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BCA Report 2019 Amendment 1

BCA Assessment Report

Report 2022/0627 Revision A

Prepared for Toga

July 2022

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Author: Timothy Abovian
Verifier: Anthony Ljubicic

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

1. EXECUTIVE SUMMARY

This BCA assessment report has been prepared by Steve Watson & Partners to accompany a detailed State significant development (SSD) development application (DA) for the mixed-use redevelopment proposal at TOGA Central, located at 2 & 8A Lee Street, Haymarket (the site). The site is legally described as Lot 30 in Deposited Plan 880518 and Lot 13 in Deposited Plan 1062447. The site is also described as 'Site C' within the Western Gateway sub-precinct at the Central Precinct.

This report has been prepared to address the Secretary's Environmental Assessment Requirements (SEARs) issued for the SSD DA (SSD 33258337).

This report concludes that the proposed mixed-use redevelopment is suitable and warrants approval subject to the implementation of the following mitigation measures.

- Resolution of the design issues provided in this report and summarised in Section 10.
- Provision of the additional information requested in this report and summarised in Section 10.
- Obtaining the performance solutions listed in Section 10 prior to the issue of a Construction Certificate.

Following the implementation of the above mitigation measures, the remaining impacts are appropriate.

Summary of BCA Parameters:

Building Use:	Hotel, office, retail, carpark, storage, assembly building & swimming pool.
Class of Occupancy	Class 3, 5, 6, 7a, 7b, 9b & 10b
Type of Construction Required	Type A
Rise Storeys:	45
Number of Storeys:	50
Effective Height:	>50m

An assessment of the design of the proposed design of the project at BCA Report 2019 Amendment 1 has been undertaken against the Deemed-to-Satisfy (DTS) provisions of the relevant sections of the Building Code of Australia and the applicable Building Regulations.

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

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 Amendment 1. Compliance is subject to resolution of the identified areas of non-compliance and compliance with the recommendations

provided within the report.

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

Whilst not precluding the issue of a Construction Certificate, it is noted that many detailed design issues are not indicated on the drawings. These issues are designated “Compliance Readily Achievable” in the *“Status*” column of the assessment in Section 14 of the report and should be resolved prior to construction.

2. TABLE OF CONTENTS

Glossary

Building Code of Australia - BCA, National Construction Code - NCC

Deemed-to-Satisfy - Dts

Environmental Planning and Assessment (Development Certification and Fire Safety) Regulation 2021 - EPAR (DCFS)

Environmental Planning and Assessment Act 1979 No 203 - EPAA

Environmental Planning and Assessment Regulation 2021 - EPAR

3. INTRODUCTION

This report has been prepared to accompany a SSD DA for the for the mixed-use redevelopment proposal at TOGA Central, located at 2 & 8A Lee Street, Haymarket and presents the findings of a preliminary assessment undertaken of the proposed design against the Deemed-to-Satisfy (DtS) provisions of Building Code of Australia BCA 2019 Amendment 1.

The Minister for Planning, or their delegate, is the consent authority for the SSD DA and this application is lodged with the NSW Department of Planning and Environment (DPE) for assessment.

The purpose of the SSD DA is to complete the restoration of the heritage-listed building on the site, delivery of new commercial floorspace and public realm improvements that will contribute to the realisation of the Government's vision for an iconic technology precinct and transport gateway. The application seeks consent for the conservation, refurbishment and adaptive re-use of the Adina Hotel building (also referred to as the former Parcel Post building (fPPb)), construction of a 45-storey tower above and adjacent to the existing building and delivery of significant public domain improvements at street level, lower ground level and within Henry Deane Plaza. Specifically, the SSD DA seeks development consent for:

- Site establishment and removal of landscaping within Henry Deane Plaza.
- Demolition of contemporary additions to the fPPb and public domain elements within Henry Deane Plaza.
- Conservation work and alterations to the fPPb for retail premises, commercial premises, and hotel and motel accommodation. The adaptive reuse of the building will seek to accommodate:
    - Commercial lobby and hotel concierge facilities,
    - Retail tenancies including food and drink tenancies and convenience retail with back of house areas,
    - 4 levels of co-working space,
    - Function and conference area with access to level 7 outdoor rooftop space, and
    - Reinstatement of the original fPPb roof pitch form in a contemporary terracotta materiality.
- Provision of retail floor space including a supermarket tenancy, smaller retail tenancies, and back of house areas below Henry Deane Plaza (at basement level 1 (RL12.10) and lower ground (RL 16)).
- Construction of a 45-storey hotel and commercial office tower above and adjacent to the fPPb. The tower will have a maximum building height of RL 202.28m, and comprise:
    - 10 levels of hotel facilities between level 10 – level 19 of the tower including 204 hotel keys and 2 levels of amenities including a pool, gymnasium and day spa to operate ancillary to the hotel premises. A glazed atrium and hotel arrival is accommodated adjacent to the fPPb, accessible from Lee Street.
    - 22 levels of commercial office space between level 23 – level 44 of the tower accommodated within a connected floor plate with a consolidated side core.
    - Rooftop plant, lift overrun, servicing and BMU.
- Provision of vehicular access into the site via a shared basement, with connection points provided to both Block A (at RL 5) and Block B (at RL5.5) basements. Primary access will be accommodated from the adjacent Atlassian site at 8-10 Lee Street, Haymarket, into 4 basement levels in a split-level arrangement. The basement will accommodate:

- Car parking for 106 vehicles, 4 car share spaces and 5 loading bays.
- Hotel, commercial and retail and waste storage areas.
- Plant, utilities and servicing.

- Provision of end of trip facilities and 165 employee bicycle spaces within the fPPb basement, and an additional 72 visitor bicycle spaces within the public realm.
- Delivery of a revitalised public realm across the site that is coordinated with adjacent development, including an improved public plaza linking Railway Square (Lee Street), and Block B (known as 'Central Place Sydney'). The proposal includes the delivery of a significant area of new publicly accessible open space at street level, lower ground level, and at Henry Deane Plaza, including the following proposed elements:
  - Provision of equitable access within Henry Deane Plaza including stairways and a publicly accessible lift.
  - Construction of raised planters and terraced seating within Henry Deane Plaza.
  - Landscaping works within Henry Deane Plaza.
- Utilities and service provision.
- Realignment of lot boundaries.

This report has been prepared in response to the requirements contained within the Secretary's Environmental Assessment Requirements (SEARs) dated 17 December 2021 and issued for the SSD DA.

4. 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, construction certification to be issued under Part 6 of the NSW Environmental Planning and Assessment Act 1979 No 203, Environmental Planning and Assessment (Development Certification and Fire Safety) Regulation 2021 and Environmental Planning and Assessment Regulation 2021.

5. SCOPE AND LIMITATIONS

5.1 SCOPE

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

5.2 LIMITATIONS

The following limitations apply to the assessment:

- The report considers matters of a significant nature only and should not be considered exhaustive.

The plans are assessed to the extent necessary to issue a construction certificate under Part 6 of The Act. This means the design has been assessed to be capable of complying with the BCA without necessarily having all the detailed design completed at this stage.

Details in regard to access for people with disabilities have been assessed to the extent of the deemed-to-satisfy provisions of the BCA/Premises Standard only. A detailed assessment against AS 1428 series, AS/NZS 2890.6 – 2009 and AS 4299 – 1995 is outside the scope of this report

Generally, the assessment does not incorporate a detailed assessment of the requirements of the Australian Standards.

Structural and services documentation have not been reviewed.

Appraisals are limited to the provisions of the BCA and the Premises Standards. Other legislative requirements have not been considered. It does not address additional or specific requirements stipulated under other areas such as Safety in Design, Construction Safety, Disability Discrimination, Planning and Environment, Occupational Health and Safety, Health, Dangerous Goods, etc, which may impact on the design and use of the building. It is recommended that appropriate advice from suitably qualified consultants should be obtained for further information on these areas

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

5.3 CERTIFICATION WORKS

This report is provided as part of SWP's contracted scope for this project, which is "Certification Work", as defined in the Building and Development Certifiers Regulation 2020. Due to the strict requirements and limits in terms of conflicts of interest imposed under that regulation, SWP cannot undertake any services other than Certification Work services on this project. Hence, the contents of this report, and any associated correspondence, are provided in the context of a preliminary certification assessment of plans, and may not be construed to constitute involvement in building design, the preparation of plans and specifications, the provision of advice on how to amend a plan or specification to ensure that the aspect will comply with legislative or code requirements, or to breach any other restriction or limitation imposed under the conflict of interest provisions of that or any other legislation.

5.4 NATIONAL CONSTRUCTION CODE BCA 2019 AMENDMENT 1– VOLUME 1: BUILDING CODE OF AUSTRALIA CLASS 2 TO CLASS 9 BUILDINGS

The National Construction Code (NCC) is a uniform set of technical provisions for the design and construction of buildings, structures and plumbing/drainage systems which is separated into 3 volumes. Volume 1 of the NCC is the Building Code of Australia (BCA) for Class 2 to 9 buildings which is the document to which the assessment in this report has been undertaken against. The BCA is legislated under The Act and specifies the Performance Requirements for the design and construction of Class 2 to 9 buildings that must be satisfied to achieve compliance. The Performance Requirements can only be satisfied by a Performance Solution, Deemed-to-Satisfy (DTS) solution or a combination of both.

5.5 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
Existing building fire safety	EPAR S64	Council may require upgrading in some circumstances
Alts and adds – change in building use	EPAR S14(1) (DCFS)	Fire safety to be upgraded in affected part of building Structural adequacy to be signed off Category 1 fire safety provisions to be upgraded. (Hydrants, sprinklers, fire control centres, smoke detection, smoke hazard management, emergency lifts.)
Alts and adds – no change in use	EPAR (DCFS) S14(3)	No reduction in the level of safety permitted
New Work	EPAR (DCFS) S19	All new works must comply
Access to premises	Disability (Access to Premises — Buildings) Standards 2010	Upgrade of the "Affected Part" to provide access for people with disabilities

6.1 NEW WORK

Section 19 of the EPAR (DCFS) requires that all new work comply with the current requirements of the BCA.

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

6.2 CONSENT AUTHORITY MAY REQUIRE BUILDING TO BE UPGRADED

When determining a development application, a Consent Authority (Council) is required to assess fire safety in an existing building under Section 64 of the EPAR.

The assessment must consider whether the measures contained in a building are inadequate

- to protect persons using the building and facilitate their egress in the event of a fire or
- to restrict the spread of fire between buildings.

In determining a development application, the consent authority is to take into consideration whether it would be appropriate for the building to be brought into total or partial conformity with the BCA. Normally this discretionary power would only be enacted in the following circumstances:

- the proposed scope of works encompasses a large portion of the building so that a total building upgrade would not be considered an onerous requirement (i.e. ½ the total volume of the building including other works undertaken in the last 3 years);
- the upgrading measure(s) significantly increase the level of safety and are able to be cost-effectively incorporated into the proposed works so that they would not be considered an

onerous requirement

- the existing level of safety is so deficient that the council consider an upgrade is necessary irrespective of the scope of works proposed.

6.3 NO CHANGE OF BUILDING USE - STRUCTURAL STRENGTH AND FIRE SAFETY

Section 14(3) of the EPAR (DCFS) prevents a certifying authority from issuing a construction certificate if the proposed new work will result in a reduction to the fire protection and structural capacity of the building.

6.4 CHANGE OF BUILDING USE - STRUCTURAL STRENGTH AND FIRE SAFETY

If a change in use is involved under the application, Section 14(1) of the EPAR (DCFS) requires that the fire protection (egress), structural capacity and Category 1 Fire Safety provisions must be applicable to the new use of the building.

6.5 ACCESS TO PREMISES

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

7. METHODOLOGY

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:
    a. Clause is administrative information only **(Noted)**;
    b. Clause is or is not relevant to the proposed work **(Applicable or N/A)**
    c. The proposed work complies with the requirements of the clause **(Complies)**;
    d. Compliance with the requirements of the clause is unable to be determined from the documentation provided **(Compliance Readily Achievable)**. A recommendation in the "Comments" column will indicate what is required to achieve compliance. The design and construction teams are responsible to ensure compliance is achieved;
    e. Compliance with the requirements of the clause is unable to be determined from the documentation provided. Additional details or relevant information required to verify compliance (**Additional Details Required**);
    f. Proposed work does not comply with the requirements of the clause **(Does Not Comply)**. An indication will be given in the Comments field as to the nature of the issue and whether an alternative solution has been proposed to address the issue;
    g. Proposed work is to be addressed on a performance basis via an Alternative Solution satisfying the relevant Performance Requirements. (**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 within the City of Sydney Local Government Area (LGA). The site is situated 1.5km south of the Sydney CBD and 6.9km north-east of the Sydney International Airport within the suburb of Haymarket.

The site is located within the Western Gateway sub-precinct, an area of approximately 1.65ha that is located immediately west of Central Station within Haymarket on the southern fringe of the Sydney CBD. Immediately north of Central Station is Belmore Park, to the west is Haymarket (including the University of Technology, Sydney and Chinatown), to the south and east is rail lines and services and Prince Alfred Park and to the east is Elizabeth Street and Surry Hills.

