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Qantas Group Flight Training Centre

BCA Assessment Report

Report 2019/0208 R1.2

Prepared for Qantas Group

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SWP Quality System

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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

Steve Watson & Partners has been commissioned by Qantas Airways Ltd (Qantas) to prepare this report in accordance with the technical requirements of the Secretary's Environmental Assessment Requirements (SEARs), and in support of the **SSD 10154** for the development of a new flight training centre at 297 King Street, Mascot.

DESCRIPTION OF SITE AND LOCALITY

The site is located at 297 King Street, Mascot and comprises land known as Lots 2 & 4 DP 234489, Lot 1 DP 202747, Lot B DP 164829 and Lot 133 DP 659434. The site is identified in Figure 1.



Figure 1 - The Site

Key features of the site are as follows:

- The site is approximately 5.417ha and is an irregular shape. It is approximately 240m in length and maintains a variable width of between approximately 321m in the northern portion of the site and approximately 93m along the King Street frontage (refer to Figure 1).
- The site possesses a relatively level slope across the site. An open Sydney Water drainage channel bisects the northern portion of the site in an east-west direction. There are some isolated changes in level immediately adjacent to this channel. A Site Survey Plan accompanies the application which details the topographic characteristics of the site.
- Multiple mature Plane Trees are scattered throughout the site. A variety of native and exotic trees and vegetation also exist around the perimeter of the site which help screen the site from surrounding uses.
- Site improvements include at-grade car parking for Qantas staff, an industrial shed to store spare aviation parts, a substation, a disused gatehouse, a Sydney Water Asset with two driveways over it, the Qantas catering facility and Qantas tri-generation plant.

- The site forms part of a larger land holding under the ownership of Qantas that generally extends between Qantas Drive to the west, Ewan Street to the south, Coward Street to the north, with the Qantas “Corporate Campus” fronting Bourke Road.
- Vehicular access to the site from the local road network is available from King Street. The site has intra-campus connections along the northern boundary in the form of two connecting driveways in the north-eastern and north-western corner of the site along the northern boundary which link it to the broader Mascot Campus.
- The site is located within the Bayside LGA.

Key features of the locality are:

- **North:** The site is bounded to the north low scale industrial development, beyond which is Coward Street. Further north of the site is the Mascot Town Centre which is characterised by transport-oriented development including high density mixed-use development focussed around the Mascot Train Station.
- **East:** The site is bordered to the east by commercial development including a newly completed Travelodge hotel which includes a commercial car park. Additional commercial development to the east includes the Ibis Hotel and Pullman Sydney Airport fronting O’Riordan Street.
- **South:** The site is bounded to the south by King Street, beyond which is Qantas owned at-grade car parking and other industrial uses. Further south is the Botany Freight Rail Line and Qantas Drive beyond which is the Domestic Terminal at Sydney Airport.
- **West:** The site is bordered to the west by the Botany Freight Rail Line and Qantas Drive, beyond which lies Sydney Kingsford Smith Airport and the Qantas Jetbase (location of the current Flight Training Centre).

PROJECT DESCRIPTION

Safety is Qantas’ first priority. The flight training centre is a key pillar of this value. The facility enables pilots and flight crews to undertake periodic testing to meet regulatory requirements by simulating both aircraft and emergency procedural environments. The Project seeks consent for the construction and operation of a new flight training centre, and associated ancillary uses including a multi-deck car park. The Project is comprised of the following uses:

Flight Training Centre

The proposed flight training centre will occupy the southern portion of the site. It is a building that comprises 4 core elements as follows:

- An emergency procedures hall that contains;
 - cabin evacuation emergency trainers,
 - an evacuation training pool,
 - door trainers,
 - fire trainers
 - slide descent towers,
 - security room,
 - aviation medicine training and equipment rooms.
- A flight training centre that contains:

- a flight training hall with 14 bays that will house aircraft simulators,
- integrated procedures training rooms, computer rooms, a maintenance workshop, storerooms, multiple de-briefing and briefing rooms, pilot's lounge and a shared lounge.
- Teaching Space that contains
 - training rooms,
 - classrooms and two computer based exam rooms.
- Office Space
 - Office space for staff and associated shared amenities including multiple small, medium and large meeting rooms, think tank rooms, informal meeting spaces, a video room and lunch/tea room.
- Ancillary spaces including the reception area at the ground floor, toilets, roof plant and vertical circulation. The external ground floor layout will include a loading dock, at-grade car parking for approximately 39 spaces and a bus drop-off zone at the northern site boundary.

Car Park

The proposed multi-deck car park will be located to the north-east of the flight training centre and adjacent the existing Qantas catering facility and tri-generation plant. The car park is 13 levels and will provide 2059 spaces for Qantas staff. Vehicle access to the car park will be provided via King Street, Kent Road and from Qantas Drive via the existing catering bridge.

Summary of BCA Parameters:

Building Use:	Flight Training Centre
Class of Occupancy	Class 5 & 9b
Type of Construction Required	Type A & B (mixed type of construction)
Rise Storeys:	4
Number of Storeys:	4
Effective Height:	12.55m

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

1. Performance based separation to Level 3 fire compartment (Clause C2.7)
2. It is proposed to provide fire-resistance levels (FRL's) to the external wall of one side of the fire compartment in lieu of both sides of the fire compartment (Clause C3.3 and C3.4)
3. Extended travel distances to a point of choice between available exits (Clause D1.4)
4. Extended travel distances to the nearest available exit (Clause D1.4)
5. Extended travel distances between available exits (Clause D1.5)
6. Dimensions of the paths of travel to exits within the SIM Hall (Clause D1.6)
7. Open stairway (non-required) connecting 4 storeys (Clause D1.12)
8. Location of fire brigade booster assembly (Clause E1.3)
9. Deletion of smoke exhaust to the SIM Hall (Clause E2.2)
10. Deletion of Atrium requirements (Part G3)

Section 10.3 contains key BCA items that will need to be addressed for inclusion into the documentation submitted for the Construction Certificate.

The design is capable of complying with the requirements of the relevant sections of the Environmental Planning Assessment Act 1979, the Environmental Planning and Assessment Regulations 2000 and the Building Code of Australia 2019. 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.

Table of Contents

Project Contacts	2
SWP Quality System	2
Revision History	2
Table of Contents	7
1. INTRODUCTION	8
2. PURPOSE	8
3. SCOPE AND LIMITATIONS	8
3.1. Scope	8
3.2. Limitations	8
4. NATIONAL CONSTRUCTION CODE 2016 AMENDMENT 1 –VOLUME 1: BUILDING CODE OF AUSTRALIA CLASS 2 TO CLASS 9 BUILDINGS	8
5. PERFORMANCE SOLUTIONS	9
6. STATUTORY FRAMEWORK	9
6.1. New Work	9
7. METHODOLOGY	9
7.1. Process adopted	9
8. DESCRIPTION OF PROPOSED DEVELOPMENT	10
9. ASSESSMENT DATA SUMMARY	10
9.1. Assumptions	10
9.2. Interpretations	10
10. KEY BCA ISSUES REQUIRING RESOLUTION	11
10.1. Performance solutions required – Fire Engineering	11
10.2. BCA Items requiring additional details or documentation during the course of design development	18
11. RELEVANT AUTHORITIES	20
12. STATUTORY FIRE SAFETY MEASURES	20
13. CONCLUSION	21
14. BCA 2019 – CLAUSE BY CLAUSE ASSESSMENT	21
15. APPENDIX A – GLOSSARY AND ABBREVIATION	63
16. APPENDIX B – REFERENCED DOCUMENTATION	65
17. APPENDIX B – STATUTORY FIRE SAFETY MEASURES	66
18. APPENDIX C1.1 – FIRE RATING REQUIREMENTS	67
19. APPENDIX C1.10 – EARLY FIRE HAZARD PROPERTIES FOR MATERIALS	69
20. APPENDIX C2.2 – FLOOR AREAS AND VOLUMES	70
21. APPENDIX D1.4 – EXITS	71
22. APPENDIX D1.13 – POPULATIONS/EXIT WIDTH ASSESSMENT	72
23. APPENDIX D2.24 – PROTECTION OF OPENABLE WINDOWS	73
24. APPENDIX D3 – SIGNIFICANT ACCESSIBILITY REQUIREMENTS	74
25. APPENDIX F2.3 – REQUIREMENTS FOR SANITARY FACILITIES	75

1. Introduction

This report presents the findings of a preliminary assessment undertaken of the proposed design of the Qantas Flight Training Centre at 297 King Street Mascot against the Deemed-to-Satisfy (DtS) provisions of Building Code of Australia (BCA) 2019.

It has been prepared by Steve Watson and Partners for Qantas Group.

2. Purpose

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

The assessment is undertaken for the purpose of, and to the extent necessary for, application for SEARs development consent.

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.

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

The National Construction Code (NCC) is a uniform set of technical provisions for the design and construction of buildings, structures and plumbing/drainage systems which is separated into 3 volumes. Volume 1 of the NCC is the Building Code of Australia (BCA) for Class 2 to 9 buildings which is the document to which the assessment in this report has been undertaken against. The BCA is legislated under The Act

and specifies the Performance Requirements for the design and construction of Class 2 to 9 buildings that must be satisfied to achieve compliance. The Performance Requirements can only be satisfied by a Performance Solution, Deemed-to-Satisfy (DTS) solution or a combination of both.

5. Performance Solutions

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

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

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

6. Statutory Framework

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

Issue	Legislative reference	Comment
New Work	EPAR 145	All new works must comply with BCA requirements

6.1. New Work

Clause 145 of the EPAR requires that all new work comply with the current requirements of the BCA.

This means that all works proposed in the plans are required to comply but that existing features of an existing building need not comply with the BCA unless required to under other clauses of the legislation.

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 site is located at 297 King Street Mascot.

The proposed flight training centre will occupy the southern portion of the site. It is a building that comprises 4 core elements as follows:

- An emergency procedures hall that contains;
 - cabin evacuation emergency trainers,
 - an evacuation training pool,
 - door trainers,
 - fire trainers
 - slide descent towers,
 - security room,
 - aviation medicine training and equipment rooms.
- A flight training centre that contains:
 - a flight training hall with 14 bays that will house aircraft simulators,
 - integrated procedures training rooms, computer rooms, a maintenance workshop, storerooms, multiple de-briefing and briefing rooms, pilot's lounge and a shared lounge.
- Teaching Space that contains
 - training rooms,
 - classrooms and two computer based exam rooms.
- Office Space
 - Office space for staff and associated shared amenities including multiple small, medium and large meeting rooms, think tank rooms, informal meeting spaces, a video room and lunch/tea room.
- Ancillary spaces including the reception area at the ground floor, toilets, roof plant and vertical circulation. The external ground floor layout will include a loading dock, at-grade car parking for approximately 35 spaces and a bus drop-off zone at the northern site boundary.

9. Assessment Data Summary

The following basic assessment data has been drawn from the provisions of the BCA 2019* (Preview version).

9.1. Assumptions

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

1. Nil

9.2. Interpretations

A number of issues within the BCA are recognised to be interpretive in nature. Where these issues are

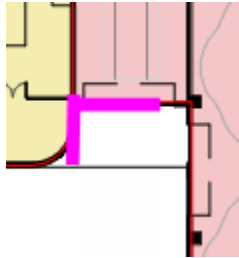
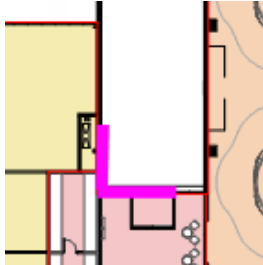
encountered, interpretations are made that are consistent with Standard Industry Practise and/or Steve Watson & Partners policy formulated in regard of each issue.

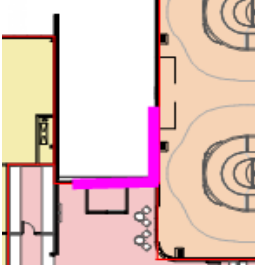
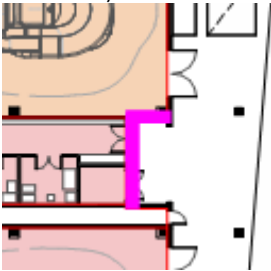
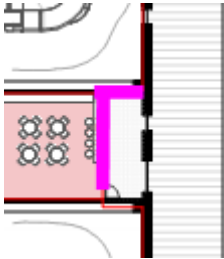
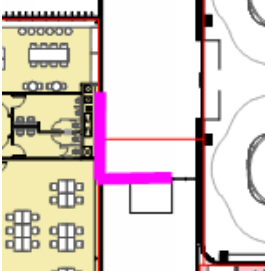
1. The Class 9b portion has been classified as an assembly building however is not considered a school under definition.
2. Egress from the flight simulators can be achieved directly to the floor of the SIM hall.

