STEVE WATSON
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Berry Holdsworth

BCA Assessment Report for DA

Report 2021/2988 R1.2

Prepared for Aqua Land St Leonard Development 3 pty ltd

17 June 2022

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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

An assessment of the design of the proposed design of the Berry Holdsworth project 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.

This report details the non-compliances identified that require either amendments to plans or an Alternative Solution to satisfy the Performance Requirements of the BCA.

Summary of BCA Parameters:

Building Use:	Residential flat building with basement carparking, childcare centre and community hall
Class of Occupancy	Class 2, 7a, 9b
Type of Construction Required	Type A,
Rise Storeys:	13
Number of Storeys:	16
Effective Height:	40.8, (Lower Ground Level RL 64.400 - Level 10 RL105.200)

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 (Development Certification and Fire Safety) Regulation 2021 and the Building Code of Australia 2019 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 10 of this report and need to be clarified with SWP or the building certifier for the project prior to the issue of a construction certificate.

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1. Introduction

This report presents the findings of a preliminary assessment undertaken of the proposed design of the mixed use development at 12-20 Berry Road & 11-19 Holdsworth Avenue St Leonards South against the Deemed-to-Satisfy (DtS) provisions of Building Code of Australia BCA 2019 Amendment 1.

It has been prepared by Steve Watson and Partners for Aqua Land St Leonard Development 3 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 2019 amendment 1.

The assessment is undertaken for the purpose of, and to the extent necessary for, construction certification to be issued under Part 6 of the NSW Environmental Planning and Assessment Act 1979 (The Act) and the Environmental Planning and Assessment (Development Certification and Fire Safety) Regulation 2021 (EP&A [Development Certification and Fire Safety] Reg).

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 issue a construction certificate under Part 6 of The Act. 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
- The BCA report and associated compliance advice is not intended or permitted to be relied on by any other party with respect to their obligations to ensure compliance including but not limited to the making of a compliance declaration under the NSW Design and Building Professionals Act.

4. National Construction Code BCA 2019 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
New Work	EP&A [Development Certification and Fire Safety] Reg Section 19	All new works must comply
Residential Flat Development	EPAR (DCFS) S15 & S43	Statement from a qualified designer verifying compliance with SEPP65 for residential developments
BASIX	EPAR (DCFS) S10	BASIX certificate required for residential projects

6.1. New Work

Part 3, Division 2 - Section 19 of the EP&A [Development Certification and Fire Safety] Reg *(the Act s6.33(1))* 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.

6.2. Residential flat development

Section 15 of the EPAR (DCFS) requires a qualified designer to provide a statement that verifies that the plans and specifications achieve or improve the design quality of the development having regard to the design quality principles set out in Part 2 of the State Environmental Planning Policy No. 65 – Design Quality of Residential Flat Development (SEPP 65) prior to the issue of a Construction Certificate. Section 43 of the EPAR (DCFS) requires a qualified designer to provide a statement that verifies that the residential flat development achieves the design quality of the development as shown in the plans and specifications having regard to the design quality principles set out in Part 2 of SEPP 65 prior to issuing an Occupation Certificate.

6.3. Fulfilment of BASIX Commitments

Section 10 of the EPAR (DCFS) requires the certifying authority to monitor fulfilment of any commitments listed on the BASIX certificate, where the BASIX certificate requires the certifying authority to monitor those commitments. A final occupation certificate must not be issued until the certifying authority is satisfied that each of the commitments has been fulfilled.

7. Methodology

7.1. 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**);

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

The proposed development involves the construction of a new 16 storey Residential flat building containing two towers over four levels of common basement carparking, a child centre and a community hall

It is located at 12-20 Berry Road & 11-19 Holdsworth Avenue St Leonards South

9. Assessment Data Summary

The following basic assessment data has been drawn from the provisions of the BCA 2019 Amendment 1.

9.1. Assumptions

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

1. The fitout of the childcare centre and community hall will form part of a separate DA
2. The courtyard level communal room, music room and garden store are only for residents and therefore are defined as class 2.

9.2. 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 storage / waste rooms on basement levels are considered to be less than 10% of the total floor area of that storey, there ore class 7a is retained
2. Cars, cabinets and loose furniture are not considered to be permanently fixed and not intervening in the path of travel
3. The external courtyard area on ground floor has been assessed as roof as open space. Any openings including drainage will be located more than 3m from the path of travel or address as a performance solution.

10. Issues Requiring Resolution

10.1. Issues requiring amendments to plans, additional details or documentation.

The following issues either need to be resolved or require further details and/or documentation to be provided to ensure compliance before issuing the Construction Certificate.

Item	DTS Clause	Description	Requirement to Satisfy BCA
1.	**Spec C1.1**	**Fire separation**	Fire separation is required between different classes within the building, e.g 1. Childcare centre and residential corridors 2. Community rooms and residential corridors 3. Carpark level and residential corridors 4. Bin storage rooms and public corridors 5. Residential concierge and public corridors Architect to provide FRL plans at CC stage detailing compliance
2.	**C1.9**	**Non-combustible building elements**	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 Architect to confirm compliance
3.	**C1.14**	**Ancillary elements**	An ancillary element such as a sign, 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. Architect to confirm compliance
4.	**C2.14**	**Public corridor over 40m**	Due to the interconnecting stair and void in the western tower, the public corridor serving the below levels is over 40m. Smoke doors to be provided or to be addressed under performance solution. • courtyard level, • upper ground, l • level 01 Due to the interconnecting stair and void in the eastern tower, the public corridor serving the below levels is over 40m. Smoke doors to be provided or to be addressed under performance solution. • lower ground • courtyard level
5.	**C3.11**	**Bounding construction: Class 2**	Doorways and window between public corridors and other rooms as listed below are required to be protected via -/60/30 fire doors or windows which comply with BCA clause C3.4; 1. Windows within SOU which open to the stair/voids (e.g H.CL.05 & B.01.04) on Courtyard level, L1 2. Bin storage rooms 3. Residential lobby concierge

Item	DTS Clause	Description	Requirement to Satisfy BCA
6.	**D1.6/ F2.3**	**Dimensions of exits and paths of travel to exits/ Sanitary facilities**	Based on the 1m egress width provided for the L1 community tenancy a maximum of 100 people can occupy the tenancy at any one time. However, one unisex accessible toilet within the communal hall is compliant for a maximum of 50 patrons. Client to confirm population of either a max 50 patrons or if a larger population, additional toilets are required
7.	**D2.15**	**Thresholds**	Architect to confirm if any internal rooms will be provided with threshold steps in doorways e.g. plant rooms
8.	**D2.20**	**Swinging doors**	The following doors encroach more than 500mm into the required width of the stair. Doors to be modified. 1. L 10 plant room off fire stair 2. L 10 VRV condenser room off fire stair 3. L9 LRV condenser room fire stair 4. L9 Hot water plant room off fire stair 5. L9 plant room off fire stair
9.	**E1.3**	**Fire hydrants**	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 Performance Solution). E.g. location of hydrant pump room , booster only located within view of Holdsworth Avenue Entry , hydrants on mid landings within fire stairs *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*

Item	DTS Clause	Description	Requirement to Satisfy BCA
10.	**E1.5**	**Sprinklers**	The services engineer is to provide detailed design documents and design certification for the sprinkler design confirming compliance Specification E1.5 Any non-sprinkler protected areas and other AS2118 departures need to be identified and included in the fire engineering review (EP1.4). These areas need to be confirmed but could include: • Apartment balconies. • External under croft areas • Chemical stores • Dangerous goods stores • Flammable liquids stores • Server rooms • Shower recesses or low risk bathroom areas or the like • Sprinkler valve room location
11.	**E1.6**	**Portable fire extinguishers**	Class 2, 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.
12.	**E2.2**	**Smoke hazard management -**	All fire stairs including the fire isolated passageways which connect to the fire stairs and lead to open space are required to be provided with automatic air pressurisation system. Mechanical drawings to detail compliance
13.	**F3.1**	**Height of rooms and other spaces**	Architect to provide design certificate noting any areas of non-compliance
14.	**F4.1, F4.2,F4.3**	**Provision of natural light**	Architect to provide detailed calculations noting any areas of non-compliance. A number of studies (e.g SOU B.05.04) are located internally within the SOUs and will not achieve direct complaint natural lighting. Further details on compliance are to be provided at CC stage
15.	**G1.1**	**Swimming pools**	Detailed drawings and sections of pool fence location and compliance to be provided
16.	**G1.3**	**Outdoor play spaces**	Detailed drawings and sections of outdoor childcare enclosure to be provided

10.2. Performance solutions required.

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

Item	Non-Compliance	DTS Clause	Description	Performance Requirement
1.	**Protection of openings in external walls**	**C3.2, C3.4**	Performance solution to address openings in SOUs within 3m of the northern boundary. Levels affected are; upper ground, L1, L2 ,L3, L4, L5	CP2, CP8
2.	**Number of exits required**	**D1.2**	Performance solution is to address 1. Single exit serving the class 9b community room on level 1	DP4, EP2

