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Iglu Redfern II
80-88 Regent Street Redfern

BCA Assessment Report
Report 2018/0859 R1.1

Prepared for Iglu Pty Ltd
August 2018

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Disclaimer:

This report is based on a desktop audit of preliminary documentation only.
Details contained in the report address issues of significance to broad BCA compliance relevant to this stage of design resolution.

This report is based on a review of the design documentation only. It represents a compliance report for "documentation to this point in time" and will be subject to amendment and expansion as project documentation develops

Executive Summary

This State Significant Development Application (SSDA) seeks approval for the development of a new student accommodation facility. Specifically, the proposal involves:

- site preparation works;
- construction and use of an 18 storey building comprising:
  - 265 student accommodation beds within 185 units, arranged as follows:
    - 163 x studio units;
    - 6 x loft units; and
    - 16 x 6-bed cluster units.
  - communal student facilities including study areas, lounge rooms, laundry facilities and a rooftop terrace;
  - three ground floor retail tenancies;
  - a single commercial tenancy;
- landscaping works including terrace planting; and
- extension and augmentation of services and infrastructure as required.

The proposal will operate as an integrated campus with the adjoining Iglu facility adjacent at 66 Regent St Redfern which commenced operation in early 2018.

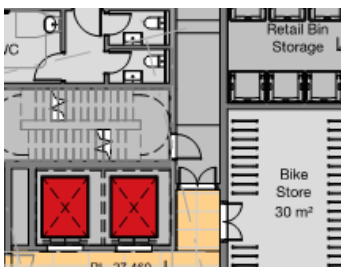
An assessment of the design of the proposed design has been undertaken against the Deemed-to-Satisfy (DTS) provisions of the relevant sections of the Building Code of Australia and the applicable Building Regulations.

Summary of BCA Parameters:

Building Use:	Studio accommodation, retail and commercial
Class of Occupancy	Class 3, 5 and 6
Type of Construction Required	Type A
Rise Storeys:	19
Number of Storeys:	20
Effective Height:	56.04m (Level 17 RL82.8m – Ground Level RL 26.76m)

The following are the main issues that require amendments to the design:

1. Swing of the fire stair doorway of ground floor impeding across the required path of travel of the back of house corridor on ground floor.



The following are the main issues proposed to be addressed by the Fire Safety Engineer via a Performance Solution:

1. Reduction of FRL's to the retail level of ground floor;
2. Deletion to FRL's to public corridor on Level 01 common areas;
3. Length of public corridor on Level 01 exceeds 40m;
4. Single exit in lieu of two from ground floor retail & back of house areas and mezzanine level;
5. Extended travel distances (7m in lieu of 6m) from a single sole-occupancy unit on levels 2 to 17;
6. Discharge location of the two fire stairs within the building on ground floor;
7. Location of the existing fire brigade booster assembly not within sight of the main entrance of the new building.

The design is capable of complying with the requirements of the relevant sections of the Environmental Planning Assessment Act 1979, the Environmental Planning and Assessment Regulations 2000 and the Building Code of Australia 2016 amendment 1. Compliance is subject to resolution of the identified areas of non-compliance and compliance with the recommendations provided within the report.

Further detailed regulatory reviews will need to be progressively undertaken as designs advance and become more resolved to ensure compliance is achieved.

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 in Section 14 of the report and should be resolved prior to construction.

Key issues which require additional details have been listed under Section 9.2 of this report and need to be clarified with SWP prior to the issue of a construction certificate.

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1. Introduction

This report presents the findings of an assessment undertaken of the proposed design of the Iglu Redfern II at 80 – 88 Regent Street Redfern against the Deemed-to-Satisfy (DtS) provisions of Building Code of Australia (BCA) 2016 Amendment 1.

It has been prepared by Steve Watson and Partners for Iglu Pty Ltd.

2. Purpose

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

The assessment is undertaken for the purpose of, and to the extent necessary for, development application to be issued under the NSW Environmental Planning and Assessment Act 1979 (The Act) and Environmental Planning and Assessment Regulation 2000 (EPAR).

3. Scope and Limitations

3.1. Scope

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

3.2. Limitations

The following limitations apply to the assessment:

- The report considers matters of a significant nature only and should not be considered exhaustive.
- The plans are assessed to the extent necessary to be issued for development approval. This means the design has been assessed to be capable of complying with the BCA without necessarily having all the detailed design completed at this stage.
- Details in regard to access for people with disabilities have been assessed to the extent of the deemed-to-satisfy provisions of the BCA/Premises Standard only. A detailed assessment against AS 1428 series, AS/NZS 2890.6 – 2009 and AS 4299 – 1995 is outside the scope of this report
- Generally, the assessment does not incorporate a detailed assessment of the requirements of the Australian Standards.
- Structural and services documentation have not been reviewed.
- Appraisals are limited to the provisions of the BCA and the Premises Standards. Other legislative requirements have not been considered. It does not address additional or specific requirements stipulated under other areas such as Safety in Design, Construction Safety, Disability Discrimination, Planning and Environment, Occupational Health and Safety, Health, Dangerous Goods, etc, which may impact on the design and use of the building. It is recommended that appropriate advice from suitably qualified consultants should be obtained for further information on these areas.

4. National Construction Code 2016 Amendment 1 –Volume 1: Building Code of Australia Class 2 to Class 9 Buildings

The National Construction Code (NCC) is a uniform set of technical provisions for the design and construction of buildings, structures and plumbing/drainage systems which is separated into 3 volumes. Volume 1 of the

NCC is the Building Code of Australia (BCA) for Class 2 to 9 buildings which is the document to which the assessment in this report has been undertaken against. The BCA is legislated under The Act and specifies the Performance Requirements for the design and construction of Class 2 to 9 buildings that must be satisfied to achieve compliance. The Performance Requirements can only be satisfied by a Performance Solution, Deemed-to-Satisfy (DTS) solution or a combination of both.

5. Performance Solutions

The BCA is written in a performance format which allows performance based buildings. This has allowed for innovation and variation from the prescriptive deemed-to-satisfy requirements of the BCA, whilst maintaining the principle levels of health, safety and amenity of building occupants.

Performance solutions are generally adopted when a nominated deemed-to-satisfy provision appears inappropriate for the design, or when a proposed design varies from the prescriptive requirements of the BCA. Subsequently, a performance solution supported by Fire Engineering analysis can determine whether a proposed design that varies from prescriptive requirements, will satisfactorily meet the performance provisions of the BCA. Ultimately, it is with the discretion of the relevant building surveyor whether to accept a deviation from the prescriptive code requirements.

Utilising the performance provisions may result in more economical and somewhat safer building, however alternative solutions may require additional on-going maintenance. It is in this instance that all parties, such as the building owner, insurance companies, proposed tenants, etc., are aware of this decision making process and are kept informed of any additional requirements needed to maintain the level of safety.

6. 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	Legislative reference	Comment
Alts and adds – no change in use	EPAR 143(3)	No reduction in the level of safety permitted
New Work	EPAR 145	All new works must comply
Access to premises	Disability (Access to Premises — Buildings) Standards 2010	Upgrade of the "Affected Part" to provide access for people with disabilities

5.1. New Work

Clause 145 of the 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.

5.2. No change of building use - structural strength and fire safety

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

5.3. Change of building use - structural strength and fire safety

If a change in use is involved under the application, Clause 143 (1) of the EPAR requires that the fire

protection (egress), structural capacity and Category 1 Fire Safety provisions must be applicable to the new use of the building.

5.4. Access to premises

The Disability (Access to Premises – Buildings) Standards came into force via BCA2011 throughout Australia on 01 May 2011, and with it introduced a higher standard of access to that required by previous versions of the BCA. In prescribed circumstances, the legislation requires upgrade of access and facilities for persons with disabilities when building work is proposed. In particular, unless works are undertaken by a lessee who does not lease the entire building, proposed building work anywhere in the building could trigger a need for enhanced access at the main building pedestrian entry and from that entry to all areas of the building that are subject to the building work.

7. Methodology

6.1. 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:
    1. Clause is administrative information only **(Noted)**;
    2. Clause is or is not relevant to the proposed work **(Applicable or N/A)**
    3. The proposed work complies with the requirements of the clause **(Complies)**;
    4. 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;
    5. 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**);
    6. 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;
    7. Proposed work is to be addressed on a performance basis via an Alternative Solution satisfying the relevant Performance Requirements. (**Performance Solution**);
    8. In the event of alterations and extensions to an existing building, a base building non-compliance may exist which is not exacerbated by the new works. **(No Reduction in Safety);**
    9. In the event of alterations and extensions to an existing building, a base building non-compliance may exist which is being exacerbated by the new works. **(Reduction in Safety)**;
    10. In the event of alterations and extensions to an existing building, a base building non-compliance may exist which is not exacerbated by the new works. **(No Reduction in Safety)**
    11. In the event of alterations and extensions to an existing building, a base building non-compliance may exist which is being exacerbated by the new works. **(Reduction in Safety)**
3) Nominate the status of the design against each BCA requirement;
4) Provide comments against each BCA requirement as appropriate.

8. Description of Proposed Development

This State Significant Development Application (SSDA) seeks approval for the development of a new student accommodation facility. Specifically, the proposal involves:

- site preparation works;
- construction and use of an 18 storey building comprising:
  - 265 student accommodation beds within 185 units, arranged as follows:
    - 163 x studio units;
    - 6 x loft units; and
    - 16 x 6-bed cluster units.
  - communal student facilities including study areas, lounge rooms, laundry facilities and a rooftop terrace;
  - three ground floor retail tenancies;
  - a single commercial tenancy;
- landscaping works including terrace planting; and
- extension and augmentation of services and infrastructure as required.

The proposal will operate as an integrated campus with the adjoining Iglu facility adjacent at 66 Regent St Redfern which commenced operation in early 2018.

9. Assessment Data Summary

The following basic assessment data has been drawn from the provisions of the BCA 2016 amendment 1.

8.1. Assumptions

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

1. Five (5%) of the total retail population is assumed to be staff.
2. For the purposes of calculating population and minimum sanitary facilities under Clauses D1.13 and F2.3 of the BCA, twenty percent (20%) of the total retail floor area of tenancies will consist of permanent fixtures, fixed shelving, racking and the like.
3. The rooftop has not been considered as a rise in storeys by definition as the only roofed portion contains plant. Should the outdoor area for residents contain a roof structure then this level will count in the rise in storeys and therefore count for the purposes of effective height.

8.2. 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. The new building works located at 80 – 88 Regent Street will link through Level 01 into the existing Iglu Redfern building on the adjacent property. As such, in considered a United Building for the purposes of Part A4 of the BCA. The two buildings together will comply with all of the requirements of the BCA as though they are a single building.
2. As a single united building, the property boundary separating the existing and proposed building is not considered a fire source feature. This is consistent with A4.1 of the BCA in particular the Guide

to the BCA for this clause which details multiple allotments for united buildings. Furthermore, it is anticipated that the allotments will likely be amalgamated as part of the development approval.

10. Issues Requiring Resolution

9.1. Issues requiring amendments to plans

The following issues need to be resolved before issuing the Construction Certificate.

Item	DTS Clause	Description of Non-compliance	Requirement to Satisfy BCA
1.	D2.20	The fire stair door swing on ground floor impedes more than 100mm into the 1m path of corridor exit when the door is fully open.	Amend design to ensure door swing is not located across the corridor.