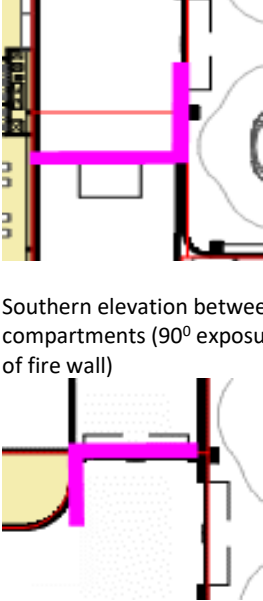
10. Key BCA Issues Requiring Resolution

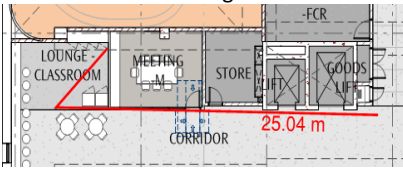
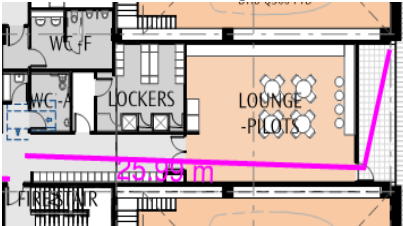
10.1. Performance solutions required – Fire Engineering

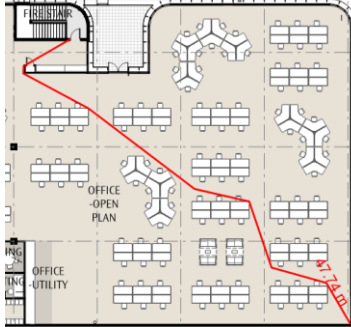
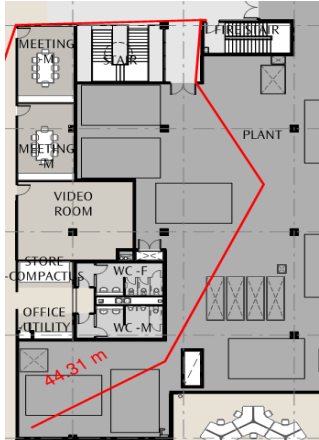
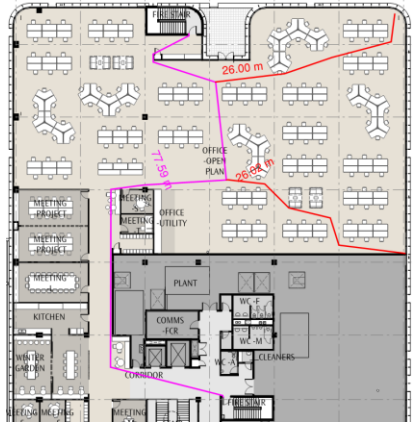
It is proposed that the following non-compliances be investigated as being via a performance solution from a suitably qualified fire engineer:

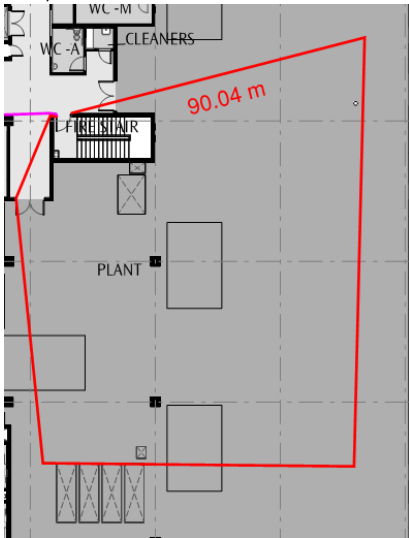
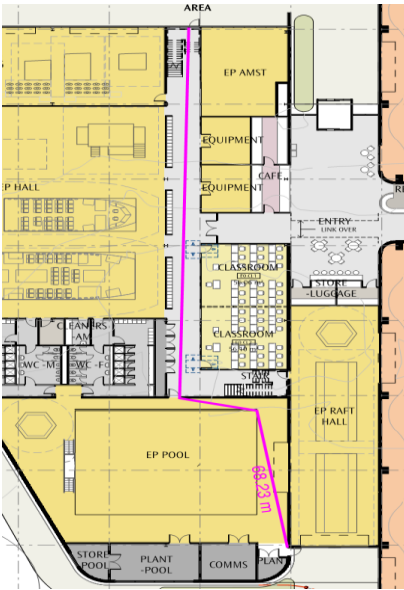
Item	Non-Compliance	DTS Clause	Description	Performance Requirement
1.	Performance based fire compartment separation	C2.7	Level 3 is proposed to be a separate fire compartment from ground to level 2. The method for fire separation between these fire compartments will be a fire curtain to the stairway and not in accordance with a fire wall to C2.7 of the BCA	CP2
2.	Protection of external walls and associated openings in different fire compartments	C3.3 & C3.4	The following areas contain external wall and openings exposed either side of a fire compartment which will need to be protected. Ground floor - Southern elevation between EP hall and southern fire compartments (90° exposure – 4m protection either side of fire wall)  - Northern elevation between EP hall and southern fire compartments (90° exposure – 4m protection either side of fire wall)  - Northern elevation between northern and southern fire compartments (90° exposure – 4m protection either side of fire wall)	CP2

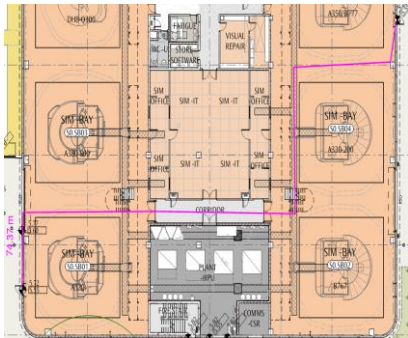
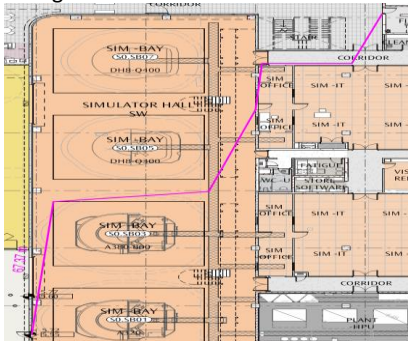
Item	Non-Compliance	DTS Clause	Description	Performance Requirement
			 - Eastern elevation between northern and southern fire compartments (90° exposure – 4m protection either side of fire wall)  Level 1 - Eastern elevation between northern and southern fire compartments (90° exposure – 4m protection either side of fire wall)  - Northern elevation between EP hall and southern fire compartments (90° exposure – 4m protection either side of fire wall)  - Northern elevation between northern and southern fire compartments (90° exposure – 4m protection either side of fire wall)	

Item	Non-Compliance	DTS Clause	Description	Performance Requirement
			 Southern elevation between EP hall and southern fire compartments (90° exposure – 4m protection either side of fire wall) It is proposed to provide fire-resistance levels (FRL's) to the external wall of one side of the fire compartment in lieu of both sides of the fire compartment. This is to be addressed as a performance solution.	
3.	Extended travel distances to a point of choice	D1.4	The following areas have been identified with distances exceeding 20m to a point of choice: 26m from the northern office area on level 3;  28m from the southern office area on level 3;	DP4, EP2.2

Item	Non-Compliance	DTS Clause	Description	Performance Requirement
			 3. 25m from the lounge classroom on level 2;  4. 23m from the CBT PT on level 2;  5. 26m from Pilot Lounge on level 1;  6. 25m from CBT.EP on level 1; 	
4.	Extended travel	D1.4	The following areas have been identified with exit travel distances	DP4, EP2.2

Item	Non-Compliance	DTS Clause	Description	Performance Requirement
	distances to the nearest exit		exceeding 40m: 1. 48m from northern office area on level 3;  2. 50m from the plant area on level 3; 	
5.	Extended travel distances between alternative exits	D1.5	The following areas have been identified with distances between alternative exits exceeding 60m: 1. 78m between central and northern fire stairs on level 3;  2. 75m between central and southern fire stairs on level 3;	DP4, EP2.2

Item	Non-Compliance	DTS Clause	Description	Performance Requirement
			 3. 90m between alternative exits from the plant room on level 3;  4. 69m between EP hall exits north and south; 	

Item	Non-Compliance	DTS Clause	Description	Performance Requirement
			5. 74m between external exits in the SIM bays on ground  6. 68m between external exit in the SIM and central fire stair on ground 	
6.	Dimensions of path of travel to an exit	D1.6	A path of travel to an exit is required to have an unobstructed height of 2m and width of 1m. The flight simulator envelope within the SIM bays has the potential to encroach on the path of travel to the exits.	DP6
7.	Open stairway connecting 4 storeys	D1.12	A non-required-non-fire-isolated stairway is permitted to connect up to 2 storeys. The building includes a proposed open stairway not serving as an exit which connects 4 storeys (ground to level 3).	CP2, EP2.2
8.	Location of fire brigade booster assembly	E1.3, AS 2419.1	The fire brigade booster assembly is proposed to be located on adjacent to the vehicular accessway on King Street. This is not within sight of the main entrance of the building.	EP1.3
9.	Deletion of smoke exhaust to the SIM Hall	E2.2	Class 9b fire compartments exceeding 2000m² require an automatic smoke exhaust system complying with Specification E2.2b. Smoke exhaust is proposed to be provided to the EP Hall. Smoke exhaust is proposed to be deleted from the SIM Hall.	EP2.2
10.	Deletion of Atrium requirements	Part G3	The SIM bays occupy a large volume space which indirectly connects the adjacent 3 storeys of ground, levels 1 and 2. A performance solution is proposed to not apply the atrium provisions of Part D3 and Specification G3.8 based on the unique building design & usage and separation of the floor space from the SIM halls.	CP2, EP1.4, EP2.2

10.2. BCA Items requiring additional details or documentation during the course of design development

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

Item	DTS Clause	Description	Requirement to Satisfy BCA
1.	C1.1, Spec C1.1	Fire-resistance construction of building elements is to comply with Type A and B fire-resisting construction detailed in Specification C1.1 of the BCA.	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 loadbearing structural elements requiring an FRL. All non-loadbearing FRL's are to be detailed by the architect on the plans including system details of proposed wall types achieving the FRL Details of the proposed method of fire separation at the junction of floors and the external wall and the external wall must be provided for assessment.
2.	C1.9	The external walls and all their components are required to be non-combustible.	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.
3.	C1.11	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.	Confirmation of whether the SIM hall is proposed to include tilt-up slab construction is to be provided. If so, the structural engineer will be required to confirm compliance with Specification C1.1
4.	C2.6	Spandrel separation In a building of Type A construction that is not sprinkler protected, a spandrel must be provided. The spandrel must be not less than 900mm in height, extended not less than 600mm above the upper surface of the intervening floor and be of non-combustible material having an FRL of not less than 60/60/60.	Details of spandrel protection between portions of the building where one storey sits above another is to be provided. Note: Spandrel protection applies not only for openings but also any part of the external wall where one storey sit above another storey whereby the external wall does not have an FRL of at least 60/60/60 or greater.
5.	C2.7	A fire wall must extend to the underside of a floor having an FRL required for a fire wall or to the roof covering. Where the fire wall location has different roof levels in either fire	The fire compartments will rely on portions of horizontal floor slab construction as well as vertical fire walls in separating into separate fire compartments. The portions of floors that form part of the horizontal separation of the fire compartment must have the

Item	DTS Clause	Description	Requirement to Satisfy BCA
		compartment either side of the fire wall, there is no requirement to extend the fire wall to the underside of the higher roof level or above the lower roof level.	same FRL of the fire compartment (FRL 120/120/120). Details of floor and fire wall construction achieving an FRL of FRL 120/120/120 will be required.
6.	C2.7	Openings permitted within the fire wall must not reduce the FRL of the fire wall except where permitted under Part C3 of the BCA.	Confirmation of whether any openings are proposed in the fire wall notwithstanding fire doors or fire protected service penetrations.
7.	C2.7	Building elements, other than roof battens with dimensions of 75 mm x 50 mm or less or sarking-type material, must not pass through or cross the fire wall unless the required fire-resisting performance of the fire wall is maintained.	Structural engineer drawings and design will be required to confirm their design with regard to the location of the proposed fire walls and ensuring structural building elements do not pass through the fire walls. Independent structures may be required either side of the fire wall to ensure compliance.
8.	C2.12	Any UPS system with a voltage exceeding 12 volts and a storage capacity of 200kWh or more must be fire separated.	Writing confirmation will be required for the proposed UPS systems proposed in the building meeting the requirements of this clause not to be within fire rated construction.
9.	C3.5	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. The doorways are to be self-closing or automatic closing operation initiated by the activation of a smoke detector, or any other detector deemed suitable in accordance with AS 1670.1 if smoke detectors are unsuitable in the atmosphere, installed in accordance with the relevant provisions of AS 1670.1 and located on each side of the fire wall not more than 1.5 m horizontal distance from the opening.	Details of compliance for doorways located within fire walls will be required.
10.	D1.13	Total population numbers for the building	Qantas as the owner and end user of the building will need to provide concurrence to forecast population provided by NoxonGiffen.
11.	Part D3	Requirements for access for people with disabilities	Access consultant to undertake DDA review of proposed design
12.	Section E	Requirements for essential fire safety measures including: • Fire hydrants; • Fire hose reels; • Portable Fire Extinguishers; • Automatic shutdown of air-handling systems; • Automatic smoke detection and alarm system; • Building occupant warning system; • Emergency lighting; • Exit signs	Detailed design and assessment to be provided by suitably qualified wet and dry fire, mechanical, electrical and hydraulic engineers.

