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BCA Assessment Report

REPORT 2014/1703 R1.1
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Report Revision History

Revision	Date	Reason for Revision	Prepared by	Reviewed	Approved by
R1.0	3/11/14	Draft	Jason Krzus 	David Cartwright 	Guiseppe Graziano 
R1.1	13/11/14	Final – *updated comments*			
R1.2	20/11/14	Final – *minor update*			

EXECUTIVE SUMMARY

An assessment of the proposed design of an eighteen (18) storey student accommodation building with ground floor retail tenancies and dance studio has been undertaken against the Deemed-to-Satisfy provisions of the relevant sections of the BCA. The assessment has revealed that in order to comply a number of issues need to be resolved.

Section 8 of this report details the non-compliances identified that are proposed to be addressed as an Alternative Solution to satisfy the Performance Requirements of the BCA:

1. Reduced Fire Resistance Levels to bounding construction of bedroom sole-occupancy units, retail compartment and public corridor on level 1;
2. Protection of openings to northern and southern boundaries;
3. Protection of doorways within bounding construction walls;
4. Fire rating of service penetrations through bounding construction walls;
5. Numbers of exits provided to basement, retail tenancies and mezzanine level;
6. Exit travel distances from within sole-occupancy units and non-sole-occupancy unit areas;
7. Protection of path of travel from discharge of fire-isolated exits;
8. Number of accessible sole-occupancy units;
9. Location of and radiant heat protection of fire brigade booster assembly;
10. Location of sprinkler alarm valve room;
11. Access location and change of level to the fire control room;
12. Alternative smoke hazard management system in lieu of stair pressurisation system;
13. Deletion of exit directional signage from cluster units;
14. Reduction of sound insulation rating to sole-occupancy unit (cluster bedroom) walls.

The following key issues require attention during design development:

1. Egress from courtyard area on level 1;
2. Operation of latch details and swing direction to security gates in laneways;
3. Details of protection of window openings;
4. Design of key essential services compliance eg fire hydrant, sprinkler systems;
5. Design of fire control room requirements;
6. Provisions of floor wastes to bathroom and laundries;
7. Provision of ambulant sanitary facilities for male and females.

Whilst not precluding the issue of a Construction Certificate, it is noted that many detailed design issues are not indicated on the drawings. These issues are designated “Compliance Readily Achievable” in the “Status” column of the assessment at Appendix B of the report and should be resolved prior to construction. Key issues should be clarified with SWP prior to construction.

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1. INTRODUCTION

This report presents the findings of an assessment of the design of a eighteen (18) storey student accommodation building with ground floor retail tenancies and dance studio against the Deemed-to-Satisfy (DTS) provisions of the relevant sections of the Building Code of Australia (BCA).

It has been prepared by building regulations consultants and certifiers Steve Watson and Partners for Iglu Pty Ltd

2. PURPOSE

The purpose of this report is to provide an assessment of the design documentation for the proposed project against the current requirements of the BCA.

The assessment is undertaken for the purpose of, and to the extent necessary for, for submission with the Development Application to Council under Part 4 of the Environmental Planning and Assessment Act.

3. SCOPE AND LIMITATIONS

3.1. SCOPE

The scope of this assessment is limited to the design documentation referenced in Appendix C of this report.

3.2. LIMITATIONS

The following limitations apply to the assessment:

- The plans are assessed to the extent necessary for submission with the Development Application to Council under Part 4 of the Environmental Planning and Assessment Act. This means the design has been assessed to be capable of complying with the BCA without necessarily having all the details required to issue a Construction Certificate.
- Details in regard to access for people with disabilities have been assessed to the extent of the deemed-to-satisfy provisions of the BCA only. An assessment against AS 1428 is outside the scope of this report.
- The assessment does not consider the requirements of legislation other than the nominated sections of the EP&A Act which might address building works such as OH&S, Construction Safety or the like.
- Generally the assessment does not incorporate the detailed requirements of the Australian Standards.

4. STATUTORY FRAMEWORK

The following table summarises the key statutory issues relating to fire safety and the BCA in relation to the certification of new building works.

Issue	EPAR Clause Ref	Comment	Relevant section of this report
New Work	145	All new works must comply	8 and 13

4.1. NEW WORK

Clause 145 of the Environmental Planning and Assessment Regulation 2000 (EPAR) requires that all new work comply with the current requirements of the BCA.

This means that all works proposed in the plans are required to comply but that existing features of

an existing building need not comply with the BCA unless required to under other clauses of the legislation.

4.2. RESIDENTIAL FLAT DEVELOPMENT

Clause 143A of the EPAR requires a qualified designer to provide a statement that verifies that the plans and specifications achieve or improve the design quality of the development having regard to the design quality principles set out in Part 2 of the *State Environmental Planning Policy No. 65 – Design Quality of Residential Flat Development* (SEPP 65) prior to the issue of a Construction Certificate.

Clause 154A of the EPAR requires a qualified designer to provide a statement that verifies that the residential flat development achieves the design quality of the development as shown in the plans and specifications having regard to the design quality principles set out in Part 2 of SEPP 65 prior to issuing an Occupation Certificate.

5. METHODOLOGY

5.1. PROCESS ADOPTED

The following method of assessment has been used in the preparation of this report:

1) Determine the basic assessment data for the building.
2) Assess the design of the building against the current Deemed-to-Satisfy requirements of Sections B, C, D, E, F, G, H and J of the BCA. Establish the status of each clause into the following categories:
   a) Clause is administrative information only **(Noted)**.
   b) Clause is or is not relevant to the proposed work **(Applicable or Not Applicable)**.
   c) The proposed work complies with the requirements of the clause **(Complies)**.
   d) Compliance with the requirements of the clause is unable to be determined from the documentation provided **(Compliance Readily Achievable)**. A recommendation in the "Comments" column will indicate what is required to achieve compliance. The design and construction teams are responsible to ensure compliance is achieved.
   e) Compliance with the requirements of the clause is unable to be determined from the documentation provided. Additional details or relevant information required to verify compliance (**Additional Details Required**);
   f) Proposed work does not comply with the requirements of the clause **(Does Not Comply)**. An indication will be given in the Comments field as to the nature of the issue and whether an alternative solution has been proposed to address the issue.
   g) Proposed work is to be addressed on a performance basis via an Alternative Solution satisfying the relevant Performance Requirements. (**Alternative Solution**).
3) Nominate the status of the design against each BCA requirement.
4) Provide comments against each BCA requirement as appropriate

6. DESCRIPTION OF PROPOSED DEVELOPMENT

The proposed development comprises a eighteen (18) storey student accommodation building with ground floor retail tenancies and dance studio located at 60 – 78 Regent Street, Redfern.

7. ASSESSMENT DATA SUMMARY

The following basic assessment data has been drawn from the provisions of the BCA 2014.

7.1. ASSUMPTIONS

Assumptions made in the preparation of this report are listed below:

1. Nil

7.2. INTERPRETATIONS

A number of issues within the BCA are recognised to be interpretive in nature. Where these issues are encountered, interpretations are made that are consistent with Standard Industry Practise and/or Steve Watson & Partners policy formulated in regard of each issue.

1. Each individual bedroom has been classified as a sole-occupancy unit for the purposes of the BCA.

7.3. BUILDING CHARACTERISTICS

The following assessment data has been drawn from the provisions of the BCA.

7.3.1. Classification

The significant spaces in the proposed design have been classified in accordance with the requirements of Clause A3.2 of the BCA and are summarised in the table below:

Floor	*Space*	*Classification*
Basement	Ancillary services	3
Ground	Student accommodation lobby and back of house	3
	Retail	6
	Dance studio	9b
Mezzanine	Ancillary store to student accommodation	3
Levels 1 to 17	Student accommodation	3

7.3.2. Summary of construction determination

The type of construction required for the proposed design is summarised in the table below. Refer to appendix B for further detailed assessment data on the proposed development.

Classification	3, 6 & 9b
Number of storeys contained	20
Rise in storeys	19
Type of construction required	A
Effective height	53.43m (Level 17 RL 82.8) – (Ground floor lowest RL 27.37)

8. ISSUES REQUIRING RESOLUTION

8.1. ITEMS REQUIRING ADDITIONAL DETAILS OR DOCUMENTATION

The following items have been identified which require further details or documentation to be provided to ensure compliance is achieved before issuing the Construction Certificate.

Item	DTS Clause	Description	Requirement to Satisfy BCA
1.	B1.6	A Class 3 building in a flood hazard area must comply with the ABCB Standard for Construction of Buildings in Flood Hazard Areas.	Confirmation will be required as to whether the building is located within a flood hazard area.
2.	D1.4	Access to and from the courtyard is to be shown so as to assess travel distances from this area.	Amended plans to be provided to undertake this assessment.
3.	D2.21	The operation of latch provisions will also apply to the security gates located at the three ends of the laneways.	Details will be required to be provided prior to the issue of the Construction Certificate.

Item	DTS Clause	Description	Requirement to Satisfy BCA
4.	D2.24	Window openings must be provided with protection if the floor below the window is 2m or more above the surface beneath in the bedrooms of Class 2 buildings. The openable portion of the window must be protected with a) a device to restrict the window opening or b) a screen with secure fittings A device or screen required must: - not permit a 125mm sphere to pass through the window opening or screen; and - resist an outward horizontal action of 250N against the window restrained by a device or screen protecting the opening and have a child resistant release mechanism if the screen or device is able to be removed, unlocked or overridden.	Details of compliance will be required to be provided on plans for Construction Certificate.
5.	E1.3	Details hydraulic plans identifying the locations of all fire hydrants and the booster assembly are to be provided for review. The hydraulic engineer must ensure that compliant coverage is provided to all areas of the building from the internal hydrants and must provide design certification to accompany the drawings certifying the design complies with Clause E1.3 of the BCA and AS2419.1 – 2005 (noting any non-compliances which are to be addressed as an Alternative Solution). Note 1: Full coverage may not be provided from hydrants in the stairs alone. Note 2: Hydrant hose must extend at least 1m into rooms to be counted for coverage.	Hydraulic plans showing details of the fire hydrant system will be required prior to the Construction Certificate.
6.	E1.3	The fire brigade booster assembly is required to be separated from the building by construction with a fire resistance rating of not less than FRL 90/90/90 for a distance of not less than 2m each side of and 3m above the upper hose connection in the booster assembly.	Hydraulic details of the fire brigade booster will required to be provided to compliance with the fire rated shielding requirements above. Given the current dimensions of the nominated area for the booster it is unlikely that compliance will be achieved. This is to be reviewed by the Fire Safety Engineer and addressed as an Alternative Solution if compliance cannot be achieved.

Item	DTS Clause	Description	Requirement to Satisfy BCA
7.	E1.4	Details hydraulic plans identifying the locations of all fire hose reels are to be provided for review within the retail tenancies/dance studio and BOH areas. The hydraulic engineer must ensure that compliant coverage is provided to all areas of the building and must provide design certification to accompany the drawings certifying the design complies with Clause E1.4 of the BCA and AS2441 – 2005. Note 1: Full coverage appears to not be provided from to all areas from the FHR's adjacent the exit stairs alone, i.e intermediate hose reels will be required in various locations. Note 2: The hose must extend at least 1m into rooms to be counted for coverage.	Hydraulic plans showing details of the fire hose reels will be required prior to the Construction Certificate
8.	E1.5	The designing services engineer is to prepare the sprinkler hydrant system design and advise if there are any other aspects of the system which do not fully comply with the requirements of BCA Clause E1.5, BCA Specification E1.5 and AS2118.1-1999. Noting this building has an effective height greater than 50m.	The designing engineer must provide a written outline of any non-compliance and be provided to SWP and the Fire Engineer for review and the possibility to be addressed as an Alternative Solution.
9.	E1.8	As the building has an effective height of greater than 50m a specific fire control room is required to be provided in accordance with clauses 2 to 12 of Specification E1.8.	Details of compliance with clauses 2 to 12 of Specification E1.8 will be required to be provided for the Construction Certificate.
10.	F1.11	The floor of a bathroom in each sole occupancy of a Class 3 portion is to be graded to permit drainage to a floor waste.	Details of compliance will be required to be provided on plans for Construction Certificate.
11.	F2.4	At a bank of toilets where there are one or more toilets in addition to an accessible unisex facility, a sanitary facility compartment suitable for a person with an ambulant disability in accordance with AS1428.1 is required for males and females.	Ambulant facilities for male and females are required to be provided in accordance with AS 1428.1 at the common toilets. Drawings indicating compliance will be required for Construction certificate.
12.	Section J	Assessment of the Energy Efficiency requirements.	Assessment of the requirements of Section J is to be undertaken by the projects Energy Efficiency Consultant and a report provided for review.

