

BCA ASSESSMENT REPORT

33-35 FAIRLIGHT STREET & 10-12 CLIFFORD AVENUE, FAIRLIGHT NSW 2094

Prepared for: Allen Group Development Pty Ltd C/- Lighthouse Project Management Pty Ltd **Project No:** 240011

Date: 12 December 2024 **Status:** Revision 02

Registered Certifiers | Building Regulation | Passive Fire

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REPORT STATUS				
DATE	REVISION	STATUS	AUTHOR	PEER REVIEW
03/12/2024	01	Draft issued for Client Information and Comment Prior to DA Application Submission	Darko Kardum	Steven Rodriguez
12/12/2024	02	Updated Report issued for DA Application Submission	Darko Kardum	Steven Rodriguez

Prepared by:



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Reviewed by:



Steven Rodriguez - Director
Registered Certifier/Principal Certifying Authority (NSW)
Building Surveying Grade A1 – Registration No. BPB 0823



1. INTRODUCTION

1.1 REPORT BACKGROUND

Concise Certification Pty Ltd has been commissioned by The Trustee for Woollahra Development Unit Trust to provide professional Building Code Certification Services for the proposed construction of a 5-storey (plus a pool terrace) residential flat building with 2 existing basement levels.

Our engagement involved a detailed desktop assessment of the architectural design documentation against the provisions of the National Construction Code Series (Volume 1) **Building Code of Australia 2022 (BCA)**.

1.2 REPORT PURPOSE

The key objectives of the report are as follows:

- Undertake a high-level assessment of the proposed development against the deemed to satisfy provisions of the National Construction Code Series – Volume 1 – Building Code of Australia 2022.
- Identify any Deemed-to-Satisfy compliance departures that require further resolution/attention for by either way of design change or Performance Based Solutions prior to the submission of the Construction Certificate application.
- Identify essential fire safety measures and building works that are applicable to the subject building and that may be requiring upgrade to comply with the provisions of Section 14 & 79 of the Environmental Planning and Assessment Regulation 2021 (formally known as Clauses 143 & 166) and the provisions of Sections 62 & 64 of the Environmental Planning and Assessment Regulation 2021 (formally known as Clauses 93 & 94). The proposed building alterations and additions have considered all necessary Fire and Life Safety Upgrade works accordingly.
- Identify essential fire safety measures and building works that are applicable to the proposed development in accordance with Section 79 of the Environmental Planning and Assessment (Development Certification and Fire Safety) Regulation 2021.
- Verify that the referenced documentation has been reviewed by an appropriately qualified Building Surveyor and A1 Registered Certifier and compliance with the BCA / Access to Premises – Building Standard 2010 is readily achievable.
- Issue a collaborated fire engineering summary outlining the key compliance matters identified by the design team as deemed to satisfy departures requiring consideration by the project Fire Safety Engineer in order to assist in the preparation of the Fire Engineering Brief & Fire Engineering Brief Questionnaire (where required) to Fire & Rescue NSW).
- Verify that the referenced documentation has been reviewed by an appropriately qualified Building Surveyor and Accredited Accessibility Consultant and demonstrate that compliance with the BCA / Access to Premises – Building Standard 2010 is readily achievable.
- Enable the Registered Certifier to satisfy its statutory obligations under Section 19 of the Environmental Planning and Assessment (Development Certification and Fire Safety) Regulation 2021, whilst also taking into due consideration the provisions under Sections 28 and 29 of Part 3 of the Building and Development Certifiers Act 2018 and Clauses 24 and 25 of Part 4 of the Building and Development Certifiers Regulation 2020.
- Accompany the submission of a Development Application (DA) to Council to enable the Consent Authority to be satisfied that the building design is capable of complying with the BCA and that subsequent compliance with the Fire & Life Safety, Accessibility, Health & Amenity and Energy Efficiency requirements of the BCA, will not give rise to design changes to the building which may necessitate the submission of further applications under Section 4.55 (Modifications) of the Environmental Planning and Assessment Act, 1979

1.3 REPORT DOCUMENTATION RELIED UPON

The following documentation has been reviewed, referenced, and/or relied upon in the preparation of this report:

- National Construction Code Series – Volume 1 – Building Code of Australia 2022 (BCA)
- National Construction Code Series – Guide to the Building Code of Australia 2022
- Environmental Planning & Assessment Act 1979

- Environmental Planning & Assessment Regulation 2021
- Environmental Planning and Assessment (Development Certification and Fire Safety) Regulation 2021
- Access to Premises - Building Standards 2010
- Architectural Plans prepared by Platform Architects as detailed below:

Plan Number	Revision	Date
DA0000	A	05/12/2024
DA0050	A	05/12/2024
DA0100	A	05/12/2024
DA0400	A	05/12/2024
DA0500	A	05/12/2024
DA1000	A	05/12/2024
DA1001	A	05/12/2024
DA1002	A	05/12/2024
DA1003	A	05/12/2024
DA1004	A	05/12/2024
DA1005	A	05/12/2024
DA1006	A	05/12/2024
DA1007	A	05/12/2024
DA1008	A	05/12/2024
DA1950	A	05/12/2024
DA2000	A	05/12/2024
DA2001	A	05/12/2024
DA2002	A	05/12/2024
DA2003	A	05/12/2024
DA3000	A	05/12/2024
DA3001	A	05/12/2024
DA3002	A	05/12/2024
DA3003	A	05/12/2024
DA4000	A	05/12/2024
DA4001	A	05/12/2024
DA5000	A	05/12/2024
DA5100	A	05/12/2024
DA5101	A	05/12/2024
DA5200	A	05/12/2024
DA5201	A	05/12/2024
DA5202	A	05/12/2024
DA5203	A	05/12/2024
DA5300	A	05/12/2024
DA5301	A	05/12/2024
DA5302	A	05/12/2024
DA5303	A	05/12/2024
DA5400	A	05/12/2024
DA5500	A	05/12/2024
DA5501	A	05/12/2024

DA5502	A	05/12/2024
DA5503	A	05/12/2024
DA5504	A	05/12/2024
DA5505	A	05/12/2024
DA5700	A	05/12/2024

1.4 REPORT LIMITATIONS & EXCLUSIONS

The limitations and exclusions of this report are as follows:

- This report is based on a review of the referenced documentation in the report above.
- This report does not address issues in relation to the design, maintenance or operation electrical, mechanical, hydraulic or fire protection services, Utility Services Provider Requirements (Water, Gas, Telecommunications and Electricity supply authorities), Local Government Act and Regulations, Work Health and Safety Act and Regulations or the like.
- This assessment does not incorporate the detailed requirements of the BCA Referenced Australian Standards and it is the responsibility of design and installation contractors to demonstrate and achieve compliance for all new works.
- This report does not in any way imply Safety in Design criteria has been considered in full and is predominantly prepared using the National Construction Code Series (Vol 1) BCA 2022 as a benchmark. Design consultants are to consider safety in design principles in their design documentation to the degree necessary.
- Although our assessment has considered Part D4 of the BCA, detailed assessment is excluded from our services, and this is to be undertaken by an Accessibility Consultant; or addressed via design certification from the Architect.
- Although our assessment has considered Part F7 of the BCA, detailed assessment is excluded from our services, and this is to be undertaken by an Acoustic Consultant; or addressed via design certification from the Architect.
- Although our assessment has considered Part F of the BCA, detailed assessment of hydraulic/drainage, electrical, mechanical, weatherproofing, waterproofing, condensation management and acoustic requirements is excluded from our services, and this is to be undertaken by suitably qualified design engineers and specialised consultants disciplined in these fields.
- Although our assessment has considered Part J of the BCA, detailed assessment of the Energy Efficiency is excluded from our services, and this is to be undertaken by an Energy Efficiency Consultant; or addressed via design certification from the Architect.
- The commentary in this report is not in any way a contribution to the Fire Safety Strategy and/or meant to contribute to the Fire Engineering Brief process as this is the role of the Fire Safety Engineer – (Certifier in Fire Safety). The commentary within this BCA Assessment Report does not relieve the C10 Fire Safety Engineer from their statutory obligations under EP&A Regs/Act, Building and Development Certifiers Act/Regs.
- Services design documentation was considered however not reviewed as part of this high-level BCA Assessment. Competent Fire Safety Practitioner Certification and drawings are to be provided at the Construction Certificate stages. Further assessment of the architectural and fire services design documentation together with any supplementary documentation will be required at the Construction Certificate application stages.
- Structural adequacy of the existing and proposed new building works is to be provided by the project structural engineer.
- It is important to note that this Building Code Assessment Report is not to be misconstrued as being a complete assessment of the detailed design drawings and/or a report which confirms strict compliance with the BCA covering all services, structural and other engineering principles. This is a desktop summary carried out against the presented architectural drawings reference, using Volume 1 of the Building Code of Australia as a benchmark. The report identifies key compliance matters identified from our review of the Architectural drawings which are in the opinion of the author, key matters to be considered further by either way of notation on specifications, detail on plans, design certification and/or via Performance Based Design Briefs and subsequent Performance Based Solutions (where required) to be considered by the Registered Certifier under Section 19 of the Environmental Planning and Assessment (Development Certification and Fire Safety) Regulation.

The Design Practitioners, Accredited Fire Safety Practitioners, Engineers, Consultants and Building Practitioners are to refer back to the relevant BCA Volumes, relevant Australian Standards, Guidelines, Policies and the like and/or other legislative documents which need to be ready in conjunction with this report.

- The commentary within this BCA Assessment Report does not relieve the Principal Designer, Principal Building Contractor, Structural Engineer, Accredited Practitioners (Fire Safety), any associated Building Suppliers and/or the Certifying Authority from their statutory obligations under the Work Health Safety Act, Safety in Design Principles, EP&A Regs/Act, Building Professionals Regs/Act and/or the Design and Building Practitioners Act 2020. The aforementioned are to be satisfied that their designs meet the requirements prior to approval.
- It is important to note that without the written permission from Concise Certification Pty Ltd, no part of this report may be reproduced in any form or by any means. This report is based solely on client instructions and therefore should not be relied upon or used by any third party without prior knowledge and instructions from Concise Certification Pty Ltd.
- This report is based solely on client instructions and therefore should not be relied upon or used by any third party without prior knowledge and instructions from Concise Certification Pty Ltd.
- Concise Certification Pty Limited cannot guarantee acceptance of this report by the Local Council, NSW Fire Brigades, or other approval authorities.

1.5 EXISTING & PROPOSED DEVELOPMENT

The site, the subject of this report, consists of multiple allotment that are legally identified as the following:

- Lot 9 / Section B / DP3742 – No. 33 Fairlight St
- Lot 8 / Section B / DP3742 – No. 35 Fairlight St
- Lot 20 / Section B / DP3742 – No. 10 Clifford Ave
- SP20752 – No. 12 Clifford Ave

The above registered addresses are located in the Northern Beaches Council area and it is understood the lots will be consolidated into a single allotment and when consolidated, the site is considered to be irregular in shape and has an approximate site area of 2,346m².

The site has two (2) street frontages being Fairlight Street to the North and Clifford Avenue to the South. The site is bounded by existing residential buildings to the East and West.



Figure 1 – Satellite Image (Source: Six Maps, November 2024)

The sites are currently occupied by Four (4) residential buildings which will be demolished to make way for the new residential development.

The proposed development entails demolition of existing structures onsite and construction of a new residential flat building with carpark. The building is split into two towers from level 4 and above with the following Building identification

- Building A – Building adjacent to Clifford Avenue
- Building B - Building adjacent to Fairlight Street

and in summary entails the following:

- Ground Floor – Main pedestrian (Clifford Street) and Vehicular Entrance, Plant/Services and Fire Pump Room, Waste and Bin Rooms, Gym, Common Amenity and Communal Open Space;
- Level 1 – 2 x Residential Sole Occupancy Units (Units U1 & U2);
- Level 2 – 2 x Adaptable Residential Sole Occupancy Units (Units U3 & U4), 15 x Carparking Spaces, 1x Visitor Carparking Space, Bicycle Parking, Storage Cages/Rooms, Communal Cellar, Plant/Services Rooms;
- Level 3 – 2 x Adaptable Residential Sole Occupancy Units (Units U5 & U6), 18 x Carparking Spaces, 1x Visitor Carparking Space, Bicycle Parking, Storage Cages/Rooms, Bulky Waste and Bin rooms and, Plant/Services Rooms;
- Level 4 – Building is Split into two towers on this level with 2 x Residential Sole Occupancy Units (Units U7, U8) in Building A and 2 x 2 storey residential units (U10 & U11 First Level) in Building B;
- Level 5 – 1 x Residential Sole Occupancy Units (Units U9 Penthouse) in Building A and 2 x 2 Storey Units (units U12 & U13 second level) in Building 2;
- Level 6 – Concrete Roof and roof lights for Building A and 4 x 2 Storey Units (Units U12, U13, U14 & U15 First Level) in Building B
- Level 7 – 4 x 2 Storey Units (Units U12, U13, U14, U15 Second Level) in Building B
- Roof – Concrete Roof, Lift overrun, roof lights and roof top photovoltaic panels & Carpark exhaust duct

The main super structure will consist of a reinforced concrete and masonry super structure from Basement to the roof top level.



Figure 2 – Artist’s impression from Clifford Avenue (Source: Platform Architects)

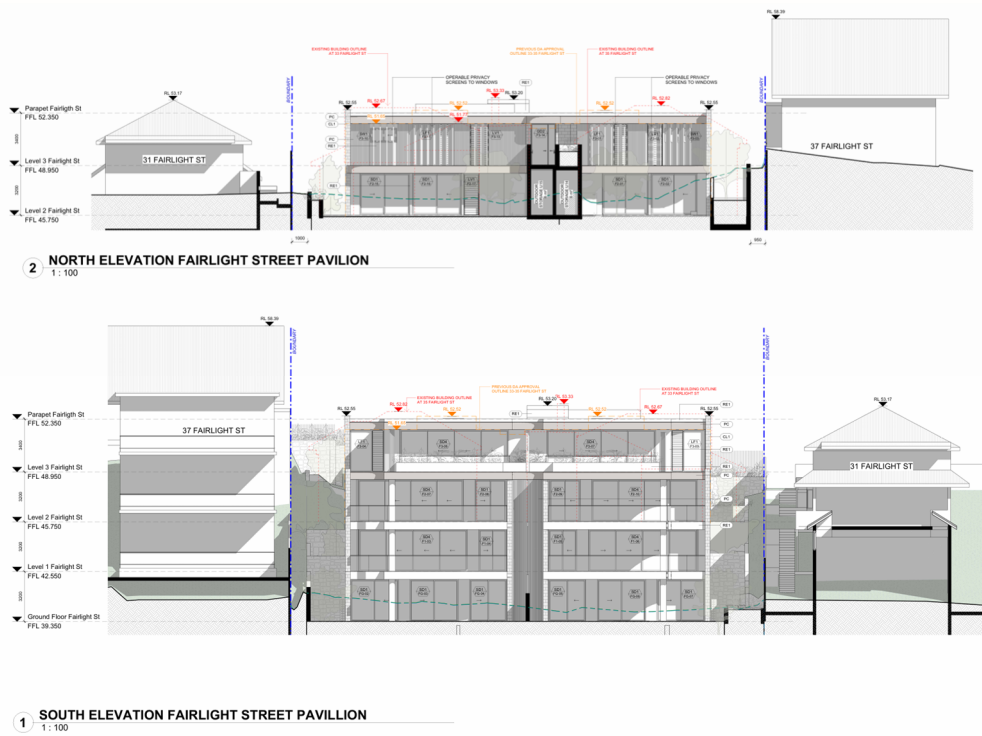


Figure 3 – Northern and Southern Elevations (Source: Platform Architects)

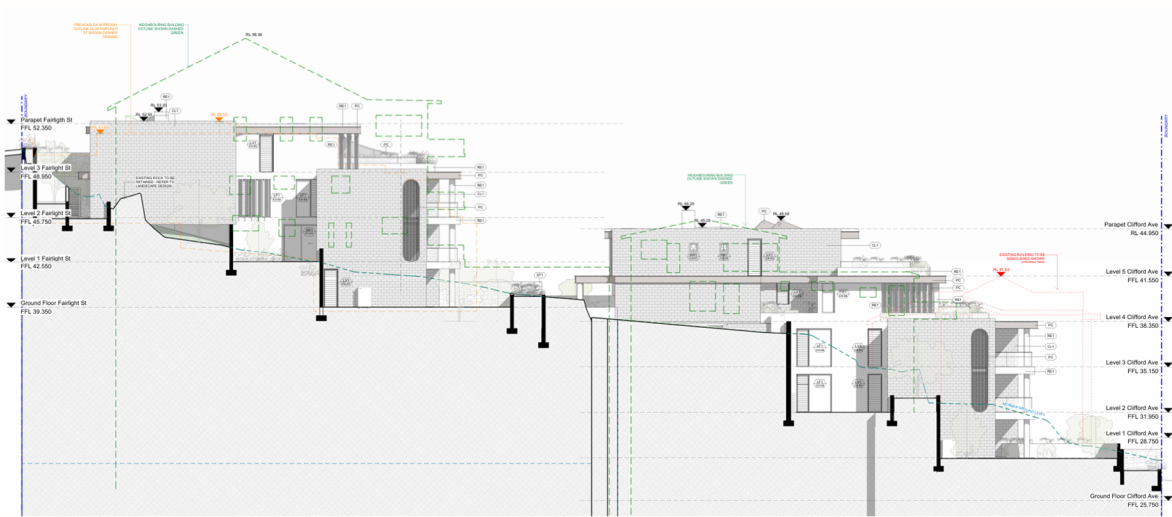
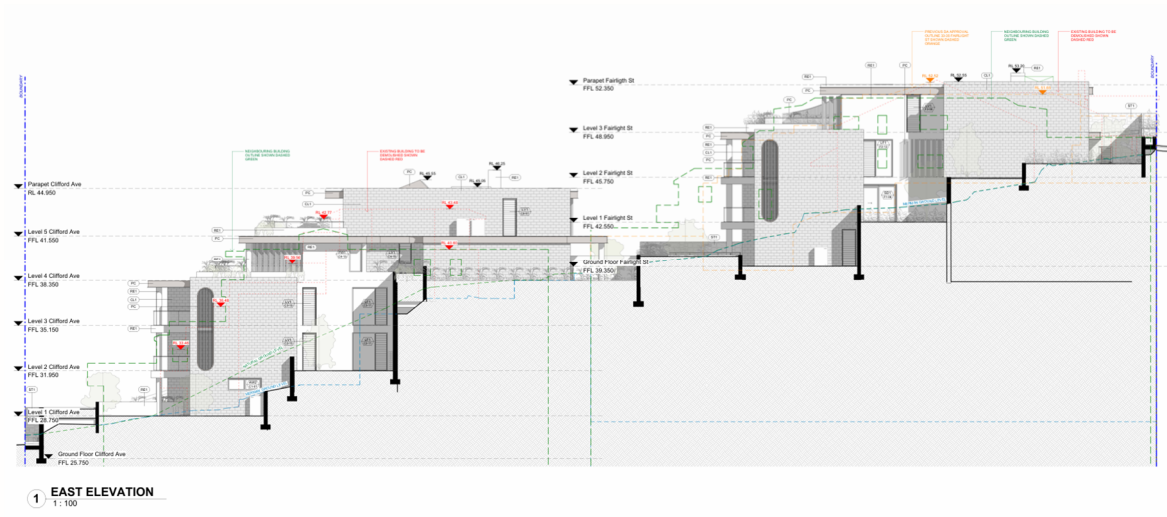


Figure 4 Eastern and Western Elevation (Source: Platform Architects)

1.6 BUILDING CODE OF AUSTRALIA 2022 (BCA)

Pursuant to Section 69 of the Environmental Planning and Assessment Regulation 2021 and Section 19 of the Environmental Planning and Assessment (Development Certification and Fire Safety) Regulation 2021, all new building work must comply with the current provisions of the National Construction Code Series (Volume 1) Building Code of Australia (BCA).

At the date of this assessment, it was understood that a Part 6 Construction Certificate Application for the development would be made with a Registered Certifier after the 01 May 2025 and as such the relevant rendition of the BCA is **BCA 2022**.

1.7 REPORT STRUCTURE

The report consists of a Summary of Compliance Departures provided in the table under **Section 2** below, which is for the reader's ease of reference and most urgent attention.

Notwithstanding the summary of issues within **Section 2** must also be read in conjunction with the body of the assessment provided under **Section 3** of the report which further details compliance matters needing consideration in design development and during construction.

It is also the responsibility of all design consultants to ensure compliance with relevant BCA requirements, Australian Standards and Manufacturers Specifications. This report does not in any way relieve design consultants from their obligations in designing to achieve compliance with the BCA. Furthermore, this report does not relieve the Principal Certifier from their statutory obligations required to assess the drawings in detail prior to the issue of a Part 6 Construction Certificate.

2. SUMMARY OF KEY COMPLIANCE DEPARTURES NEEDING ADDRESSING AT THE CONSTRUCTION CERTIFICATE STAGE

The following comprises a summary of the key compliance issues identified within the BCA Assessment in Section 3 of this report and is to be read in conjunction with the aforementioned Section and the Building Code of Australia Volume 1.

The following matters are to be considered & addressed to the satisfaction of the Principal Certifier as part of the Construction Certificate application.

Relevant BCA Clauses	Description of Compliance Matter Requiring Resolution
BCA Parts B1D2 – B1D4 (Structural Performance)	<p><u>BCA Part B1 & Spec</u> - specifies the key structural requirements and FRL's for buildings.</p> <p>specifies the key structural requirements and FRL's for buildings.</p> <p>Structural Engineering Drawings and Design Certification is required for the new works. Certification and details are to also address FRL's as specified under BCA Spec 5 (for Type A Construction) and nominate all applicable Australian Standards and Importance Levels.</p> <p>Note 1: Where non-BCA Referenced Australian Standards are proposed, in particularly when they are proposed in lieu of a referenced Australian Standard, these must be disclosed by the Design Practitioners to the Registered Certifier and Registered Building Practitioner for their further consideration.</p> <p>Note 2: It is the structural Engineers responsibility to ensure they design the building to cater form the Importance Levels of <u>BCA Table B1D3a</u> identifies the Importance Levels of Building & Structures that must be considered by the structural engineer, and which must be read in conjunction with AS1170.4-2007 accordingly noting the BCA takes precedence over any inconsistencies in this regard. The Structural Engineer is responsible for determining compliance with the above.</p> <p>Note 3: Services Designers are to consider and address the seismic restraints provisions under Section 8 'Designs for Parts and Components' of AS1170.4-2007 which details in part advice on services clearances, spacing of bracing, example calculations, force diagrams, safety wire requirements for T-Bar ceilings systems etc. These provisions apply to all buildings with Importance Levels 2 to 4 and apply to all smoke control systems, emergency electrical systems, fire and smoke detection systems, fire suppression systems, life safety systems, boilers, furnaces, water heaters, flues, pressure vessels etc, reciprocating/rotating manufacturing equipment, utility and services interfaces, lift machinery, escalators, lighting fixtures, electrical boards, conveyors, etc as detailed within the standards.</p> <p>Note 4: Where structural steel columns, beams and braces are proposed, a colour coded mark-up plan to show the location of these structural members and details on the method of fire protection proposed to achieve the required min FRL's, are to be provided with the Construction Certificate application. Any structural steel members are to also be fire rated accordingly. .</p> <p>Note 5: Where it is <u>not</u> proposed to achieve a minimum 200mm thick reinforced concrete slab throughout the residential levels (when required by AS3600-2018), this will need to be disclosed by the project structural engineer and addressed under a Performance Based Solution by a C10 Fire Safety Engineer.</p> <p>Note 6: Where it is proposed to incorporate permanent Polymer Formwork wall type systems such as Dincel/AFS/Ritek etc, the use of these wall/load bearing systems are to be disclosed by the project structural engineer and addressed under a Performance Based Solution by a qualified Fire Safety Engineer.</p> <p>Note 7: Termite mitigation measures are required where primary timber elements are proposed. This includes any primary timber elements such as internal stairways, internal walls, roofs, floors or the like. Notwithstanding, it is recommended that termite mitigation, measures are considered irrespectively.</p> <p>Note 8: Services shafts etc which also form barriers need to be designed accordingly to meet product specifications for human impact and comply with AS1170.1 -2002.</p> <p>Note 9: Structural engineer is to provide a list of DTS design departures needing consideration by the project fire safety engineer. Should no design departures be identified, the Registered Certifier and Building Practitioner are entitled to rely on the Design Declaration for BCA Compliance in this regard.</p> <p>Note 10: Structural engineer is to ensure their designs comply with the referenced documents in Schedule 2 of the BCA (Including Amendments to Standards) and identify to the Registered Certifier and Registered Fire Safety Engineer, any departures to these standards of performance that need further consideration via Performance Based Solutions. Should no design departures</p>