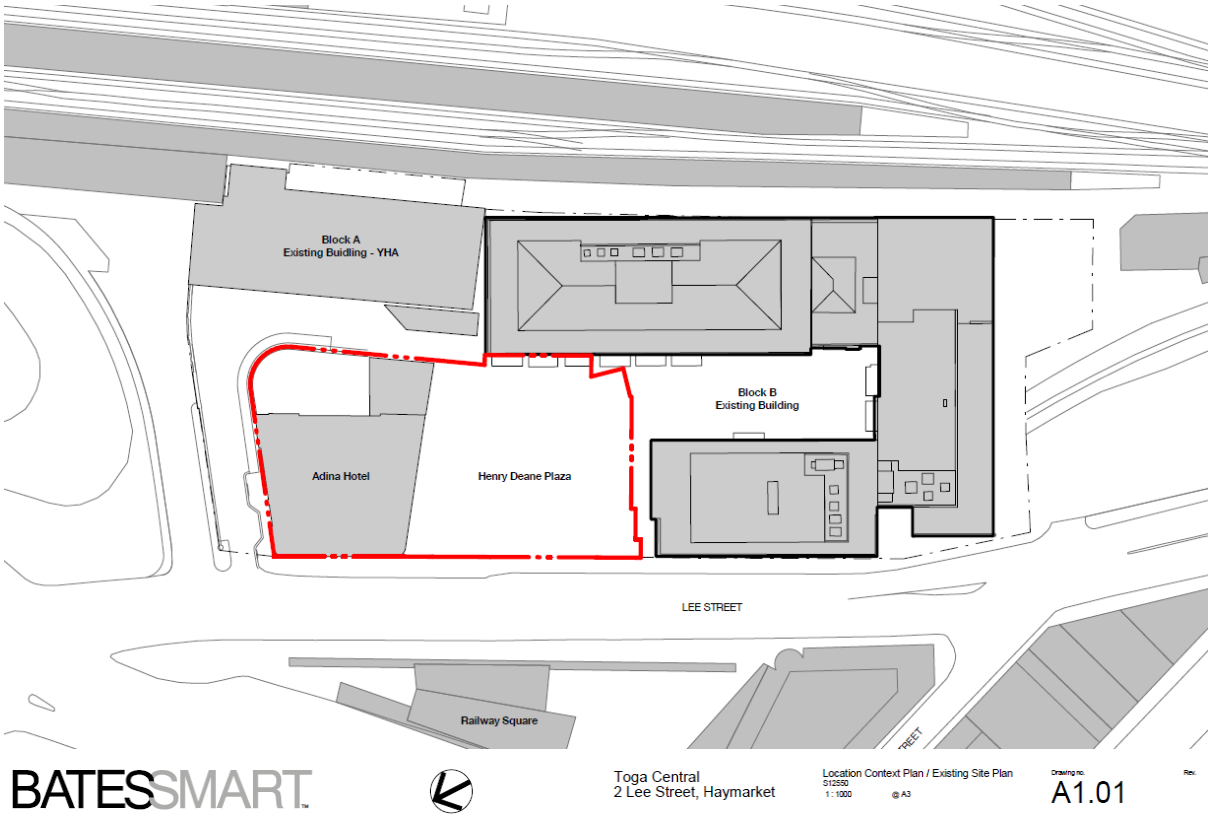
Central Station is a public landmark, heritage building, and the largest transport interchange in NSW. With regional and suburban train services, connections to light rail, bus networks and to Sydney Airport, the area around Central Station is one of the most-connected destinations in Australia.

The site is located at 2 & 8A Lee Street, Haymarket and is legally described as Lot 30 in Deposited Plan 880518, Lot 13 in Deposited Plan 1062447 and part of Lot 14 in Deposited Plan 1062447.

The land that comprises the site under the Proponent's control (either wholly or limited in either height or depth) comprises a total area of approximately 4,159sqm.

The location of the TOGA Central site is illustrated in **Figure 1**.

Figure 1 – Site Identification Plan



Source: Bates Smart

The site currently comprises the following existing development:

1. Lot 30 in Deposited Plan 880518 (Adina Hotel building): the north-western lot within the Western Gateway sub-precinct accommodates a heritage-listed building which was originally developed as the Parcels Post Office building. The building has been adaptively re-used and is currently occupied by the Adina Hotel Sydney Central. The eight-storey building provides 98 short-stay visitor apartments and studio rooms with ancillary facilities including a swimming pool and outdoor seating at the rear of the site.
2. Lot 13 in Deposited Plan 1062447 (Henry Deane Plaza): the central lot within the Western Gateway sub-precinct adjoins Lot 30 to the south. It accommodates 22 specialty food and beverage, convenience retail and commercial service tenancies. The lot also includes publicly accessible space which is used for pop-up events and a pedestrian thoroughfare from Central Station via the Devonshire Street Tunnel. At the entrance to Devonshire Street Tunnel is a large public sculpture and a glazed structure covers the walkway leading into Railway Square. This area forms part of the busy pedestrian connection from Central Station to Railway Square and on to George and Pitt Streets, and pedestrian subways.

The site is listed as an item of local significance under Schedule 5 of the *Sydney Local Environmental Plan 2012* 'Former Parcels Post Office including retaining wall, early lamp post and building interior', Item 855.

The site is also included within the Central Railway Station State heritage listing. This is listed on the State Heritage Register 'Sydney Terminal and Central Railway Station Group', Item SHR 01255, and in Schedule 5 of the *Sydney Local Environmental Plan 2012* 'Central Railway Station group including buildings, station yard, viaducts and building interiors' Item 824.

The site is not however listed independently on the State Heritage Register. There is an array of built forms that constitute Central Station, however the Main Terminal Building (particularly the western frontage) and associated clocktower constitute key components in the visual setting of the Parcel Post building.

9. ASSESSMENT DATA SUMMARY

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

9.1 ASSUMPTIONS

The following assumptions were made in the preparation of this report:

1. Not more than 80% of the lower ground level retail tenancies are proposed to be used as food and beverage, of which, no tenancy will accommodate more than 20 seated patrons.

9.2 INTERPRETATIONS

No interpretations have been made in preparation of this report.

10. ISSUES REQUIRING RESOLUTION

10.1 ISSUES REQUIRING AMENDMENTS TO PLANS, ADDITIONAL DETAILS OR DOCUMENTATION

The following issues either need to be resolved or require further details and/or documentation to be provided to ensure compliance before submitting the SSD DA.

Item	DTS Clause	Description	Requirement to Satisfy BCA
1.	**B1.1**	**Resistance to actions**	The structural engineer should confirm that any existing structural elements to be retained can be certified to current code, including but not limited to earthquake load compliance.
2.	**Spec C1.1**	**Fire resisting construction**	The FRLs of all existing structural elements should be confirmed and any reduced FRLs addressed as part of a performance solution.
3.	**C2.2**	**General floor area and volume limitations**	A compartmentation plan is needed to confirm the size of each fire compartment in the building. The existing heritage building appears to form a single compartment that may exceed the limitations under this clause and may require a performance solution.
4.	**C3.3**	**Separation of external walls and associated openings in different fire compartments**	A fire compartment plan for the building is needed to determine whether external walls between adjacent compartments are exposed to one another.
5.	**E1.3**	**Fire hydrants**	Full compliance with AS2419.1 will be required unless varied via fire brigade approval. A fire hydrant design for the building is needed for review, including the hydrant booster location and fire hydrant locations to review coverage. These items can be shown on the architectural plans. The hydraulic engineer must ensure that compliant coverage is provided to all areas of the building from the internal hydrants and must provide design certification to accompany the drawings certifying the design complies with Clause E1.3 of the BCA and AS2419.1 – 2005 (noting any non-compliances, which are to be addressed as an Alternative Solution). *Note 1: The hydrant hose must extend at least 1m into rooms to be counted for coverage.* *Note 2: If full coverage is not provided from hydrants located within the stairs alone. Intermittent hydrant outlets can be installed to achieve a compliant coverage. The hydrants are to be located not more than 25m from another hydrant to allow for progressive attack.* *Note 3: As the building has an effective height of greater than 25m the system is required to be installed in the configuration of a ring main*
6.	**E1.4**	**Fire hose reels**	Fire hose reels should be illustrated throughout the building to review coverage and must generally be located within 4m of an exit. Note Class 3 & 5 exemptions. The hydraulic engineer must ensure that compliant coverage is provided to all areas of the building and must provide design certification to accompany the drawings certifying the design complies with Clause E1.4 of the BCA and AS2441 – 2005.
7.	**E1.5**	**Sprinklers**	A sprinkler system is required throughout. Control valves must be accessed directly from open space unless approved as part of a performance solution and should be illustrated for review.

10.2 PERFORMANCE SOLUTIONS REQUIRED

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

Item	Non-Compliance	DTS Clause	Description	Performance Requirement
1.	**Fire resisting construction**	**Spec. C1.1**	A performance solution is needed to reduce storage areas in the basement carpark to 2hrs.	CP1 & CP2
2.	**Fire resisting construction**	**Spec. C1.1**	A performance solution is needed to reduce the FRLs of the supermarket storage areas to 3hrs.	CP1 & CP2
3.	**Non-combustible building elements**	**C1.9**	A performance solution is needed to permit any combustible elements in the external walls and any attachments, including heritage timber façade elements.	CP2
4.	**Separation of lift shafts**	**C2.10**	The hotel arrival lifts on ground level also serve levels below and are not proposed to be wholly contained within a fire rated shaft. The atrium lifts between levels 2-6 also extend down to basement level 1 and are not proposed to be wholly contained within a fire rated shaft.	CP2
5.	**Public corridors in Class 2 & 3 buildings**	**C2.14**	The class 3 public corridor that forms part of the atrium will not meet the requirements of this clause and requires a performance solution.	CP2 & EP2.2
6.	**Protection of openings in external walls**	**C3.2**	A fire engineering strategy should be developed for non-protection of any façade openings exposed to the eastern and southern property boundaries, including openings between building elements such as columns, beams and the like, in the plane formed at the construction edge or perimeter of the building.	CP2 & CP8
7.	**Number of exits required**	**D1.2**	A performance solution is needed to permit access to a single exit in the following areas: • The scissor stair lift lobby on basement level 02. • The northern plant room on level 8. • The northern plant room on level 9.	DP4
8.	**Exit travel distances**	**D1.4 & D1.5**	A performance based egress strategy is proposed to between neighbouring allotments and buildings that share the common mall space on basement level 01 and lower ground level.	DP4 & EP2.2
9.	**Exit travel distances**	**D1.4**	A performance solution is proposed to permit the following extended travel distances on commercial and carpark floors (excludes hotel part): • 30m to a point of choice • 60m to the nearest exit	DP4 & EP2.2
10.	**Distance between alternative exits**	**D1.5**	A performance solution is proposed to permit the following extended travel distances: • 90m between alternative exits.	DP4 & EP2.2
11.	**Distance between alternative exits**	**D1.5**	The converging alternative egress paths in the plant areas on level 7 & 9 are less than 6m apart and require a performance solution.	DP4 & EP2.2
12.	**Travel via fire-isolated exits**	**D1.7**	The basement fire stair that discharges to the covered plaza on the lower ground floor requires a performance solution.	DP5

Item	Non-Compliance	DTS Clause	Description	Performance Requirement
13.	**Separation of rising and descending stair flights**	**D2.4**	A performance solution is needed to permit a direct connection between rising and descending stair flights in the high-rise scissor stair between basement level 02-04.	DP2 & DP4
14.	**Fire hydrants**	**E1.3**	A performance solution is needed to permit the location of the hydrant pump room, which does not open directly into the adjacent fire stair.	EP1.3
15.	**Smoke hazard management - General requirements**	**E2.2**	It is understood that the design for the smoke exhaust system in the building is being assessed on a performance basis.	EP2.2
16.	**Water proofing of external walls**	**F1.0**	A weatherproofing performance solution will be required as part of the construction certificate application.	FP1.4
17.	**Deemed-to-Satisfy Provisions**	**G1.0**	A performance solution is required to address the requirements of GP1.1 for swimming pools.	GP1.1
18.	**Dimensions of atrium well**	**G3.2**	A performance solution is needed to permit the proposed atrium well dimensions.	CP2 & EP2.2
19.	**Separation of atrium by bounding walls**	**G3.3**	An atrium well is required to be separated from the remainder of the building by bounding walls not more than 3.5m from the perimeter of the atrium well, except in the case of 3 consecutive storeys. A performance-based design is proposed.	CP2 & EP2.2
20.	**Construction of bounding walls**	**G3.4**	Bounding walls must have an FRL not less than 60/60/60 or constructed of fixed toughened safety glass or wired safety glass in non-combustible frames protected with wall wetting sprinklers in accordance with Specification G3.8. A performance-based design is proposed.	CP2 & EP2.2
21.	**Energy efficiency measures**	**Part J**	It is understood that the building enclosure is being assessed based on a JV3 assessment, which will also confirm the existing façade elements that can be retained.	JP1

11. RELEVANT AUTHORITIES

Where an alternative solution is proposed to meet the performance requirements contained in any one or more of the Category 2 fire safety provisions referral to Fire and Rescue NSW under Section 26 of the Environmental Planning and Assessment (Development Certification and Fire Safety) Regulation 2021 is required in either of the following types of buildings:

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

12. STATUTORY FIRE SAFETY MEASURES

All fire/essential safety measures installed within the building are required required to be certified upon completion of the project and prior to occupation of the building by the owner of the building, by issuing a Final Fire Safety Certificate under the Act.

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

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

13. CONCLUSION

The design is capable of complying with the requirements of the relevant sections of the of the Act and EPAR (DCFS) 2021, EPAR 2021 and the BCA 2019 Amendment 1 subject to resolution of the identified areas of non-compliance and compliance with the recommendations provided within the report.