8.2. ALTERNATIVE SOLUTIONS PROPOSED / REQUIRED

It is proposed to satisfy the following non-compliances via a performance based alternative solution:

Item	Non-Compliance	DTS Clause	Description	Performance Requirement	Comments
1.	Reduced FRL's – Bounding construction	C1.1, Spec C1.1	Non-loadbearing internal wall between and bounding cluster bedroom sole-occupancy units are not proposed to achieve an FRL of -/60/60.	CP1 & CP2	

Item	Non-Compliance	DTS Clause	Description	Performance Requirement	Comments
2.	Reduced FRL's – Retail portion	C1.1, Spec C1.1	Ground floor Class 6 FRLs of 180 minutes to be reduced to a combination of 90 and 120 minutes.	CP1 & CP2	
3.	Reduced FRL's – Public corridor level 01	C1.1, Spec C1.1	Level 01 podium will not have internal walls bounding the public corridors achieve an FRL of --/60/60. The public corridor is from the cluster to both fire stair exits	CP1 & CP2	
4.	Protection of openings	C3.2 & C3.4	Openings located with 3m of the northern and southern boundaries are proposed to be assessed via a performance based solution.	CP2 & CP8	
5.	Bounding construction doorways	C3.11	Doors to the sole-occupancy cluster bedroom units are not proposed to be provided with self-closing -/60/30 fire doors.	CP2	
6.	Bounding construction doorways	C3.11	Level 01 podium level will have doorways from rooms not within an SOU that open into the public corridor that are not self-closing -/60/30 fire doors.	CP2	
7.	Fire rating of service penetrations	C3.15	As a result of non-loadbearing internal wall between and bounding bedroom cluster sole-occupancy units not proposed to achieve an FRL of -/60/60, service penetrations through these wall are not proposed to be protected in accordance with C3.15.	CP2	
8.	Number of exits provided	D1.2	The following areas will have access to a single exit in lieu of the required minimum of 2 exits:- • Basement level; • Certain retail tenancies and the dance studio on ground floor; • Mezzanine level.	DP4 & EP2.2	Triggers Fire & Rescue NSW referral
9.	Exit travel distances (SOU's)	D1.4	Exit travel distances to a point of choice of 2 exits from bedroom SOU's exceeds 6m as follows: • Up to 13m on levels 6 to 17; • Up to 10m on levels 2 to 5. • Up to 19m from level 01.	DP4 & EP2.2	Triggers Fire & Rescue NSW referral

Item	Non-Compliance	DTS Clause	Description	Performance Requirement	Comments
10.	Exit travel distances (Non SOU's)	D1.4	Exit travel distances from point not within an SOU to an exit or point of choice between exit exceeds 20m as follows: • Up to 31m from kitchen within cluster on Level 01. • Up to 35m from Store room on mezzanine level	DP4 & EP2.2	Triggers Fire & Rescue NSW referral
11.	Path of travel from discharge of fire stairs	D1.7	Path of travel from discharge of fire stair passing within 6m of the external wall of the buildings is not to be protected in accordance with the requirements D1.7 and C3.4.	DP4, DP5 & EP2.2	Triggers Fire & Rescue NSW referral
12.	Number of accessible sole-occupancy units	D3.1	Based the building provided 370 sole-occupancy units a minimum of 15 accessible sole-occupancy units are required to be provided. The plans indicate a total of 5 accessible sole-occupancy units which is proposed to be performance assessed.	DP1	
13.	Fire brigade booster assembly	E1.3 & AS2419.1 - 2005	The location of the fire brigade booster assembly has been nominated on Regent Street façade. Due main entrance to the building (Iglu Lobby) being located down the private laneway the position of the proposed fire brigade booster assembly is considered not within sight of the main entrance. *Note: Radiant heat protection of fire brigade booster assembly most likely will require performance justification. To be confirmed.*	EP1.3	Triggers Fire & Rescue NSW referral
14.	Sprinkler alarm valve room	E1.5	The sprinkler alarm valves are required to be located in a room which has direct egress to a road or open space. The sprinkler alarm valves are located in a room accessed from basement level via the fire stair and corridor which is to be performance assessed. **NOTE: Hydraulic consultant to advise if specific sprinkler valves room is required given a combined hydrant/sprinkler system (AS2118.6) is proposed with sprinkler control assemblies within the fire stairs.**	EP1.4	Triggers Fire & Rescue NSW referral

Item	Non-Compliance	DTS Clause	Description	Performance Requirement	Comments
15.	Fire control room – level change	E1.8	The fire control room must have egress to road or open space which does not involve a change in level of more than 300mm. Egress from the fire control room to Regent Street involves a change in level of 350m (RL29.75 to RL30.10).	EP1.6	Triggers Fire & Rescue NSW referral
16.	Fire control room – front entrance access	E1.8	The fire control room is required to be accessible via two paths of travel- a) one from the front entrance of the building; and b) one direct from a public place or fire-isolated passageway which leads to a public place and has a door with an FRL of not less than -/120/30. The 'front entrance' doorway is accessed from the internal laneway which necessitates travelling through a security gate, down the laneway and under the building to reach the access to door to the fire control room. This has been determined as not being technically at the front entrance of building accessible directly from Regent Street.	EP1.6	Triggers Fire & Rescue NSW referral
17.	Smoke Hazard Management - Automatic air pressurisation system	E2.2	Automatic air pressurisation is not proposed to be provided to the fire isolated exits. Performance based smoke lobbies are proposed to be provided in lieu of the automatic air pressurisation.	EP2.2	Triggers Fire & Rescue NSW referral
18.	Directional exit signage	E4.6	Directional exit signage is proposed to be omitted from within the student accommodation cluster public corridors.	EP4.2	
19.	Sound insulation rating of walls	F5.5	Individual bedrooms SOU's are not proposed to be provided with dts sound insulation ratings.	FP5.2 & FP5.3	

9. ISSUES TO BE RESOLVED PRIOR TO CONSTRUCTION

The following identifies certain items which are not detailed or specified within the design documentation which may become an issue if not designed in accordance with the requirements of the BCA. The items below are those items which we have experienced to be regular issues only. Not all unspecified items have been noted below:

Item	Clause	Description	Requirement to Satisfy BCA
1.	C3.15	Openings for services penetrations (mixed metal and PVC plumbing systems)	Metal pipes are allowed to penetrate fire-resisting construction on the basis that a wholly metal pipe system is reasonably resistant to fire and smoke. However, when metal pipework penetrates a floor and PVC is used within the same pipe system it does not comply. When PVC is used it should penetrate the slab and should be protected by a fire collar.
2.	D2.15	Thresholds	External doorway thresholds are generally required to be less than 190 mm and even less for health or aged care facilities. Often the door threshold signals the limit of design responsibility (or attention to design) so that the threshold height is omitted from the design.
3.	D2.16	Balustrades or other barriers (No climbable members for floors 4m above floor beneath)	Balustrades located more than 4 m above the ground below must not be climbable by children. Incorrect balustrade design can result in significant rectification works given that there are often large quantities of balustrading all constructed to the same detail (particularly in residential projects.) The interpretation of "must not facilitate climbing" as required under BCA clause D2.16(h) is the issue that can lead to significant problems as it is not adequately specified under the BCA. The non-climbable zone is between 150 mm and 760 mm from the floor. We therefore recommend that the Pool Fence Code AS1926 be consulted for clarification. The key is that any ledge of greater than 10 mm in width can be held to facilitate climbing if the angle to horizontal is less that 60°. Also, acceptable construction tolerances for building elements means that a complying design detail can easily be constructed so as not to comply. The 10 mm limit is not able to be extended to allow for tolerances. The following items can lead inadvertently to a defective detail: • Split balustrade elements (ie brick hob to 500 mm and then 500 mm clear glazing panel above) will almost certainly create a climbable ledge once built • End fixing points can create footholds where balustrade infill elements are fixed to posts • Not allowing enough height for tiles to be built up to create falls so that the dimensions from the finished floor do not comply • Taps and other fittings fixed to the balustrade • Other climbable points located close to but not actually on the balustrade
4.	D2.17	Handrails	Handrails are often omitted from the design of ramps and stairs. Even as little as two steps is counted as a stairway and as such requires a handrail.
5.	D2.21	Operation of latch (door hardware)	BCA Clause D2.21 requires certain types of latches to all doors in the path of egress. This effectively means that every single door in commercial and industrial buildings needs to comply. The problem is that knob type handles do not and cannot comply. Deadlocks do not comply.
6.	D2.24	Protection of openable windows	A window in a bedroom of a class 2, 3 or 4 part of a building or a window in a Class 9b early childhood centre must be protected if the window is 2m or more above the surface beneath and the window opening These openable windows must be protected with a device to restrict the window opening size or a screen with secure fittings. The device or screen must not permit a 125mm sphere to pass through the window opening or screen and resist an outward horizontal action of 250 N.

Item	Clause	Description	Requirement to Satisfy BCA
7.	D3.2	General building access requirements (Door widths)	The Access standard AS1428.1 has recently been amended to require a minimum of 850 mm wide door way openings. The problem is that a standard 870 mm door leaf is usually trimmed down and fitted to jambs with 10 mm reveals. That is, openings for standard 870 mm doors can never comply.
8.	D3.2	General building access requirements (Raised computer floors)	Often computer floors will be installed only in the computer room to a height of up to 300 mm above the rest of the floor. This creates the following conflicts: • Disabled access – a 1:14 ramp should be provided • Thresholds – attention should be paid to clause D2.15 of the BCA as steps and ramps are not permitted in or leading to doorways without a landing. Stair tread dimensions- do not design a floor height that means the tread dimensions cannot be met (115 mm-190 mm is permissible. A height of between 190-230 mm cannot be designed for)
9.	D3.3	Parts of buildings to be accessible (handrails)	Low rise retail, industrial and commercial premises not exceeding 3 storeys with the upper storeys less than 200m^2 do not require lifts but are required to have "accessible" stairs. This means that there are special requirements for handrails to the internal stairs including • Handrails to both sides of the stair • Handrails must extend 300 mm beyond the stair • See clause 9 of AS1428.1 for further details.
10.	D3.8	Tactile indicators	BCA clause D3.8 requires tactile ground indicators to be installed in certain locations. The "tactile" must be 600 mm in depth and extend for the width of the stair, ramp, kerb ramp or other feature. Tactiles are often seen as a last minute item. However, they are often required to be set into concrete or terrazzo which can lead to costly and time-consuming retrofit activity.
11.	E1.3	Hydrants (Walls adjacent to external hydrants)	External Hydrants are required to be located 10 m from a building. Where this is not proposed, the external wall of the building is required to achieve a 90/90/90 fire rating for 2 m on each side from the centre of the hydrant outlet and 3 m above the hydrant (or to the roof line if this is lower.) Note that tilt-up concrete panels supported by steel portal frames will not achieve the fire rating unless the supporting structure is also fire-rated.
12.	E1.3	Hydrant booster	The Fire brigade booster assembly is to be located where it is readily accessible to firefighters. A hardstand area is to be located within 8m of the booster so it is operable by fire brigade pumping appliances. The booster must be within sight of the main entrance to the building. If within, or affixed to, the external wall of the building, the booster must be separated from the building by a construction with a fire resistance rating of not less than FRL 90/90/90 for a distance of not less than 2 m each side of and 3 m above the upper hose connections in the booster assembly If remote from the building, the booster must be adjacent to the principal vehicular access to the site and located not less than 10 m from the external wall of any building served.
13.	F2.4	Facilities for people with disabilities	Toilets for people with disabilities are required to comply with AS1428.1 in all respects. The standard regulates the locations, dimensions and details associated with taps, pans, grab rails, roll holders, basins, soap dishes and floor wastes. In fact, almost every element is regulated with respect to heights, offsets from walls, height beneath etc.

10. STATUTORY FIRE SAFETY MEASURES

The Statutory Fire Safety Measures listed in Appendix F of this report are required to be certified upon completion of the project and prior to occupation of the building by the owner of the building, by issuing a Final Fire Safety Certificate under the Act.

The owner is also required under the Act to certify each of the Fire Safety Measures annually by issuing a Fire Safety Statement.

11. CONCLUSIONS

The design is capable of complying with the requirements of the relevant sections of the BCA subject to resolution of the identified areas of non-compliance and compliance with the recommendations provided within the report.

12. APPENDIX A – DETAILED ASSESSMENT DATA

12.1. FLOOR AREAS AND VOLUMES

Floor	*Approx Area (m^2)*	*Approx Volume (m^3)*	*Comment*
Ground	1264	7584	

12.2. NOMINATED FIRE COMPARTMENTS

The BCA does not require Class 3 portion to be considered.

These are indicated in the table above for the Class 6 & 9b portion.