9.2. 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.	E1.5	It is proposed that the sprinkler system will be integrated with the existing sprinkler system in the adjacent connected building. As a united building, the building is considered one building and together comply with the BCA as a single building. The existing system is a combined hydrant/sprinkler system installed to AS 2118.6 – 2012 and 2118.1 – 1999. The current BCA maintains 2118.6 – 2012, however AS 2118.1 is in a transitional phase with the either the 1999 or 2017 version able to be applied.	Designing services engineer to confirm applicable version of the sprinkler standard to be applied. A gap analysis is to be provided by the designing fire services engineer should the 2017 version be applied. A performance solution maybe required where full compliance with the 2017 standard cannot be achieved. No gap analysis is required if compliance to the 1999 version is proposed. Designing services engineer to provide confirmation of compliance to: • Proposed water supply in accordance with Clause 7 of Specification E1.5 of the BCA; • Details of whether new sprinkler valves are proposed and their location (existing building or within new building).
2.	E2.2 & E4.9	The smoke detection system & occupant warning system/SISSEP is proposed to be integrated into the existing system in the adjacent connected building. As a united building, the building is considered one building and together will comply with the BCA as a single building. The main fire indicator panel is to be located in the existing fire control room. The existing systems are installed to AS 1670.1 – 2004 and AS 1670.4 – 2004. Updated Australian Standard versions of these standards have been adopted by the current BCA. The new system is required to comply to AS 1670.1 – 2015 and AS 1670.4 – 2015.	A gap analysis is to be provided by the designing fire services engineer. A performance solution maybe required where full compliance with the 2015 versions of these Australian Standards cannot be achieved.

9.3. Performance solutions required

It is proposed to satisfy the following non-compliances via performance solutions:

Item	Non-Compliance	DTS Clause	Description	Performance Requirement
1.	Reduction of FRLs	C1.1 , Spec C1.1	Ground floor and Level 00 containing retail classifications are proposed to have FRL reduced for 3 to 2 hours.	CP1 & CP2
2.	Public corridors to Level 01 not to contain walls containing an FRL of 60 minutes	C1.1 , Spec C1.1	Level 01 will not have internal walls bounding the Class 3 public corridors achieving an FRL of --/60/60.	CP1 & CP2
3.	Level 01 public corridor length without smoke division	C2.14	The combined public corridor on Level 01 between the new and exits buildings exceeds 40m in length without smoke separation (up to 92m)	CP2
4.	Number of exits to ground and mezzanine levels	D1.2	The follow areas have access to a single exit in lieu of two: • Ground floor retail and office tenancies; • Ground floor retail bin storage and sanitary facilities; • Level 00 mezzanine.	DP4, EP2.2
5.	Extended travel distances from Class 3 portion	D1.4	Extended travel distances (7m in lieu of 6m) from a single sole-occupancy unit on levels 2 to 17	DP4, EP2.2
6.	Discharge point of fire-isolated stairs	D1.7	Discharge location of the two fire stairs within the building on ground floor.	DP4, DP5, EP2.2
7.	Location of existing fire brigade booster assembly	E1.3, AS2419.1	The existing fire brigade booster assembly is not located within sight of the main entrance to the new building.	EP1.3

11. Relevant Authorities

Where an alternative solution is proposed to meet the performance requirements contained in any one or more of the Category 2 fire safety provisions referral to Fire and Rescue NSW under Clause 144 of the EP&A Regulations is required in either of the following types of buildings:

(a) a class 9a building that is proposed to have a total floor area of 2,000 square metres or more, or
(b) a building (other than a class 9a building) that is proposed to have:
  (i) a fire compartment with a total floor area of more than 2,000 square metres, or
  (ii) a total floor area of more than 6,000 square metres,

12. Statutory Fire Safety Measures

All fire/essential safety measures installed within the building are required 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.

With performance solutions, additional or more frequent maintenance may result.

13. Conclusion

The design is capable of complying with the requirements of the relevant sections of the of the Act and EPAR and the BCA 2016 Amendment 1 subject to resolution of the identified areas of non-compliance and compliance with the recommendations provided within the report.

Further detailed regulatory reviews will need to be progressively undertaken as designs advance and become more resolved to ensure compliance is achieved.

14. BCA 2016 – Clause by Clause Assessment

Clause	Description	Comment	Status
BCA Version			
BCA 2016	**BCA version** The BCA is generally updated every 3 years with amendments influencing health, safety and amenity features required within the building. Legislation typically allows future BCA changes to be ignored provided substantial progress on the design of the development has previously occurred.	This report assumes that the applicable BCA version is BCA 2016 amendment 1. In addition, requirements of the Premises Standards (PS) are covered as relevant.	Noted
Section A: General Provisions			
A3.2	**Classification and usage** Usage on each level of the building is as follows: **LEVEL** / **USE** / **CLASS** Ground / Office / 5 Retail / 6 Mezzanine / Office / 5 Retail / 6 Level 01 / Student accommodation and common areas / 3 Level 02 to 17 / Student accommodation / 3 Level 18 / Common area and plant (ancillary) / 3		Noted
A2.1	**Suitability of materials** Every part of a building must be constructed in an appropriate manner to achieve the requirements of the BCA, using materials that are fit for the purpose for which they are intended.	The builder is responsible to adopt and install appropriate proprietary accredited building products and is to ensure that those products/assemblies are fit for the purpose they are intended and are installed in accordance with the manufacturer's specifications/ requirements for that system.	Compliance readily achievable
Section B: Structure			
B1.1	**Resistance to actions** The resistance of the building must be greater than the most critical action effect resulting from different combinations of actions	Certification from a qualified structural engineer will need to be provided at Construction Certificate stage	Compliance readily achievable
B1.2	**Determination of individual actions** The magnitude of individual actions must be determined in accordance with Clause B1.2 of the BCA.	Certification from a qualified structural engineer will need to be provided at Construction Certificate stage	Compliance readily achievable
B1.3	-	No provisions	-
B1.4	**Determination of structural resistance of materials and forms of construction** The structural resistance of materials and forms of construction must be determined in	Certification from a qualified structural engineer will need to be provided at Construction Certificate stage	Compliance readily achievable

Clause	Description	Comment	Status
	accordance with the relevant Australian Standards in accordance with Clause B1.4 of the BCA.		
B1.5	**Structural software** 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.	-	Noted
B1.6	**Construction of buildings in flood hazard areas**	-	Noted
Part B	**Structure and importance level** Assessment of the building structure will be required for dead, live, wind, earthquake, fire and other loads required by current day AS Codes. The design of the structure must be based on the appropriate 'Importance Level' under BCA Table B1.2a.	The building has an importance level 3 in accordance with Table B1.2a.	Compliance readily achievable
Section C: Fire Resistance			
Part C1 – Fire Resistance and Stability			
C1.1	**Type of construction required** **Type A Construction** BCA Type A fire resisting construction is required. The following fire ratings apply: **Building Element** **Required FRL**	Details of the proposed construction and how it will achieve the required FRL is to be provided. Certification from a structural engineer will be required for FRL's of all structural elements including existing structure. Details of the proposed method of fire separation at the junction of floors and the external wall and the junction of fire rated internal walls and the external wall must be provided for assessment.	Compliance readily achievable
	Loadbearing external walls, columns, beams: Generally 1.5 hr FRL (non-combustible) – Class 3 Generally 2 hr FRL (non-combustible) – Class 6 (subject to performance solution)	1. It is proposed to obtain a performance solution to allow the structure to achieve an FRL of 120/120/120 throughout ground floor and Level 00 for the retail portion. 2. Level 01 will not have internal walls bounding the Class 3 public corridors achieving an FRL of --/60/60. Note: The public corridor by definition is deemed from the bedroom SOU's to both fire stair exits on the floor. To be investigated as a performance solution.	Performance Solution
	Non-loadbearing external walls, etc. less than 3m from a fire source or boundary or less than 6m from another building on the site: Generally 1.5 hr FRL (non-combustible) – Class 3 Generally 2 hr FRL (non-combustible) – Class 6 (subject to performance solution)		
	Non-loadbearing external walls etc. greater than 3m from a fire source or boundary or more than 6m from other buildings on the site.: Nil (Non-combustible)		
	Floors: Generally 1.5 hr FRL		

Clause	Description		Comment	Status
		(non-combustible) – Class 3 Generally 2 hr FRL (non-combustible) – Class 6 (subject to performance solution)		
	Internal load-bearing walls/columns etc.; Supporting a floor over Supporting a roof over	Generally 1.5 hr FRL (non-combustible) – Class 3 Generally 2 hr FRL (non-combustible) – Class 6 (subject to performance solution)		
	Floors	Generally 1.5 hr FRL (non-combustible) – Class 3 Generally 2 hr FRL (non-combustible) – Class 6 (subject to performance solution)		
	Roofs	Nil with sprinkler protection (non-combustible covering)		
	Non-loadbearing Services Shafts	--/90/90 FRL (non-combustible)		
Spec C1.1	**Fire resisting construction** *Support of another part* 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 not less than that required for the part if supports and be non-combustible. *Attachments* The method of attaching or installing a finish, lining, ancillary element or service to a building element must not reduce the fire resistance of that element. *Enclosure of shafts* Shafts required to have an FRL must be enclosed at the top and bottom by construction have an FRL not less than that required for the walls of the shaft. Shafts, other than one enclosing a fire isolated stairway or ramp, do not require an FRL at the top if the shaft extends beyond the roof covering.			Compliance readily achievable
C1.2	**Calculation of rise in storeys** **Effective Height / Calculation of rise in storeys**. Rise in storeys is a defined BCA term addressing the number of main building levels excluding basements. Effective height is defined under the BCA as vertical distance between the floor of the lowest		The following parameters apply: Rise in storeys: 19 storeys Effective Height: 56.04m *(Ground floor to Level 17 RL's)*	Noted

Clause	Description	Comment	Status
	storey included in the calculation of rise in storeys and the floor of the topmost storey (excluding the topmost storey if it contains only heating, ventilating, lift or other equipment, water tanks or similar service units). These parameters influence the BCA provisions applicable to the building.		
C1.3	**Buildings of multiple classification**	The building is required to be constructed of Type A fire resisting construction.	Noted
C1.4	**Mixed types of construction**		N/A
C1.5	**Two storey Class 2, 3 or 9c buildings**		N/A
C1.6	**Class 4 parts of buildings**		N/A
C1.7	**Open spectator stands and indoor sports stadiums**		N/A
C1.8	**Lightweight construction** 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.	Details of the proposed systems to be installed must be in accordance with a tested prototype.	Compliance readily achievable
C1.9	**Non-combustible building elements** In a building of Type A or B construction the following building elements and their components must be non-combustible: i. External walls and common walls, including all components. ii. The flooring and floor framing of lift pits iii. Non-loadbearing internal wall that are required to be fire resisting. The following materials may be used where non-combustible materials are required: • Plasterboard. • Perforated gypsum. • Fibrous-plaster sheeting to AS 2185. • Fibre-reinforced cement sheeting. • Pre-finished metal sheeting. • Bonded laminated materials. • As determined by testing to AS 1530.1 • An appropriately BCA accredited product or system	Architect and Structural engineer to make provisions for this requirement in the design. A detailed review of the external cladding must be undertaken to ensure that there are no combustible materials and non-complaint claddings have not been nominated that could increase the risk of fire spread via the external façade. Ensure all façade materials have a current Certificate of Conformity or a current Certificate of Accreditation, or the like to determine their acceptance by the Fire Safety Engineer and Fire Brigade	Compliance readily achievable
C1.10	**Fire hazard properties** *(NSW variation for Entertainment Venues)* Floor materials, floor coverings and wall and ceiling lining materials need to comply with prescribed fire hazard properties. Refer to Appendix C1.10.	Compliance assumed and will require verification test data for all timber and other combustible linings and materials, including: • Carpets • Vinyls (walling and flooring) • Timber flooring and wall linings • Veneered wall panelling	Compliance readily achievable