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

14. BCA 2019 AMENDMENT 1 – CLAUSE BY CLAUSE ASSESSMENT

<table>
<tr><th>Clause</th><th>Description</th><th>Comment</th><th>Status</th></tr>
<tr><td colspan="3">BCA Version</td><td></td></tr>
<tr><td>BCA 2019 Amendment 1</td><td>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.</td><td>This report assumes that the applicable BCA version is BCA 2019 Amendment 1. In addition, requirements of the Premises Standards (PS) are covered as relevant.</td><td>Noted</td></tr>
<tr><td colspan="3">Section A: General Provisions</td><td></td></tr>
<tr><td>A5.2</td><td>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.</td><td>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.</td><td>Noted</td></tr>
<tr><td>Part A6</td><td>Classification and usage
Usage on each level of the building is as follows:
<table>
<tr><th>LEVEL</th><th>USE</th><th>CLASS</th></tr>
<tr><td>Basement level 02-04</td><td>Carpark
Storage</td><td>7a
7b</td></tr>
<tr><td>Basement level 01</td><td>Commercial
Storage</td><td>6
7b</td></tr>
<tr><td>Lower ground level-ground level</td><td>Commercial</td><td>6</td></tr>
<tr><td>Level 02-05</td><td>Office</td><td>5</td></tr>
<tr><td>Level 06</td><td>Function Space</td><td>9b</td></tr>
<tr><td>Level 07</td><td>Hotel</td><td>3</td></tr>
<tr><td>Level 09-21</td><td>Hotel</td><td>3</td></tr>
<tr><td>Level 21</td><td>Swimming pool</td><td>10b</td></tr>
<tr><td>Level 22-45</td><td>Office</td><td>5</td></tr>
</table></td><td>-</td><td>Noted</td></tr>
<tr><td>Part A7</td><td>United buildings
Buildings are deemed united when two or more buildings adjoining each other are connected and used as one building.</td><td>-</td><td>Noted</td></tr>
<tr><td colspan="3">Section B: Structure</td><td></td></tr>
<tr><td>B1.1</td><td>Resistance to actions
The resistance of the building must be greater than the most critical action effect resulting from different combinations of actions</td><td>The structural engineer should confirm that any existing structural elements to be retained can be certified to current</td><td>Additional Details Required</td></tr>
</table>

Clause	Description	Comment	Status
		code, including but not limited to earthquake load compliance.	
B1.2	**Determination of individual actions** The magnitude of individual actions must be determined in accordance with Clause B1.2 of the BCA.	Certification from a qualified structural engineer will need to be provided at Construction Certificate stage.	Compliance Readily Achievable
B1.3	-	No provisions	-
B1.4	**Determination of structural resistance of materials and forms of construction** The structural resistance of materials and forms of construction must be determined in accordance with the relevant Australian Standards in accordance with Clause B1.4 of the BCA.	Certification from a qualified structural engineer will need to be provided at Construction Certificate stage.	Compliance Readily Achievable
B1.5	**Structural software** Structural software used in computer aided design of a building or structure that uses design criteria based on DTS provisions of the BCA must comply with the ABCB Protocol for Structural Software.	-	Compliance Readily Achievable
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** **Type A Construction** BCA Type A fire resisting construction is required. Refer to Appendix C1.1 for required FRLs.	-	Noted
Spec C1.1	**Fire resisting construction** *Support of another part* Where a part of a building required to have an FRL depends upon direct vertical or lateral support from another part to maintain its FRL, that supporting part must have an FRL not less than that required for the part if supports and be non-combustible. *Attachments* The method of attaching or installing a finish, lining, ancillary element or service to a building	The FRLs of all existing structural elements should be confirmed and any reduced FRLs addressed as part of a performance solution.	Additional Details Required
		Structural elements on the hotel floors directly support the commercial towers above and require FRLs of at least 2hrs unless varied by a performance solution.	Compliance Readily Achievable
		A performance solution is needed to reduce storage areas in the basement carpark to 2hrs.	Performance Solution

Clause	Description	Comment	Status
	element must not reduce the fire resistance of that element. *Enclosure of shafts* Shafts required to have an FRL must be enclosed at the top and bottom by construction have an FRL not less than that required for the walls of the shaft. Shafts, other than one enclosing a fire isolated stairway or ramp, do not require an FRL at the top if the shaft extends beyond the roof covering.	A performance solution is needed to reduce the FRLs of the supermarket storage areas to 3hrs.	Performance Solution
		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 walls will be required at Construction Certificate stage.	Compliance Readily Achievable
C1.2	**Calculation of rise in storeys** **Effective Height / Calculation of rise in storeys**. Rise in storeys is a defined BCA term addressing the number of main building levels excluding basements. Effective height is defined under the BCA as vertical distance between the floor of the lowest storey included in the calculation of rise in storeys and the floor of the topmost storey (excluding the topmost storey if it contains only heating, ventilating, lift or other equipment, water tanks or similar service units). These parameters influence the BCA provisions applicable to the building.	The following parameters apply: Rise in storeys: 45 Effective Height: >50m	Noted
C1.3	**Buildings of multiple classification**	The building is required to be constructed of Type A fire resisting construction as the classification of the top storey is a Class 5.	Compliance Readily Achievable
C1.4	**Mixed types of construction**	-	N/A
C1.5	**Two storey Class 2, 3 or 9c buildings**	-	N/A
C1.6	**Class 4 parts of buildings**	-	N/A
C1.7	**Open spectator stands and indoor sports stadiums**	-	N/A
C1.8	**Lightweight construction** Lightweight construction used in a wall system must comply with Specification C1.8. Lightweight construction used as a fire-resisting covering of a steel column or the like, and where the covering is not in continuous contact with the column must have the voids filled to a height of not less than 1.2m above the floor and where the column is liable to be damaged must be protected by steel or other suitable material.	Details of the proposed systems to be installed must be in accordance with a tested prototype. Compliant details should be provided with the Construction Certificate application.	Compliance Readily Achievable
C1.9		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	Compliance Readily Achievable

Clause	Description	Comment	Status
	Non-combustible building elements In a building required to be of Type A or B construction, the following building elements and their components must be non-combustible: External walls and common walls, including all components incorporated within them including façade covering, framing and insulation; The flooring and floor framing of lift pits; Non-loadbearing internal walls where they are required to be fire-resisting; Non-loadbearing shaft being a lift, ventilating, garbage or similar shaft. The following materials may be used where non-combustible materials are required:- 5. Plasterboard. 6. Perforated gypsum. 7. Fibrous-plaster sheeting to AS 2185. 8. Fibre-reinforced cement sheeting. 9. 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. 10. Sarking-type materials that do not exceed 1mm thickness and have a flammability index not greater than 5. 11. 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. 12. Any product as determined by testing to AS 1530.1 13. An appropriately BCA accredited product or system	current Certificate of Accreditation, or the like to determine their acceptance by the Fire Safety Engineer and Fire Brigade.	
		A performance solution is needed to permit any combustible elements in the external walls and any attachments, including heritage timber façade elements.	Performance Solution
C1.10	**Fire hazard properties** Floor materials, floor coverings and wall and ceiling lining materials need to comply with prescribed fire hazard properties. Refer to Appendix C1.10 & compliance with AS5637.1-2015	Compliance assumed and will require verification test data for all timber and other combustible linings and materials, including: 1. Carpets 2. Vinyls (walling and flooring) 3. Timber flooring and wall linings 4. Veneered wall panelling 5. Spray-on insulation material 6. Other combustible finishes 7. Carpark soffit insulation fire test reports, based on 'room fire testing' will be required to meet fire brigade consent conditions if applicable.	Compliance Readily Achievable

Clause	Description	Comment	Status
C1.11	**Performance of external walls in fire**	-	N/A
C1.12	-	This Clause has deliberately been left blank	-
C1.13	**Fire-protected timber: Concession**	-	N/A
C1.14	**Ancillary elements**	An ancillary element must not be fixed, installed or attached to the internal parts or external face of an external wall that is required to be non-combustible unless it is non-combustible or as specified under this clause.	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.	Applicable
C2.2	**General floor area and volume limitations (Type A construction)** The floor area and volume limitations are: Class 5, 9b or 9c: 8,000m^2 and 48,000m^3 Class 6, 7, 8 or 9a: 5,000m^2 and 30,000m^3 **Note:** • The basement carpark levels are not required to be considered as they're provided with a sprinkler system throughout	A compartmentation plan is needed to confirm the size of each fire compartment in the building. The existing heritage building appears to form a single compartment that may exceed the limitations under this clause and may require a performance solution.	Additional Details Required
C2.3	**Large isolated buildings**	-	N/A
C2.4	**Requirements for open space and vehicular access**	-	N/A
C2.5	**Class 9a and 9c buildings**	-	N/A
C2.6	**Vertical separation of openings in external walls**	-	N/A
C2.7	**Separation by fire walls** A fire wall must extend to the underside of a floor having an FRL required for a fire wall or the roof covering.	-	N/A
C2.8	**Separation of classifications in the same storey** As the building has parts of different classifications located alongside one another in the same storey each building element must have the higher FRL prescribed in Specification C1.1 of the BCA or the parts must be separated by a fire wall.	A performance solution is proposed to reduce FRLs for storage areas throughout the building.	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.	A performance solution is proposed to reduce FRLs for storage areas throughout the building. Floors throughout the building should generally otherwise comply with the BCA.	Compliance Readily Achievable
C2.10	**Separation of lift shafts**	The hotel arrival lifts on ground level also serve levels below and are not proposed	Performance Solution

Clause	Description	Comment	Status
	Openings for lift landing doors and services must be protected in accordance with the DTS provisions of Part C3 of the BCA	to be wholly contained within a fire rated shaft. The atrium lifts between levels 2-6 also extend down to basement level 1 and are not proposed to be wholly contained within a fire rated shaft.	
C2.11	**Stairways and lifts in one shaft**	-	Compliance Readily Achievable
C2.12	**Separation of equipment** Two-hour fire enclosure is required for: • lift motor rooms • emergency generators sustaining emergency equipment operating in emergency mode • central mechanical smoke control plant • boilers • a battery system installed in the building that has a total voltage of 12 volts or more and a storage capacity of 200 kWh or more.	-	Compliance Readily Achievable
C2.13	**Electricity supply system** A substation located within a building or main switchboard, which sustains emergency equipment, must be separated from the remainder of the building by 2hr fire rated construction. Switchboards sustaining emergency equipment must be constructed so that emergency equipment switchgear is separated from non-emergency equipment switchgear by metal partitions designed to minimise the spread of faults.	-	Compliance Readily Achievable
C2.14	**Public corridors in Class 2 & 3 buildings** Public corridors must be divided at intervals of not more than 40m by smoke-proof walls complying with Clause 2 of Specification C2.5.	The class 3 public corridor that forms part of the atrium will not meet the requirements of this clause and requires a performance solution.	Performance Solution
Part C3 – Protection of Openings			
C3.1	**Application of Part**	-	Applicable
C3.2	**Protection of openings in external walls** Openings in the external walls of the building are to be protected in accordance with C3.4, being fire rated windows, external sprinklers or the like, if: less than 3m to side or rear boundary, less than 6m from the far boundary of a road or lane, Less than 6m from another building on the same allotment. Openings that require protection should not occupy more than $^1/_3$ of the storey in which they occur.	A fire engineering strategy should be developed for non-protection of any façade openings exposed to the eastern and southern property boundaries, including openings between building elements such as columns, beams and the like, in the plane formed at the construction edge or perimeter of the building.	Performance Solution

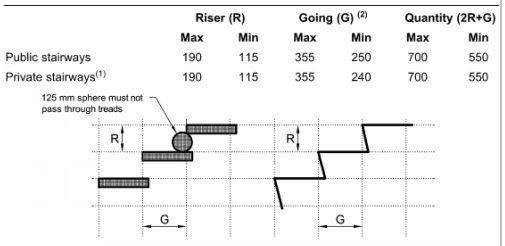
Clause	Description	Comment	Status
C3.3	**Separation of external walls and associated openings in different fire compartments** External walls within the distances specified in Table C3.3 of the BCA are to be protected by construction with an FRL not less than 60/60/60 and the associated openings protected in accordance with Clause C3.4 of the BCA. **Angle between walls** — **Min. Distance** 0° (walls opposite) — 6 m more than 0° to 45° — 5 m more than 45° to 90° — 4 m more than 90° to 135° — 3 m more than 135° to less than 180° — 2 m 180° or more — Nil	A fire compartment plan for the building is needed to determine whether external walls between adjacent compartments are exposed to one another.	Additional Details Required
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/-	-	Compliance Readily Achievable
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.	-	Compliance Readily Achievable
C3.6	**Sliding fire doors**	-	N/A
C3.7	**Protection of doorways in horizontal exits**		N/A
C3.8	**Openings in fire-isolated exits** -/60/30 self-closing fire doors are required to doorways providing access to fire isolated stairways. A window or other opening in the external wall of the fire isolated exit is to be protected in accordance with Clause C3.4 if it is within 6m of, and exposed to, a window or other opening in the wall of the same building.	-	Compliance Readily Achievable
C3.9	**Service penetrations in fire-isolated exits** Service penetrations other than electrical wiring for essential service installations, pressurisation ducts with an FRL of -/120/60, or water pipes for fire services are not permissible.	-	Compliance Readily Achievable
C3.10	**Openings in fire-isolated lift shafts** Openings in lift shafts are to be protected by -/60/- fire doors complying with AS1735.11. Lift indicator panels are to be backed by construction having an FRL of not less than -/60/60 if it exceeds 35,000mm^2 (175 X 200 mm).	Certification from the lift supplier is required for the installation of the new lift.	Compliance Readily Achievable

