devices which can be opened in accordance with sub-clauses (a), (b) & (c)	Note
F4.7 Ventilation borrowed from adjoining rooms	Natural ventilation to a room may come through a window, opening ventilating door or other device from an adjoining room (including an enclosed verandah) if both rooms are within a sole-occupancy unit or the enclosed verandah is common property and be carried out in accordance with the requirements of sub-clauses (a), (b) & (c).	N/A

Clause	Reference	Comment
F4.8 Restriction on position of water closets and urinals	A room containing a water closet pan or urinal must not open directly into a kitchen or pantry, public dining room or restaurant, a dormitory in a Class 3 building, a room used for public assembly (which is not an early childhood centre, primary school or open spectator stand) or a workplace normally occupied by more than 1 person	**Complies.**
F4.9 Airlocks	If a room containing a closet pan or urinal is prohibited under F4.8 from opening directly into another room then the provisions of sub-clauses (a) & (b) apply relating to the requirements of airlocks and mechanical ventilation standards	**Complies.**
F4.10	*Left blank*	
F4.11 Carparks	Every storey of a carpark except an open-deck carpark must have- (a) A system of ventilation complying with AS 1668.2; or (b) An adequate system of permanent natural ventilation.	N/A
F4.12 Kitchen local exhaust ventilation	A commercial kitchen must be provided with a kitchen exhaust hood complying with AS AS/NZS 1668.1 and AS 1668.2 in accordance with the provisions of sub-clauses (a) and (b).	N/A
Part F5	***Sound Transmission & Installation***	
F5.1 Application of Part	The Deemed-to-Satisfy Provisions of this Part apply to Class 2 and 3 buildings and Class 9c aged care buildings.	N/A to this Multi-Purpose Library development

Clause	Reference	Comment
SECTION G	**ANCILLARY PROVISIONS**	
Part G3	***Atriums***	
Note:	*Part G3 contains Deemed-to-Satisfy Provisions additional to those contained in Sections C, D and E for Atrium Construction*	
G3.1 Application of Part	This part does not apply to an atrium which connects only 2 storeys; or connects only 3 storeys if each storey is provided with a sprinkler system complying with Specification E1.5 throughout; and one of those storeys is situated at a level at which there is direct egress to a road or open space.	**N/A** The building contains a stair connecting 3 storeys in the class 9b building part that has sprinklers. This is not considered to be an atrium, and therefore the application of Part G3 is not required.

Clause	Reference	Comment
SECTION H	**SPECIAL USE BUILDINGS**	
Part H1	***Theatres, Stages and Public Halls***	
Note:	*Part H1 contains Deemed-to-Satisfy Provisions additional to those contained in Sections C, D, E, F and G for buildings containing or used as places of public entertainment other than temporary structures and drive-in-theatres*	
H1.1	The DTS provisions of this Part apply to every enclosed Class 9b building or part of a building which • Is a school assembly, church or community hall with a stage and any backstage area with a total floor are of more than 300m^2; or • Otherwise has a stage and any backstage area more than 200m2; or • Has a stage with an associated rigging loft. Notwithstanding, **Clause H1.4** applies to every open or enclosed Class 9b building and **Clause H1.7** only applies to enclosed Assembly Building parts.	Note. Clause H1.4 and Clause H1.7 apply to this building in the lecture theatre area.
H1.4	With respect to the proposed seating within an open spectator stand the gradient of the floor surface must be stepped so that— ▪ a line joining the nosing's of consecutive steps does not exceed an angle of 30° to the horizontal; and ▪ the height of each step in the stepped floor (if proposed) is not more than 600mm. Where an aisle divides the stepped floor and the difference in level between any 2 consecutive steps— o exceeds 230mm but not 400mm — an intermediate step must be provided in the aisle; and o exceeds 400mm — 2 equally spaced intermediate steps must be provided in the aisle; and o the going of intermediate steps must be not less than 270mm and such as to provide as nearly as practicable equal treads throughout the length of the aisle. The clearance between the proposed new rows of fixed seats must be not less than— ▪ 300mm where the distance to an aisle is not more than 3.5 m; or ▪ 500mm where the distance to an aisle is more than 3.5 m.	**CRA** Details are to be provided with the application for Construction Certificate
H1.7	In every enclosed Class 9b building, where in any part of the auditorium, the general lighting is dimmed or extinguished during public occupation and the floor is stepped or is inclined at a slope steeper than 1 in 12, aisle lights must be provided to illuminate the full length of the aisle and tread of each step.	**CRA** Details are to be provided with the application for Construction Certificate