Item	DTS Clause	Description	Requirement to Satisfy BCA
13.	E1.3	The fire brigade booster assembly is located within between 3.5m and 10m of the building, therefore is required to be protected by an adjacent fire-rated freestanding wall that- - o achieves an FRL of 90/90/90; and - o extends 1m each side of the outermost fire hydrant booster risers within the assembly and is a minimum of 3m wide; and - o extends to a height of 2m above finished ground level.	Details of compliance to be provided for the Construction Certificate.
14.	F1.0	Weatherproofing of external wall systems must be in accordance with Performance Requirement FP1.4 or BCA Verification Method FV1.	Architect to provide details of compliance for weatherproofing of external walls
15.	F3.1	Areas containing more than 100 persons will require rooms and corridors to be a minimum of 2.7m in height.	Details of whether 2.7m room heights and corridors are achieved from Class 9b levels are to be provided.
16.	G3.6	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	The roof of the SIM building is proposed to have an FRL to the roof. Details of whether the entry portion of the building is proposed to have an FRL. May require a performance solution.
17.	Section J	Energy efficiency requirements to new works	ESD Consultant to provide assessment of BCA Section Energy Efficiency requirements

11. Relevant Authorities

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

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

12. Statutory Fire Safety Measures

All fire/essential safety measures installed within the building are required 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 the Act and EPAR and the **BCA 2016** 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 – Clause by Clause Assessment

Clause	Description	Comment	Status															
BCA Version																		
BCA 2019	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. In addition, requirements of the Premises Standards (PS) are covered as relevant.	Noted															
Section A: General Provisions																		
A3.2	Classification and usage Usage on each level of the building is as follows: <table><thead><tr><th>LEVEL</th><th>USE</th><th>CLASS</th></tr></thead><tbody><tr><td>Ground</td><td>Training Centre</td><td>9b</td></tr><tr><td>Level 1</td><td>Training Centre</td><td>9b</td></tr><tr><td>Level 2</td><td>Training Centre</td><td>9b</td></tr><tr><td>Level 3</td><td>Staff Offices</td><td>5</td></tr></tbody></table>	LEVEL	USE	CLASS	Ground	Training Centre	9b	Level 1	Training Centre	9b	Level 2	Training Centre	9b	Level 3	Staff Offices	5		Noted
LEVEL	USE	CLASS																
Ground	Training Centre	9b																
Level 1	Training Centre	9b																
Level 2	Training Centre	9b																
Level 3	Staff Offices	5																
A2.1	Suitability of materials Every part of a building must be constructed in an appropriate manner to achieve the requirements of the BCA, using materials that are fit for the purpose for which they are intended.	The builder is responsible to adopt and install appropriate proprietary accredited building products and is to ensure that those products/assemblies are fit for the purpose they are intended and are installed in accordance with the manufacturer’s specifications/ requirements for that system.	Compliance readily achievable															
Section B: Structure																		
B1.1	Resistance to actions The resistance of the building must be greater than the most critical action effect resulting from different combinations of actions	Certification from a qualified structural engineer will need to be provided at Construction Certificate stage	Compliance readily achievable															
B1.2	Determination of individual actions The magnitude of individual actions must be determined in accordance with Clause B1.2 of the BCA.	Certification from a qualified structural engineer will need to be provided at Construction Certificate stage	Compliance readily achievable															
B1.3	-	No provisions	-															

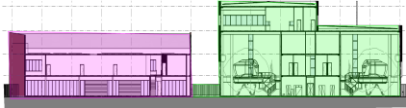
Clause	Description	Comment	Status
B1.4	Determination of structural resistance of materials and forms of construction The structural resistance of materials and forms of construction must be determined in accordance with the relevant Australian Standards in accordance with Clause B1.4 of the BCA.	Certification 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	-	N/A
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

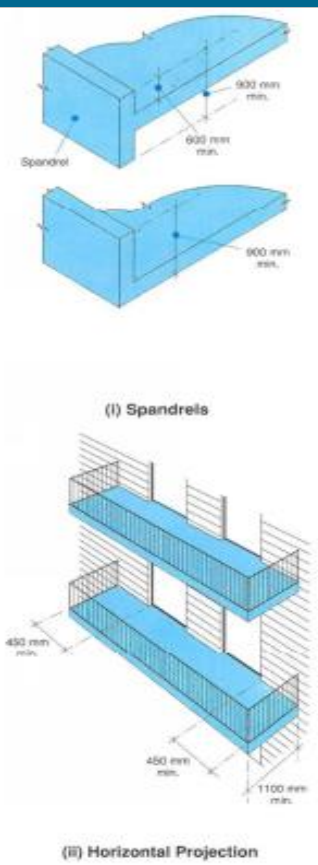
C1.1	Type of construction required		Details of the proposed construction and how it will achieve the required FRL is to be provided. Certification from a structural engineer will be required for FRL's of all structural elements including existing structure. Details of the proposed method of fire separation 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.	Additional details required
	Type A Construction – <u>Applies to 4 storey SIM and office</u>			
	BCA Type A fire resisting construction is required. The following fire ratings apply:			
	Building Element	Required FRL		
	Loadbearing external walls, columns, beams	Generally 2 hr FRL (non-combustible)		
	Non-loadbearing external walls, etc. less than 3m from a fire source or boundary or less than 6m from another building on the site	Generally 2 hr FRL (non-combustible)		
	Non-loadbearing external walls etc. greater than 3m from a fire source or boundary or more than 6m from other buildings on the site.	Nil (Non-combustible)		
Floors separating storeys	Generally 2hr FRL			
Internal load-bearing walls/columns etc.;	See below			

Clause	Description		Comment	Status																				
	Supporting a floor over	Generally 2 hr FRL (concrete/ masonry for walls)																						
	Supporting the roof over	Generally 1 hr FRL (concrete/ masonry for walls)																						
	Roofs	120/60/30 FRL																						
	Non-loadbearing Services Shafts	--/120/120 FRL (non-combustible)																						
	Fire walls	120/120/120 FRL																						
	Type of construction required Type B Construction – <u>Applies to 2 storey EP Hall</u> BCA Type B fire resisting construction is required. The following fire ratings apply: <table><thead><tr><th>Building Element</th><th>Required FRL</th></tr></thead><tbody><tr><td>Loadbearing external walls within 18m of a fire-source feature</td><td>Generally 2 hr FRL (non-combustible)</td></tr><tr><td>Non-loadbearing external walls, etc. less than 3m from a fire source or boundary or less than 6m from another building on the site</td><td>Generally 2 hr FRL (non-combustible)</td></tr><tr><td>Non-loadbearing external walls etc. greater than 3m from a fire source or boundary or more than 6m from other buildings on the site.</td><td>Nil (Non-combustible)</td></tr><tr><td>Floors separating storeys</td><td>30/30/30 FRL *Refer to Clause C2.7</td></tr><tr><td>Internal load-bearing walls/columns etc.;</td><td>See below</td></tr><tr><td> - Supporting a floor over </td><td>Generally 2 hr FRL (concrete/ masonry for walls)</td></tr><tr><td> - Supporting the roof over </td><td>Nil</td></tr><tr><td>Roofs</td><td>Nil</td></tr><tr><td>Non-loadbearing Services Shafts</td><td>--/120/120 FRL (non-combustible)</td></tr></tbody></table>		Building Element	Required FRL	Loadbearing external walls within 18m of a fire-source feature	Generally 2 hr FRL (non-combustible)	Non-loadbearing external walls, etc. less than 3m from a fire source or boundary or less than 6m from another building on the site	Generally 2 hr FRL (non-combustible)	Non-loadbearing external walls etc. greater than 3m from a fire source or boundary or more than 6m from other buildings on the site.	Nil (Non-combustible)	Floors separating storeys	30/30/30 FRL *Refer to Clause C2.7	Internal load-bearing walls/columns etc.;	See below	Supporting a floor over	Generally 2 hr FRL (concrete/ masonry for walls)	Supporting the roof over	Nil	Roofs	Nil	Non-loadbearing Services Shafts	--/120/120 FRL (non-combustible)		
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Supporting the roof over	Nil																							
Roofs	Nil																							
Non-loadbearing Services Shafts	--/120/120 FRL (non-combustible)																							
Spec C1.1	Fire resisting construction <u>Support of another part</u> 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			Compliance readily achievable																				

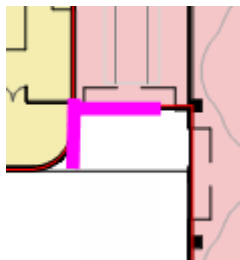
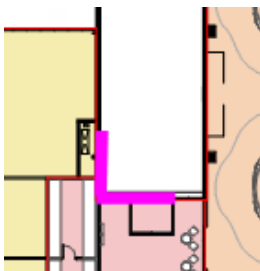
Clause	Description	Comment	Status
	part must have an FRL not less than that required for the part if supports and be non-combustible. <u>Attachments</u> The method of attaching or installing a finish, lining, ancillary element or service to a building element must not reduce the fire resistance of that element. <u>Enclosure of shafts</u> 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.		
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: 4 storeys Effective Height: 12.55m (L3 RL 18050 – Ground RL 5500)	Noted
C1.3	Buildings of multiple classification		Noted
C1.4	Mixed types of construction	The building is proposed to be of mixed type of construction. A fire wall is proposed to separate the 2 storey EP Hall from the 4 storey SIM and office portion.  The following types of constructions will apply. • 4 storey SIM and office – Type A; • 2 storey EP Hall – Type B. *Refer to Clause C2.7 for fire wall construction requirements.	Noted
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.	Details of the proposed systems to be installed must be in accordance with a tested prototype.	Compliance readily achievable

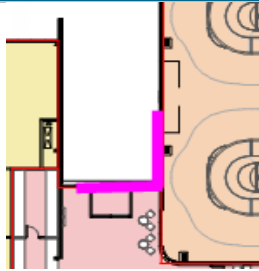
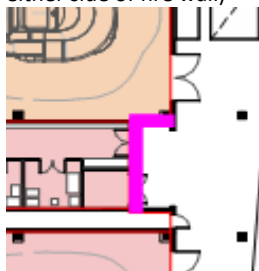
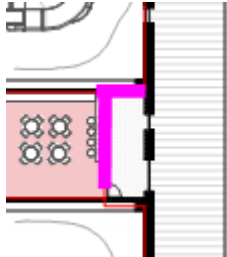
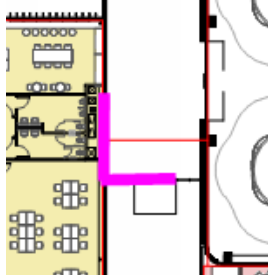
Clause	Description	Comment	Status
	Lightweight construction used as a fire-resisting covering of a steel column or the like, and where the covering is not in continuous contact with the column must have the voids filled to a height of not less than 1.2m above the floor and where the column is liable to be damaged must be protected by steel or other suitable material.		
C1.9	Non-combustible building elements In a building of Type A or B construction the following building elements and their components must be non-combustible: - External walls and common walls, including all components. - The flooring and floor framing of lift pits - Non-loadbearing internal wall that are required to be fire resisting. The following materials may be used where non-combustible materials are required:- - Plasterboard. - Perforated gypsum. - Fibrous-plaster sheeting to AS 2185. - Fibre-reinforced cement sheeting. - Pre-finished metal sheeting 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 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	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.	Additional details required
C1.10	Fire hazard properties (NSW variation) Floor materials, floor coverings and wall and ceiling lining materials need to comply with prescribed fire hazard properties. Refer to Appendix C1.10.	Compliance assumed and will require verification test data for all timber and other combustible linings and materials, including: - Carpets - Vinyls (walling and flooring) - Timber flooring and wall linings - Veneered wall panelling - Spray-on insulation material - Other combustible finishes	Compliance readily achievable

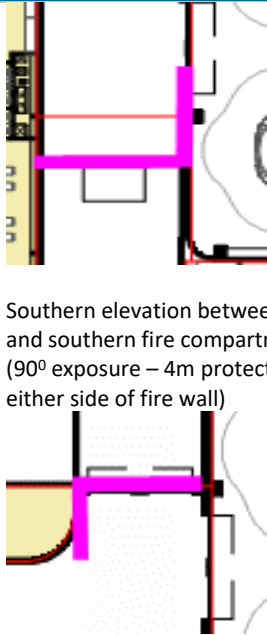
Clause	Description	Comment	Status
		Carpark soffit insulation fire test reports, based on 'room fire testing' will be required to meet fire brigade consent conditions if applicable.	
C1.11	Performance of external walls in fire Concrete external walls that could collapse as complete panels are to be designed 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.	Confirmation of whether the SIM hall is proposed to include tilt-up slab construction is to be provided. If so, the structural engineer will be required to confirm compliance with Specification C1.1	Additional details required
C1.12	Non-combustible materials	Gypsum, metal and laminated non-combustible materials containing combustible components are deemed to be non-combustible.	Noted
C1.13	Fire-protected timber: Concession <i>Fire-protected timber</i> in a Class 2, 3 or 5 building may be used wherever an element is <i>required</i> to be <i>non-combustible</i> ,		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.		Compliance readily achievable
Part C2 – Compartmentation and Separation			
C2.1	Application of Part	Clauses C2.2, C2.3 and C2.4 do not apply to a sprinkler protected carpark, open deck carpark or open spectator stand.	Noted
C2.2	Floor area limitations Type A construction The floor area and volume limitations are: Class 5 & 9b: 8,000m ² and 48,000m ³ Type B construction The floor area and volume limitations are: Class 9b: 5,500m ² and 33,000m ³	The building is proposed to be separated into fire compartments within the limitations of Type A and B floor area and volumes size limitations. Refer to appendix C2.2 for detailed info of fire compartment sizes and areas.	Complies
C2.3	Large isolated buildings		N/A
C2.4	Perimeter vehicular access		N/A
C2.5	Class 9a and 9c buildings		N/A
C2.6	Vertical separation of openings in external walls Only applicable to a building of Type A Construction, which is not sprinkler protected.	In a building of Type A construction that is not sprinkler protected, a spandrel must be provided. The spandrel must be not less than 900mm in height, extended not less than 600mm above the upper surface of the intervening floor and be of non-combustible material having an FRL of not less than 60/60/60. Details of spandrel protection between portions of the building where one storey sits above another is to be provided.	Additional detail required

Clause	Description	Comment	Status
	 (i) Spandrels (ii) Horizontal Projection	Note: Spandrel protection applies not only for openings but also any part of the external wall where one storey sit above another storey whereby the external wall does not have an FRL of at least 60/60/60 or greater.	
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 to the roof covering. Where the fire wall location has different roof levels in either fire compartment either side of the fire wall, there is no requirement to extend the fire wall to the underside of the higher roof level or above the lower roof level.	The fire compartments will rely on portions of horizontal floor slab construction as well as vertical fire walls in separating into separate fire compartments. The portions of floors that form part of the horizontal separation of the fire compartment must have the same FRL of the fire compartment (FRL 120/120/120). Details of floor and fire wall construction achieving an FRL of FRL 120/120/120 will be required.	Additional detail required
	Openings permitted within the fire wall must not reduce the FRL of the fire wall except where permitted under Part C3 of the BCA.	Confirmation of whether any openings are proposed in the fire wall notwithstanding fire doors or fire protected service penetrations.	Additional detail required
	Building elements, other than roof battens with dimensions of 75 mm x 50 mm or less or sarking-type material, must not pass through or cross the fire wall unless the required fire-resisting performance of the fire wall is maintained.	Structural engineer drawings and design will be required to confirm their design with regard to the location of the proposed fire walls and ensuring structural building elements do not pass through the fire walls. Independent structures may be required either side of the fire wall to ensure compliance.	Additional detail required
	The South Fire Compartment is connected from ground to level 3 via an open stair.	Level 3 is proposed to be a separate fire compartment from ground to level 2.	Performance solution