13. APPENDIX B – CLAUSE BY CLAUSE ASSESSMENT

13.1. SECTION B – STRUCTURE

Clause	Description	Status	Comments
B1.1	Resistance to actions	Compliance Readily Achievable	The resistance of a building or structure must be greater than the most critical action effect resulting from different combinations of actions. Certification from a qualified structural engineer to be provided.
B1.2	Determination of individual actions	Compliance Readily Achievable	The magnitude of individual actions must be determined in accordance with Clause B1.2 of the BCA. Certification from a qualified structural engineer to be provided.
B1.3	-	-	No provisions.
B1.4	Determination of structural resistance of materials and forms of construction	Compliance Readily Achievable	The structural resistance of materials and forms of construction must be determined in accordance with the relevant Australian Standards in accordance with Clause B1.4 of the BCA. Certification from a qualified structural engineer to be provided.
B1.5	Structural Software	Compliance Readily Achievable	Structural software used in computer aided design of a building or structure that uses design criteria based on DTS provisions of the BCA must comply with the ABCB Protocol for Structural Software. Certification from a qualified structural engineer to be provided.
B1.6	Construction of buildings in flood hazard areas	Additional Details Required	A Class 3 building in a flood hazard area must comply with the ABCB Standard for Construction of Buildings in Flood Hazard Areas. Confirmation will be required as to whether the building is located within a flood hazard area.
		Additional Details Required	The finished floor level of habitable rooms must be above the Flood Hazard Level (FHL) The finished floor level of enclosed non-habitable rooms must be no more than 1.0 m below the Defined Flood Level (DFL). Any enclosure below the FHL must have openings to allow for automatic entry and exit of floodwater for all floods up to the FHL. The openings must meet the following criteria- (i) doors and windows must not be counted as openings but openings can be installed in doors and windows; and (ii) there must be a minimum of two openings on different sides of each enclosed area; and (iii) the total net area of all openings must be at least 1% of the enclosed area; and (iv) openings must permit a 75 mm sphere to pass through; and (v) any opening covers must not impede the flow of water. Egress from a balcony, verandah, deck, door, window or the like must be available to allow a person in the building to be rescued by emergency services personnel, if rescue

Clause	Description	Status	Comments
			during a flood event up to the DFE is required

13.2. SECTION C - FIRE RESISTANCE

Clause	Description	Status	Comments
C1.1	Type of construction required	Compliance Readily Achievable	The building is to be erected in Type fire resisting construction in accordance with Specification C1.1 of the BCA. Refer to Appendix E for the relevant fire resisting requirements.
Spec C1.1	Fire Resisting Construction	Compliance Readily Achievable	Where a part of a building required to have an FRL depends upon direct vertical or lateral support from another part to maintain its FRL, that supporting part must have an FRL and be non-combustible as required by Clause 2.2 of the Specification. Certain lintels must have the FRL require for the part of the building in which they are situated in. A combustible material may be used as a finish or lining to a wall or roof, or in a sign, sunscreen or blind, awning, or other attachment to a building element which has the required FRL if the material is exempt under Clause C1.10 or complies with the fire hazard properties prescribed in Specification C1.10. It must not be located near or directly above a required exit and must not constitute an undue risk of fire spread via the façade. Certain columns, structures on roofs, and balconies and verandahs are provided with concessions. Shafts required to have an FRL must be enclosed at the top and bottom by construction having an FRL not less than that required for the walls of a non- loadbearing shaft in the same building. The top of a shaft, other than one enclosing a fire-isolated stairway or ramp, is exempt if it extends beyond the roof covering. The bottom of a shaft is exempt if it is non-combustible and laid directly on the ground. **Type A Construction** A loadbearing internal wall and a loadbearing fire wall (including those that are part of a loadbearing shaft) must be of concrete or masonry. Generally, external walls, common walls, internal walls required to have an FRL and shaft walls must be of non-combustible construction. The roof is not required to have an FRL if its covering is non-combustible, as the building is proposed to be sprinkler protected throughout and also due to being a class 3 building.
		Alternative Solution	Non-loadbearing internal wall between and bounding bedroom cluster sole-occupancy units are not proposed to achieve an FRL of -/60/60. **This is to be reviewed by the Fire Safety Engineer and addressed as an Alternative Solution.**
		Alternative Solution	Ground floor Class 6 FRLs of 180 minutes to be reduced to a combination of 90 and 120 minutes.

Clause	Description	Status	Comments
			This is to be reviewed by the Fire Safety Engineer and addressed as an Alternative Solution.
		Alternative Solution	Level 01 podium will not have internal walls bounding the public corridors achieve an FRL of --/60/60. The public corridor is from the cluster to both fire stair exits. **This is to be reviewed by the Fire Safety Engineer and addressed as an Alternative Solution.**
C1.2	Calculation of rise in storeys	Noted	Refer to Section 7.3.2 of this report.
C1.3	Buildings of multiple classification	Noted	The building is required to be constructed of Type A fire resisting construction.
C1.4	Mixed types of construction	Not Applicable	The building is proposed to be Type A construction throughout.
C1.5	Two storey Class 2, 3 or 9c buildings	Not Applicable	
C1.6	Class 4 parts of buildings	Not Applicable	
C1.7	Open spectator stands and indoor sports stadiums	Not Applicable	
C1.8	Lightweight construction	Compliance Readily Achievable	Lightweight construction used in a wall system must comply with Specification C1.8. Lightweight construction used as a fire-resisting covering of a steel column or the like, and where the covering is not in continuous contact with the column must have the voids filled to a height of not less than 1.2m above the floor and where the column is liable to be damaged must be protected by steel or other suitable material.
C1.9	-	-	No provisions.
C1.10	Fire hazard properties (NSW additional requirements for Entertainment Venues)	Compliance Readily Achievable	The fire hazard properties of linings materials and assemblies must comply with Specification C1.10 and NSW Specification C1.10.
C1.11	Performance of external walls in fire	Compliance Readily Achievable	Concrete external walls that could collapse as complete panels are to be designed in accordance with Specification C1.11 to minimise the likelihood of external walls collapsing outwards in the event of a fire and separating from supporting members.
C1.12	Non-combustible materials	Noted	Gypsum, metal and laminated non-combustible materials containing combustible components are deemed to be non-combustible.
C2.1	Compartmentation and Separation - Application of Part	Applicable	Clauses C2.2, C2.3 and C2.4 do not apply to a sprinkler protected carpark, open deck carpark or open spectator stand.
C2.2	General floor area limitations	Complies	The ground floor Class 6 fire compartments is within Type A maximum floor area and volume limitations.
C2.3	Large isolated buildings	Not Applicable	The building is not a large isolated building.

Clause	Description	Status	Comments
C2.4	Requirements for open spaces and vehicular access	Not Applicable	The building is not a large isolated building.
C2.5	Class 9a and 9c buildings (NSW modified requirements for Class 9c Buildings)	Not Applicable	The building does not contain Class 9a or 9c portions.
C2.6	Vertical separation of openings in external walls	Not Applicable	The building is required to be sprinkler protected.
C2.7	Separation by fire walls	Not Applicable	Fire walls are not proposed or required.
C2.8	Separation of classifications in the same storey	Compliance Readily Achievable	As the building has parts of different classifications located alongside one another in the same storey each building element must have the higher FRL prescribed in Specification C1.1 of the BCA or the parts must be separated by a fire wall. Note: Class 6 ground floor portion to be reduced to 90 minutes via a performance based assessment.
C2.9	Separation of classifications in different storeys	Compliance Readily Achievable	As different classifications are situated one above the other in adjoining storeys they must be separated in accordance with the DTS provisions of the BCA. Note: Class 6 ground floor portion to be reduced to 90 minutes via a performance based assessment
C2.10	Separation of lift shafts	Compliance Readily Achievable	Both lift shaft are required to be emergency lifts therefore must be contained in a shaft having an FRL of not less than 120/120/120 Openings for lift landing doors and services must be protected in accordance with the DTS provisions of Part C3 of the BCA.
C2.11	Stairways and lifts in one shaft	Complies	
C2.12	Separation of equipment	Compliance Readily Achievable	Equipment that comprises lift motors, lift control panels, central smoke control plant, boilers or batteries must be separated from the remainder of the building by construction with an FRL as required under Specification C1.1 but not less than 120/120/120.
C2.13	Electricity supply system	Compliance Readily Achievable	Electrical substations and main switchboards sustaining emergency equipment operating in the emergency mode must be separated from the remainder of the building by construction with an FRL not less than 120/120/120. All switchboards and electrical conductors are to comply with the requirements of Clause C2.13.
C2.14	Public corridors in Class 2 and 3 buildings	Complies	Public corridors are less than 40m in length therefore do not require smoke division.
C3.1	Protection of openings - Application of Part	Applicable	Concessions and definition of certain openings.

Clause	Description	Status	Comments
C3.2	Protection of openings in external walls	Alternative Solution	Openings within 3m of an allotment boundary shall be protected by sprinklers, fire doors, fire windows etc, in accordance with Clause C3.4 of the BCA. **Openings located with 3m of the northern and southern boundaries are proposed to be assessed via a performance based solution.** **This is to be reviewed by the Fire Safety Engineer and addressed as an Alternative Solution.**
C3.3	Separation of external walls and associated openings in different fire compartments	Not Applicable	The building does not contain separate fire compartments on the same storey.
C3.4	Acceptable method of protection	Applicable	Window openings that are required to be protected are to be protected by wall wetting sprinklers with windows that are automatic closing or permanently fixed in the closed position, -/60/- fire windows or -/60/60 automatic fire shutters. Doorways are to be protected by wall wetting sprinklers used with doors that are self closing or automatic closing, or -/60/30 self closing or automatic closing fire doors.
C3.5	Doorways in fire walls	Not Applicable	
C3.6	Sliding fire doors	Not Applicable	
C3.7	Protection of doorways in horizontal exits	Not Applicable	
C3.8	Openings in fire isolated exits	Compliance Readily Achievable	-/60/30 self-closing fire doors are required to doorways providing access to fire isolated stairways or alternatively be automatic closing which is initiated by the activation of a smoke detector in accordance with AS 1670 installed not more than 1.5m from the approach side of the doorway.
C3.9	Service penetrations in fire isolated exits	Compliance Readily Achievable	Service penetrations other than electrical wiring for essential service installations, pressurisation ducts with an FRL of -/120/60, or water pipes for fire services are not permissible.
C3.10	Openings in fire isolated lift shafts	Compliance Readily Achievable	Openings in lift shafts are to be protected by -/60/- fire doors complying with AS1735.11. Lift indicator panels are to be backed by construction having an FRL of not less than -/60/60 if it exceeds 35,000mm2 (175 X 200 mm).
C3.11	Bounding construction: Class 2, 3, 4 and 9 buildings (NSW Requirements for Class 3 changed and additional requirements for Class 9 Entertainment Venue)	Alternative Solution	Doorways which open into a public corridor, public lobby or the like are to have self-closing -/60/30 fire doors fitted. **Doors to the sole-occupancy cluster bedroom units are not proposed to be provided with self-closing -/60/30 fire doors.** **This is to be reviewed by the Fire Safety Engineer and addressed as an Alternative Solution.**

Clause	Description	Status	Comments
		Alternative Solution	Level 01 podium level will have doorways from rooms not within an SOU that open into the public corridor that are not self-closing -/60/30 fire doors.. **This is to be reviewed by the Fire Safety Engineer and addressed as an Alternative Solution.**
C3.12	Openings in floors for services	Compliance Readily Achievable	Services passing through floors are to be placed within fire resisting shafts or in accordance with Clause C3.15. Loadbearing and non-loadbearing shafts are required to have an FRL as specified in Table 3 of Specification C1.1
C3.13	Openings in shafts	Compliance Readily Achievable	In a building of Type A construction, an opening in a wall providing access to a ventilating, pipe, garbage, or other service shaft must be protected by: • If it is a sanitary compartment - a door or panel which together with its frame, is non combustible or has an FRL of not less than -/30/30, or • A self closing -/60/30 fire door or hopper, or • An access panel with an FRL of not less than -/60/30, or • If the shaft is a garbage shaft - a door or hopper of non-combustible construction.
C3.14	-	-	No provisions
C3.15	Openings for service installation	Compliance Readily Achievable	Methods and materials used are to be identical to tested prototypes and in accordance with AS4072.1 and AS1530.4, and having achieved the required FRL or resistance to the incipient spread of fire or other specified method.
		Alternative Solution	As a result of non-loadbearing internal wall between and bounding bedroom cluster sole-occupancy units not proposed to achieve an FRL of -/60/60, service penetrations through these wall are not proposed to be protected in accordance with C3.15. **This is to be reviewed by the Fire Safety Engineer and addressed as an Alternative Solution.**
C3.16	Construction Joints	Compliance Readily Achievable	Construction joints are to be installed in accordance with a tested prototype in accordance with AS1530.4.
C3.17	Columns protected with lightweight construction	Compliance Readily Achievable	Columns must be protected in accordance with the identical tested prototype.

13.3. SECTION D – ACCESS AND EGRESS

Clause	Description	Status	Comments
D1.1	Application of Part	Applicable	Does not apply to the internal parts of a sole occupancy unit in a Class 2, 3 or 4 building.