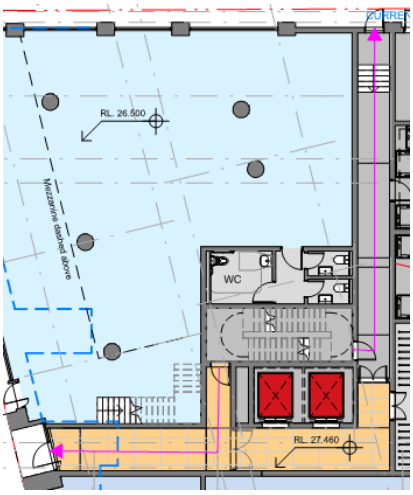
Clause	Description	Comment	Status
		• Spray-on insulation material • Other combustible finishes • Carpark soffit insulation fire test reports, based on 'room fire testing' will be required to meet fire brigade consent conditions if applicable.	
C1.11	**Performance of external walls in fire**		N/A
C1.12	**Non-combustible materials**	Gypsum, metal and laminated non-combustible materials containing combustible components are deemed to be non-combustible.	Noted
C1.13	**Fire-protected timber: Concession**		N/A
C1.14	**Ancillary elements** An ancillary element must not be fixed, installed or attached to the internal parts or external face of an external wall that is required to be non-combustible unless it is non-combustible or as specified under this clause.	External wall details showing all components to be provided for the Construction Certificate.	Additional details required
Part C2 – Compartmentation and Separation			
C2.1	**Application of Part**	Clauses C2.2, C2.3 and C2.4 do not apply to a sprinkler protected carpark, open deck carpark or open spectator stand.	Noted
C2.2	**Floor area limitations** **(Type A construction)** The floor area and volume limitations are: Class 6, 7, 8 or 9a: 5,000m^2 and 30,000m^3 **Note:** • The BCA does not require Class 3 parts of the building to be considered	The floor area and volume of Ground Floor and Level 00 levels are within the maximum limitations outlined by Table C2.2.	Complies
C2.3	**Large isolated buildings**		N/A
C2.4	**Perimeter vehicular access**		N/A
C2.5	**Class 9a and 9c buildings**		N/A
C2.6	**Vertical separation of openings in external walls**	The building is required to have sprinkler system in accordance Specification E1.5 installed throughout.	N/A
C2.7	**Separation by fire walls** A fire wall must extend to the underside of a floor having an FRL required for a fire wall or the roof covering.		N/A
C2.8	**Separation of classifications in the same storey** 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.	Each floor has a single classification applied.	Compliance readily achievable

Clause	Description	Comment	Status
C2.9	**Separation of classifications in different storeys** 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.	A performance solution has been proposed to reduce the FRL's down to 2 hours throughout ground floor and level 00. Floors are required to have an FRL not less than 120/120/120. Confirmation that the existing structure achieves an FRL of 120/120/120 is required from the structural engineer	Compliance readily achievable
C2.10	**Separation of lift shafts** Openings for lift landing doors and services must be protected in accordance with the DTS provisions of Part C3 of the BCA	The lifts are required to be emergency lifts therefore are required to be within a 2 hr FRL shaft	Compliance readily achievable
C2.11	**Stairways and lifts in one shaft**	The lift and stairways are within separate shafts	Complies
C2.12	**Separation of equipment** Two-hour fire enclosure is required for: • lift motor rooms • emergency generators sustaining emergency equipment operating in emergency mode • central mechanical smoke control plant • boilers • batteries with voltage over 24 volts and a capacity exceeding 10 ampere hours. (Batteries within an electricity network substation are exempt.)	Any UPS system with a voltage exceeding 24 volts and a capacity exceeding 10 amp hours must be fire separated.	Compliance readily achievable
C2.13	**Electricity supply system** A substation located within a building or main switchboard, which sustains emergency equipment, must be separated from the remainder of the building by 2hr fire rated construction. Switchboards sustaining emergency equipment must be constructed so that emergency equipment switchgear is separated from non-emergency equipment switchgear by metal partitions designed to minimise the spread of faults.		Compliance readily achievable
C2.14	**Public corridors in Class 2 & 3 buildings** Public corridors must be divided at intervals of not more than 40m by smoke-proof walls complying with Clause 2 of Specification C2.5.	The combined public corridor on Level 01 between the new and exits buildings exceeds 40m in length without smoke separation (up to 92m) **To be investigated as a performance solution.** 	Performance Solution
Part C3 – Protection of Openings			
C3.1	**Application of Part**		Noted

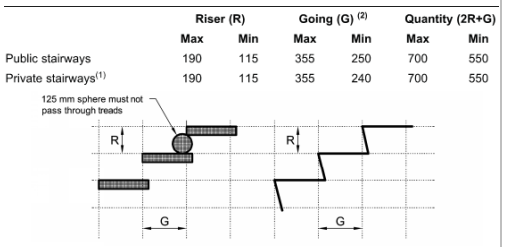
Clause	Description	Comment	Status
C3.2	**Protection of openings in external walls** Openings in the external walls of the building are to be protected in accordance with C3.4, being fire rated windows, external sprinklers or the like, if: • less than 3m to side or rear boundary, • less than 6m from the far boundary of a road or lane, • Less than 6m from another building on the same allotment. Openings that require protection should not occupy more than $^1/_3$ of the storey in which they occur.	As a united building, the boundary between the properties is not considered a fire source feature.	N/A
C3.3	**Separation of external walls and associated openings in different fire compartments**	Each floor (including ground and mezzanine combined) is a separate fire compartment	N/A
C3.4	**Acceptable method of protection** Window openings that are required to be protected are to be protected by internal or external wall wetting sprinklers with windows that are automatic closing or permanently fixed in the closed position, -/60/- fire windows that are automatic closing or permanently fixed closed or -/60/60 automatic closing fire shutters. Doorways are to be protected by internal or external wall wetting sprinklers used with doors that are self-closing or automatic closing, or -/60/30 self-closing or automatic closing fire doors. Other openings, excluding voids, to be protected with internal or external wall wetting sprinklers or construction having an FRL not less than -/60/-		Noted
C3.5	**Doorways in fire walls**		N/A
C3.6	**Sliding fire doors**		N/A
C3.7	**Protection of doorways in horizontal exits**		N/A
C3.8	**Openings in fire isolated exits** -/60/30 self-closing fire doors are required to doorways providing access to fire isolated stairways. A window or other opening in the external wall of the fire isolated exit is to be protected in accordance with Clause C3.4 if it is within 6m of, and exposed to, a window or other opening in the wall of the same building.		Compliance readily achievable
C3.9	**Service penetrations in fire isolated exits** 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.		Compliance readily achievable
C3.10	**Openings in fire isolated lift shafts** Openings in lift shafts are to be protected by -/60/- fire doors complying with AS1735.11 and are set to remain closed except when	Certification from the lift supplier is required for the installation of the new lift	Compliance readily achievable

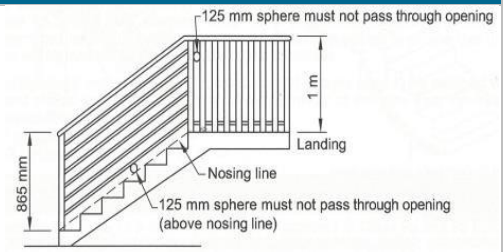
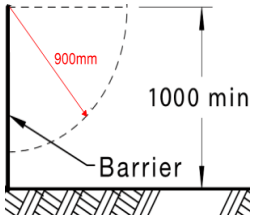
Clause	Description	Comment	Status
	discharging or receiving passengers, goods or vehicles. Lift indicator panels are to be backed by construction having an FRL of not less than -/60/60 if it exceeds 35,000mm^2 (175 X 200 mm).		
C3.11	**Bounding construction: Class 2, 3, 4 and 9 buildings** Doorways opening to public corridors within the Class 3 portion are to be protected with self-closing -/60/30 fire doors.		Compliance readily achievable
C3.12	**Openings in floors for services** Services passing through floors are to be placed within fire resisting shafts or in accordance with Clause C3.15.	Services penetrations of fire rated structure generally need to be fire-stopped and/or located in fire rated riser shafts. Openings in fire rated elements need to be fire resisting to maintain the function of the elements.	Compliance readily achievable
C3.13	**Openings in shafts** 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.		Compliance readily achievable
C3.14	-	This clause has deliberately been left blank	-
C3.15	**Openings for service installation** Services penetrations through a building elements (other than an external wall or roof) that are required to have an FRL with respect to integrity or insulation or a resistance to the incipient spread of fire, must comply with a tested system or with Specification C3.15. 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. Ventilation and air-conditioning systems are to be installed in accordance with AS/NZS 1668.1.	Any system used must be a certified system and installed in accordance with the tested method. Specifications of the methods of fire sealing need to be provided.	Compliance readily achievable
C3.16	**Construction Joints** Construction joints in elements required to have a fire resistance with respect to integrity and insulation must be protected.	Construction joints are to be installed in accordance with a tested prototype in accordance with AS1530.4.	Compliance readily achievable
C3.17	**Columns protected with lightweight construction to achieve an FRL**	Columns must be protected in accordance with the identical tested prototype.	Compliance readily achievable

Clause	Description	Comment	Status
Section D: Access and Egress			
Part D1 - Provision for Escape			
D1.1	**Application of Part**		Noted
D1.2	**Number of exits required** At least two exits need to serve all areas of every storey as follows: • High rise buildings over 25m in effective height.	The follow areas have access to a single exit in lieu of two: • Ground floor retail and office tenancies; • Ground floor retail bin storage and sanitary facilities; • Level 00 mezzanine. **To be investigated as a performance solution.**	Performance Solution
D1.3	**When fire-isolated stairways and ramps are required** Every stair in a Class 5 to 9 building must be fire isolated unless it does not connect or pass through more than 3 consecutive floors in a sprinkler protected building, or 2 storeys in a non-sprinkler protected building.	The tower exits stairs are proposed to be fire-isolated.	Complies
D1.4	**Exit travel distances** Class 3 portion the following applies: • The entrance doorway of any sole-occupancy unit must be not more than 6m from an exit or a point which travel in different directions to 2 exits is available; • The entrance doorway of any sole-occupancy unit must be 20m from a single exit serving the storey at the level of egress to a road or open space; • Areas not within a sole-occupancy unit must be not more than 20m from an exit or a point which travel in different directions to 2 exits is available Class 5/6 portion the following applies: • No point on the floor must be more than 20m to an exit or a point in which travel in different directions to 2 exits is available, in which case, the maximum distance to 1 exit cannot exceed 40m.	The following areas have been identified with travel distances exceeding 6m to a point of choice from an entrance doorway of a sole-occupancy unit : • Level 2 to 17 – One sole-occupancy room is approx. 7m from a point of choice **To be investigated as a performance solution.** 	Performance solution
D1.5	**Distance between alternative exits** The following travel distance limits apply: • ≤ 45m travel distance between alternative exits and not less than 9m between alternative exits for the Class 3 portion; • ≤ 60m travel distance between alternative exits and not less than 9m between alternative exits for the Class 5/6 portion; • Exit paths to alternative exits should not converge at any point to be less than 6m apart.		Complies
D1.6	**Dimensions of exits and paths of travel to exits**		Complies