Clause	Description	Comment	Status
		The method for fire separation between these fire compartments will be a fire curtain to the stairway and not in accordance with a fire wall to C2.7 of the BCA This is to be addressed via a performance solution by a fire engineer.	
C2.8	Separation of classifications in the same storey As the building has parts of different classifications located alongside one another in the same storey each building element must have the higher FRL prescribed in Specification C1.1 of the BCA or the parts must be separated by a fire wall.	Each storey contains a single classification.	N/A
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.	Fire-resistance levels for Class 5 and 9b are the same requirement.	N/A
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		Complies
C2.11	Stairways and lifts in one shaft	The lift is within its own shaft	Complies
C2.12	Separation of equipment Equipment that comprises of the following must be separated from the remainder of the building by construction with an FRL as required under Specification C1.1 but not less than 120/120/120: • boilers or battery system (having a total voltage exceeding 12 volts and a storage capacity of 200kWh or more); • lift motor rooms; and • emergency generators sustaining emergency equipment operating in emergency mode	Writing confirmation will be required for the proposed UPS systems proposed in the building meeting the requirements of this clause not to be within fire rated construction.	Additional details required
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.	The substation is shown as being located externally from the building. The switchboard that is proposed to run the smoke hazard management systems running in fire mode will require fire rated construction to 120/120/120 FRL with a self-closing FRL--/120/30.	Compliance readily achievable
C2.14	Public corridors in Class 2 & 3 buildings		N/A
Part C3 – Protection of Openings			
C3.1	Application of Part		Noted

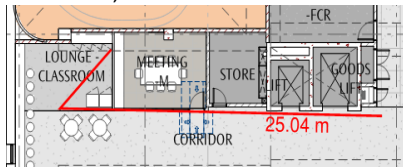
Clause	Description	Comment	Status														
C3.2	Protection of openings in external walls Openings in the external walls of the building are to be protected in accordance with C3.4, being fire rated windows, external sprinklers or the like, if: - less than 3m to side or rear boundary, - less than 6m from the far boundary of a road or lane, - Less than 6m from another building on the same allotment. Openings that require protection should not occupy more than $\frac{1}{3}$ of the storey in which they occur.	The building is located greater than the distances specified that triggers protection of openings. This includes the fire trainers	N/A														
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. <table><thead><tr><th>Angle between walls</th><th>Min. Distance</th></tr></thead><tbody><tr><td>0° (walls opposite)</td><td>6 m</td></tr><tr><td>more than 0° to 45°</td><td>5 m</td></tr><tr><td>more than 45° to 90°</td><td>4 m</td></tr><tr><td>more than 90° to 135°</td><td>3 m</td></tr><tr><td>more than 135° to less than 180°</td><td>2 m</td></tr><tr><td>180° or more</td><td>Nil</td></tr></tbody></table>	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	The following areas contain external wall and openings exposed either side of a fire compartment which will need to be protected. Ground floor - Southern elevation between EP hall and southern fire compartments (90° exposure – 4m protection either side of fire wall)  - Northern elevation between EP hall and southern fire compartments (90° exposure – 4m protection either side of fire wall)  - Northern elevation between northern and southern fire compartments (90° exposure – 4m protection either side of fire wall)	Performance solution
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																

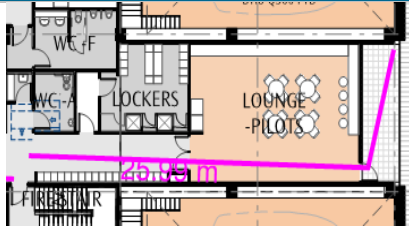
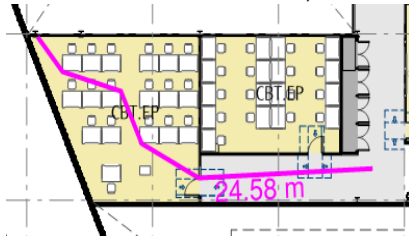
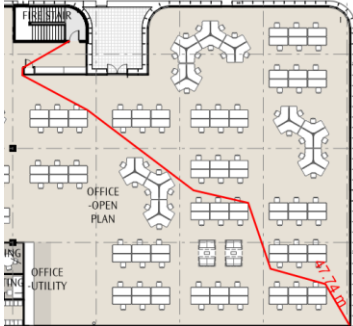
Clause	Description	Comment	Status
		 - Eastern elevation between northern and southern fire compartments (90° exposure – 4m protection either side of fire wall)  Level 1 - Eastern elevation between northern and southern fire compartments (90° exposure – 4m protection either side of fire wall)  - Northern elevation between EP hall and southern fire compartments (90° exposure – 4m protection either side of fire wall)  - Northern elevation between northern and southern fire compartments (90° exposure – 4m protection either side of fire wall)	

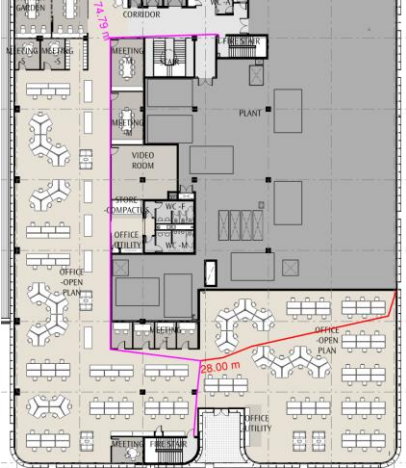
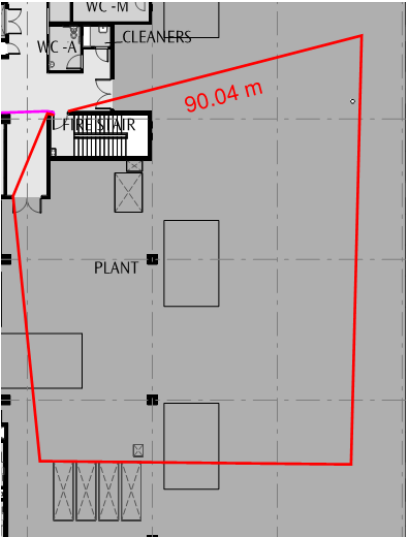
Clause	Description	Comment	Status
		 Southern elevation between EP hall and southern fire compartments (90° exposure – 4m protection either side of fire wall) It is proposed to provide fire-resistance levels (FRL's) to the external wall of one side of the fire compartment in lieu of both sides of the fire compartment. This is to be addressed as a performance solution.	
C3.4	Acceptable method of protection Window openings that are required to be protected are to be protected by internal or external wall wetting sprinklers with windows that are automatic closing or permanently fixed in the closed position, -/60/- fire windows that are automatic closing or permanently fixed closed or -/60/60 automatic closing fire shutters. Doorways are to be protected by internal or external wall wetting sprinklers used with doors that are self-closing or automatic closing, or -/60/30 self-closing or automatic closing fire doors. Other openings, excluding voids, to be protected with internal or external wall wetting sprinklers or construction having an FRL not less than -/60/-		Noted
C3.5	Doorways in fire walls 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. The doorways are to be self-closing or automatic closing operation initiated by the activation of a smoke detector, or any other detector deemed suitable in accordance with AS 1670.1 if smoke detectors are unsuitable in the atmosphere, installed in accordance with the relevant provisions of AS 1670.1 and located on each side of the fire wall not more than 1.5 m horizontal distance from the opening.	Details of compliance for doorways located within fire walls will be required.	Additional details required

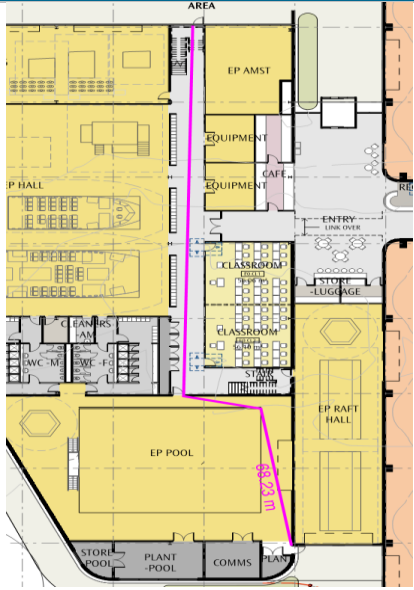
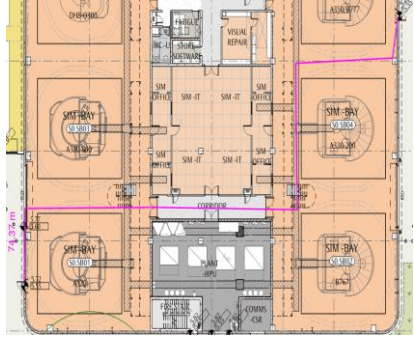
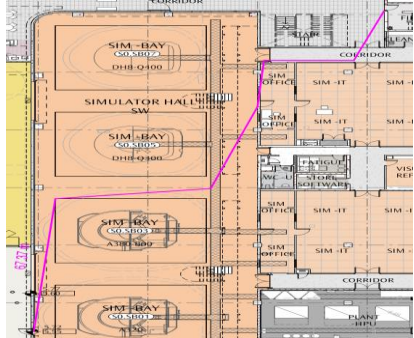
Clause	Description	Comment	Status
C3.6	Sliding fire doors Sliding fire doors are to be held open with an electromagnetic device, which when deactivated allows the door to be fully closed in not less than 20 seconds and not more than 30 seconds. An audible warning device and red flashing warning light 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.	A Sliding fire doors is proposed in the fire wall separating the EP Raft Hall. Details of compliance to be provided for the Construction Certificate.	Compliance readily achievable
C3.7	Protection of doorways in horizontal exits	Horizontal exit on level 1 between EP hall and SIM Bay to comply.	Compliance readily achievable
C3.8	Openings in fire isolated exits -/60/30 self-closing fire doors are required to doorways providing access to fire isolated stairways. Alternatively automatic-closing operation initiated by the activation of a smoke detector, or any other detector deemed suitable in accordance with AS 1670.1 if smoke detectors are unsuitable in the atmosphere, installed in accordance with the relevant provisions of AS 1670.1 and located not more than 1.5 m horizontal distance from the approach side of the doorway. 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.	A door schedule indicating compliance is required to be provided.	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 35,000mm² (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 <i>(NSW variation for Class 9c Buildings and Entertainment Venues)</i> Doorways opening to public corridors are to be protected with self-closing -/60/30 fire doors.		N/A
C3.12	Openings in floors for services Services passing through floors are to be placed within fire resisting shafts or in accordance with Clause C3.15.	Services penetrations of fire rated structure generally need to be fire-stopped and/or located in fire rated riser shafts. Openings in fire rated elements need to be fire resisting to maintain the function of the elements.	Compliance readily achievable

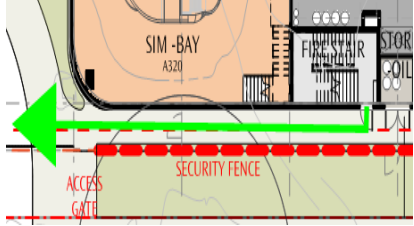
Clause	Description	Comment	Status
C3.13	Openings in shafts In a building of Type A construction, an opening in a wall providing access to a ventilating, pipe, garbage, or other service shaft must be protected by: • If it is a sanitary compartment - a door or panel which together with its frame, is non-combustible or has an FRL of not less than - /30/30, or • A self-closing -/60/30 fire door or hopper, or • An access panel with an FRL of not less than - /60/30, or • If the shaft is a garbage shaft - a door or hopper of non-combustible construction.		Compliance readily achievable
C3.14	-	This clause has deliberately been left blank	-
C3.15	Openings for service installation Services penetrations through a building elements (other than an external wall or roof) that are required to have an FRL with respect to integrity or insulation or a resistance to the incipient spread of fire, must comply with a tested system or with Specification C3.15. Methods and materials used are to be identical to tested prototypes and in accordance with AS4072.1 and AS1530.4, and having achieved the required FRL or resistance to the incipient spread of fire or other specified method. Ventilation and air-conditioning systems are to be installed in accordance with AS/NZS 1668.1.	Any system used must be a certified system and installed in accordance with the tested method. Specifications of the methods of fire sealing need to be provided.	Compliance readily achievable
C3.16	Construction Joints Construction joints in elements required to have a fire resistance with respect to integrity and insulation must be protected.	Construction joints are to be installed in accordance with a tested prototype in accordance with AS1530.4.	Compliance readily achievable
C3.17	Columns protected with lightweight construction to achieve an FRL	Columns must be protected in accordance with the identical tested prototype.	Compliance readily achievable
Section D: Access and Egress			
Part D1 - Provision for Escape			
D1.1	Application of Part		Noted
D1.2	Number of exits required A minimum of two exits is required from each storey in a Class 9b storey that contains more than 50 persons.	Two exits at minimum are provided from each storey.	Complies
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 stairs are shown as exits from the 4 storey portion of the building. Exits from the 2 storey EP hall can be open stairs.	Complies

Clause	Description	Comment	Status
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.	The following areas have been identified with distances exceeding 20m to a point of choice: 1. 2. 26m from the northern office area on level 3;  3. 28m from the southern office area on level 3;  4. 25m from the lounge classroom on level 2;  5. 23m from the CBT PT on level 2;  6. 26m from Pilot Lounge on level 1;	Performance solution

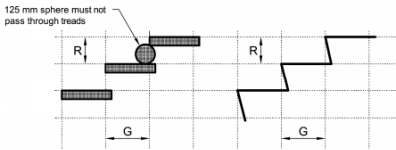
Clause	Description	Comment	Status
		 7. 25m from CBT.EP on level 1;  The following areas have been identified with exit travel distances exceeding 40m: 48m from northern office area on level 3;  50m from the plant area on level 3; 	
D1.5	Distance between alternative exits The following travel distance limits apply: ≤ 60m travel distance between alternative exits and not less than 9m between alternative exits; - Exit paths to alternative exits should not	The following areas have been identified with distances between alternative exits exceeding 60m: 78m between central and northern fire stairs on level 3;	Performance solution