	<p>be identified, the Registered / Principal Certifier and Building Practitioner are entitled to rely on the Design Certifications and Declaration for BCA Compliance in this regard.</p> <p>Note 11: where the roof structure is proposing photovoltaic / solar panels and the roof must be designed to cater for the additional loads and uplift of winds from the coastline. Design and Building Practitioners Design Declarations and documentation must take into account these provisions and verify the design has considered these accordingly at the Construction Certificate application stage</p> <p>Note 12: Structural details labelled for construction together with Structural Specifications, Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier.</p> <p>Note 13: Architectural and Structural Details and Specifications identifying the relevant Australian Standards, Wall Types/Systems/Materials/FRL's/ Fire Hazard Properties, External Schedule of Finishes including cross sectional wall details are to be provided. Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier. Where Fire Safety Engineering is proposed, a copy of the Fire Engineers Report prepared by an Accredited C10 Certifier – Fire Safety and who is also Registered Design Practitioner, is to also be provided.</p> <p>Fire Engineered Performance Solution: Where slab set downs are required by AS3600, and the slab thicknesses cannot achieve 200mm thick, and where PVC polymer formwork walls systems are proposed, and where steel columns and beams are proposed and not fire rated in strict accordance with a tested system, it is understood that the design team have engage a C10 Fire Safety Engineer to develop a Performance Based Solution to rationalise FRL's to achieve 60 mins in lieu of 90 and/or 120 mins as the case may require, rationalise the use of PVC polymer formwork and rationalise the FRL's to steel columns and beams and the report will need to demonstrate compliance with all relevant BCA Performance Requirement (B1P1, B1P2, C1P1 & C1P2).</p>
<p>BCA Clause C2D10 & C2D14 (Non-Combustible Building Elements & Ancillary Elements)</p>	<p><u>BCA Clause C2D10</u> requires external walls and all elements associated elements to be non-combustible or meet the concessions of this clause. This includes cladding, insulations, plasterboard linings etc.</p> <p><u>BCA Clause D2D14</u> requires ancillary elements to meet the criteria of this clause and permits combustible materials on the premise that compliance is achieved with specified criteria.</p> <p>In this regard, the following areas have been identified as matters which may be requiring further design consideration and/or justification via Performance-Based Solutions by the project Fire Safety Engineer;</p> <p>(a) <u>Attachments</u> - There may be waterproofing membranes, window shrouds, timber support boards / noggings for fittings and fixtures, timber doors, that form part of or are attached to the external wall which may not strictly comply with the concessions under BCA cl.C2D10 and/or AS1530.1-1994 for combustibility and test reports are to be furnished at the Construction Certificate stage confirming that all components of the wall linings are non-combustible;</p> <p>NB: Plastic angles, plastic packers or any other attachments or linings which may not strictly comply with the concessions under BCA cl. C2D10 and/or AS1530.1 for combustibility and are not endorsed</p> <p>(b) <u>Render Finishes</u> - There may be polymer type Render coatings or any other linings which may not strictly comply with the concessions under BCA cl.C2D10 and/or AS1530.1 for combustibility and test reports or Codemark Certificates are to be furnished at the Construction Certificate stage confirming the product and system is non-combustible – NB: The Rockcote Quick Render is a suitable Render to be applied to external walls subject to all other materials and attached are non-combustible.</p> <p>(c) <u>Permanent Polymer Wall Systems</u> - There may be <u>Permanent PVC / Polymer Formwork wall systems</u> (e.g. Dintel, AFS Rediwall, etc) or any other linings which may not strictly comply with the concessions under BCA cl.C2D10 and/or AS1530.1 for combustibility and test reports or Codemark Certificates are to be furnished at the Construction Certificate stage confirming the product and system is non-combustible.</p> <p>(d) <u>Masonry/Concrete Walls</u> - Masonry and concrete walls need to be designed by the Architect and Structural Engineers taking into consideration the criteria and slenderness ratio's etc specified under AS3600 Section 5 and AS3700 Section 6 accordingly</p>

	<p>(e) <u>Waterproof Membranes on External Walls</u> - BCA Clauses C2D14 permits external waterproofing materials to be applied to an adjacent floor surface and roof surface including vertical upturns and below ground membranes projecting above natural ground floor to a maximum height of 250mm. The design details identify waterproofing application to the slab edges and external walls that are above ground (in addition to waterproofing of planter boxes) which deviate from the above clause and will require justification via a Performance Based solution for the final Construction Certificate stage to the satisfaction of the Registered Certifier;</p> <p>(f) <u>External Signs</u> - Any proposed light boxes or building signs affixed to the external walls will require justification via performance based solutions;</p> <p>(g) <u>External Pergola/Awning Details</u> - There may be awning (including any Glazed Awnings/Canopies) / shade structures projecting from the building which are ancillary elements needing to comply with the provisions above. Please note that glass awning/sunshades are not exempted from being non-combustible under BCA Clause C2D14 and these would require justification via permeance based solutions.</p> <p>Fire Engineered Performance Solution: Where any part of the external walls is not AS1530.1-1994 tested or does not fall within the definition of non-combustible or exempted under C2D10 or D2D14 of the BCA, it is understood that the design team will to engage a C10 Fire Safety Engineer to develop a Performance Based Solution to rationalise combustibility provisions and the report will need to demonstrate compliance with all relevant BCA Performance Requirement C1P2 & C1P4.</p> <p>Note 1: Our office does not endorse the use of any Aluminium Panels and/or any other combustible materials wall componentry and all external wall assembly materials must be supported by testing in accordance with AS1530.1 -1994. Any Performance Solutions for external walls permitted by the Registered Certifier, must consider AS5113-2016 and FRNSW requirements. The use of external claddings or permanent polymer formwork walls must be supported by Codemark Certification or the like and cross section wall details are required.</p> <p>Note 2: Refer to C2D10, sub-clauses (4), (5) & (6) which provides provide a list of materials and assemblies which are either exempted or permitted to be used in line with the provisions above.</p> <p>Note 3: The Supporting Fire Test and/or Design Certification to the satisfaction of the Registered Certifier are to be provided with the Construction Certificate application.</p> <p>Note 4: Any performance solutions for external walls must consider AS5113-2016 and FRNSW requirements. The use of external claddings or permanent polymer formwork walls must be supported by Codemark Certification, or the like and cross section wall details are required. Any Codemark Certification must include direct reference to BCA Clause C2D10 in this regard. The Supporting Fire Test and/or Design Certification to the satisfaction of the Registered Certifier are to be provided with the Construction Certificate application.</p> <p>Note 5: Architectural and Structural Details and Specifications identifying the relevant Australian Standards, Wall Types/Systems/Materials/FRL's/Fire Hazard Properties, External Schedule of Finishes including cross sectional wall details are to be provided. Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier. Where Fire Safety Engineering is proposed, a copy of the Fire Engineers Report prepared by an Accredited C10 Certifier – Fire Safety and who is also Registered Design Practitioner, is to also be provided.</p>
<p>BCA Clause C2D11 & G6D2 (Early Fire Hazard Properties)</p>	<p><u>BCA Clause C2D11</u>. Provides the requirements for the fire hazard properties for all internal linings, material and assemblies..</p> <p>In this regard, the following areas have been identified as matters which may be requiring further design consideration and/or justification via Performance-Based Solutions by the project Fire Safety Engineer</p> <p>(a) <u>Poly/Plastic Pedestal Pavers supports and Decking</u> - Where plastic/poly pedestal pavers and timber decking are proposed to be used on balconies, roof top and common areas, these may not comply with the required Fire Hazard Properties in accordance with Specification 7 of the BCA 2022 and will require justification via a performance based solution</p> <p>Fire Engineered Performance Solution: It is understood that the design team may engaged the services of an Accredited Fire Safety Engineer to consider a Performance Based Solution to rationalise the Early Fire Hazard Properties of the pedestal pavers supports by demonstrating compliance with BCA Performance Requirement C1P2, C1P4</p> <p>Note 1: Refer to C2D11, Subclause 3 of this clause provide a list of materials and assemblies exempt from the provisions above.</p>

	<p>Note 2: Refer to Specification 7 which sets out the requirements for all fire hazard properties of linings, materials and assemblies in Class 2-9 buildings as set out in Table S7C2.</p> <p>Note 3: The Supporting Fire Test and Design Certification to the satisfaction of the Registered Certifier are to be provided with the Construction Certificate application.</p> <p>Note 4: Architectural Details and Specifications identifying the relevant Australian Standards, Wall Types/Systems/Materials/FRL's/ Fire Hazard Properties, External Schedule of Finishes including cross sectional wall details are to be provided. Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier. Where Fire Safety Engineering is proposed, a copy of the Fire Engineers Report prepared by an Accredited C10 Certifier – Fire Safety and who is also Registered Design Practitioner, is to also be provided</p>
<p>BCA Clause C3D8 + C3D9 + C3D10 (Fire Separation between Classifications) & BCA Spec. 5 (FRL's)</p>	<p>BCA Clause C3D8 - specifies requirements for Fire Walls</p> <p>BCA Clause C3D9 - requires higher FRL's to be adopted throughout, or appropriate fire separation between different Classifications to be provided.</p> <p>BCA Clause C3D10 - requires appropriate fire separation between different Classifications in consecutive storeys to be provided.</p> <p>BCA Specification 5 - specifies FRL's required to key building elements.</p> <p>In this regard, the following areas have been identified as matters which may be requiring further design consideration and/or justification via Performance-Based Solutions by the project Fire Safety Engineer;</p> <ul style="list-style-type: none"> a) Ground Floor to Level 3 – The Storage Cages within the carpark are classified as Class 7b Storage areas and given these spaces are not proposed to be fire separated from the carpark, the whole storey will need to adopt the higher FRL of 240/240/240 mins. In addition, the Carpark/ back of house Storage areas must also be fire separated from the residential lobbies and SOU's accordingly; b) Levels 2 & 3 - - The dual access lift landing doors between the carpark and SOU lobbies are located in the fire wall separating the two fire compartments which will not achieve the required FRL and may not strictly comply with the automatic closing function required for fire doors in fire walls and this arrangement will need to be addressed via a performance based solution; c) Level 3 – The Cellar room located within the carpark is to be fire separated from the SOU and carpark by construction achieving an FRL in accordance with Spec 5 of the BCA; d) Level 4 to 7 - The floors and SOU bounding construction there above of the remainder of the Class 2 (Apartments) would only be required to achieve a minimum FRL of 90/90/90 and must also achieve a minimum thickness of 200mm including all set down to wet areas and balconies. <p>Fire Engineered Performance Solution: It is understood that the design team will engaged the services of an Accredited Fire Safety Engineer to consider a Performance Based Solution to rationalise FRL's and the extent of fire separation provided by the lift landing doors, by demonstrating compliance with all relevant BCA Performance Requirement (C1P1, C1P2, C1P8)</p> <p>Note: Architectural details, Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier. Where Fire Safety Engineering is proposed, a copy of the Fire Engineers Report prepared by a C10 Certifier – Fire Safety and who is a Registered Design Practitioner, is to also be provided..</p>
<p>BCA Clauses C4D3 & C4D5 (Protection of openings)</p>	<p>BCA Clauses C4D3 & C4D5 -requires openings situated in the external walls located within 3m of the fire source features to be protected or addressed under performance solutions.</p> <p>In this regard, the following areas have been identified as matters which may be requiring further design consideration and/or justification via Performance-Based Solutions by the project Fire Safety Engineer:</p> <ul style="list-style-type: none"> a) Level 1 – The window openings in the Living Room of Unit 2 are located within 3m of the Eastern Boundary; b) Level 2 - The window / Door openings in the Living Room and Bedroom 2 and Bedroom 3 of Unit 3 are located within 3m of the Western Boundary; c) Level 3 - The window openings in the Living Room and Bedroom 2 and Bedroom 3 of Unit 5 are located within 3m of the Western Boundary;

	<p>d) <u>Level 4</u> - The window openings in the Dining Room and Bedroom 1 and Bedroom 2 of Unit 7 are located within 3m of the Western Boundary;.</p> <p>Fire Engineered Performance Solution: It is understood that the design team may engaged the services of an Accredited Fire Safety Engineer to consider a Performance Based Solution to rationalise the extent of protection required to the affected opening by demonstrating compliance with BCA Performance Requirement C1P2, C1P8.</p> <p>Note 1: Architectural Details confirming openings that will be protected versus those that will be subject to Fire Safety Engineering are to be provided with notations such as access door opening to be protected with a Fire Door, openings to garage vehicular entrance to be addressed by Fire Engineering etc.</p> <p>Note 2: Architectural details, Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier. Where Fire Safety Engineering is proposed, a copy of the Fire Engineers Report prepared by a C10 Certifier – Fire Safety and who is a Registered Design Practitioner, is to also be provided.</p>
<p>BCA Clause C4D4 (Separation of External Walls and Associated Openings in Different Fire Compartment)</p>	<p><u>BCA Clause C4D4</u> - requires fire separation and protection to external walls that are located between different fire compartment;</p> <p>In this regard, the following areas have been identified as matters which may be requiring further design consideration and/or justification via Performance-Based Solutions by the project Fire Safety Engineer:</p> <p>a) <u>Ground Floor</u> – The carpark entry and the main lobby areas are considered to be within different fire compartments and therefore the fire separating wall between these compartments does not extend to the outer edge of the roof overhang above;</p> <p>Fire Engineered Performance Solution: It is understood that the design team may engaged the services of an Accredited Fire Safety Engineer to consider a Performance Based Solution to rationalise the extent of fire separation required between fire compartments by demonstrating compliance with all relevant BCA Performance Requirement (C1P2, C1P8)</p> <p>Note 2: Architectural details, Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier. Where Fire Safety Engineering is proposed, a copy of the Fire Engineers Report prepared by a C10 Certifier – Fire Safety and who is a Registered Design Practitioner, is to also be provided</p>
<p>BCA Clause C4D6 (Doorways in Fire Walls)</p>	<p><u>BCA Clause C4D6</u> - specifies the minimum requirements for protection of openings in fire walls.</p> <p>In this regard, the following areas have been identified as matters which may be requiring further design consideration and/or justification via Performance-Based Solutions by the project Fire Safety Engineer:</p> <p>a) <u>Levels 2 & 3</u> - The dual access lift landing doors between the carpark and SOU lobbies are located in the fire wall separating the two fire compartments which will not achieve the required FRL and may not strictly comply with the automatic closing function required for fire doors in fire walls and this arrangement will need to be addressed via a performance based solution.</p> <p>Fire Engineered Performance Solution: It is understood that the design team will engaged the services of an Accredited Fire Safety Engineer to consider a Performance Based Solution to rationalise the extent of fire separation provided by the lift landing doors by demonstrating compliance with BCA Performance Requirement C1P2, C1P8.</p> <p>Note 1: Architectural details, Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier. Where Fire Safety Engineering is proposed, a copy of the Fire Engineers Report prepared by a C10 Certifier – Fire Safety and who is a Registered Design Practitioner, is to also be provided.</p> <p>Note 2: Refer to C3D13 & C3D14 above for protection requirements of walls and doors ways to MSB and Fire Pump Room where required.</p> <p>Note 3: Architectural Details and Specifications identifying the relevant Australian Standards, floor & Wall Types/Systems/Materials/FRL's including cross sectional wall & floor details are to be provided. Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier</p>

<p>BCA Clause C4D12 (Bounding Construction) & BCA Spec 5 (FRL's)</p>	<p><u>BCA Clause C4D12</u> - specifies the requirements for fire separation of SOU's from Public Corridors and other areas</p> <p>In this regard, the following areas have been identified as matters which may be requiring further design consideration and/or justification via Performance-Based Solutions by the project Fire Safety Engineer;</p> <ul style="list-style-type: none"> a) <u>Level 5 (Penthouse Level Building A)</u> – The Lift landing doors open directly into the SOU and lift landing door will only achieve and FRL of -/60/- in lieu of the required -/60/30 tested to AS1905.1-2015 and may not strictly comply with the automatic closing function required for fire doors. b) <u>Bounding Construction Junctions</u> – Cavity fire stopping details will be required for the bounding / party wall aand the bounding/party wall and external wall junctions. c) <u>Service Cupboards</u>- The depth of the services cupboards located in the common areas on the Residential levels should be limited to 500mm to avoid these areas constituting a room and requiring additional fire separation from the public corridors <p>Fire Engineered Performance Solution: It is understood that the design team will engaged the services of an Accredited Fire Safety Engineer to consider a Performance Based Solution to rationalise the extent of fire separation by demonstrating compliance with all relevant BCA Performance Requirement (C1P2, C1P8 & E2P2).</p> <p>Note 1: Details of the cavity separation at the external walls and roof/floor junctions together with colour coded plans showing the different FRL's for all wall types and any framing members, which are to be of non-combustible material (e.g. steel framing,) are to be provided with the Construction Certificate application.</p> <p>Note 2: Where lightweight construction is proposed, a specification of the nominated wall systems and FRL's are to be provided together with design Certification from the architect confirming BCA compliance.</p> <p>Note 3: Architectural Details and Specifications identifying the Wall Types/Systems and the FRL's proposed, together with colour coded Fire Compartment Plans are to be provided. Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier. Where Fire Safety Engineering is proposed, a copy of the Fire Engineers Report prepared by a C10 Certifier – Fire Safety and who is a Registered Design Practitioner, is to also be provided</p>
<p>BCA Clause C4D15 (Openings for Service Installations)</p>	<p><u>BCA Clause C4.D15</u> specifies that services penetrations through fire rated elements need fire sealing.</p> <p>In this regard, the following areas have been identified as matters which may be requiring further design consideration and/or justification via Performance-Based Alternative Solutions by the project Fire Safety Engineer;</p> <ul style="list-style-type: none"> (a) <u>Cast In Services:</u> There will most likely be cast in-slab conduit or other service penetrations through fire rated building elements which may not be able to be protected with a proprietary fire seal and as such will need to be considered under a performance based solution justifying compliance with Performance Requirements; <p>Fire Engineered Performance Solution: It is understood that the design team may engage an Accredited C10 Fire Safety Engineer to develop a Performance Based Solution to rationalise the extent of protection required to the cast in services and other fire seals to penetrations and the report will need to demonstrate compliance with all relevant BCA Performance Requirement C1P2/C1P8;</p> <p>Note 1: BCA cl. C4.D15 and AS1668.1-2015 provides concessions for mechanical ducts in services shafts to have no fire rated bases on the premise these shafts contain no other services other than mechanical duct work. Where other services are proposed to be installed, the base of the mechanical shaft need to be fire rated and fire seals installed to all penetrations e.g. fire dampers, fire collars etc.</p> <p>Note 2: Sprinkler design is to consider mechanical services shafts which are not proposed to be provided with a fire rated base and whether these require sprinklers in the shafts.</p> <p>Note 3: Passive fire services consultant is to review all services penetrations and provide further details on the method of fire protection proposed identifying any additional matters that will required further consideration by the fire safety engineer that may need addressing via a performance based solution.</p>

	<p>Note 4: Architectural Details, Services Details and Specifications/ passive Fire report identifying fire seals and fire ratings proposed. Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier. Where required, a copy of the Fire Engineers Report prepared by an Accredited C10 Certifier – Fire Safety and who is also Registered Design Practitioner, is to also be provided.</p>
<p>BCA Clause C4D16 (Control Joints)</p>	<p><u>BCA Clause C4D16</u> specifies that all control joints in buildings need fire sealing.</p> <p>In this regard, the following areas have been identified as matters which may be requiring further design consideration and/or justification via Performance-Based Solutions by the project Fire Safety Engineer;</p> <p>(a) <u>Temporary/Permanent Movement Joints</u> – All Control joints will need to be fire sealed with proprietary products to achieve the required FRL's. where these cannot be fire sealed, they will need addressing via performance based solutions.</p> <p>(b) <u>Perimeter Wet Wall penetrations</u> – Similar to the above, where any wet wall designs are proposed in the below ground levels and where perimeter gaps are proposed at the slab edges between storeys, given they cannot be fire sealed they will need addressing via performance based solutions.</p> <p>Fire Engineered Performance Solution: It is understood that the design team may engage a C10 Fire Safety Engineer to develop a Performance Based Solution to rationalise the extent of protection required to control joints and the report will need to demonstrate compliance with all relevant BCA Performance Requirement C1P2/C1P8.</p> <p>Note 1: The Concessions under C4D2 only apply to service penetrations and vehicular ramps between carpark levels occupying the same fire compartment and does not offer concessions for control joints.</p> <p>Note 2: Architectural Details and Specifications identifying fire seals and fire ratings proposed. Design Certification and Design Compliance Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier. A copy of the Fire Engineers Report prepared by an Accredited C10 Certifier – Fire Safety and who is also Registered Design Practitioner, is to also be provided.</p>
<p>BCA Clause C2D2 & Spec. 5 (Fire Resistance Levels)</p>	<p><u>BCA Clause C2D2 Spec 5-</u> specifies the Type of Construction and building elements required to achieve nominated FRL's.</p> <p>In this regard, the following areas have been identified as matters which may be requiring further design consideration and/or justification via Performance-Based Alternative Solutions by the project Fire Safety Engineer:</p> <p>(a) <u>Ground Floor to Level 3</u> – The Storage Cages within the carpark are classified as Class 7b Storage areas and given these spaces are not proposed to be fire separated from the carpark, the whole storey will need to adopt the higher FRL of 240/240/240 mins. In addition, the Carpark/ back of house Storage areas must also be fire separated from the residential lobbies and SOU's accordingly;</p> <p>(b) <u>Level 3</u> – The Cellar room located within the carpark is to be fire separated from the SOU and carpark by construction achieving an FRL in accordance with Spec 5 of the BCA;</p> <p>(c) <u>Level 4 to 7</u> - The floors and SOU bounding construction of the remainder of the Class 2 (Apartments) would only be required to achieve a minimum FRL of 90/90/90 and must also achieve a minimum thickness of 200mm including all set down to wet areas and balconies;</p> <p>(d) <u>Service Cupboards</u> - The depth of the services cupboards located in the common areas on the Residential levels should be limited to 500mm to avoid these areas constituting a room and requiring additional fire separation from the public corridors; The AC plant room on level 6 will required fire separation in accordance with Specification 5 and Clause C4D12;</p> <p>(e) <u>Services Shafts</u> – Ensure all services shafts have nominated FRL's and wall types are specifically designed to ensure they achieve the required FRL's in both directions;</p> <p>(f) <u>Cavity Fire Stopping</u> – Cavity separation is required between Levels and SOU's is to be detailed and any departures addressed via Performance Based Solutions;</p> <p>(g) <u>Inter-allotment Boundary</u> – The inter-allotment boundary has not been considered as it is expected that Council will require the lots to be consolidated upon completion to form one</p>

	<p>single allotment. This is to be confirmed prior to the CC Application so the inter-allotment boundary can be discounted;</p> <p>(h) <u>Permanent Movement Joints (PMJ) and wet wall Perimeter Gaps</u> – Where any PMJ's and / or wet walls are proposed with perimeter control joints not adequately fire sealed with a product achieving the required FRL, these will need to be addressed via Performance Based Solutions.</p> <p>Fire Engineered Performance Solution: It is understood that the design team may engage a C10 Fire Safety Engineer to develop a Performance Based Solution to rationalise reduced FRL's to the storage areas and the report will need to demonstrate compliance with all relevant BCA Performance Requirement C1P1/C1P2. <u>Additionally</u>, where slab set downs within the residential wet areas or balconies are proposed and the slab thicknesses cannot achieve 200mm thick (as required by AS3600-2018), the report will need to also demonstrate compliance with all relevant BCA Performance Requirement B1P1 in addition to C1P1 & C1P2.</p> <p>Note 1: The concessions offered for the omission of fire ratings to the roof structures are not available with the use of an FPAA H01H or FPAA101D sprinkler system.</p> <p>Note 2: Colour coded Fire Compartment Plans are to be provided with the Construction Certificate application which show total floor areas and volumes and include all fire walls and external fire rated walls as required by BCA and the Fire Engineering Strategy in the Performance Solution Report.</p> <p>Note 3: Details of the cavity separation at the external walls and roof junctions are to be provided together with colour coded plans showing the different FRL's for all wall types.</p> <p>Note 4: Architectural Details and Specifications identifying the Wall Types/Systems/Materials and the FRL's achieved are to be provided. Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier. Where required, a copy of the Fire Engineers Report prepared by an Accredited C10 Certifier – Fire Safety and who is also Registered Design Practitioner, is to also be provided..</p>
<p>BCA Spec 5 & Subclause 55C16 (Fire Resisting Construction/ Roof Lights)</p>	<p>BCA Clause Spec 5 Subclause 55C16: specifies that maximum size and location of roof lights in a roof this is required to be non-combustible;</p> <p>In this regard, the following areas have been identified as matters which may be requiring further design consideration and/or justification via Performance-Based Solutions by the project Fire Safety Engineer;</p> <p>(a) <u>Level 4 & 6</u> – Any part of the building that is within 3m and projects above 6m of the skylights located adjacent to the outdoor terraces on level 5 & 7 (both buildings) are required to be fire rated to achieve and FRL of 90/90/90 and any openings protected in accordance with Clause C4D5 (i.e. Drenchers, fire windows, fire doors, etc) or alternatively, any departures addressed via a performance based solution;</p> <p>(b) <u>Roof Level Skylight Details</u> – Roof light recesses have not been shown on the roof floor plans and these should be detailed so services consultants, namely wet and dry fire, can design services to these voids accordingly.</p> <p>Fire Engineered Performance Solution: It is understood that the design team may engage a C10 Fire Safety Engineer to develop a Performance Based Solution to rationalise the extent of fire separation and protection to the roof lights and the report will need to demonstrate compliance with all relevant BCA Performance Requirement C1P2, C1P8.</p> <p>Note: Architectural Details and Specifications identifying the Wall Types/Systems/Materials and the FRL's achieved are to be provided. Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier</p>
<p>BCA Clause D2D5 (Exit Travel Distances)</p>	<p>BCA Clause D2D5 (old D1.4) specifies the maximum egress travel distances permissible from a point on the floor to a point of choice where alternative exits are available or from a point on the floor to the nearest exits</p> <p>In this regard, the following areas have been identified as matters which may be requiring further design consideration and/or justification via Performance-Based Solutions by the project Fire Safety Engineer;</p> <p>a) <u>Ground Floor level</u> - Egress travel distance from the furthest point on the floor within the Bin Room, Main Switch Room and the main Lobby is up to 25m Worst Case (in lieu of 20m) to the single exit.</p> <p>b) <u>Level 2 & Level 3 Carpark</u> – Travel distances are considered compliant throughout the carpark and storage area on the premise that the traffic engineer confirms the proposed handrails</p>