Clause	Description	Comment	Status
C3.11	**Bounding construction: Class 2, 3, 4 and 9 buildings** Doorways opening to public corridors are to be protected with self-closing -/60/30 fire doors.	-	Compliance Readily Achievable
C3.12	**Openings in floors and ceilings for services** Services passing through floors are to be placed within fire resisting shafts or in accordance with Clause C3.15.	Services penetrations of fire rated structure generally need to be fire-stopped and/or located in fire rated riser shafts. Openings in fire rated elements need to be fire resisting to maintain the function of the elements.	Compliance Readily Achievable
C3.13	**Openings in shafts** In a building of Type A construction, an opening in a wall providing access to a ventilating, pipe, garbage, or other service shaft must be protected by: • If it is a sanitary compartment - a door or panel which together with its frame, is non-combustible or has an FRL of not less than -/30/30, or • A self-closing -/60/30 fire door or hopper, or • An access panel with an FRL of not less than -/60/30, or • If the shaft is a garbage shaft - a door or hopper of non-combustible construction.	-	Compliance Readily Achievable
C3.14	-	This clause has deliberately been left blank	-
C3.15	**Openings for service installations** Services penetrations through a building elements (other than an external wall or roof) that are required to have an FRL with respect to integrity or insulation or a resistance to the incipient spread of fire, must comply with a tested system or with Specification C3.15 Methods and materials used are to be identical to tested prototypes and in accordance with AS4072.1 and AS1530.4, and having achieved the required FRL or resistance to the incipient spread of fire or other specified method. , or differ from a prototype assembly of the service, building element and protection method in accordance with Section 4 of AS 4072.1 Ventilation and air-conditioning systems are to be installed in accordance with AS/NZS 1668.1.	Any system used must be a certified system and installed in accordance with the tested method. Specifications of the methods of fire sealing need to be provided.	Compliance Readily Achievable
C3.16	**Construction Joints** Construction joints in elements required to have a fire resistance with respect to integrity and insulation must be protected.	Construction joints are to be installed in accordance with a tested prototype in accordance with AS1530.4.	Compliance Readily Achievable
C3.17	**Columns protected with lightweight construction to achieve an FRL**	Columns must be protected in accordance with the identical tested prototype.	Compliance Readily Achievable

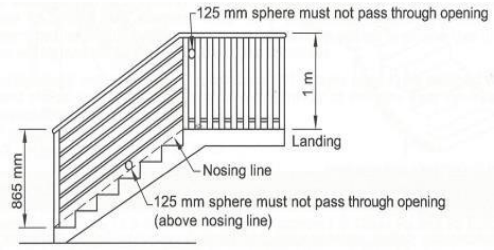
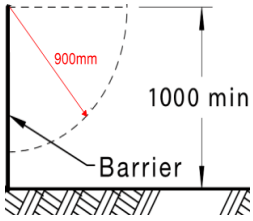
Clause	Description	Comment	Status
Section D: Access and Egress			
Part D1 - Provision for Escape			
D1.1	**Application of Part**	-	Applicable
D1.2	**Number of exits required** At least two exits need to serve all areas of every storey as follows: High rise buildings over 25m in effective height. Each basement level. Access to an exit must be provided without passing through another SOU.	A performance solution is needed to permit access to a single exit in the following areas: • The scissor stair lift lobby on basement level 02. • The northern plant room on level 8. • The northern plant room on level 9.	Performance Solution
D1.3	**When fire-isolated stairways and ramps are required** Every stair in a Class 5 to 9 building must be fire isolated unless it does not connect or pass through more than 3 consecutive floors in a sprinkler protected building, or 2 storeys in a non-sprinkler protected building.	-	Compliance Readily Achievable
D1.4	**Exit travel distances** No point on the floor must be more than 20m to an exit or a point in which travel in different directions to 2 exits is available, in which case, the maximum distance to 1 exit cannot exceed 40m. (Refer to concession under Spec E1.5a for Class 2 and 3 buildings not more than 25m in effective height with a sprinkler system complying with AS 2118.1 or AS 2118.4)	A performance solution is proposed to permit the following extended travel distances on commercial and carpark floors (excludes hotel part): • 30m to a point of choice • 60m to the nearest exit	Performance Solution
		A performance based egress strategy is proposed to between neighbouring allotments and buildings that share the common mall space on basement level 01 and lower ground level.	Performance Solution
D1.5	**Distance between alternative exits** The following travel distance limits apply: • ≤ 20m to a single exit or to a point of choice to alternative egress paths, and • ≤ 40m to the closest alternative exit; • ≤ 60m travel distance between alternative exits and not less than 9m between alternative exits; • Exit paths to alternative exits should not converge at any point to be less than 6m apart.	A performance solution is proposed to permit the following extended travel distances: • 90m between alternative exits	Performance Solution
		The converging alternative egress paths in the plant areas on level 7 & 9 are less than 6m apart and require a performance solution.	Performance Solution

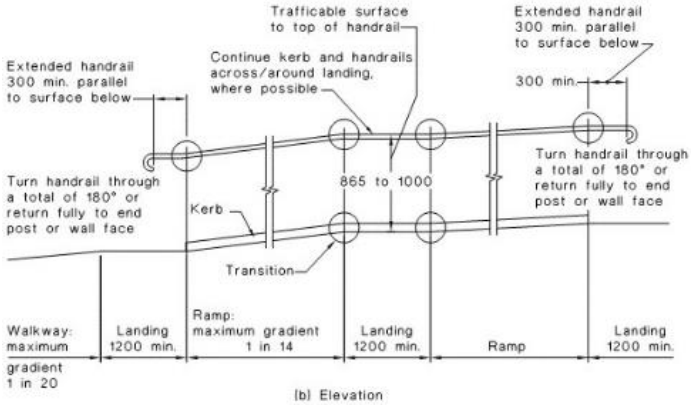
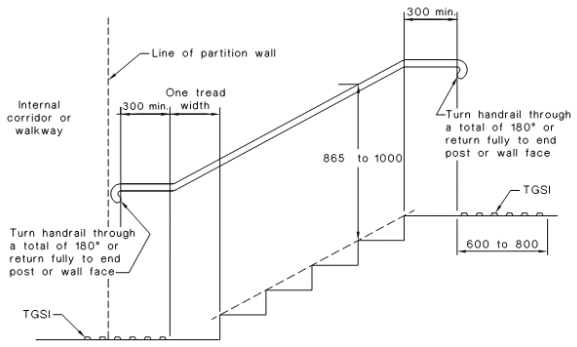
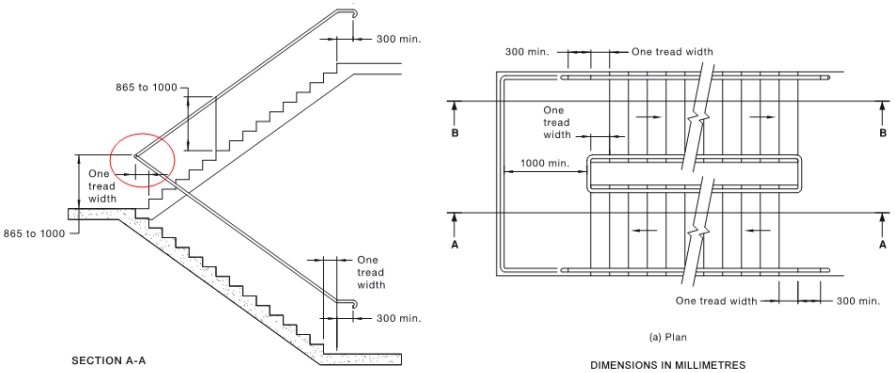
Clause	Description	Comment	Status
D1.6	**Dimensions of exits and paths of travel to exits**	Exit widths are generally capable of complying throughout the building. The building will generally accommodate the following number of occupants on each floor: • Office tower floors having access to 2 exits – 200 occupants. • Level 2-7 – 200 occupants. • Ground floor – 380 occupants. The number of occupants permitted on basement level 1 and the lower ground floor will depend on the future, performance based egress strategy. Compliance generally looks achievable and exact populations will be able to be confirmed at Construction Certificate stage.	Compliance Readily Achievable
D1.7	**Travel via fire-isolated exits**	The basement fire stair that discharges to the covered plaza on the lower ground floor requires a performance solution.	Performance Solution
D1.8	**External stairways or ramps in lieu of fire-isolated exits**	-	N/A
D1.9	**Travel by non-fire-isolated stairways or ramps**	-	Compliance Readily Achievable
D1.10	**Discharge from exits** An exit must not be blocked nor be capable of being blocked at its point of discharge.	Details of the methods of protection of the doors are required to be provided on the plans to demonstrate compliance against the requirements of BCA Clause D1.10.	Compliance Readily Achievable
D1.11	**Horizontal exits**	-	N/A
D1.12	**Non-required stairways, ramps or escalators** 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.	-	Compliance Readily Achievable
D1.13	**Number of persons accommodated**	-	Noted
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 plant room with a floor area not more than 100m^2, or all but one point of egress from a plant room with a floor area not more than 200m^2.	-	Compliance Readily Achievable
D1.17	**Access to lift pits** Access requirements apply to lift pits over 3m in depth.	Lift consultant to confirm.	Compliance Readily Achievable
D1.18	**Egress from early childhood centres**	-	N/A

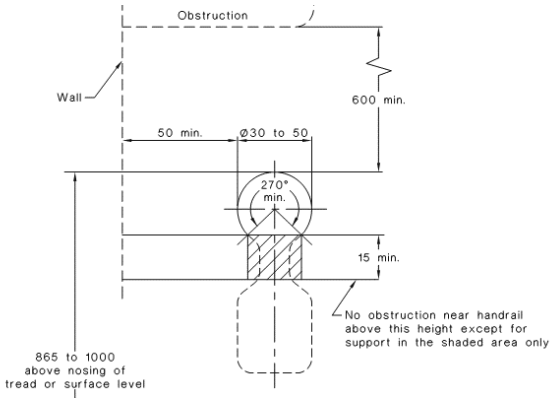
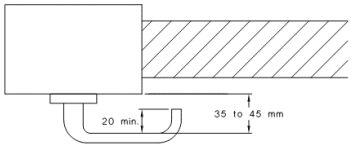
Clause	Description	Comment	Status
Part D2 – Construction of Exits			
D2.1	**Application of Part**		Applicable
D2.2	**Fire-isolated stairways and ramps** Fire resisting shafts must be constructed of non-combustible materials and so that if there is local failure it will not cause structural damage or impair the fire resistance of the shaft	-	Compliance Readily Achievable
D2.3	**Non-fire-isolated stairways and ramps** Required stairs in a building having a rise in storeys of not more than 2 must be constructed only of reinforced or prestressed concrete, or steel not less than 6mm thick or timber that has a finished thickness of not less than 44mm and an average density of not less than 800 kg/m^3 at a moisture content of 12%.	-	Compliance Readily Achievable
D2.4	**Separation of rising and descending stair flights**	A performance solution is needed to permit a direct connection between rising and descending stair flights in the high-rise scissor stair between basement level 02-04.	Performance Solution
D2.5	**Open access ramps and balconies**	-	N/A
D2.6	**Smoke lobbies**	-	N/A
D2.7	**Installations in exits and paths of travel** Electrical meters and motors, distribution boards and telecommunication boards must not be accessed from fire isolated exits and, if located in corridors leading to exits, should occur in non-combustible or fire protective smoke sealed enclosures. No openings to ducts conveying hot products of combustion permitted in required exits. Gas or fuel services not permitted in required exits. Electric or services equipment in paths of travel to exits must be within a non-combustible and smoke sealed enclosure.	Install non-combustible linings to the internal walls, ceiling and doors of relevant cupboards and install smoke seals to the doors.	Compliance Readily Achievable
D2.8	**Enclosure of space beneath stairs and ramps**	-	N/A
D2.9	**Width of required stairways and ramps** A stairway or ramp more than 2m in width is only counted as having a width of 2m unless it is divided by a continuous handrail or balustrade between landings and each division is less than 2m wide.	-	Noted
D2.10	**Pedestrian ramps** Ramps serving as required exit must have a gradient not less steep than 1:8. If the ramp is required for disabled access under Part D3 it must comply with AS1428.1. The surface of the ramp must have a non-slip finish.	-	Compliance Readily Achievable
D2.11	**Fire-isolated passageways** Fire isolated passageways are to have an FRL equivalent to the fire resisting stair shaft as specified in Specification C1.1 when tested from the outside	-	Compliance Readily Achievable
D2.12	**Roof as open space**	-	Compliance

Clause	Description	Comment	Status
	The roof is required to have an FRL of not less than 120/120/120 and not incorporate any roof lights or other openings within 3m of the path of travel.		Readily Achievable
D2.13	**Going and risers** To provide safe passage, stairways must comply with the following: minimum 2 risers / maximum 18 in each flight risers 115mm min 190 mm max - going 250mm min 355mm max - 2R+G 550mm min 700mm max. Adjacent risers, or between adjacent goings a 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  	-	Compliance Readily Achievable
D2.14	**Landings** Ramps Surfaces, stair tread surfaces or nosing strips, and stair landing surfaces, or landing nosing strips to a flight below, must achieve slip-resistance classifications to AS4586-2013 as follows: **Application** / **Dry Surface Conditions** / **Wet Surface Condition** 1:14 or steeper ramps — P4 or R11 — P5 or R12 Ramps of 1:14 to 1:20 — P3 or R10 — P4 or R11 Tread or Landing Surface — P3 or R10 — P4 or R10 Nosing Strip or Landing Strip — P3 — P4	Certification / test reports on the slip resistance of the surfaces will need to be provided on constructed elements.	Compliance Readily Achievable
D2.15	**Thresholds** 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	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

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

Clause	Description	Comment	Status
	maximum height of 25mm over the threshold • In a building required to be accessible and the doorway opens to a road or open space and is provided with a threshold ramp or step ramp in accordance with AS1428.1, • Or in any other case a single 190mm step is permitted at doors leading to the exterior.		
D2.16	**Barriers to prevent falls** Requirements apply to the provision and design of barriers at locations where a person could fall 1m or more. Generally, 125mm maximum gap size limits apply between balusters or rails and a 1m minimum height applies, with alternate dimensions permitted in fire isolated stairs and industrial areas.  Where the level of the surface below is 4m or more, a balustrade or other barrier must not facilitate climbing of horizontal elements between 150mm and 760mm above the floor. Climbable elements cannot be located within 900mm of the top rail of each balustrade where the fall is greater than 4m. This measurement is taken in an arc as seen in the extract below  	-	Compliance Readily Achievable
D2.17	**Handrails** Handrails to exits including parts of fire isolated exit serving an area required to be accessible to people with disabilities must comply with Clause 12 of AS1428.1, viz: Handrails not to obstruct circulation space 30-50mm diameter 865-1000mm above nosing line of stairs 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	Handrail details to be confirmed by the access consultant Handrails are to be provided in compliance with Clause D3.3 and include the following- **Non-Fire Isolated Stairways and Ramps** All stairs and ramps not used as an emergency exit are to have handrails installed on both sides that comply with Clause 10 & 11 of AS1428.1-2009 **Fire Isolated Stairways and Ramps** In Fire Isolated Stairways & Ramps a handrail is required to be installed to at least one side of stair flights and located not less than 865mm above the nosing's of stair treads and the floor surfaces of landings	Compliance Readily Achievable