Clause	Reference	Comment
NSW H1.1 Application of Part	NSW H101 applies in replacement to Part H1 in relation to a Class 9b building that is an entertainment venue for a Class 9b building or part of a building that is not an entertainment venue, the provisions of sub-clause (a) applies	N/A The assembly areas are not considered to be assembly buildings that constitute an Entertainment venue in this development.
Part H2	***Public Transport Buildings***	
Note:	*Part H2 contains Deemed-to-Satisfy Provisions for Class 9b and Class 10 Public Transport Buildings additional to those contained in Parts D3, E3 and F2 that apply to public transport buildings*	
H2.1 – Application of Part	(a) The Deemed-to-Satisfy Provisions of this Part apply to the passenger use areas of a Class 9b and Class 10 building used for public transport. (b) The Deemed-to-Satisfy Provisions of this Part take precedence where there is a difference to the Deemed-to-Satisfy Provisions of Parts D3, E3 and F2. (c) For an airport that does not accept regular public transport services, as defined in the Disability Standards for Accessible Public Transport 2002, only H2.8, H2.9, H2.10, H2.11, H2.12 and H2.13 of this Part apply. A3.3(a)(i) does not apply to this Part	Not applicable to this Multi-Purpose Library and administration building project

Clause	Reference	Comment
SECTION J	**ENERGY EFFICIENCY**	
J1	The provision of insulation of the building envelope will be required in the proposed building, in accordance with Clauses J1.0 to J1.6, and the Tables therein, including Thermal Construction General, Roof and Ceiling Construction, Rooflights, Walls, and Floors. Design details and/or certification of design will be required to be provided in this regard.	Energy efficiency design measures will be implemented into the 'new' building design to satisfy the requirements under BCA Parts J1, J2, J3, J5, J6, J7 and J8 for **Climate Zone 5** as follows; + building fabric (insulation) + external glazing + building sealing to doors, exhaust vents and windows + efficiency of the running of air conditioning systems and mechanical ventilation systems with respect to insulation of ductwork, timer switches, etc + performance of glazing + artificial lighting & power controls (interior and exterior lighting) + hot water systems + access and maintenance of energy efficiency systems **CRA.** Compliance with the DTS provisions or the undertaking of a verification report **will be** provided to satisfy relevant requirements of the BCA in this instance.

Clause	Reference	Comment
J2 – Glazing	Glazing within the external building envelope will be required to be assessed/designed to achieve compliance with Clauses J2.0 to J2.5, including the Tables therein, having regard to the maximum aggregate air-conditioning energy attributable to each façade of the proposed building. A calculation demonstrating that the proposed design of the building complies with the requirements of Part J2 is required to be provided in this regard.	**Complies** A DTS solution or a verification report will be provided to satisfy the Performance requirements of the BCA in this instance.
J3 – Building sealing	The proposed building envelope will be required to be sealed to prevent air infiltration in accordance with the requirements of Clauses J3.0 to J3.6. Details or certification that the proposed building design complies with the requirements of Part J3 is required to be provided	**CRA.** A DTS solution or a verification report will be provided to satisfy the Performance requirements of the BCA in this instance.
J4 – Air movement	Details and/or design certification which confirm that air movement within the proposed building achieves compliance with the relevant requirements of Clauses J4.0 to J4 4 and the Table therein will be required to be provided from the mechanical Engineer.	N/A
J5 – Air-conditioning & ventilation systems	Details and/or design certification which confirm that any proposed air-conditioning system or unit within the proposed building achieves compliance with the relevant requirements of Part J5 will be required to be provided from the Mechanical Engineer.	**CRA** Design statement to be provided from the design consultant
J6 – Artificial lighting & power	Details and/or design certification which confirm that all artificial lighting, power control, and boiling/chilled water units within the proposed building achieves compliance with the relevant requirements of Part J6 will be required to be provided from the Electrical Engineer	**CRA** Design statement to be provided from the design consultant
J7 – Hot water supply & swimming pool & spa pool plant	Details and/or design certification which confirm that any proposed hot water supply system within the proposed building achieves compliance with the relevant requirements of Part J7 (Section 8 of AS 3500.4) will be required to be provided from the Hydraulic Engineer	**CRA** Design statement to be provided from the design consultant
J8 – Access for maintenance & facilities for monitoring	See NSW Subsection J8 for access to maintenance. Access must be provided to all plant, equipment and components that require maintenance in accordance with Part I2.	**CRA** Design statement to be provided from the design consultant