	<p>(which are to be either inline or proud of any kerb) will comply with the provision of AS2890.1-2004</p> <p>Fire Engineered Performance Solution: It is understood that the client will engaged the services of an Accredited C10 Fire Safety Engineer to consider a Performance Based Solution to rationalise the exit stair arrangements and extended travel distances by demonstrating compliance with all relevant BCA Performance Requirement (D1P4, E2P2).</p> <p>Note: Architectural Details and Specifications are to be provided ensuring they cross reference any Fire Engineering requirements. Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier. A copy of the Fire Engineers Report prepared by an Accredited C10 Certifier – Fire Safety and who is also Registered Design Practitioner, is to also be provided</p>
<p>BCA Clause D2D8 (Widths of Exits & Paths of Travel)</p>	<p>BCA Clause D2D8 specifies the minimum unobstructed exit widths required.</p> <p>In this regard, following areas have been identified as matters which may be requiring further design consideration and/or justification via Performance-Based Solutions by the project Fire Safety Engineer; .</p> <ul style="list-style-type: none"> a) <u>Level 2 & 3 - Carpark Areas</u> – The Storage Cage/Rooms within the carpark have a reduced egress width of up to 600mm in lieu of 1.0m; b) <u>Level 7 – Egress stair</u> – The non-fire isolated stairway providing egress from level 6 is required to be provided with handrail extensions and turndowns and to top and bottom of the stair in accordance with AS1428.1-2009 and this will therefore encroach into the 1.0 minimum required egress widths at these locations. c) <u>Plant Rooms/areas</u> – There may be reduced egress widths around plant equipment that is less than the minimum required 1.0m. <p>Fire Engineered Performance Solution: It is understood that the client will engaged the services of a Fire Safety Engineer to consider a Performance Based Solution to rationalise reduced egress widths by demonstrating compliance with all BCA Performance Requirement (D1P4 / D1P6).</p> <p>Note: Architectural Details and Specifications are to be prepared by a suitably qualified design practitioner (Registered Architect) ensuring they cross reference any Fire Engineering requirements. Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier. A copy of the Fire Engineers Report prepared by an Accredited C10 Certifier – Fire Safety and who is also Registered Design Practitioner, is to also be provided.</p>
<p>BCA Clause D2D12 (Travel via Fire Isolated Exits and Discharge)</p>	<p>BCA Clause D2D12 - requires fire isolated stairs to discharge directly to open space or into the confines of the building that is no less than 2/3 open and where travel to the road necessitate passing within 6m of the external wall, the openings within the external wall required to be protected internally. The clause also regulates the door access provisions associated with fire stairs in certain circumstances.</p> <p>In this regard, the following areas have been identified as matters which may be requiring further design consideration and/or justification via Performance-Based Solutions by the project Fire Safety Engineer;</p> <ul style="list-style-type: none"> (a) <u>Fire Stair 1 Discharge Location</u> – Fire Stairs (FS1) discharges directly into a covered area of the building (in lieu of discharging directly to a road or open space) which is not open for 1/3 of its perimeter and has an unobstructed height of 3m; <u>In addition to the above</u>, upon discharge from the Fire Stairs occupants need to pass within 6m of the external walls and openings of the building to reach the road and as such, the external walls within 6m of the path of travel to the road require an FRL of 60/60/60 mins rated in both directions and all effected openings are required to be self-closing and internally protected with drenchers, fire windows, shutters, fire doors or the like; (b) <u>Fire Stair 2 Discharge Location</u> – Fire Stairs (FS2) discharges directly into the confines of the building (in lieu of discharging directly to a road or open space) which is not open for 2/3 of its perimeter and requires travel via an internal non-fire isolated stair; <u>In addition to the above</u>, upon discharge from the Fire Stairs occupants need to pass within 6m of the external walls and openings of the building to reach the road and as such, the external walls within 6m of the path of travel to the road require an FRL of 60/60/60 mins rated in both directions and all effected openings are required to be self-closing and internally protected with drenchers, fire windows, shutters, fire doors or the like. <p>Fire Engineered Performance Solution: It is understood that the design team will engage a C10 Fire Safety Engineer to develop a Performance Based Solution to rationalise egress stair discharge</p>

	<p>arrangements and the report will need to demonstrate compliance with all relevant BCA Performance Requirement (D1P4, D1P5, E2P2).</p> <p>Note: Architectural Details and Specifications are to be prepared by a suitably qualified design practitioner (Registered Architect) ensuring they cross reference any Fire Engineering requirements. Design Certification and Design Compliance Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier. A copy of the Fire Engineers Report prepared by an Accredited C10 Certifier – Fire Safety and who is also Registered Design Practitioner, is to also be provided.</p>
<p>BCA Clause D3D8 (Installations in Exits and Paths of Travel)</p>	<p><u>BCA Clause D3D8</u> - specifies requirements for the installation within the paths of travel to exits.</p> <p>In this regard, the following areas have been identified as matters which may be requiring further design consideration and/or justification via Performance-Based Solutions by the project Fire Safety Engineer.</p> <p>a) <u>Services in Fire Stairs</u> – there may be drainage pipes and other services (other than those permitted under clause D3D8) that are located within the fire stairs and where these are proposed, these will need to be considered under a performance based solution justifying compliance with all relevant Performance Requirements</p> <p>b) <u>Common Corridors and Lobby areas</u> – Any Electrical Services Board /NBN enclosure/ MSB's Rooms located along the path of travel to the exit is to be of non-combustible construction and all openings suitable smoke sealed where they are located in the path of travel to the exits. This includes any ventilation grills in doors or walls which will require smoke dampers.</p> <p>Fire Engineered Performance Solution: Where required, the design team may engage a C10 Fire Safety Engineer to develop a Performance Based Solution to rationalise departures with fire & Smoke separation required to the Electrical Services Board and services within the fire stair and the report will need to demonstrate compliance with all relevant BCA Performance Requirement (D1P4, D1P5, E2P2)</p> <p>Note: Architectural Details and Specifications are to be provided ensuring they cross reference any Fire Engineering requirements. Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the relevant Construction Certificate application to the satisfaction of the Registered Certifier. Where required, a copy of the Fire Engineers Report prepared by an Accredited C10 Certifier – Fire Safety and who is also Registered Design Practitioner, is to also be provided</p>
<p>BCA Clause D3D9 (Enclosure of Space Beneath Stairs and Ramps)</p>	<p><u>BCA Clause D3D9</u> - specifies requirements for fire separation of enclosures below exit stairways;.</p> <p>In this regard, the following areas have been identified as matters which may be requiring further design consideration and/or justification via Performance-Based Solutions by the project Fire Safety Engineer.</p> <p>a) <u>Level 6 AC Plant Room</u> – The plant room below the non-fire isolated stairway is to be enclosed in fire rated construction of no less than 60/60/60 and any openings protected with a self closing -/60/30 fire door. The room will inherently require fire separated that is in accordance with Clause C4D12 and Specification 5 being a room not within an SOU.</p> <p>Note: Architectural Details and Specifications are to be provided ensuring they cross reference any Fire Engineering requirements. Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the relevant Construction Certificate application to the satisfaction of the Registered Certifier. Where required, a copy of the Fire Engineers Report prepared by an Accredited C10 Certifier – Fire Safety and who is also Registered Design Practitioner, is to also be provided</p>
<p>BCA Clause D3D13 (Roof as open Space)</p>	<p><u>BCA Clause D3D13</u> - specifies requirements for a roof where an exit discharges over a roof to reach the road and open space.</p> <p>In this regard, the following areas have been identified as matters which may be requiring further design consideration and/or justification via Performance-Based Solutions by the project Fire Safety Engineer;</p> <p>(a) <u>Level 6 & level 7 Exit Discharge</u> - The exits to open space from the building at level 6 & 7 are onto the level 6 roof slab over the individual private storage rooms which requires consideration of this clause. As such, the concrete floor slab will need to achieve a min FRL of 120/120/120 and any openings (including openings in the external plane) within 3m of the path of travel to reach the road will need addressing via a performance based solution.</p> <p>Fire Engineered Performance Solution: It is understood that the design team will engaged the services of an Accredited Fire Safety Engineer to prepare a Performance Based Solution to rationalise the departures associated with openings within 3m of the path of travel along roof as</p>

	<p>open space. In this regard, the report is to demonstrate compliance with BCA all relevant Performance Requirements (C1P2/D1P4).</p> <p>Note: Architectural Details and Specifications are to be prepared by a suitably qualified design practitioner (Registered Architect) ensuring they cross reference any Fire Engineering requirements. Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier. A copy of the Fire Engineers Report prepared by an Accredited C10 Certifier – Fire Safety and who is also Registered Design Practitioner, is to also be provided</p>
<p>BCA Clause D3D22 (Handrails)</p>	<p>BCA cl. D3D22 –specified the requirement for handrails to all proposed internal and external stairways;</p> <p>In this regard, the following areas have been identified as matters which may be requiring further design consideration and/or justification via Performance-Based Solutions by the project Fire Safety Engineer</p> <p>(a) Level 2 & 3 Carpark Area – The handrails along to 1:8 driveway ramps that are also considered to be paths of travel to the exits on these levels are to be inline or sit proud of the kerb below together with confirmation from the traffic engineer that this arrangement is compliant with AS2890.1-2004. Any departures will need to be addressed via a performance based solution.</p> <p>Fire Engineered Performance Solution: It is understood that the design team will engaged the services of an Accredited Fire Safety Engineer to prepare a Performance Based Solution to rationalise the departures associated handrail arrangements along the path of travel to the exits. In this regard, the report is to demonstrate compliance with BCA all relevant Performance Requirements (D1P2).</p> <p>Note 1: Please note the additional handrail requirements for stairs required to be accessible under AS1428.1-2009. Project Access Consultant to review all stairways and handrail details and prepare a report for submission to the Registered certifier at the Construction Certificate stage.</p> <p>Note 2: Architectural Details and Specifications are to be prepared by a suitably qualified design practitioner (Registered Architect) ensuring they cross reference any Fire Engineering requirements. Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier. A copy of the Fire Engineers Report prepared by an Accredited C10 Certifier – Fire Safety and who is also Registered Design Practitioner, is to also be provided</p>
<p>BCA Clause D3D29 (Protection of Openable Windows)</p>	<p>BCA clause D3D29 –specified the requirements for openable windows to be provide with a means of protection where the floor below is located 2m or more;</p> <p>In this regard, the following areas have been identified as matters which may be requiring further design consideration and/or justification via Performance-Based Solutions:</p> <p>(a) Windows Sill Heights – There are several windows where there is a fall of more than 4m to the surface below, with sill heights of less than 865mm and have horizontal elements located between 150mm and 760mm .</p> <p>BCA Performance Solution: It is understood that the design team may engaged the services of a BCA consultant to consider a Performance Based Solution to rationalise the departures with the protection of openable windows by demonstrating compliance with all relevant BCA Performance Requirements (D1P3)</p> <p>Note: Architectural Details and Specifications are to be prepared by a suitably qualified design practitioner (Registered Architect). Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier</p>
<p>BCA Part D4, AS1428.1 (Accessibility requirements)</p>	<p>BCA Part D4 - requires accessibility compliance to be achieved.</p> <p>Accessibility Compliance Report: An Access consultant is to be engaged to review the proposal and provide an Accessibility compliance / Performance Solution Report to accompany the Construction certificate application submission to ensure that all aspects of the DDA, AS1428.1-2009 and Part D3 of the BCA have been addressed. Adaptable Housing/ADG provisions will also need to be considered and Pre-post adaptation plans will need to accompany the Construction Certificate application.</p> <p>Accessibility Compliance Report: It is understood that an access consultant will be engaged to review the proposal and provide an Accessibility compliance / Performance Solution Report to accompany the Construction certificate application submission to ensure that all aspects of the DDA, AS1428.1-2009 and Part D4 of the BCA have been addressed. Adaptable Housing/ADG</p>

	<p>provisions will also need to be considered and Pre-post adaptation plans will need to accompany the Construction Certificate application to the satisfaction of the Registered Certifier.</p> <p>Note 1: Architectural details are to incorporate all recommendations of the latest rendition of the Accessibility compliance and / BCA Performance Solution Report.</p> <p>Note 2: Architectural details and design certification to the satisfaction of the Registered Certifier carrying our certification work are to be provided with the Construction certificate application incorporating all recommendations of the latest rendition of the Accessibility compliance and / BCA Performance Solution Report.</p> <p>Note 3: Architectural details, Specifications, and design certifications together with the Access compliance report are to be prepared by a suitably qualified design practitioner (Registered Architect & Access Consultant) and submitted to the satisfaction of the Registered Certifier with the Construction Certificate application. Where A Performance Solution is proposed, a copy of the Access Report prepared by an Accredited Access Consultant from the Association of Access Consultants is to also be provided and accompanied by a BCA Performance Based Design Brief..</p>
<p>BCA Clause E1D2 (Fire Hydrants)</p>	<p>BCA Clause E1D2 - requires hydrants coverage to the building in accordance with AS2419.1-2021</p> <p>In this regard, the following areas have been identified as matters which may be requiring further design consideration and/or justification via Performance-Based Solutions by the project Fire Safety Engineer;</p> <ul style="list-style-type: none"> a) Fire Brigade Booster Assembly - The location of the Hydrant Booster Assembly (on Clifford Avenue) is not within sight of all main pedestrian entrances to the building as there are two main entrances. b) Fire Pump Room Location – Access to the any required Fire Pump room needs to be via a fire stair and air lock and/or directly from open space. Where accessed is via a fire stair, the stair is required to be provided with stair with <u>Stair Pressurisation</u> in accordance with AS1668.1-2015; c) Fire Hydrant Landing Valve Location – Hydrants are to be located on each storey within 4m of an exit or installed within the fire stairs where fire stairs are provided serving the building, ensuring egress paths are not reduced to under 1.0m (unless otherwise addressed via a Performance Based Solution); d) Fire Hydrant Coverage Plans – Detailed sweep coverage plans with dimensions are to accompany the Construction Certificate application; e) Fire Hydrant Design Departures – Any departures associated with the systems Standard of Performance (AS2419.1-2021) needs to be identified by the Registered Design Practitioner/Competent Fire Safety Practitioner for the Registered Certifier and Fire Safety Engineers consideration. <p>Fire Engineered Performance Solution: Where any part of design is proposed to deviate (subject to design engineers' advice) the design team will engage a C10 Fire Safety Engineer to develop a Performance Based Solution and the report will need to demonstrate compliance with all relevant BCA Performance Requirement E1P3.</p> <p>Note 1: The Fire Services Design Engineer must be an Accredited Practitioner - (Fire Safety) having relevant accreditation with the Fire Protection Association of Australia (FPAA) or the Department of Fair trading. Furthermore, the designer must have suitable qualifications in the respective fields they are designing to, and their design details and certifications are to identify any shortfalls or departures associated with the either the BCA or the relevant Australian Standards.</p> <p>Note 2: Architectural Details and Specifications are to be provided ensuring they cross reference any Fire Engineering requirements. Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier. A copy of the Fire Engineers Report prepared by an Accredited C10 Certifier – Fire Safety and who is also Registered Design Practitioner, is to also be provided.</p>
<p>BCA Clause E1D3 (Fire Hose Reels)</p>	<p>BCA Clause E1D3 specifies the requirements for Fire Hose Reels in Buildings.</p> <p>In this regard, the following areas have been identified as matters which may be requiring further design consideration and/or justification via Performance-Based Solutions by the project Fire Safety Engineer;</p> <ul style="list-style-type: none"> a) Fire Hose Reel Coverage – Fire Hose Reel coverage is required to all areas of the Level 2 and Level 3 carpark areas and Ground floor level (including services plant rooms and waste room) without passing through a fire door.

	<p>b) <u>Fire Hose Reel Coverage Plans</u> – Detailed sweep coverage plans with dimensions are to accompany the Construction Certificate application.</p> <p>c) <u>Fire Hose Reel Design Departures</u> – Any departures associated with the systems Standard of Performance (AS2441.1-2005) needs to be identified by the Registered Design Practitioner/Competent Fire Safety Practitioner for the Registered Certifier and Fire Safety Engineers consideration. Fire Engineered Performance Solution: It is understood that the client may engaged the services of a Fire Safety Engineer to consider a Performance Based Solution to rationalise the Fire Hose Reel coverage arrangements by demonstrating compliance with BCA Performance Requirements E1P1.</p> <p>Note 1: The fire services design engineer must demonstrate that they are Competent Fire Safety Practitioner (CFSP) and they must be on the Register of the Fire Protection Association Australia (FPAA). Furthermore, the designer must have suitable qualifications in the respective fields they are designing to, and their design details and certifications are to identify any shortfalls or departures associated with the either the BCA or the relevant Australian Standards.</p> <p>Note 2: Architectural & Fire Services Details and Specifications are to be provided ensuring they cross reference any Fire Engineering requirements. Design Certification and Design Compliance Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier. A copy of the Fire Engineers Report prepared by an Accredited C10 Certifier – Fire Safety and who is also Registered Design Practitioner, is to also be provided.</p>
<p>BCA Clauses E1D4, E1D5, E1D6, E1D8 & Specification 17 (Sprinklers)</p>	<p><u>BCA Clauses E1D4, E1D5, E1D6, E1D8</u> requires sprinklers to buildings in accordance with AS2118.1-2017.</p> <p>In this regard, the following areas have been identified as matters which may be requiring further design consideration and/or justification via Performance-Based Solutions by the project Fire Safety Engineer;</p> <p>a) <u>Fire Brigade Booster Assembly</u> - The location of the Sprinkler Booster Assembly (on Clifford Avenue) is not within sight of all main pedestrian entrances to the building as there are two main entrances;</p> <p>b) <u>Fire Pump Room Location</u> – Access to the any required Fire Pump room needs to be via a fire stair and air lock and/or directly from open space. Where accessed is via a fire stair, the stair is required to be provided with stair with <u>Stair Pressurisation</u> in accordance with AS1668.1-2015;</p> <p>c) <u>Fire Sprinkler Clearances</u> –Sprinkler heads proposed to the storage areas, for clearances purposes may require addressing via a fire engineered Performance Based Solution and fire services consultant to confirm sprinkler clearance;</p> <p>d) <u>Fire Sprinkler Design Departures</u> – Any departures associated with the systems Standard of Performance (AS2118.1-2017) needs to be identified by the Registered Design Practitioner/Competent Fire Safety Practitioner for the Registered Certifier and Fire Safety Engineers consideration.</p> <p>Fire Engineered Performance Solution: It is understood that the client will engaged the services of a Fire Safety Engineer to consider a Performance Based Solution to rationalise the Sprinkler System arrangements by demonstrating compliance with BCA Performance Requirements E1P4</p> <p>Note 1: The Fire Services Design Engineer must be an Accredited Practitioner - (Fire Safety) having relevant accreditation with the Fire Protection Association of Australia (FPAA) or the Department of Fair trading. Furthermore, the designer must have suitable qualifications in the respective fields they are designing to, and their design details and certifications are to identify any shortfalls or departures associated with the either the BCA or the relevant Australian Standards.</p> <p>Note 2: Architectural Details and Specifications are to be provided ensuring they cross reference any Fire Engineering requirements. Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier. A copy of the Fire Engineers Report prepared by an Accredited C10 Certifier – Fire Safety and who is also Registered Design Practitioner, is to also be provided.</p>
<p>BCA Clause E1D17 & E2D21 (Provisions for Special Hazards)</p>	<p><u>BCA Clauses E1D17 & E2D21</u> specifies provision for Special Hazards</p> <p>In this regard, the following areas have been identified as matters which may be requiring further design consideration and/or justification via Performance-Based Alternative Solutions by the project Fire Safety Engineer;</p> <p>(a) <u>Photovoltaic/Solar Panels</u> – Photo voltaic panels are proposed on the Roof and these need to be identified in the FEBQ/FER. Where battery storage systems are also proposed, these</p>

	<p>may need to be contained in separate fire rated enclosures and also identified in the FEBQ/FER..</p> <p>(b) <u>Electric Vehicle charging Facilities</u> – The provision of any electric vehicle charging facilities in the carparks needs to be identified in the FEBQ/FER.</p> <p>(c) <u>Impulse Fans</u> – The use of Impulse/jet fans could affect operation of the carpark fire systems and the firefighting operations of FRNSW. As such, consideration to FRNSW guidelines will need to be considered. https://www.fire.nsw.gov.au/gallery/files/pdf/guidelines/impulse_fans_in_carparks.pdf.</p> <p>(d) <u>VOIDS</u> – Any voids connecting Levels have potential to form a quasi-atrium and should be considered</p> <p>Fire Engineered Performance Solution: It is understood that the design team will engaged the services of an Accredited Fire Safety Engineer to prepare a Performance Based Solution to rationalise several BCA DTS departures and the above Special Hazard Provision will need to be considered accordingly.</p> <p>Note: Architectural & Fire Services Details and Specifications are to be provided ensuring they cross reference any Fire Engineering requirements. Design Certification and Design Compliance Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier. A copy of the Fire Engineers Report prepared by an Accredited C10 Certifier – Fire Safety and who is also Registered Design Practitioner, is to also be provided</p>
<p>BCA Clause E2D3, E2D8, E2D9, (NSW) E2D16 & Specification 20 & 21 (Smoke Hazard Management)</p>	<p>BCA Clauses E2D3, E2D4 & Specification 20 & 21 specifies smoke hazard management systems applicable to buildings and in this case, the following are required;</p> <p>(a) AS3786-2014 Smoke Alarm System within each SOU</p> <p>(b) AS1670.1-2018 Automatic Fire Detection and Alarm System throughout all common areas.</p> <p>(c) AS1670.1-2018 Building Occupant Warning throughout all common areas.</p> <p>(d) AS1670.3 -2018 Alarm System Monitoring at the FDCIE (fire panel).</p> <p>(e) AS2118.4-2012 Sprinkler System throughout</p> <p>In this regard, the following areas have been identified as matters which may be requiring further design consideration and/or justification via Performance-Based Solutions by the project Fire Safety Engineer;</p> <p>(a) <u>Smoke Detection Systems</u> –Detection systems are typically required throughout all common areas in the Carpark and Residential Corridors as a compensatory measure to DTS deviations within the Fire Engineering Strategies for the building .they will also be required to <u>automatic shutdown</u> of ducted any air handling within the Class 9b part.</p> <p>(b) <u>Smoke Alarms Systems</u> –Smoke alarms within the SOU's are to strictly comply with Specification 20 and Subclause S20C3 and be located in hallways between bedrooms and any other areas or located in front of bedroom doors where there is no hallway and must not be located near ceiling fans or supply AC vents. Smoke alarms are to be interconnected within each respective unit and be located 300mm from intersecting walls.</p> <p>(c) <u>Fire Indicator Panel</u> – Given the building requires a Sprinkler System, an FIP with ASE will be required at the Principal Building Entrance.</p> <p>(d) <u>Stair Pressurisation</u> –Fire stairs providing access to any Fire Pump Room are required by AS2419.1-2021 to be provided with Stair Pressurisation system complying with AS1668.1.</p> <p>(e) <u>Smoke Hazard management Design Departures</u> – Any departures associated with the systems Standard of Performance (/AS2118.1-2017 / AS1670.1-2018 / AS3786 / AS1668) needs to be identified by the Competent Fire Safety Practitioner for the design team and Registered Certifiers consideration</p> <p>Fire Engineered Performance Solution: Where any part of design is proposed to deviate (subject to design engineers' advice) the design team will engage a C10 Fire Safety Engineer to develop a Performance Based Solution to rationalise certain aspects of the</p>