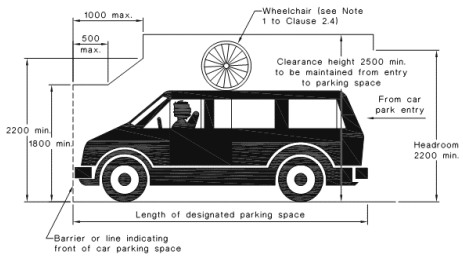
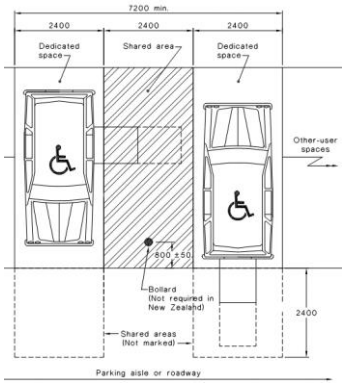
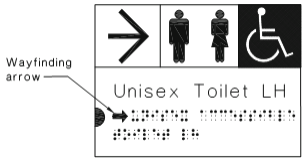
Clause	Description	Comment	Status
	curled ends	**Consistent Handrail Heights for all stairways** The height of the top of the handrail, measured at a height of between 865mm – 1000mm vertically from the stair nosing shall be consistent throughout the ramp (or stairs) and any landings. All stairs including 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  DIMENSIONS IN MILLIMETRES	

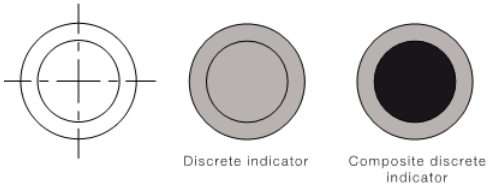
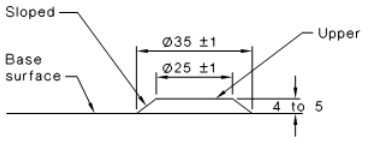
Clause	Description	Comment	Status
	Handrail Profile 		
D2.18	**Fixed platforms, walkways, stairways and ladders** Platforms, walkways, stairs, ladders and the like that give access to and around plant and equipment, machine rooms, attic spaces and other low use areas of the building are permitted provided that construction details are to AS1657.	-	Compliance Readily Achievable
D2.19	**Doorways and doors** Must not be revolving door, roller shutter or tilt door. Can be fitted with a sliding door if it leads directly to open space and can be opened manually under a force of not more than 110N and be fitted with a fail-safe device if the door is power operated.	Auto sliding doors at the entries into the building must comply with these requirements.	Compliance Readily Achievable
D2.20	**Swinging doors** Defined exit doors that serve a part of a building with a floor area over 200m^2 must swing outward in the direction of exit travel. Must not encroach more than 500mm into the required width of the stair or 100mm when fully open and swing in the direction of travel.	The inward swinging single exit doors serving the lower ground level retail spaces require hold-open devices.	Compliance Readily Achievable
D2.21	**Operation of latch** Exit doors should be provided with “free handle” egress via a downward or pushing action and, if serving an area accessible to people with disabilities, must have non-slip “D” pull handles with 35-45mm hand clearances.  (a) Isometric view  (b) Plan view Where the latch operation device is not located on the door leaf itself- manual controls to power-operated doors must be at least 25 mm wide, proud of the surrounding surface and located not	All exit doors and doors in the path of travel must comply.	Compliance Readily Achievable

Clause	Description	Comment	Status
	less than 500 mm from an internal corner; and for a hinged door, between 1 m and 2 m from the door leaf in any position; and for a sliding door, within 2 m of the doorway and clear of a surface mounted door in the open position. braille and tactile signage complying with Clause 3 and 6 of Specification D3.6 must identify the latch operation device.		
D2.22	**Re-Entry from Fire-Isolated Exits** Fire isolated stair doors must facilitate re-entry from within the stair back onto the floor on every 4th level at all times and on all levels in the event of a fire alarm, where serving a health care or aged care building or where the exit stair serves a storey above 25m in effective height. Doors of fire-isolated exits must not be locked from the inside of a fire-isolated exit, unless: Option 1 All doors are fitted with a fail-safe device that automatically unlocks the door upon activation of a fire alarm; **AND** On at least every fourth storey, the doors are not able to be locked at all and are sign posted stating re-entry is available at that level. Option 2 All doors are fitted with a fail-safe device that automatically unlocks the door upon activation of a fire alarm; **AND** An intercommunication or audible/visual alarm system is provided within the stair to assist persons who may accidentally be locked within the stair.	-	Compliance Readily Achievable
D2.23	**Signs on doors** Signage in capital letters not less than 20mm high to be provided on doors as follows An automatic door held open by an automatic hold-open device: **FIRE SAFETY DOOR - DO NOT OBSTRUCT** for a self-closing door **FIRE SAFETY DOOR** **DO NOT OBSTRUCT** **DO NOT KEEP OPEN** for a door discharging from a fire-isolated exit **FIRE SAFETY DOOR - DO NOT OBSTRUCT**	Under Section 108 of the Environmental Planning and Assessment (Development Certification and Fire Safety) Regulation 2021 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:	Compliance Readily Achievable

Clause	Description	Comment	Status
		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.	
D2.24	**Protection of openable windows** Windows serving a residential bedroom or serving an early childhood centre must be protected where the floor is 2m or more above the external surface below. Window openings must be provided with protection if the floor below the window is 2m or more above the surface beneath in the bedrooms of Class 2 or 3 buildings or Class 9b early childhood centre. Where the window sill is below 1.7m above the floor level, the openable portion of the window must be protected with a device to restrict the window opening or a screen with secure fittings A device or screen required must: not permit a 125mm sphere to pass through the window opening or screen; and resist an outward horizontal action of 250N against the window restrained by a device or screen protecting the opening and have a child resistant release mechanism if the screen or device is able to be removed, unlocked or overridden. Where the fall distance from the floor to the surface below is 4m or more or where a release device occurs to a required screen, an additional barrier at 865mm above floor level is required and must be non-climbable with gaps no greater than 125mm between elements.	-	Compliance Readily Achievable
D2.25	**Timber stairways: Concession**	-	N/A
NSW D2.101	**Doors in the path of travel in an Entertainment Venue**	-	N/A
Part D3 – Access for People with Disabilities			
D3.1	**General building access requirements** Access is generally required for persons with a disability throughout all areas unless specifically exempted.	Access is required throughout. Consultation with the access consultant is required.	Compliance Readily Achievable
D3.2	**Access to buildings** External access to the building for people with a	Refer to access consultant's report.	Compliance Readily Achievable

Clause	Description	Comment	Status
	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.		
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 if AS 1428.1. Every stairway, except a fire isolated stairway, must comply with Clause 11 of AS 1428.1. A fire isolated stairway must comply with Clause 11(f) and (g) of AS 1428.1. Every passenger lift must comply with Clause E3.6. Access ways must have passing spaces and turning spaces complying with AS 1428.1. A ramp or passenger lift need not be provided to serve a storey or level other than the entrance storey of a class 5, 6, 7b or 8 building containing not more than 3 storeys and with a floor area of each storey, excluding the entrance floor, of not more than 200m². Pile height or pile thickness of carpets shall comply with the requirements of this Clause and AS 1428.1.	Refer to access consultant's report.	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.	-	Noted
D3.5	**Accessible carparking** 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.	-	Compliance Readily Achievable

Clause	Description	Comment	Status
	 		
D3.6	**Signage** Braille and tactile signage complying with Specification D3.6 and incorporating the international symbol of access or deafness in accordance with AS1428.1 must identify every accessible sanitary facility and space with a hearing augmentation system. Every doorway required to be provided with an exit sign under Clause E4.5 is to be provided with braille and tactile signage that states "**EXIT**" and identify the floor level "**LEVEL #**".  Signage must be provided within a room containing hearing augmentation identifying the type of hearing augmentation, the area covered in the room and if receivers are being used and where the receivers can be obtained. Signage identifying ambulant accessible sanitary facilities in accordance with AS 1428.1 must be located on the door of the facility. 	Signage details must be in accordance with AS1428.1 - 2009 and Specification D3.6 of the BCA.	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**	-	N/A
D3.8	**Tactile indicators (TGSIs)** Tactile indicators are to be provided to all stairways, ramps and escalators must be provided to warn people who are blind or have a vision impairment that they are approaching: a stairway, other than a fire-isolated stairway, 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	Refer to access consultant's report.	Compliance Readily Achievable
D3.9	**Wheelchair seating spaces in Class 9b assembly buildings**	-	N/A
D3.10	**Swimming pools** Not less than 1 means of accessible water entry/exit in accordance with Specification D3.10 must be provided.	-	Compliance Readily Achievable

Clause	Description	Comment	Status
	An accessible entry/exit must be by means of— a fixed or movable ramp and an aquatic wheelchair; or a zero depth entry and an aquatic wheelchair; or a platform swimming pool lift and an aquatic wheelchair; or a sling-style swimming pool lift. Latching devices on gates and doors forming part of a swimming pool safety barrier need not comply with AS 1428.1.		
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 requires a fire hydrant system in accordance with AS 2419.1 – 2005. Where a sprinkler system is installed in the building in accordance with AS 2118.1, AS 2118.4, AS 2118.6, FPAA101H or FPAA101D the fire hydrant booster protection requirements of clauses 7.3(c)(ii) and 7.3(d)(iii) of AS 2419.1 do not apply The fire brigade booster assembly is required to be installed in accordance with AS2419.1 – 2005 except that it may be located between 3.5m and 10m of the building where the assembly is protected by an adjacent fire-rated freestanding wall that— achieves an FRL of not less than 90/90/90; and extends not less than 1 m each side of the outermost fire hydrant booster risers within the assembly and is not less than 3 m wide; and extends to a height of not less than 2 m above finished ground level.	Full compliance with AS2419.1 will be required unless varied via fire brigade approval. A fire hydrant design for the building is needed for review, including the hydrant booster location and fire hydrant locations to review coverage. These items can be shown on the architectural plans. The hydraulic engineer must ensure that compliant coverage is provided to all areas of the building from the internal hydrants and must provide design certification to accompany the drawings certifying the design complies with Clause E1.3 of the BCA and AS2419.1 – 2005 (noting any non-compliances, which are to be addressed as an Alternative Solution). *Note 1: The hydrant hose must extend at least 1m into rooms to be counted for coverage.* *Note 2: If full coverage is not provided from hydrants located within the stairs alone. Intermittent hydrant outlets can be installed to achieve a compliant coverage. The hydrants are to be located not more than 25m from another hydrant to allow for progressive attack.*	Additional Details Required

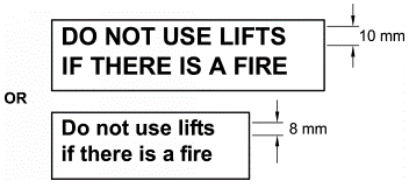
Clause	Description	Comment	Status
		Note 3: As the building has an effective height of greater than 25m the system is required to be installed in the configuration of a ring main	
		A performance solution is needed to permit the location of the hydrant pump room, which does not open directly into the adjacent fire stair.	Performance Solution
E1.4	**Fire hose reels** Fire hose reel coverage to AS2441-2005 is required throughout with hose reels located adjacent to stairs and exits. Where coverage is not achieved with hose reels located Additional hose reels are permitted to be located along the paths of travel to achieve coverage where Hoses are not permitted to pass through fire or smoke doors to achieve hose reel cover. Note: Fire hose reels not required to: - Class 2, 3, 4, 5 and 9c buildings; Class 8 electricity network substations; Classrooms and associated corridors in primary and secondary schools	Fire hose reels should be illustrated throughout the building to review coverage and must generally be located within 4m of an exit. Note Class 3 & 5 exemptions. The hydraulic engineer must ensure that compliant coverage is provided to all areas of the building and must provide design certification to accompany the drawings certifying the design complies with Clause E1.4 of the BCA and AS2441 – 2005.	Additional Details Required
E1.5	**Sprinklers** Fire sprinkler protection to AS2118.1-1999 or AS2118.6-2012 as relevant is a mandatory requirement for the project if:- The building effective height exceeds 25m. (If any part of the development exceeds 25m effective height, all parts of the complex require sprinklers.) Class 2 or 3 building and any other class of building containing a Class 2 or 3 part (Note: residential care buildings are excluded), throughout the whole building including any part of another class, if any part of the building has a rise in storey of 4 or more and an effective height of not more than 25m. An enclosed carpark with more than 40 cars occurs. A retail fire compartment over 3,500m^2/21,000m^3 occurs. Sprinkler pumps and valves must be accessible from the street. Sprinkler system activation must be linked to an audible occupant warning system. Sprinkler hazard Class under AS2118 needs to be agreed where uncertainty of usage under Appendix 1 of the Code occurs.	The services engineer is to provide detailed design documents and design certification for the sprinkler design confirming compliance Specification E1.5 or Specification E1.5a. Any non-sprinkler protected areas and other AS2118 departures need to be identified and included in the fire engineering review (EP1.4). These areas need to be confirmed but could include: • Apartment balconies. • External under croft areas • Radiation therapy bunkers • PC3 laboratories • Chemical stores • Dangerous goods stores • Flammable liquids stores • MRI/PET areas • Server rooms • Operating theatres (TBC) • Data centres and related UPS • Bridge links to adjacent buildings • Shower recesses or low risk bathroom areas or the like	Compliance Readily Achievable
		A sprinkler system is required throughout. Control valves must be accessed directly from open space unless approved as part of a performance solution and should be illustrated for review.	Additional Details Required
E1.6	**Portable fire extinguishers** Portable Fire Extinguishers are required be installed	Fire extinguishers are required within 10m of every residential SOU entry door.	Compliance Readily