Item	Non-Compliance	DTS Clause	Description	Performance Requirement
			2. Single exit serving the class 2 garden storage, music room and communal rooms on courtyard level	
3.	**Exit travel distances**	**D1.4**	The following areas have been identified with distances exceeding 6m on residential levels and 20m to a point of choice in all other locations: 1. 25m within basement level 3 2. 22m within basement 2 3. 24 within basement level 1 4. 25m within lower ground carpark 5. 9.5m within lower ground residential level 6. 9.3m within courtyard level of residential towners 7. 30m within childcare centre 8. 22m within the community level 9. 30m from within the landscape area of level 10 adjacent to the pool	DP4, EP2
4.	**Distance between alternative exits**	**D1.5**	The following areas have been identified with distances between alternative exits exceeding 60m: 1. 75m within basement level 2 2. 84m within basement 1 3. 85m within lower ground basement	DP4, EP2.2
5.	**Travel via fire-isolated exits**	**D1.7**	The northern fire stair which serves the western building discharges to a covered area which his not open for 1/3 of its perimeter . Further details to be provided confirming if the area has a height of not less than 3m and that the doors and openings to the resi lobby are to be protected in accordance with BCA clause C3.4	DP4, DP5, EP2.2
6.	**Travel via fire-isolated exits**	**D1.7**	The path of travel from open space/courtyard level to Holdswoth Avenue and Berry Road requires occupants to walk within 6m of the building the fire stairs serve. Further details to be provided. If the path of travel passes within 6m of the building that part of the wall must have— (i) an FRL of not less than 60/60/60; and (ii) any openings protected internally in accordance with C3.4,for a distance of 3 m above or below, as appropriate, the level of the path of travel, or for the height of the wall, whichever is the lesser. Architect and fire engineer to review and confirm extent of DTS compliance proposed to be achieved	DP4, DP5, EP2.2
7.	**Travel via fire-isolated exits**	**D1.7**	Access is provided directly into the fire stair from the following rooms which do not occupy the whole floor; • child centre • L 10 plant room • L 10 VRV condensers • L9 VRV condensers • L9 Hot water plant	DP4, DP5, EP2.2
8.	**Path of travel**	**D.1.10**	Travel from the courtyard level to Holdsworth Avenue requires occupants to pass under the building overhang along the northern boundary	DP4 EP2.2

Item	Non-Compliance	DTS Clause	Description	Performance Requirement
9.	**Egress from early childhood centres**	**D1.18**	Two exits are provided with one directly to the courtyard which his deemed as roof as open space with direct access to both Holdsworth Avenue and Berry Road. However the second exit is via the via the fire isolated corridor/ stair and therefore does not comply DTS	DP4, DP5, EP2.2
10.	**Separation of rising and descending stair flights**	**D2.4**	The four fire isolated stairs serving both buildings contain rising and descending flights. This non-compliance is to be addressed by the fire engineer	DP4,DP5
11.	**Roof as open space**	**D2.12**	The path of travel from courtyard level open space to the road requires occupants to walk within 3m of the following openings 1. carpark supply intake 2. drainage points A performance solution will need to address this non-compliance along with any other openings located within 3m of the path of travel. Architect and service consultants to review and confirm	CP8 DP4, DP5, EP2.2
12.	**Deletion of zone smoke control**	**E2.2**	It is proposed to omitted zone smoke control from the 9b child care and community hall	EP2.2
13.	**Weather proofing of external walls**	**F1.0**	Facade engineer is required to develop a BCA performance solution to address FP1.4	FP1.4

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 Section 26 of the EP&A [Development Certification and Fire Safety] Regulation 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 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, EP&A [Development Certification and Fire Safety] Reg and the BCA 2019 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 2019 Amendment 1 – Clause by Clause Assessment

Clause	Description	Comment	Status
BCA Version			
BCA 2019 Amendment 1	**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 2019 Amendment 1. In addition, requirements of the Premises Standards (PS) are covered as relevant.	Noted
Section A: General Provisions			
A5.2	**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.	Noted
Part A6	**Classification and usage** Usage on each level of the building is as follows: **LEVEL** / **USE** / **CLASS** B3 / Carpark / 7a B2 / Carpark / 7a B1 / Carpark / 7a Lower ground / Residential, Carpark / 2,7a, Courtyard / Residential and childcare / 2,9b Upper Ground / Residential, Community Hall / 2,9b Level 01-Level 10 / Residential / 2		Noted
Part A7	**United buildings** Buildings are deemed united when two or more buildings adjoining each other are connected and used as one building.	The building is a united building due the common basement	Applicable

Clause	Description	Comment	Status
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 accordance with the relevant Australian Standards in accordance with Clause B1.4 of the BCA.	Certification from a qualified structural engineer will need to be provided at Construction Certificate stage	Compliance Readily Achievable
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** The building if contained in a flood hazard area must comply with the ABCB Standard for Construction of Buildings in Flood Hazard Areas.	Applies to Class 2, 4, 9a and 9c buildings Confirmation from a hydraulic engineer will be required as to whether the building is located within a floor hazard area as defined under the BCA.	Compliance Readily Achievable
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** **90min for Class 2** **120min for Class 7a and 9b**	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

Clause	Description	Comment	Status
		The storage / waste rooms on basement levels are considered to be less than 10% of the total floor area of that storey; Therefore the basement levels are required to achieve am FRL of 120min. Fire separation is required between different classes within the building, e.g 1. Childcare centre and residential corridors 2. Community rooms and residential corridors 3. Carpark level and residential corridors 4. Bin storage rooms and public corridors 5. Residential concierge and public corridors	Compliance Readily Achievable
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 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.	The following parameters apply: Rise in storeys: 13 storeys Effective Height: 40.8m	Applicable

Clause	Description	Comment	Status
C1.3	**Buildings of multiple classification**	The building is required to be constructed of Type A fire resisting construction as the classification of the top storey is a Class 2	Noted
C1.4	**Mixed types of construction**	If a fire wall divides the building in accordance with Clause C2.7, the building portions are able to be constructed in differing levels of fire-resistance determined in accordance with Clause C1.1 and C1.3.	Compliance Readily Achievable
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 required to be 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 incorporated within them including façade covering, framing and insulation; ii. The flooring and floor framing of lift pits; iii. Non-loadbearing internal walls where they are required to be fire-resisting; iv. Non-loadbearing shaft being a lift, ventilating, garbage or similar shaft. 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 having a combustible surface finish not exceeding 1mm thickness and where the spread-of-flame index of the product is not greater than 0. • Sarking-type materials that do not exceed 1mm thickness and have a flammability index not greater than 5. • Bonded laminated materials where each lamina, including any core, is not combustible and each adhesive layer does not exceed 1mm thickness and the total	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

Clause	Description	Comment	Status
	thickness of the adhesive layers does not exceed 2mm and the spread of flame index and smoke development index of the bonded laminated material as a whole do not exceed 0 and 3 respectively. • Any product as determined by testing to AS 1530.1 • An appropriately BCA accredited product or system		
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 with AS5637.1-2015	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 • 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. •	Compliance Readily Achievable
C1.11	**Performance of external walls in fire** Concrete external walls that could collapse as complete panels are to be designed in accordance with Specification C1.11 to minimise the likelihood of external walls collapsing outwards in the event of a fire and separating from supporting members.	Specification C1.11 applies to buildings having a rise in storeys of not more than 2 with concrete external walls that could collapse as complete panels which: a) consist of either single or multiple panels attached by steel connections to lateral supporting members; and b) depend on those connections to resist outward movement of the panels relative to the supporting members, and c) have a height to thickness ratio not greater than 50	N/A
C1.12		This Clause has deliberately been left blank	N/A
C1.13	**Fire-protected timber: Concession** *Fire-protected timber* in a Class 2, 3 or 5 building may be used wherever an element is *required* to be *non-combustible*,		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.	Details to be provided at CC stage	Compliance Readily Achievable

Clause	Description	Comment	Status
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	**General floor area and volume limitations** **(Type A construction)** The floor area and volume limitations are: Class 5, 9b or 9c: 8,000m^2 and 48,000m^3 Class 6, 7, 8 or 9a: 5,000m^2 and 30,000m^3 **Note:** • The BCA does not require Class 2 and 3 parts of the building to be considered • The basement carpark levels are not required to be considered as they're provided with a sprinkler system throughout	The BCA does not require Class 2 parts of the building to be considered The basement carpark levels are not required to be considered as they're provided with a sprinkler system throughout Its noted the child care centre tenancy and community tenancy are within the volume limitations and are required to be fire separated from the remainder of the building	Complies
C2.3	**Large isolated buildings** Where the building exceeds the limitations under Clause C2.2 above but not more than 18,000m^2 nor 108,000m^3:		N/A
C2.4	**Requirements for open space and vehicular access**		N/A
C2.5	**Class 9a and 9c buildings** *(NSW variation for Class 9c Buildings)*		N/A
C2.6	**Vertical separation of openings in external walls** Only applicable to a building of Type A Construction, which is not sprinkler protected.	Building is sprinklered	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.	Details to be provided at CC stage	Compliance Readily Achievable
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.	The residential portion and carpark on lower ground floor is required to be fire separated by 120min construction.	Compliance Readily Achievable
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.	The slab separating the carpark and childcare from the above residential levels are required to achieve 120min FRLS	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	Details to be provided at CC stage	Compliance Readily Achievable
C2.11	**Stairways and lifts in one shaft**	The lift is within its own shaft	Complies