APPENDIX 2

LIST OF ESSENTIAL SERVICES

SCHEDULE

Statutory Fire Safety Measure	Design/Installation Standard	Proposed
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 (Levels Basement, Ground and Level 1 only)	BCA Spec. E1.5 & AS 2118.1-1999	✓
Building Occupant Warning System activated by the Sprinkler 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 Dampers	BCA Clause C3.15, AS 1668.1 - 1998 & AS 1682.1 & 2 - 1990	✓
Fire Doors	BCA Clause C2.12, C2.13, C3.4, C3.5, C3.8, and AS 1905.1 – 2005	✓
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 & AS4072.1 - 2005	✓
Mechanical Air Handling Systems (including automatic shutdown in class 9b areas)	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	✓
Required Exit Doors (power operated)	BCA Clause D2.19(b)	✓
Smoke Hazard Management Systems	BCA Part E2 & AS/NZS 1668.1 - 1998	✓
Sound System and Intercom System for Emergency Purposes	BCA Clause E4.9 and AS1670.4-2004	✓
Wall-Wetting Sprinklers	BCA Clause C3.4 & D1.7	✓
Warning & Operational Signs	Section 183 of the EP & A Regulations 2000, AS 1905.1 - 2005, BCA Clause D2.23, E3.3	✓
Alternative Solutions	*As per Table 10.2*	

APPENDIX 3

Table 3 TYPE A CONSTRUCTION: FRL OF BUILDING ELEMENTS

Building element	Class of building — FRL: (in minutes)
	Structural adequacy*/ *Integrity*/ *Insulation
	5 or 9
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 *loadbearing* parts—	
less than 1.5 m	120/120/120
1.5 to less than 3 m	120/ 90/ 90
3 m or more	120/ 60/ 30
For non- *loadbearing* parts—	
less than 1.5 m	–/120/120
1.5 to less than 3 m	–/ 90/ 90
3 m 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 3 m	120/–/–
3 m or more	–/–/–
COMMON WALLS and FIRE WALLS—	120/120/120
INTERNAL WALLS—	
Fire-resisting lift and stair *shafts*—	
Loadbearing	120/120/120
Non- *loadbearing*	–/120/120
Bounding *public corridors*, public lobbies and the like—	
Loadbearing	120/–/–
Non- *loadbearing*	–/–/–
Between or bounding *sole-occupancy units*—	
Loadbearing	120/–/–
Non- *loadbearing*	–/–/–
Ventilating, pipe, garbage, and like *shafts* not used for the discharge of hot products of combustion—	
Loadbearing	120/ 90/ 90

Building element	Class of building — FRL: (in minutes)
	Structural adequacy*/ *Integrity*/ *Insulation
	5 or 9
Non- *loadbearing*	–/ 90/ 90
OTHER LOADBEARING INTERNAL WALLS, INTERNAL BEAMS, TRUSSES	
and COLUMNS—	120/–/–
FLOORS	120/120/120
ROOFS	120/ 60/ 30