	<p>Smoke Hazard Management System designs and the report will need to demonstrate compliance with all relevant BCA Performance Requirements (E2P2).</p> <p>Note 1: The Fire Services Design Engineer must be an Accredited Practitioner - (Fire Safety) having relevant accreditation with the Fire Protection Association of Australia (FPAA) or the Department of Fair trading. Furthermore, the designer must have suitable qualifications in the respective fields they are designing to, and their design details and certifications are to identify any shortfalls or departures associated with the either the BCA or the relevant Australian Standards.</p> <p>Note 2: Architectural Details and Specifications are to be provided ensuring they cross reference any Fire Engineering requirements. Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier. A copy of the Fire Engineers Report prepared by an Accredited C10 Certifier – Fire Safety and who is also Registered Design Practitioner, is to also be provided</p>
<p>BCA Clause F1D5 (External Waterproofing)</p>	<p><u>BCA Clause F1D5</u> specifies the requirements for external waterproofing membranes.</p> <p>In this regard, the following areas have been identified as matters which may be requiring further design consideration and/or justification via Performance-Based Solutions by the project Fire Safety Engineer;</p> <p>(a) <u>External Waterproofing/Freeboard heights</u> – Architect/Hydraulic/Façade Engineer/s to determine freeboard heights and design door threshold/step down accordingly. They are also to design external waterproofing membranes to walls, planter boxes, podium roof tops, concrete roofs etc;</p> <p>(b) <u>External Waterproofing</u> - The waterproofing and flashing details of the planter boxes, door and windows are to be in accordance with AS4654 noted above – refer to diagrams below for assistance;</p> <p>(c) <u>Pedestal Paver Systems</u> – Where Poly Paver / Pedestal Paver systems are proposed to balconies, terraces, podium common areas etc, they will require Performance Based Solutions as the pavers do not provide the required 1:100 falls required to finished floor levels as per the applicable Australian Standards;</p> <p>In this regard, 1:80 falls or positive falls are typically required at the concrete substrate level as part of the justification from the Waterproof Consultant developing the Performance Based Design Brief/BCA Performance Solution Report;</p> <p>(d) <u>Waterproof Membranes on External Walls</u> – BCA Clauses C2D10 and C2D14 permits external waterproofing materials to be applied to an adjacent floor surface and roof surface including vertical upturns and below ground membranes projecting above natural ground floor to a maximum height of 250mm. Wherever this is proposed, to deviate from the above clauses, this will require justification via a Performance Based Solution.</p> <p>BCA Performance Solution: Where any part of design is proposed to deviate (subject to design engineers' advice) the design team will engage a C10 Fire Safety Engineer and/or Professional Waterproofing Consultant to develop a Performance Based Solution to rationalise certain aspects of the waterproofing system designs and the report will need to demonstrate compliance with all relevant BCA Performance Requirements F1P2 & C1P2.</p> <p>Note 1: F1D4 and F1D5 do not apply to a roof designed to comply with F3D2 (a) to (d). Also, F1D3 to F1D5 do not apply to a balcony, podium or singular horizontal surface part of a building where the flooring is of timber decking or other perforated flooring; or which is located directly above ground – refer to F1D2 Application of Part for further guidance in this regard.</p> <p>Note 2: Architectural, Hydraulic and Waterproofing Details and Specification are to be provided. Design Certification and Design Compliance Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier. Where design departures are proposed, a Performance Based Solutions addressing BCA performance Requirement F1P2 is to be prepared by the waterproofing Consultant and a copy of the Report is to also be provided.</p>
<p>BCA Clause F1D5 (External Waterproofing)</p>	<p><u>BCA Clause F1D5</u> specifies the requirements for external waterproofing membranes.</p> <p>In this regard, the following areas have been identified as matters which may be requiring consideration by either way of redesign or via justification from the project Architect or waterproofing consultant via a performance based solution,</p> <p>a) <u>External Waterproofing/Freeboard heights</u> – Architect/Hydraulic/Façade Engineer/s to determine freeboard heights and design door threshold/step down accordingly. They are also to design external waterproofing membranes to walls, planter boxes, podium roof tops, concrete roofs etc</p>

	<p>b) <u>External Waterproofing</u> - The waterproofing and flashing details of the planter boxes, door and windows are to be in accordance with AS4654 noted above – refer to diagrams below for assistance;</p> <p>c) <u>Pedestal Paver Systems</u> – Where Poly Paver / Pedestal Paver systems are proposed to balconies, terraces, podium common areas etc, they will require Performance Based Solutions as the pavers do not provide the required 1:80 falls required to finished floor levels as per the applicable Australian Standards;</p> <p>In this regard, 1:80 falls or positive falls are typically required at the concrete substrate level as part of the justification from the Waterproof Consultant developing the Performance Based Design Brief/BCA Performance Solution Report;</p> <p>d) <u>Waterproof Membranes on External Walls</u> – BCA Clauses C2D10 and C2D14 permits external waterproofing materials to be applied to an adjacent floor surface and roof surface including vertical upturns and below ground membranes projecting above natural ground floor to a maximum height of 250mm. Wherever this is proposed to deviate from the above clauses, this will require justification via a Performance Based Solution.</p> <p>BCA Performance Solution: Where any part of design is proposed to deviate (subject to design engineers' advice) the design team will engage a C10 Fire Safety Engineer and/or Professional Waterproofing Consultant to develop a Performance Based Solution to rationalise certain aspects of the waterproofing system designs and the report will need to demonstrate compliance with all relevant BCA Performance Requirements F1P2 & C1P2.</p> <p>Note 1: F1D4 and F1D5 do not apply to a roof designed to comply with F3D2 (a) to (d). Also, F1D3 to F1D5 do not apply to a balcony, podium or singular horizontal surface part of a building where the flooring is of timber decking or other perforated flooring; or which is located directly above ground – refer to F1D2 Application of Part for further guidance in this regard.</p> <p>Note 2: Architectural, Hydraulic and Waterproofing Details and Specification are to be provided. Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier. Where design departures are proposed, a Performance Based Solutions addressing BCA performance Requirement F1P2 is to be prepared by the Engineer and waterproofing consultant and a copy of the Report is to also be provided.</p>
<p>BCA Clause F2D2 (Waterproofing of Wet Areas)</p>	<p><u>BCA Clause F2D2</u> specifies the requirements for waterproofing of internal wet areas. Class 2 buildings must have building elements in a wet area (bathroom, shower, laundry, powder room) that are water resistant or waterproofed in accordance with Specification 26 and AS3740-2021.</p> <p>Please ensure the new standard is reviewed to ensure appropriate details are adopted in the proposed design, noting 1:100 falls are now required at the membrane substrate level (concrete floor) and additionally, 1:80 falls are required throughout on the FFL in Internal wet areas as per BCA Clause F2D2 which takes precedence over the Standard.</p> <p>In this regard, the following areas have been identified as matters which may be requiring consideration by either way of redesign or via justification from the project Architect or waterproofing consultant via a performance based solution,</p> <p>(a) <u>Windows in Showers</u> – there are windows in showers that may not strictly comply with the provision of AS3740.1-2021. (e.g Unit 7 & Unit 8 Bath).</p> <p>BCA Performance Solution: Where any part of design is proposed to deviate (subject to design engineers' advice) the design team will need to engage a Professional Waterproofing Consultant to develop a Performance Based Solution to rationalise certain aspects of the waterproofing system designs and the report will need to demonstrate compliance with all relevant BCA Performance Requirement F1P2.</p> <p>Note 1: Architect and Builder to refer to Specification 26 for specific design details. Definitions for explanations of Water Resistant and Waterproofed are also referenced in Specification 26.</p> <p>Note 2: Drainage/Puddle floor waste flanges are required to <u>ALL</u> floor wastes. Shower roses which are ceiling mounted require waterproofing application to extend to the full height to the wall and ceilings to be water resistant. Falls to floor wastes in all internal wet areas are to be 1:80.</p> <p>Note 3: Third Party Water proofing consultants are to be engaged to assist the Architect with detailing compliance requirements.</p> <p>Note 4: Architectural, Hydraulic and Waterproofing Details and Specification are to be provided. Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier. Where design departures are proposed, a Performance</p>

	<p>Based Solutions addressing BCA performance Requirement F1P2 is to be prepared by the waterproofing consultant and a copy of the Report is to also be provided.</p>
<p>BCA Clause F3D1, F3D2, F3D3, F3D4 & F3D5 (Wall Cladding / External Wall Weather proofing) & BCA Clauses F8D2 to F8D5 – (Condensation Management)</p>	<p><u>BCA Clause F3D5</u> specifies the need for the designers to ensure the external walls are designed to prevent water and moisture ingress. <u>BCA Clauses F8D2 to F8D5</u> specifies the requirements for condensation management in buildings.</p> <p>In this regard, the following areas have been identified as matters which may be requiring further design consideration and/or justification via a Performance-Based Alternative Solutions by the project Facade Engineer;</p> <p>(a) <u>External Wall Weatherproofing/Facade Engineering</u> - In order to comply with the deemed to satisfy provisions, the architect and façade engineers must design the building envelope and surrounding surfaces in accordance with Clauses F3D2, F3D3, F3D4 & F3D5 and where this cannot be achieved, a Performance based solution utilising Verification F3V1 and addressing Performance Requirements F3P1 will need to be provided;</p> <p>(b) <u>Condensation Management</u> – The provisions of Clauses F8D2 to F8D5 need to also be considered in the external wall design.</p> <p>BCA Performance Solution: Façade Engineer to prepare a report to assess water and moisture ingress via the external walls and roof whilst considering BCA Clauses F3D1, F3D2, F3D3, F3D4, F3D5 & F8D2 to F8D5 and also develop a Performance Based Solution to address BCA Clauses F3D5 and BCA Performance Requirement F3P1 as it is unlikely that the external wall cladding will not comply with these provisions accordingly</p> <p>Note 1: External cladding that does not consist of the above options will need to be subject to performance based solutions.</p> <p>Note 2: External wall claddings in buildings of Type A Construction must be non-combustible and tested in accordance with AS1530.1-1994 as required by BCA Clause C2D10.</p> <p>Note 3: External waterproofing membranes in accordance with F1D5 and AS4654.1 or 2 - 2012 are not permissible for vertical or near vertical surfaces and relate to horizontal surfaces only.</p> <p>Note 4: Sarking type materials in Type B or <u>Type A Construction</u> must not exceed 1mm thickness and have a Flammability Index not greater than 5 to be installed on external walls of buildings and if this is not complied with, the sarking Type Materials must be non-combustible and tested in accordance with AS1530.1-1994 as required by BCA Clause C2D10.</p> <p>Note 5: Architectural and/or Façade Engineering Details, Specifications are to be provided. Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier. Where design departures are proposed, a Performance Based Solution addressing BCA performance Requirement F3P1 and Verification Method F3V1 and BCA Performance Requirement F8P1 and Verification Method F8V1 respectively, is to be prepared by the Engineer and a copy of the Report is to also be provided</p>
<p>BCA Clause F4D8 (Construction of Sanitary Facilities)</p>	<p><u>BCA Clause F4D8</u> - specifies requirements for the location of door to the closet pans in full enclosed sanitary compartments;</p> <p>In this regard, the following areas have been identified as matters which may be requiring further design consideration i.e. (lift off hinges, cavity sliding doors, etc);</p> <p>(a) <u>Level 4 Unit 8</u> – the WC is located within 1.2m of the inward swinging door to the Powder room and Ensuite;</p> <p>(b) <u>Level 5 Unit 10 & 11</u> – the WC is located within 1.2m of the inward swinging door to the Ensuites.</p> <p>Note: Architectural Details and Specifications are to be prepared by a suitably Registered design practitioner (Registered Architect) are to be provided. Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier</p>
<p>BCA Clause F5D2 (Height of Rooms)</p>	<p><u>BCA Clause F5D2</u> - specifies the minimum ceiling height to habitable and non-habitable room.</p> <p>In this regard, the following areas have been identified as matters which may be requiring further design consideration or justification via a Performance Based Solution ;</p> <p>a) <u>Storage Cages</u> – The minimum sprinkler head clearances required for sprinklers within the storage cages may reduce the head height clearance of the cages / rooms to be less than the minimum 2.1m and this will required addressing via performance based solution.</p> <p>BCA Performance Solution: The applicant may engage the services of an BCA Consultant to develop a Performance Based Solution in accordance with Clause A2G2 to justify the departures above by demonstrating compliance with all relevant BCA Performance Requirements (F5P1).</p>

	<p>Note 1: Services design details are to be reviewed and confirmation is to be provided that services are not encroaching below the minimum head height clearances</p> <p>Note 2: Architectural Details and Specifications are to be provided ensuring they cross reference any Fire Engineering requirements. Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier. A copy of the Performance Solution Report is to also be provided.</p>
BCA Part F7 (Acoustics)	<p>BCA Part F7 – specifies the acoustic separation provisions applicable to the residential development</p> <p>In this regard, the following areas have been identified as matters which may be requiring further design consideration or justification via a Performance Based Solution by the acoustic engineer;</p> <p>a) Level 5 Building A - Penthouse Level – There is a lift landing doors that provide direct access into the residential Sole Occupancy unit which will not achieve the minimum Rw of 30.</p> <p>BCA Performance Solution: The applicant may engage the services of an Acoustic Consultant to develop a Performance Based Solution in accordance with Clause A2G2 to justify the departures above by demonstrating compliance with all relevant BCA Performance Requirements (F7P2).</p> <p>Note: Architectural & Acoustic Consultant Details and Specifications are to be provided. Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier. A copy of the Performance Solution Report is to also be provided.</p>
BCA Part G1D2 NSW (Swimming Pools)	<p>BCA NSW Part G1D2 specifies specific criteria for Swimming Pools which need to be read in conjunction with the NSW Swimming Pools Act/Regulation and AS1926.1-2012.</p> <p>In this regard, the following areas have been identified as matters which may be requiring consideration at the Construction Certificate application stage and or addressed via a Performance Based Solution:</p> <p>(a) Level 5 Building A - Private Pool / Spa – Barriers are to be provide in accordance with AS1926.1-2012 or Clause 9 of the Swimming Pool Regulation 2018.</p> <p>(b) Pool & Spa Drainage – There is not DTS provisions that satisfied the performance requirement G1P1 for the drainage of pool/spa water and as such, this will need to be addressed via a Performance Based Solution.</p> <p>(c) E1 Registered Certifier's Compliance Statement – We recommend an E1 registered Certifier be engaged to review the plans and provide design advice and a design compliance statement to confirm the proposed barriers comply with the BCA and AS1926.1 and the Swimming Pool Regulation.</p> <p>BCA Performance Solution: It is understood that the applicant will engaged the services of an Hydraulic Consultant to develop a Performance Based Solution in accordance with Clause A2G2 to rationalise the swimming pool drainage by demonstrating compliance with all relevant BCA Performance Requirements (G1P1).</p> <p>Note: Architectural Details and Specifications are to be prepared by a suitably Registered design practitioner (Registered Architect) are to be provided. Design Certification and Design Compliance Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier.</p>
BCA Part J (Energy Efficiency)	<p>BCA Section J specifies the energy efficiency provision applicable to the building.</p> <p>Detailed Section J compliance report to be provided at the Construction Certificate stage.</p> <p>In addition, the DTS requirements of NSW Variations of Section J (Energy Efficiency) of the BCA will need to apply to the proposed Class 2 parts of the development. Refer to NSW Variation Clauses J2D2(2), J3D5, J3D6 J4D2, J4D3, J3D10(3), J3D10(5), J3D10(6), J5D2 to J5D5, J6D2 to J6D13, J8D2 & Part B2 of the PCA, J9D3, J9D4 and J9D5.</p> <p>The building is located in Climate Zone 5 and the relevant provisions of the BCA are to be applied to each classification concerned adoringly.</p> <p>Note 1: In order to demonstrate compliance, it is understood that a Section J report and Verification report from an ESD Consultant will be submitted with the Construction Application.</p> <p>Note 2: Architectural Details and Specifications are to be prepared by a suitably Registered design practitioner (Registered Architect) are to be provided. Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier.</p> <p>Note 3: For a Class 2 building, where a relevant development consent requires compliance with a BASIX Multi Dwelling Certificate issued under Version 3.0 or earlier, NSW Section J of NCC 2019 Volume One Amendment 1 applies and where a relevant development consent requires</p>

	compliance with a BASIX Multi Dwelling Certificate issued under Version 4.0 or later, Section J of NCC 2022 Volume One applies.
Safety in Design	<p><u>Safety in Design</u> is a requirement for the design team to consider which in some instances may be over and above the minimum requirements of the BCA.</p> <p>In this regard, the following areas have been identified as preliminary matters which may be requiring consideration at the Construction Certificate application stage:</p> <ul style="list-style-type: none"> (a) Photovoltaic Panels and any onsite Battery storage systems are to meet the operational requirements of FRNSW. (b) Electric vehicle charging provisions are to meet the operational requirements of FRNSW. (c) The use of impulse fans in the carpark are to meet the operational requirements of FRNSW. (d) Climbable elements near balustrades including but not limited to AC units, Gas/water fixtures, light fixtures or other climbable elements located within 900mm non climbable zone (likened to non-climbable zone provisions within the swimming pool code) (e) Privacy screens between balconies are to ensure they have no climbable elements located between 750mm-760mm. (f) Frameless glass balustrades require interconnecting rails and end fixing in accordance with AS1288-2021. (g) Structural and external building elements (and other) are to consider the proximity of the shoreline and coastal construction design principles must be considered for longevity of the building (h) External and internal surfaces are to comply with the slip resistance criteria referenced under AS/NZS 4586-2013. (i) All safety and toughened glazing need to have permanently affixed labels as required by AS1288 -2021. (j) Roof anchoring systems and roof access provisions need to comply with Work Health Safety and Work Cover requirements. (k) Areas where occupants could trip, fall and cause injury (over and above areas listed in the BCA) should be provided with suitable signs, high visibility markings, gates, barriers or the like in this regard. (l) Safety in design principles to be considered by all consultants for areas outside the minimum requirements of the BCA – namely in relation to slips trips, falls and workplace health and safety. (m) Access for maintenance is to comply with Work Health Safety and Work Cover requirements via AS1657-2018 fixed and/or removable type ladders and platforms etc . (n) Internal and external carpark areas including driveways, turning circles and car spaces are to comply with AS2890.1 -2004 and AS2890.6-2009. Safety provisions associated with the vehicular accessways and lift landings and pedestrian thoroughfares are to be considered. <p>Note 1: The above list of matters are preliminary matters of consideration that we have identified and is in no way meant to be limited to these. The Design team has their own responsibility to consider these and any other matters from a safety in design perspective.</p> <p>Note 2: Architectural Details and Specifications are to be prepared by a suitably Registered design practitioner (Registered Architect) are to be provided. Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier.</p>

It is important to note that the above is not an exhaustive list of the matters requiring attention and the summary is to be read in conjunction with the remainder of the report in Section 3 below.

3. BCA ASSESSMENT

The following is a summary of relevant areas of BCA Compliance that will need to be considered & addressed for the proposed development prior to the issue of a Construction Certificate.

Section A – General Provisions & Key Building Characteristics:

The key building characteristics and classifications for the proposed development as determined by Volume 1 of the Building Code of Australia are as follows:

CHARACTERISTICS	PROPOSED
– BCA CLASSIFICATION:	Class 2 - (Residential SOU's) Class 7a (Carpark) Class 7b (Storage)
– RISE IN STOREYS:	Six (6)
– STOREYS CONTAINED:	Eight (8)
– TYPE OF CONSTRUCTION:	Type A Construction
– EFFECTIVE HEIGHT:	>12m and <25m (RL 48.95 – RL 25.75 = 23.2m) – Conservatively considered to be a RIS of Eight (8) with regard to effective height which will not affect the fire safety strategy for the Building as the building will be less than 25m
– FIRE COMPARTMENTS:	Complies with BCA Table C2.2
– CLIMATE ZONE:	Climate Zone 5
– SPECIAL CONSIDERATIONS:	Coastal Construction – (Materials to be compatible for corrosion where the site is within proximity of breaking surf) and Electric Vehicle Charging and Photovoltaic Solar panels and Battery Storage Systems

Note 1: The base of the lift do not constitute an RL requiring consideration under the Effective Height Calculations as these are not occupant accessible areas – Principal Certifier to be satisfied with this consideration at the Construction Certificate Stage.

Note 2: The assessment considered separate Sprinkler and Hydrant Systems being utilised to AS2419.1-2021 and AS2118.1-2017 respectively and no combined or FPAA systems were considered. Should these considerations change, a reassessment of the design is required at the Construction Certificate application stage.

Note 3: The floor area of storage areas within the basement carpark Levels is considered to occupy more than 10% of the floor area of the storey and in any case, there are multiple classification on these levels. Therefore, the storage areas are classified as Class 7b.

Note 4: Although the building technically has a rise in storey of six (6), our assessment and determination of the effective height has conservatively considered the building to have a RIS of Eight (8).

Note 5: The Gym located on the Ground Floor level is considered to be ancillary to the Class 2 Residential Classification given the size of the area and it has not been deemed to be a Class 9b Gym. - Principal Certifier to be satisfied with this consideration at the Construction Certificate Stage.

Fire Source Features:

The site is currently situated over multiple allotments however, the inter-allotment boundary has not been considered as it is expected that Council will require the lots to be consolidated upon completion to form one single allotment. This is to be confirmed prior to the CC Application so the inter-allotment boundary can be discounted

In this regard, the site will be situated over a single allotment (once consolidated) and the distances from the nearest Fire Source Features / allotment boundaries are as follows:

FIRE SOURCE FEATURE	DISTANCE TO FIRE SOURCE FEATURE
– NORTHERN SIDE	>6m from the far boundary of the opposite side of Fairlight Street (Approx. 20m)
– EASTERN SIDE	<3m from the site boundary adjoining the allotment (Approx. 1.89m)

- WESTERN SIDE	<3m from the site boundary adjoining the allotment (Approx. 1.0m)
- SOUTHERN SIDE	>6m from the far boundary of the opposite side of Clifford Avenue (Approx. 29m)

Note: Refer to BCA Clauses C4D3, C4D5 & Specification 5 in the report below for further commentary regarding fire source features and requirements for fire protection, etc.

Floor Area / Volume:

The maximum permissible fire compartment sizes for the different classification in the development must comply with the limitations of BCA Table C3D3 as detailed for each classification detailed below:

CLASSIFICATIONS	FIRE COMPARTMENT SIZES	COMPLIES
- CLASS 2 – (RESIDENTIAL SOU's)	N/A	Yes
- CLASS 7a & 7b - (CARPARK / STORAGE)	Max Floor Area – 5,000m ² Max Volume - 30,000m ³	Yes

Note: Fire compartmentation limitations do not apply to Class 2 Residential SOU's and/or to a Class 7a sprinkler protected carpark.

Section A - Part A – Classification of Buildings & Structures:

The proposed development will generally satisfy the DTS provisions and inherently the Objectives, Functional Statements & Performance Requirements of Section A of the BCA subject to compliance with the following:

1. **BCA cl. A2G2 – Performance Solutions:** Where a Performance Solution is proposed, compliance is achieved by demonstrating compliance with the relevant Performance Requirements or the solution is at least equivalent to the Deemed-to-satisfy provisions.

Performance solutions must be shown to comply with the relevant Performance Requirements through one or a combination of the following Assessment Methods;

- a) Evidence of suitability in accordance with BCA Part A5G3; that shows the material, product, plumbing and drainage product, form of construction or design meets the relevant Performance requirements;
- b) A verification method using the BCA referenced Verification methods or other Verification Methods accepted by the appropriate authority that demonstrate compliance with the relevant Performance Requirements;
- c) Expert Judgement; or
- d) Comparison to the DTS provisions.

All Performance Solutions are required to be carried out with the criteria of BCA A2G2(4) and include the following:

- a) Be subject to a Performance Based Design Brief in consultation with all key stakeholders; carry out analysis in accordance with the BCA Adopted Assessment Methods;
- b) Evaluate results against specified Acceptance Criteria; and subject to a final report which addresses all the provisions of this clause.

Note 1: All Performance Solutions are required to identify all relevant Performance Requirements under the subject BCA Parts and all 'other' relevant Performance Requirements under in other BCA Parts or Sections that are relevant to any aspects of the Performance Solutions proposed.

Note 2: Fire & Rescue NSW have formally advised through their position statements that they are considered a key stakeholder for all fire and life safety measures and as such a Fire Engineering Brief Questionnaire (FEBQ) is required.

Note 3: Non fire related design departures such as structural, access, amenity, energy efficiency etc need to be subject to separate Performance-Based Design Briefs (PBDB).

Note 4: All DTS departures require Performance-Based Design Briefs (PBDB) to be prepared to outline their proposal for justification of the departures and for purposes of providing the relevant stakeholders with

the opportunity for comment and concurrence, prior to the formalisation of the Final BCA Performance Solution Report/s

Note 5: All Performance Solutions are to be reviewed by all relevant key stakeholders for concurrence with the authors proposals. Stakeholder peer reviews do not in any way absolve the principal report writer of any legal responsibility and/or their need to appropriately justify compliance with the relevant BCA Performance Requirements.

Note 6: In this regard, it is noted that the design entails several design departures and improvements that vary from the DTS provisions of the BCA and as such the design will be subject to FEBQ's and PDDB's accordingly.

2. **BCA Clause A4G1 Referenced Documentation:** A reference in the NCC to a document refers to the edition or issues and any amendment listed in Schedule 2 of the BCA. A document referenced in the NCC is only applicable in the context in which the document is quoted.

Where a new edition, issue or amendment of a primary referenced document is not listed in Schedule 2 of the BCA, the new edition, issue or amendment is not referenced for the purpose of the NCC. Where a none referenced Standard is proposed, this will require justification via a Performance Based Design Brief and Performance Solution report.

Any document referenced in a primary referenced document is known as a secondary referenced document. A reference in a primary referenced document to a secondary or other referenced document is a reference to the document as it existed at the time of publication of the primary referenced document.

Note: The design team is to ensure their designs comply with the referenced documents in Schedule 2 of the BCA (Including Amendments to Standards as listed) and identify to the Registered Certifier and Fire Safety Engineer, any departures to these standards of performance that need further consideration via Performance Based Solutions. Should no design departures be identified, the Registered / Principal Certifier and Building Practitioner are entitled to rely on the Design Certifications and Declaration for BCA Compliance in this regard.

3. **BCA Clause A5G3 Evidence of Suitability:** Evidence to support that the use of a material, product, form of construction or design meets a Performance Requirement or a Deemed-to-Satisfy Provision may be in the form of any one, or any combination of the following:

(a) A current CodeMark Australia or CodeMark Certificate of Conformity.

(b) A current Certificate of Accreditation.

(c) A current certificate, other than a certificate described in (a) and (b), issued by a certification body stating that the properties and performance of a material, product, form of construction or design fulfil specific requirements of the BCA.

Reports from Accredited Testing Laboratories that demonstrate compliance with the parameters of this clause, Product Technical Statements, Certification from professional engineers or other appropriately qualified persons and other suitable documentation meeting the ABCB protocols can be relied upon.

Note: Designers should familiarise themselves with the DTS provisions of this clause when selecting any materials or the like for the development.