Clause	Description	Status	Comments
D1.2	Number of exits required (NSW Extra Entertainment Venue subclause)	Alternative Solution	The building is greater than 25m in effective height and therefore requires a minimum of 2 exit from each storey. The following areas will have access to a single exit:- • Basement level; • Certain retail tenancies and the dance studio on ground floor; • Mezzanine level. **This is to be reviewed by the Fire Safety Engineer and addressed as an Alternative Solution.**
D1.3	When fire isolated exits are required	Complies	Exits are nominated are fire-isolated exits.
D1.4	Exit travel distances	Alternative Solution	Exit travel distances to a point of choice of 2 exits from bedroom SOU's exceeds 6m as follows: • Up to 13m on levels 6 to 17; • Up to 10m on levels 2 to 5. • Up to 19m from level 01. Exit travel distances from point not within an SOU to an exit or point of choice between exit exceeds 20m as follows: • Up to 31m from kitchen within cluster on Level 01. • Up to 35m from Store room on mezzanine level. **This is to be reviewed by the Fire Safety Engineer and addressed as an Alternative Solution.**
		Additional Details Required	Access to and from the courtyard is to be shown so as to assess travel distances from this area. Amended plans to be provided to undertake this assessment.
D1.5	Distance between alternative exits	Complies	Distances between alternative exits complies.
D1.6	Dimensions of exits (NSW Differing requirements for Entertainment Venue)	Compliance Readily Achievable	In a required exit or path of travel, the unobstructed height throughout must be not less than 2m, except the unobstructed height of any doorway must be reduced to not less than 1980mm. The unobstructed width of each exit or path of travel to an exit except a doorway must not be less than 1m Note: Any retail tenancy that will accommodate from than 100 persons will require additional exits than 1m to accommodate for increased populations.
D1.7	Travel via fire-isolated exits	Alternative Solution	The two fire-isolated stairways discharge into the private laneway which necessitate passing within 6m of the external wall of the building to read the public roadway. Deemed-to-Satisfy requirements the external wall would require to have an FRL of 60/60/60 and openings protected internally in accordance with C3.4 for a height of 3m. The path of travel is proposed to be addressed as part of a performance based assessment. **This is to be reviewed by the Fire Safety Engineer and addressed as an Alternative Solution.**

Clause	Description	Status	Comments
D1.8	External stairways in lieu of fire-isolated exits	Not Applicable	
D1.9	Travel by non-fire-isolated stairways or ramps	Not Applicable	No non-fire-isolated stairways have been utilised as an exit.
D1.10	Discharge from exits (NSW Additional requirements for Entertainment Venues)	Compliance Readily Achievable	Suitable barriers such as bollards are to be provided to prevent the blockage of exits by vehicles, etc. An unobstructed path of travel to the road must be provided with a width not less than the width of the required exit. Where a required exit discharges to open space that is at a difference level than the public road to which it is connected, the path of travel to the road must be by: • a ramp having a gradient not steeper than 1:8 at any part, or no steeper than 1:14 if also required for accessibility provisions; or • a complying stairway.
D1.11	Horizontal exits	Not Applicable	
D1.12	Non-required stairs, ramps or escalators	Not Applicable	
D1.13	Number of persons accommodated (NSW Differing requirements for Entertainment Venues)	Noted	
D1.14	Measurement of distance	Noted	
D1.15	Method of measurement	Noted	
D1.16	Plant rooms and lift machine rooms: Concession	Applicable	
D1.17	Access to lift pits	Compliance Readily Achievable	Access to lift pits where the pit depth is not more than 3m must be through the lowest landing doors. Lift pits with a depth of more than 3m must have an access doorway that is level with the pit floor and not be less than 600mm wide by 1980mm high. Access to the doorway must be by a stairway complying with AS 1657. Doors must be horizontal sliding or outward opening and be self-closing and self-locking from the outside and be provided with signage on the landing side in letters not less than 35mm high stating: "**DANGER LIFTWELL- ENTRY OF UNAUTHORISED PERSON PROHIBITED – KEEP CLEAR AT ALL TIMES**"
D2.1	Construction of exits - Application of Part (NSW Differing requirements for Entertainment Venue)	Applicable	
D2.2	Fire isolated stairs or ramps	Compliance Readily Achievable	Stairs or ramps within fire resisting shafts are to be constructed of non-combustible materials. The construction of the stairs is not to cause structural damage or impair the fire resistance of the shaft if there is local failure.
D2.3	Non-fire-isolated stairways and ramps	Compliance Readily Achievable	Required stairs that are not required to be within a fire-resting shaft are to be constructed of concrete, steel, or timber of specified minimum dimensions.

Clause	Description	Status	Comments
D2.4	Separation of rising and descending stair flights	Compliance Readily Achievable	Rising and descending fire isolated stairways must not be directly connected. Any construction that separates or is common to the rising and descending flights must be non-combustible and be smoke proof in accordance with Clause 2 of Specification C2.5.
D2.5	Open access ramps and balconies	Not Applicable	
D2.6	Smoke lobbies	Not Applicable	
D2.7	Installations in exits and paths of travel	Compliance Readily Achievable	Electrical boards and the like are to be located within and enclosed by non-combustible construction or have a fire-protective covering with the doorway suitably sealed against smoke spreading from the enclosure. Generally the services or equipment may be enclosed in non-combustible construction such as MDF with a solid core door. Electrical wiring may only be installed in a fire-isolated exit if the wiring is associated with: • a lighting, detection, or pressurisation system serving the exit, or • a security, surveillance or management system serving the exit, or • intercommunication system or audible or visual alarm system in accordance with Clause D2.22 or • the monitoring or hydrant or sprinkler isolation valves.
D2.8	Enclosure of space under stairs and ramps	Complies	Enclosures under fire stairs are not proposed.
D2.9	Width of stairways	Not Applicable	A stairway more than 2m in width is only counted as having a width of 2m unless it is divided by a continuous handrail or balustrade between landings and each division is less than 2m wide.
D2.10	Pedestrian ramps	Compliance Readily Achievable	Ramps serving as required exit must have a gradient not less steeper than 1:8. If the ramp is required for disabled access under Part D3 it must comply with AS1428.1. The surface of the ramp must have a non-slip finish.
D2.11	Fire-isolated passageways	Compliance Readily Achievable	Fire isolated passageways are to have an FRL equivalent to the fire resisting stair shaft as specified in Specification C1.1.

Clause	Description	Status	Comments
D2.12	Roof as open space	Not Applicable	Exits discharge to natural ground.
D2.13	Goings and risers (NSW Differing requirements for Entertainment Venue)	Compliance Readily Achievable	Stairs are to have risers measuring between 115-190mm and goings between 250-355mm. Goings and Risers are to satisfy the equation of 2R+G=700(max) and 550(min). Goings and risers are to be consistent throughout in one flight. Under the requirements of AS1428.1-2009 open riser are not permitted. All treads to be fitted with non-slip finish or non-skid strips. Treads must be of solid construction if the stairway is more than 10m high or connects more than 3 storeys. Treads are required to have a surface or nosing strip with a slip-resistance classification not less than listed in Table D2.14 when tested in accordance with AS 4586.
D2.14	Landings	Compliance Readily Achievable	Landings must comply with the requirements of Clause D2.14 of the BCA. Landings must be not less than 750mm long and have a non-slip finish throughout or an adequate non-skid strip near the edge of the landing where it leads to a flight below. Landings are required to have a surface or nosing strip with a slip-resistance classification not less than listed in Table D2.14 when tested in accordance with AS 4586.
D2.15	Thresholds (NSW Differing requirements for Entertainment Venue)	Compliance Readily Achievable	A 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: • In a building required to be accessible the door opens to a road or open space and is provided with a threshold ramp or step ramp in accordance with AS1428.1. • In other cases the door opens to a road or open space, external stair landing or external balcony, and the doorsill is not more than 190mm above the finished surface of the ground balcony or the like to which the door opens.
D2.16	Balustrades (NSW Differing requirements for Entertainment Venue)	Compliance Readily Achievable	Balustrades complying with Deemed-to-Satisfy provisions of the BCA are to be provided to where the level of the surface below is 1m or more. Where the level of the surface below is 4m or more, a balustrade or other barrier must not facilitate climbing of horizontal elements between 150mm and 760mm above the floor. Any opening in the balustrade must not permit a 125mm sphere to pass through the balusters. Wire balustrades must be constructed to comply with Clause D2.16(i) and Tables D2.16a and D2.16b.

Clause	Description	Status	Comments
D2.17	Handrails	Compliance Readily Achievable	Handrails are to be provided to at least one side of stair flights and located not less than 865mm above the nosings of stair treads and the floor surfaces of landings. Handrails are required to be continuous between stair flights landings and have no obstruction on or above them that will tend to break a hand-hold. Within the fire stairs serving an area required to be accessible the handrails must be accessible, designed and constructed to comply with clause 12 of AS 1428.1.
D2.18	Fixed platforms walkways, stairways, and ladders	Compliance Readily Achievable	Fixed platforms, walkways, stairways, ladders, landings, handrails, balustrades and any tread or riser in a plant room, lift motor room or the like is to comply with AS1657.
D2.19	Doorways and doors (NSW Additional requirements for Entertainment Venue)	Compliance Readily Achievable	Sliding doors serving as exit doors can only be provided if the door leads directly to a road or open space and the door is able to be opened manually under a force of not more than 110 N. Any power-operated doors must be able to be opened manually under a force of not more than 110N if there is a malfunction or failure of the power source and leads to an open space it must automatically open if there is a power failure to the door or on the activation of a fire or smoke alarm anywhere in the fire compartment served by the door.
D2.20	Swinging doors	Complies	Exit doors swing in the direction of egress.
D2.21	Operation of latch (NSW Additional requirements for Entertainment Venue)	Compliance Readily Achievable	The latch of a door in a required exit, forming part of a required exit or in the path of travel is to be readily openable without a key from the side of that faces a person seeking egress. It is to have a single downward action and be located between 900mm and 1.1m from the floor. This means lever handles are generally required. If serving an area required to be accessible the hardware must be such that the hand of a person who cannot grip will not slip from the handle during the operation of the latch.
		Additional Details Required	The operation of latch provisions will also apply to the security gates located at the three ends of the laneways. Details will be required to be provided prior to the issue of the Construction Certificate.
D2.22	Re-entry fire-isolated exits	Compliance Readily Achievable	The two fire-isolated stairways serve storeys above an effective height of 25m. As such the doors of these two fire isolated exits must not be locked from the inside of a fire isolated exit, unless all doors are automatically unlocked by a failsafe device by activation of a fire alarm. Signage or an intercommunication system is to be additionally provided to the doors. Note: Iglu have advised fire stairs will not be locked from the inside.

Clause	Description	Status	Comments
D2.23	Signs on doors (NSW Additional requirements for Entertainment Venue)	Compliance Readily Achievable	Fire doors providing direct access into fire isolated exits and required smoke doors are required to have signage on the side of the door that faces the person seeking egress. If the doors are held up by a hold open device the signage is to be provide on the wall adjacent the doorway or on both sides of the door. Horizontal exits, smoke doors that swing in both directions and doors leading from a fire isolated exit to a road or open space must have signage on each side of the door. An automatic door held open by an automatic hold-open device: **FIRE SAFETY DOOR DO NOT OBSTRUCT** Or for a self-closing door **FIRE SAFETY DOOR** **DO NOT OBSTRUCT** **DO NOT KEEP OPEN** or for a door discharging from a fire-isolated exit **FIRE SAFETY DOOR DO NOT OBSTRUCT** Under Clause 183 of the Environmental Planning and Assessment Regulation 2000 a notice is to be displayed in a conspicuous location adjacent to a doorway providing access to but not within a fire isolated stairway, passageway or ramp. The words "**OFFENCES RELATING TO FIRE EXITS**" are to be provided in letters at least 8mm high and the remaining words are to be at least 2.5mm high. The notice is to state the following: OFFENCES RELATING TO FIRE EXITS It is an offence under the Environmental Planning and Assessment Act 1979: a) to place anything in or near this fire exit that may obstruct persons moving to and from the exit, or b) interfere with or obstruct the operation of any fire doors, or c) to remove, damage or otherwise interfere with this notice.
D2.24	Protection of openable windows	Additional Details Required	Window openings must be provided with protection if the floor below the window is 2m or more above the surface beneath in the bedrooms of Class 2 buildings. The openable portion of the window must be protected with c) a device to restrict the window opening or d) a screen with secure fittings A device or screen required must: - not permit a 125mm sphere to pass through the window opening or screen; and - resist an outward horizontal action of 250N against the window restrained by a device or screen protecting the opening and have a child resistant release mechanism if the screen or device is able to be removed, unlocked or overridden. **Details of compliance will be required to be provided on plans for Construction Certificate.**

Clause	Description	Status	Comments
NSW D2.101	Doors in path of travel in a Entertainment Venue	Not Applicable	
D3.1	Access for people with disabilities - Application of Part	Applicable	All buildings and parts of buildings as specified under Table D3.1 must be accessible unless exempted under Clause C3.4 Noting assessment of the disabled access provisions of the BCA to be undertaken by the project's Access Consultant. **Access Report to be provided for review prior to issue of the Construction Certificate.**
		Compliance Readily Achievable	For the Class 3 student accommodation access for people with disabilities is required to the entrance doorway of each sole-occupancy unit as well as to and within all rooms or spaces for use in common by the residents. The Class 5 and 9b portions access is required to and within all areas normally used by the occupants.
		Alternative Solution	Based the building provided 370 sole-occupancy units a minimum of 15 accessible sole-occupancy units are required to be provided. The plans indicate a total of 5 accessible sole-occupancy units which is proposed to be performance assessed. **This is to be reviewed by the Access Consultant and addressed as an Alternative Solution.**
D3.2	Access to buildings	Compliance Readily Achievable	Access must be provided to a building from 1. the main points of a pedestrian entry at the allotment boundary, and 2. another accessible building connected by a pedestrian link, and 3. from any accessible carparking space on the allotment. An accessway is required to be provided through the principal pedestrian entrance and through not less than 50% of all pedestrian entrances. In a building with a floor area over 500m^2, a pedestrian entrance which is not accessible must not be located more than 50m from an accessible entrance. If a pedestrian entrance consists of more than 3 doorways then not less than 50% of those doorways must be accessible. **Access Report to be provided for review prior to issue of the Construction Certificate.**