Clause	Description	Comment	Status
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 • a battery system installed in the building that has a total voltage of 12 volts or more and a storage capacity of 200 kWh or more.	Details to be provided at CC stage	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.	Details to be provided at CC stage	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.	Due to the interconnecting stair and void in the western tower, the public corridor serving the below levels is over 40m. Smoke doors to be provided or to be addressed under performance solution. • courtyard level, • upper ground, l • level 01 Due to the interconnecting stair and void in the eastern tower, the public corridor serving the below levels is over 40m. Smoke doors to be provided or to be addressed under performance solution. • lower ground • courtyard level	Compliance Readily Achievable
Part C3 – Protection of Openings			
C3.1	**Application of Part**		Noted
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,	Performance solution is to address openings in SOUs within 3m of the northern boundary. Levels affected are; upper ground, L1, L2 ,L3, L4 & L5	Performance Solution

Clause	Description	Comment	Status
	• 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.		
C3.3	**Separation of external walls and associated openings in different fire compartments** External walls within the distances specified in Table C3.3 of the BCA are to be protected by construction with an FRL not less than 60/60/60 and the associated openings protected in accordance with Clause C3.4 of the BCA. **Angle between walls** — **Min. Distance** 0° (walls opposite) — 6 m more than 0° to 45° — 5 m more than 45° to 90° — 4 m more than 90° to 135° — 3 m more than 135° to less than 180° — 2 m 180° or more — Nil		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/-	Performance solution to address openings in SOUs within 3m of the northern boundary. Levels affected are; upper ground, L1, L2 ,L3, L4, L5	Performance Solution
C3.5	**Doorways in fire walls** Doorways in firewalls are to be protected by a fire door or fire shutter that has an FRL of not less than that required for the firewall except that the insulation rating must be at least 30.	Door between carpark and residential area on the lower ground floor is required to be a -/120/30 fire door	Compliance Readily Achievable
C3.6	**Sliding fire doors** Sliding fire doors are to be held open with an electromagnetic device, which when deactivated allows the door to be fully closed in not less than 20 seconds and not more than 30 seconds. An audible warning device and red flashing warning light must be provided. A sign stating "**WARNING – SLIDING FIRE DOOR**" in capital letters not less than 50 mm high lettering is to be provided on each side of the doorway located directly above the opening.		N/A
C3.7	**Protection of doorways in horizontal exits** Doorways in horizontal exits are to be protected by a fire door, which has an FRL of not less than that required for the firewall except that the insulation rating must be at least 30.		N/A

Clause	Description	Comment	Status
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.	Details to be provided on construction certificate drawings	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. 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).	Certification from the lift supplier is required for the installation of the new lift	Compliance Readily Achievable
C3.11	**Bounding construction: Class 2, 3, 4 and 9 buildings** *(NSW variation for Class 9c Buildings and Entertainment Venues)* Doorways opening to public corridors are to be protected with self-closing -/60/30 fire doors.	Doorways and window between public corridors and other rooms as listed below are required to be protected via -/60/30 fire doors or windows which comply with BCA clause C3.4; 1. Windows within SOU which open to the stair/voids (e.g H.CL.05 & B.01.04) on Courtyard level, L1 2. Bin storage rooms 3. Resi lobby	Compliance Readily Achievable
C3.12	**Openings in floors and ceilings 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	-

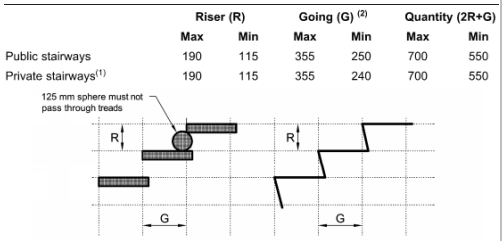
Clause	Description	Comment	Status
C3.15	**Openings for service installations** Services penetrations through a building elements (other than an external wall or roof) that are required to have an FRL with respect to integrity or insulation or a resistance to the incipient spread of fire, must comply 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. , or differ from a prototype assesmbly of the service, building element and protection method in accordance with Section 4 of AS 4072.1 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
Section D: Access and Egress			
Part D1 - Provision for Escape			
D1.1	**Application of Part**		Noted
D1.2	**Number of exits required** *(NSW variation for Entertainment Venues)* At least two exits need to serve all areas of every storey as follows: • High rise buildings over 25m in effective height • Class 2 or 3 building subject to C1.5 • Each basement level • Early Childhood Centres Each patient care area must be served by a minimum of 2 exits. Access to an exit must be provided without passing through another SOU.	Performance solution is to address 1. Single exit serving the class 9b community room on level 1 2. Single exit serving the class 2 ancillary garden storage, music and communal rooms on courtyard level	Performance Solution
		• Two fire stairs serve basement carpark levels 3,2,1 • Lower ground carpark is served by one fire stair and one exit out to Holdsworth Avenue • Lower ground residential level is served by one fire stair and one exit out to Holdsworth Avenue • Childcare centre level is served by an exit to the court yard and one exit via fire stair • On courtyard level the western tower has one exit out to the courtyard as roof as open space and one via the fire stair • On courtyard level the eastern tower has one exit out to court yard as roof as open space and two via the fire stairs • Two fire stairs serve each residential	Complies

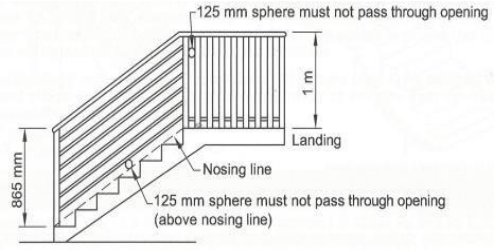
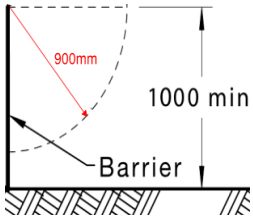
Clause	Description	Comment	Status
		level from L1-L10 The open stairs provided are non -required and not counted as exits	
D1.3	**When fire-isolated stairways and ramps are required** Every stair in a Class 5 to 9 building must be fire isolated unless it does not connect or pass through more than 3 consecutive floors in a sprinkler protected building, or 2 storeys in a non-sprinkler protected building.	Fire isolated stairs serve the building with the exception of the non-required, non- fire isolated stair which serves the western tower courtyard level, upper ground, level 01 and the eastern tower lower ground and court yard level.	Complies
D1.4	**Exit travel distances** 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. (Refer to concession under Spec E1.5a for Class 2 and 3 buildings not more than 25m in effective height with a sprinkler system complying with AS 2118.1 or AS 2118.4)	The following areas have been identified with distances exceeding 20m to a point of choice: 1. 25m within basement level 3 2. 22m within basement 2 3. 24 within basement level 1 4. 25m within lower ground carpark 5. 9.5m within lower ground resi level 6. 9.3m within courtyard level of resi towners 7. 30m within childcare centre 8. 22m within the community level 9. 30m from within the landscape area of level 10 adjacent to the pool	Performance Solution
D1.5	**Distance between alternative exits** The following travel distance limits apply: • ≤ 20m to a single exit or to a point of choice to alternative egress paths, and • ≤ 40m to the closest alternative exit; • ≤ 60m travel distance between alternative exits and not less than 9m between alternative exits; • Exit paths to alternative exits should not converge at any point to be less than 6m apart.	The following areas have been identified with distances between alternative exits exceeding 60m: 1. 75m within basement level 2 2. 84m within basement 1 3. 85m within lower ground basement	Performance Solution
D1.6	**Dimensions of exits and paths of travel to exits** *(NSW variation for Entertainment Venues)*	Based on the indicative childcare population of 60 students and 10 staff the two exits provided are compliant Based on the 1m egress width provided for the L1 community tenancy a maximum of 100 people can occupy the tenancy at anyone time. Its noted the fit out of these two tenancies will form part of a separate approval.	Compliance Readily Achievable