Clause	Description	Comment	Status
	to Table E1.6 and AS 2444 requirements, at: Throughout Class 5 buildings emergency services switchboards kitchens flammable liquid stores at nurses' stations special risk areas where fire hose reels are not installed Class 2, 3 or 4 residential areas are to be protected by 2.5kg ABE type fire extinguishers located in common areas on the storey served and located not more than 10m from each sole occupancy unit entry door.		Achievable
E1.7	-	This Clause has deliberately been left blank	-

E1.8	**Fire control centre**
	A fire control centre for Fire Indicator, Fire Fans Control and Emergency Intercom panels is required for buildings of over 25m in effective height or buildings over 18,000m^2 in area, at a location readily available for firefighting operations and located at or near the main building entry.
	Buildings over 50m in effective height require a fire rated fire control room with prescribed requirements for layout, access, location and equipment with the following features:
	• 2 hr FRL concrete/masonry construction.
	• Low hazard linings (per fire stairs)
	• No extraneous services passing through
	• 2 hr fire FRL doors
	• No penetrations through floor over
	• 2-hour fire dampers, etc.
	• Two access points needed, one from front entry foyer of building and one from public place.
	• Dedicated fire isolated pressurisation system to ventilate with 30 air changes required.
	• Contents required:
	  ○ FIP
	  ○ Controls for pumps, fans and other emergency gear
	  ○ Phone
	  ○ Whiteboard and pinup board
	  ○ Plan layout table
	  ○ Tactical fire plans
	  ○ May also contain
	  ▪ MECP
	  ▪ Lift annunciation panels
	  ▪ Gas/electric controls
	  ▪ Emergency generator backup
		-	Compliance Readily Achievable

E1.9	**Fire precautions during construction** Fire services are required during construction, including fire hydrants and hose reels which must be	Further discussion required with builder to determine that this is included in their program.	Compliance Readily Achievable

Clause	Description	Comment	Status
	active and operational after the building reaches a construction stage effective height of 12m. When the building reaches 12m effective height: All required hydrants and hose reels must be operational on every storey covered by a roof or floor slab over, except for the two uppermost storeys. Any required booster connections must be installed.	BCA compliance with respect to fire services during construction can be problematic as hydrants with required pressures and flows and booster connections often cannot be achieved at the required time. A temporary fire protection system, possibly with temporary boosters and no fire pumps, may need to be agreed with the fire brigade. This needs to be put in place early in the construction programme and may require liaison with the builder and his fire services contractor.	
E1.10	**Provisions for special hazards**	-	N/A
Part E2 – Smoke Hazard Management			
E2.1	**Applicable of Part**	Part is not applicable to open deck car parks open spectator stands a Class 8 electricity network substation with a floor area not more than 200m^2 storerooms, etc. less than 30m^2 sanitary compartments plant rooms or the like	Applicable
E2.2	**Smoke hazard management - General requirements** **Residential buildings** The following smoke hazard management systems are required for the complex: Stair pressurisation for fire isolated stairs serving a storey over 25m effective height. Stair pressurisation for stairs serving multiple basements. Automatic smoke detection and alarm system complying with AS1670 or AS3786 interconnected smoke alarms within residential areas and sole occupancy units. Common area detection for general occupant warning are also required. Carpark exhausts need to run at full capacity on fire alarm. The following general requirements apply: Stair pressurisation and air-handling shutdown activation must be via smoke detectors located per AS1668.1 and within 3m of the lift doors at each level. The system should also be linked to the building occupant audible alarm system. For buildings above 25m in effective height, activation of any residential corridor alarm	It is proposed to sprinkler protect the building throughout. Fire isolated stairways throughout the building that serve a storey above an effective height of 25m or more than 2 below ground storeys require pressurisation. The residential parts of the building require a smoke detection system complying with Spec. E2.2a. The commercial parts of the building require a zone pressurisation system between vertically separated fire compartments in accordance with AS 1668.1. Smoke exhaust provisions should be assessed for any class 6 fire compartment that exceeds 2000m2 in floor area. Smoke detection systems for smoke control systems throughout the building are generally required to comply with this Specification, including system monitoring.	Compliance Readily Achievable
		It is understood that the design for the smoke exhaust system in the building is being assessed on a performance basis.	Performance Solution

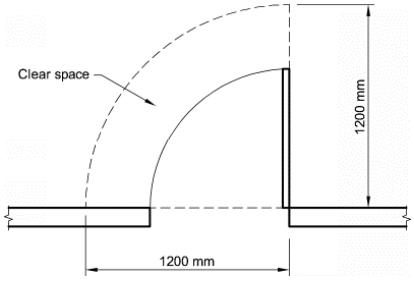
Clause	Description	Comment	Status
	should sound an audible warning to Clause 4.3.4 of AS1670.4 throughout all apartments to achieve a sound level of 75 dB(A) at the bedhead within the apartment. **Retail buildings** The following smoke hazard management systems are required: Retail malls require an automatic smoke exhaust system (BCA Spec E2.2b) with activation via extended spacing smoke detectors and/or sprinkler activation. Smoke exhaust is required for retail fire compartments exceeding 2000m2. Air handling plant not forming part of a smoke hazard management system must be installed to operate as a zoned smoke control system under AS1668.1 or should shut down in fire mode and be fitted with dampers to prevent smoke spread.		
E2.3	**Provisions of special hazards**	-	N/A
Part E3 – Lift Installations			
E3.1	**Lift installations** Electric and electrohydraulic lifts must comply with the design requirements of BCA Specification E3.1.	Certification of lift design to be provided.	Compliance Readily Achievable
E3.2	**Stretcher facility in lifts** Buildings greater than 12m in effective height require a lift sized to accommodate a stretcher of 2m x 0.6m x 1.4m high. The lift must serve every level to which lift access is provided.	Ensure a suitably sized lift serves each level.	Compliance Readily Achievable
E3.3	**Warning against use of lift in fire** Warning signage is required at lift doors advising that lifts should not be used in the event of a fire.	Signage to be installed stating. 	Compliance Readily Achievable
E3.4	**Emergency lifts** Emergency lifts of prescribed size, operation and fire isolation are required in buildings where the building has an effective height over 25m. Where more than two passenger lifts serve a storey, two emergency lifts must be provided, and these must be in separate shafts if multiple lift shafts occur. The following requirements apply to an emergency lift:	At least two emergency lifts are required to serve every storey of the building.	Compliance Readily Achievable

Clause	Description	Comment	Status
	Must serve all storeys served by a passenger lift. Must be contained in a fire rated shaft. If the building effective height exceeds 75m, must have a 600kg rating if not provided with a stretcher facility or a 900kg rating if stretcher facility is provided.		
E3.5	**Landings**	-	Compliance Readily Achievable
E3.6	**Passenger lifts** Every passenger lift must be one of the types identified n Table E3.6a, have accessible features in accordance with Table E3.6b and not reply on a constant pressure device for its operation if the lift car is fully enclosed.	-	Compliance Readily Achievable
E3.7	**Fire service control** Where lifts serve a storey above 12m in effective height: 1. A fire service control switch is required for each lift or lift group. 2. A lift car fire service drive control is required for each lift.	Certification of lift design to be provided.	Compliance Readily Achievable
E3.8	**Residential care buildings**	-	N/A
E3.9	**Fire service recall control switch** The fire service control switch must be located at the landing nominated by the appropriate authority and, when activated, must return all lifts to the nominated floor. If a lift car drive control has been activated, it shall override the landing fire service control switch.	Certification of lift design to be provided.	Compliance Readily Achievable
E3.10	**Lift car fire service drive control switch** The lift car service drive control must be activated from within the lift car. The switch is to be located between 600mm and 1500mm above the lift car floor and be labelled '**FIRE SERVICE**" in indelible white lettering on red background. The "**OFF**" and "**ON**" positions are to be identified.	Certification of lift design to be provided.	Compliance Readily Achievable
Part E4 – Emergency Lighting, Exit and Warning Systems			
E4.1	**-**	This clause has been intentional left blank	-
E4.2	**Emergency lighting requirements** Emergency lighting is to be provided throughout the building.	Emergency lighting is to be provided in: 1. Every fire-isolated stairway, fire-isolated ramp, or fire-isolated passageway. 2. Every passageway, hallway, corridor or the like, that is part of the path of travel to an exit. 3. In every room having a floor area more than 100m^2 that does not open to a	Compliance Readily Achievable

Clause	Description	Comment	Status
		corridor or space that has emergency lighting or to a road or open space. 4. In any room having a floor area more than 300m^2. 5. In every required non-fire isolated stairway. 6. To every room or space that has public access in a Class 6 building if: 7. the floor area is more than 300m2; 8. or if any point on the floor is more than 20m from the nearest doorway opening directly to the road or open space; or 9. if the egress involves a vertical rise within the building of more than 1.5m.	
E4.3	**Measurement of distances**	-	Noted
E4.4	**Design and operation of emergency lighting** Emergency lighting must comply with to AS2293.1	-	Compliance Readily Achievable
E4.5	**Exit signs** Exit signs are to be provided in accordance with Clause E4.5 of the BCA.	Exit signs must be clearly visible to person approaching the exit and must be installed on, above or adjacent to; • A door providing direct egress from a storey to a stairway, passageway or ramp serving as a required exit. • A door from an enclosed stairway, passageway or ramp at every level of discharge to a road or open space. • A door serving as or forming part of a required exit in a storey required to be provided with emergency lighting.	Compliance Readily Achievable
E4.6	**Direction signs** Where an exit is not readily apparent then exit signs with directional arrows must be installed in appropriate positions in corridors, hallways, lobbies and the like indicating the direction to a required exit	-	Compliance Readily Achievable
E4.7	**Class 2 and 3 buildings and Class 4 parts: Exemptions**	-	Applicable
E4.8	**Design and operation of exit signs** Exit signs are to operate in accordance with AS 2293.1. Photo luminescent exit sign are to comply with Specification E4.8	-	Compliance Readily Achievable
E4.9	**Emergency warning and intercom systems** An emergency warning and intercom system complying with AS 1670.4 must be installed throughout the building.	Details demonstrating compliance and design certification will be required from services consultants at Construction Certificate stage.	Compliance Readily Achievable

Clause	Description	Comment	Status
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 weatherproofing performance solution will be required as part of the construction certificate application. 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.	Performance Solution
F1.1	**Stormwater drainage** Stormwater drainage must comply with AS/NZS 3500.3.	Hydraulic drawings and design certification to be provided at Construction Certificate stage.	Compliance Readily Achievable
F1.2	-	This clause has deliberately been left blank	-
F1.3	-	This clause has deliberately been left blank	-
F1.4	**External above ground membranes** External waterproofing membrane systems for roofs, decks, balconies and the like must comply with AS4654 Parts 1 and 2.	The standard membrane detailing for waterproofing including minimum upturn termination lengths, requirements for stepped balcony details at doorways and windows and provision of continuous grates where stepping does not occur.	Compliance Readily Achievable
F1.5	**Roof coverings** Metal sheet roofing complying with AS 1562.1	-	Compliance Readily Achievable
F1.6	**Sarking** Sarking type materials used for weatherproofing of roofs and walls must comply with AS/NZS 4200 Parts 1 and 2.	-	Compliance Readily Achievable
F1.7	**Water proofing of wet areas in buildings** Water proofing of wet areas within a building to comply with AS 3740.	-	Compliance Readily Achievable
F1.8	-	This clause has deliberately been left blank	-
F1.9	**Damp-proofing** Moisture from the ground must be prevented from reaching the lowest floor timber and the walls above the lowest floor joists, the walls above the dam proof course and the underside of a suspended floor constructed of a material other than timber, and the	-	Compliance Readily Achievable

Clause	Description	Comment	Status
	supporting beams or girders. Damp proof course must consist of a material that complies with AS/NZS 2904 or an impervious termite shield in accordance with AS 3660.1.		
F1.10	**Damp-proofing of floors on the ground** A vapour barrier in accordance with AS2870 is to be provided beneath the basement floor slab.	-	Compliance Readily Achievable
F1.11	**Provision of floor wastes** The floor of each bathroom and laundry in each sole occupancy of the Class 2 and 3 building portions must have a floor waste and the floor graded to the floor waste to permit drainage of water.	-	Compliance Readily Achievable
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**	-	Compliance Readily Achievable
F2.2	**Calculation of number of occupants and fixtures**	-	Compliance Readily Achievable
F2.3	**Facilities in Class 3 to 9 buildings** Toilet facilities are required in appropriate numbers based on the number of persons accommodated.	Refer to appendix F2.3 of this report. The number of sanitary facilities will accommodate the following occupants per floor: 1. Office levels 22-43 – **120 staff** 2. Level 06 function space – **300 occupants** 3. Level 02-05 coworking – **100 staff per floor** 4. Basement Supermarket & convenience store, lower ground retail & hotel administration staff – **160 staff** 5. Basement level 1 F&B tenancy: • **40 staff** • **400 patrons** 6. Lower ground – ground café/restaurant: • **20 staff** • **300 patrons** A total of 30 hotel service staff are proposed. A designated area for sanitary facilities is provided on basement level 2. The number of required fixtures is tabulated in Appendix F2.3 if this report.	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	Refer to access consultant's report. Note that a performance solution is needed to permit the location of the accessible	Compliance Readily Achievable