Clause	Description	Status	Comments
D3.3	Parts of buildings to be accessible	Compliance Readily Achievable	Every ramp, except a fire isolated ramp, must comply with Clause 10 if AS 1428.1. Every stairway, except a fire isolated stairway, must comply with Clause 11 of AS 1428.1. A fire isolated stairway must comply with Clause 11(f) and (g) of AS 1428.1. Every passenger lift must comply with Clause E3.6. Accessways must have passing spaces and turning spaces complying with AS 1428.1. A ramp or passenger lift need not be provided to serve a storey or level other than the entrance storey of a class 5, 6, 7b or 8 building containing not more than 3 storeys and with a floor area of each storey, excluding the entrance floor, of not more than 200m^2. Pile height or pile thickness of carpets shall comply with the requirements of this Clause and AS 1428.1. **Access Report to be provided for review prior to issue of the Construction Certificate.**
D3.4	Concessions	Noted	
D3.5	Carparking	Not Applicable	No carparking spaces are provided as part of the development.
D3.6	Signage	Compliance Readily Achievable	Braille and tactile signage complying with Specification D3.6 and incorporating the international symbol of access or deafness in accordance with AS1428.1 must identify every accessible sanitary facility and space with a hearing augmentation system. Every doorway required to be provided with an exit sign under Clause E4.5 is to be provided with braille and tactile signage that states "**EXIT**" and identify the floor level "**LEVEL #**". Signage must be provided within a room containing hearing augmentation identifying the type of hearing augmentation, the area covered in the room and if receivers are being used and where the receivers can be obtained. Signage identifying ambulant accessible sanitary facilities in accordance with AS 1428.1 must be located on the door of the facility. Where the pedestrian entrance is not accessible, directional signage in accordance with AS 1428.1 must be provided to direct a person to the location of the nearest accessible pedestrian entrance. Where a bank of sanitary facilities is not provided with an accessible unisex sanitary facility, directional signage must be placed at the location of the sanitary facilities that are not accessible, to direct a person to the location of the nearest accessible unisex sanitary facility. **Access Report to be provided for review prior to issue of the Construction Certificate.**
D3.7	Hearing augmentation	Not Applicable	

Clause	Description	Status	Comments
D3.8	Tactile indicators	Additional Details Required	Tactile indicators are to be provided to all stairways, ramps and escalators must be provided to warn people who are blind or have a vision impairment that they are approaching: • a stairway, other than a fire-isolated stairway, • an escalator, passenger conveyor or moving walk, • a ramp other than a fire-isolated ramp, step ramp, kerb ramp or swimming pool ramp, or • in the absence of a suitable barrier an overhead: ○ obstruction less than 2 m above floor level, other than a doorway ○ an accessway meeting a vehicular way adjacent to any pedestrian entrance to a building, excluding a pedestrian entrance serving an area referred to in D3.4, if there is no kerb or kerb ramp at that point Tactile ground surface indicators must comply with sections 1 and 2 of AS/NZS 1428.4.1 **Access Report to be provided for review and locations of tactiles indicators on plan prior to issue of the Construction Certificate.**
D3.9	Wheel Chair Seating Spaces in Class 9b Assembly Buildings	Not Applicable	
D3.10	Swimming Pools	Not Applicable	
D3.11	Ramps	Compliance Readily Achievable	On an accessway a series of connected ramps must not have a combined vertical rise of more than 3.6m. A landing for a step ramp must not overlap a landing of another step ramp or ramp.
D3.12	Glazing on an accessway	Compliance Readily Achievable	On an accessway, where there is no chair rail, handrail or transom, all frameless or fully glazed doors, sidelights and any glazing capable of being mistaken for a doorway or opening, must be clearly marked in accordance with AS 1428.1.

13.4. SECTION E – SERVICES AND EQUIPMENT

Clause	Description	Status	Comments
E1.1	-	-	No provisions
E1.2	-	-	No provisions
E1.3	Fire Hydrants	Alternative Solution	The location of the fire brigade booster assembly has been nominated on Regent Street façade. Due main entrance to the building (Iglu Lobby) being located down the private laneway the position of the proposed fire brigade booster assembly is considered not within sight of the main entrance. **This is to be reviewed by the Fire Safety Engineer and addressed as an Alternative Solution.**
		Additional Details Required	The fire brigade booster assembly is required to be separated from the building by construction with a fire resistance rating of not less than FRL 90/90/90 for a distance of not less than 2m each side of and 3m above the upper hose connection in the booster assembly. **Hydraulic details of the fire brigade booster will required to be provided to compliance with the fire rated shielding requirements above. Given the current dimensions of the nominated area for the booster it is unlikely that compliance will be achieved. This is to be reviewed by the Fire Safety Engineer and addressed as an Alternative Solution if compliance cannot be achieved.** . The designing hydraulic engineer is to prepare the hydrant system and advise if there are any other aspects of the system which do not fully comply with the requirements of AS2419.1-2005. Noting this building has an effective height greater than 50m. The designing engineer must provide a written outline of any non-compliances and be provided to SWP and the Fire Engineer for review and the possibility to be addressed as an Alternative Solution.
		Additional Details Required	Details hydraulic plans identifying the locations of all fire hydrants and the booster assembly are to be provided for review. The hydraulic engineer must ensure that compliant coverage is provided to all areas of the building from the internal hydrants and must provide design certification to accompany the drawings certifying the design complies with Clause E1.3 of the BCA and AS2419.1 – 2005 (noting any non-compliances which are to be addressed as an Alternative Solution). Note 1: Full coverage may not be provided from hydrants in the stairs alone. Note 2: Hydrant hose must extend at least 1m into rooms to be counted for coverage. **Hydraulic plans showing details of the fire hydrant system will be required prior to the Construction Certificate.** .

Clause	Description	Status	Comments
E1.4	Fire hose reels	Compliance Readily Achievable	Fire hose reels are required to be provided within the Class 6/9b retail tenancies/dance studio only. Fire hose reels are not required to be provided within the Class 3 student accommodation areas. Fire hose reels are to be installed internally within 4m of an exit or internally adjacent to a fire hydrant. Additional hose reels are permitted to be installed further then 4m from exit to achieve coverage. Fire hose reels are to be installed accordance with AS2441.
		Additional Details Required	Details hydraulic plans identifying the locations of all fire hose reels are to be provided for review within the retail tenancies/dance studio and BOH areas. The hydraulic engineer must ensure that compliant coverage is provided to all areas of the building and must provide design certification to accompany the drawings certifying the design complies with Clause E1.4 of the BCA and AS2441 – 2005. Note 1: Full coverage appears to not be provided from to all areas from the FHR's adjacent the exit stairs alone, i.e intermediate hose reels will be required in various locations. Note 2: The hose must extend at least 1m into rooms to be counted for coverage. **Hydraulic plans showing details of the fire hose reels will be required prior to the Construction Certificate**
E1.5	Sprinklers	Applicable	The building is to be provided with a sprinkler system throughout in accordance with Specification E1.5 due to being greater than 25m in effective height.
		Alternative Solution	The sprinkler alarm valves are required to be located in a room which has direct egress to a road or open space. The sprinkler alarm valves are located in a room accessed from basement level via the fire stair and corridor which is to be performance assessed. **This is to be reviewed by the Fire Safety Engineer and addressed as an Alternative Solution.** **NOTE: Hydraulic consultant to advise if specific sprinkler valves room is required given a combined hydrant/sprinkler system (AS2118.6) is proposed with sprinkler control assemblies within the fire stairs.**
		Additional Details Required	The designing services engineer is to prepare the sprinkler hydrant system design and advise if there are any other aspects of the system which do not fully comply with the requirements of BCA Clause E1.5, BCA Specification E1.5 and AS2118.1-1999. Noting this building has an effective height greater than 50m. The designing engineer must provide a written outline of any non-compliance and be provided to SWP and the Fire Engineer for review and the possibility to be addressed as an Alternative Solution.

Clause	Description	Status	Comments
E1.6	Portable fire extinguishers	Compliance Readily Achievable	Portable fire extinguishers are required to be provided in accordance with Table E1.6 of the BCA and Sections 1, 2, 3 and 4 of AS 2444. Within the Class 3 student accommodation portion the portable fire extinguishers must be ABE type extinguishers, a minimum size of 2.5kg and distributed outside sole-occupancy units to serve only the storey at which they are located and so that the travel distance from the entrance doorway of the sole-occupancy unit to the nearest fire extinguisher is not more than 10m.
E1.7	-	-	No provisions.
E1.8	Fire control centres	Additional Details Required	As the building has an effective height of greater than 50m a specific fire control room is required to be provided in accordance with clauses 2 to 12 of Specification E1.8. **Details of compliance with clauses 2 to 12 of Specification E1.8 will be required to be provided for the Construction Certificate.**
		Alternative Solution	The fire control room must have egress to road or open space which does not involve a change in level of more than 300mm. Egress from the fire control room to Regent Street involves a change in level of 350m (RL29.75 to RL30.10). **This is to be reviewed by the Fire Safety Engineer and addressed as an Alternative Solution.**
		Alternative Solution	The fire control room is required to be accessible via two paths of travel- c) one from the front entrance of the building; and d) one direct from a public place or fire-isolated passageway which leads to a public place and has a door with an FRL of not less than -/120/30. The 'front entrance' doorway is accessed from the internal laneway which necessitates travelling through a security gate, down the laneway and under the building to reach the access to door to the fire control room. This has been determined as not being technically at the front entrance of building accessible directly from Regent Street. **This is to be reviewed by the Fire Safety Engineer and addressed as an Alternative Solution.**
E1.9	Fire precautions during construction	Compliance Readily Achievable	During construction, not less than one fire extinguisher to suit Class A, B and C fires is required for each storey, and is required to be located adjacent to each exit. After the building has reached an effective height of 12m, hydrants and hose reels must be operational in at least every storey, except the 2 uppermost storeys, covered by the roof or the floor structure above and any required booster connections must be installed.
E1.10	Provisions for special hazards	Not Applicable	

Clause	Description	Status	Comments
E2.1	Smoke Hazard Management - Application of Part	Applicable	Part is not applicable to · open deck car parks · open spectator stands · storerooms, etc less than 30m^2 · sanitary compartments · plantrooms or the like
E2.2	General requirements (NSW Replacement of provisions for Class 9b buildings)	Compliance Readily Achievable	An air-handling system that does not form part of the smoke hazard management system and recycles air from one fire compartment to another must be designed and installed to operate as a smoke control system in accordance with AS/NZS 1668.1 or incorporate smoke dampers and automatically shutdown upon activation of smoke detectors in accordance with Claus e 4.10 of AS/NZS 1668.1. *Note: Each bedroom sole-occupancy unit in the Class 3 student accommodation portion is treated as a separate fire compartment for the purposes of this requirement.*
		Alternative Solution	As the building has an effective height of greater than 25m the fire isolated exits that serve storeys above the 25m are to be provided with automatic stair pressurisation in accordance with the AS/NZS 1668.1 throughout the entire exit. Automatic air pressurisation is not proposed to be provided to the fire isolated exits. Performance based smoke lobbies are proposed to be provided in lieu of the automatic air pressurisation. **This is to be reviewed by the Fire Safety Engineer and addressed as an Alternative Solution.**
		Compliance Readily Achievable	The Class 3 student accommodation portion is required to be provided with an automatic smoke detection system in accordance with Specification E2.2a consisting of: · a smoke alarm system complying with Clause 3; or · a smoke detection system complying with Clause 4; or · a combination of a smoke alarm system complying with Clause 3 within sole-occupancy units and a smoke detection complying with Clause 4 in areas not within the sole-occupancy units.
		Compliance Readily Achievable	A building occupant warning system in accordance with Clause 6 of Specification E2.2a and AS 1670.1 – 2004 will be required to be connected to the Clause 4 of Specification E2.2a smoke detection system and sprinkler system.
		Compliance Readily Achievable	A fire alarm monitoring system connected to a fire station or fire station dispatch centre in accordance with AS 1670.3 – 2004 is required to be provided.
		Not Applicable	Due to the Class 6/9b portion being contained within a single fire compartment a zone smoke control system is not required to be provided.
		Not Applicable	The Class 6 portion is contained within a fire compartment less than 2000m^2 therefore the requirements of Specification E2.2b do not apply.