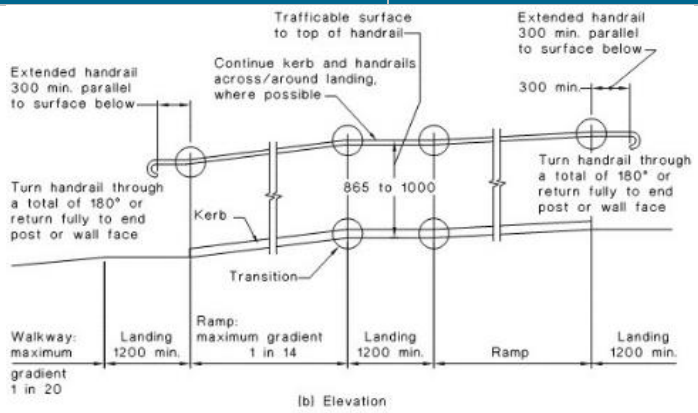
Clause	Description	Comment	Status
D1.7	**Travel via fire-isolated exits**	The discharge of the two fire stairs is not to a road or open space or to a covered area as permitted by the BCA **To be investigated as a performance solution.** 	Performance solution
D1.8	**External stairways or ramps in lieu of fire-isolated exits**		N/A
D1.9	**Travel by non-fire-isolated stairways or ramps**		Complies
D1.10	**Discharge from exits** An exit must not be blocked nor be capable of being blocked at its point of discharge.	Details of the methods of protection of the doors are required to be provided on the plans to demonstrate compliance against the requirements of BCA Clause D1.10	Compliance readily achievable
D1.11	**Horizontal exits**		N/A
D1.12	**Non-required stairways, ramps or escalators**		N/A
D1.13	**Number of persons accommodated**	Refer to below	Noted
	Level / Use	Population: Patrons / Staff	
	Ground & Mezzanine — Retail (General retail) *rest, bar, café not counted for	79 / 5	
	Ground & Mezzanine — Office	40	
D1.14	**Measurement of distances**		Noted
D1.15	**Method of measurement**		Noted
D1.16	**Plant rooms, lift machine rooms and electricity network substations: Concession** A ladder may be used in lieu of a stairway as an exit from: a) a plant room with a floor area not more than 100m^2, or b) all but one point of egress from a plant room with a floor area not more than 200m^2.		Compliance readily achievable
D1.17	**Access to lift pits**	Lift consultant to confirm.	Compliance readily

Clause	Description	Comment	Status
	Access requirements apply to lift pits over 3m in depth.		achievable
Part D2 – Construction of Exits			
D2.1	**Application of Part**		Noted
D2.2	**Fire isolated stairways and ramps** Fire resisting shafts must be constructed of non-combustible materials and so that if there is local failure it will not cause structural damage or impair the fire resistance of the shaft		Compliance readily achievable
D2.3	**Non fire isolated stairways and ramps** Required stairs in a building having a rise in storeys of not more than 2 must be constructed only of reinforced or prestressed concrete, or steel not less than 6mm thick or timber that has a finished thickness of not less than 44mm and an average density of not less than 800 kg/m^3 at a moisture content of 12%.		N/A
D2.4	**Separation of rising and descending stair flights**	The building only contains descending flights	N/A
D2.5	**Open access ramps and balconies**		N/A
D2.6	**Smoke lobbies**		N/A
D2.7	**Installations in exits and paths of travel** Electrical meters and motors, distribution boards and telecommunication boards must not be accessed from fire isolated exits and, if located in corridors leading to exits, should occur in non-combustible or fire protective smoke sealed enclosures. No openings to ducts conveying hot products of combustion permitted in required exits. Gas or fuel services not permitted in required exits. Electric or services equipment in paths of travel to exits must be within a non-combustible and smoke sealed enclosure.	Install non-combustible linings to the internal walls, ceiling and doors of relevant cupboards and install smoke seals to the doors.	Compliance readily achievable
D2.8	**Enclosure of space beneath stairs and ramps**		N/A
D2.9	**Width of required stairways and ramps**		N/A
D2.10	**Pedestrian ramps**		N/A
D2.11	**Fire-isolated passageways** Fire isolated passageways are to have an FRL equivalent to the fire resisting stair shaft as specified in Specification C1.1 when tested from the outside		Compliance readily achievable
D2.12	**Roof as open space**		N/A
D2.13	**Going and risers** To provide safe passage, stairways must comply with the following: • minimum 2 risers / maximum 18 in each flight • risers 115mm min 190 mm max - going 250mm min 355mm max - 2R+G 550mm min 700mm max. • Adjacent risers, or between adjacent goings a	Further detail of the stairs will need to be provided to confirm compliance	Compliance Readily Achievable

Clause	Description	Comment	Status
	variation no greater than 5mm is permitted and the largest and smallest riser within the flight or the largest and smallest going within a flight is not to exceed a variation of 10mm. • 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 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** Ramps Surfaces, stair tread surfaces or nosing strips, and stair landing surfaces, or landing nosing strips to a flight below, must achieve slip-resistance classifications to AS4586-2013 as follows: **Application** / **Dry Surface Conditions** / **Wet Surface Condition** 1:14 or steeper ramps — P4 or R11 — P5 or R12 Ramps of 1:14 to 1:20 — P3 or R10 — P4 or R11 Tread or Landing Surface — P3 or R10 — P4 or R10 Nosing Strip or Landing Strip — P3 — P4	Certification / test reports on the slip resistance of the surfaces will need to be provided on constructed elements.	Compliance readily achievable
D2.15	**Thresholds** Steps should not occur at doorways without a threshold landing except as follows: • In a building required to be accessible and the doorway opens to a road or open space and is provided with a threshold ramp or step ramp in accordance with AS1428.1, • Or in any other case a single 190mm step is permitted at doors leading to the exterior.	Note that where access for people with disabilities is required it is not permitted to have a step at the threshold of a doorway	Compliance readily achievable
D2.16	**Barriers to prevent falls** Requirements apply to the provision and design of barriers at locations where a person could fall 1m or more. Generally, 125mm maximum gap size limits apply between balusters or rails and a 1m minimum height applies, with alternate dimensions permitted in fire isolated stairs and industrial areas.		Compliance readily achievable

Clause	Description	Comment	Status
	 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. Climbable elements cannot be located within 900mm of the top rail of each balustrade where the fall is greater than 4m. This measurement is taken in an arc as seen in the extract below 		
D2.17	**Handrails** Handrails to exits including parts of fire isolated exit serving an area required to be accessible to people with disabilities must comply with Clause 12 of AS1428.1, viz: • Handrails not to obstruct circulation space • 30-50mm diameter • 865-1000mm above nosing line of stairs • 865-1000mm above ramps and landings • Consistent height throughout • 50mm grip clearance and no obstructions to handhold • Continuous at internal (return) landings • Provided with handrail extensions and 180 degree curled ends	Handrail details to be confirmed by the access consultant. Handrails are to be provided in compliance with Clause D3.3 and include the following- **Non-Fire Isolated Stairways and Ramps** All stairs and ramps not used as an emergency exit are to have handrails installed on both sides that comply with Clause 10 & 11 of AS1428.1-2009 **Fire Isolated Stairways and Ramps** In Fire Isolated Stairways & Ramps a handrail is required to be installed to at least one side of stair flights and located not less than 865mm above the nosing's of stair treads and the floor surfaces of landings **Consistent Handrail Heights for all stairways** The height of the top of the handrail, measured at a height of between 865mm – 1000mm vertically from the stair nosing shall be consistent throughout the ramp (or stairs) and any landings. All stairs including fire stairs are required to be designed to comply with Clause 12 of AS1428.1 – 2009	Compliance readily achievable
	Ramps		

Clause	Description	Comment	Status

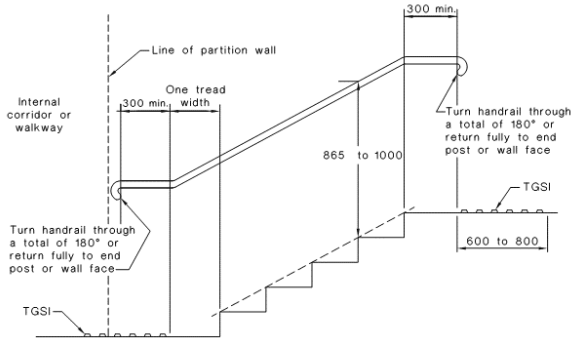


(b) Elevation

DIMENSIONS IN MILLIMETRES

FIGURE 14 RAMP HANDRAILS

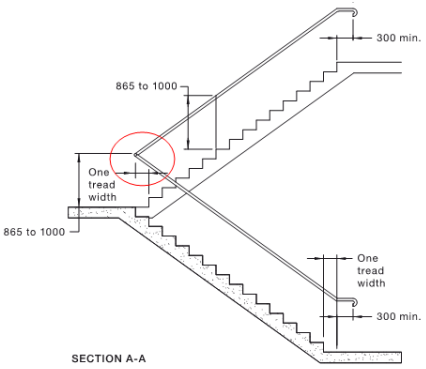
Stairways



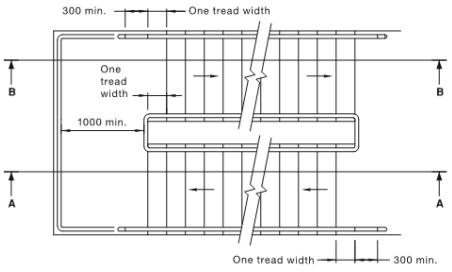
SECTIONAL VIEW

DIMENSIONS IN MILLIMETRES

FIGURE 26(B) STAIRWAY LOCATION AND HANDRAIL EXTENSIONS AT END OF STAIRWAY OTHER THAN AT LINE OF BOUNDARY



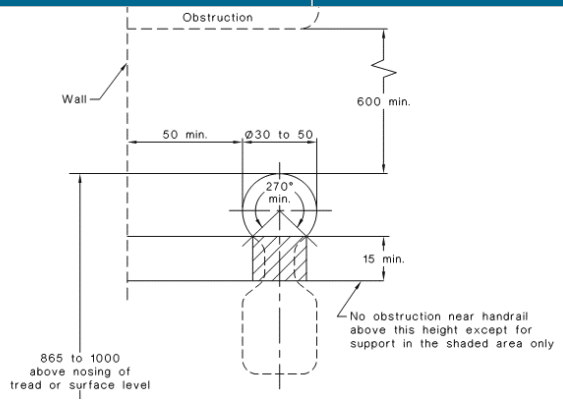
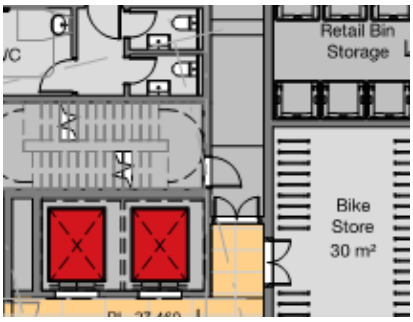
SECTION A-A