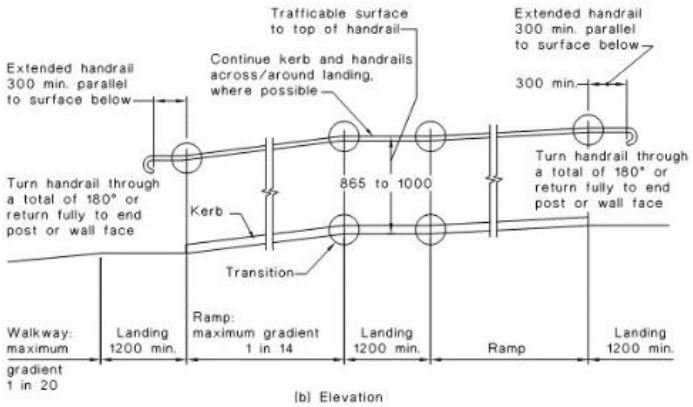
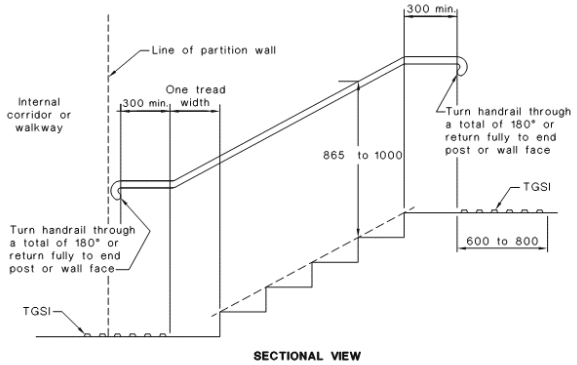
Clause	Description	Comment	Status
D1.7	**Travel via fire-isolated exits**	The northern fire stair which serves the western building discharges to a covered area which his not open for 1/3 of its perimeter . Further details to be provided confirming if the area has a height of not less than 3m and that the doors and openings to the resi lobby are to be protected in accordance with BCA clause C3.4	Performance Solution
		The path of travel from open space/courtyard level to Holdswoth Avenue and Berry Road requires occupants to walk within 6m of the building the fire stairs serve. Further details to be provided. If the path of travel passes within 6m of the building that part of the wall must have— (i) an FRL of not less than 60/60/60; and (ii) any openings protected internally in accordance with C3.4,for a distance of 3 m above or below, as appropriate, the level of the path of travel, or for the height of the wall, whichever is the lesser. Architect and fire engineer to review and confirm extent of DTS compliance proposed to be achieved	Performance Solution
		Access is provided directly into the fire stair from the following rooms which do not occupy the whole floor; 1. child centre 2. L 10 plant room 3. L 10 VRV condensers 4. L9 VRV condensers 5. L9 Hot water plant	Performance Solution
D1.8	**External stairways or ramps in lieu of fire-isolated exits** External stairs or ramps may be used instead of fire-isolated stairs to a building under 25m in effective height, subject to: • Stair to be non-combustible construction. • Exit doors onto the stair to be 1-hour fire rated. • Exit paths via the stair must be shielded if within 6m of openings in external wall of building.		N/A
D1.9	**Travel by non-fire-isolated stairways or ramps**	The open stairs provided are non -required	N/A
D1.10	**Discharge from exits** *(NSW variation for Entertainment Venues)* An exit must not be blocked nor be capable of being blocked at its point of discharge.	Travel from the courtyard level to Holdsworth Avenue requires occupants to pass under the north eastern corner of the building	Performance Solution
D1.11	**Horizontal exits** Horizontal exits must have a clear area on the side of the fire wall, to which the occupants are evacuating, to accommodate the total number of persons serviced by the horizontal exit of not less than 0.5m^2		N/A

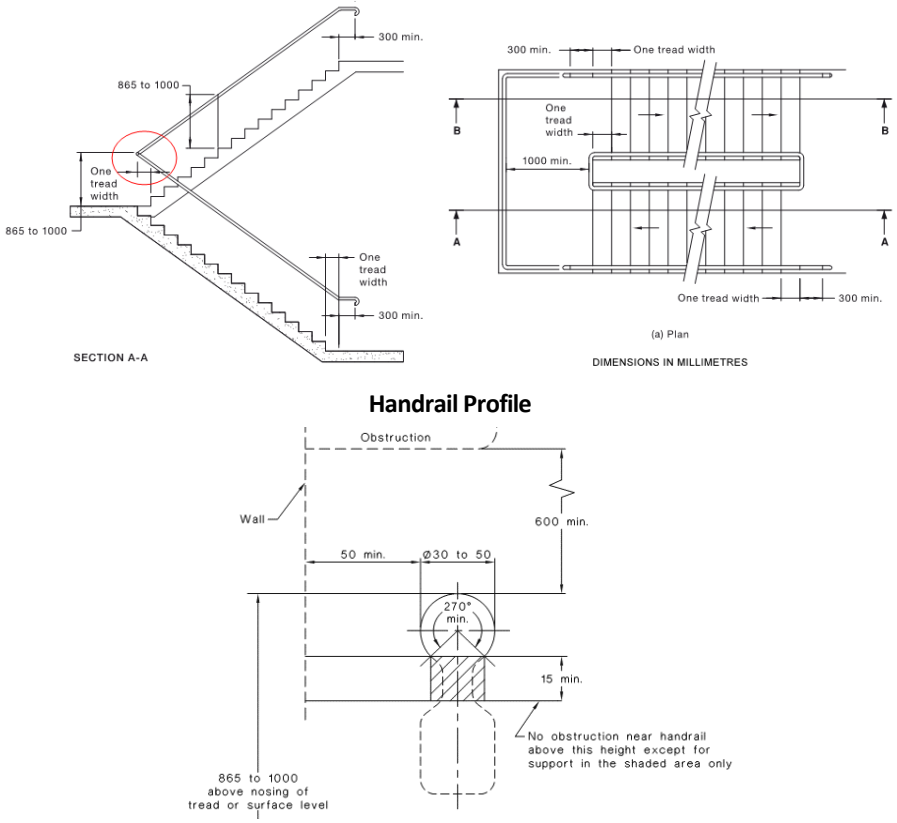
Clause	Description		Comment	Status
	per person in any other case			
D1.12	**Non-required stairways, ramps or escalators** Non-required stairs are permitted to connect up to 3 consecutive levels in a sprinklered building if one of the levels has direct access to open space		Internal non-required stair connects two levels in both resi building	Complies
D1.13	**Number of persons accommodated**			Complies
	Level	Use		
	B3	Carpark	90	
	B2	Carpark	90	
	B1	Carpark	77	
	Courtyard level	Childcare	60 children & 10 staff	
	Level 1	Community tenancy	100 based on 1m of egress	
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.			N/A
D1.17	**Access to lift pits** Access requirements apply to lift pits over 3m in depth.		Lift consultant to confirm.	Compliance Readily Achievable
D1.18	**Egress from early childhood centres** Every part of a class 9b early childhood centre must be wholly within a storey that provides direct egress to a road or open space These requirements do not apply in a building with a rise in storeys of not more than 2, where the class 9b early childhood centre is the only use in that building.		Two exits are provided with one directly to the courtyard which his deemed roof as open space with direct access to both Holdsworth Avenue and Berry Road. However, the second exit is via the fire isolated corridor/ stair and therefore does not comply DTS.	Performance Solution
Part D2 – Construction of Exits				
D2.1	**Application of Part** *(NSW variation for Entertainment Venues)*			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			Compliance Readily

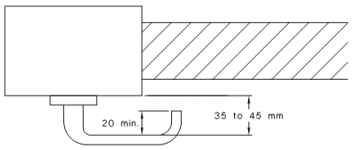
Clause	Description	Comment	Status
	of not more than 2 must be constructed only of reinforced or prestressed concrete, or steel not less than 6mm thick or timber that has a finished thickness of not less than 44mm and an average density of not less than 800 kg/m^3 at a moisture content of 12%.		Achievable
D2.4	**Separation of rising and descending stair flights**	The four fire isolated stairs serving both buildings contain rising and descending flights. This non-compliance is to be addressed by the fire engineer	Performance Solution
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** If the space below a fire-isolated stairway is within the fire isolated shaft it must not be enclosed to form a cupboard or similar enclosed space. The space below non fire-isolated stairs must not be enclosed to form a cupboard or similar enclosed space unless the enclosing walls have an FRL of not less than 60/60/60 and any doorway to the enclosed space is fitted with a self-closing -/60/30 fire door.		N/A
D2.9	**Width of required stairways and ramps** A stairway or ramp more than 2m in width is only counted as having a width of 2m unless it is divided by a continuous handrail or balustrade between landings and each division is less than 2m wide.		N/A
D2.10	**Pedestrian ramps** Ramps serving as required exit must have a gradient not less steep than 1:8. If the ramp is required for disabled access under Part D3 it must comply with AS1428.1. The surface of the ramp must have a non-slip finish.		Compliance Readily Achievable
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** The roof is required to have an FRL of not less than 120/120/120 and not incorporate any roof lights or	The path of travel from courtyard level open space to the road requires occupants to walk within 3m of the following openings 1. carpark supply intake	Performance Solution

Clause	Description	Comment	Status
	other openings within 3m of the path of travel.	2. community lobby reception. A performance solution will need to address this non-compliance along with any other openings such as drainage points located within 3m of the path of travel.	
D2.13	**Going and risers** *(NSW variation for Entertainment Venues)* 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 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  	Further detail of the stairs will need to be provided to confirm compliance	Compliance Readily Achievable
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**	Architect to confirm if any internal rooms will be provided with threshold steps in doorways e.g. plant rooms	Compliance Readily Achievable