Clause	Description	Status	Comments
E2.3	Provisions for special hazards	Not Applicable	
E3.1	Lift installations	Compliance Readily Achievable	An electric passenger lift installation and an electrohydraulic passenger lift installation must comply with Specification E3.1
E3.2	Stretcher facility in lifts	Compliance Readily Achievable	Both lifts are required to accommodate a stretcher facility which requires the minimum dimension of 600mm wide x 2000mm long and 1400mm high above floor level. Plans submitted for Construction Certificate to demonstrate compliance.
E3.3	Warning against use of lifts in fire	Compliance Readily Achievable	A warning sign is to be displayed where it can be readily seen near every call button of the passenger lift. The warning sign is to comply with the details and dimensions set out in Figure E3.3 of the BCA.
E3.4	Emergency lifts	Compliance Readily Achievable	Both lifts are required to be an emergency lift as the building has an effective height of greater than 25m. The emergency lifts are required to be contained within fire-resisting shafts in accordance with Clause C2.10.
E3.5	Landings	Compliance Readily Achievable	Access and egress to and from the liftwell landings is to comply with the Deemed-to-Satisfy provisions of Section D of the BCA.
E3.6	Passenger lifts	Compliance Readily Achievable	Every passenger lift must be one of the types identified n Table E3.6a, have accessible features in accordance with Table E3.6b and not reply on a constant pressure device for its operation if the lift car is fully enclosed.
E3.7	Fire Services Control	Compliance Readily Achievable	Lifts serving a storey above an effective height of 12m must be provided with a fire control switch complying with Clause E3.9 and a lift car fire service drive control switch complying with Clause E3.10.
E3.8	Aged care buildings	Not Applicable	
E3.9	Fire service recall operation switch	Compliance Readily Achievable	The switch must be located at the landing nominated by the appropriate authority, be labelled '**FIRE SERVICE**" in indelible white lettering on red background. The "**OFF**" and "**ON**" positions are to be identified.
E3.10	Lift car fire service drive control switch	Compliance Readily Achievable	The lift car service drive control must be activated from within the lift car. The switch is to be located between 600mm and 1500mm above the lift car floor and be labelled '**FIRE SERVICE**" in indelible white lettering on red background. The "**OFF**" and "**ON**" positions are to be identified.
E4.1	-	-	No provisions.

Clause	Description	Status	Comments

E4.2	Emergency lighting requirements	Compliance Readily Achievable	Emergency lighting is to be provided throughout the building in accordance with Clause E4.2 of the BCA.
			Emergency lighting is to be provided in :
			• every fire-isolated stairway, fire-isolated ramp or fire-isolated passageway.
			• Every passageway, hallway, corridor or the like, that is part of the path of travel to an exit.
			• In every room having a floor area more than 100m^2 that does not open to a corridor or space that has emergency lighting or to a road or open space.
			• In any room having a floor area more than 300m^2.
			• To every room or space that has public access in a Class 6 or 9b building if:
			  • the floor area is more than 300m^2;
			  • or if any point on the floor is more than 20m from the nearest doorway opening directly to the road or open space; or
			  • if the egress involves a vertical rise within the building of more than 1.5m.

E4.3	Measurement of distance	Noted	
E4.4	Design and operation of emergency light	Compliance Readily Achievable	Emergency lighting shall be provided throughout the building in accordance with the requirements of Clause E4.4 of the BCA and AS 2293.1.
E4.5	Exit signs	Compliance Readily Achievable	Exit signs are to be provided in accordance with Clause E4.5 of the BCA. Exit signs must be clearly visible to person approaching the exit and must be installed on, above or adjacent to; 1. A door providing direct egress from a storey to a stairway, passageway or ramp serving as a required exit. 2. A door from an enclosed stairway, passageway or ramp at every level of discharge to a road or open space. 3. A horizontal exit. 4. A door serving as or forming part of a required exit in a storey required to be provided with emergency lighting.
E4.6	Direction signs (NSW Entertainment Venue - External to the building where the exit does not open directly onto a street.)	Compliance Readily Achievable	Where an exit is not readily apparent then exit signs with directional arrows must be installed in appropriate positions in corridors, hallways, lobbies and the like indicating the direction to a required exit in accordance with Clause E4.6 of the BCA.
		Alternative Solution	Directional exit signage is proposed to be omitted from within the student accommodation cluster public corridors. **This is to be reviewed by the Fire Safety Engineer and addressed as an Alternative Solution.**

Clause	Description	Status	Comments
E4.7	Class 2, 3 and 4 buildings: Exemptions	Applicable	E4.5 does not apply to- a) a Class 2 building in which every door referred to is clearly and legibly labelled on the side remote from the exit or balcony- i. with the word "EXIT" in capital letters 25mm high in colour contrasting with that of the background: ii. by some other method; or b) an entrance door of a sole-occupancy unit in a Class 2 part of the building.
E4.8	Design and operation of exit signs	Compliance Readily Achievable	Exit signs are to operate in accordance with AS 2293.1 and be clearly visible at all times while the building is occupied.
E4.9	Sounds systems and intercom systems for emergency purposes	Compliance Readily Achievable	As the building has an effective height of greater than 25m a sound system and intercom system for emergency purposes (SSISEP) complying with AS 1670.4 must be installed throughout the building.

13.5. SECTION F – HEALTH AND AMENITY

Clause	Description	Status	Comments
F1.1	Stormwater drainage	Compliance Readily Achievable	Stormwater drainage design shall be in accordance with AS/NZS 3500.3
F1.2	-	-	No provisions
F1.3	-	-	No provisions
F1.4	External above ground membranes	Compliance Readily Achievable	Waterproofing membranes for external above ground use must comply with AS 4654 Parts 1 and 2.
F1.5	Roof coverings	Compliance Readily Achievable	Roof coverings are to comply with the relevant Australian Standards as per Clause F1.5.
F1.6	Sarking	Compliance Readily Achievable	Sarking type materials used for weatherproofing of roofs and walls must comply with AS/NZS 4200 Parts 1 and 2.
F1.7	Waterproofing of wet areas	Compliance Readily Achievable	Shower enclosure surfaces, floor surfaces in bathrooms, shower rooms, slop hoppers, sink compartments, laundry and sanitary compartments is required to be waterproofed in accordance with AS 3740.
F1.8	-	-	No provisions
F1.9	Damp-proofing	Compliance Readily Achievable	Moisture from the ground must be prevented from reaching the lowest floor timber and the walls above the lowest floor joists, the walls above the dam proof course and the underside of a suspended floor constructed of a material other than timber, and the supporting beams or girders. Damp proof course must consist of a material that complies with AS/NZS 2904 or an impervious termite shield in accordance with AS 3660.1.

Clause	Description	Status	Comments
F1.10	Damp-proofing of floors on the ground	Compliance Readily Achievable	A vapour barrier in accordance with AS2870 is to be provided beneath the basement floor slab.
F1.11	Provision of floor wastes	Additional Details Required	The floor of a bathroom in each sole occupancy of a Class 3 portion is to be graded to permit drainage to a floor waste. **Details of compliance will be required to be provided on plans for Construction Certificate.**
F1.12	Sub-floor ventilation	Not Applicable	
F1.13	Glazed assemblies	Compliance Readily Achievable	Windows, sliding doors with a frame, adjustable louvres, shopfronts and window walls with one piece framing in an external wall must comply with AS 2047 requirements for resistance to water penetration.
F2.1	Facilities in residential buildings	Complies	Private facilities have been provided for each resident consisting of a shower, closet pan and washbasin.
F2.2	Calculation of number of occupants and fixtures	Noted	
F2.3	Facilities in Class 3 to 9 buildings	Compliance Readily Achievable	The following sanitary facilities have been shown to serve the retail tenancies: • One unisex accessible facility (WC & WB); • One unisex facility (WC & WB); • One male facility (WC & WB); • One female facility (WC & WB). Given the above number distribution the following have been counted: • The unisex accessible facility has been counted once for each sex. • The unisex facility has been counted as a male facility. • The male facility WC has been counted as a urinal. The numbers provide above allows up to 25 male and 30 female employees for the Class 6 retail tenancies. Given the size of the retail area this should be sufficient. Exact numbers of staff can only be determined upon fitout details of individual tenancies proposed for each retail space. Note: Sanitary facilities for patrons are required only if a future restaurant, café, bar etc contain more than 20 patrons to a particular tenancy. Patron numbers have not been assessed at this stage for base building works. Should this be the case future sanitary calculations will be required.

Clause	Description	Status	Comments
F2.4	Facilities for people with disabilities	Compliance Readily Achievable	At a bank of toilets where there are one or more toilets in addition to an accessible unisex facility, a sanitary facility compartment suitable for a person with an ambulant disability in accordance with AS1428.1 is required for males and females. Ambulant facilities for male and females are required to be provided in accordance with AS 1428.1 at the common toilets. Drawings indicating compliance can be achieved.
		Compliance Readily Achievable	Accessible unisex sanitary compartment and shower is required to be provided within all accessible sole-occupancy units.
F2.5	Construction of sanitary compartments	Compliance Readily Achievable	Doors to the fully enclosed toilets are to open outwards, slide or be readily removable from the outside of the sanitary compartment.
F2.6	Interpretation: Urinals and washbasins	Noted	
F2.7	Warm water installations (NSW – deleted)	Not Applicable	Not Applicable in NSW
F2.8	Waste management	Not Applicable	
F3.1	Height of rooms and other spaces	Compliance Readily Achievable	The following ceiling heights apply- Class 2 portion: · Kitchen, laundry or the like – 2.1m · Corridor, passageway or the like – 2.1m · Habitable room excluding a kitchen – 2.1m Class 6/9b portion · Commercial tenancy – 2.4m · Corridor, passageway or the like – 2.1m · Bathroom, sanitary compartment, carparking area store room or the like – 2.1m · Above a stairway, landing or the like – 2m measured vertically above nosing of stairway treads or floor surface of landing.
F4.1	Provision of natural light	Applicable	Natural light is required to be provided to all bedrooms and dormitories within the Class 3 student accommodation portion.
F4.2	Methods and extent of natural light	Compliance Readily Achievable	Natural light is required to be provided to 10% of the floor area of a habitable room. Plans indicate compliance can be achieved.
F4.3	Natural light borrowed from adjoining room	Noted	Natural light may be borrowed through adjacent rooms in accordance with the provisions of this clause.
F4.4	Artificial lighting	Compliance Readily Achievable	Lighting shall be provided throughout the building to comply with AS1680.0 in accordance with the requirements of Clause F4.4 of the BCA.

Clause	Description	Status	Comments
F4.5	Ventilation of rooms (NSW Reference to AS/NZS 3666.1 deleted for NSW)	Compliance Readily Achievable	Ventilation shall be provided throughout the building in by means of natural ventilation complying with Clause F4.6 or mechanical ventilation complying with the requirements of AS1668.2 as required by Clause F4.5 of the BCA.
F4.6	Natural ventilation	Compliance Readily Achievable	Natural ventilation in accordance with F4.5 is require to consist of permanent openings, windows, or other devices which can be opened- • With an aggregate opening or openable size not less than 5% of the floor area of the room required to be ventilated; and • Open to the- o suitably sized court, or space open to the sky; o an open verandah, carport, or the like; or an adjoining room in accordance with F4.7.
F4.7	Ventilation borrowed from adjoining room	Noted	Ventilation may be borrowed from an adjoining room is accordance with this clause.
F4.8	Restriction on position of water closets and urinals	Not Applicable	
F4.9	Airlocks	Not Applicable	
F4.10	-	-	No Provisions
F4.11	Carparks	Not Applicable	
F4.12	Kitchen local exhaust	Compliance Readily Achievable	A commercial kitchen must be provided with a kitchen exhaust hood complying with AS/NZS 1668.1 and AS 1668.2, where, · any cooking apparatus has a total maximum electrical power input exceeding 8kW, or · a total gas power input exceeding 29 MJ/h, or · the total maximum power input to more than one apparatus exceeds 0.5kW electrical power or 1.8 MJ gas per metre square of the room or enclosure.
F5.1	Sound Transmission and Insulation - Application of part	Applicable	Applicable to the Class 3 portion. **Note: Assessment of the requirements of Part F5 is to be undertaken by an Acoustic Consultant and a report provided for review.** **Further, the Acoustic Consultant is to inspect the works during construction and on completion and provide final certification.**
F5.2	Determination of airborne sound insulation ratings	Compliance Readily Achievable	Construction required to have an airborne sound insulation rating must have the value for weighted sound reduction index (R_w) or weighted sound reduction index with spectrum adaptation term ($R_w + C_{tr}$) determined in accordance with AS/NZS1276.1 or ISO717.1 using result from laboratory measurements, or comply with Specification F5.2 of the BCA.