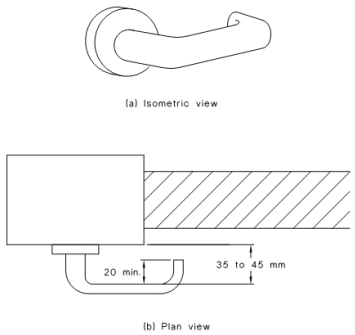


(a) Plan

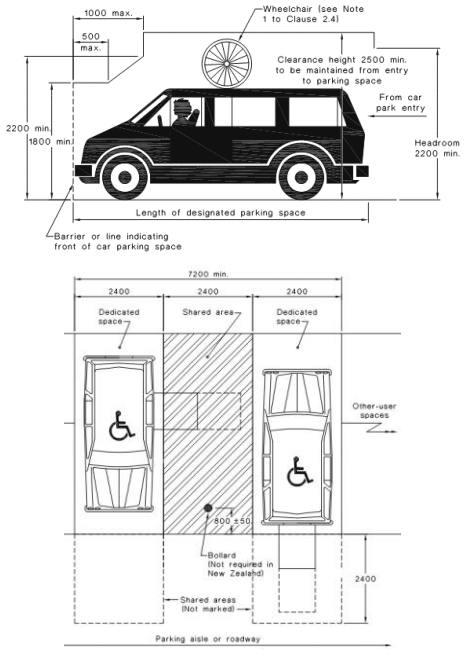
DIMENSIONS IN MILLIMETRES

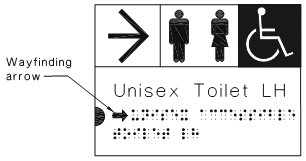
Handrail Profile

Clause	Description	Comment	Status
			
D2.18	**Fixed platforms, walkways, stairways and ramps** Platforms, walkways, stairs, ladders and the like that give access to and around plant and equipment, machine rooms, attic spaces and other low use areas of the building are permitted provided that construction details are to AS1657.	Certification to AS1657 is to be provided	Compliance readily achievable
D2.19	**Doorways and doors** Exit doors must not be revolving door, roller shutter or tilt door. Can be fitted with a sliding door if it leads directly to open space and can be opened manually under a force of not more than 110N and be fitted with a fail-safe device if the door is power operated.	Auto sliding doors at the entries into the building must comply with these requirements	Compliance readily achievable
D2.20	**Swinging doors** Defined exit doors that serve a part of a building with a floor area over 200m^2 must swing outward in the direction of exit travel. Must not encroach more than 500mm into the required width of the stair or 100mm when fully open and swing in the direction of travel.	The fire stair door swing impedes more than 100mm into the 1m path of corridor exit when the door is fully open. 	Does not comply
D2.21	**Operation of latch** Exit doors should be provided with “free handle” egress via a downward or pushing action and, if serving an area accessible to people with disabilities, must have non-slip “D” pull handles with 35-45mm hand clearances.	All exit doors and doors in the path of travel must comply.	Compliance readily achievable

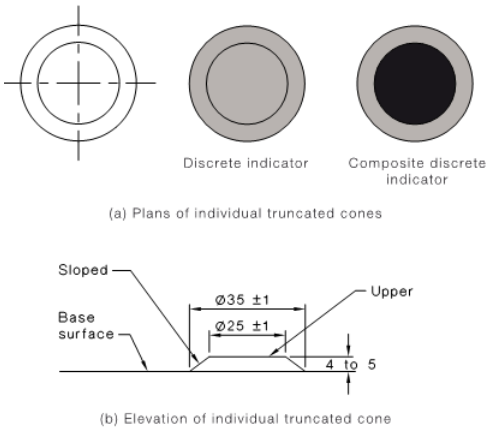
Clause	Description	Comment	Status
			
D2.22	**Re-Entry from Fire-Isolated Exits** Fire isolated stair doors must facilitate re-entry from within the stair back onto the floor on every 4th level at all times and on all levels in the event of a fire alarm, where the exit stair serves a storey above 25m in effective height. Doors of fire-isolated exits must not be locked from the inside of a fire-isolated exit, unless: <u>Option 1</u> • All doors are fitted with a fail-safe device that automatically unlocks the door upon activation of a fire alarm; **AND** • On at least every fourth storey, the doors are not able to be locked at all and are sign posted stating re-entry is available at that level. <u>Option 2</u> • All doors are fitted with a fail-safe device that automatically unlocks the door upon activation of a fire alarm; **AND** • An intercommunication or audible/visual alarm system is provided within the stair to assist persons who may accidentally be locked within the stair.		Compliance readily achievable
D2.23	**Signs on doors** Signage in capital letters not less than 20mm high to be provided on doors as follows i. An automatic door held open by an automatic hold-open device: **FIRE SAFETY DOOR - DO NOT OBSTRUCT** ii. for a self-closing door **FIRE SAFETY DOOR** **DO NOT OBSTRUCT** **DO NOT KEEP OPEN** iii. 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 or from this exit, or (b) to interfere with or obstruct the operation of any fire doors, or (c) to remove, damage or otherwise interfere with this notice.	Compliance readily achievable
D2.24	**Protection of openable windows** Windows serving a residential bedroom or serving an early childhood centre must be protected where		Compliance readily achievable

Clause	Description	Comment	Status
	the floor is 2m or more above the external surface below. 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 or 3 buildings or Class 9b early childhood centre. Where the window sill is below 1.7m above the floor level, the openable portion of the window must be protected with • a device to restrict the window opening or • 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. Where the fall distance from the floor to the surface below is 4m or more or where a release device occurs to a required screen, an additional barrier at 865mm above floor level is required and must be non-climbable with gaps no greater than 125mm between elements.		
D2.24	**Timber stairways: Concession**		N/A
NSW D2.101	**Doors in the path of travel in an Entertainment Venue**		N/A
Part D3 – Access for People with Disabilities			
D3.1	**General building access requirements** Access is generally required for persons with a disability throughout all areas unless specifically exempted.	Access is required throughout. Consultation with the access consultant is required	Compliance readily achievable
D3.2	**Access to buildings** External access to the building for people with a disability must be provided: • From main pedestrian entry points at the allotment boundary. • Through the principle pedestrian entrance. • Through at least 50% of all pedestrian entries. • From accessible car parking spaces. • For buildings over 500m², so that an accessible entry occurs within 50m of any non-accessible entry. • From any another accessible building on the site.	Refer to access consultant's report.	Compliance readily achievable
D3.3	**Parts of the building to be accessible** All parts of the building must be accessible to people with a disability except for areas where access would be inappropriate due to the particular use or areas that would pose a health or safety risk to people with a disability.	Refer to access consultant's report.	Compliance readily achievable

Clause	Description	Comment	Status
	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. Access ways must have passing spaces and turning spaces complying with AS 1428.1. Pile height or pile thickness of carpets shall comply with the requirements of this Clause and AS 1428.1.		
D3.4	**Exemptions** Certain areas may not need to be accessible if the area is deemed inappropriate because of the particular use or the area would pose a health or safety risk for people with disabilities.		Noted
D3.5	**Accessible car parking** The accessible parking spaces must comply with AS/NZS 2890.6 – 2009. General requirements are: • 2.4m x 5.4m. • 2.2m head clearance for access and egress routes to and from accessible car spaces. • 2.5m head clearances over accessible car spaces. • Flat even surfaces. • Designated and sign posted for disabled users. 		N/A
D3.6	**Signage** 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.	Signage details must be in accordance with AS1428.1 - 2009 and Specification D3.6 of the BCA.	Compliance readily achievable

Clause	Description	Comment	Status
	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.		
D3.7	**Hearing augmentation**		N/A

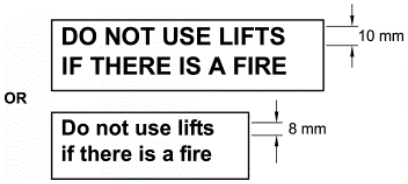
D3.8	**Tactile indicators (TGSIs)**
	Tactile indicators are to be provided to all stairways, ramps and escalators must be provided to warn people who are blind or have a vision impairment that they are approaching:
	• a stairway, other than a fire-isolated stairway,
	• a ramp other than a fire-isolated 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 access way meeting a vehicular way adjacent to any pedestrian entrance to a building, excluding a pedestrian entrance
		Refer to access consultant's report.	Compliance readily achievable

Clause	Description	Comment	Status
	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  		
D3.9	**Wheelchair seating spaces in Class 9b assembly buildings**		N/A
D3.10	**Swimming pools**		N/A
D3.11	**Ramps**		N/A
D3.12	**Glazing on an accessway** 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.	Glazed shopfronts will need to have solid and non-transparent decals installed in accordance with AS 1428.1	Compliance readily achievable
Section E: Services and Equipment			
Part E1 – Fire Fighting Equipment			
E1.1	-	This Clause has deliberately been left blank	
E1.2	-	This Clause has deliberately been left blank	
E1.3	**Fire hydrants** Fire hydrant cover is required throughout to AS2419.1 from hydrants located externally, within fire stairs or at other approved locations.	It is proposed to integrate into the existing fire hydrant system in the adjacent connected building. As a united building, the building is considered one building and together comply with the BCA as a single building. The existing system is a combined hydrant/sprinkler system installed to AS 2118.6 – 2012 and 2419.1 – 2005. The current BCA maintains both versions of these standards therefore no gap analysis is required. The existing fire brigade booster assembly and pump room will be utilised. The existing fire brigade booster assembly is not located within sight of the main entrance to the new building. **To be investigated as a performance solution.**	Performance solution

Clause	Description	Comment	Status
		Full compliance with AS2419.1 will be required unless varied via fire brigade approval. 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: The hydrant hose must extend at least 1m into rooms to be counted for coverage.* *Note 2: If full coverage is not provided from hydrants located within the stairs alone. Intermittent hydrant outlets can be installed to achieve a compliant coverage. The hydrants are to be located not more than 25m from another hydrant to allow for progressive attack.* *Note 3: As the building has an effective height of greater than 25m the system is required to be installed in the configuration of a ring main*	
E1.4	**Fire hose reels** Applicable to the Class 5 and 6 portion. Does not apply to Class 3 parts Fire hose reel coverage to AS2441-2005 is required throughout with hose reels located adjacent to stairs and exits. Where coverage is not achieved with hose reels located Additional hose reels are permitted to be located along the paths of travel to achieve coverage where system coverage is not achieved adjacent to exits/internal fire hydrants	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.	Compliance readily achievable
E1.5	**Sprinklers** The building requires a sprinkler system as it has an effective height greater than 25m Sprinkler pumps and valves must be accessible from the street. Sprinkler system activation must be linked to an audible occupant warning system. Sprinkler hazard Class under AS2118 needs to be agreed where uncertainty of usage under Appendix 1 of the Code occurs.	It is proposed that the sprinkler system will be integrated with the existing sprinkler system in the adjacent connected building. As a united building, the building is considered one building and together comply with the BCA as a single building. The existing system is a combined hydrant/sprinkler system installed to AS 2118.6 – 2012 and 2118.1 – 1999. The current BCA maintains 2118.6 – 2012, however AS 2118.1 is in a transitional phase with the 1999 or 2017 version able to be applied. Designing services engineer to confirm applicable version of the sprinkler standard to be applied. A gap analysis is to be provided by the designing fire services engineer should the 2017 version be applied. A performance solution maybe required where full compliance with the 2017 cannot be achieved. No gap analysis is	Additional details required