Clause	Description	Comment	Status
	(NSW variation for Entertainment Venues) Steps should not occur at doorways without a threshold landing except as follows: • In patient care areas in a Class 9a, the door sill is not more than 25mm above the finished floor level to which the door way opens, • In a Class 9c building, a ramp is provide with a maximum gradient of 1:8 for a maximum height of 25mm over the threshold • 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.		
D2.16	**Barriers to prevent falls** *(NSW variation for Entertainment Venues)* 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.  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  		Compliance Readily Achievable
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	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	Compliance Readily Achievable

Clause	Description	Comment	Status
	• 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	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	
	Ramps  (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		

Clause	Description	Comment	Status
			
D2.18	**Fixed platforms, walkways, stairways and ladders** 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	N/A
D2.19	**Doorways and doors** *(NSW variation for Entertainment Venues)* 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 following doors encroach more than 500mm into the required width of the stair. Doors to be modified. 1. L 10 plant room off fire stair 2. L 10 VRV condensers roomoff fire stair 3. L9 LRV condensers room fire stair 4. L9 Hotwater plant room off fire stair 5. L9 plant room off fire stair	Additional Details Required
D2.21	**Operation of latch** *(NSW variation for Entertainment Venues)* Exit doors should be provided with "free handle" egress via a downward or pushing action and, if	All exit doors and doors in the path of travel must comply.	Compliance Readily Achievable

Clause	Description	Comment	Status
	serving an area accessible to people with disabilities, must have non-slip "D" pull handles with 35-45mm hand clearances.  (a) Isometric view  (b) Plan view Where the latch operation device is not located on the door leaf itself- • manual controls to power-operated doors must be at least 25 mm wide, proud of the surrounding surface and located not less than 500 mm from an internal corner; and • for a hinged door, between 1 m and 2 m from the door leaf in any position; • and for a sliding door, within 2 m of the doorway and clear of a surface mounted door in the open position. • braille and tactile signage complying with Clause 3 and 6 of Specification D3.6 must identify the latch operation device. Doors in a Class 9b building (other than schools or early childhood centres) serving a storey or room accommodating more than 100 people must be provided with a panic bar.		
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 serving a health care or aged care building or 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:	Details to be provided at CC stage	Compliance Readily Achievable

Clause	Description	Comment	Status
	Option 1 • 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. Option 2 • 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.		
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 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		Compliance Readily Achievable

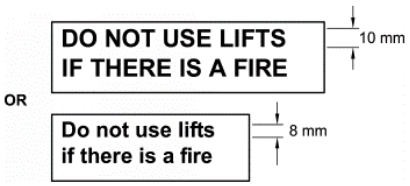
Clause	Description	Comment	Status
	• resist an outward horizontal action of 250N against the window restrained by a device or screen protecting the opening and have a child resistant release mechanism if the screen or device is able to be removed, unlocked or overridden. Where the fall distance from 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.		
D2.25	**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			
	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. Refer to separate to access rereport.	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** The building requires a fire hydrant system in accordance with AS 2419.1 – 2005. Where a sprinkler system is installed in the building in accordance with AS 2118.1, AS 2118.4, AS 2118.6, FPAA101H or FPAA101D the fire hydrant booster protection requirements of clauses 7.3(c)(ii) and 7.3(d)(iii) of AS 2419.1 do not apply The fire brigade booster assembly is required to be installed in accordance with AS2419.1 – 2005 except that it may be located between 3.5m and 10m of the building where the assembly is protected by an adjacent fire-rated freestanding wall that— • achieves an FRL of not less than 90/90/90; and • extends not less than 1 m each side of the outermost fire hydrant booster risers within the assembly and is not less than 3 m wide; and • extends to a height of not less than 2 m above finished ground level.	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). E.g. location of hydrant pump room, booster only located within view of Holdsworth Avenue Entry of the main entry's *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*	Compliance Readily Achievable

Clause	Description	Comment	Status
		required to be installed in the configuration of a ring main	
E1.4	**Fire hose reels** 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 Hoses are not permitted to pass through fire or smoke doors to achieve hose reel cover. Note: Fire hose reels not required to: - • Class 2, 3, 4, 5 and 9c buildings; • Class 8 electricity network substations; • Classrooms and associated corridors in primary and secondary schools	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** *(NSW variation for Residential Aged Care)* Fire sprinkler protection to AS2118.1-1999, relevant is a mandatory requirement for the project if:- • The building effective height exceeds 25m. (If any part of the development exceeds 25m effective height, all parts of the complex require sprinklers.) • Class 2 or 3 building and any other class of building containing a Class 2 or 3 part (Note: residential care buildings are excluded), throughout the whole building including any part of another class, if any part of the building has a rise in storey of 4 or more and an effective height of not more 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. **"Excessive hazard" means:** (a) Hazardous process risks including the following: (i) Aircraft hangars (ii) Electrical/electronic manufacturing and assembly (predominantly plastic components. (iii) Fire-lighter manufacturing. (iv) Fireworks manufacturing. (v) Flammable liquid spraying. (vi) Foam plastic goods manufacturing and/or processing. (vii) Foam rubber goods manufacturing and/or processing. (viii) Hydrocarbon based sheet product	The services engineer is to provide detailed design documents and design certification for the sprinkler design confirming compliance Specification E1.5 or Specification E1.5a. Any non-sprinkler protected areas and other AS2118 departures need to be identified and included in the fire engineering review (EP1.4). These areas need to be confirmed but could include: • Apartment balconies. • External under croft areas • Radiation therapy bunkers • PC3 laboratories • Chemical stores • Dangerous goods stores • Flammable liquids stores • MRI/PET areas • Server rooms • Operating theatres (TBC) • Data centres and related UPS • Bridge links to adjacent buildings • Shower recesses or low risk bathroom areas or the like • Sprinkler valve room location	Compliance Readily Achievable

Clause	Description	Comment	Status
	manufacturing. (ix) Nitrocellulose and nitrocellulose goods manufacturing. (x) Paint and varnish works, solvent based. (xi) Plastic goods manufacturing and/or processing works. (xii) Resin and turpentine manufacturing. (xiii) Vehicle repair shops. (b) Combustible goods with an aggregate volume exceeding 2,000m^3 and stored to a height greater than 4m such as the following: (i) Aerosol packs with flammable contents. (ii) Cartons and associated packing material excluding cartons with densely packed non-combustible content.		
E1.6	**Portable fire extinguishers** Portable Fire Extinguishers are required be installed to Table E1.6 and AS 2444 requirements, at: • Throughout Class 5 buildings • 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.	Class 2 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 centre for Fire Indicator, Fire Fans Control and Emergency Intercom panels is required for buildings of over 25m in effective height or buildings over 18,000m^2 in area, at a location readily available for firefighting operations and located at or near the main building entry. Buildings over 50m in effective height require a fire rated fire control room with prescribed requirements for layout, access, location and equipment with the following features: • 2 hr FRL concrete/masonry construction. • Low hazard linings (per fire stairs) • No extraneous services passing through • 2 hr fire FRL doors • No penetrations through floor over	Fire control centre is proposed on Lower Ground off Holdsworth Avenue	Compliance Readily Achievable

Clause	Description	Comment	Status
	• 2-hour fire dampers, etc. • Doors must open into room • Two access points needed, one from front entry foyer of building and one from public place. • Contents required: - FIP - Controls for pumps, fans and other emergency gear - Phone - Whiteboard and pinup board - Plan layout table - Tactical fire plans • May also contain - MECP - Lift annunciation panels - Gas/electric controls - Emergency generator backup • Dedicated fire isolated pressurisation system to ventilate with 30 air changes required.		
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 • 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	Noted

Clause	Description	Comment	Status
E2.2	**Smoke hazard management - General requirements** *(NSW variation for Entertainment Venues)* **Residential buildings** The following smoke hazard management systems are required for the complex: • Stair pressurisation for fire isolated stairs serving a storey over 25m effective height. • Stair pressurisation for stairs serving multiple basements. • Automatic smoke detection and alarm system complying with AS1670 or AS3786 interconnected smoke alarms within residential areas and sole occupancy units. Common area detection for general occupant warning are also required. • Carpark exhausts need to run at full capacity on fire alarm. The following general requirements apply: • Stair pressurisation and air-handling shutdown activation must be via smoke detectors located per AS1668.1 and within 3m of the lift doors at each level. The system should also be linked to the building occupant audible alarm system.	The building is required to have 1. Automatic Fire Detection And Alarm System (Smoke Detection System) 2. EWIS 3. Automatic Fire Suppression Systems (Sprinklers) 4. Fire Alarm Monitoring System 5. Mechanical Air Handling System (Automatic Shut Down Of Air-Handling System) in class 9b 6. Mechanical Air Handling System (Automatic Air Pressurisation System) 7. Mechanical Air Handling System (Carpark Mechanical Ventilation System)	Compliance Readily Achievable
		It is proposed to omitte zone smoke control from the 9b child care tenancy and community hall	Performance Solution
	• For buildings above 25m in effective height, activation of any residential corridor alarm should sound an audible warning to Clause 4.3.4 of AS1670.4 throughout all apartments to achieve a sound level of 75 dB(A) at the bedhead within the apartment. **Public assembly buildings** The following smoke hazard management systems are required:- • Automatic smoke detection and alarm system to "extending spacing" requirements of AS1668.1. • Sprinkler protection throughout. • Stairwell pressurisation is required for fire isolated stairs serving atrium areas or serving multiple basement levels with activation on fire alarm and via smoke detectors located per AS1668.1 and within 3m of the lift doors at each level. The smoke detectors need to be a separate dedicated system with control, indicating and alarm verification facility to AS1603.4. The system should also be linked to the building occupant audible alarm system. • Air-handling systems serving multiple fire compartments and not forming part of a smoke hazard management system should be designed to AS1668.1 or should be fitted with smoke dampers and set to automatically shut down in fire mode. Smoke detectors to BCA E2.2a are required in addition to sprinklers for this purpose. (i.e. basically dedicated smoke	The fire isolated passageways which extend from the fire isolated stairs on courtyard level are required to be pressurised	Compliance Readily Achievable