4. **BCA Clause A5G8 Aluminium Composite Panels:** The use of any external aluminium composite panels must include permanent labelled in accordance with SA TS 5344 - 2019. ACP is defined as an aluminium flat or profiled aluminium sheet materials in composite with any type of material.

Note 1: Aluminium Composite Panels is defined as a Flat or profiled aluminium sheet material in composite with any type of material.

Note 2: Buildings of Type A or Type B Construction are not permitted to have ACP which are not tested to be non-combustible construction pursuant to AS1530.1-1994.

Note 3: Architect is to ensure their selection of any ACP's are in accordance with the provisions of BCA Clause A5G3 above.

5. BCA cl. A6G1 – Determining of Building Classifications: The classification of a building or part of a building is determined by the purpose for which it is designed, constructed or adapted to be used.

Furthermore, each part of a building must be classified separately according to its use and where these parts have different purposes – if not more than 10% of the floor area of a storey – being the minor use, is used for a purpose which is a different classification applying to the major use, the classification of the major use may apply to the whole storey.

In this regard it is understood the building's is Classified as a Class 2 (Residential Sole Occupancy Units), Class 7a (Carpark) and Class 7b (Storage).

Note: *The storage areas within the carpark are considered to be Class 7b (Storage Areas) as the 10% concessions noted above is not applicable where there are multiple classifications on a storey. There will be an ancillary plant and other areas which will adopt the relevant Classifications in the parts of the building they are situated within.*

Section B – Structural Provisions:

The proposed development will generally satisfy the DTS provisions & Performance Requirements of Section B of the BCA subject to compliance with the following:

6. BCA Part B1 – Structural provisions: Structural engineering documentation for structural works must comply with the relevant structural provisions of BCA Clauses B1D1 to B1D5 (Tables and Specifications inclusive) as applicable.

Note: *Structural plans, specifications and design certification are to be prepared by a suitably qualified designer (Registered Structural Engineer) and submitted to the satisfaction of the Registered Certifier at the Construction Certificate application stage.*

7. BCA cl. B1D2 – B1D4 – Building Resistance & Determination to Actions & Determining of Structural Resistance of Materials and Forms of Construction (B1-B4): Structural resistance of materials and forms of construction must comply with BCA Clauses B1D2 – B1D4.

The design must consider (but not be limited to) the following Australian Standards and any other appropriate standards accordingly:

- AS 1170.0 – 2002 General Principles
- AS 1170.1 – 2002 (Amendments 1 & 2), Permanent Imposed & Other Actions - including certification for balustrades (dead and live loads)
- AS 1170.2 – 2021, Wind loads
- AS 1170.4 – 2007 (Amendments 1 & 2), Earthquake Actions in Australia
- AS 1288 – 2021, Glass in Buildings Selection & Installation.
- AS1530.4-2014, Fire-Resistance Tests on Elements of Construction
- AS1657-2018, Fixed Platforms, Walkways, Stairways and Ladders
- AS/NZS 1664.1 and 2 – 1997, Aluminium construction
- AS 2159 – 2009, Piling
- AS 2047 – 2014, Windows in buildings
- AS2312.1 and AS/NZS2312.2-2014 Protection of steel – Hot Dipped and Coated. (Housing)
- AS2327-2017 (Amendment 1), Composite Steel-Concrete Construction in Buildings
- AS2699.1 & 2 – 2020, Masonry Construction and Lintels and Shelf Angles
- AS 3600 – 2018, Concrete Structures
- AS3666.1 & 3 – 2014, Termite Management
- AS 3700 – 2018, Masonry code
- AS 4100 – 2020, Steel Structures
- AS/NZS 4505-2012, Garage Doors
- AS 4600 – 2018, Cold Formed Steel Structures
- AS5215-2021, Post Installed and Cast-in Fasteners in Concrete

- AS5146.1-2015 – Reinforced Autoclave Aerated Concrete Structures
- ABCB – 2011, Protocol for Structural Software, Version 2011.2
- ABCB - 2012, Buildings in Flood Hazard Areas, Version 2012.3
- ISO8336 - 1993E, Fibre Cement Flat Sheets
- Nash Standard - 2021 Steel Framed Construction in Bushfire Areas
- Nash Standard Part 1 – 2005, and Part 2-2014, Residential and Low-Rise Steel Framing (Including all Amendments)
- Structural engineer to consider Importance Levels in their design declarations.
- ABCB Standard for Construction of Buildings in Flood Hazard Areas
- BCA Specification 5 – Fire Resistance of Building Elements
- All other relevant Australian Standards, guidelines and referenced/cross referenced standards.

Note 1: Where non-BCA Referenced Australian Standards are proposed, in particularly when they are proposed in lieu of a referenced Australian Standard, these must be disclosed by the Design Practitioners to the Registered Certifier and Registered Building Practitioner for their further consideration.

Note 2: It is the structural Engineers responsibility to ensure they design the building to cater form the Importance Levels of BCA Table B1D3a identifies the Importance Levels of Building & Structures that must be considered by the structural engineer, and which must be read in conjunction with AS1170.4-2007 accordingly noting the BCA takes precedence over any inconsistencies in this regard. The Structural Engineer is responsible for determining compliance with the above.

Note 3: Services Designers are to consider and address the seismic restraints provisions under Section 8 'Designs for Parts and Components' of AS1170.4-2007 which details in part advice on services clearances, spacing of bracing, example calculations, force diagrams, safety wire requirements for T-Bar ceilings systems etc. These provisions apply to all buildings with Importance Levels 2 to 4 and apply to all smoke control systems, emergency electrical systems, fire and smoke detection systems, fire suppression systems, life safety systems, boilers, furnaces, water heaters, flues, pressure vessels etc, reciprocating/rotating manufacturing equipment, utility and services interfaces, lift machinery, escalators, lighting fixtures, electrical boards, conveyors, etc as detailed within the standards.

Note 4: Where structural steel columns, beams and braces are proposed, a colour coded mark-up plan to show the location of these structural members and details on the method of fire protection proposed to achieve the required min FRL's, are to be provided with the Construction Certificate application. Any structural steel members are to also be fire rated accordingly.

Note 5: Where it is not proposed to achieve a minimum 200mm thick reinforced concrete slab throughout the residential levels (when required by AS3600-2018), this will need to be disclosed by the project structural engineer and addressed under a Performance Based Solution by a C10 Fire Safety Engineer.

Note 6: Where it is proposed to incorporate permanent Polymer Formwork wall type systems such as Dincel/AFS/Ritek etc, the use of these wall/load bearing systems are to be disclosed by the project structural engineer and addressed under a Performance Based Solution by a qualified Fire Safety Engineer.

Note 7: Termite mitigation measures are required where primary timber elements are proposed. This includes any primary timber elements such as internal stairways, internal walls, roofs, floors or the like. Notwithstanding, it is recommended that termite mitigation, measures are considered irrespectively.

Note 8: Services shafts etc which also form barriers need to be designed accordingly to meet product specifications for human impact and comply with AS1170.1 -2002.

Note 9: Structural engineer is to provide a list of DTS design departures needing consideration by the project fire safety engineer. Should no design departures be identified, the Registered Certifier and Building Practitioner are entitled to rely on the Design Declaration for BCA Compliance in this regard.

Note 10: Structural engineer is to ensure their designs comply with the referenced documents in Schedule 2 of the BCA (Including Amendments to Standards) and identify to the Registered Certifier and Registered Fire Safety Engineer, any departures to these standards of performance that need further consideration via Performance Based Solutions. Should no design departures be identified, the Registered / Principal Certifier and Building Practitioner are entitled to rely on the Design Certifications and Declaration for BCA Compliance in this regard.

Note 11: where the roof structure is proposing photovoltaic / solar panels and the roof must be designed to cater for the additional loads and uplift of winds from the coastline. Design and Building Practitioners Design Declarations and documentation must take into account these provisions and verify the design has considered these accordingly at the Construction Certificate application stage.

Note 12: Structural details labelled for construction together with Structural Specifications, Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier.

Note 13: Architectural and Structural Details and Specifications identifying the relevant Australian Standards, Wall Types/Systems/Materials/FRL's/ Fire Hazard Properties, External Schedule of Finishes including cross sectional wall details are to be provided. Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier. Where Fire Safety Engineering is proposed, a copy of the Fire Engineers Report prepared by an Accredited C10 Certifier – Fire Safety and who is also Registered Design Practitioner, is to also be provided.

Fire Engineered Performance Solution: Where slab set downs are required by AS3600, and the slab thicknesses cannot achieve 200mm thick, and where PVC polymer formwork walls systems are proposed, and where steel columns and beams are proposed and not fire rated in strict accordance with a tested system, it is understood that the design team will engage a C10 Fire Safety Engineer to develop a Performance Based Solution to rationalise FRL's as the case may require, rationalise the use of PVC polymer formwork and rationalise the FRL's to steel columns and beams and the report will need to demonstrate compliance with all relevant BCA Performance Requirement (B1P1, B1P2, C1P1 & C1P2).

SECTION C – FIRE RESISTANCE AND COMPARTMENTATION:

The proposed development will generally satisfy the DTS provisions & Performance Requirements of Section C of the BCA subject to compliance with the following:

8. **BCA cl. C2D2 & C2D3 Type of Construction and Rise in Storeys:** The building will be **Type A Construction** by virtue of the Rise in Storeys of the building being assessed as **Six (6)**.
9. **BCA cl. C2D9 – Lightweight construction:** Lightweight construction must comply with Specification 6 if used in a wall system in accordance with sub-clauses (1) & (2). The fire rated applications must comply with manufacturers specifications, Tested reports and be certified accordingly.

Where Hebel wall or other lightweight construction plasterboard wall systems are proposed in the bounding construction (between SOU's and between SOUs and common areas within the residential parts of the building) details of the tested systems and FRL's/Acoustic Ratings achieved are to be specified and provided. Similarly, any columns, beams or the like proposed to be protected with a retrospective fire rated application, detailed specifications and test reports are to be provided.

Note 1: Architectural details, including colour coded plans and cavity details and design certification to the satisfaction of the Registered Certifier are to be provided with the Construction Certificate application, which nominate FRL's and wall/floor details accordingly.

Note 2: Where structural steel columns, beams and braces are proposed, a colour coded mark-up plan to show the location of these structural members and details on the method of fire protection proposed to achieve the required min FRL's are to be provided with the Construction Certificate application. Any structural steel members are to also be fire rated accordingly and any departures addressed via a fire engineered performance-based solution.

Note 3: Architectural and Structural Details and Specifications identifying the relevant Australian Standards, Wall Types/Systems/Materials/FRL's/ Fire Hazard Properties, External Schedule of Finishes including cross sectional wall details are to be provided. Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier.

10. **BCA cl. C2D10 Non-combustible Building Elements:** The provisions of this clause are intended to provide a series of requirements and concessions for the use of non-combustible building elements and these provisions are specified below;

- a) In a building required to be of Type A or B construction, the following building elements and their components must be non-combustible:
 - (i) External walls and common walls, including all components incorporated in them including the facade covering, framing and insulation.
 - (ii) The flooring and floor framing of lift pits.
 - (iii) Non-loadbearing internal walls where they are required to be fire-resisting.
- b) A shaft, being a lift, ventilating, pipe, garbage, or similar shaft that is not for the discharge of hot products of combustion, that is non-loadbearing, must be of non-combustible construction in—
 - (i) a building required to be of Type A construction; and
 - (ii) a building required to be of Type B construction, subject to C3D11, in—
 - A. a Class 2, 3 or 9 building; and
 - B. a Class 5, 6, 7 or 8 building if the shaft connects more than 2 storeys.
- c) A loadbearing internal wall and a loadbearing fire wall, including those that are part of a loadbearing shaft, must comply with Specification 5.
- d) The requirements of (a) and (b) do not apply to gaskets, caulking, sealants & damp-proof courses.

Subclauses 4, 5 and 6 of this clause detail materials that are permitted/exempted from being non-combustible and the designers are to ensure that all materials specified comply with these criteria accordingly.

In this regard, the following areas have been identified as matters which may be requiring further design consideration and/or justification via Performance-Based Solutions by the project Fire Safety Engineer;

- a) Attachments - There may be waterproofing membranes, window shrouds, that form part of or are attached to the external wall which may not strictly comply with the concessions under BCA cl.C2D10 and/or AS1530.1-1994 for combustibility and test reports are to be furnished at the Construction Certificate stage confirming that all components of the wall linings are non-combustible;
- b) Render Finishes - There may be polymer type Render coatings or any other linings which may not strictly comply with the concessions under BCA cl.C2D10 and/or AS1530.1 for combustibility and test reports or Codemark Certificates are to be furnished at the Construction Certificate stage confirming the product and system is non-combustible – NB: The Rockcote Quick Render is a suitable Render to be applied to external walls subject to all other materials and attachments are non-combustible;
- c) Insulation/Sarking - There may be insulation and sarking materials and/or services located in the 'external walls' and/or in 'bounding construction walls' which will not meet the non-combustible criteria;
- d) Permanent Polymer Wall Systems - There may be Permanent PVC / Polymer Formwork wall systems (e.g. Dintel, AFS Rediwall, etc) or any other linings which may not strictly comply with the concessions under BCA cl.C2D10 and/or AS1530.1 for combustibility and test reports or Codemark Certificates are to be furnished at the Construction Certificate stage confirming the product and system is non-combustible;
- e) Masonry/Concrete Walls - Masonry and concrete walls need to be designed by the Architect and Structural Engineers taking into consideration the criteria and slenderness ratio's etc specified under AS3600 Section 5 and AS3700 Section 6 accordingly.

Fire Engineered Performance Solution: Where any part of the external walls is not AS1530.1-1994 tested or does not fall within the definition of non-combustible or exempted under C2D10 or C2D14 of the BCA, It is understood that the design team will engage a C10 Fire Safety Engineer to develop a Performance Based Solution to rationalise combustibility provisions and the report will need to demonstrate compliance with all relevant BCA Performance Requirement (C1P2 & C1P4).

Note 1: Refer to C2D10, sub-clauses (4), (5) & (6) which provides provide a list of materials and assemblies which are either exempted or permitted to be used in line with the provisions above.

Note 2: Our office does not endorse the use of any Aluminium Composite Panels, PVC modular wall systems and/or any other combustible components in external walls and bounding construction. All

external/bounding wall assembly components must be supported by test reports in accordance with AS1530.1 -1994 or by unconditional Codemark Certification.

Note 3: Any performance solutions for external walls must consider AS5113-2016 and FRNSW requirements. The use of external claddings or permanent polymer formwork walls must be supported by Codemark Certification or the like and cross section wall details are required.

Note 4: The Supporting Fire Test and/or Design Certification to the satisfaction of the Accredited Certifier are to be provided with the Construction Certificate application.

Note 5: Architectural Details and Specifications identifying the relevant Australian Standards, Wall Types/Systems/Materials/FRL's/ Fire Hazard Properties, External Schedule of Finishes including cross sectional wall details are to be provided. Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier. Where Fire Safety Engineering is proposed, a copy of the Fire Engineers Report prepared by an Accredited C10 Certifier – Fire Safety and who is also Registered Design Practitioner, is to also be provided.

11. **BCA cl. C2D11 – Early Fire Hazard Properties:** Floor, wall & ceiling linings, sarking, and any other linings and attachments are required to comply with the requirements under Clause C2D11 & Specification 7. In this regard, we provide the following notes which are to be read in conjunction with the tables in the BCA:

- All reflective foils such as sarking/insulations need to achieve compliance and have a flammability index of not greater than 5 and if required to be non-combustible in Type B or A construction, they must not exceed 1mm thicknesses or be supported by testing against AS1530.1-1994.
- All insulation materials (including sarking, mineral wool and other fabricated batt, poly or the like products) located in external walls and other walls required to be non-combustible, must be tested to comply with AS1530.1 or be addressed under Performance Solutions (in line with recent ABCB Practice Notes).
- Ceiling and wall linings are to have a Material Group Number of 1, 2 or 3 in sprinklered protected buildings and 1 or 2 in non-sprinkler protected buildings.
- Timber feature wall or ceiling linings (or the like) are to comply with the Material Group Ratings under Table S7C4 and are also to have a Material Group Number of 1, 2 or 3 in sprinklered protected buildings and 1 or 2 in non-sprinkler protected buildings.
- Flooring such as carpets, vinyls, floating floors etc need to achieve a Critical Radiant Flux of not less than 1.2 (where sprinklers are installed) and of not more than 2.2 (where no sprinklers are installed).

In this regard, the following areas have been identified as matters which may be requiring further design consideration and/or justification via Performance-Based Solutions by the project Fire Safety Engineer:

- (a) Poly/Plastic Pedestal Pavers supports - Where plastic/poly pedestal pavers and timber decking are proposed to be used on balconies, roof top and common areas, these may not comply with the required Fire Hazard Properties in accordance with Specification 7 of the BCA 2022 and will require justification via a performance based solution.

Note 1: Refer to C2D11, Subclause 3 of this clause provide a list of materials and assemblies exempt from the provisions above.

Note 2: Refer to Specification 7 which sets out the requirements for all fire hazard properties of linings, materials and assemblies in Class 2-9 buildings as set out in Table S7C2.

Note 3: The Supporting Fire Test and Design Certification to the satisfaction of the Registered Certifier are to be provided with the Construction Certificate application.

Note 4: BCA C2D10 and C2D14 permits external waterproofing materials to be applied to an adjacent floor surface and roof surface including vertical upturns and below ground membranes projecting above natural ground floor to a maximum height of 250mm. Wherever this is proposed, to deviate from the above clauses, this will require justification via a Performance Based solution.

Note 4: Architectural Details and Specifications identifying the Wall Types/Systems/Materials and the Fire Hazard Properties achieved are to be provided. Design Certification and Design Compliance Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier.

12. BCA cl. C2D14 – Ancillary Elements: The provisions of this clause are intended to clarify that the Ancillary Elements listed under this clause may be applied to an external wall that is required to be non-combustible. The provisions of this clause are specified below;

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 one of the following:

- a) An ancillary element that is non-combustible.
- b) A gutter, downpipe or other plumbing fixture or fitting.
- c) A flashing.
- d) A grate or grille not more than 2 m² in area associated with a building service.
- e) An electrical switch, socket-outlet, cover plate or the like.
- f) A light fitting.
- g) A required sign.
- h) A sign other than one provided under (a) or (g) that—
 - (i) achieves a group number of 1 or 2; and
 - (ii) does not extend beyond one storey; and
 - (iii) does not extend beyond one fire compartment; and
 - (iv) is separated vertically from other signs permitted under (h) by at least 2 storeys.
- i) An awning, sunshade, canopy, blind or shading hood other one provided under (a) that—
 - (i) meets the requirements of Table 4 of Specification C1.10 as for an internal element; and
 - (ii) serves a storey—
 - A. at ground level; or
 - B. immediately above a storey at ground level; and
 - (iii) does not serve an exit, where it would render the exit unusable in a fire.
- j) A part of a security, intercom or announcement system.
- k) Wiring.
- l) Waterproofing material installed in accordance with AS4654.2 and applied to an adjacent floor surface, including vertical upturn, or a roof surface.
- m) Collars, sleeves and insulation associated with services installations
- n) Screens applied to vents, weepholes and gaps complying with AS3959
- o) Wiper and brush seals associated with doors, windows and other openings.
- p) A gasket, caulking, sealant or adhesive directly associated with (a) to (o).

In this regard, the following areas have been identified as matters which may be requiring further design consideration and/or justification via Performance-Based Alternative Solutions by the project Fire Safety Engineer;

- (a) Waterproof Membranes on External Walls - BCA Clauses C2D14 permits external waterproofing materials to be applied to an adjacent floor surface and roof surface including vertical upturns and below ground membranes projecting above natural ground floor to a maximum height of 250mm. The design details identify waterproofing application to the slab edges and external walls that are above ground (in addition to waterproofing of planter boxes) which deviate from the above clause and will require justification via a Performance Based solution for the final Construction Certificate stage to the satisfaction of the Registered Certifier;
- (b) External Signs - Any proposed light boxes or building signs affixed to the external walls will require justification via performance based solutions;
- (c) Balcony Soffit Linings – The balcony soffit linings may be attached to the external walls and as such will also need to be non-combustible. In this regard any timber look panelling will need to be aluminium or other non-combustible material;
- (d) External Balcony /Awning Details - There may be awning (including Glazed Awnings/Canopies) / shade structures projecting from the building which are ancillary elements needing to comply with the provisions above. Please note that glass awning/sunshades are not exempted from being non-combustible under BCA Clause C2D14 and these would require justification via performance based solutions.

Fire Engineered Performance Solution: Where any part of the external walls is not AS1530.1-1994 tested or does not fall within the definition of non-combustible or exempted under C2D10 or D2D14 of the BCA, it is

understood that the design team will to engage a C10 Fire Safety Engineer to develop a Performance Based Solution to rationalise combustibility provisions and the report will need to demonstrate compliance with all relevant BCA Performance Requirement (C1P2 & C1P4).

Note 1: C2D14 does not apply to ancillary elements installed to the internal face or lining of an external wall. These ancillary elements are subject to the Fire Hazard Properties of C2D11. Refer to Specification 7 which sets out the requirements for all fire hazard properties of linings, materials and assemblies in Class 2-9 buildings as set out in Table S7C2;

Note 2: C2D14 does not restrict the external mounting of domestic air conditioning condensers on an external wall;

Note 3: The Supporting Fire Test and Design Certification to the satisfaction of the Registered Certifier are to be provided with the Construction Certificate application;

Note 4: Architectural Details and Specifications identifying the relevant Australian Standards, Wall Types/Systems/Materials/FRL's/ Fire Hazard Properties, External Schedule of Finishes including cross sectional wall details are to be provided. Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier. Where Fire Safety Engineering is proposed, a copy of the Fire Engineers Report prepared by an Accredited C10 Certifier – Fire Safety and who is also Registered Design Practitioner, is to also be provided.

13. **BCA cl. C2D15 – Fixing Bonded Laminated Cladding Systems:** The provisions of this clause are intended to clarify that in a building required to be of Type A or B construction, externally located bonded laminated cladding panels must have all layers of cladding mechanically supported or restrained to the supporting frame.

An externally located bonded laminated cladding panel need not comply with (1) if it is one of the following:

- (a) A laminated glass system.
- (b) Layered plasterboard product.
- (c) Perforated gypsum lath with a normal paper finish.
- (d) Fibrous-plaster sheet.
- (e) Fibre-reinforced cement sheeting.
- (f) A component of a garage door.

Note 1: For C2D15(1), mechanical support or restraint means fixing that does not solely rely on chemical adhesive, double sided tape or the like, and includes concealed fixing systems such as cassette fixing, channel-type fixing and face fixing.

Note 2: Architectural Details and Specifications identifying the relevant Australian Standards, Wall Types/Systems/Materials/FRL's/ Fire Hazard Properties, External Schedule of Finishes including cross sectional wall details are to be provided. Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier.

14. **BCA cl. C3D3 – General Floor Area and Volume Limitations:** The total proposed floor area and volume sizes of the fire compartments must comply with the limitations of C3D3 (below) for the Classifications and Mixed Type of Construction concerned.

Table C3D3 Maximum size of fire compartments or areas

Classification	Type A construction	Type B construction	Type C construction
5, 9b or 9c	Max floor area—8 000 m ²	Max floor area—5 500 m ²	Max floor area—3 000 m ²
	Max volume—48 000 m ³	Max volume—33 000 m ³	Max volume—18 000 m ³
6, 7, 8 or 9a (except for patient care areas)	Max floor area—5 000 m ²	Max floor area—3 500 m ²	Max floor area—2 000 m ²
	Max volume—30 000 m ³	Max volume—21 000 m ³	Max volume—12 000 m ³

Figure 5 – Table C3D3 (Source: NCC/BCA Volume 1)

This clause does not apply to Class 2 or Class 7a Buildings that are sprinkler protected and, in this regard, compliance is readily achieved. Notwithstanding, the building will have horizontal fire separation provided by separating floor structures and vertical fire separation provided by bounding construction.

Note: Architectural Details and Specifications identifying the relevant Australian Standards, Wall Types/Systems/Materials/FRL's including cross sectional wall details are to be provided. Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier.

12. **BCA cl. C3D7 – Vertical Separation of Openings in External Walls:** As the building is proposed to be sprinkler protected throughout in accordance with AS2118.1-2017, spandrel separation is not required to be provided between all levels at external openings of the building.
13. **BCA cl. C3D8, C3D9 & C3D10 – Separation of Classifications on the same and in different storeys:** Where parts of different classifications are situated above one another in adjoining storeys, or beside each other on the same storey, consideration for fire separation between the adjoining parts must be considered and the respective FRL's proposed (as prescribed under Spec 5 for the classification's considered).

In this regard, the following areas have been identified as matters which may be requiring further design consideration and/or justification via Performance-Based Solutions by the project Fire Safety Engineer;

- a) **Ground Floor to Level 3** – The Storage Cages within the carpark are classified as Class 7b Storage areas and given these spaces are not proposed to be fire separated from the carpark, the whole storey will need to adopt the higher FRL of 240/240/240 mins. In addition, the Carpark/ back of house Storage areas must also be fire separated from the residential lobbies and SOU's accordingly;
- b) **Levels 2 & 3** - - The dual access lift landing doors between the carpark and SOU lobbies are located in the fire wall separating the two fire compartments which will not achieve the required FRL and may not strictly comply with the automatic closing function required for fire doors in fire walls and this arrangement will need to be addressed via a performance based solution;
- c) **Level 3** – The Cellar room located within the carpark is to be fire separated from the SOU and carpark by construction achieving an FRL in accordance with Spec 5 of the BCA;
- d) **Level 4 to 7** - The floors and SOU bounding construction there above of the remainder of the Class 2 (Apartments) would only be required to achieve a minimum FRL of 90/90/90 and must also achieve a minimum thickness of 200mm including all set down to wet areas and balconies.