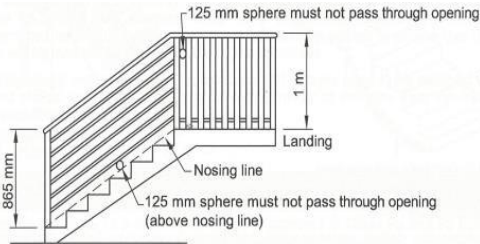
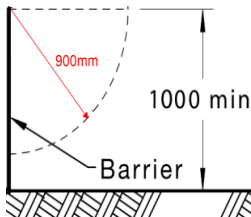
Clause	Description	Comment	Status
	converge at any point to be less than 6m apart.	 2. 75m between central and southern fire stairs on level 3;  3. 90m between alternative exits from the plant room on level 3;  4. 69m between EP hall exits north and south;	

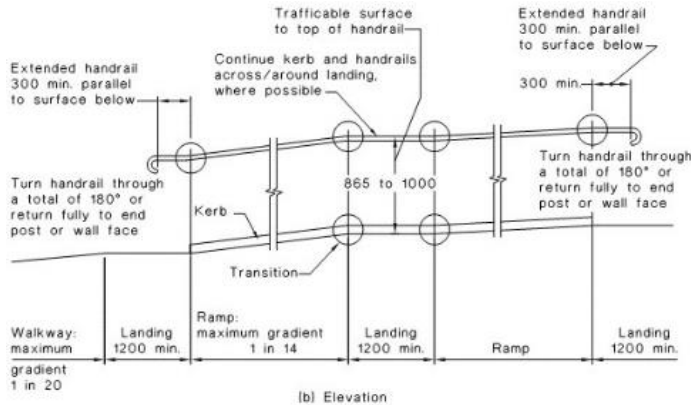
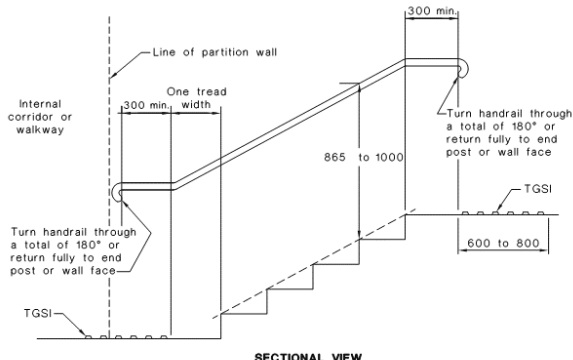
Clause	Description	Comment	Status
		 5. 74m between external exits in the SIM bays on ground  6. 68m between external exit in the SIM and central fire stair on ground 	
D1.6	Dimensions of exits and paths of travel to exits	Level 3 staff contains 2 exits at 200 persons. Anticipated population at 132. Level 2 SIMS contains 3 exits at 320 persons. Anticipated population at 80% capacity is 239. EP Hall Level 2 contains 2 exits at 20 persons. Anticipated population at 158. A path of travel to an exit is required to have an unobstructed height of 2m and width of	Complies Performance

Clause	Description	Comment	Status
		1m. The flight simulator envelope within the SIM bays has the potential to encroach on the path of travel to the exits. This is to be addressed via a performance solution by a fire engineer.	solution
D1.7	Travel via fire-isolated exits Where a fire stair discharge pathway to a roadway passes within 6m of an external wall of the same building, the part of the building is required to have an FRL of 60/60/60 and any openings protected internally in accordance with C3.4 for a height of 3m above the ground.	The discharge pathway from the fire stairs to a roadway passes within 6m (horizontal measurement) of the external wall and associated openings of the building. Refer to instances below: 1. Fire stair discharge pathway at south end of building;  Where a fire stair discharge pathway to a roadway passes within 6m of an external wall of the same building, the part of the building is required to have an FRL of 60/60/60 and any openings protected internally in accordance with C3.4 for a height of 3m above the ground. Details of compliance to be provided for the Construction Certificate.	Compliance readily achievable
D1.8	External stairways or ramps in lieu of fire-isolated exits		N/A
D1.9	Travel by non-fire-isolated stairways or ramps	Travel distances via the two non-fire-isolated stairways in the EP area comply.	Complies
D1.10	Discharge from exits <i>(NSW variation for Entertainment Venues)</i> An exit must not be blocked nor be capable of being blocked at its point of discharge.	Details of the methods of protection of the doors are required to be provided on the plans to demonstrate compliance against the requirements of BCA Clause D1.10	Compliance readily achievable
D1.11	Horizontal exits 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 0.5m² per person in any other case	A horizontal exit on level 1 is proposed between EP hall and SIM Bay.	Compliance readily achievable
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	A non-required-non-fire-isolated stairway is permitted to connect up to 2 storeys. The building includes a proposed open stairway not serving as an exit which connects 4 storeys (ground to level 3). This is to be addressed via a performance solution by a fire engineer. *Note: The stairway hasn't been considered as being located within an atrium.	Performance solution
D1.13	Number of persons accommodated	Refer to Appendix D1.13. Qantas as the owner and end user of the	Additional details

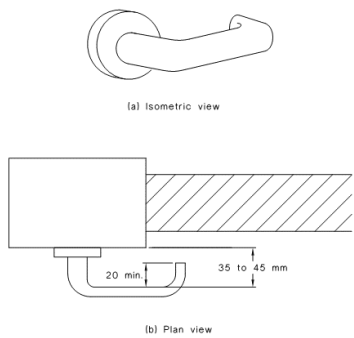
Clause	Description	Comment	Status
		building will need to provide concurrence to forecast population provided by NoxonGiffen.	required
D1.14	Measurement of distances		Noted
D1.15	Method of measurement		Noted
D1.16	Plant rooms, lift machine rooms and electricity network substations: Concession A ladder may be used in lieu of a stairway as an exit from: a) a plant room with a floor area not more than 100m², or b) all but one point of egress from a plant room with a floor area not more than 200m².		Compliance readily achievable
D1.17	Access to lift pits Access requirements apply to lift pits over 3m in depth.	Lift consultant to confirm.	Compliance readily achievable
Part D2 – Construction of Exits			
D2.1	Application of Part <i>(NSW variation)</i>		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 non-fire-isolated stairs 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%.		Compliance readily achievable
D2.4	Separation of rising and descending stair flights		N/A
D2.5	Open access ramps and balconies		N/A
D2.6	Smoke lobbies		N/A
D2.7	Installations in exits and paths of travel Electrical meters and motors, distribution boards and telecommunication boards must not be accessed from fire isolated exits and, if located in corridors leading to exits, should occur in non-combustible or fire protective smoke sealed enclosures. No openings to ducts conveying hot products of combustion permitted in required exits. Gas or fuel services not permitted in required exits. Electric or services equipment in paths of travel to exits must be within a non-combustible and smoke sealed enclosure.	Install non-combustible linings to the internal walls, ceiling and doors of relevant cupboards and install smoke seals to the doors.	Compliance readily achievable
D2.8	Enclosure of space beneath stairs and ramps	Enclosures not shown	N/A
D2.9	Width of required stairways and ramps A stairway or ramp more than 2m in width is only		N/A

Clause	Description	Comment	Status																												
	counted as having a width of 2m unless it is divided by a continuous handrail or balustrade between landings and each division is less than 2m wide.																														
D2.10	Pedestrian ramps		N/A																												
D2.11	Fire-isolated passageways Fire isolated passageways are to have an FRL equivalent to the fire resisting stair shaft as specified in Specification C1.1 when tested from the outside		Compliance Readily Achievable																												
D2.12	Roof as open space		N/A																												
D2.13	Going and risers <i>(NSW variation for Entertainment Venues)</i> 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 <table><tr><td></td><td colspan="2">Riser (R)</td><td colspan="2">Going (G) ⁽²⁾</td><td colspan="2">Quantity (2R+G)</td></tr><tr><td></td><td>Max</td><td>Min</td><td>Max</td><td>Min</td><td>Max</td><td>Min</td></tr><tr><td>Public stairways</td><td>190</td><td>115</td><td>355</td><td>250</td><td>700</td><td>550</td></tr><tr><td>Private stairways⁽¹⁾</td><td>190</td><td>115</td><td>355</td><td>240</td><td>700</td><td>550</td></tr></table> 		Riser (R)		Going (G) ⁽²⁾		Quantity (2R+G)			Max	Min	Max	Min	Max	Min	Public stairways	190	115	355	250	700	550	Private stairways ⁽¹⁾	190	115	355	240	700	550	Further details of the stairs will need to be provided to confirm compliance	Compliance Readily Achievable
	Riser (R)		Going (G) ⁽²⁾		Quantity (2R+G)																										
	Max	Min	Max	Min	Max	Min																									
Public stairways	190	115	355	250	700	550																									
Private stairways ⁽¹⁾	190	115	355	240	700	550																									
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: <table><tr><td><u>Application</u></td><td><u>Dry Surface Conditions</u></td><td><u>Wet Surface Condition</u></td></tr><tr><td>1:14 or steeper ramps</td><td>P4 or R11</td><td>P5 or R12</td></tr><tr><td>Ramps of 1:14 to 1:20</td><td>P3 or R10</td><td>P4 or R11</td></tr><tr><td>Tread or Landing Surface</td><td>P3 or R10</td><td>P4 or R10</td></tr><tr><td>Nosing Strip or</td><td>P3</td><td>P4</td></tr></table>	<u>Application</u>	<u>Dry Surface Conditions</u>	<u>Wet Surface Condition</u>	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	P3	P4	Certification / test reports on the slip resistance of the surfaces will need to be provided on constructed elements.	Compliance readily achievable													
<u>Application</u>	<u>Dry Surface Conditions</u>	<u>Wet Surface Condition</u>																													
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	P3	P4																													

Clause	Description	Comment	Status
	Landing Strip		
D2.15	Thresholds <i>(NSW variation for Entertainment Venues)</i> 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.	Note that where access for people with disabilities is required it is not permitted to have a step at the threshold of a doorway	Compliance readily achievable
D2.16	Barriers to prevent falls <i>(NSW variation for Entertainment Venues)</i> 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	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	Compliance readily achievable

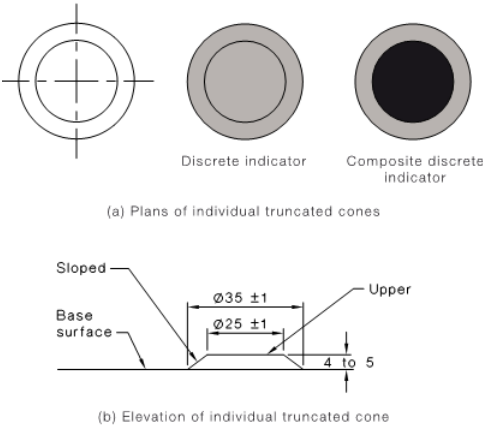
Clause	Description	Comment	Status
	• 30-50mm diameter • 865-1000mm above nosing line of stairs • 865-1000mm above ramps and landings • Consistent height throughout • 50mm grip clearance and no obstructions to handhold • Continuous at internal (return) landings • Provided with handrail extensions and 180 degree curled ends	emergency exit are to have handrails installed on both sides that comply with Clause 10 & 11 of AS1428.1-2009 Fire Isolated Stairways and Ramps In Fire Isolated Stairways & Ramps a handrail is required to be installed to at least one side of stair flights and located not less than 865mm above the nosing's of stair treads and the floor surfaces of landings Consistent Handrail Heights for all stairways The height of the top of the handrail, measured at a height of between 865mm – 1000mm vertically from the stair nosing shall be consistent throughout the ramp (or stairs) and any landings. All stairs including fire stairs are required to be designed to comply with Clause 12 of AS1428.1 – 2009	
	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
	Handrail Profile		
D2.18	Fixed platforms, walkways, stairways and ramps Platforms, walkways, stairs, ladders and the like that give access to and around plant and equipment, machine rooms, attic spaces and other low use areas of the building are permitted provided that construction details are to AS1657.	Certification to AS1657 is to be provided	Compliance readily achievable
D2.19	Doorways and doors <i>(NSW variation for Entertainment Venues)</i> 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 200m² 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.		Complies
D2.21	Operation of latch <i>(NSW variation)</i> Exit doors should be provided with “free handle” egress via a downward or pushing action and, if serving an area accessible to people with disabilities, must have non-slip “D” pull handles with 35-45mm hand clearances.	Exit doors and doors in a path of travel to an exit 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. Each storey contains less than 100 persons.	Compliance readily achievable

Clause	Description	Comment	Status
	 Exit doors and doors in a path of travel to an exit 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		N/A
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 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.		Compliance readily achievable
D2.24	Timber stairways: Concession		N/A
NSW D2.101	Doors in the path of travel in an Entertainment Venue		N/A
Part D3 – Access for People with Disabilities			
D3.1	General building access requirements Access is generally required for persons with a disability throughout all areas unless specifically	Access is required throughout. Access consultant to provide report detailing compliance to Part D3 of the BCA	Additional details required

Clause	Description	Comment	Status
	exempted.	and AS 1428.1 – 2009.	
D3.2	Access to buildings External access to the building for people with a disability must be provided: • From main pedestrian entry points at the allotment boundary. • Through the principle pedestrian entrance. • Through at least 50% of all pedestrian entries. • From accessible car parking spaces. • For buildings over 500m², so that an accessible entry occurs within 50m of any non-accessible entry. • From any another accessible building on the site.	Access consultant to provide report detailing compliance to Part D3 of the BCA and AS 1428.1 – 2009.	Compliance readily achievable
D3.3	Parts of the building to be accessible All parts of the building must be accessible to people with a disability except for areas where access would be inappropriate due to the particular use or areas that would pose a health or safety risk to people with a disability. Every ramp, except a fire isolated ramp, must comply with Clause 10 of AS 1428.1. Every stairway, except a fire isolated stairway, must comply with Clause 11 of AS 1428.1. A fire isolated stairway must comply with Clause 11(f) and (g) of AS 1428.1. Every passenger lift must comply with Clause E3.6. Access ways must have passing spaces and turning spaces complying with AS 1428.1. Pile height or pile thickness of carpets shall comply with the requirements of this Clause and AS 1428.1.	Access consultant to provide report detailing compliance to Part D3 of the BCA and AS 1428.1 – 2009.	Compliance readily achievable
D3.4	Exemptions Certain areas may not need to be accessible if the area is deemed inappropriate because of the particular use or the area would pose a health or safety risk for people with disabilities.	Access consultant to provide report detailing compliance to Part D3 of the BCA and AS 1428.1 – 2009. Any areas exempted from access to be detailed and justified in the access report.	Noted
D3.5	Accessible car parking The accessible parking spaces must comply with AS/NZS 2890.6 – 2009. General requirements are: • 2.4m x 5.4m. • 2.2m head clearance for access and egress routes to and from accessible car spaces. • 2.5m head clearances over accessible car spaces. • Flat even surfaces. • Designated and sign posted for disabled users.	Access consultant to provide report detailing compliance to AS/NZS 2890.6 – 2009.	Compliance readily achievable