Clause	Description	Comment	Status
	detectors at 20m spacing and 10m from walls.) Similarly, lecture theatre air-handling system must shutdown on fire alarm. • Miscellaneous air-handling systems serving multiple fire compartments be installed to Section 5 and 11 of AS1668.1 as relevant. • Connected to occupant alert system.		
E2.3	**Provisions of special hazards**		N/A
Part E3 – Lift Installations			
E3.1	**Lift installations** Electric and electrohydraulic lifts must comply with the design requirements of BCA Specification E3.1.	Certification of lift design to be provided	Compliance 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.	Ensure a suitably sized lift serves each level.	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 required in buildings where: • the building has an effective height over 25m, or • a patient care area occurs in a health care building at a level that does not have direct access to a road or open space. 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. • If the building effective height exceeds 75m, must have a 600kg rating if not provided with a stretcher facility or a 900kg rating if stretcher facility is provided. • If serving a patient care area in a health care building, have minimum clear car dimensions of 2280mm depth, 1600mm width and 2300 mm height. Doors must be 1300mm wide and 2100mm high. (All dimensions measured clear of all obstructions including handrails.)	Architect to nominate proposed Emergency lifts for each tower	Compliance Readily Achievable

Clause	Description	Comment	Status
	• If serving a patient care area in a health care building, must be connected to a standby power system where installed.		
E3.5	**Landings**		Compliance Readily Achievable
E3.6	**Passenger lifts** Every passenger lift must be one of the types identified n Table E3.6a, have accessible features in accordance with Table E3.6b and not reply on a constant pressure device for its operation if the lift car is fully enclosed.	Certification of lift design to be provided	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	**Residential 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 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.	Certification of lift design to be provided	Compliance Readily 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, and • 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	Compliance Readily Achievable

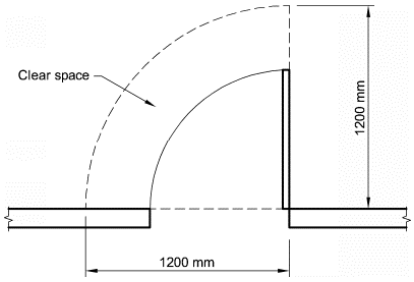
Clause	Description	Comment	Status

		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.	

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** *(NSW variation for Entertainment Venues)* Where an exit is not readily apparent then exit signs with directional arrows must be installed in appropriate positions in corridors, hallways, lobbies and the like indicating the direction to a required exit		Compliance Readily Achievable
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	**Emergency warning and intercom systems** An emergency warning and intercom system complying with AS 1670.4 must be installed	Details demonstrating compliance and design certification will be required from services consultants at Construction	Compliance Readily Achievable

Clause	Description	Comment	Status
	throughout the building.	Certificate stage.	
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.	Facade engineer is required to develop a BCA performance solution to address FP1.4	Performance Solution
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 71 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.	suitably qualified independent specialist waterproofing consultant is required to provide comments on all architectural detailed drawings to ensure drawings detail full compliance for any relevant DA Conditions (if applicable), BCA Compliance & Relevant Australian Standards relating to internal and external waterproofing compliance.	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.		Compliance Readily Achievable
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.		Compliance Readily Achievable
F1.11	**Provision of floor wastes**		Compliance

Clause	Description	Comment	Status
	The floor of each bathroom and laundry in each sole occupancy of the Class 2 and 3 building portions must have a floor waste and the floor graded to the floor waste to permit drainage of water.		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.		Compliance Readily Achievable
F1.13	**Glazed assemblies** Windows, sliding doors with a frame, adjustable louvres, shopfronts and window walls with one piece framing in an external wall must comply with AS 2047 requirements for resistance to water penetration.		Compliance Readily Achievable
Part F2 – Sanitary and Other Facilities			
F2.1	**Facilities in residential buildings**		Compliance Readily Achievable
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. A Class 9b early childhood centre must be provided with— (i) a kitchen or food preparation area with a kitchen sink, separate hand washing facilities, space for a refrigerator and space for cooking facilities, with— (A) the facilities protected by a door or gate with child proof latches to prevent unsupervised access to the facilities by children younger than 5 years old; and (B) the ability to facilitate supervision of children from the facilities if the early childhood centre accommodates children younger than 2 years old; and (ii) one bath, shower or shower-bath; and (iii) if the centre accommodates children younger than 3 years old— (A) a laundry facility comprising a washtub and space in the same room for a washing machine; and (B) a bench type baby bath, which is within 1 m of the nappy change bench; and (C) a nappy changing bench which— (aa) is within 1 m of separate adult hand washing facilities and bench type baby bath; and (bb) must be not less than 0.9 m2 in area and at a	It's noted the fitout of the childcare and communal hall will form part of a separate approval. Sanitary facilities will be provided at this stage	Compliance Readily Achievable

Clause	Description	Comment	Status
	height of not less than 850 mm, but not more than 900 mm above the finished floor level; and (cc) must have a space not less than 800 mm high, 500 mm wide and 800 mm deep for the storage of steps; and (dd) is positioned to permit a staff member changing a nappy to have visibility of the play area at all times.		
F2.4	**Accessible sanitary facilities** Accessible unisex toilets for people with a disability are required on each storey and at 50% of toilet banks on any storey. Facilities should be constructed to AS1428.1 – 2009 although an existing WC facility that fully complies with AS1428.1 – 2001 may substitute as a concession.	Refer to access consultant's report	Compliance Readily Achievable
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 	Compliance Readily Achievable
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
F2.9	**Accessible adult change facilities** Note: applies to- • Shopping centre >3,500 people • Sports venue >35,000 people • Swimming pool >70m perimeter • Museum, art gallery, theatre >1,500 patrons • Airport terminal		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. In a Class 9b building in a school classroom or other assembly building with more than 100 persons — 2.4 m; A theatre, public hall or other assembly building with more than 100 persons — 2.7 m In a corridor that serves an assembly building with not more than 100 persons — 2.4 m	Architect to provide design certificate noting any areas of non-compliance .	Compliance Readily Achievable

Clause	Description	Comment	Status
	In a corridor that serves an assembly building with more than 100 persons — 2.7 m; in a Class 9a health-care building— (i) a patient care area — 2.4 m; and (ii) an operating theatre or delivery room — 3 m; and (iii) a treatment room, clinic, waiting room, passageway, corridor, or the like — 2.4 m		
Part F4 – Light and Ventilation			
F4.1	**Provision of natural light** Natural lighting aggregating 10% of room floor area is required as follows: • To all habitable rooms in residential buildings. • To early childhood centres.	Architect to provide detailed calculations noting any areas of non-compliance.	Compliance Readily Achievable
		A number of studies (e.g SOU B.05.04) are located internally within the SOUs and will not achieve direct complaint natural lighting. Further details on compliance are to be provided.	Compliance Readily Achievable
F4.2	**Methods and extent of natural lighting**	Architect to provide detailed calculations noting any areas of non-compliance.	Compliance Readily Achievable
F4.3	**Natural light borrowed from adjoining room**	Architect to provide detailed calculations noting any areas of non-compliance.	Compliance Readily Achievable
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**	Architect to provide detailed calculations noting any areas of non-compliance.	Compliance Readily Achievable
F4.7	**Ventilation borrowed from adjoining room**	Architect to provide detailed calculations noting any areas of non-compliance.	Compliance Readily Achievable
F4.8	**Restriction on location of sanitary compartments**		Compliance Readily Achievable
F4.9	**Airlocks**		N/A
F4.10	-	This clause has intentionally been left blank	-
F4.11	**Carparks** Basement carparks must be provided with a system of mechanical ventilation complying with AS 1668.2		Compliance Readily Achievable
F4.12	**Kitchen local exhaust ventilation**		Compliance

Clause	Description	Comment	Status
	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.		Readily Achievable
Part F5 – Sound Transmission and Insulation			
F5.1	**Application of Part** Applicable to Class 3, 3 and 9c buildings	**A detailed assessment will need to be undertaken by a qualified acoustic consultant at the Construction Certificate stage to verify compliance.**	Compliance Readily Achievable
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 sole occupancy units from a plant room, lift shaft, public corridor, public lobby or the like or parts of different classifications must have an $R_w + C_{tr}$ of not less than 50 and an $L_{n,w} + C_I$ of not more than 62.		Compliance Readily 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,		Compliance Readily Achievable