Fire Engineered Performance Solution: It is understood that the design team will engaged the services of an Accredited Fire Safety Engineer to consider a Performance Based Solution to rationalise reduced FRL's and the extent of fire separation by demonstrating compliance with all relevant BCA Performance Requirement (C1P1, C1P2, C1P8).

Note: Architectural details, Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier. Where Fire Safety Engineering is proposed, a copy of the Fire Engineers Report prepared by a C10 Certifier – Fire Safety and who is a Registered Design Practitioner, is to also be provided.

14. **BCA cl. C3D11 – Separation of Lift Shafts:** Any lift connecting more than 2 storeys, or more than 3 storeys in a sprinkler protected building, (other than lifts wholly within an atrium) must be separated from the remainder of the building with construction achieving a minimum FRL in accordance with Specification 5 of the BCA for the classification concerned.

Given the proposed passenger lift connects more than a total of three (3) consecutive storeys, the lift shaft is required to be fire rated under this clause. Lift landing doors are to be protected in accordance with BCA cl. C4D10 achieving a minimum FRL of --/60/-- and achieve a minimum FRL of 90/90/90 in the Class 2 parts and a minimum of 120/120/120 in the Class 7a parts accordingly.

Lift landing doors are to be protected in accordance with BCA cl. C4D10 and achieve a minimum FRL of --/60/--. The doors are to be installed in strict accordance with the fire test reports and the reveals between the lift door and the concrete shaft must also be fire rated to achieve the minimum FRL as required by Spec 5 of the BCA.

Note 1: Fire ratings will need to be commensurate to the classifications of the areas they connect or pass by i.e. 90/90/90 in the residential levels & 120/120/120 in the carpark levels or as required by the Fire Safety Engineers Fire Safety Strategy.

Note 2: Architectural details, Lift design details, specifications are to be provided. Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier.

15. **BCA cl. C3D13 – Separation of Equipment:** Any lift motor or lift control panels, emergency generators sustaining central smoke control plant, boilers or battery storage enclosures are required to be fire separated from the remainder of the building by construction having a minimum FRL of 120/120/120. Doors to the enclosure are to be self-closing --/120/30 fire doors.

Subclause (2) of this clause offers exemptions for the separation of certain plant equipment or rooms and AS2419.1-2021 outlines the requirements for separation of on-site fire hydrant pumps where proposed.

Note 1: Consideration for the need for fire separation of any server/comms room where it is proposed to have Batteries/UPS's/Storage with a battery system with a voltage exceeding 12 Volts or more, or a storage capacity exceeding 200kWh or more. Electrical Engineer/Contractor/IT contractor to advise further in this regard.

Note 2: Consideration for the need for fire separation of any photovoltaic panels battery storage rooms where it is proposed to incorporate battery systems with a voltage exceeding 12 Volts or more, or a storage capacity exceeding 200kWh or more. Electrical Engineer/Contractor/IT contractor to advise further in this regard.

Note 3: There is to be a suitable portable fire extinguisher located between 2m and 10m of the MSB room and the Fire Rating details are to be detailed on the Construction Certificate drawings.

Note 4: Architectural Details and Specifications identifying the relevant Australian Standards, floor & Wall Types/Systems/Materials/FRL's including cross sectional wall & floor details are to be provided. Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier.

16. **BCA cl. C3D14 – Electricity Supply Systems:** Any electrical substations, electrical conductors, or main switchboards that sustain emergency equipment operating in emergency mode are required to be fire separated from the remainder of the building by construction having a minimum FRL of 120/120/120. Doors to the enclosure are to be self-closing --/120/30 fire doors.

Note 1: Consideration for the need for fire separation of the MSB if it is proposed to provide power supply to any essential services such as (but not limited to) fire hydrant/sprinkler pumps, smoke control systems, emergency lifts and/or other essential services referenced in this Clause.

Note 2: Additionally, there is to be a suitable portable fire extinguisher located between 2m and 10m of the room. Fire rating details are to be noted on the drawings.

Note 3: Architectural Details and Specifications identifying the relevant Australian Standards, floor & Wall Types/Systems/Materials/FRL's including cross sectional wall & floor details are to be provided. Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier.

17. **BCA cl. C3D15 – Public corridors in Class 2 and 3 buildings:** In a Class 2 or 3 building, a public corridor, if more than 40 m in length, must be divided at intervals of not more than 40m with smoke-proof walls complying with Specification S11C2.

In this regard, there were no public Corridors identified that exceed the illimitations of this Clause.

18. **BCA cl. C4D3 – Protection of Openings in External Walls:** Any openings within the external walls that are located within 3m of a side or rear allotment boundary, 6m from an adjoining building on the same allotment or 6m from the far boundary of an adjoining roadway are required to be protected externally in accordance with Clause C3D5. Openings may also be protected by non-translucent construction achieving an FRL of 30 mins such as blade walls or the like.

In this regard, the following areas have been identified as matters which may be requiring further design consideration and/or justification via Performance-Based Solutions by the project Fire Safety Engineer:

- a) **Level 1** – The window openings in the Living Room of Unit 5 are located within 3m of the Eastern Boundary;

- b) Level 2 - The window / Door openings in the Living Room and Bedroom 2 and Bedroom 3 of Unit 3 are located within 3m of the Western Boundary;
- c) Level 3 - The window openings in the Living Room and Bedroom 2 and Bedroom 3 of Unit 5 are located within 3m of the Western Boundary;
- d) Level 4 - The window openings in the Dining Room and Bedroom 1 and Bedroom 2 of Unit 7 are located within 3m of the Western Boundary.

Fire Engineered Performance Solution: It is understood that the design team may engaged the services of an Accredited Fire Safety Engineer to consider a Performance Based Solution to rationalise the extent of protection required to the affected opening by demonstrating compliance with BCA Performance Requirement C1P2, C1P8.

Note: Architectural details, Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier. Where Fire Safety Engineering is proposed, a copy of the Fire Engineers Report prepared by a C10 Certifier – Fire Safety and who is a Registered Design Practitioner, is to also be provided.

19. BCA cl. C4D4 – Separation of external walls and associated openings in different fire compartments: External walls and openings within them that are exposed to external walls and opening in difference fire compartments are required to achieve a minimum FRL of 60/60/60 (both directions) with any openings protected in accordance with Clause C4D5.

In this regard, the following areas have been identified as matters which may be requiring further design consideration and/or justification via Performance-Based Solutions by the project Fire Safety Engineer:

- a) Ground Floor – The carpark entry and the main lobby areas are considered to be within different fire compartments and therefore the fire separating wall between these compartments does not extend to the outer edge of the roof overhang above.

Fire Engineered Performance Solution: It is understood that the design team may engaged the services of an Accredited Fire Safety Engineer to consider a Performance Based Solution to rationalise the extent of fire separation required between fire compartments by demonstrating compliance with all relevant BCA Performance Requirement (C1P2, C1P8).

Note: Architectural details, Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier. Where Fire Safety Engineering is proposed, a copy of the Fire Engineers Report prepared by a C10 Certifier – Fire Safety and who is a Registered Design Practitioner, is to also be provided.

20. BCA cl. C4D5 – Acceptable Methods of Protection: Where protection of openings is required, doorways, windows and other openings must be protected externally as follows:
- Doorways – External wall- wetting sprinklers as appropriate used with doors that are self-closing or automatic closing; or -/60/30 fire doors that are self-closing or automatic closing.
 - Windows – Internal or external wall-wetting sprinklers (as the case may require) and as appropriate used with windows that are automatic closing or permanently fixed in the closed position; or -/60/- automatic closing fire shutters.
 - Other openings – Excluding voids – internal or external wall-wetting sprinklers, as appropriate; or Construction having FRL not less than -/60/-.

Note 1: Where openings are proposed to be protected with external drenchers, they are to ensure that the glazing they are protecting is fixed in the closed position and there are no window transoms/mullions that will affect the operation and protection of the drenchers. Where drenches are proposed, Architectural Plans are to include notations to this effect and identify method of protection to all openings or that they are subject to Performance Based Solutions.

Note 2: Architectural details, Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) to the satisfaction of the Registered Certifier are to be provided with the Construction Certificate application. Where Fire Safety Engineering is proposed, a copy of the Fire

Engineers Report prepared by a C10 Certifier – Fire Safety and who is a Registered Design Practitioner, is to also be provided.

21. BCA cl. C4D6 – Openings in Fire Walls: Door within fire walls must not exceed ½ the length of the fire wall and each doorway must be protected by a fire door or fire shutter with an FRL of that is required by Spec 5 with any fire shutter having an insulation level of at least 30.

Any doors located in the line of the fire wall need to be protected with a self-closing Fire Door or fire shutter achieving a minimum FRL required for the wall and have an insulation rating of at least 30 minutes.

In this regard, the following areas have been identified as matters which may be requiring further design consideration and/or justification via Performance-Based Solutions by the project Fire Safety Engineer:

- a) Levels 2 & 3 - The dual access lift landing doors between the carpark and SOU lobbies are located in the fire wall separating the two fire compartments which will not achieve the required FRL and may not strictly comply with the automatic closing function required for fire doors in fire walls and this arrangement will need to be addressed via a performance based solution.

Fire Engineered Performance Solution: It is understood that the design team will engaged the services of an Accredited Fire Safety Engineer to consider a Performance Based Solution to rationalise the extent of fire separation provided by the lift landing doors by demonstrating compliance with BCA Performance Requirement C1P2, C1P8.

Note: Architectural details, Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier. Where Fire Safety Engineering is proposed, a copy of the Fire Engineers Report prepared by a C10 Certifier – Fire Safety and who is a Registered Design Practitioner, is to also be provided.

Note 1: Refer to C3D13 & C3D14 above for protection requirements of walls and doors ways to MSB and Fire Pump Room where required.

Note 2: Architectural Details and Specifications identifying the relevant Australian Standards, floor & Wall Types/Systems/Materials/FRL's including cross sectional wall & floor details are to be provided. Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier.

22. BCA cl. C4D9 – Openings in Fire Isolated Exits: The doors to the fire isolated exits are required to be self-closing --/60/30 fire doors and where any window openings in the external wall of the fire isolated exits are located within 6m of other openings of the same building (unless other openings of the same stair), the window is to be protection in accordance with Clause C3.4.

Note: Architectural details and specifications prepared by a suitably Registered practitioner (Registered Architect) are to be provided. Design Certification and Design Compliance Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier

23. BCA cl. C4D10 – Service Penetrations in Fire Isolated Exits: Fire isolated exits are not to be penetrated by any services other than electrical wiring for lighting, or security and essential services; ducting for stair pressurisation systems (if adequately fire separated from the remainder of the building) and water supply pipes for fire services permitted within the fire stairs.

Note: Architectural Details and Specifications are to be prepared by a suitably qualified design practitioner (Registered Architect) ensuring they cross reference any Fire Engineering requirements. Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier.

24. BCA cl. C4D11 – Openings in Fire Isolated Lift Shafts: The doors to the lift shafts are to be protected by doors having an FRL of -/60/- and comply with AS 1735.11. In addition, if the lift call panels exceed 35000mm² they must be backed by construction with a rating of not less than --/60/60.

In addition to the above, the lift landing doors that open directly in the Residential SOU's are required to achieve a minimum FRL of -/60/30 and be self closing or automatic closing as required by Clause C4D12.

Note 1: Architectural & Lift design details, specifications, Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are to be provided with the Construction

Certificate application to the satisfaction of the Registered Certifier. Where Fire Safety Engineering is proposed, a copy of the Fire Engineers Report prepared by a C10 Certifier – Fire Safety and who is a Registered Design Practitioner, is to also be provided.

21. **BCA cl. C4D12 – Bounding Construction:** Bounding construction of the walls to the residential sole occupancy units bounding the corridor and between adjoining units needs to achieve an FRL of 90/90/90 if load bearing or --/60/60 if non-load bearing construction.

A room bounding the corridors (such as services rooms/garbage rooms/parking areas etc) also needs fire separation in line with the above.

The doors to each sole occupancy unit are required to be self-closing --/60/30 fire doors. Other doors that open from rooms into public areas within the residential part of the building must also be self-closing -/60/30 fire doors.

Where brick veneer or lightweight construction is proposed, the fire rated bounding walls need to extend to the outer brick wall face to limit the spread of fire via the cavity. Where double brick is proposed cavity fire stopping with rock wool or the like will be required.

In this regard, the following areas have been identified as matters which may be requiring further design consideration and/or justification via Performance-Based Solutions by the project Fire Safety Engineer;

- a) **Level 5 (Penthouse Level Building A)** – The Lift landing doors open directly into the SOU and lift landing door will only achieve and FRL of -/60/- in lieu of the required -/60/30 tested to AS1905.1-2015 and may not strictly comply with the automatic closing function required for fire doors;
- b) **Bounding Construction Junctions** – Cavity fire stopping details will be required for the bounding / party wall and the bounding/party wall and external wall junctions;
- c) **Service Cupboards** - The depth of the services cupboards located in the common areas on the Residential levels should be limited to 500mm to avoid these areas constituting a room and requiring additional fire separation from the public corridors.

Fire Engineered Performance Solution: It is understood that the design team will engaged the services of an Accredited Fire Safety Engineer to consider a Performance Based Solution to rationalise the extent of fire separation and protection required to the lift landing doors by demonstrating compliance with all relevant BCA Performance Requirement (C1P2, C1P8 & E2P2).

Note 1: Details of the cavity separation at the external walls and roof/floor junctions together with colour coded plans showing the different FRL's for all wall types and any framing members, which are to be of non-combustible material (e.g. steel framing,) are to be provided with the Construction Certificate application.

Note 2: Where lightweight construction is proposed, a specification of the nominated wall systems and FRL's are to be provided together with design Certification from the architect confirming BCA compliance.

Note 3: Architectural Details and Specifications identifying the Wall Types/Systems and the FRL's proposed, together with colour coded Fire Compartment Plans are to be provided. Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier. Where Fire Safety Engineering is proposed, a copy of the Fire Engineers Report prepared by a C10 Certifier – Fire Safety and who is a Registered Design Practitioner, is to also be provided.

22. **BCA cl. C4D13 – Openings in Floors and Ceilings:** Where services pass through a floor required to have an FRL or a ceiling with a resistance to the incipient spread of fire, the service must be located within a fire rated shaft complying with BCA Specification 5, or the service must be protected with appropriate fire seals conforming to BCA C4D15.

In this regard, the following areas have been identified as matters which may be requiring further design consideration and/or justification via Performance-Based Alternative Solutions by the project Fire Safety Engineer;

- (a) **Cast In Services:** There will may be cast in-slab conduit or other service penetrations through fire rated building elements which may not be able to be protected with a proprietary fire seal and as such will

need to be considered under a performance based solution justifying compliance with Performance Requirements.

Fire Engineered Performance Solution: It is understood that the design team will engage an Accredited C10 Fire Safety Engineer to develop a Performance Based Solution to rationalise the extent of protection required to the cast in services and other fire seals to penetrations and the report will need to demonstrate compliance with all relevant BCA Performance Requirement C1P2/C1P8.

Note: Architectural Details, Services Details and Specifications/ passive Fire report identifying fire seals and fire ratings proposed. Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier. A copy of the Fire Engineers Report prepared by an Accredited C10 Certifier – Fire Safety and who is also Registered Design Practitioner, is to also be provided.

23. **BCA cl. C4D14– Openings in Shafts:** Openings to service shafts are required to be protected by --/30/30 panel (if in a sanitary compartment), or a self-closing --/60/30 fire door, or a --/60/30 access panel. If the shaft is a garbage shaft, a door hopper of non-combustible construction is permitted to be installed.

Note: Architectural Details and Specifications identifying the Wall Types/Systems and the FRL's proposed, together with colour coded Fire Compartment Plans are to be provided. Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier.

24. **BCA cl. C4.D15 – Openings for Service Installations:** Where service installations penetrate the walls or floors required to have an FRL with respect to integrity and insulation they are to be protected by fire seals having an FRL of the building element concerned.

Fire seals are required to comply with C4D15, Specification 13, AS1530.4-2014, AS 4072.1- 2005 and Manufacturers Specifications. Where the mechanical ventilation system penetrates floors or walls that require an FRL the installation is to comply with AS/NZS 1668.1-2015.

In this regard, the following areas have been identified as matters which may be requiring further design consideration and/or justification via Performance-Based Alternative Solutions by the project Fire Safety Engineer;

- (a) **Cast In Services:** There will most likely be cast in-slab conduit or other service penetrations which cannot be protected with a proprietary fire seal and as such will need to be located within its own dedicated fire rated shaft or be considered under a Performance based solution justifying compliance with Performance Requirements.

Fire Engineered Performance Solution: It is understood that the design team will engage a C10 Fire Safety Engineer to develop a Performance Based Solution to rationalise the extent of protection required to the cast in services and other fire seals to penetrations and the report will need to demonstrate compliance with all relevant BCA Performance Requirements C1P2 & C1P8.

Note 1: BCA cl. C4.D15 and AS1668.1-2015 provides concessions for mechanical exhaust ducts in services shafts to have no fire rated bases on the premise these shafts contain no other services other than mechanical duct work. Where other services are proposed to be installed, the base of the mechanical shaft need to be fire rated and fire seals installed to all penetrations e.g. fire dampers, fire collars etc.

Note 2: Sprinkler design is to consider mechanical services shafts which are not proposed to be provided with a fire rated base and whether these require sprinklers in the shafts.

Note 3: Passive fire services consultant is to review all services penetrations and provide further details on the method of fire protection proposed identifying any additional matters that will require further consideration by the fire safety engineer that may need addressing via a performance based solution.

Note 4: Architectural Details, Services Details and Specifications/ passive Fire report identifying fire seals and fire ratings proposed. Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier. Where required, a copy of the Fire Engineers Report prepared by an Accredited C10 Certifier – Fire Safety and who is also Registered Design Practitioner, is to also be provided.

25. BCA cl. C4.D16 – Control Joints: Construction joints, spaces and the like in and between building elements required to be fire-resisting with respect to integrity and insulation must be protected in a manner identical with a prototype tested in accordance with AS 4072.1-2005 and AS 1530.4 – 2014 to achieve the required FRL; or that differs from a prototype in accordance with Section 4 of AS 4072.1 and achieves the required FRL.

The determination of the required FRL must be confirmed in a report from an Accredited Testing Laboratory in accordance with Specifications 1 and 2.

The requirements of (1) do not apply where joints, spaces and the like between fire-protected timber elements are provided with cavity barriers in accordance with Specification 9.

In this regard, the following areas have been identified as matters which may be requiring further design consideration and/or justification via Performance-Based Solutions by the project Fire Safety Engineer;

- a) Temporary/Permanent Movement Joints – All Control joints will need to be fire sealed with proprietary products to achieve the required FRL's. where these cannot be fire sealed, they will need addressing via performance-based solutions;
- b) Perimeter Wet Wall penetrations – Similar to the above, where any wet wall designs are proposed in the below ground levels and where perimeter gaps are proposed at the slab edges between storeys, given they cannot be fire sealed they will need addressing via performance-based solutions.

Fire Engineered Performance Solution: It is understood that the design team may engage a C10 Fire Safety Engineer to develop a Performance Based Solution to rationalise the extent of protection required to control joints and the report will need to demonstrate compliance with all relevant BCA Performance Requirement C1P2/C1P8.

Note 1: The Concessions under C4D2 only apply to service penetrations and vehicular ramps between carpark levels occupying the same fire compartment and does not offer concessions for control joints.

Note 2: Architectural Details and Specifications together Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier. Where required, a copy of the Fire Engineers Report prepared by an Accredited C10 Certifier – Fire Safety and who is also Registered Design Practitioner, is to also be provided.

26. BCA Clause C4D17 – Columns Protected with Lightweight construction to achieve an FRL: A column protected by lightweight construction to achieve an FRL which passes through a building element that is required to have an FRL or a resistance to the incipient spread of fire, must be installed using a method and materials identical with a prototype assembly of the construction which has achieved the required FRL or resistance to the incipient spread of fire.

Note: Architectural Details and Specifications together Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier.

27. BCA Specification 5 – Fire Resisting Construction (Spec C1.1): The building/s are of Type A Construction and as such all new building elements will need to comply with the FRL's detailed in BCA Specification 5, Section S5C11 – Tables S5C 11a to S5C11g and Clauses S5C12 to S5C20 (as applicable).

Architect and Structural Engineer to ensure design compliance and builder to confirm as built works achieve relevant FRL's which are summarised in the table below:

BUILDING ELEMENT	Class 2	Class 7a	Class 7b
EXTERNAL WALL (including any column and other building element incorporated therein) or other external building element, where the distance from any fire-source feature to which it is exposed is – For load bearing parts- Less than 1.5m 1.5 to less than 3m	90/90/90	120/120/120	240/240/240

3m or more	90/60/60	120/90/90	1240/240/180
For non-load bearing parts-	90/60/30	120/60/30	240/180/90
Less than 1.5m			
1.5 to less than 3m	--/90/90	--/120/120	--/240/240
3m or more	--/60/60	--/90/90	--/240/180
	--/--/--	--/--/--	--/--/--
EXTERNAL COLUMN not incorporated in an external wall, where the distance from any fire source feature to which it is exposed is –			
Less than 3m	90/--/--	120/--/--	240/--/--
3m or more	--/--/--	--/--/--	--/--/--
COMMON WALLS & FIRE WALLS	90/90/90	120/120/120	240/240/240
INTERNAL WALLS			
Fire Resisting lift and stair shafts –			
Loadbearing	90/90/90	120/120/120	240/240/240
Non-loadbearing	--/90/90	--/120/120	--/120/120
Bounding public corridors, public hallways and the like –			
Loadbearing	90/90/90	120/--/--	240/--/--
Non-loadbearing	--/60/60	--/--/--	--/--/--
Between or bounding SOU's –			
Loadbearing	90/90/90	120/--/--	240/--/--
Non-loadbearing	--/60/60	--/--/--	--/--/--
Ventilating, pipe, garbage, and the like shafts not used for the discharge of hot products of combustion –			
Loadbearing	90/90/90	120/90/90	240/120/120
Non-loadbearing	--/90/90	--/90/90	--/120/120
OTHER LOADBEARING INTERNAL WALLS & COLUMNS	90/--/--	120/--/--	240/--/--
FLOORS	90/90/90	120/120/120	240/240/1240
ROOFS	Non-Combustible		

Figure 6– Summary of Tables of BCA Spec 5 for Type A Construction (Source: NCC/BCA Volume 1)

Additional Notes / Requirements

Note 1: All external wall systems including insulations that are altered or constructed must be non-combustible construction and where required to be fire resisting, they must achieve an FRL in line with the FRL's in the Table above and within Specification 5.

Note 2: All fire resisting wall systems including insulations are also to be non-combustible and achieve an FRL in both directions.

Note 3: All load bearing internal walls including loadbearing shaft walls and fire walls are to be concrete or masonry construction and generally achieve FRL's with the Table above and within Specification 5.

Note 4: All internal fire resisting walls are to extend to the underside of the floor next above or if on the top storey, they must extend to the underside of the on-combustible roof covering.

Note 5: All floor structures must be lined with fire rated construction in accordance with Section 4 of AS1530.4-2014 and achieve FRL's in accordance with the Table above and within Specification 5 for the classification the lower storey concerned – refer to comments in Section C above and below regarding Fire Safety Engineering.

Note 6: The walls to all fire rated shafts (lifts, fire stairs and services) must achieve the fire rating from both directions i.e. from inside and outside the shaft.

Additionally, all shafts are required to be enclosed at the top and bottom with fire rated construction having an FRL similar to the shaft.

See subclause C5C8 for exemptions to this clause for services shafts (only) that project beyond the roof. Fire and Lift shafts do not obtain any concessions and must be fire rated lids.

Note 7: The use of structural steel columns & beams supporting floors, roofs, balconies or any external columns must generally achieve FRL's in accordance with the Table above and within Specification 5 for the classification concerned. The use of all structural steel columns & beams, brace structures, ring beams and like are to be disclosed and noted on the architectural drawings and fire rated and certified by the architect, structural engineer and fire contractor accordingly.

Note 8: The roof structure need not achieve an FRL and only needs to be non-combustible due to AS2118.1 - 2017 sprinklers being proposed throughout in accordance with specification 17 & 18.

Note 9: Any new lintels within any walls required to be fire rated will achieve the same fire rating as the walls within which they are located. This is not applicable if the opening is less than 3m wide and the masonry is non-load bearing or less than 1.8m wide of the masonry is loadbearing.

Note 10: Where a finish, lining or ancillary element or service installation is attached to a building element, it must not reduce the fire resistance of that element below that is required by the specification. Refer to BCA Clause C2D10 and C2D14 for external walls and ancillary attachments.

Note 11: All designers are to review BCA Specification 5 "Fire Resisting Constructions" thoroughly for further clarifications regarding required Fire Resistance Levels. Typical wall details are to be reviewed to comply with the above and any departures are to be addressed under Performance Based Solutions.