Clause	Description	Comment	Status
	  Where the pedestrian entrance is not accessible, directional signage in accordance with AS 1428.1 must be provided to direct a person to the location of the nearest accessible pedestrian entrance. Where a bank of sanitary facilities is not provided with an accessible unisex sanitary facility, directional signage must be placed at the location of the sanitary facilities that are not accessible, to direct a person to the location of the nearest accessible unisex sanitary facility.		
D3.7	Hearing augmentation A hearing augmentation system must be provided where an inbuilt amplification system, other than one used only for emergency warning, is installed— - in a room in a Class 9b building; or - in an auditorium, conference room, meeting room or room for judicatory purposes; or - at any ticket office, teller's booth, reception area or the like, where the public is screened from the service provider An induction loop must be provided to not less than 80% of the floor area of the room or space served by the inbuilt amplification system; or A system requiring the use of receivers or the like, it must be available to not less than 95% of the floor area of the room or space served by the inbuilt amplification system, and the number of receivers provided must not be less than— - if the room or space accommodates up to 500 persons, 1 receiver for every 25 persons or part thereof, or 2 receivers, whichever is the greater; and - if the room or space accommodates more than 500 persons but not more than 1000 persons, 20 receivers plus 1 receiver for every 33 persons or part thereof in excess of 500 persons; and - if the room or space accommodates more than 1000 persons but not more than 2000 persons, 35 receivers plus 1 receiver for every 50 persons or part thereof in excess of 1000 persons; and - if the room or space accommodates more than 2000 persons, 55 receivers plus 1 receiver for every 100 persons or part thereof in excess of 2000 persons.	Refer to access consultant's report.	Compliance readily achievable
D3.8	Tactile indicators (TGSIs) Tactile indicators are to be provided to all stairways, ramps and escalators must be provided to warn people who are blind or have a vision impairment that they are approaching: a stairway, other than a fire-isolated stairway,	Refer to access consultant's report.	Compliance readily achievable

Clause	Description	Comment	Status
	- an escalator, passenger conveyor or moving walk, - a ramp other than a fire-isolated ramp, step ramp, kerb ramp or swimming pool ramp, or - in the absence of a suitable barrier an overhead: - obstruction less than 2 m above floor level, other than a doorway - an access way meeting a vehicular way adjacent to any pedestrian entrance to a building, excluding a pedestrian entrance serving an area referred to in D3.4, if there is no kerb or kerb ramp at that point Tactile ground surface indicators must comply with sections 1 and 2 of AS/NZS 1428.4.1  (a) Plans of individual truncated cones (b) Elevation of individual truncated cone		
D3.9	Wheelchair seating spaces in Class 9b assembly buildings		N/A
D3.10	Swimming pools		N/A
D3.11	Ramps On an access way a series of connected ramps must not have a combined vertical rise of more than 3.6m. A landing for a step ramp must not overlap a landing of another step ramp or ramp.	Refer to access consultant's report.	Compliance readily achievable
D3.12	Glazing on an accessway On an accessway, where there is no chair rail, handrail or transom, all frameless or fully glazed doors, sidelights and any glazing capable of being mistaken for a doorway or opening, must be clearly marked in accordance with AS 1428.1.	Glazed shopfronts will need to have solid and non-transparent decals installed in accordance with AS 1428.1	Compliance readily achievable
Section E: Services and Equipment			
Part E1 – Fire Fighting Equipment			
E1.1	-	This Clause has deliberately been left blank	
E1.2	-	This Clause has deliberately been left blank	
E1.3	Fire hydrants The building required to be provided with a fire	Details of the proposed fire brigade booster assembly location is to be provided for compliance review.	Additional details required

Clause	Description	Comment	Status
	hydrant system in accordance with AS 2419.1. Fire hydrant cover is required throughout to AS2419.1 from hydrants located externally, within fire stairs or at other approved locations.	Details of any required hydrant pump system are to be provided. Hydraulic drawings and design certification to be provided at Construction Certificate stage by a competent fire safety practitioner. The fire brigade booster assembly is located within between 3.5m and 10m of the building, therefore is required to be protected by an adjacent fire-rated freestanding wall that- ○ achieves an FRL of 90/90/90; and ○ extends 1m each side of the outermost fire hydrant booster risers within the assembly and is a minimum of 3m wide; and ○ extends to a height of 2m above finished ground level. Details of compliance to be provided for the Construction Certificate.	
		The fire brigade booster assembly is proposed to be located on adjacent to the vehicular accessway on King Street. This is not within sight of the main entrance of the building. This is to be addressed via a performance solution by a fire engineer.	Performance solution
E1.4	Fire hose reels Fire hose reel coverage to AS2441-2005 is required throughout the Class 9b portion. Hose reels are not required to the Class 5 portion. Hose reels are to be 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.	Hydraulic drawings and design certification to be provided at Construction Certificate stage by a competent fire safety practitioner.	Compliance readily achievable
E1.5	Sprinklers	*Refer to Part G3 and Specification G3.8 for sprinkler requirements applying to the building due to atrium provisions.	Noted
E1.6	Portable fire extinguishers Portable Fire Extinguishers are required be installed to Table E1.6 and AS 2444 requirements.		Compliance readily achievable
E1.7	-	This Clause has deliberately been left blank	
E1.8	Fire control centre	The building has a floor area less than 18,000m ² in size.	N/A
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:	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	Compliance Readily achievable

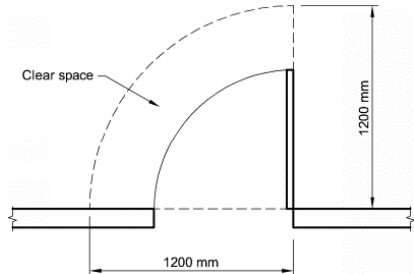
Clause	Description	Comment	Status
	- All required hydrants and hose reels must be operational on every storey covered by a roof or floor slab over, except for the two uppermost storeys. - Any required booster connections must be installed.	and booster connections often cannot be achieved at the required 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.	
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 200m² - storerooms, etc. less than 30m² - sanitary compartments - plant rooms or the like	Noted
E2.2	General requirements - Smoke Hazard Management (NSW variation) The following smoke hazard management systems are required for the building: <u>An automatic smoke detection and alarm system</u> for occupant evacuation complying with Clause 4 of Specification E2.2a and AS1670.1 – 2018, which activates a <u>building occupant warning system</u> in accordance with Clause 7 of Specification E2.2a and AS1670.1-2018. <u>Automatic shutdown of any air-handling systems</u> (other than individual rooms units with a capacity not more than 1000 L/s and miscellaneous exhaust air systems installed to Section 5 and 6 of AS 1668.1) to be operated on activation of an automatic smoke detection system complying with Specification E2.2a, which is activated by <u>an automatic smoke detection and alarm system</u> complying with Clause 6 of Specification E2.2a and AS1670.1 – 2018 An air-handling system (<i>which does not form part of a smoke hazard management system in accordance with Table E2.2a or Table E2.2b</i>) and which recycles air from one fire compartment to another fire compartment or operates in a manner that may unduly contribute to the spread of smoke from one fire compartment to another fire compartment must— (i) be designed and installed to operate as a smoke control system in accordance with AS 1668.1; or (ii) (A) incorporate smoke dampers where the air-handling ducts penetrate any elements separating the fire compartments served; and	Dry fire drawings and design certification to be provided at Construction Certificate stage by a competent fire safety practitioner. Dry fire and mechanical drawings and design certification to be provided at Construction Certificate stage by a competent fire safety practitioner. Mechanical drawings and design certification to be provided at Construction Certificate stage by the mechanical engineer.	Additional details required

Clause	Description	Comment	Status
	(B) be arranged such that the air-handling system is shut down and the smoke dampers are activated to close automatically by smoke detectors complying with clause 7.5 of AS 1670.1; and *Refer to Part G3 performance solution not to apply atrium provisions of Part G3		
	Class 9b fire compartments exceeding 2000m ² require an <u>automatic smoke exhaust system</u> complying with Specification E2.2b.	Smoke exhaust is proposed to be provided to the EP Hall. Smoke exhaust is proposed to be deleted from the SIM Hall. This is to be addressed via a performance solution by a fire engineer.	Performance solution
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.	Certification of lift design to be provided	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. OR	Compliance readily achievable
E3.4	Emergency lifts		N/A
E3.5	Landings		Complies
E3.6	Passenger lifts Every passenger lift must be one of the types identified in Table E3.6a, have accessible features in accordance with Table E3.6b and not rely on a constant pressure device for its operation if the lift car is fully enclosed.		Compliance readily achievable
E3.7	Fire service control Where lifts serve a storey above 12m in effective height: - A fire service control switch is required for each lift or lift group. - A lift car fire service drive control is required for each lift.	The building has an effective height of 12.55m therefore this clause applies. 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	Certification of lift design to be provided	Compliance readily achievable

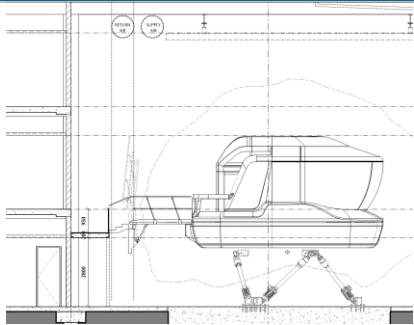
Clause	Description	Comment	Status
	and, when activated, must return all lifts to the nominated floor. If a lift car drive control has been activated, it shall override the landing fire service control switch.		
E3.10	Lift car fire service drive control switch The lift car service drive control must be 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 in: • Every fire-isolated stairway, fire-isolated ramp or fire-isolated passageway. • Every passageway, hallway, corridor or the like, that is part of the path of travel to an exit. • In every room having a floor area more than 100m² that does not open to a corridor or space that has emergency lighting or to a road or open space. • In any room having a floor area more than 300m². • 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 300m²; • 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.	Design drawings and certification from an electrical engineer will be required.	Compliance readily achievable
E4.3	Measurement of distances		Noted
E4.4	Design and operation of emergency lighting Emergency lighting must comply with to AS2293.1		Compliance readily achievable
E4.5	Exit signs Exit signs are to be provided in accordance with Clause E4.5 of the BCA.	Exit signs must be clearly visible to person approaching the exit and must be installed on, above or adjacent to; 1. A door providing direct egress from a storey to a stairway, passageway or ramp serving as a required exit. 2. A door from an enclosed stairway, passageway or ramp at every level of discharge to a road or open space. 3. A horizontal exit. 4. A door serving as or forming part of a required exit in a storey required to be provided with emergency lighting.	Compliance readily achievable

Clause	Description	Comment	Status
E4.6	Direction signs <i>(NSW variation)</i> 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		N/A
E4.8	Design and operation of exit signs Required exit signs must comply with AS 2293.1, photo luminescent exit signs with Specification E4.8, and are to be clearly visible at all times when the building is occupied by any person having the legal right of entry to the building.		Compliance readily achievable
E4.9	Emergency warning and intercom systems		N/A
Section F: Health and Amenity			
Part F1 – Damp and Weatherproofing			
F1.0	Water proofing of external walls Weatherproofing of external wall systems must be in accordance with BCA Verification Method FV1.	A test report on the proposed wall system is to be provided. The test report must include the following information: (i) Name and address of the person supervising the test. (ii) Test report number. (iii) Date of the test. (iv) Cladding manufacturer's name and address. (v) Construction details of the test specimen, including a description, and drawings and details of the components, showing modifications, if any. (vi) Test sequence with the pressures used in all tests. (vii) For each of the static and cyclic pressure tests, full details of all leakages, including position, extent and timing.	Additional details required
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.		Compliance readily achievable
F1.5	Roof coverings Roof coverings are required to be in accordance with		Compliance readily achievable

Clause	Description	Comment	Status
	the requirements of this clause		
F1.6	Sarking Sarking type materials used for weatherproofing of roofs and walls must comply with AS/NZS 4200 Parts 1 and 2.		Compliance readily achievable
F1.7	Water proofing of wet areas in buildings Water proofing of wet areas within the building is to comply with AS 3740.		Compliance readily achievable
F1.8	-	This clause has deliberately been left blank	-
F1.9	Damp-proofing Moisture from the ground must be prevented from reaching the walls above the damp proof course. 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 ground floor slab.		Compliance readily achievable
F1.11	Provision of floor wastes		N/A
F1.12	Subfloor ventilation		N/A
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		N/A
F2.2	Calculation of number of occupants and fixtures		Noted
F2.3	Facilities in Class 3 to 9 buildings Toilet facilities are required in appropriate numbers based on the number of persons accommodated.	The following sanitary facility numbers have been determined: Level 4 staff Male – 4 WC, 3 urinals & 3 washbasins Female – 5 WC & 3 washbasins EP Level 1, 2 – Users Male – 3 WC, 2 urinals & 3 washbasins Female – 5 WC & 3 washbasins SIM Level 1, 2 & 3 – Users Male – 4 WC, 3 urinals & 4 washbasins Female – 7 WC & 4 washbasins	Compliance readily achievable
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	Refer to access consultant's report	Compliance readily achievable