Clause	Description	Comment	Status
	banks on any storey. Facilities should be constructed to AS1428.1 – 2009 although an existing WC facility that fully complies with AS1428.1 – 2001 may substitute as a concession.	bathrooms on the commercial floors that are not at the same 'bank' as the male and female bathrooms.	
F2.5	**Construction of sanitary compartments** Where clear space between closet pan and doorway is less than 1.2m, doors must open outwards, slide or be readily removable from outside.	All hinged doors that swing inward to sanitary facilities and do not comply with achieving a 1200mm clearance to pan are required to be installed with lift-off hinges 	Compliance Readily Achievable
F2.6	**Interpretation: Urinals and washbasins**	Each 600mm length of a continuous urinal trough is counted as 1 urinal.	Noted
F2.7	*(NSW variation – Deleted)*	-	-
F2.8	**Waste management**	-	N/A
F2.9	**Accessible adult change facilities**	-	N/A
Part F3 – Room Heights			
F3.1	**Height of rooms and other spaces** Generally, a minimum ceiling height of 2.4m is required throughout except as permitted under this clause.	-	Compliance Readily Achievable
Part F4 – Light and Ventilation			
F4.1	**Provision of natural light** Natural lighting aggregating 10% of room floor area is required as follows: To all habitable rooms in residential buildings. In bedrooms and dormitories of hotels, motels and the like. To rooms used for sleeping in health care and aged care buildings. To school classrooms and early childhood centres.	-	Noted
F4.2	**Methods and extent of natural lighting**	-	Compliance Readily Achievable
F4.3	**Natural light borrowed from adjoining room**	-	N/A
F4.4	**Artificial lighting** The artificial lighting system must comply with AS/NZS 1680.0.	Design details and certification from an electrical engineer is required.	Compliance Readily Achievable
F4.5	**Ventilation of rooms** Ventilation shall be provided throughout the building in by means of natural ventilation	Design details and certification from an mechanical engineer is required.	Compliance Readily Achievable

Clause	Description	Comment	Status
	complying with Clause F4.6 or mechanical ventilation complying with the requirements of AS1668.2 as required by Clause F4.5 of the BCA.		
F4.6	**Natural ventilation**	-	Compliance Readily Achievable
F4.7	**Ventilation borrowed from adjoining room**	-	Compliance Readily Achievable
F4.8	**Restriction on location of sanitary compartments**	-	Compliance Readily Achievable
F4.9	**Airlocks**	-	Compliance Readily Achievable
F4.10	**-**	This clause has intentionally been left blank	-
F4.11	**Carparks** Basement carparks must be provided with a system of mechanical ventilation complying with AS 1668.2	-	Compliance Readily Achievable
F4.12	**Kitchen local exhaust ventilation** 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.	Commercial kitchen exhaust ducts must be contained within dedicated fire isolated shafts that discharge above the roof in accordance with AS1668.2.	Compliance Readily Achievable
Part F5 – Sound Transmission and Insulation			
F5.1	**Application of Part** Applicable to Class 3 buildings.	A detailed assessment will need to be undertaken by a qualified acoustic consultant at the Construction Certificate stage to verify compliance.	Compliance Readily Achievable
F5.1	**Determination of airborne sound insulation ratings** Construction required to have an airborne sound insulation rating must have the value for weighted sound reduction index (R_w) or weighted sound reduction index with spectrum adaptation term ($R_w + C_{tr}$) determined in accordance with AS/NZS1276.1 or ISO717.1 using result from laboratory measurements, or comply with Specification F5.2 of the BCA.	-	Compliance Readily Achievable
F5.3	**Determination of impact sound insulation ratings** A floor required to have an impact sound insulation rating must have the required value for weighted normalised impact sound pressure level with spectrum adaptation term ($L_{n,w}+C_I$) determined in accordance with AS/ISO 717.2 using results from	-	Compliance Readily Achievable

Clause	Description	Comment	Status
	laboratory measurements or comply with Specification F5.2 of the BCA. Walls that are required to have an impact sound insulation rating must be of discontinuous construction.		
F5.4	**Sound insulation rating of floors** Floors separating sole occupancy units or separating sole occupancy units from a plant room, lift shaft, public corridor, public lobby or the like or parts of different classifications must have an $R_w + C_{tr}$ of not less than 50 and an $L_{n,w} + C_I$ of not more than 62.	-	Compliance Readily Achievable
F5.5	**Sound insulation rating of walls** Walls must have an $R + C_t$ of not less than 50 if it separates sole occupancy units and an R_w of 50 if it separates a sole occupancy unit from a plant room, lift shaft, public corridor, public lobby or the like or parts of different classifications. Compliance with F5.3(b) is required if the wall separates a bathroom, sanitary compartment, laundry or kitchen in one sole occupancy unit from a habitable room (excluding a kitchen) in another adjoining unit or a sole occupancy unit from a plant room or lift shaft. Doors incorporated the walls that separate sole-occupancy units from a stairway, public corridor, public lobby or the like, provided the door assembly has an R_w not less than 30. Where a wall required to have sound insulation has a floor above, the wall must continue to the underside of the floor above or a ceiling that provides the sound insulation required for the wall. Where a wall required to have sound insulation has a roof above, the wall must continue to the underside of the roof above or a ceiling that provides the sound insulation required for the wall.	-	Compliance Readily Achievable
F5.6	**Sound insulation rating of internal services** Services passing through more than one sole-occupancy unit must be separated from the rooms by construction with an $R_w + C_{tr}$ (airborne) not less than: 40 if the adjacent room is a habitable room (other than a kitchen); or 25 if the adjacent room is a kitchen or non-habitable room. Note if a stormwater pipe passes through a sole – occupancy unit it must be separated in accordance with (a) and (b).	-	Compliance Readily Achievable
F5.7	**Sound isolation pumps** A flexible coupling must be used at the point of connection between the service pipes in a building and any circulating or other pump.	-	Compliance Readily Achievable
Part F6 – Condensation management			
F6.1	**Application of part** This part applies to a sole-occupancy unit of a Class 2	-	N/A

Clause	Description	Comment	Status
	building or Class 4 part of a building.		
F6.2	**Pliable building membrane**	-	N/A
F6.3	**Flow rate and discharge of exhaust systems**	-	N/A
F6.4	**Ventilation of roof spaces**	-	N/A
Section G: Ancillary Provisions			
Part G1- Minor Structures and components			
G1.0	**Deemed-to-Satisfy Provisions**	A performance solution is required to address the requirements of GP1.1.	Performance Solution
G1.1	**Swimming pools** *(NSW variation for swimming pools)*	-	Compliance Readily Achievable
G1.2	**Refrigerated chambers, strong rooms and vaults**	-	Compliance Readily Achievable
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			
G2.1	**-**	This clause has intentionally been left blank	-
G2.2	**Installation of appliances**	-	N/A
G2.3	**Open fireplaces**	-	N/A
G2.4	**Incinerator rooms**	-	N/A
Part G3 - Atrium Construction			
G3.1	**Application of Part**	-	Applicable
G3.2	**Dimensions of atrium well** Minimum 6m diameter atrium well is required.	A performance solution is needed to permit the proposed atrium well dimensions.	Performance Solution
G3.3	**Separation of atrium by bounding walls**	An atrium well is required to be separated from the remainder of the building by bounding walls not more than 3.5m from the perimeter of the atrium well, except in the case of 3 consecutive storeys. A performance-based design is proposed.	Performance Solution
G3.4	**Construction of bounding walls**	Bounding walls must have an FRL not less than 60/60/60 or constructed of fixed toughened safety glass or wired safety glass in non-combustible frames protected with wall wetting sprinklers in accordance with Specification G3.8. A performance-based design is proposed.	Performance Solution
G3.5	**Construction of balconies** If a bounding wall separating an *atrium* from the remainder of the building is set back from the *atrium well*, an imperforate and non-	-	Compliance Readily Achievable

Clause	Description	Comment	Status
	combustible barrier not less than 1 m high must be provided.		
G3.6	**Separation at roof** The atrium roof must have an FRL not less than that prescribed in Table 3 of Specification C1.1 or the roof structure and membrane are to be protected by a sprinkler system complying with Specification E1.5 and G3.8	-	Compliance Readily Achievable
G3.7	**Means of egress** All areas within the atrium must have at least 2 means of egress.	-	Compliance Readily Achievable
G3.8	**Fire and smoke control systems** Sprinklers are to be provided throughout in accordance with Specification E1.5 and G3.8. A smoke control system complying with AS/NZS1668.1 and Specification G3.8 is required throughout. An automatic fire detection and alarm system must comply with AS1670.1 and Specification G3.8. A sound system and intercom system for emergency purposes must be provided in accordance with AS1670.4 and must incorporate visual warning devices that operate on alarm and display the words "EVACUATE" in red letters. A suitable alternative power supply (emergency generator) must be provided to operate "required" safety systems in the building in accordance with Specification G3.8. Fire isolated stairways are required to be provided automatic air pressurisation in accordance with AS/NZS1668.1.	The mechanical engineer will need to confirm any compliance departures between the proposed system design and the deemed-to-satisfy requirements of the BCA.	Compliance Readily Achievable
Part G4 - Construction in Alpine Areas			
G4.1	**Application of Part**	-	N/A
G4.2	-	This clause has deliberately been left blank.	-
G4.3	**External doorways**	-	N/A
G4.4	**Emergency lighting**	-	N/A
G4.5	**External trafficable structures**	-	N/A
G4.6	**Clear space around buildings**	-	N/A
G4.7		This clause has deliberately been left blank.	N/A
G4.8	**Fire-fighting services and equipment**	-	N/A
G4.9	**Fire orders**	-	N/A
Part G5 - Construction in Bushfire Prone Areas			
G5.1	**Application of Part**	-	N/A
G5.2	**Protection**	-	N/A
Part G6 – Occupiable outdoor areas			
G6.1	**Application of Part** Applies to occupiable outdoor areas in addition to	-	Applicable

Clause	Description	Comment	Status
	other deemed-to-satisfy provisions of the BCA. Part G6 takes precedent where there is a difference to the deemed-to-satisfy provisions of Sections C, D, E, F & G. Except for clause G6.2, Part G6 does not apply to occupiable outdoor areas of individual resident rooms or outdoor occupiable areas less than $10m^2$.		
G6.2	**Fire hazard properties** A lining, material or assembly in an occupiable outdoor area must comply with C1.10 as for an internal element. The following fire hazard properties of a lining, material or assembly in an occupiable outdoor area are not required to comply with C1.10: (i) Average specific extinction area. (ii) Smoke-Developed Index. (iii) Smoke development rate. (iv) Smoke growth rate index ($SMOGRA_{RC}$)	Proposed materials used in outdoor occupiable areas are subject to C1.10 requirements as this clause.	Compliance Readily Achievable
G6.3	**Fire separation** For the purposes of the Deemed-to-Satisfy Provisions of C2.7, C2.8 and C2.9, a reference to a storey includes an occupiable outdoor area, however a fire wall cannot be used to separate an occupiable outdoor area into different fire compartments.	-	Noted
G6.4	**Provision for escape** For the purposes of the Deemed-to-Satisfy Provisions of Part D1, a reference to a storey or room includes an occupiable outdoor area.	Egress requirements under Part D1 apply to occupiable outdoor areas.	Compliance Readily Achievable
G6.5	**Construction of exits** For the purposes of the Deemed-to-Satisfy Provisions of Part D2, a reference to a storey or room includes an occupiable outdoor area.	Construction of exits requirements under Part D2 apply to occupiable outdoor areas.	Compliance Readily Achievable
G6.6	**Firefighting equipment** Except for Clause 7(b)(i) of Specification E1.5, for the purposes of the Deemed-to-Satisfy Provisions of Part E1, a reference to a storey includes an occupiable outdoor area.	Firefighting equipment required under Part E1 to be designed to include occupiable outdoor areas.	Compliance Readily Achievable
G6.7	**Lift installations** For the purposes of the Deemed-to-Satisfy Provisions of Part E3, a reference to a storey includes an occupiable outdoor area.	Lift designs required under Part E3 to be designed to include occupiable outdoor areas.	Compliance Readily Achievable
G6.8	**Visibility in an emergency, exit signs and warning systems** For the purposes of the Deemed-to-Satisfy Provisions of Part E4, a reference to a storey includes an occupiable outdoor area.	Emergency lighting, exits signs and emergency warning and intercom systems to be designed to include occupiable outdoor areas.	Compliance Readily Achievable
G6.9	**Light and ventilation** For the purposes of the Deemed-to-Satisfy Provisions of F4.4, F4.8 and F4.9, a reference to a room includes an occupiable outdoor area.	-	Noted
G6.10	**Fire orders**	-	N/A

Clause	Description	Comment	Status
Section H: Special Use Buildings – Auditoriums, Public Halls, Public Transport Buildings			
Part H1 - Class 9b Buildings			**N/A**
NSW Part - H102 Temporary Structures			**N/A**
NSW Part - H103 Drive-In Theatres			**N/A**
Part H2 - Public Transport Buildings			**N/A**
Part H3 - Farm Building and Farm Sheds			**N/A**
NSW Section J: Energy Efficiency Energy Efficiency for buildings requires buildings to reduce greenhouse gas emissions by efficiently using energy. A building's services must have features that facilitate the efficient use of energy. The discipline of Energy Efficiency with the BCA has become a specialised field where compliance with BCA Section J is to be certified with the issue of a Certificate of Compliance – Design from the relevant Services Engineer/Consultant. The purpose of this section is to provide a brief explanation of which areas are to achieve compliance with BCA Section J – Energy Efficiency during design and construction. The BCA should be referenced for exact requirements, clarification and further explanation.			
Section J	**Energy efficiency measures** Energy efficiency measures are prescribed for the following building elements to limit energy consumption:- Building fabric External glazing Building sealing Air movement. Air-conditioning and ventilation systems. Artificial lighting and power Hot water supply Access for maintenance	It is understood that the building enclosure is being assessed based on a JV3 assessment, which will also confirm the existing façade elements that can be retained.	Performance Solution
		Compliance of the services designs are assumed, although further information will be required to confirm compliance at construction certificate stage.	Compliance Readily Achievable