Clause	Description	Comment	Status
		required if compliance to the 1999 versions is proposed. Designing services engineer to provide confirmation of compliance to: • Proposed water supply in accordance with Clause 7 of Specification E1.5 of the BCA; • Details of whether new sprinkler valves are proposed and their location (existing building or within new building).	
E1.6	**Portable fire extinguishers** Portable Fire Extinguishers are required be installed to Table E1.6 and AS 2444 requirements, at: • emergency services switchboards • kitchens • flammable liquid stores • at nurses' stations • special risk areas • where fire hose reels are not installed • Class 2, 3 or 4 residential areas are to be protected by 2.5kg ABE type fire extinguishers located in common areas on the storey served and located not more than 10m from each sole occupancy unit entry door.		Compliance readily achievable
E1.7	-	This Clause has deliberately been left blank	
E1.8	**Fire control centre** A fire control room in accordance with Specification E1.8 is required as the building has an effective height of greater than 50m.	It is proposed to utilise the existing fire control room in the adjacent connected building. As a united building, the building is considered one building and together comply with the BCA as a single building. As such, the existing fire control room complies in terms of serving the new works.	Complies
E1.9	**Fire precautions during construction** Fire services are required during construction, including fire hydrants and hose reels which must be active and operational after the building reaches a construction stage effective height of 12m. When the building reaches 12m effective height: • All required hydrants and hose reels must be operational on every storey covered by a roof or floor slab over, except for the two uppermost storeys. • Any required booster connections must be installed.	Further discussion required with builder to determine that this is included in their program. BCA compliance with respect to fire services during construction can be problematic as hydrants with required pressures and flows and booster connections often cannot be achieved at the required time. A temporary fire protection system, possibly with temporary boosters and no fire pumps, may need to be agreed with the fire brigade. This needs to be put in place early in the construction programme and may require liaison with the builder and his fire services contractor.	Compliance Readily achievable
E1.10	**Provisions for special hazards**		N/A
Part E2 – Smoke Hazard Management			
E2.1	**Applicable of Part**	Part is not applicable to	Noted

Clause	Description	Comment	Status
		• open deck car parks • open spectator stands • a Class 8 electricity network substation with a floor area not more than 200m^2 • storerooms, etc. less than 30m^2 • sanitary compartments • plant rooms or the like	
E2.2	**Smoke Hazard Management - General requirements** The following smoke hazard management systems are required for the building: • Stair pressurisation in accordance with AS 1668.1 – 2105 to the entire of both fire isolated stairs as they are serving a storey over 25m effective height. • Automatic smoke detection and alarm system complying with Clause 4 of Specification E2.2a and AS1670.1 – 2015 throughout including within sole-occupancy units. Details of any alarm acknowledgment facility will need to be provided. • Automatic smoke detection and alarm system complying with Clause 5 of Specification E2.2a and AS1670.1 – 2015 throughout to activate air pressurisation systems for fire-isolated exits including having additional smoke detectors installed adjacent to each bank of lift landing doors set back horizontally for the door openings by not more than 3m. • The smoke detection systems required under Specification E2,2a Clause 4 and 5 are required to activate a building occupant warning system in accordance with Clause 6 of Specification E2.2a (noting Clause E4.9 of the BCA requires SSISEP in addition to AS 1670.4). • Note: The Class 5/6 portion does not require zone smoke control as it is located within a single fire compartment in an otherwise Class 3 building. • 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.	The smoke detection system & occupant warning system/SISSEP is proposed to be integrated into the existing system in the adjacent building. As a united building, the building is considered one building and together will comply with the BCA as a single building. The main fire indicator panel is to be located in the existing fire control room. The existing systems were installed to AS 1670.1 – 2004 and AS 1670.4 – 2004. Updated Australian Standard versions of these standards have been adopted by the current BCA . The new system is required to comply to AS 1670.1 – 2015 and AS 1670.4 – 2015. A gap analysis is to be provided by the designing fire services engineer. A performance solution maybe required where full compliance with the 2015 versions of these Australian Standards cannot be achieved.	Additional details required
E2.3	**Provisions of special hazards**		N/A
Part E3 – Lift Installations			
E3.1	**Lift installations**	Certification of lift design to be provided	Compliance

Clause	Description	Comment	Status
	Electric and electrohydraulic lifts must comply with the design requirements of BCA Specification E3.1.		readily achievable
E3.2	**Stretcher facility in lifts** Buildings greater than 12m in effective height require a lift sized to accommodate a stretcher of 2m x 0.6m x 1.4m high. The lift must serve every level to which lift access is provided.	At least one of the lifts is required to accommodate a stretcher facility	Compliance readily achievable
E3.3	**Warning against use of lift in fire** Warning signage is required at lift doors advising that lifts should not be used in the event of a fire.	Signage to be installed stating. 	Compliance readily achievable
E3.4	**Emergency lifts** Emergency lifts of prescribed size, operation and fire isolation are as the building has an effective height over 25m. Where more than two passenger lifts serve a storey, two emergency lifts must be provided, and these must be in separate shafts if multiple lift shafts occur. The following requirements apply to an emergency lift: • Must serve all storeys served by a passenger lift. • Must be contained in a fire rated shaft.	Both lifts are required to be an emergency lift	Compliance readily achievable
E3.5	**Landings**		Compliance readily achievable
E3.6	**Passenger lifts** Every passenger lift must be one of the types identified in Table E3.6a, have accessible features in accordance with Table E3.6b and not reply on a constant pressure device for its operation if the lift car is fully enclosed.		Compliance readily achievable
E3.7	**Fire service control** Where lifts serve a storey above 12m in effective height: • A fire service control switch is required for each lift or lift group. • A lift car fire service drive control is required for each lift.	Certification of lift design to be provided	Compliance readily achievable
E3.8	**Aged care buildings**		N/A
E3.9	**Fire service recall control switch** The fire service control switch must be located at the landing nominated by the appropriate authority and, when activated, must return all lifts to the nominated floor. If a lift car drive control has been activated, it shall override the landing fire service control switch.	Certification of lift design to be provided	Compliance readily achievable
E3.10	**Lift car fire service drive control switch** The lift car service drive control must be activated	Certification of lift design to be provided	Compliance readily

Clause	Description	Comment	Status
	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.		achievable
Part E4 – Emergency Lighting, Exit and Warning Systems			
E4.1	-	This clause has been intentional left blank	-

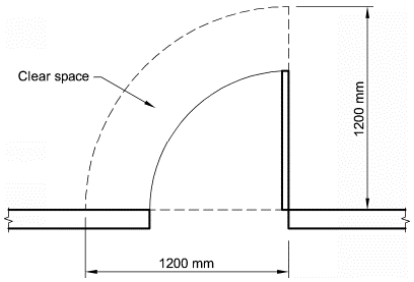
E4.2	**Emergency lighting requirements**
	Emergency lighting is to be provided throughout the building.
		Emergency lighting is to be provided in:
		• every fire-isolated stairway, fire-isolated ramp or fire-isolated passageway.
		• Every passageway, hallway, corridor or the like, that is part of the 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.
		• In every required non-fire isolated stairway
		• 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.
			Compliance readily achievable

E4.3	**Measurement of distances**		Noted
E4.4	**Design and operation of emergency lighting** Emergency lighting must comply with to AS2293.1		Compliance readily achievable
E4.5	**Exit signs** 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.	Compliance readily achievable
E4.6	**Direction signs** 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		Compliance readily achievable

Clause	Description	Comment	Status
	exit		
E4.7	**Class 2 and 3 buildings and Class 4 parts: Exemptions**		Noted
E4.8	**Design and operation of exit signs** 1. Exit signs are to operate in accordance with AS 2293.1. 2. Photo luminescent exit sign are to comply with Specification E4.8		Compliance readily achievable
E4.9	**Sounds systems and intercom systems for emergency purposes** As the building has an effective height greater than 25m, a sound system and intercom system for emergency purposes (SSISEP) complying with AS 1670.4 must be installed throughout the building.	The smoke detection system & occupant warning system/SISSEP is proposed to be integrated into the existing system in the adjacent building. As a united building, the building is considered one building and together will comply with the BCA as a single building. The main fire indicator panel is to be located in the existing fire control room. The existing systems were installed to AS 1670.1 – 2004 and AS 1670.4 – 2004. Updated Australian Standard versions of these standards have been adopted by the current BCA . The new system is required to comply to AS 1670.1 – 2015 and AS 1670.4 – 2015. A gap analysis is to be provided by the designing fire services engineer. A performance solution maybe required where full compliance with the 2015 versions of these Australian Standards cannot be achieved.	Additional details required
Section F: Health and Amenity			
Part F1 – Damp and Weatherproofing			
F1.0	**Water proofing of external walls** Weatherproofing of external wall systems must be in accordance with BCA Verification Method FV1.	A test report on the proposed wall system is to be provided. The test report must include the following information: (i) Name and address of the person supervising the test. (ii) Test report number. (iii) Date of the test. (iv) Cladding manufacturer's name and address. (v) Construction details of the test specimen, including a description, and drawings and details of the components, showing modifications, if any. (vi) Test sequence with the pressures used in all tests. (vii) For each of the static and cyclic pressure tests, full details of all leakages, including position, extent and timing.	Compliance readily achievable

Clause	Description	Comment	Status
F1.1	**Stormwater drainage** Stormwater drainage must comply with AS/NZS 3500.3.	Hydraulic drawings and design certification to be provided at Construction Certificate stage.	Compliance readily achievable
F1.2	-	This clause has deliberately been left blank	-
F1.3	-	This clause has deliberately been left blank	-
F1.4	**External above ground membranes** External waterproofing membrane systems for roofs, decks, balconies and the like must comply with AS4654 Parts 1 and 2.	The standard membrane detailing for waterproofing including minimum upturn termination lengths, requirements for stepped balcony details at doorways and windows and provision of continuous grates where stepping does not occur.	Compliance readily achievable
F1.5	**Roof coverings** Metal sheet roofing complying with AS 1562.1		Compliance readily achievable
F1.6	**Sarking** Sarking type materials used for weatherproofing of roofs and walls must comply with AS/NZS 4200 Parts 1 and 2.		Compliance readily achievable
F1.7	**Water proofing of wet areas in buildings** Water proofing of wet areas within a building to comply with AS 3740.		Compliance readily achievable
F1.8	-	This clause has deliberately been left blank	-
F1.9	**Damp-proofing** 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.		N/A
F1.10	**Damp-proofing of floors on the ground** A vapour barrier in accordance with AS2870 is to be provided beneath the basement floor slab.		N/A
F1.11	**Provision of floor wastes** The floor of each bathroom and laundry in each sole occupancy of the Class 3 building portions must have a floor waste and the floor graded to the floor waste to permit drainage of water.		Compliance readily achievable
F1.12	**Subfloor ventilation** The lower ground sub floor space is to be cleared of all building debris and vegetation and be cross ventilated in accordance with Table F1.12 by evenly distributed openings provided in the external walls Additionally the sub floor space is to contain no dead air spaces and be graded to prevent water ponding under the building.		N/A
F1.13	**Glazed assemblies** Windows, sliding doors with a frame, adjustable louvres, shopfronts and window walls with one		Compliance readily achievable

Clause	Description	Comment	Status
	piece framing in an external wall must comply with AS 2047 requirements for resistance to water penetration.		
Part F2 – Sanitary and Other Facilities			
F2.1	**Facilities in residential buildings**	Each room is provided with a: - • Shower; • Closet pan; • Washbasin.	Complies
F2.2	**Calculation of number of occupants and fixtures**		Noted
F2.3	**Facilities in Class 3 to 9 buildings** Toilet facilities are required in appropriate numbers based on the number of persons accommodated.	The following common sanitary facilities have been provided: • One unisex accessible facility; • One male WC and washbasin; • One female WC and washbasin. The numbers provide above allows up to 40 employees for the Class 6 retail tenancies and for staff of the Class 3 student accommodation. Exact numbers of retail 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. The following sanitary facilities have been provided for the office tenancy : • One unisex accessible facility; • One male WC and washbasin; • One female WC and washbasin. The numbers provide above allows up to 40 employees which based on D1.13 population will achieve compliance.	Compliance readily achievable
F2.4	**Accessible sanitary facilities** Accessible unisex toilets for people with a disability is required within every accessible sole-occupancy unit for the Class 3 portion. Accessible unisex toilets for people with a disability are at each bank of sanitary compartments containing male and female sanitary compartments provided in common areas. At each bank of toilets where there is one or more toilets in addition to an accessible unisex sanitary compartment at that bank of toilets, a sanitary compartment suitable for a person with an ambulant disability in accordance with AS 1428.1 must be provided for use by males and females.	Refer to access consultant's report	Compliance readily achievable