Clause	Description	Comment	Status
	although an existing WC facility that fully complies with AS1428.1 – 2001 may substitute as a concession.		
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	<i>(NSW variation – Deleted)</i>	-	-
F2.8	Waste management		N/A
F2.9	Accessible adult change facilities		N/A
Part F3 – Room Heights			
F3.1	Height of rooms and other spaces <u>Class 5 portions:</u> - General floor areas – 2.4m <u>Class 9b portions:</u> - General floor areas – 2.4m - Areas containing more than 100 persons will require rooms and corridors to be a minimum of 2.7m in height. <u>Generally</u> - Corridor, passageways or the like – 2.1m; - Bathroom, sanitary compartment, store room or the like – 2.1m; and - Above a stairway, landing or the like – 2m measured vertically above nosing of stairway treads or floor surface of landing.	Details of whether 2.7m room heights and corridors are achieved from Class 9b levels are to be provided.	Additional details required
Part F4 – Light and Ventilation			
F4.1	Provision of natural light		N/A
F4.2	Methods and extent of natural lighting		N/A
F4.3	Natural Light borrowed from adjoining room		N/A
F4.4	Artificial lighting An artificial lighting system is required in accordance with the requirements of this clause and AS/NZS 1680.0.	Design details and certification from an electrical engineer is required	Compliance readily achievable
F4.5	Ventilation of rooms Ventilation shall be provided throughout the building in by means of natural ventilation complying with Clause F4.6 or mechanical	The building is proposed to be mechanically ventilated. Design details and certification from an	Compliance readily achievable

Clause	Description	Comment	Status
	ventilation complying with the requirements of AS1668.2 as required by Clause F4.5 of the BCA.	mechanical engineer is required	
F4.6	Natural ventilation	The building is proposed to be mechanically ventilated.	N/A
F4.7	Ventilation borrowed from adjoining room	The building is proposed to be mechanically ventilated.	N/A
F4.8	Restriction on position of sanitary compartments		Complies
F4.9	Airlocks		N/A
F4.10	-	This clause has intentionally been left blank	-
F4.11	Carparks Basement carparks must be provided with a system of mechanical ventilation complying with AS 1668.2	On grade carpark only.	N/A
F4.12	Kitchen local exhaust ventilation A commercial kitchen must be provided with a kitchen exhaust hood complying with AS/NZS 1668.1 and AS 1668.2, where: - any cooking apparatus has a total maximum electrical power input exceeding 8kW, or - a total gas power input exceeding 29 MJ/h, or the total maximum power input to more than one apparatus exceeds 0.5kW electrical power or 1.8 MJ gas per metre square of the room or enclosure.	Any kitchen subject to the listed parameters will required kitchen exhaust.	Compliance readily achievable
Part F5 – Sound Transmission and Insulation			N/A
Part F6 – Condensation Management			N/A
Section G: Ancillary Provisions			
Part G1- Minor Structures and components			
G1.1	Swimming pools (NSW variation for swimming pools)		N/A
G1.2	Refrigerated chambers, strong rooms and vaults		N/A
G1.3	Outdoor play spaces		N/A
NSW G1.101	Provision for cleaning windows A safe manner of cleaning windows is to be provided as windows are located 3 or more storeys above ground level.	The windows must either be able to be cleaned wholly from within the building, or a method complying with the Construction Safety Act 1912 and Regulations is required.	Compliance readily achievable
Part G2 - Boilers, pressure vessels, heating appliances, fire places, chimneys and flues			N/A
Part G3 - Atrium Construction			
Part G3 & Spec G3.8	Application of Part Atrium provisions of Part G3 apply to an atrium that connects: 3 storeys or more; 4 storeys or more if each storey is provided with a sprinkler system to Specification E1.5 and one of the storeys is situated at a level at which there is direct egress to road or open	The SIM bays occupy a large volume space which indirectly connects the adjacent 3 storeys of ground, levels 1 and 2.	Performance solution

Clause	Description	Comment	Status
	space.	 A performance solution is proposed to not apply the atrium provisions of Part D3 and Specification G3.8 based on the unique building design & usage and separation of the floor space from the SIM halls. This is to be addressed via a performance solution by a fire engineer.	
Part G4 - Construction in Alpine Areas			N/A
Part G5 - Construction in Bushfire Prone Areas			N/A
Part G6 – Occupiable Outdoor Areas			N/A
Section H: Special Use Buildings – Auditoriums, Public Halls, Public Transport Buildings			
Part H1 - Class 9b Buildings			N/A
NSW Part - H101 Entertainment Venues other than Temporary Structures and Drive-In Theatres			N/A
NSW Part - H102 Temporary Structures			N/A
NSW Part - H103 Drive-In Theatres			N/A
Part H2 - Public Transport Buildings			N/A
Part H3 - Farm Building and Farm Sheds			N/A
NSW Section J: Energy Efficiency Energy Efficiency for buildings requires buildings to reduce greenhouse gas emissions by efficiently using energy. A building's services must have features that facilitate the efficient use of energy. The discipline of Energy Efficiency with the BCA has become a specialised field where compliance with BCA Section J is to be certified with the issue of a Certificate of Compliance – Design from the relevant Services Engineer/Consultant. The purpose of this section is to provide a brief explanation of which areas are to achieve compliance with BCA Section J – Energy Efficiency during design and construction. The BCA should be referenced for exact requirements, clarification and further explanation.			
Section J	Energy efficiency measures Energy efficiency measures are prescribed for the following building elements to limit energy consumption:- • Building fabric • Building sealing • Air movement. • Air-conditioning and ventilation systems. • Artificial lighting and power • Hot water supply	Compliance assumed, although further information is required to confirm compliance. A performance based BCA JV3 assessment may be adopted for the project if compliance with BCA deemed to satisfy provisions are problematic.	Compliance readily achievable

Clause	Description	Comment	Status
	Access for maintenance		
NSW Subsection J(B) Energy Efficiency - Class 3 and Class 5 to 9 Buildings			
NSW J(B)1 - Compliance with BCA Provisions.			Noted
Class 3 and Class 5 to 9 buildings must comply with all of the provisions of the national Section J that are applicable to the relevant classifications, except as varied by NSW J3.1 Application of Part.			
Part J0 - Energy Efficiency			
J0.1	Application of Part		Noted
J0.2	Heating and cooling loads of sole-occupancy units of a Class 2 building or a Class 4 part		N/A
J0.3	Ceiling fans		N/A
J0.4	Roof thermal breaks		N/A
J0.5	Wall thermal breaks		N/A
Part J1 - Building Fabric			
J1.1	Application of Part	Applies to building elements forming the envelope. The building is located within Climate Zone 5.	Noted
J1.2	Thermal construction – general Insulation must comply with AS/NZS 4859.1 and be installed in accordance with Clause J1.2.	Assessment by an Energy Efficiency consultant is to be carried out and Section J Compliance Report provided.	Compliance readily achievable
J1.3	Roof and ceiling construction A roof or ceiling must achieve a Total R-Value greater than or equal to R3.7 for an downward direction of heat flow. The solar absorptance of the upper surface of a roof must not be more than 0.45.	Assessment by an Energy Efficiency consultant is to be carried out and Section J Compliance Report provided.	Compliance readily achievable
J1.4	Roof lights The roof lights must have a total area of not more than 5 % of the floor area of the room or space served. Transparent and translucent elements requires combined performance of – - for Total system SHGC, in accordance with Table J1.4; and - for Total system U-Value, not more than U3.9.	Assessment by an Energy Efficiency consultant is to be carried out and Section J Compliance Report provided.	Compliance readily achievable
J1.5	Walls and glazing The Total System U-Value of wall-glazing construction must not be greater than U2.0. The Total System U-Value of wall-glazing construction must be calculated in accordance with Specification J1.5a and the requirements of this clause. The solar admittance of externally facing wall-glazing construction must be greater than the values specified in Table J1.5c and are to be calculated in accordance with Specification J1.5a.	Assessment by an Energy Efficiency consultant is to be carried out and Section J Compliance Report provided.	Compliance readily achievable
J1.6	Floors	Assessment by an Energy Efficiency	Compliance

Clause	Description	Comment	Status
	The floor must achieve a Total R-Value of 2.0 for downwards heat flow.	consultant is to be carried out and Section J Compliance Report provided.	readily achievable
Part J2 - This Part has deliberately been left blank			
Part J3 - Building Sealing			
J3.1	Application of Part <i>(NSW variation for building sealing)</i>	Applies to elements forming the envelope.	Noted
J3.2	Chimneys and flues		N/A
J3.3	Roof lights The roof lights must be sealed, or capable of being sealed, and must be constructed with— (i) an imperforate ceiling diffuser or the like installed at the ceiling or internal lining level; or (ii) a weatherproof seal; or (iii) a shutter system readily operated either manually, mechanically or electronically by the occupant.		Compliance readily achievable
J3.4	Windows and doors A seal to restrict air infiltration must be fitted to each edge of an external door, openable external window or the like when serving a conditioned space.		Compliance readily achievable
J3.5	Exhaust fans A miscellaneous exhaust fan must be fitted with a sealing device such as a self-closing damper or the like when serving a conditioned space.		Compliance readily achievable
J3.6	Construction of roofs, walls and floors Roofs, walls, floors and any opening must be constructed to minimise air leakage in accordance with Clause J3.6(b) when forming part of the external fabric of a conditioned space. These requirements do not apply to openings, grilles and the like required for smoke hazard management.		Compliance readily achievable
J3.7	Evaporative coolers		N/A
Part J4 - This Part has deliberately been left blank			
Part J5 - Air-conditioning and Ventilation Systems			
J5.1	Application of Part	Applies to the building.	Noted
J5.2	Air-conditioning system control An air-conditioning system must be capable of being deactivated when the building or part of a building served by that system is not occupied. An air-conditioning system must comply with requirements specified under this clause.	The mechanical engineer is to design and certify the A/C system to comply with the requirements under this Clause.	Compliance readily achievable
J5.3	Mechanical ventilation system control The mechanical ventilation system must comply with the requirements specified under this clause.	The mechanical engineer is to design and certify the mechanical ventilation system to comply with the requirements under this Clause.	Compliance readily achievable

Clause	Description	Comment	Status
J5.4	Fan systems Fans, ductwork and duct components that form part of an air-conditioning system or mechanical ventilation system must comply with the requirements of this clause.	The mechanical engineer is to design and certify the mechanical ventilation system to comply with the requirements under this Clause.	Compliance readily achievable
J5.5	Ductwork insulation Ductwork and fittings in an air-conditioning system must be provided with insulation complying with the requirements of this clause.	The mechanical engineer is to design and certify the mechanical ventilation system to comply with the requirements under this Clause.	Compliance readily achievable
J5.6	Ductwork sealing Ductwork in an air-conditioning system with a capacity of 3000 L/s or greater, not located within the only or last room served by the system, must be sealed against air loss in accordance with the duct sealing requirements of AS 4254.1 and AS 4254.2 for the static pressure in the system.	The mechanical engineer is to design and certify the mechanical ventilation system to comply with the requirements under this Clause.	Compliance readily achievable
J5.7	Pump systems Pumps and pipework that form part of an air-conditioning system must comply with the requirements of this clause.	The mechanical engineer is to design and certify the mechanical ventilation system to comply with the requirements under this Clause.	Compliance readily achievable
J5.8	Pipework insulation Piping, vessels, heat exchangers and tanks containing heating or cooling fluid, where the fluid is held at a heated or cooled temperature, that are part of an air-conditioning system, other than in appliances covered by MEPS, must be provided with insulation complying with the requirements of this clause.	The mechanical engineer is to design and certify the mechanical ventilation system to comply with the requirements under this Clause.	Compliance readily achievable
J5.9	Space heating A heater used for air-conditioning or as part of an air-conditioning system must comply with the requirements of this clause.	The mechanical engineer is to design and certify the mechanical ventilation system to comply with the requirements under this Clause.	Compliance readily achievable
J5.10	Refrigerant chillers An air-conditioning system refrigerant chiller must comply with MEPS and the full load operation energy efficiency ratio and integrated part load energy efficiency ratio in Table J5.10a or Table J5.10b when determined in accordance with AHRI 551/591.	The mechanical engineer is to design and certify the mechanical ventilation system to comply with the requirements under this Clause.	Compliance readily achievable
J5.11	Unitary air-conditioning equipment Unitary air-conditioning equipment including packaged air-conditioners, split systems, and variable refrigerant flow systems must comply with the requirements of this clause.	The mechanical engineer is to design and certify the mechanical ventilation system to comply with the requirements under this Clause.	Compliance readily achievable
J5.12	Heat rejection equipment The motor rated power of a fan in a cooling tower, closed circuit cooler or evaporative condenser must not exceed the allowances in Table J5.12. The fan in an air-cooled condenser must have a motor rated power in accordance with the requirements of this clause	The mechanical engineer is to design and certify the mechanical ventilation system to comply with the requirements under this Clause.	Compliance readily achievable

Clause	Description	Comment	Status
Part J5 - Artificial Lighting and Power			
J6.1	Application of Part	Applies to the building.	Noted
J6.2	Artificial lighting For artificial lighting, the aggregate design illumination power load must not exceed the sum of the allowances obtained by multiplying the area of each space by the maximum illumination power density in Table J6.2a. Aggregate design illumination power is to be calculated in accordance with requirements of this clause.	Design drawings and certification from an electrical engineer will be required.	Compliance readily achievable
J6.3	Interior artificial lighting and power control The power control for artificial interior lighting must comply with the requirements of Clause J6.3. Artificial lighting of a room or space must be individually operated by a switch or other control device in accordance with Specification J6.	Design drawings and certification from an electrical engineer will be required.	Compliance readily achievable
J6.4	Interior decorative and display lighting Interior decorative and display lighting, such as for foyer mural or art displays, must be controlled separately from other artificial lighting as specified in Clause J6.4. Window display lighting must be controlled separately from other display lighting.		Noted
J6.5	Artificial lighting around the perimeter of a building Artificial lighting around the perimeter of a building must be controlled by a daylight sensor or time switch as specified in Clause J6.5.	Design drawings and certification from an electrical engineer will be required.	Compliance readily achievable
J6.6	Boiling water and chilled water storage units Power supply to a boiling water or chilled water storage unit must be controlled by a time switch in accordance with Specification J6.	Design drawings and certification from an electrical engineer will be required.	Compliance readily achievable
J6.7	Lifts Lifts must be configured to:- - ensure artificial lighting and ventilation in the car are turned off when it is unused for 15 minutes; - achieve the idle and standby energy performance level in Table 6.7a; - achieve the energy efficiency class in Table 6.7b; or if a dedicated goods lift energy efficiency class D in accordance with ISO 25745-2.	Design certification from the lift designer will be required.	Compliance readily achievable
J6.8	Escalators and moving walkways		N/A
Part J7 - Heated Water Supply and Swimming Pool and Spa Pool Plant			
J7.1	-	This Clause has deliberately been left blank	-
J7.2	Heated water supply A hot water supply system for food preparation and sanitary purposes, other than a solar hot water supply system in climate zones 1, 2 and 3 must be		Compliance readily achievable