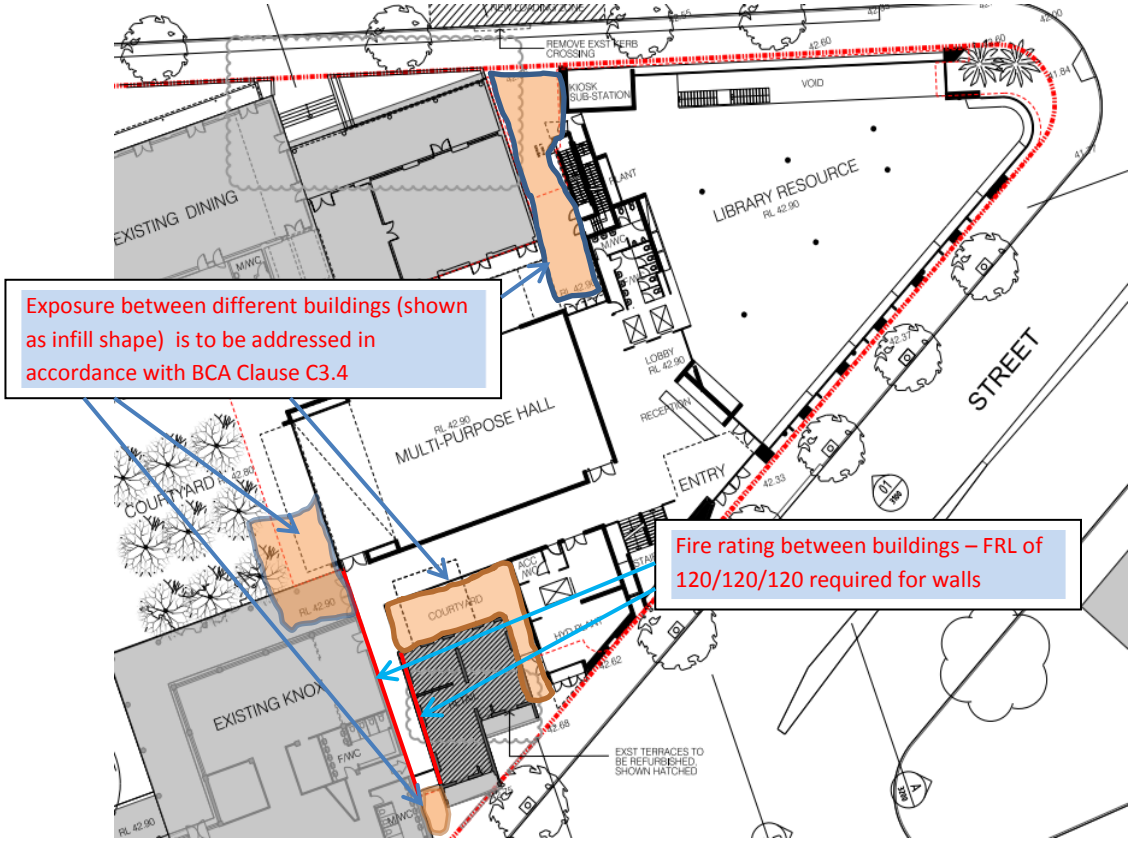
Notes:

1. The concession granted under clause 3.5 of BCA Specification C1.1 does not apply in this instance (the building is not provided with sprinklers throughout).
2. Where a combustible material is used as a finish or lining to a wall or roof, or sunscreen, or awning, to a building element required to have an FRL the material must be exempted or complies with the fire hazard properties prescribed under C1.10 and does not otherwise constitute an undue risk of fire spread via the façade of the building.
3. Lift shafts are required to be enclosed at the top of the shaft with fire rated construction having an FRL of 120/120/120.
4. Fire isolated exits are to be provided with a fire rated "lid" that achieves an FRL of 120/120/120.
5. Where roof lights are proposed they are required to be located not less than 3 metres from a roof light in an adjoining fire separated part; and must not be more than 20% of the area of the roof.
6. Any loadbearing internal walls or loadbearing fire walls are to be masonry or concrete.
7. A non-loadbearing wall that is required to be fire resisting must be non-combustible construction.
8. External walls must be non combustible construction. Non-loadbearing parts of an external wall that are more than 3m from a fire source feature need not be fire rated.
9. Details of spandrel separation is to be provided for the upper 3 levels, inclusive of the method of fire stopping at the connection between the external wall and the floor slab.
10. Internal columns in this building (being less than 25m in effective height) that are in the storey immediately below the roof, can be constructed as follows:
    a. Building with a rise in storeys exceeding 3 – FRL 60/60/60
    b. Building with a rise in storeys not exceeding 3 – no FRL.

    In this instance the building exceeds 3 storeys and therefore the concession of 60/60/60 FRL is applicable.