Clause	Description	Comment	Status
F2.5	**Construction of sanitary compartments** Where clear space between closet pan and doorway is less than 1.2m, doors must open outwards, slide or be readily removable from outside.	All hinged doors that swing inward to sanitary facilities and do not comply with achieving a 1200mm clearance to pan are required to be installed with lift-off hinges 	Complies
F2.6	**Interpretation: Urinals and washbasins**	Each 600mm length of a continuous urinal trough is counted as 1 urinal.	Noted
F2.7	*(NSW variation – Deleted)*	-	-
F2.8	**Waste management**		N/A
Part F3 – Room Heights			
F3.1	**Height of rooms and other spaces** Generally, a minimum ceiling height of 2.4m is required throughout. Bathrooms, sanitary compartments, store rooms or like, a minimum of 2.1m ceiling height is permitted		Compliance readily achievable
Part F4 – Light and Ventilation			
F4.1	**Provisions of natural light** Natural light is required to be provided to all bedrooms within the Class 3 student accommodation portion.		Compliance readily achievable
F4.2	**Methods and extent of natural lighting** Natural light is required to be provided to 10% of the floor area of a habitable room.	Plans detailing compliance will be require for the Construction Certificate.	Compliance readily achievable
F4.3	**Natural Light borrowed from adjoining room**	Natural light may be borrowed through adjacent rooms in accordance with the provisions of this clause.	Noted
F4.4	**Artificial lighting** The artificial lighting system must comply with AS/NZS 1680.0.	Design details and certification from an electrical engineer is required	Compliance readily achievable
F4.5	**Ventilation of rooms** *(NSW variation for Public Health Regulation)* 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.	Design details and certification from an mechanical engineer is required	Compliance readily achievable
F4.6	**Natural ventilation** 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		Noted

Clause	Description	Comment	Status
	not less than 5% of the floor area of the room required to be ventilated; and • Open to the- ○ suitably sized court, or space open to the sky; ○ an open verandah, carport, or the like; or an adjoining room in accordance with F4.		
F4.7	**Ventilation borrowed from adjoining room** Ventilation may be borrowed from an adjoining room is accordance with this clause.		Noted
F4.8	**Restriction on position of sanitary compartments**		Complies
F4.9	**Airlocks**		N/A
F4.10	-	This clause has intentionally been left blank	-
F4.11	**Carparks**		N/A
F4.12	**Kitchen local exhaust ventilation** 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.	Applicable to any future restaurant (food & drink premises) within the retail portion.	Compliance readily achievable
Part F1 – Sound Transmission and Insulation			
F5.1	**Application of Part** Applicable only to the Class 3 portions.	**A detailed assessment will need to be undertaken by a qualified acoustic consultant at the Construction Certificate stage to verify compliance.**	Noted
F5.1	**Determination of airborne sound insulation ratings** 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.		Compliance readily achievable
F5.3	**Determination of impact sound insulation ratings** 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. Walls that are required to have an impact sound insulation rating must be of discontinuous construction.		Compliance readily achievable
F5.4	**Sound insulation rating of floors** Floors separating sole occupancy units or separating		Compliance readily

Clause	Description	Comment	Status
	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 $L_{n,w} + C_l$ of not more than 62.		achievable
F5.5	**Sound insulation rating of walls** Walls must have an $R + C_t$ of not less than 50 if it separates sole occupancy units and an R_w 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. Doors incorporated the walls that separate sole-occupancy units 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.		Compliance readily achievable
F5.6	**Sound insulation rating of internal services** Services passing through more than one sole-occupancy unit must be separated from the rooms by construction with an $R_w + C_{tr}$ (airborne) not less than: a) 40 if the adjacent room is a habitable room (other than a kitchen); or b) 25 if the adjacent room is a kitchen or non-habitable room. Note if a stormwater pipe passes through a sole – occupancy unit it must be separated in accordance with (a) and (b).		Compliance readily achievable
F5.7	**Sound isolation pumps** A flexible coupling must be used at the point of connection between the service pipes in a building and any circulating or other pump.		Compliance readily achievable
Section G: Ancillary Provisions			
Part G1- Minor Structures and components			
G1.1	**Swimming pools** *(NSW variation for swimming pools)*		N/A
G1.2	**Refrigerated chambers, strong rooms and vaults**		N/A
G1.3	**Outdoor play spaces**		N/A

Clause	Description	Comment	Status
NSW G1.101	**Provision for cleaning windows** 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.	Compliance readily achievable
Part G2 - Boilers, pressure vessels, heating appliances, fire places, chimneys and flues			**N/A**
Part G3 - Atrium Construction			**N/A**
Part G4 - Construction in Alpine Areas			**N/A**
Part G5 - Construction in Bushfire Prone Areas			**N/A**
Section H: Special Use Buildings – Auditoriums, Public Halls, Public Transport Buildings			**N/A**
Part H1 - Class 9b Buildings			**N/A**
NSW Part - H101 Entertainment Venues other than Temporary Structures and Drive-In Theatres			**N/A**
NSW Part - H102 Temporary Structures			**N/A**
NSW Part - H103 Drive-In Theatres			**N/A**
Part H2 - Public Transport Buildings			**N/A**
Part H3 - Farm Building and Farm Sheds			**N/A**
NSW Section J: Energy Efficiency Energy Efficiency for buildings requires buildings to reduce greenhouse gas emissions by efficiently using energy. A building's services must have features that facilitate the efficient use of energy. The discipline of Energy Efficiency with the BCA has become a specialised field where compliance with BCA Section J is to be certified with the issue of a Certificate of Compliance – Design from the relevant Services Engineer/Consultant. The purpose of this section is to provide a brief explanation of which areas are to achieve compliance with BCA Section J – Energy Efficiency during design and construction. The BCA should be referenced for exact requirements, clarification and further explanation.			
Section J	**Energy efficiency measures** Energy efficiency measures are prescribed for the following building elements to limit energy consumption:- • Building fabric • External glazing • Building sealing • Air movement. • Air-conditioning and ventilation systems. • Artificial lighting and power • Hot water supply • Access for maintenance	Compliance assumed, although further information is required to confirm compliance. A performance based BCA JV3 assessment may be adopted for the project if compliance with BCA deemed to satisfy provisions are problematic.	Compliance readily achievable

Clause	Description	Comment	Status
NSW Subsection J(A) Energy Efficiency - Class 2 Buildings and Class 4 Parts			**N/A**
NSW Subsection J(B) Energy Efficiency - Class 3 and Class 5 to 9 Buildings			**Applies**
NSW J(B)1 - Compliance with BCA Provisions. Class 3 and Class 5 to 9 buildings must comply with all of the provisions of the national **Section J** that are applicable to the relevant classifications, except as varied by **NSW J3.1** Application of Part.			**Noted**
Part J0 - Energy Efficiency			
J0.1	**Application of Part**		Noted
J0.2	**Heating and cooling loads of sole-occupancy units of a Class 2 building or a Class 4 part**		N/A
J0.3	**Ceiling fans** Required ceiling fans must be permanently installed and have a speed controller		Compliance readily achievable
Part J1 - Building Fabric			
J1.1	**Application of Part**		Noted
J1.2	**Thermal construction – general** 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.		Compliance readily achievable
J1.3	**Roof and ceiling construction** 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. 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.	The minimum total R-Value required for roofs or ceilings are specified in Appendix J1.	Compliance readily achievable
J1.4	**Roof lights** .	No roof lights proposed.	N/A
J1.5	**Walls** Each part of an external wall that is part of the envelope must satisfy one of the options in Table	Refer to Appendix J1 for required minimum R-Values and other requirements.	Compliance readily achievable

Clause	Description	Comment	Status
	J1.5a or Table J1.5b except as specified in Clause J1.5. 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**		N/A
Part J2 - Glazing			
J2.1	**Application of Part**		Noted
J2.2	-	This Clause has deliberately been left blank	-
J2.3	-	This Clause has deliberately been left blank	-
J2.4	**Glazing** 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.	Compliance readily achievable
J2.5	**Shading** 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		Compliance readily achievable

Clause	Description	Comment	Status
	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.		
Part J3 - Building Sealing			
J3.1	**Application of Part** *(NSW variation for building sealing)*	Applies to elements forming the envelope of a Class 3, and Class 5 to 9 building other than as specified including parts of the building that cannot be fully enclosed.	Noted
J3.2	**Chimneys and flues**		N/A
J3.3	**Roof lights**		N/A
J3.4	**Windows and doors** 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.		Compliance readily achievable
J3.5	**Exhaust fans** 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.		Compliance readily achievable
J3.6	**Construction of roofs, walls and floors** 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.		Compliance readily achievable
J3.7	**Evaporative coolers** An evaporative cooler must be fitted with a self-closing damper or the like when serving a heated space.		Compliance readily achievable
Part J4 - This Part has deliberately been left blank			
Part J5 - Air-conditioning and Ventilation Systems			
J5.1	**Application of Part**		Noted
J5.2	**Air-conditioning systems** An air-conditioning system must be capable of being deactivated when the building or part of a building served by that system is not occupied. An air-conditioning system must comply with requirements specified under this Clause which relate to controls, fans, pumps, insulation and time	The mechanical engineer is to design and certify the A/C system to comply with the requirements under this Clause.	Compliance readily achievable

Clause	Description	Comment	Status
	switches. Space heating must comply with Specification J5.2d. Energy efficiency ratios must comply with Specification J5.2e		
J5.3	**Mechanical ventilation systems** The mechanical ventilation system must comply with the requirements specified under this clause which relate to controls, fans and time switches.	The mechanical engineer is to design and certify the mechanical ventilation system to comply with the requirements under this Clause.	Compliance readily achievable
J5.4	**Miscellaneous exhaust systems** A miscellaneous exhaust system with an air flow rate of more than 1000 L/s, that is associated with equipment having a variable demand, must be capable of stopping the motor when the system is not needed and have a variable speed fan or the like.		Compliance readily achievable
Part J5 - Artificial Lighting and Power			
J6.1	**Application of Part**		Noted
J6.2	**Artificial lighting** 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.		Compliance readily achievable
J6.3	**Interior artificial lighting and power control** 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.		Compliance readily achievable
J6.4	**Interior decorative and display lighting** 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.		Compliance readily achievable
J6.5	**Artificial lighting around the perimeter of a building** Artificial lighting around the perimeter of a building must be controlled by a daylight sensor or time switch as specified in Clause J6.5.		Compliance readily achievable
J6.6	**Boiling water and chilled water storage units** Power supply to a boiling water or chilled water storage unit must be controlled by a time switch in accordance with Specification J6.		Compliance readily achievable
Part J7 - Heated Water Supply and Swimming Pool and Spa Pool Plant			
J7.1	-	This Clause has deliberately been left blank	-
J7.2	**Heated water supply** 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		Compliance readily achievable