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

15. Appendix A – Glossary and Abbreviation

BCA GLOSSARY

Term	Definition
Deemed-to-Satisfy Solution	<i>A method of satisfying the Deemed-to- Satisfy Provisions.</i>
Deemed-to- Satisfy Provisions	<i>Provisions that are deemed to satisfy the Performance Requirements.</i>
Effective height	<i>The 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).</i>
Fire resistance level	<i>The grading periods in minutes determined in accordance with Schedule 5 of the BCA, for the following criteria – (a) Structural adequacy; and (b) Integrity; and (c) Insulation, And expressed in that order.</i>
Open-deck carpark	<i>A carpark in which all parts of the parking storeys are cross-ventilated by permanent unobstructed openings in not fewer than 2 opposite or approximately opposite sides, and – (a) Each side that provides ventilation is not less than 1/6 of the area of any other side; and (b) The openings are not less than ½ of the wall area of the side concerned.</i>
Performance Requirement	<i>A requirement which states the level of performance which a Performance Solution or Deemed-to-Satisfy Solution must meet.</i>
Performance Solution	<i>A method of complying with the Performance Requirements other than by a Deemed-to-Satisfy Solution.</i>
Rise in storey	<i>The greatest number of storeys calculated in accordance with C1.2 of the BCA.</i>
Type of Construction	<i>Type of fire-resisting construction of a building determined in accordance with C1.1 of the BCA. Type A is the most fire-resisting and Type C is the least fire-resisting.</i>

ABBREVIATIONS

Acronym	Definition
AS	<i>Australian Standard</i>
BCA	<i>National Code of Construction, Volume One, Building Code of Australia 2019</i>
DtS	<i>Deemed – to - satisfy</i>
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i>
EP&A Regulation	<i>Environmental Planning and Assessment Regulation 2000</i>
FRL	<i>Fire resistance level</i>

Acronym	Definition
F&R NSW	<i>Fire and Rescue NSW</i>
NSW	New South Wales
Qantas	Qantas Airways Limited
QGFTC	Qantas Group Flight Training Centre
SIM	Full Motion Flight Simulators
sqm	Square Metres
SSD	State Significant Development

16. Appendix B – Referenced Documentation

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

Drawing No.	Title	Issue	Date	Drawn By
NGA-S1822-DWG-A3.02.01	QGFT – Site – Plan – Demolition	D0.2	2019.04.01	Noxongiffen
NGA-S1822-DWG-A3.03.01	QGFT – Plan – Overall – L00	D1.4	2019.04.01	Noxongiffen
NGA-S1822-DWG-A3.03.11	QGFT – Plan – Overall – L01	D1.1	2019.04.01	Noxongiffen
NGA-S1822-DWG-A3.03.21	QGFT – Plan – Overall – L02	D1.1	2019.04.01	Noxongiffen
NGA-S1822-DWG-A3.03.31	QGFT – Plan – Overall – L03	D1.2	2019.04.01	Noxongiffen
NGA-S1822-DWG-A3.03.41	QGFT – Plan – Overall – L04 - Roof	D1.1	2019.04.01	Noxongiffen
NGA-S1822-DWG-A3.03.51	QGFT – Areas – Compartments	D0.4	2019.04.01	Noxongiffen
NGA-S1822-DWG-A3.03.52	QGFT – Areas – Thermal Envelope	D0.1	2019.04.01	Noxongiffen
NGA-S1822-DWG-A3.04.01	QGFT – Elevations – Overall	D0.1	2019.04.01	Noxongiffen
NGA-S1822-DWG-A3.04.02	QGFT – Elevations – Overall	D0.1	2019.04.01	Noxongiffen
NGA-S1822-DWG-A3.04.11	QGFT – Sections – Overall	D0.2	2019.04.01	Noxongiffen

17. 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	BCA2019 Clause C3.13 and tested prototypes (AS 1530.4 – 2014 and AS 4072.1-2005) Note: Systems tested to AS 1530.4 prior to 1 January 1995 need not be retested to comply with the provisions in AS 4072.1]
Automatic fail safe devices	Scheduled devices release upon trip of smoke detection and/or sprinkler activation in accordance with BCA2019 Clauses D2.19 and D2.21.
Automatic fire detection and alarm system (smoke detection system)	BCA2019 Clause 4 of Specification E2.2a, Specification G3.8 and AS 1670.1 – 2018
Automatic fire detection and alarm system (smoke detection system to operate smoke exhaust system)	BCA2019 Clause 6 of Specification E2.2a and AS 1670.1 – 2018
Automatic fire detection and alarm system (smoke detection system to automatically shut down air-handling system)	BCA2019 Clause 6 of Specification E2.2a and AS 1670.1 – 2018
Building occupant warning system	BCA2019 Clause 6 of Specification E2.2a and AS1670.1 – 2018
Emergency lighting	BCA2019 Clause E4.2, E4.4 and AS 2293.1 – 2018
Exit signs	BCA2019 Clause E4.5, NSW E4.6, E4.8 and AS 2293.1 – 2018
Fire dampers	BCA2019 Clause C3.15 and AS/NZS 1668.1 – 2015
Fire doors	BCA2019 Specification C3.4 and AS 1905.1 – 2015
Fire hydrants systems	BCA2019 Clause E1.3 and AS 2419.1 – 2005
Fire seals protecting opening in fire resisting components of the building	BCA2019 Clause C3.15, Specification C3.15 and AS 1530.4 –2014 and AS 4072.1 – 2005 and installed in accordance with the tested prototype. <i>[Note: Systems tested to AS 1530.4 prior to 1 January 1995 need not be retested to comply with the provisions in AS 4072.1]</i>
Fire hose reel system	BCA2019 Clause E1.4 and AS 2441 – 2005
Mechanical air handling system (automatic shutdown of air-handling system)	BCA2019 Clause E2.2 and AS/NZ 1668.1 – 2015
Mechanical air handling system (automatic smoke exhaust system)	BCA2019 Table E2.2b, Specification E2.2b and AS/NZ 1668.1 – 2015
Portable fire extinguishers	BCA2019 Clause E1.6 and AS 2444 – 2001
Smoke detectors and heat detectors (detectors for the automatic closing operation of fire doors and fire shutters in fire walls)	BCA2019 Clause C3.5 and AS 1670.1 – 2018
Wall wetting sprinkler and drencher systems	BCA2019 Clause C3.4
Warning and operational signs	BCA2019 Clauses C3.6, D1.17, D2.23, D3.6, E3.3, E3.9 and E3.10

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

18. 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

Type B Construction: FRL of Building Elements

Building element	Class of building - FRL: (in minutes)			
	Structural adequacy/Integrity/Insulation			
	2, 3 or 4 part	5, 9 or 7a	6	7b or 8
EXTERNAL WALL (including any column and other building element incorporated therein) or other external building element, where the distance from any fire-source feature to which it is exposed is-				
For loadbearing parts-				
less than 1.5m	90/90/90	120/120/120	180/180/180	240/240/240
1.5 to less than 3 m	90/60/30	120/ 90/60	180/120/90	240/180/120
3 to less than 9 m	90/30/30	120/ 30/30	180/90/60	240/90/60
9 to less than 18 m	90/30/-	120/30/-	180/60/-	240/60/-
18 m or more	- / - / -	- / - / -	- / - / -	- / - / -
For non-loadbearing parts-				
less than 1.5 m	-/90/90	- /120/120	- /180/180	- /240/240
1.5 to less than 3 m	-/60/30	- / 90/60	- /120/90	- /180/120
3 m or more	- / - / -	- / - / -	- / - / -	- / - / -
EXTERNAL COLUMN not incorporated in an external wall, where the distance from any fire-source feature to which it is exposed is-				
Less than 18m	90/ - / -	120/ - / -	180/ - / -	240/ - / -
18 m or more	- / - / -	- / - / -	- / - / -	- / - / -
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	60/60/60	120/ - / -	180/ - / -	240/ - / -
Non-loadbearing	- /60/60	- / - / -	- / - / -	- / - / -
Between or bounding sole-occupancy units-				
Loadbearing	60/60/60	120/ - / -	180/ - / -	240/ - / -
Non-loadbearing	- /60/60	- / - / -	- / - / -	- / - / -
OTHER LOADBEARING INTERNAL WALLS, INTERNAL BEAMS, TRUSSES and COLUMNS				
	60/ - / -	120/ - / -	180/ - / -	240/ - / -
ROOFS	- / - / -	- / - / -	- / - / -	- / - / -

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

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

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

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

In addition, in non-sprinklered areas, wall and ceiling linings must have a smoke growth rate index not more than 100 or an average specific extinction area less than 250m²/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

20. Appendix C2.2 – Floor Areas and Volumes

Floor areas and volumes of each storey

Floor	Approx. Area (m ²)	Approx. Volume (m ³)	Comment
Ground	7,332	-	
Level 1	3,087	-	
Level 2	1,699	-	
Level 3	1,900	-	
Total	14,018		

Nominated Fire Compartments

Compartment	Approx. Area (m ²)	Approx. Volume (m ³)	Comment
North Fire Compartment Contains SIMS and centre portions of Levels Ground, 1 & 2	3,031	22,513	Noted as orange colour on fire compartment drawings Complies with Type A sizes limitations of 8,000m ² and 48,000m ³
South Fire Compartment Contains SIM and centre portions of Levels Ground, 1 & 2	5,926	39,323	Noted as pink colour on fire compartment drawings Complies with Type A sizes limitations of 8,000m ² and 48,000m ³
Admin Fire Compartment Contains office Level 3	1,900	8,588	Noted as pink colour on fire compartment drawings. Complies with Type A sizes limitations of 8,000m ² and 48,000m ³ Subject to performance based fire separation from South Fire Compartment.
EP Fire Compartment Contains EP Hall on Ground and Level 1	3,161	19,584	Noted as yellow colour on fire compartment drawings. Complies with Type B sizes limitations of 5,500m ² and 33,000m ³

21. Appendix D1.4 – Exits

The exits from the building are set out below:

Exit No	Location	Type	Grid Ref	No of storeys connected / passed by	Comments
1.	TBC				

22. Appendix D1.13 – Populations/Exit Width Assessment

Population numbers as provided.

						loading	/floor	Population
	STAFF	LEVEL 4 ADMIN				100%		
	SF&CO	Commercial Operations	14	16				
		Simulator Facilities	2					
	Training and Checkin	Pilot Training	31					
S-L4		Aviation Safety Training	34	79	122	122	122	
		Flight Training Support	14					
	Workforce Planning	Flight Training Scheduling	21	21				132
	Third Party	Qantaslink	4	6				
		Jetstar	2					
	STAFF	GROUND FLOOR				100%		
S-L1	SF&CO	Simulator Facilities	8	10	10	10	10	
	Cafe		2					
	STUDENTS	AST				100%		
E.L1	Classroom 01		18				18	
	Classroom 02		18					
	Classroom 03		18					
	Classroom 04		18					
	Classroom 05		18	162				
E.L2	Classroom 06		18		194	194		
	Classroom 07		18				158	
	Classroom 08		18					
	Classroom 09		18					
	CBT-01		16	32				
	CBT-02		16					
	STUDENTS	PILOT TRAINING				80%		
S.L2	FFS	Incoming	28	56				
		Outgoing	28				80	
	IPT	Incoming	22	44				513
		Outgoing	22					
	Classroom 01		18					
	Classroom 02		18					
	Classroom 03		18					
	Classroom 04		18	108				
	Classroom 05		18					
	Classroom 06		18		398	319		
S.L3	Classroom 07		24				239	
	Classroom 08		24					
	Classroom 09		24	116				
	CBT-01		32					
	CBT-Exam		12					
	Classroom- QE-1		12	24				
	Classroom- QE-2		12					
	Auditorium		50	50				
	TOTAL				724			645

Location	Use	Population	Required aggregate egress width (m) or maximum permissible population*	Proposed aggregate egress width (m)	Status
TBC					Complies

23. 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 <u>cannot</u> 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

24. Appendix D3 – Significant Accessibility Requirements

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

Principle requirements are:

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

The following general requirements apply to accessible toilets:

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

25. Appendix F2.3 – Requirements for Sanitary Facilities

The status of sanitary facilities required by Part F2 of the BCA are set out below:

Class	Use	Occupant Numbers			WC Required / Provided		Urinal Required / Provided		Basin Required / Provided	
		Total								
			Male							
			Female				N/A			
			Unisex Disabled				N/A			
			Male							
			Female				N/A			
			Unisex Disabled				N/A			
	TOTAL		Male							
			Female				N/A			
			Unisex Disabled				N/A			

Notes:

1. A common unisex accessible facility may be counted once for both male and female facilities in accordance with Clause F2.2(c) of the BCA;
2. Staff and patrons are permitted to share the same facilities in accordance with Clause F2.3(d) of the BCA;
3. At least one ambulant sanitary compartment must be provided within each the male and female facilities complying with Section 16 of AS1428.1 – 2009.
4. A WC is able to be used in place of a urinal.



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BUILDING CODE CONSULTANTS
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