In this regard, the following areas have been identified as matters which may be requiring further design consideration and/or justification via Performance-Based Solutions by the project Fire Safety Engineer:

- (i) Ground Floor to Level 3 – The Storage Cages within the carpark are classified as Class 7b Storage areas and given these spaces are not proposed to be fire separated from the carpark, the whole storey will need to adopt the higher FRL of 240/240/240 mins. In addition, the Carpark/ back of house Storage areas must also be fire separated from the residential lobbies and SOU's accordingly;
- (j) Level 3 – The Cellar room located within the carpark is to be fire separated from the SOU and carpark by construction achieving an FRL in accordance with Spec 5 of the BCA;
- (k) Level 4 to 7 - The floors and SOU bounding construction of the remainder of the Class 2 (Apartments) would only be required to achieve a minimum FRL of 90/90/90 and must also achieve a minimum thickness of 200mm including all set down to wet areas and balconies;
- (l) Service Cupboards - The depth of the services cupboards located in the common areas on the Residential levels should be limited to 500mm to avoid these areas constituting a room and requiring additional fire separation from the public corridors; The AC plant room on level 6 will require fire separation in accordance with Specification 5 and Clause C4D12;
- (m) Services Shafts – Ensure all services shafts have nominated FRL's and wall types are specifically designed to ensure they achieve the required FRL's in both directions;
- (n) Cavity Fire Stopping – Cavity separation is required between Levels and SOU's is to be detailed and any departures addressed via Performance Based Solutions;
- (o) Inter-allotment Boundary – The inter-allotment boundary has not been considered as it is expected that Council will require the lots to be consolidated upon completion to form one single allotment. This is to be confirmed prior to the CC Application so the inter-allotment boundary can be discounted;
- (p) Permanent Movement Joints (PMJ) and wet wall Perimeter Gaps – Where any PMJ's and / or wet walls are proposed with perimeter control joints not adequately fire sealed with a product achieving the required FRL, these will need to be addressed via Performance Based Solutions.

Fire Engineered Performance Solution: It is understood that the design team may engage a C10 Fire Safety Engineer to develop a Performance Based Solution to rationalise reduced FRL's to the storage areas and the report will need to demonstrate compliance with all relevant BCA Performance Requirement C1P1/C1P2. Additionally, where slab set downs within the residential wet areas or balconies are proposed and the slab thicknesses cannot achieve 200mm thick (as required by AS3600-2018), the report will need to also demonstrate compliance with all relevant BCA Performance Requirement B1P1 in addition to C1P1 & C1P2.

Note 1: The concessions offered for the omission of fire ratings to the roof structures are not available with the use of an FPAA H01H or FPAA101D sprinkler system.

Note 2: Colour coded Fire Compartment Plans are to be provided with the Construction Certificate application which show total floor areas and volumes and include all fire walls and external fire rated walls as required by BCA and the Fire Engineering Strategy in the Performance Solution Report.

Note 3: Where lightweight construction is proposed, a specification of the nominated wall systems and FRL's are to be provided together with design Certification from the architect confirming BCA compliance. Note that load bearing Walls need to be concrete or Masonry construction in accordance with BCA Specification 5.

Note 4: Details of the cavity separation at the external walls and roof junctions are to be provided together with colour coded plans showing the different FRL's for all wall types.

Note 5: Architectural Details and Specifications identifying the Wall Types/Systems/Materials and the FRL's achieved are to be provided. Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier. Where required, a copy of the Fire Engineers Report prepared by an Accredited C10 Certifier – Fire Safety and who is also Registered Design Practitioner, is to also be provided.

28. **BCA Spec. 5 - Subclause S5C16 - Fire Resisting Construction/Roof Lights:** The specification requires roof lights to comply with subsection 3.6 and the provisions within restricts the proximity of roof lights from the boundaries and/or other roof lights in other fire separated areas to no less than 3m and to any part of the same building which projects above the roof unless the wall has an FRL of a Fire Wall and any openings in that part of the wall for a vertical rise of 6m above the roof is protected in accordance the Clause C4D5 of the BCA.

In this regard, the following areas have been identified as matters which may be requiring further design consideration and/or justification via Performance-Based Solutions by the project Fire Safety Engineer;

- (a) Level 4 & 6 – Any part of the building that is within 3m and projects above 6m of the skylights located adjacent to the outdoor terraces on level 5 & 7 (both buildings) are required to be fire rated to achieve and FRL of 90/90/90 and any openings protected in accordance with Clause C4D5 (i.e. Drenchers, fire windows , fire doors, etc) or alternatively, any departures addressed via a performance based solution;
- (b) Rooftop Level Skylight Details – Roof light recesses have not been shown on the roof floor plans and these should be detailed so services consultants, namely wet and dry fire, can design services to these voids accordingly.

Fire Engineered Performance Solution: It is understood that the design team may engage a C10 Fire Safety Engineer to develop a Performance Based Solution to rationalise the extent of fire separation and protection to the roof lights and the report will need to demonstrate compliance with all relevant BCA Performance Requirement C1P2, CP8.

Note: Architectural Details and Specifications identifying the Wall Types/Systems/Materials and the FRL's achieved are to be provided. Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier.

SECTION D – ACCESS AND EGRESS:

The proposed development will generally satisfy the DTS provisions & Performance Requirements of Section D of the BCA subject to compliance with the following:

29. BCA cl. D2D3– Number of Exits Required: The building is required to be provided with a minimum of one (1) exits from each storey and not less than 2 exits from each Basement level.

In this regard, the following designated exits are proposed from each respective level;

- Ground Floor Level– (x1) Exit via the Principal Pedestrian Entrance which is at the construction edge of the roof above.
- Level 1– (x1) Fire Stairs #1
- Level 2 & level 3– (x2) Fire Stairs #1 & #2
- Level 4 - (x1) Fire Stair #1 Building A. The Fire Stair in Building B bypasses the two storey units No. 10 & 11
- Level 5 - (x1) Fire Stair # 1 Building A & (x1) Fire Stair # 2 Building B
- Level 6– (x1) Fire Stair #2 Building B
- Level 7– (x1) Fire Stair #2 Building B

An Exit is defined by the BCA as follows:

- a) Any, or any combination of the following if they provide egress to a road or open space—
 - (i) An internal or external stairway.
 - (ii) A ramp.
 - (iii) A fire-isolated passageway
 - (iv) A doorway opening to a road or open space.
- b) A horizontal exit or a fire-isolated passageway leading to a horizontal exit

Open Space is defined by the BCA as follows:

A space on the allotment, or a roof or similar part of a building adequately protected from fire, open to the sky and connected directly with a public road.

Note: Architectural Details and Specifications are to be provided ensuring they cross reference any Fire Engineering requirements. Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier. A copy of the Fire Engineers Report prepared by an Accredited C10 Certifier – Fire Safety and who is also Registered Design Practitioner, is to also be provided.

30. BCA cl. D2D4 – When Fire Isolated Exits are Required: Where an exit stair passes through more than 3 consecutive storeys in the building it is required to be contained within a fire rated shaft achieving minimum FRL's in line with those applicable to each part as per BCA Specification C1.1 above. The shaft is to also be enclosed with a fire rated lid achieving same FRL of the shaft, and the lid is to be designed and constructed to provide fire ratings in both directions.

In this regard, In this regard the Fire Stairs within the building connect more than three consecutive storeys and are therefore required to be located in fire isolated shafts.

Note: Architectural Details and Specifications are to be provided ensuring they cross reference any Fire Engineering requirements. Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier.

31. BCA cl. D2D5 – Exit Travel Distances: Egress travel distances must comply with the respective classifications accordingly.

Class 2 (Residential SOU's Part) - The exit travel distances from the entrance doorway of the residential sole occupancy units to an exit generally need to be no more than 6 metres to a point of choice of two exits or not be more than 20 metres to a single exit serving a storey at the level of egress to the road or open space. Concessions for extended egress travel distances of up to 12m (in lieu of the 6m discussed above) are permissible based on a Sprinkler system being proposed that is in accordance with BCA Spec 17 & 18.

Class 7a, 7b and 9b (Carpark / Storage/ Plant Rooms / Gym / Common Area) Parts - The exit travel distances in in these areas are required to be not more than 20 metres to a single exit, or no more than 20m to an exit or a point where travel in different directions to two or more exits is provided. Where alternative exits are available, the total distance to one of the two exits may be increased to 40m accordingly.

In this regard, the following areas have been identified as matters which may be requiring further design consideration and/or justification via Performance-Based Solutions by the project Fire Safety Engineer;

- a) Ground Floor level - Egress travel distance from the furthest point on the floor within the Bin Room, Main Switch Room and the main Lobby is up to 25m Worst Case (in lieu of 20m) to the single exit;
- b) Level 2 & Level 3 Carpark – Travel distances are considered compliant throughout the carpark and storage area on the premise that the traffic engineer confirms the proposed handrails (which are to be either inline or proud of any kerb) will comply with the provision of AS2890.1-2004.

Fire Engineered Performance Solution: It is understood that the client will engaged the services of an Accredited C10 Fire Safety Engineer to consider a Performance Based Solution to rationalise the extended travel distances by demonstrating compliance with all relevant BCA Performance Requirement (D1P4, E2P2).

Note: Architectural Details and Specifications are to be provided ensuring they cross reference any Fire Engineering requirements. Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier. A copy of the Fire Engineers Report prepared by an Accredited C10 Certifier – Fire Safety and who is also Registered Design Practitioner, is to also be provided.

32. BCA cl. D2D6 – Distances Between Alternative Exits: The distance between alternative exits within the building must not exceed 60 metres and/or be located less than 9m apart. The alternative path of travel exits must not converge such that they become less than 6m apart.

In this regard, it is noted that egress travel distances between exits comply with the egress provision of D2D6

Note: Architectural Details and Specifications are to be provided ensuring they cross reference any Fire Engineering requirements. Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier.

33. BCA cl. D2D7 – Height of Exit, Paths of Travel to Exits and Doorways: The unobstructed height throughout an exit or a path of travel to an exit must be not less than 2 metres, except for doorways which may be reduced to not less than 1980mm.

In this regard, it is considered that the proposed design of the building generally complies with the egress heights provisions of D2D7 however, services design details are to be reviewed and confirmation is to be provided that services are not encroaching below the minimum head height clearances.

Note: Architectural Details and Specifications are to be prepared by a suitably qualified design practitioner (Registered Architect) ensuring they cross reference any Fire Engineering requirements. Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier.

34. BCA cl. D2D8 – Widths of Exits and Paths of Travel to Exits: The unobstructed width of exits or path of travel to exits and the total aggregate widths for stairways and doorways must take into consideration the total population loads of each storey as determined under D2D8 accordingly.

The exit stairways and passageways must achieve a minimum unobstructed width of 1.0m and this includes a measurement between handrails and the opposing walls.

In addition, a minimum of 1.0m is to be provided around all plant equipment and other equipment within the service rooms and to all common external ramps, stairs and walkways.

As part of the following assessment total population numbers that are considered in the assessment is Max. 50 persons per level

In this regard, following areas have been identified as matters which may be requiring further design consideration and/or justification via Performance-Based Solutions by the project Fire Safety Engineer; .

- a) Level 2 & 3 - Carpark Areas – The Storage Cage/Rooms within the carpark have a reduced egress width of up to 600mm in lieu of 1.0m;
- b) Level 7 – Egress stair – The non-fire isolated stairway providing egress from level 6 is required to be provided with handrail extensions and turndowns and to top and bottom of the stair in accordance with AS1428.1-2009 and this will therefore encroach into the 1.0 minimum required egress widths at these locations;
- c) Plant Rooms/areas – There may be reduced egress widths around plant equipment that is less than the minimum required 1.0m.

Fire Engineered Performance Solution: It is understood that the client will engaged the services of a Fire Safety Engineer to consider a Performance Based Solution to rationalise reduced egress widths by demonstrating compliance with all BCA Performance Requirement (D1P4 / D1P6).

Note: Architectural Details and Specifications are to be prepared by a suitably qualified design practitioner (Registered Architect) ensuring they cross reference any Fire Engineering requirements. Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier. A copy of the Fire Engineers Report prepared by an Accredited C10 Certifier – Fire Safety and who is also Registered Design Practitioner, is to also be provided.

- 35. BCA cl. D2D9 – Widths of Doorways in Exits or Paths of Travel to Exits: The unobstructed width of a doorway provided to comply with D2D8 (1), (2), (3) or (4), minus 250mm must be provided and in any other case (except in a Class 9a and 9c building and/or a door which opens to a sanitary compartment or bathroom) the door width must be a minimum of 750mm wide.

In this regard, it is considered that the proposed design of the building generally complies with the egress dimension provisions of D2D9

Note: Architectural Details and Specifications are to be prepared by a suitably qualified design practitioner (Registered Architect) ensuring they cross reference any Fire Engineering requirements. Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier.

- 36. BCA cl. D2D10 – Exits Widths not to Diminish in Direction of Egress: The unobstructed width of a required exit must not be diminish in the direction of travel to a road or open space, except where the width is increased in accordance with D2D8(1)(b) or D2D9(a)(i).

In this regard, it is considered that the proposed design of the building/s generally complies with the egress width provisions of D2D10.

Note: Architectural Details and Specifications are to be provided ensuring they cross reference any Fire Engineering requirements. Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier.

- 37. BCA cl. D2D11 – Determination and Measurements of Exits and Paths of Travel to Exits: The unobstructed width of an exit or a path of travel to an exit for the purpose of BCA Clauses D2D7 to D2D10 are measured clear of all obstructions and as per the criteria in D2D11. Designers are encouraged to review this clause to ensure compliance is achieved.

Note: Architectural Details and Specifications are to be prepared by a suitably qualified design practitioner (Registered Architect) ensuring they cross reference any Fire Engineering requirements. Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier

- 25. BCA cl. D2D12 – Travel Via Fire Isolated Exits: Each fire-isolated stairway or fire-isolated ramp must provide independent egress from each storey served and discharge directly, or by way of its own fire-isolated passageway –
 - (a) to a road or open space; or
 - (b) to a point—

- i. in a storey or space, within the confines of the building, that is used only for pedestrian movement, car parking or the like and is open for at least $\frac{3}{4}$ of its perimeter; and
 - ii. from which an unimpeded path of travel, not further than 20 m is available to a road or open space; or
- (c) into a covered area that—
- i. adjoins a road or open space; and
 - ii. is open for at least $\frac{1}{3}$ of its perimeter; and
 - iii. has an unobstructed clear height throughout, including the perimeter openings, of not less than 3 m; and
 - iv. provides an unimpeded path of travel from the point of discharge to the road or open space of not more than 6 m.

In addition to the above, where a path of travel from the point of discharge of a fire-isolated exit necessitates passing within 6 m of any part of an external wall of the same building, measured horizontally at right angles to the path of travel, the following applies:

- a) That part of the wall must have—
 - i. Subject to FRL's under Spec 5 firstly, an FRL of not less than 60/60/60 (rated in both directions); and
 - ii. any openings protected internally in accordance with C4D5; and
 - iii. The protection required by (a) must extend for a distance of 3 m above or below, as appropriate, the level of the path of travel, or for the height of the wall, whichever is the lesser.

And, if more than 2 access doorways, not from a sanitary compartment or the like, open to a required fire-isolated exit in the same storey—

- i. a smoke lobby in accordance with D3D7 must be provided; or
- ii. the exit must be pressurised in accordance with AS 1668.1.

In this regard, the following areas have been identified as matters which may be requiring further design consideration and/or justification via Performance-Based Solutions by the project Fire Safety Engineer;

- (a) Fire Stair 1 Discharge Location – Fire Stairs (FS1) discharges directly into a covered area of the building (in lieu of discharging directly to a road or open space) which is not open for 1/3 of its perimeter and has an unobstructed height of 3m;

In addition to the above, upon discharge from the Fire Stairs occupants need to pass within 6m of the external walls and openings of the building to reach the road and as such, the external walls within 6m of the path of travel to the road require an FRL of 60/60/60 mins rated in both directions and all effected openings are required to be self-closing and internally protected with drenchers, fire windows, shutters, fire doors or the like;

- (b) Fire Stair 2 Discharge Location – Fire Stairs (FS2) discharges directly into the confines of the building (in lieu of discharging directly to a road or open space) which is not open for 2/3 of its perimeter and requires travel via an internal non-fire isolated stair;

In addition to the above, upon discharge from the Fire Stairs occupants need to pass within 6m of the external walls and openings of the building to reach the road and as such, the external walls within 6m of the path of travel to the road require an FRL of 60/60/60 mins rated in both directions and all effected openings are required to be self-closing and internally protected with drenchers, fire windows, shutters, fire doors or the like.

Fire Engineered Performance Solution: It is understood that the design team will engage a C10 Fire Safety Engineer to develop a Performance Based Solution to rationalise egress stair discharge arrangements and the report will need to demonstrate compliance with all relevant BCA Performance Requirement (D1P4, D1P5, E2P2).

Note: Architectural Details and Specifications are to be prepared by a suitably qualified design practitioner (Registered Architect) ensuring they cross reference any Fire Engineering requirements. Design Certification and Design Compliance Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered

Certifier. A copy of the Fire Engineers Report prepared by an Accredited C10 Certifier – Fire Safety and who is also Registered Design Practitioner, is to also be provided.

38. BCA cl D2D14 – Travel by Non-Fire Isolated Stairways or Ramp: Class 2 part – The travel distance from the discharge of the stairway to the road or open space must not be more than 15m from a doorway providing egress to a road or open space or 30m from one of two such doorways if travel to each of them is in opposite directions. Furthermore, the total distance of travel via a non-fire isolated stairway from the entrance doorway of the residential sole occupancy units must not exceed 60m

Class 7a part - The travel distance from the discharge of the stairway to the road or open space must not be more than 20m from a doorway providing egress to a road or open space or 40m from one of two such doorways if travel to each of them is in opposite directions. The total travel distance is to be not more than 80m from any point of the floor.

In this regard, It is considered that the proposed design of the building generally complies with the egress dimension provisions of D2D14;

Note: Architectural Details and Specifications are to be prepared by a suitably qualified design practitioner (Registered Architect) ensuring they cross reference any Fire Engineering requirements. Design Certification and Design Compliance Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier.

39. BCA cl. D2D15 – Discharge from Exits: Upon egress occupants must have suitable paths of travel including compliant stairways and ramps (where required) between the building and the Roadway. Graded surfaces must not be steeper than 1:8 and pedestrian egress ramps require handrails and non-slip finishes. Where also required for accessibility, the paths of travel are to comply with BCA Part D4 & AS1428.1-2009.

Exits must also be provided with safety bollards to ensure they are not obstructed by vehicles or other obstructions where considered necessary.

Note: Architectural Details and Specifications are to be provided ensuring they cross reference any Fire Engineering requirements. Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier.

40. BCA cl. D2D18 – Number of Persons Accommodated: Clause D2D18 and Table D2D18 provide a method which may be used to calculate the anticipated number of people in particular types of buildings so that minimum exit widths and the required number of sanitary and other facilities can be calculated. This clause and table are not to be used for non-BCA purposes.

- Ground Floor – Max 10 persons
- Level 1 – Max 30 Persons
- Level 2 & 3 – Max 40 persons
- Level 4 – Max 30 Persons
- Level 5 – Max 30 Persons
- Level 6 – Max 30 Persons
- Level 7 – Max 30 Persons

In this regard, It is considered that the proposed design of the building generally complies with the egress dimension provisions of D2D8 and D2D18.

Note 1: The above is a very conservative number and the design team and client are to review the populations numbers above and provide their confirmation as to being acceptable.

Note 2: Architectural Details and Specifications are to be provided ensuring they cross reference any Fire Engineering requirements. Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier.

41. BCA Part D3 Construction of Exits: The stair treads and risers, stair landings, door thresholds, balustrades and handrails in stairways used by the occupants are to comply with the technical provisions of these Clauses

within Part D3 and AS1428.1-2009. Stairways providing Access for Maintenance Personnel to rooms defined by BCA Clause D3D23 may be subject to variation designs complying with AS1657-2018.

Further details will be required prior to issue of the Construction Certificate.

Note: Architectural Details and Specifications are to be prepared by a suitably qualified design practitioner (Registered Architect). Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier.

42. **BCA cl. D3D3 - Fire Isolated Stairways and Ramps:** Fire isolated stairs are to have building elements constructed of non-combustible materials such as reinforced or prestressed concrete, Steel etc which will not cause structural damage or impair the FRL's of the stair shaft if there is local failure.

Note: Architectural Details and Specifications are to be prepared by a suitably qualified design practitioner (Registered Architect). Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier.

43. **BCA cl. D3D4 – Non-Fire Isolated Stairways and Ramps:** In a building having a rise in storeys more than 2, required stairways must be constructed of the following;
- reinforced or prestressed concrete, or
 - Steel with no part less than 6mm thick,
 - Timber that has a finished thickness of not less than 44mm and has an average density not less than 800kg/m³ at a moisture content of 12% and has not been joined by means of glue unless it is laminated with Resorcinol or Phenol Formaldehyde glue.

Note: Architectural Details and Specifications are to be prepared by a suitably qualified design practitioner (Registered Architect). Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier.

44. **BCA cl. D3D8 – Installations in Exits and Paths of Travel:** Services or equipment comprising electricity meters, distribution boards, central telecommunication distribution boards/equipment, electrical motors or other motors serving equipment in the building, can be installed in a corridor or the like, leading to a required exit if the services or equipment are enclosed with non-combustible construction or appropriate fire-protection covering and doorways suitably sealed against smoke spread from the enclosure.

In this regard, the following areas have been identified as matters which may be requiring further design consideration and/or justification via Performance-Based Solutions by the project Fire Safety Engineer.

- a) **Services in Fire Stairs** – there may be drainage pipes and other services (other than those permitted under clause D3D8) that are located within the fire stairs and where these are proposed, these will need to be considered under a performance based solution justifying compliance with all relevant Performance Requirements;
- b) **Common Corridors and Lobby areas** – Any Electrical Services Board /NBN enclosure/ MSB's Rooms located along the path of travel to the exit is to be of non-combustible construction and all openings suitable smoke sealed where they are located in the path of travel to the exits. This includes any ventilation grills in doors or walls which will require smoke dampers.

Fire Engineered Performance Solution: Where required, the design team may engage a C10 Fire Safety Engineer to develop a Performance Based Solution to rationalise departures with fire & Smoke separation required to the Electrical Services Board and services within the fire stair and the report will need to demonstrate compliance with all relevant BCA Performance Requirement (D1P4, D1P5, E2P2).

Note: Architectural Details and Specifications are to be provided ensuring they cross reference any Fire Engineering requirements. Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the relevant Construction Certificate application to the satisfaction of the Registered Certifier. Where required, a copy of the Fire Engineers Report prepared

by an Accredited C10 Certifier – Fire Safety and who is also Registered Design Practitioner, is to also be provided.

45. BCA cl. D3D9 – Enclosure of Space Beneath Stairs and Ramps: Any areas beneath a required fire isolated stairway or ramp must not be enclosed to form a cupboard or room.

In this regard, the following areas have been identified as matters which may be requiring further design consideration and/or justification via Performance-Based Solutions by the project Fire Safety Engineer.

- a) Level 6 AC Plant Room – The plant room below the non-fire isolated stairway is to be enclosed in fire rated construction of no less than 60/60/60 and any openings protected with a self closing - /60/30 fire door. The room will inherently require fire separated that is in accordance with Clause C4D12 and Specification 5 being a room not within an SOU.

Note: Architectural Details and Specifications are to be provided ensuring they cross reference any Fire Engineering requirements. Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the relevant Construction Certificate application to the satisfaction of the Registered Certifier. Where required, a copy of the Fire Engineers Report prepared by an Accredited C10 Certifier – Fire Safety and who is also Registered Design Practitioner, is to also be provided.

46. BCA cl. D3D13 – Roof as Open Space: Where an exit discharges to a roof of a building, the roof must have an FRL of not less than 120/120/120 and there must be no roof lights or other openings located within 3m of the path of travel of persons using the exit to reach a road or open space.

In this regard, the following areas have been identified as matters which may be requiring further design consideration and/or justification via Performance-Based Solutions by the project Fire Safety Engineer;

- (a) Level 6 & level 7 Exit Discharge - The exits to open space from the building at level 6 & 7 are onto the level 6 roof slab over the storage rooms which requires consideration of this clause. As such, the concrete floor slab will need to achieve a min FRL of 120/120/120 and any openings (including openings in the external plane) within 3m of the path of travel to reach the road will need addressing via a performance based solution.

Fire Engineered Performance Solution: It is understood that the design team will engaged the services of an Accredited Fire Safety Engineer to prepare a Performance Based Solution to rationalise the departures associated with openings within 3m of the path of travel along roof as open space. In this regard, the report is to demonstrate compliance with BCA all relevant Performance Requirements (C1P2/D1P4).

Note: Architectural Details and Specifications are to be prepared by a suitably qualified design practitioner (Registered Architect) ensuring they cross reference any Fire Engineering requirements. Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier. A copy of the Fire Engineers Report prepared by an Accredited C10 Certifier – Fire Safety and who is also Registered Design Practitioner, is to also be provided.

47. BCA cl. D3D14 – Treads and Risers: The stairs must comply with the tread, riser and going dimensions of this clause and the nosing of the stairs must be provided with a non-slip treads and meet the provisions of AS1428.1-2009.

The following will apply in relation to the construction of all stairways:

- Stairway must have not more than 18 and not less than 2 risers in each flight.
- Goings and risers within the stair flights must be constant throughout each flight.
- Off-set treads between flights are to be provided – refer to AS1428.1-2009.
- Goings and risers are to be in accordance with BCA Table D3D14 below.:

	Riser (R)	Going (G)	Quantity (2R+G)
Maximum	190	355	700
Minimum	115	250	550

Figure 7 – Stair Tread & Riser Details (Source: NCC/BCA Clause D3D14)

- Risers must be solid construction with no gaps and treads must have non slip finishes and stair nosing's in accordance with BCA Part D34 and AS4586-2013 and AS1428.1-2009.