Clause	Description	Comment	Status
	designed and installed in accordance with Section 8 of AS/NZS 3500.4		
J7.3	**Swimming pool hearing and pumping**		N/A
J7.4	**Spa pool heating and pumping**		N/A
Part J8 - Facilities for Energy Monitoring			
J8.1	**Application of Part**		Noted
J8.2	-	This Clause has deliberately been left blank	-
J8.3	**Facilities for energy monitoring** A building or sole-occupancy unit with a floor area of more than 500m^2 must have the facility to record the consumption of gas and electricity. A building with a floor area of more than 2,500m^2 must have the facility to record individually the energy consumption of: I. air-conditioning plant including, where appropriate, heating plant, cooling plant and air handling fans; and II. artificial lighting; and III. appliance power; and IV. central hot water supply; and V. internal transport devices including lifts, escalators and travelators where there is more than one serving the building; and VI. other ancillary plant.	An energy monitoring facility is required for the building.	Compliance readily achievable

15. Appendix A – Referenced Documentation

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

Drawing No.	Title	Issue	Date	Drawn By
A01.001	Site Plan	A	10/8/2018	Batessmart
A03.001	Ground Floor Plan	A	10/8/2018	Batessmart
A03.102	Level 00 Mezzanine	A	10/8/2018	Batessmart
A03.103	Level 01	A	10/8/2018	Batessmart
A03.104	Level 02	A	10/8/2018	Batessmart
A03.105	Level 03, 07, 12, 13	A	10/8/2018	Batessmart
A03.106	Level 04, 08, 14	A	10/8/2018	Batessmart
A03.107	Level 05, 09, 10, 15, 16, 17	A	10/8/2018	Batessmart
A03.108	Level 06, 11	A	10/8/2018	Batessmart
A03.119	Roof Terrace Level	A	10/8/2018	Batessmart
A09.001	Elevation East	A	10/8/2018	Batessmart
A09.002	Elevation South	A	10/8/2018	Batessmart
A09.003	Elevation West	A	10/8/2018	Batessmart
A09.004	Elevation North	A	10/8/2018	Batessmart
A10.001	Section A	A	10/8/2018	Batessmart
A10.002	Section B	A	10/8/2018	Batessmart

16. Appendix B – Statutory Fire Safety Measures

Schedule of Statutory Fire Safety Measures

Measure	Standard of Performance
Access panels, doors and hoppers to fire resisting shafts	BCA2016 Amendment 1 Clause C3.13 and tested prototypes (AS 1530.4 – 2014 and AS 4072.1-2005) Note: Systems tested to AS 1530.4 prior to 1 January 1995 need not be retested to comply with the provisions in AS 4072.1]
Automatic fail safe devices	Scheduled devices release upon trip of smoke detection and/or sprinkler activation in accordance with BCA2016 Amendment 1 Clauses D2.19 and D2.21.
Automatic fire detection and alarm system (smoke detection system)	BCA2016 Amendment 1 Clause 4 of Specification E2.2a and AS 1670.1 – 2015
Automatic fire detection and alarm system (smoke detection system to stair pressurisation system)	BCA2016 Amendment 1 Clause 5 of Specification E2.2a and AS 1670.1 - 2015
Automatic fire suppression systems *(Combined sprinkler and hydrant system)*	BCA2016 Amendment 1 Specification E1.5, AS 2118.6-2012, AS2118.1 – 1999 or 2017 (TBC)
Building occupant warning system (see SSIEP)	BCA2016 Amendment 1 Clause 6 of Specification E2.2a and AS 1670.1 - 2015
Emergency lifts	BCA2016 Amendment 1 Clause E3.4
Emergency lighting	BCA2016 Amendment 1 Clause E4.2, E4.4 and AS 2293.1 – 2005
Exit signs	BCA2016 Amendment 1 Clause E4.5, NSW E4.6, E4.8 and AS 2293.1 – 2005
Fire control room	BCA2016 Amendment 1 Specification E1.8
Fire dampers	BCA2016 Amendment 1 Clause C3.15 and AS/NZS 1668.1 – 2015 (AS 1682.1-1990 and AS 1682.2-1990)
Fire doors	BCA2016 Amendment 1 Specification C3.4 and AS 1905.1 – 2015
Fire hydrants systems *(Combined sprinkler and hydrant system)*	BCA2016 Amendment 1 Clause E1.3, AS 2118.6 – 2012 and AS 2419.1 – 2005
Fire seals protecting opening in fire resisting components of the building	BCA2016 Amendment 1 Clause C3.15, Specification C3.15 and AS 1530.4 – 2014 and AS 4072.1 – 2005 and installed in accordance with the tested prototype. *[Note: Systems tested to AS 1530.4 prior to 1 January 1995 need not be retested to comply with the provisions in AS 4072.1]*
Hose reel system	BCA2016 Amendment 1 Clause E1.4 and AS 2441 – 2005
Mechanical air handling system *(automatic air pressurisation system)*	BCA2016 Amendment 1 Table E2.2a and AS/NZ 1668.1-2015
Portable fire extinguishers	BCA2016 Amendment 1 Clause E1.6 and AS 2444 – 2001
Sound System and Intercommunication System for Emergency Purposes	BCA2016 Amendment 1 Clause E4.9, Specification G3.8 and AS 1670.4 – 2015
Warning and operational signs	BCA2016 Amendment 1 Clauses D2.23, D3.6, E3.3, E3.9 and E3.10

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

17. Appendix C1.1 – Fire Rating Requirements

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 within it) 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-				
For loadbearing columns	90/ - / -	120/ - / -	180/ - / -	240/ - / -
For non-loadbearing columns	- / - / -	- / - / -	- / - / -	- / - / -
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

18. Appendix C1.10 – Early Fire Hazard Properties for Materials

Floor materials, floor coverings and wall and ceiling lining materials are required to comply with BCA prescribed fire hazard properties.

Floor Linings and Floor Coverings	
General Non Sprinklered Areas	Minimum 2.2 (or 4.5 for Class 3 areas and 9a patient care areas) kw/m^2 critical radiant heat flux and, a maximum smoke development rate of 750 percent minutes.
General Sprinklered Areas	Minimum 1.2(or 2.2 for Class 3, 9a patient care, and 9c residential use areas) kw/m^2 critical radiant heat flux
Fire Isolated Exits and Fire Control Rooms	Minimum 2.2/(or 4.5 for Class 3, 9a and 9c areas) kw/m^2 critical radiant heat flux
Lift Cars	Minimum 2.2 kw/m^2 critical radiant heat flux

Wall Linings and Ceiling Linings	
Generally	Variously Group 1,2, or 3 materials (more restrictive Group number for non-sprinklered areas, public corridors, health care corridors and other prescribed locations) when tested to AS/ISO 9705 or clause 3 of BCA Spec A2.4 and AS/NZ 3837
Fire Isolated Exits	Group 1 material when tested as above
Lift Cars	Group 1 or 2 materials when tested as above

In addition, in non-sprinklered areas, wall and ceiling linings must have a smoke growth rate index not more than 100 or an average specific extinction area less than 250m^2/g.

Other than above, construction materials generally need to achieve as1530.3 early fire hazard indices requirements as follows:	
Generally	Spread of flame Index not > 9 Smoke developed index not > 8
Sarking	Flammability Index not > 5
Fire Isolated Exits and Fire Control Rooms	Spread of Flame Index 0 Smoke Developed Index not > 2 Sarking Flammability 0
Non Fire Isolated Stairs & Escalators and Auditorium Fixed Seating	Spread of Flame Index 0 Smoke Developed Index not > 5
Lifts	To AS 1735.2
Air Ducts	To AS4254

19. Appendix D2.24 – Protection of Openable Windows

Building Use	Openable Windows		
	<2m above surface beneath	>2m above surface beneath	>4m above surface beneath
Bedrooms	No restrictions	Window located below 1.7m above bedroom floor:- • Must be protected by device to restrict window opening **OR** screen with secure fittings; AND • No opening greater than 125mm; AND • Device and screen must resist outward horizontal action of 250N; AND • Have child resistant release if device or screen is able to be removed, unlocked or overridden; AND • If device or screen is able to be removed, unlocked or overridden minimum 865mm barrier required to protect window. Note: No 865mm barrier required if device or screen is permanent and cannot be removed, unlocked or overridden Window located min. 1.7m above bedroom floor • No restrictions	Comments as per >2m above surface beneath
Other rooms (i.e. lounge, dining room etc)	No restrictions	No restrictions	Barrier required • Min. 865mm above floor • No openings exceeding 125mm • No climbable elements between 150-760mm above floor
All other buildings	No restrictions	No restrictions	Barrier required • Min. 865mm above floor • No openings exceeding 125mm • No climbable elements between 150-760mm above floor

20. Appendix D3 – Significant Accessibility Requirements

Access for wheelchair users and people with disabilities generally must be to AS1428.1-2009.
Principle requirements are:

- Continuous accessible paths of travel throughout
- Minimum 1m wide travel paths with maximum 3-5mm joints, lips, level changes etc.
- No deep pile carpets or grates with large slots.
- Walls or 75-150mm kerbs at travel path sides or if level change occurs to cause a wheelchair hazard.
- 1.8m wide x 2m long wheelchair passing spaces at 20m intervals in passageways where a direct line of sight is not available.
- Turning spaces at 20m intervals and within 2m of dead end access ways. 1.5m x 1.5m 90 deg turning spaces (with splayed internal corner) and 1.54m x 2.07m long 180 deg turning spaces are required including at dead ends in passageways.
- Step ramps, kerb ramps and threshold ramps as prescribed.
- 1:14 maximum ramps with 9m between landings.
- 1.9m x 1 in 10 (maximum 190mm rise) step ramps
- 1.52m x 1 in 8 (maximum 190mm rise) kerb ramps.
- 30-50mm handrails with 300mm extensions and curls and 50mm clearances on both sides of steps, ramps, etc.
- 850mm clear width doors with 340 - 900mm latch side clearances and 1220-1670mm approach clearances depending on arrangements.
- Stairs and ramps set back from building lines and corridors to allow space for handrail extensions and TGSIs.
- Decals to glazing.
- 900-1100mm door hardware height.
- Lever handle hardware with low opening forces.
- Landings at doorways, direction changes and at intervals on ramps and inclined walkways.
- Walkways with colour contrast borders.
- Flat even surfaces.
- Colour contrasted hand rails and door frames.
- “D” pull handles to doors.
- Continuous protected paths from disabled persons’ car spaces to lifts, access points, etc.
- Ambulant disabled persons’ toilets with grab rails and outward swinging doors or longer cubicles.
- Prescribed types of water entry arrangements for swimming pools depending on pool size.
- Non fire enclosed stairs with opaque risers.
- Fire stairs and non-fire enclosed stairs with colour contrasting nosing strips.
- All switches and controls 900-1100mm above floor level.

The following general requirements apply to accessible toilets:

- Unisex facility.
- ~1.9 x 2.7m or 2.3 x 2.4m minimum room dimensions depending on arrangements. (~2.2m x 1.6m if AS1428.1-2001 concession applies).
- 30-40mm grab rails with 50-60mm clearances.
- Doors with appropriate clearances and circulation spaces and able to be operated externally in emergencies
- Washbasins with clearances as required.
- Shielded hot water pipes.
- Mirror, shelf, dispensers and coat hooks.
- Mirrored layout for alternative facilities

21. Appendix J1 – 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 U-Value	Not more than 8.5	Not more than 5.7	Not more than 4.3	Not more than 3.4
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:

- 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.
- The total area of roof lights is the combined area for all roof lights serving the room or space.
- The area of a roof light is the area of the roof opening that allows light to enter the building.
- 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.
- 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 Envelope 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		1.0	1.0	Nil	Nil	1.0	1.0	1.5	2.5
	(i)	ventilation of not more than 1.5 air changes per hour of outside air during occupied hours; and								
	(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.

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