APPENDIX 4

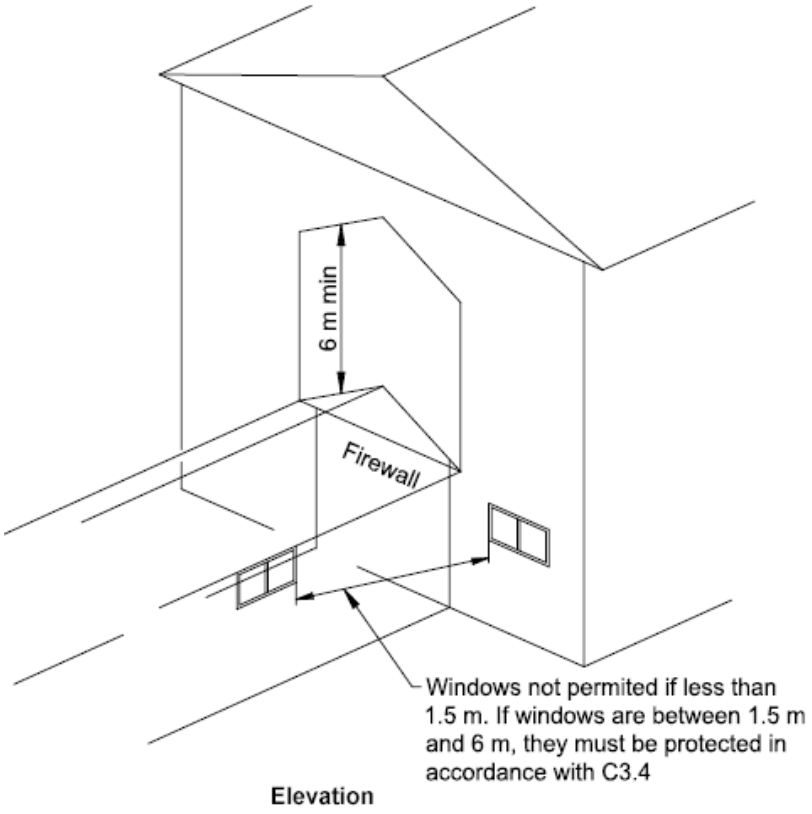
Fire Walls separating buildings



Alternatives are available for the existing dwelling proposed to be re-used as a retail tenancy, i.e. for the building to be consumed into the main fabric of the subject College building. The building will need to be assessed therefore as Type A Construction and the primary impact of this relates to the following:

- loadbearing walls require FRL of 120/120/120;
- floors requiring an FRL of 120/120/120 and
- the roof requiring an FRL.

Some if these items may be successfully justified to remain as they are currently subject to a fire safety engineering assessment should sprinklers be provided throughout.



BCA Clasue C2.7 fire wall separation indicating protection of openings and also heights of different storeys where necessary

APPENDIX 5

BCA Clause D2.23

(a) A sign, to alert persons that the operation of certain doors must not be impaired, must be installed where it can readily be seen on, or adjacent to, a—

(i) (**A) *required* fire door providing direct access to a fire-isolated *exit*,** except a door providing direct egress from a *sole-occupancy unit* in a Class 2 or 3 building or Class 4 part; and

(B) *required* smoke door,

on the side of the door that faces a person seeking egress and, if the door is fitted with a device for holding it in the open position, on either the wall adjacent to the doorway or both sides of the door; and

(ii)

(A) fire door forming part of a *horizontal exit*; and

(B) smoke door that swings in both directions; and

(C) **door leading from a fire isolated *exit* to a road or *open space*, on each side of the door.**

(b) A sign referred to in **(a)** must be in capital letters not less than 20 mm high in a colour contrasting with the background and state—

(i) for an *automatic* door held open by an *automatic* hold-open device— "FIRE SAFETY DOOR—DO NOT OBSTRUCT"; or

(ii) for a *self-closing* door— "**FIRE SAFETY DOOR - DO NOT OBSTRUCT - DO NOT KEEP OPEN**"; or

(iii) for a door discharging from a fire-isolated *exit*— "FIRE SAFETY DOOR—DO NOT OBSTRUCT".

In addition to the above, the doors which provide access to the fire isolated exits and also the Horizontal Exits must have signage provided adjacent to the entry doorway which states the following (ref Clause 183 of EP&A Reg 2000):