Clause	Description	Comment	Status
	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.		
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
Part F6 – Condensation management			
F6.1	**Application of part** This part applies to a sole-occupancy unit of a Class 2 building or Class 4 part of a building.		Compliance Readily Achievable
F6.2	**Pliable building membrane** Where a pliable building membrane is installed in an external wall it must: • comply with AS/NZS 4200.1; and • be installed in accordance with AS 4200.2; and • be a vapour permeable membrane for climate zones 6, 7 and 8; and • be located on the exterior side of the primary insulation layer of wall assemblies that form the external envelope of a building. For single skin masonry and single skin concrete, where a pliable building membrane is not installed in an external wall, the primary water control layer must be separated from water sensitive materials by a drained cavity.		Compliance Readily Achievable
F6.3	**Flow rate and discharge of exhaust systems** An exhaust system installed in a kitchen, bathroom, sanitary compartment or laundry must have a minimum flow rate of— • 25 L/s for a bathroom or sanitary compartment; and • 40 L/s for a kitchen or laundry. Exhaust from a kitchen must be discharged directly		Compliance Readily Achievable

Clause	Description	Comment	Status
	or via a shaft or duct to outdoor air. Exhaust from a bathroom, sanitary compartment, or laundry must be discharged— • directly or via a shaft or duct to outdoor air; or • to a roof space that is ventilated in accordance with F6.4.		
F6.4	**Ventilation of roof spaces** Where an exhaust system covered by F6.3 discharges directly or via a shaft or duct into a roof space, the roof space must be ventilated to outdoor air through evenly distributed openings. Openings required above must have a total unobstructed area of 1/300 of the respective ceiling area if the roof pitch is greater than 22°, or 1/150 of the respective ceiling area if the roof pitch is less than or equal to 22°. 30% of the total unobstructed area required above must be located not more than 900 mm below the ridge or highest point of the roof space, measured vertically, with the remaining required area provided by eave vents.		Compliance Readily Achievable
Section G: Ancillary Provisions			
Part G1- Minor Structures and components			
G1.1	**Swimming pools** *(NSW variation for swimming pools)*	Detailed sections of pool fence location to be provided at CC stage	Compliance Readily Achievable
G1.2	**Refrigerated chambers, strong rooms and vaults**		N/A
G1.3	**Outdoor play spaces** Any outdoor play space in a Class 9b early childhood centre must be enclosed on all sides with a barrier which complies with AS 1926.1.	Detailed sections of enclosure to be provided.	Compliance Readily Achievable
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			
G2.1	-	This clause has intentionally been left blank	-
G2.2	**Installation of appliances**		N/A
G2.3	**Open fireplaces**		N/A
G2.4	**Incinerator rooms**		N/A
Part G3 - Atrium Construction			
G3.1	**Application of Part**		N/A
G3.2	**Dimensions of atrium well** Minimum 6m diameter atrium well is required.		N/A
G3.3	**Separation of atrium by bounding walls** An atrium well is required to be separated from the remainder of the building by bounding walls not		N/A

Clause	Description	Comment	Status
	more than 3.5m from the perimeter of the atrium well, except in the case of 3 consecutive storeys.		
G3.4	**Construction of bounding walls** Bounding walls must have an FRL not less than 60/60/60 or constructed of fixed toughened safety glass or wired safety glass in non-combustible frames protected with wall wetting sprinklers in accordance with Specification G3.8.		N/A
G3.5	**Construction of balconies** If a bounding wall separating an *atrium* from the remainder of the building is set back from the *atrium well*, an imperforate and non-combustible barrier not less than 1 m high must be provided.		N/A
G3.6	**Separation at roof** The atrium roof must have an FRL not less than that prescribed in Table 3 of Specification C1.1 or the roof structure and membrane are to be protected by a sprinkler system complying with Specification E1.5 and G3.8		N/A
G3.7	**Means of egress** All areas within the atrium must have at least 2 means of egress.		N/A
G3.8	**Fire and smoke control systems** Sprinklers are to be provided throughout in accordance with Specification E1.5 and G3.8. A smoke control system complying with AS/NZS1668.1 and Specification G3.8 is required throughout. An automatic fire detection and alarm system must comply with AS1670.1 and Specification G3.8. A sound system and intercom system for emergency purposes must be provided in accordance with AS1670.4 and must incorporate visual warning devices that operate on alarm and display the words "EVACUATE" in red letters. A suitable alternative power supply (emergency generator) must be provided to operate "required" safety systems in the building in accordance with Specification G3.8. Fire isolated stairways are required to be provided automatic air pressurisation in accordance with AS/NZS1668.1.		N/A
Part G4 - Construction in Alpine Areas			
G4.1	**Application of Part**		N/A
G4.2	**-**	This clause has deliberately been left blank.	-
G4.3	**External doorways**		N/A
G4.4	**Emergency lighting**		N/A
G4.5	**External trafficable structures**		N/A
G4.6	**Clear space around buildings**		N/A

Clause	Description	Comment	Status
G4.7		This clause has deliberately been left blank.	N/A
G4.8	**Fire-fighting services and equipment**		N/A
G4.9	**Fire orders**		N/A
Part G5 - Construction in Bushfire Prone Areas			
G5.1	**Application of Part**		N/A
G5.2	**Protection** *(NSW variation for bushfire prone area)*		N/A
Part G6 – Occupiable outdoor areas			
G6.1	**Application of Part** Applies to occupiable outdoor areas in addition to other deemed-to-satisfy provisions of the BCA. Part G6 takes precedent where there is a difference to the deemed-to-satisfy provisions of Sections C, D, E, F & G. Except for clause G6.2, Part G6 does not apply to occupiable outdoor areas of individual resident rooms or outdoor occupiable areas less than $10m^2$.		Compliance Readily Achievable
G6.2	**Fire hazard properties** A lining, material or assembly in an occupiable outdoor area must comply with C1.10 as for an internal element. The following fire hazard properties of a lining, material or assembly in an occupiable outdoor area are not required to comply with C1.10: (i) Average specific extinction area. (ii) Smoke-Developed Index. (iii) Smoke development rate. (iv) Smoke growth rate index ($SMOGRA_{RC}$)	Proposed materials used in outdoor occupiable areas are subject to C1.10 requirements as this clause.	Compliance Readily Achievable
G6.3	**Fire separation** For the purposes of the Deemed-to-Satisfy Provisions of C2.7, C2.8 and C2.9, a reference to a storey includes an occupiable outdoor area, however a fire wall cannot be used to separate an occupiable outdoor area into different fire compartments.		Compliance Readily Achievable
G6.4	**Provision for escape** For the purposes of the Deemed-to-Satisfy Provisions of Part D1, a reference to a storey or room includes an occupiable outdoor area.	Egress requirements under Part D1 apply to occupiable outdoor areas.	Compliance Readily Achievable
G6.5	**Construction of exits** For the purposes of the Deemed-to-Satisfy Provisions of Part D2, a reference to a storey or room includes an occupiable outdoor area.	Construction of exits requirements under Part D2 apply to occupiable outdoor areas.	Compliance Readily Achievable
G6.6	**Fire fighting equipment** Except for Clause 7(b)(i) of Specification E1.5, for the purposes of the Deemed-to-Satisfy Provisions of Part E1, a reference to a storey includes an occupiable outdoor area.	Fire fighting equipment required under Part E1 to be designed to include occupiable outdoor areas.	Compliance Readily Achievable
G6.7	**Lift installations**	Lift designs required under Part E3 to be	Compliance

Clause	Description	Comment	Status
	For the purposes of the Deemed-to-Satisfy Provisions of Part E3, a reference to a storey includes an occupiable outdoor area.	designed to include occupiable outdoor areas.	Readily Achievable
G6.8	**Visibility in an emergency, exit signs and warning systems** For the purposes of the Deemed-to-Satisfy Provisions of Part E4, a reference to a storey includes an occupiable outdoor area.	Emergency lighting, exits signs and emergency warning and intercom systems to be designed to include occupiable outdoor areas.	Compliance Readily Achievable
G6.9	**Light and ventilation** For the purposes of the Deemed-to-Satisfy Provisions of F4.4, F4.8 and F4.9, a reference to a room includes an occupiable outdoor area.		Compliance Readily Achievable
G6.10	**Fire orders** For the purposes of the Deemed-to-Satisfy Provisions of G4.9, a reference to a storey includes an occupiable outdoor area.		N/A
Section H: Special Use Buildings – Auditoriums, Public Halls, Public Transport Buildings			
Part H1 - Class 9b Buildings			
H1.1	**Application of Part** *(NSW variation for Entertainment Venues)* For a Class 9b building that is an entertainment venue refer to NSW Part H101.	Applies every enclosed Class 9b building, which is not an entertainment venue which— I. is a school assembly, church or community hall with a stage and any backstage area with a total floor area of more than 300m^2; or II. otherwise, has a stage and any backstage area with a total floor area of more than 200m^2; or III. has a stage with an associated rigging loft. Notwithstanding the above- I. H1.4 applies to every open or enclosed Class 9b building; and II. H1.7 applies to every enclosed Class 9b building.	N/A
H1.2	**Separation**		N/A
H1.3	**Proscenium wall construction** A proscenium wall must comply with Specification H1.3		N/A
H1.4	**Seating are**	Details of the seating within the lecture theatres are to be provided for assessment.	N/A
H1.5	**Exit from stages**		N/A
H1.6	**Access to platforms and lofts**	A stairway that provides access to a service platform, rigging loft, or the like, must comply with AS 1657	N/A
H1.7	**Aisle lights** In every enclosed Class 9b building, where in any part of the auditorium, the general lighting is dimmed or extinguished during public occupation	Details of the proposed aisle lighting are to be provided	N/A