Clause	Description	Status	Comments
F5.3	Determination of impact sound insulation ratings	Compliance Readily Achievable	A floor required to have an impact sound insulation rating must have the required value for weighted normalised impact sound pressure level with spectrum adaptation term ($L_{n,w}+C_I$) determined in accordance with AS/ISO 717.2 using results from laboratory measurements or comply with Specification F5.2 of the BCA. A wall in a class 3 building that is required to have an impact sound insulation rating must be of discontinuous construction.
F5.4	Sound insulation rating for floors	Compliance Readily Achievable	Floors in a class 3 building separating sole occupancy units or separating sole occupancy units from a plant room, lift shaft, public corridor, public lobby or the like or parts of different classifications must have an $R_w + C_{tr}$ of not less than 50 and an $L_{n,w} + C_I$ of not more than 62.
F5.5	Sound insulation rating of walls	Compliance Readily Achievable	A wall in a class 3 building must have an Rw + Ctr of not less than 50 if it separates sole occupancy units and an Rw of 50 if it separates a sole occupancy unit from a plant room, lift shaft, public corridor, public lobby or the like or parts of different classifications. Compliance with F5.3(b) is required if the wall separates a bathroom, sanitary compartment, laundry or kitchen in one sole occupancy unit from a habitable room (excluding a kitchen) in another adjoining unit or a sole occupancy unit from a plant room or lift shaft. A door may be incorporated in a wall in a Class 3 building that separates a *sole-occupancy unit* from a stairway, *public corridor* , public lobby or the like, provided the door assembly has an R_w not less than 30. Where a wall required to have sound insulation has a floor above, the wall must continue to the underside of the floor above or a ceiling that provides the sound insulation required for the wall. Where a wall required to have sound insulation has a roof above, the wall must continue to the underside of the roof above or a ceiling that provides the sound insulation required for the wall.
		Alternative Solution	Individual bedrooms SOU's are not proposed to be provided with dts sound insulation ratings. **This is to be reviewed by the Acoustic Engineer and addressed as an Alternative Solution.**
F5.6	Sound insulation rating of services	Compliance Readily Achievable	If a duct, soil, waste, water supply pipe, including a duct or pipe that is located in a wall or floor cavity, serve or passes through more than one sole occupancy unit, the duct or pipe must be separated from the rooms of any sole-occupancy unit (SOU) by construction with an Rw + Ctr (airborne) not less than – i. 40 if the adjacent room is a habitable room (other than a kitchen); or ii. 25 if the adjacent room is a kitchen or non-habitable room If a stormwater pipe passes through a SOU it must be separated in accordance with the requirements above.

Clause	Description	Status	Comments
F5.7	Isolation of pumps	Compliance Readily Achievable	A flexible coupling must be used at the point of connection between the service pipes in a building and any circulating or other pump.

13.6. SECTION G – ANCILLARY PROVISIONS

Clause	Description	Status	Comments
G1.1	Swimming Pools (NSW – added subclause (c))	Not Applicable	
G1.2	Refrigerated chambers, strong-rooms and vaults	Not Applicable	
G1.101	Provision for cleaning windows	Compliance Readily Achievable	A safe manner of cleaning windows is to be provided as windows are located 3 or more storeys above ground level. The windows must either be able to be cleaned wholly from within the building, or a method complying with the Construction Safety Act 1912 and Regulations is required.
Part G2	Heating Appliances, Fireplaces, Chimneys and Flues	Not Applicable	
Part G3	Atrium Construction	Not Applicable	
Part G4	Construction in Alpine Areas	Not Applicable	
Part G5	Construction in Bushfire Prone Areas	Not Applicable	

13.7. SECTION H – SPECIAL USE BUILDINGS

Clause	Description	Status	Comments
Part H1	Theatres, Stages and Public Halls	Not Applicable	
Part H2	Public Transport Buildings	Not Applicable	
NSW Part H101	Entertainment Venues	Not Applicable	.

13.8. SECTION J – ENERGY EFFICIENCY

Clause	Description	Status	Comments
NSW J(A)	**Energy Efficiency – Class 2 Buildings and Class 4 Parts**	**Noted**	**The parts of NSW J(A) do not apply to Class 3 parts**

Clause	Description	Status	Comments
NSW J(B)	**Energy Efficiency - Class 3 and Class 5 to 9 Buildings**	**Noted**	**The building is located in climate zone 5**

Clause	Description	Status	Comments
NSW J(B)1	Compliance with BCA provisions	Applicable	Class 3 and Class 5 to 9 buildings must comply with all of the national provisions of Section J that are applicable to the relevant classifications, except as varied by NSW J1.6 for Class 3 buildings, NSW J3.1 and NSW J8.2 for Class 3 and Class 5 to 9 buildings. **The building is proposed modelled to comply with JV3 verification method.**
J1.1	Application of Part	Applicable	Applies to building elements forming the envelope of a Class 3 and Class 5 to 9 building.
J1.2	Thermal construction general	Compliance Readily Achievable	Insulation must comply with AS/NZS 4859.1 and be installed in accordance with Clause J1.2. Insulation must abut or overlap adjoining insulation, form a continuous barrier with ceilings, walls, bulkheads, floors or the like and not affect the safe or effective operation of services.
J1.3	Roof and ceiling construction	Compliance Readily Achievable	A roof or ceiling that is part of the envelope must achieve the Total R-Value specified in Table J1.3 for the direction of heat flow. The minimum total R-Value required for roofs or ceilings are specified in Appendix E. A roof that - i. is required to achieve a minimum *Total R-Value;* and ii. has metal sheet roofing fixed to metal purlins, metal rafters or metal battens; and iii. does not have a ceiling lining or ha a ceiling lining fixed directly to those metal purlins, metal rafters or metal battens (see specification J1.3 Figure 2(c) and (f), must have a thermal break, consisting of a material with an *R-Value* of not less than R0.2, installed between the metal roofing and its supporting metal purlins, metal rafters or metal battens.
J1.4	Roof lights	Compliance Readily Achievable	Roof lights, including any associated shaft and diffuser, that form part of the envelope must, if the roof lights are not required for compliance with Part F4, comply with Table J1.4. If the roof lights are required for compliance with Part F4 they must have an area not more than 150% of the minimum area required by F4.6; and have transparent and translucent elements, including any imperforate ceiling diffuser, with a combined performance of not more than 0.29 Total System SHGC; and 2.9 Total System U-Value.

Clause	Description	Status	Comments
J1.5	Walls	Compliance Readily Achievable	Each part of an external wall that is part of the envelope must satisfy one of the options in Table J1.5a or Table J1.5b except as specified in Clause J1.5. Refer to Appendix E for required minimum R-Values and other requirements. A wall that - i. is required to achieve a minimum *Total R-Value;* and ii. has lightweight external cladding such as weatherboards, fibre cement or metal sheeting fixed to a metal frame; and iii. does not have a wall lining or has a wall lining that is fixed directly to the same metal frame, must have a thermal break, consisting of a material with an *R-Value* of not less than R0.2, installed between the external cladding and the metal frame.
J1.6	Floors	Compliance Readily Achievable	Floors are required to achieve a minimum R-Value in accordance with Table J1.6. A concrete slab-on-ground with an in-slab heating or cooling system; or located in climate zone 8 must have insulation installed around the vertical edge of its perimeter. The insulation must have an R-Value of not less than 1.0, be water resistant and be continuous from the adjacent finished ground level to a depth of not less than 300 mm or for the full depth of the vertical edge of the concrete slab-on-ground
J2.1	Application of Part	Applicable	
J2.2	-	-	No Provisions
J2.3	-	-	No Provisions
J2.4	Glazing	Compliance Readily Achievable	The glazing in each storey including a mezzanine must be assessed separately in accordance with Clause J2.4(b) and (c) for- i) *glazing* in the external *fabric* facing each orientation; and ii) *glazing* in the internal *fabric* using the south orientation sector energy constants in Table J2.4b and shading multipliers in Table J2.4c and Table J2.4d. The aggregate *air-conditioning* energy value attributable to the *glazing* must not exceed the allowance obtained by multiplying the facade area that is exposed to the *conditioned space* for the orientation by the energy index in Table J2.4a. The glazing calculator must be completed and submitted with the Construction Certificate application as evidence of compliance.

Clause	Description	Status	Comments
J2.5	Shading	Compliance Readily Achievable	Where shading is required to comply with Clause J2.4, it must; a) be provided by an external permanent projection, such as a verandah, balcony, fixed canopy, eaves or shading hood which i. extends horizontally on both sides of the glazing for the same projection distance P in figure J2.4 of the BCA, or ii. provides the equivalent shading to that above with a reveal or the like, or b) be provided an external shading device such as a blind, vertical or horizontal building screen with blades, battens or slats, which i. is capable of restricting at least 80% of summer solar radiation, and ii. if adjustable is operated automatically in response to the level of solar radiation.
NSW J3.1	Application of Part	Applicable	Applies to elements forming the envelope of a Class 3, and Class 5 to 9 building other than as specified.
J3.2	Chimneys and flues	Not Applicable	
J3.3	Roof lights	Compliance Readily Achievable	A roof light must be sealed or capable of being sealed when serving a conditioned space.
J3.4	Windows and doors	Compliance Readily Achievable	A seal to restrict air infiltration must be fitted to each edge of an external door, openable external window or the like when serving a conditioned space.
J3.5	Exhaust fans	Compliance Readily Achievable	A miscellaneous exhaust fan must be fitted with a sealing device such as a self-closing damper or the like when serving a conditioned space.
J3.6	Construction of roofs, walls and floors	Compliance Readily Achievable	Roofs, walls, floors and any opening must be constructed to minimise air leakage in accordance with Clause J3.6(b) when forming part of the external fabric of a conditioned space. These requirements do not apply to openings, grilles and the like required for smoke hazard management.
J3.7	Evaporative coolers	Not Specified	An evaporative cooler must be fitted with a self-closing damper or the like when serving a heated space.
J4	-	-	No Provisions
J5.1	-	-	No Provisions
J5.2	Air conditioning and ventilating systems	Compliance Readily Achievable	An air-conditioning unit or system must comply with the requirements of Clause J5.2 and Specification J5.2
J5.3	Time switch	Compliance Readily Achievable	A time switch in accordance with Specification J6 must be provided to control: • an air-conditioning system of more than 10kWr, or • a ventilation system with an air flow rate or more than 1000L/s, or • a heating systems of more than 10kW$_{heating'}$

Clause	Description	Status	Comments
J5.4	Heating and chilling systems	Compliance Readily Achievable	Systems that provide heating or chilling for air-conditioning systems must comply with Clause J5.4 and Specification J5.4.
J5.5	Miscellaneous exhaust systems	Compliance Readily Achievable	A miscellaneous exhaust system with an air flow rate of more than 1000L/s that is associated with equipment having a variable demand such as a stove in a commercial kitchen or a chemical bath in a factory must have the means for the operator to reduce the energy used or stop the motor when the system is not needed. It must be designed to minimise exhausting of air conditioning.
J6.1	Application of Part	Applicable	
J6.2	Artificial lighting	Compliance Readily Achievable	In a Class 5, 6, 7, 8, 9a or 9b the artificial lighting must not exceed the sum of the allowances obtained by multiplying the area of each space by the maximum power density in Table J6.2a.
J6.3	Interior artificial lighting and power control	Compliance Readily Achievable	The power control for artificial interior lighting must comply with the requirements of Clause J6.3. Artificial lighting of a room or space must be individually operated by a switch or other control device in accordance with Specification J6.
J6.4	Interior decorative and display lighting	Compliance Readily Achievable	Interior decorative and display lighting, such as for foyer mural or art displays, must be controlled separately from other artificial lighting as specified in Clause J6.4. Window display lighting must be controlled separately from other display lighting.
J6.5	Artificial lighting around the perimeter of a building	Compliance Readily Achievable	Artificial lighting around the perimeter of a building must be controlled by a daylight sensor or time switch as specified in Clause J6.5.
J6.6	Boiling water and chilled water storage units	Compliance Readily Achievable	Power supply to a boiling water or chilled water storage unit must be controlled by a time switch in accordance with Specification J6.
J7.1	-	-	No provisions
J7.2	Hot water supply	Compliance Readily Achievable	A hot water supply system for food preparation and sanitary purposes, other than a solar hot water supply system in climate zones 1, 2 and 3 must be designed and installed in accordance with Section 8 of AS/NZS 3500.4
J7.3	Swimming pool heating and pumping	Not Applicable	
J7.4	Spa pool heating and pumping	Not Applicable	
J8.1	Application of Part	Applicable	
NSW J8.2	Access for maintenance	Compliance Readily Achievable	Access to service must be provided to all services and their components.

Clause	Description	Status	Comments
J8.3	Facilities for energy monitoring	Compliance Readily Achievable	The building as it has a floor area of more than 2,500m^2 it must have a facility to record individually the energy consumption of- a) air-conditioning plant including, where appropriate, heating plant, cooling plant and air handling fans; and b) artificial lighting; c) appliance power; d) central hot water supply; and e) internal transport devices including lifts, escalators, and travelators where there is more than one serving the building; and f) other ancillary plant.