15. APPENDIX A – REFERENCED DOCUMENTATION

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

Drawing No.	Title	Issue	Date	Drawn By
BSMART-AR- DAD-10B04000	General Arrangement Plan Basement Level 04	1	01/07/22	Bates Smart Architects
BSMART-AR- DAD-10B03000	General Arrangement Plan Basement Level 03	1	01/07/22	Bates Smart Architects
BSMART-AR- DAD-10B02000	General Arrangement Plan Basement Level 02	1	01/07/22	Bates Smart Architects
BSMART-AR-DAD-10B01000	General Arrangement Plan Basement Level 01	1	01/07/22	Bates Smart Architects
BSMART-AR-DAD-10GR0000	General Arrangement Plan Lower Ground Level	1	01/07/22	Bates Smart Architects
BSMART-AR-DAD-10GR1000	General Arrangement Plan Ground Level	1	01/07/22	Bates Smart Architects
BSMART-AR-DAD-10L02000	General Arrangement Plan Level 02	1	01/07/22	Bates Smart Architects
BSMART-AR-DAD-10L03000	General Arrangement Plan Level 03	1	01/07/22	Bates Smart Architects
BSMART-AR-DAD-10L04000	General Arrangement Plan Level 04	1	01/07/22	Bates Smart Architects
BSMART-AR-DAD-10L05000	General Arrangement Plan Level 05	1	01/07/22	Bates Smart Architects
BSMART-AR-DAD-10L06000	General Arrangement Plan Level 06	1	01/07/22	Bates Smart Architects
BSMART-AR-DAD-10L07000	General Arrangement Plan Level 07	1	01/07/22	Bates Smart Architects
BSMART-AR-DAD-10L08000	General Arrangement Plan Level 08 (Plant)	1	01/07/22	Bates Smart Architects
BSMART-AR-DAD-10L09000	General Arrangement Plan Levels 9 (Plant)	1	01/07/22	Bates Smart Architects
BSMART-AR-DAD-10L10000	General Arrangement Plan Level 10-15	1	01/07/22	Bates Smart Architects
BSMART-AR-DAD-10L16000	General Arrangement Plan Level 16-17	1	01/07/22	Bates Smart Architects
BSMART-AR-DAD-10L18000	General Arrangement Plan Level 18-19	1	01/07/22	Bates Smart Architects
BSMART-AR-DAD-10L20000	General Arrangement Plan Level 20 (Plant)	1	01/07/22	Bates Smart Architects
BSMART-AR-DAD-10L21000	General Arrangement Plan Level 21	1	01/07/22	Bates Smart Architects
BSMART-AR-DAD-10L22000	General Arrangement Plan Level 22	1	01/07/22	Bates Smart Architects
BSMART-AR-DAD-10L23000	General Arrangement Plan Level 23-44	1	01/07/22	Bates Smart Architects
BSMART-AR-DAD-10L45000	General Arrangement Plan Level 45 (Plant)	1	01/07/22	Bates Smart Architects
BSMART-AR-DAD-10L46000	General Arrangement Plan Level 45 (Plant) Upper	1	01/07/22	Bates Smart Architects
BSMART-AR-DAD-10L47000	General Arrangement Plan Roof Level	1	01/07/22	Bates Smart Architects
BSMART-AR-DAD-30001000	General Arrangement Section A	1	01/07/22	Bates Smart Architects

BSMART-AR-DAD-30002000	General Arrangement Section B	1	01/07/22	Bates Smart Architects
BSMART-AR-DAD-30003000	General Arrangement Section C	1	01/07/22	Bates Smart Architects
BSMART-AR-DAD-30004000	General Arrangement Section D	1	01/07/22	Bates Smart Architects
BSMART-AR-DAD-01GR1000	Site Plan Lower Ground Level	1	01/07/22	Bates Smart Architects
BSMART-AR-DAD-01GR2000	Site Plan Ground Level	1	01/07/22	Bates Smart Architects
BSMART-AR-DAD-01001000	Context Plan (Existing)	1	01/07/22	Bates Smart Architects
BSMART-AR-DAD-01002000	Context Plan (Proposed)	1	01/07/22	Bates Smart Architects

16. APPENDIX B – STATUTORY FIRE SAFETY MEASURES

Schedule of Statutory Fire Safety Measures

Measure	Standard of Performance
Access Panels, Doors And Hoppers To Fire Resisting Shafts	BCA 2019 Amendment 1 Clause C3.13 and tested prototypes (AS 1530.4 – 2014)
Automatic Fail Safe Devices	Scheduled devices release upon trip of smoke detection, fire detection and sprinkler activation in accordance with BCA 2019 Amendment 1 Clause D2.21.
Automatic Fire Detection And Alarm System *(Smoke Detection System)*	BCA 2019 Amendment 1 Clause 4 of Specification E2.2a and AS 1670.1 – 2018
Automatic Fire Detection And Alarm System *(Smoke Alarm System)*	BCA 2019 Amendment 1 Clause 3 of Specification E2.2a and AS 3786 – 2014
Automatic Fire Detection And Alarm System *(Within Atriums)*	BCA 2019 Amendment 1 Specification G3.8 and AS 1670.1 – 2018
Automatic Fire Detection And Alarm System *(Smoke Detection System To Operate Zone Smoke Control Or Stair Pressurisation System)*	BCA 2019 Amendment 1 Clause 6 of Specification E2.2a and AS 1670.1 – 2018
Automatic Fire Detection And Alarm System *(Smoke Detection System To Automatically Shut down Air-Handling System)*	BCA 2019 Amendment 1 Clause 6 of Specification E2.2a and AS 1670.1 – 2018
Automatic Fire Detection And Alarm System *(Smoke Detection System To Activate Smoke Exhaust System)*	BCA 2019 Amendment 1 Clause 5 of Specification E2.2a and AS 1670.1 – 2018
Automatic Fire Suppression Systems *(Sprinklers)*	BCA 2019 Amendment 1 Specification E1.5 and AS 2118.1 – 2017
Building Occupant Warning System	BCA 2019 Amendment 1 Clause 7 of Specification E2.2a and AS 1670.1 – 2018
Emergency Lifts	BCA 2019 Amendment 1 Clause E3.4
Emergency Lighting	BCA 2019 Amendment 1 Clause E4.2, E4.4 and AS/NZS 2293.1 – 2018
Emergency Warning And Intercommunication System	BCA 2019 Amendment 1 Clause E4.9, Specification G3.8 and AS 1670.4 – 2018
Exit Signs	BCA 2019 Amendment 1 Clause E4.5, NSW E4.6, E4.7, E4.8 and AS/NZS 2293.1 – 2018
Fire Alarm Monitoring System	BCA 2019 Amendment 1 Clause 8 of Specification E2.2a and AS 1670.3 – 2018
Fire Control Room	BCA 2019 Amendment 1 Specification E1.8
Fire Dampers	BCA 2019 Amendment 1 Clause C3.15 and AS 1668.1 – 2015 (AS 1682.1 – 2015 and AS 1682.2 – 2015)
Fire Doors	BCA 2019 Amendment 1 Specification C3.4 and AS/NZS 1905.1 – 2015

Measure	Standard of Performance
Fire Hydrants Systems	BCA 2019 Amendment 1 Clause E1.3 and AS 2419.1 – 2005
Fire Seals Protecting Opening In Fire Resisting Components Of The Building	BCA 2019 Amendment 1 Clause C3.15, Specification C3.15, AS 1530.4 – 2014, AS 4072.1 – 2005 and installed in accordance with the tested prototype.
Hose Reel System	BCA 2019 Amendment 1 Clause E1.4 and AS 2441 – 2005
Lightweight Construction	BCA 2019 Amendment 1 Specifications C1.8, Clause A2.3 and AS 1530.4 – 2014
Mechanical Air Handling System *(Automatic Shut Down Of Air-Handling System)*	BCA 2019 Amendment 1 Clause E2.2 and AS 1668.1 – 2015
Mechanical Air Handling System *(Air-Handling System Design To Operate As A Smoke Control System)*	BCA 2019 Amendment 1 Clause E2.2 and AS 1668.1 – 2015
Mechanical Air Handling System *(Automatic Air Pressurisation System)*	BCA 2019 Amendment 1 Table E2.2a and AS 1668.1 – 2015
Mechanical Air Handling System *(Zone Smoke Control System)*	BCA 2019 Amendment 1 Table E2.2a and AS 1668.1 – 2015
Mechanical Air Handling System *(Carpark Mechanical Ventilation System)*	BCA 2019 Amendment 1 Table E2.2a, Clause 5.5 of AS/NZ 1668.1 – 2015 and fans with metal blades suitable for operation at normal temperature may be used and the electrical power and control cabling need not be fire rated
Mechanical Air Handling System *(Automatic Smoke Exhaust System)*	BCA 2019 Amendment 1 Specification E2.2b
Portable Fire Extinguishers	BCA 2019 Amendment 1 Clause E1.6 and AS 2444 – 2001
Smoke Dampers	BCA 2019 Amendment 1 Clause 3 of Specification C2.5 and AS 1682.1 – 2015 and AS 1682.2 – 2015
Smoke Detectors And Heat Detectors *(Detectors For The Automatic Closing Operation Of Fire Doors To Fire Isolated Exits)*	BCA 2019 Amendment 1 Clause C3.8 and AS 1670.1 – 2018
Stand-By Power Systems	BCA 2019 Amendment 1 Clause 6 of Specification G3.8
Wall Wetting Sprinkler And Drencher Systems	BCA 2019 Amendment 1 Clause C3.4, Specification G3.8
Warning And Operational Signs	BCA 2019 Amendment 1 Clauses D1.17, NSW D2.19, D2.23, E3.3, E1.8 and G3.8

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

17. APPENDIX C1.1 – FIRE RATING REQUIREMENTS

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

18. APPENDIX 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:- 1. Must be protected by device to restrict window opening OR screen with secure fittings; AND 2. No opening greater than 125mm; AND 3. Device and screen must resist outward horizontal action of 250N; AND 4. Have child resistant release if device or screen can be removed, unlocked or overridden; AND 5. If device or screen can be removed, unlocked or overridden minimum 865mm barrier required to protect window. Note: No 865mm barrier required if device or screen is permanent and cannot be removed, unlocked, or overridden Window located min. 1.7m above bedroom floor No restrictions	Comments as per >2m above surface beneath
Other rooms (i.e. lounge, dining room etc)	No restrictions	No restrictions	Barrier required 1. Min. 865mm above floor 2. No openings exceeding 125mm 3. No climbable elements between 150-760mm above floor
All other buildings	No restrictions	No restrictions	Barrier required 1. Min. 865mm above floor 2. No openings exceeding 125mm 3. No climbable elements between 150-760mm above floor

19. 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 handrails 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

20. 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 Type	WC Provided	Urinal Provided	Basin Provided
5	Office (levels 22-43)	Male	3 (60)	3 (100)	3 (90)
		Female	4 (60)	N/A	3 (90)
		Unisex Disabled	1		
9b	Level 06 function space	Male	2 (300)	3 (150)	4 (600)
		Female	4 (150)	N/A	4 (550)
		Unisex Disabled	2		
5	Level 05 coworking	Male	3 (60)	2 (50)	3 (90)
		Female	4 (60)	N/A	3 (90)
		Unisex Disabled	1		
5	Level 04 coworking	Male	3 (60)	2 (50)	3 (90)
		Female	4 (60)	N/A	3 (90)
		Unisex Disabled	1		
5	Level 03 coworking	Male	3 (60)	2 (50)	3 (90)
		Female	4 (60)	N/A	3 (90)
		Unisex Disabled	1		
5	Level 02 coworking	Male	3 (60)	2 (50)	3 (90)
		Female	4 (60)	N/A	3 (90)
		Unisex Disabled	1		
6	Staff for: Basement Supermarket & convenience store, lower ground retail & hotel administration staff	Male	4 (80)	3 (100)	4 (120)
		Female	6 (90)	N/A	4 (120)
		Unisex Disabled	1		
6	Basement level 1 F&B tenancy **staff**	Male	1 (20)	1 (25)	2 (60)
		Female	2 (30)	N/A	2 (60)
		Unisex Disabled	1		
6	Basement level 1 F&B tenancy **patrons**	Male	2 (300)	4 (200)	4 (600)
		Female	5 (200)	N/A	4 (550)
		Unisex Disabled	1		
6	Lower ground – ground café/restaurant **staff**	Male	1 (20)	0 (10)	1 (30)
		Female	1 (15)	N/A	1 (30)
		Unisex Disabled	1		
6	Lower ground – ground	Male	2 (300)	3 (150)	3 (400)
		Female	4 (150)	N/A	3 (350)

	café/restaurant **patrons**	Unisex Disabled	1

Class	Use	Occupant Numbers			WC Required	Urinal Required	Basin Required
		Total					
3	Basement level 2 – hotel staff	30	Male	15	1	1	1
			Female	15	1	N/A	1

Notes:

- 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.
- Staff and patrons are permitted to share the same facilities in class 6 tenancies in accordance with Clause F2.3(d) of the BCA.
- At least one ambulant sanitary compartment must be provided within each the male and female facilities complying with Section 16 of AS1428.1 – 2009.
- A WC can be used in place of a urinal.

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