Clause	Description	Comment	Status
	and the floor is stepped or is inclined at a slope steeper than 1 in 12, aisle lights must be provided to illuminate the full length of the aisle and tread of each step.		
NSW Part - H101 Entertainment Venues other than Temporary Structures and Drive-In Theatres			
H101.1	**Application of Part** This Part applies to every entertainment venue as described in the Environmental Planning and Assessment Regulation 2000.	Entertainment Venue is defined as a building used as a cinema, theatre or concert hall or an indoor sports stadium.	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. BCA Section J is to be certified with the issue of a Certificate of Compliance – Design from the relevant Services Engineer/Consultant.	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
DA_A-000-001	Cover Sheet	A	14/06/22	Silvester Fuller
DA_A-100-001	Plan Existing and Site Analysis	A	14/06/22	Silvester Fuller
DA_A-100-002	Site Plan	A	14/06/22	Silvester Fuller
DA_A-110-001	Basement 03	A	14/06/22	Silvester Fuller
DA_A-110-002	Basement 02	A	14/06/22	Silvester Fuller
DA_A-110-003	Basement 01	A	14/06/22	Silvester Fuller
DA_A-110-004	Lower Ground	A	14/06/22	Silvester Fuller
DA_A-110-005	Courtyard Level	A	14/06/22	Silvester Fuller
DA_A-110-006	Upper Ground	A	14/06/22	Silvester Fuller
DA_A-110-007	Level 01	A	14/06/22	Silvester Fuller
DA_A-110-008	Level 02	A	14/06/22	Silvester Fuller
DA_A-110-009	Level 03	A	14/06/22	Silvester Fuller
DA_A-110-010	Level 04	A	14/06/22	Silvester Fuller
DA_A-110-011	Level 05	A	14/06/22	Silvester Fuller
DA_A-110-012	Level 06	A	14/06/22	Silvester Fuller
DA_A-110-013	Level 07	A	14/06/22	Silvester Fuller
DA_A-110-014	Level 08	A	14/06/22	Silvester Fuller
DA_A-110-015	Level 09	A	14/06/22	Silvester Fuller
DA_A-110-016	Level 10	A	14/06/22	Silvester Fuller
DA_A-110-017	Roof	A	14/06/22	Silvester Fuller
DA_A-150-001	1 Bed Apartment Plans	A	14/06/22	Silvester Fuller
DA_A-150-002	2 Bed Apartment Plans	A	14/06/22	Silvester Fuller
DA_A-150-003	3 Bed Apartment Plans	A	14/06/22	Silvester Fuller
DA_A-150-004	TH Apartment Plans	A	14/06/22	Silvester Fuller
DA_A-150-005	4 Bed – PH Apartment Plans	A	14/06/22	Silvester Fuller
DA_A-210-001	North Elevation	A	14/06/22	Silvester Fuller
DA_A-210-002	East Elevation	A	14/06/22	Silvester Fuller
DA_A-210-003	East Internal Elevation	A	14/06/22	Silvester Fuller
DA_A-210-004	South Elevation	A	14/06/22	Silvester Fuller
DA_A-210-005	West Elevation	A	14/06/22	Silvester Fuller
DA_A-210-006	West Internal Elevation	A	14/06/22	Silvester Fuller
DA_A-211-001	East Street Site Elevation	A	14/06/22	Silvester Fuller
DA_A-211-002	West Street Site Elevation	A	14/06/22	Silvester Fuller
DA_A-310-001	Section AA	A	14/06/22	Silvester Fuller
DA_A-310-002	Section BB	A	14/06/22	Silvester Fuller
DA_A-310-003	Section CC	A	14/06/22	Silvester Fuller

DA_A-310-004	Section DD	A	14/06/22	Silvester Fuller
DA_A-310-005	Section EE	A	14/06/22	Silvester Fuller
DA_A-710-001	GFA	A	14/06/22	Silvester Fuller
DA_A-720-001	Cross Ventilation	A	14/06/22	Silvester Fuller
DA_A-710-002	Solar Access	A	14/06/22	Silvester Fuller
DA_A-730-001	Shadow Analysis	A	14/06/22	Silvester Fuller
DA_A-740-001	Views From the Sun Sheet 1	A	14/06/22	Silvester Fuller
DA_A-740-002	Views From the Sun Sheet 2	A	14/06/22	Silvester Fuller
DA_A-750-001	Materials and Finishes	A	14/06/22	Silvester Fuller

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	BCA 2019 Amendment 1 Clause C3.13 and tested prototypes (AS 1530.4 – 2014)
Automatic Fail Safe Devices	Scheduled devices release upon trip of smoke detection, fire detection and sprinkler activation in accordance with BCA 2019 Amendment 1 Clause D2.21.
Automatic Fire Detection And Alarm System *(Smoke Detection System)*	BCA 2019 Amendment 1 Clause 4 of Specification E2.2a and AS 1670.1 – 2018
Automatic Fire Detection And Alarm System *(Smoke Detection System To Operate Stair Pressurisation System)*	BCA 2019 Amendment 1 Clause 6 of Specification E2.2a and AS 1670.1 – 2018
Automatic Fire Detection And Alarm System *(Smoke Detection System To Automatically Shutdown Air-Handling System)*	BCA 2019 Amendment 1 Clause 6 of Specification E2.2a and AS 1670.1 – 2018
Automatic Fire Suppression Systems *(Sprinklers)*	BCA 2019 Amendment 1 Specification E1.5 and AS 2118.1 – 2017
Automatic Fire Suppression Systems *(Combined Sprinkler And Hydrant System)*	BCA 2019 Amendment 1 Specification E1.5 and AS 2118.6 – 2012
Emergency Lifts	BCA 2019 Amendment 1 Clause E3.4
Emergency Lighting	BCA 2019 Amendment 1 Clause E4.2, E4.4 and AS/NZS 2293.1 – 2018
Exit Signs	BCA 2019 Amendment 1 Clause E4.5, NSW E4.6, E4.7, E4.8 and AS/NZS 2293.1 – 2018
Emergency Warning And Intercommunication System	BCA 2019 Amendment 1 Clause E4.9 and AS 1670.4 – 2018
Fire Alarm Monitoring System	BCA 2019 Amendment 1 Clause 8 of Specification E2.2a and AS 1670.3 – 2018
Fire Control Centre	BCA 2019 Amendment 1 Specification E1.8
Fire Dampers	BCA 2019 Amendment 1 Clause C3.15 and AS 1668.1 – 2015 (AS 1682.1 – 2015 and AS 1682.2 – 2015)
Fire Doors	BCA 2019 Amendment 1 Specification C3.4 and AS/NZS 1905.1 – 2015
Fire Hydrants Systems	BCA 2019 Amendment 1 Clause E1.3 and AS 2419.1 – 2005
Fire Seals Protecting Opening In Fire Resisting Components Of The Building	BCA 2019 Amendment 1 Clause C3.15, Specification C3.15, AS 1530.4 – 2014, AS 4072.1 – 2005 and installed in accordance with the tested prototype.
Hose Reel System	BCA 2019 Amendment 1 Clause E1.4 and AS 2441 – 2005
Lightweight Construction	BCA 2019 Amendment 1 Specifications C1.8, Clause A2.3 and AS 1530.4 –

Measure	Standard of Performance
	2014
Mechanical Air Handling System *(Automatic Shut Down Of Air-Handling System)*	BCA 2019 Amendment 1 Clause E2.2 and AS 1668.1 – 2015
Mechanical Air Handling System *(Automatic Air Pressurisation System)*	BCA 2019 Amendment 1 Table E2.2a and AS 1668.1 – 2015
Mechanical Air Handling System *(Carpark Mechanical Ventilation System)*	BCA 2019 Amendment 1 Table E2.2a, Clause 5.5 of AS/NZ 1668.1 – 2015 and fans with metal blades suitable for operation at normal temperature may be used and the electrical power and control cabling need not be fire rated
Portable Fire Extinguishers	BCA 2019 Amendment 1 Clause E1.6 and AS 2444 – 2001
Wall Wetting Sprinkler And Drencher Systems	BCA 2019 Amendment 1 Clause C3.4
Warning And Operational Signs	BCA 2019 Amendment 1 Clauses C3.6, D1.17, NSW D2.19, D2.23, E3.3, and E1.8

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 and AS5637.1-2015

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

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