14. APPENDIX C – REFERENCED DOCUMENTATION

The following documentation was used in the preparation of this report:

Drawing No.	*Title*	*Issue*	*Date*	*Drawn By*
A01.001	Site Plan	2	27.10.14	Bates Smart
A02.B01	Basement Plan	4	27.10.14	Bates Smart
A02.000	Ground Floor Plan	4	27.10.14	Bates Smart
A02.M01	Mezzanine Plan	4	27.10.14	Bates Smart
A02.001	Podium Plan Level 01	4	27.10.14	Bates Smart
A02.002	Typical Plan (Accessible) Levels 02 - 05	4	27.10.14	Bates Smart
A02.008	Typical Plan Levels 06 - 17	4	27.10.14	Bates Smart
A02.019	Roof Terrace Plan	4	27.10.14	Bates Smart
A08.001	Section AA	1	27.10.14	Bates Smart
A08.002	Section AA	1	27.10.14	Bates Smart

15. APPENDIX D – CONSTRUCTION DETAILS

TYPE A CONSTRUCTION: FRL OF BUILDING ELEMENTS				
Building element	**Class of building - FRL:** (in minutes) Structural adequacy/Integrity/Insulation			
	2, 3 or 4 part	5, 9 or 7a	6	7b or 8
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 1.5m	90/90/90	120/120/120	180/180/180	240/240/240
1.5 to less than 3 m	90/60/60	120/ 90/ 90	180/180/120	240/240/180
3 or more	90/60/30	120/ 60/ 30	180/120/90	240/180/ 90
For non-loadbearing parts-				
less than 1.5 m	-/90/90	- /120/120	- /180/180	- /240/240
1.5 to less than 3 m	-/60/60	- / 90/ 90	- /180/120	- /240/180
3 m or more	- / - / -	- / - / -	- / - / -	- / - / -
EXTERNAL COLUMN not incorporated in an external wall, where the distance from any fire-source feature to which it is exposed is-				
less than 3 m	90/ - / -	120/ - / -	180/ - / -	240/ - / -
3 m or more	- / - / -	- / - / -	- / - / -	- / - / -
COMMON WALLS and FIRE WALLS	90/90/90	120/120/120	180/180/180	240/240/240
INTERNAL WALLS-				
Fire-resisting lift and stair shafts-				
Loadbearing	90/90/90	120/120/120	180/120/120	240/120/120
Non-loadbearing	- /90/90	- /120/120	- /120/120	- /120/120
Bounding public corridors, public lobbies and the like-				
Loadbearing	90/90/90	120/ - / -	180/ - / -	240/ - / -
Non-loadbearing	- /60/60	- / - / -	- / - / -	- / - / -
Between or bounding sole-occupancy units-				
Loadbearing	90/90/90	120/ - / -	180/ - / -	240/ - / -
Non-loadbearing	- /60/60	- / - / -	- / - / -	- / - / -
Ventilating, pipe, garbage, and like shafts not used for the discharge of hot products of Combustion-				
Loadbearing	90/90/90	120/ 90/ 90	180/120/120	240/120/120
Non-loadbearing	- /90/90	- / 90/ 90	- /120/120	- /120/120
OTHER LOADBEARING INTERNAL WALLS, INTERNAL BEAMS, TRUSSES and COLUMNS	90/ - / -	120/ - / -	180/ - / -	240/ - / -
FLOORS	90/90/90	120/120/120	180/180/180	240/240/240
ROOFS	90/60/30	120/ 60/ 30	180/60/30	240/ 90/ 60

16. APPENDIX E – ENERGY EFFICIENCY R-VALUES

ROOFS AND CEILINGS - MINIMUM TOTAL R-VALUE (Table J1.3a)

Climate zone	1, 2, 3, 4 & 5	6	7	8
Direction of heat flow	**Downwards**		**Upwards**	
Minimum *Total R-Value* for a roof or ceiling with a roof upper surface solar absorptance value of not more than 0.4	3.2	3.2	3.7	4.8
Minimum *Total R-Value* for a roof or ceiling with a roof upper surface solar absorptance value of more than 0.4 but not more than 0.6	3.7	3.2	3.7	4.8
Minimum *Total R-Value* for a roof or ceiling with a roof upper surface solar absorptance value of more than 0.6	4.2	3.2	3.7	4.8

ADJUSTMENT OF MINIMUM TOTAL R-VALUE FOR LOSS OF CEILING INSULATION (Table J1.3b)

Percentage of ceiling area uninsulated	Minimum R-Value of ceiling insulation required to satisfy J1.3(a)										
	1.0	**1.5**	**2.0**	**2.5**	**3.0**	**3.5**	**4.0**	**4.5**	**5.0**	**5.5**	**6.0**
	Adjusted minimum R-Value of ceiling insulation required to compensate for loss of ceiling insulation area										
0.5% to less than 1.0%	1.0	1.6	2.2	2.8	3.4	4.0	4.7	5.4	6.2	6.9	
1.0% to less than 1.5%	1.1	1.7	2.3	2.9	3.6	4.4	5.2	6.1	7.0		
1.5% to less than 2.0%	1.1	1.7	2.4	3.1	3.9	4.8	5.8	6.8			
2.0% to less than 2.5%	1.1	1.8	2.5	3.3	4.2	5.3	6.5				
2.5% to less than 3.0%	1.2	1.9	2.6	3.6	4.6	5.9	Not Permitted				
3.0% to less than 4.0%	1.2	2.0	3.0	4.2	5.7						
4.0% to less than 5.0%	1.3	2.2	3.4	5.0							
5.0% or more											

Note: Where the minimum *R-Value* of ceiling insulation *required* to satisfy J1.3(a) is between the values stated, interpolation may be used to determine the adjusted minimum *R-Value*.

ROOF LIGHTS - THERMAL PERFORMANCE OF TRANSPARENT AND TRANSLUCENT ELEMENTS (Table J1.4)

Roof light shaft index (see Note 1)	Constant	Total area of roof lights serving the room or space as a percentage of the floor area of the room or space			
		Up to 2%	**More than 2% to and up to 3%**	**More than 3% and up to 4%**	**More than 4% and up to 5%**
Less than 0.5	*Total System SHGC*	Not more than 0.83	Not more than 0.57	Not more than 0.43	Not more than 0.34
	Total System	Not more than	Not more than 5.7	Not more than 4.3	Not more than 3.4

	U-Value	8.5			
0.5 to less than 1.0	*Total System SHGC*	Not more than 0.83	Not more than 0.72	Not more than 0.54	Not more than 0.43
	Total System U-Value	Not more than 8.5	Not more than 5.7	Not more than 4.3	Not more than 3.4
1.0 to less than 2.5	*Total System SHGC*	Not more than 0.83	Not more than 0.83	Not more than 0.69	Not more than 0.55
	Total System U-Value	Not more than 8.5	Not more than 5.7	Not more than 4.3	Not more than 3.4
2.5 and more	*Total System SHGC*	Not more than 0.83	Not more than 0.83	Not more than 0.83	Not more than 0.83
	Total System U-Value	Not more than 8.5	Not more than 5.7	Not more than 4.3	Not more than 3.4

Notes:

1.	The *roof light* shaft index is determined by measuring the distance from the centre of the shaft at the roof to the centre of the shaft at the ceiling level and dividing it by the average internal dimension of the shaft opening at the ceiling level (or the diameter for a circular shaft) in the same units of measurement.
2.	The total area of *roof lights* is the combined area for all *roof lights* serving the room or space.
3.	The area of a *roof light* is the area of the roof opening that allows light to enter the building.
4.	The thermal performance of an imperforate ceiling diffuser may be included in the *Total System U-Value* and *Total System SHGC* of the *roof light*.
5.	The total area of *roof lights* serving the room or space as a percentage of the *floor area* of the room or space must not exceed 5% unless allowed by J1.4(b).

OPTIONS FOR EACH PART OF AN EXTERNAL WALL THAT IS PART OF AN ENVELOPE (Table J1.5a)

Climate zone	Options
1, 2 and 3	(a) (i) Achieve a minimum *Total R-Value* of 3.3. (ii) The minimum *Total R-Value* in (i) is reduced— (A) for a wall with a surface density of not less than 220 kg/m^2, by 0.5; and (B) for a wall that is— (aa) facing the south orientation as described in Figure J2.3, by 0.5; or (bb) shaded with a projection shade angle in accordance with Figure J1.5 of— (AA) 15 degrees to not more than 45 degrees, by 0.5; or (BB) more than 45 degrees, by 1.0; and (C) if the outer surface solar absorptance value is not more than 0.6, by 0.5.
	(b) Where the only space for insulation is provided by a furring channel, top hat section, batten or the like— (i) achieve a minimum *Total R-Value* of 1.4; and (ii) satisfy *glazing* energy index Option B of Table J2.4a.
4, 5 and 6	(a) (i) Achieve a minimum *Total R-Value* of 2.8. (ii) The minimum *Total R-Value* in (i) is reduced— (A) for a wall with a surface density of not less than 220 kg/m^2, by 0.5; and (B) for a wall that is— (aa) facing the south orientation as described in Figure J2.3, by 0.5; or (bb) shaded with a projection shade angle in accordance with Figure J1.5 of— (AA) 30 degrees to not more than 60 degrees, by 0.5; or (BB) more than 60 degrees, by 1.0.
	(b) Where the only space for insulation is provided by a furring channel, top hat section, batten or the like— (i) achieve a minimum *Total R-Value* of 1.4; and (ii) satisfy *glazing* energy index Option B of Table J2.4a.

7	(a) Achieve a minimum *Total R-Value* of 2.8. (b) Where the only space for insulation is provided by a furring channel, top hat section, batten or the like— (i) achieve a minimum *Total R-Value* of 1.4; and (ii) satisfy *glazing* energy index Option B of Table J2.4a.
8	(a) Achieve a minimum *Total R-Value* of 3.8.
	(b) Where the wall is an earth retaining wall or earth-berm, achieve a minimum *Total R-Value* of 2.0.

AN ENVELEOPE WALL OTHER THAN AN EXTERNAL WALL - MINIMUM TOTAL R-VALUE (Table J1.5b)

Location			Climate zone							
			1	2	3	4	5	6	7	8
(a)	Where the adjacent enclosed non- *conditioned space* has—									
	(i)	ventilation of not more than 1.5 air changes per hour of outside air during occupied hours; and	1.0	1.0	Nil	Nil	1.0	1.0	1.5	2.5
	(ii)	glazing in the external *fabric* as *required* by Part J2; and								
	(iii)	*roof lights* in the external *fabric* as *required* by J1.4.								
(b)	For other than (a)		2.3	2.3	2.3	1.8	1.8	1.8	2.8	3.8
Note:	When assessing the glazing and *roof lights* as *required* by Part J2 and J1.4, assess the glazing and *roof lights* as if the non- *conditioned space* is the same separate *conditioned space*.									

FLOORS - MINIMUM TOTAL R-VALUE *(Table J1.6)*

Location			*Climate zone*							
			1	2	3	4	5	6	7	8
Direction of heat flow			Upwards	Downwards and upwards		Downwards				
(a)	A slab on ground:									
	(i)	Without an in-slab heating or cooling system	Nil	Nil	Nil	Nil	Nil	Nil	1.0	2.0
	(ii)	With an in-slab heating or cooling system	1.25	1.25	1.25	1.25	1.25	1.25	1.25	2.25
(b)	A suspended floor without an in-slab heating or cooling system where the non- *conditioned space* is—		1.0	1.0	Nil	Nil	1.0	1.0	1.5	2.5
	(i)	enclosed; and								
	(ii)	where mechanically ventilated by not more than 1.5 air changes per hour.								
(c)	A suspended floor with an in-slab heating or cooling system where the non- *conditioned space* is—		1.25	1.25	1.25	1.25	1.25	1.25	1.75	2.75
	(i)	enclosed; and								
	(ii)	where mechanically ventilated by not more than 1.5 air changes per hour								
(d)	For other than (a), (b) or (c)		2.0	2.0	2.0	2.0	2.0	2.0	2.0	3.5
Note: A sub-floor space with not more than 150% of the *required* sub-floor ventilation is considered enclosed.										

17. APPENDIX F – STATUTORY FIRE SAFETY MEASURES

Schedule of Statutory Fire Safety Measures

Measure	Standard of Performance
Access panels, doors and hoppers to fire resisting shafts	BCA2014 Clause C3.13 and tested prototypes (AS 1530.4 – 2005)
Automatic fire detection and alarm system *(smoke alarm system)*	BCA2014 Clause 3 of Specification E2.2a and AS 3786 – 1993
Automatic fire detection and alarm system *(smoke detection system)*	BCA2014 Clause 4 of Specification E2.2a and AS 1670.1 – 2004
Automatic fire suppression systems *(Sprinklers)*	BCA2014 Specification E1.5 and AS 2118.1 – 1999
Emergency lifts	BCA2014 Clause E3.4
Emergency lighting	BCA2014 Clause E4.2, E4.4 and AS 2293.1 – 2005
Exit signs	BCA2014 Clause E4.5, NSW E4.6, E4.8 and AS 2293.1 – 2005
Fire control room	BCA2014 Specification E1.8
Fire dampers	BCA2014 Clause C3.15 and AS/NZS 1668.1 – 1998 (AS 1682.1-1990 and AS 1682.2-1990)
Fire doors	BCA2014 Specification C3.4 and AS 1905.1 – 2005
Fire hydrants systems	BCA2014 Clause E1.3 and AS 2419.1 – 2005
Fire seals protecting opening in fire resisting components of the building	BCA2014 Clause C3.15, Specification C3.15 and AS 1530.4 – 2005 and AS 4072.1 – 2005 and installed in accordance with the tested prototype.
Hose reel system	BCA2014 Clause E1.4 and AS 2441 – 2005
Lightweight construction	BCA2014 Specifications C1.8, Clause A2.3 and AS 1530.4-2005
Portable fire extinguishers	BCA2014 Clause E1.6 and AS 2444 – 2001
Smoke dampers	AS/NZS 1668.1 – 1998 (AS 1682.1-1990 and AS 1682.2-1990)
Sound System and Intercommunication System for Emergency Purposes	BCA2014 Clause E4.9 and AS 1670.4 – 2004
Warning and operational signs	BCA2014 Clauses D1.17, D2.23, D3.6, E3.3, E3.9 and E3.10
Fire Engineering Alternative Solution	TBA

Note that the fire safety schedule will need to be amended subject to the inclusion of a fire engineered alternative solution.