Application	Surface conditions	
	Dry	Wet
Ramp steeper than 1:14	P4 or R11	P5 or R12
Ramp steeper than 1:20 but not steeper than 1:14	P3 or R10	P4 or R11
Tread or landing surface	P3 or R10	P4 or R11
Nosing or landing edge strip	P3	P4

Figure 8 – Stair, Landing & Ramp Details (Source: NCC/BCA Clause D3D15)

Note: Architectural Details and Specifications are to be provided. Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier.

48. **BCA cl. D3D15 – Landings:** A stairway may have a landing with a gradient of 1:50 in a building to limit the number of risers in each flight and where provided, the landings must have length not less than 750mm and where it involves a change in direction, the length is measured 500mm from the inside edge of the landing.

Landings surfaces and/or a strip at the edge of the landing, must also have slip resistance classifications not less than those specified in Table D3D15 above when tested against AS4586-2013. Compliance is to be ensured when and of introducing any smoke barriers and doors to address the compliance departures referenced under D3D5 above.

Note: Architectural Details and Specifications are to be provided. Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier.

49. **BCA cl. D3D16 – Thresholds:** Doors (other than those inside the Class 2 SOU's) must not have a ramp or step closer to the door than the width of the door leaf except where opening to open space, where the change in level may be a maximum of 190mm.

Note 1: Threshold ramps are permitted where door open directly to a road or open space and not in any cases.

Note 2: Architectural Details and Specifications are to be provided ensuring they cross reference any Fire Engineering requirements. Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Relevant Construction Certificate application to the satisfaction of the Registered Certifier. A copy of the Fire Engineers Report prepared by an Accredited C10 Certifier – Fire Safety and who is also Registered Design Practitioner, is to also be provided.

50. **BCA cl. D3D17 to D3D21 – Barriers to Prevent Falls, Height of Barriers, Openings in Barriers, Barrier Climability & Wire barriers:** A continuous Barrier must be provided along the side of a roof to which general access is provides, a stairways or ramp, a floor, corridor, hallway, balcony, deck verandah, mezzanine, access bridge or the like and to a delineated path of access to and from a building if the trafficable surface is more than 1m or more above the surface beneath.

Balustrades and barriers throughout are to comply with the provisions of these Clauses and the following is a summary (but not limited to) of the key provisions for your ease of reference:

- All balustrades generally must achieve a minimum of 1m in height above any fall more than 1m with no gaps greater than 125mm.
- In addition, where the fall exceeds 4 metres the balconies must not have any climbable elements (on the barrier or within 1.0m of the barrier) located between 150mm and 760mm above the floor which can serve as climbable elements and footholds for children.

This includes any feature lighting installed within the inside face of concrete upturns, gas bouyanettes, water taps, AC units and the external planter beds located within 1.0m of the balustrades which could serve as a climbable element and/or foothold. This also includes privacy/sunscreens on the inside of the Balustrades which could create compliance departures.

- For fire stairs, where the fall exceeds 1m, the balustrading must be a minimum of 865mm above the nosing of the tread with a rail no more than 150mm above the line of the nosing of the tread and no gaps greater than 460mm there above. At the landing of stairs where the landing exceeds 500mm in length the balustrade must be increased to 1m in height, with a rail no more than 150mm above the landing and no gaps greater than 460mm.
- For non-fire isolated stairs where the fall exceeds 1m the balustrading must be a minimum of 865mm above the line of the nosing's of the treads, 1m at the floors and landings and there must be no gaps greater than 125mm throughout.
- Glass balustrades are to comply with AS1170.1-2002 & AS1288-2021 requiring interlinking rails and end point fixtures. NB: No frameless glass balustrades are permitted.
- Rooftop Communal open space areas are to ensure no fixed furniture, planter boxes or the like compromise balustrade provisions and all planters are to be designed as 1.0m or higher from FFL to negate the need for additional balustrades at the perimeter edges.
- Balconies are to ensure no fixed bench seating/BBQ,s AC units, gas, water light services are located within 1.0m of the balustrades..

Note 2: Careful consideration will be required to the upper areas (where BBQ or joinery is proposed) to ensure there are no climbable elements in this vicinity. The remainder of the barriers are to also ensure no fixed lights or the like are installed to maintain the barrier free from footholds.

Note 3: Careful consideration will be required to the Basement Car Stackers and roller shutters or other suitable barriers will be required form a safety in design perspective. Note Fair Trading do not allow unprotected car stackers in residential developments

Note 4: Architectural Details and Design Certification to the satisfaction of the Registered Certifier are to be provided with the Construction Certificate application. We recommend detailed shop drawings be prepared for submission to the Certifier. Structural Engineer is to review balustrade designs and also provide Design Certification.

51. **BCA cl. D3D22 – Handrails:** A handrail is required along one side of all proposed stairways and ramps located a minimum of 865mm above the line of the stair nosing and 1.0m above ramps and landings greater than 500mm. The handrail must also be continuous between flights.

Internal & External delineated access and egress paths between the building entrances/exits and to the boundary providing access to the road must have handrails provided if the gradients are steeper than 1:20.

In this regard, the following areas have been identified as matters which may be requiring further design consideration and/or justification via Performance-Based Solutions by the project Fire Safety Engineer

- (a) **Level 2 & 3 Carpark Area** – The handrails along to 1:8 driveway ramps that are also considered to be paths of travel to the exits on these levels are to be inline or sit proud of the kerb below together with confirmation from the traffic engineer that this arrangement is compliant with AS2890.1-2004. Any departures will need to be addressed via a performance based solution.

Fire Engineered Performance Solution: It is understood that the design team will engaged the services of an Accredited Fire Safety Engineer to prepare a Performance Based Solution to rationalise the departures associated handrail arrangements along the path of travel to the exits. In this regard, the report is to demonstrate compliance with BCA all relevant Performance Requirements (D1P2).

Note 1: Please note the additional handrail requirements for stairs required to be accessible under AS1428.1-2009. Project Access Consultant to review all stairways and handrail details and prepare a report for submission to the Registered certifier at the Construction Certificate stage.

Note 2: Architectural Details and Specifications are to be prepared by a suitably qualified design practitioner (Registered Architect) ensuring they cross reference any Fire Engineering requirements. Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier. A copy of the Fire Engineers Report prepared by an Accredited C10 Certifier – Fire Safety and who is also Registered Design Practitioner, is to also be provided.

52. BCA Clause D3D23 – Fixed Platforms, walkways, stairways and ladders (D2.18): A fixed platform, walkway, stairway, ladder and any going and riser, landing, handrail or barrier attached thereto may comply with the provisions of AS1657-2013 in lieu of D3D14, D3D16, D3D17, D3D18, D3D19, D3D20, D3D21 & D3D22 if it only serves a machine rooms, boiler houses, lift machine rooms, plant rooms and the like, or non-habitable rooms such as attics, store rooms and the like that are not used on a frequent or daily basis in the internal parts of Class 2 or Class 4 residential building.

Access to all other areas not listed above must comply with the other provisions of this part and not D3D23 accordingly and where AS1657-2018 is permitted, the accessways, ladders stairways and the like must comply with the Australian Standard or be addressed via performance-based solutions.

Note: *Architectural Details and Specifications are to be provided. Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier.*

53. BCA cl. D3D24 – Doorways: A swinging door in a required exit or forming part of a required exit must be installed to the requirements of this clause which requires all doors to swing in the direction of egress unless they serve certain tenancies with floor areas less than 200m² and the doors are the only exits from that space. Where the latter is proposed, the inward swing doors must be provided with a D-Handle, signage reading "Pull to Open" and a hold open device such as a bird beak type latching device.

A power operated door is *generally permitted* to be located in a path of travel to a required exit, however it must be able to be opened manually under a force of not more than 110N if there is a malfunction to the door or power failure of the power source.

A power operated door is *generally permitted* to be located in a required exit (discharge door) on the premise that it also must be able to be opened manually under a force of not more than 110N if there is a malfunction to the door or power failure of the power source and if it leads directly to a road or open space, it must automatically open if there is a power failure to the door and/or upon activation of a fire sprinkler or smoke alarm anywhere in the fire compartment it serves.

Roller shutters are not permitted over exits where the space occupies more than 200m².

Note: *Architectural Details and Specifications are to be prepared by a suitably qualified design practitioner (Registered Architect) ensuring they cross reference any Fire Engineering requirements. Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier.*

54. BCA cl. D325 - Swinging Door: All hinged exit doors are required to swing in the direction of egress. Doors serving compartments less than 200msq may swing inwards if they are provided with hold open devices.

Swinging doors must not encroach with any part of door swing by more than 500mm on the required width of the exit and no more than 100mm when the door is fully open.

Note 1: *All doorways located in an accessible path of travel and/or an egress path of travel must comply with door latch hardware provisions detailed under Section 13 of AS1428.1-2009.*

Note 2: *Architectural Details and Specifications are to be provided. Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier.*

55. BCA cl. D3D26 - Operation of Latch A door in a required exit or in a path of travel to an exit must be readily openable from the side facing a person seeking egress, by a single hand downward action or pushing action on a device located between 900mm and 1100mm above finished floor level. The hardware is to also comply with Section 13 of AS1428.1-2009 (as applicable to the use).

Note 1: *All doorways located in an accessible path of travel and/or an egress path of travel must comply with door latch hardware provisions detailed under Section 13 of AS1428.1-2009..*

Note 2: *Please note the provisions of D3D25 do not apply to all doors in a path of travel within a Class 2 SOU.*

Note 3: *Architectural Details and Specifications are to be provided ensuring they cross reference any Fire Engineering requirements. Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier. A copy of the Fire Engineers Report prepared by an Accredited C10 Certifier – Fire Safety and who is also Registered Design Practitioner, is to also be provided.*

56. BCA cl. D3D28 – Signs on Doors: The doors to the 'fire isolated exits' are to have signage located on the outside of the fire isolated exit stating "Fire Safety Door, Do Not Obstruct, Do Not Keep Open".

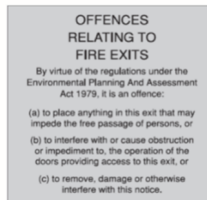


Where they are proposed to be held open with magnamatic devices they are to state, "Fire Safety Door - Do Not Obstruct" (on both sides of the door). In addition, the discharge doors from the fire stairs are to also have signage located on either side of the door stating, "Fire Safety Door – Do Not Obstruct".



All signage is to have lettering not less than 20-mm in height.

Statutory fire exit signage "Offences Relating to Fire Stairs" is also to be erected adjacent each fire door on the outside in accordance with Clause 108 of the EP & A (BC & FS) Regulation 2021.



Note: Architectural Details and Specifications are to be prepared by a suitably qualified design practitioner (Registered Architect). Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier.

57. BCA cl. D3D29 – Protection of Openable Windows: Each window opening serving a bedroom in a residential building must be provided with a means of protection if the floor below the window is 2m or more above the surface beneath.

- Where the lowest level of an openable window is less than 1.7m above the floor, then a window opening is required to be protected either with a device to restrict the window opening to a max. 125mm; or be provided with structurally suitable screens with secure fittings.
- The device or screen must be designed to resist a 125mm sphere to pass through the opening or screen and resist an outward horizontal action of 250N against the window restrained by the device or the screen protecting the opening and have a child release mechanism if the screen or device removed, unlocked or overridden.
- Further to the above, a barrier such as a balustrade, window sill or the like with a height not less than 865mm above the floor surface is required to all openable windows where the level of the floor is 4m or more above the surface beneath and the barrier is of this nature must not permit a 125mm sphere to pass through it and have any horizontal or near horizontal members between 150mm and 760mm above the floor and must not facilitate climbing.

In this regard, the following areas have been identified as matters which may be requiring further design consideration and/or justification via Performance-Based Solutions:

- (b) Windows Sill Heights – There are several windows where there is a fall of more than 4m to the surface below, with sill heights of less than 865mm and have horizontal elements located between 150mm and 760mm.

BCA Performance Solution: It is understood that the design team may engaged the services of a BCA consultant to consider a Performance Based Solution to rationalise the departures with the protection of openable windows by demonstrating compliance with all relevant BCA Performance Requirements (D1P3)

Note: Architectural Details and Specifications are to be prepared by a suitably qualified design practitioner (Registered Architect). Design Certification and Design Declarations (as required under the Design and

Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier.

58. BCA Part D4 – Access for People with a Disability: Access and facilities for people with disabilities will need to be provided to satisfy the requirements of Part D3 of the BCA & AS1428.1-2009, and the Access to Premises – Buildings Standards 2010 satisfying the client's obligations under the DDA. Clauses that directly related to compliance with this part are D3D11, D3D16, D3D22, D4D2, D4D3, D4D4, D4D7, D4D10, D4D11, D4D13, Spec 16, E3D10, F4D5 and the definitions in Schedule 1.

Pursuant to Clause D4D2, the subject building holds Class 2 and Class 7a Classifications must be accessible and access must be provided to and within all areas normally used by the occupants.

Class of Building	Access Requirements
Class 2	From the pedestrian entrance to the entrance door of all the residential units. Access is also required to all communal areas (e.g. outdoor terraces, communal rooms, Bike/Store room and garbage room within the basement levels and all other common areas, terraces, balconies and the like).
Class 7a & 7b	To and within all areas normally used by the occupants.

In this regard, the following summary of key items (but not limited to) must be considered by the design team and noted on the Construction Certificate documentation and complied with during construction of the development;

- Access from the street to the principal pedestrian entrance of the building is to be provided in accordance with AS1428.1-2009. External accessible paths / thoroughfares providing access to the building are to be noted with compliant gradients and landings at entry doors etc.
- Access is required to not less than 50% of all pedestrian entrances to the building. Notwithstanding, where entrances are not accessible the accessible entrance must be less than 50m travel.
- The doors to the entrances and to doors in areas required to be accessible within the building are required to have a clear width of not less than 850mm and satisfy the circulation space requirements under AS 1428.1 – 2009.

Note: Where an entry door is proposed to have multiple door leaves (except an automatic opening door) one of the door leaves must have a clear width of not less than 850mm.

- The circulation space around all accessible swinging doors is required to comply with Clause 13.3 and Figure 31 of AS 1428.1-2009. Circulation space requirements are to be detailed on the CC drawings – refer to Section 13 of AS1428.1-2009.
- All door handles and related hardware to swinging doorways are required to be a type 'D' handle which allows the door to be unlocked and opened with one hand in accordance with Clause 13.5.2.
- 30% luminance contrasts are to be provided to all new doorways e.g. contrasting between door leaf & jamb; or door leaf & wall; or architrave & wall; or door leaf & architrave and/or door jamb & adjacent wall.

NB: This requirement also applies to the glass doors at main entry which therefore restricts the use of frameless glass.

- All frameless glass panels or fully glazed doors on an accessway are to be clearly marking in accordance with AS 1428.1. In this instance, all frameless glass panel or fully glazed doors, including glazing capable of being mistaken for a doorway or opening, shall be marked with a full width solid non transparent contrast line not less than 75mm wide and is required to be located between 900mm and 1000mm above floor level.
- Every stairway and ramp are required to comply with the requirements under Clause 10 and 11 of AS 1428.1 – 2009 (except existing stair way along the South-West which is only an exit and only requires one (1) handrail). Notwithstanding all the stairs are to be provided with contrast stair nosing's between 50 and 75mm deep across the full width of the path of travel. The strip may be set back 15mm from

the front of the nosing and must possess a minimum luminance contrast of 30% to the background. The strip must not extend down the riser more than 10mm.

- Handrails are required to both sides with 300mm extensions and full 180 degree turn downs in accordance with Section 11 of AS1428.1-2009.

Note Fire Stairs need to comply with BCA Clause D3D22(1)(f) and (4) & Clause D4(a)(iii) which require compliance with AS1428.1-2009 clause 12 and 11(f) & (g) respectively i.e. nosing's, handrail design etc.

- Stair treads in the fire stairs will need to be off-set as per the diagrams in AS1428.1-2009.
- Accessways must have passing spaces complying with AS 1428.1 at maximum 20 metre intervals on those paths of travel where a direct line of sight is not available and turning spaces within 2 metres of the end of a path of travel and at maximum 20 metre intervals (corridor width of 1540mm required).
- Circulation space and corridor widths leading to all the SOU entry doors are to comply with Section 13 of AS1428.1. Circulation space and door dimensions 850mm will be required to the adaptable unit door under AS4299. Note AS4299 also requires access to all common areas such as letter boxes, garbage rooms, communal areas etc, and comments from the accessibility consultant will be required.
- Turning bays are required at the end of each corridor where travel is discontinuous.
- External and internal surfaces are to comply with Section 7 of AS1428.1-2009.
 - o Walking surfaces to be slip resistant and certification in respect to the slip resistance of any tiles and vinyl will be required at the Occupation Certificate stage to verify compliance with AS/NZS 4586.
 - o Any proposed carpets within the building are to have a pile height or pile thickness not exceeding 11mm and the carpet backing thickness shall not exceed 4mm (total thickness shall not exceed 15mm).
- Braille tactile signage is to be provided to all sanitary facilities and ambulant facilities. In addition, the signage to the accessible facilities is to also identify the facility for left & right-handed use.
- Braille signage is also required in accordance with the new BCA 2022 provisions at every designated exit door provided with an Exit sign required under E4D5 and state "Exit – Ground".
- Tactile indicators are to be provided to all stairs and ramps in the site. In addition, tactile indicators or another type of barrier will need to be provided around the stair obstruction where the stair is less than 2 metre above floor level. Tactiles are also required between the shared zone and vehicular driveway.
- Accessible sanitary facility to comply with Section 15 of AS1428.1-2009.
- Ambulant facilities (where required) are to comply with Section 16 of AS1428.1-2009
- Areas that would be considered inappropriate because of the particular purpose for which the area is used or where it would pose a health or safety risk for people with a disability access is not required to be provided and written confirmation will be required by the client e.g. plant / storage areas.
- Accessible Parking Facilities are not required as no new parking facilities are proposed in accordance with D4D6 and AS2890.6 - 2009.
- In addition to the above, we note that Council's DCP may require a percentage of sole occupancy units to comply with the Adaptable Housing Australian Standard AS4299, or other Policy which calls up compliance with AS1428.1 (in part). As such 'pre and post' adaptation plans together with a detailed design statement are to be submitted with the Construction Certificate application.

In this regard, the following areas have been identified as matters which may be requiring further design consideration and/or justification via Performance-Based Alternative Solutions by the project Access Consultant;

- (a) Level 6 Non fire Isolated Stairway – the stairway is to be provided with handrails extensions and tactiles and the top and bottom of the stair flight;

- (b) Communal Open Space – Wheelchair access is to be available to the common outdoor communal areas, Gym in accordance with AS1428.1-2009. This will include compliant circulation space at doorways / Gates, compliant turning spaces at end of corridors, etc;
- (c) Access to Site Controls – Access to gate, lifts, main entrances etc will require access controls, hardware and keypads located in compliant locations;
- (d) Frameless glass doors & Gates - Sliding or Swinging, Pivot doors etc may pose compliance departures if they are not provided with colour contrasting door jams.

Accessibility Compliance Report: It is understood that an access consultant will be engaged to review the proposal and provide an Accessibility compliance / Performance Solution Report to accompany the Construction certificate application submission to ensure that all aspects of the DDA, AS1428.1-2009 and Part D4 of the BCA have been addressed. Adaptable Housing/ADG provisions will also need to be considered and Pre-post adaptation plans will need to accompany the Construction Certificate application to the satisfaction of the Registered Certifier.

Note 1: Architectural details are to incorporate all recommendations of the latest rendition of the Accessibility compliance and / BCA Performance Solution Report.

Note 2: Architectural details and design certification to the satisfaction of the Registered Certifier carrying our certification work are to be provided with the Construction certificate application incorporating all recommendations of the latest rendition of the Accessibility compliance and / BCA Performance Solution Report.

Note 3: Architectural details, Specifications, and design certifications together with the Access compliance report are to be prepared by a suitably qualified design practitioner (Registered Architect & Access Consultant) and submitted to the satisfaction of the Registered Certifier with the Construction Certificate application. Where A Performance Solution is proposed, a copy of the Access Report prepared by an Accredited Access Consultant from the Association of Access Consultants is to also be provided and accompanied by a BCA Performance Based Design Brief.

SECTION E – ESSENTIAL FIRE SAFETY MEASURES:

The proposed development will generally satisfy the DTS provisions & Performance Requirements of Section E of the BCA subject to the compliance with the following:

Note: Refer to [Appendix 1](#) for a table of the relevant Essential Fire and Other Safety Measures applicable to the development which is to be read in conjunction with the following;

59. BCA cl. E1D2 – Fire Hydrants (E1.3): A Hydrant system is required to be installed in accordance with AS 2419.1 – 2021 given the total floor area of the building exceeding 500msq.

The Fire Hydrant Booster assembly is to be located within, affixed or remote from the building and in accordance with Section 7 of AS2419.1-2021.

If proposed to be located within (i.e. recessed) or affixed (i.e. attached) to the façade of the building, it must on and within 20m of the facade of the building containing the principal pedestrian entrance and be identified with a Visual Alarm Device (VAD).

If located remote from the building, it must be located adjacent to the allotment boundary and the principal vehicular access for the fire brigade pumping appliance provided to access the site. If no pumping appliance access is provided, the remote booster must be within 20m of the boundary pedestrian entrance and within 20m of the principal pedestrian entrance to the building.

Boosters are to be located at least 10m from any electric vehicle charging facilities, high voltage mains, transformers, distribution boards, electrical pillars, or other high voltage installations, any stored dangerous goods such as petroleum and the like and any combustible storage. They must also be no closer than 3m from any vent terminal of any gas assembly or measuring device, 3m from any discharge outlet from any building exhaust system operating in fire mode and be unobstructed, protected from damage and have unobstructed clearance of 1.5m in front of the assembly and 250mm on each side of the assembly.

Given the building is proposed to be sprinkler protected in accordance with AS2118.2-2017 or AS2118.4-2017, the booster assembly does not need to be protected by a radiant heat shield that has an FRL of 90/90/90 FRL (located 2 metres either side and 3 metres above the outlets)

The Fire Hydrant Booster assembly is to be within sight of the main entry.

Coverage from internal hydrants shall be provided to all parts of the building not covered by external fire hydrants by a feed hydrant of a fire brigade booster assembly (subject to the limitations of Clause 3.5.4).

All parts of the building shall not be more than 40m from an internal hydrant and concessions of up to 45m are available where egress distances throughout are Deemed to Satisfy.

Any Internal Hydrants are to be located within the fire isolated stairways at the landing of the storey they serve and where installations are proposed on levels that are not the same as the FFL of the storey, they are permitted on the premise that the locations comply with Appendix H of the standard and be located and orientated accordingly.

Remote hydrants are permitted for Class 2 and Class 3 buildings to provide coverage to SOU's however remote hydrants for other classifications require Performance Based Solution and FRNSW referrals.

Any Fire Hydrant Pump room (if required) will be required to have a door opening to a road or open space, or a door opening direct into a fire isolated airlock connected to a fire stair. The airlock must not be located wholly within the pump room and not be shared with another egress passage.

The Pump Room arrangements will need to comply with AS2419.1-2021 and AS2941-2013 for pump spatial / maintenance requirements which are generally 1.0m around the pumps and 600mm between the pumps. The standard requires a hydrant pump room is to have a door opening to a road or open space, or a door opening direct into a fire isolated airlock connected to a fire stair.

Where street hydrant coverage is being relied upon, a fire services consultant is to obtain a Fire Flow Enquiry from Sydney Water and confirm pressures, flows and coverage comply with the parameters of AS2419.1-2021 accordingly.

In this regard, the following areas have been identified as matters which may be requiring further design consideration and/or justification via Performance-Based Solutions by the project Fire Safety Engineer;

- (a) Fire Brigade Booster Assembly - The location of the Hydrant Booster Assembly (on Clifford Avenue) is not within sight of all main pedestrian entrances to the building as there are two main entrances.
- (b) Fire Pump Room Location – Access to the any required Fire Pump room needs to be via a fire stair and air lock and/or directly from open space. Where accessed is via a fire stair, the stair is required to be provided with stair with Stair Pressurisation in accordance with AS1668.1-2015;
- (c) Fire Hydrant Landing Valve Location – Hydrants are to be located on each storey within 4m of an exit or installed within the fire stairs where fire stairs are provided serving the building, ensuring egress paths are not reduced to under 1.0m (unless otherwise addressed via a Performance Based Solution);
- (d) Fire Hydrant Coverage Plans – Detailed sweep coverage plans with dimensions are to accompany the Construction Certificate application;
- (e) Fire Hydrant Design Departures – Any departures associated with the systems Standard of Performance (AS2419.1-2021) needs to be identified by the Registered Design Practitioner/Competent Fire Safety Practitioner for the Registered Certifier and Fire Safety Engineers consideration.

Fire Engineered Performance Solution: Where any part of design is proposed to deviate (subject to design engineers' advice) the design team will need to refer the departure to the Fire Safety Engineer to develop a Performance Based Solution and the report will need to demonstrate compliance with all relevant BCA Performance Requirement (E1P3) at the Construction Certificate stage.

Note 1: The Fire Services Design Engineer must be an Accredited Practitioner - (Fire Safety) having relevant accreditation with the Fire Protection Association of Australia (FPAA) or the Department of Fair trading. Furthermore, the designer must have suitable qualifications in the respective fields they are designing to, and their design details and certifications are to identify any shortfalls or departures associated with the either the BCA or the relevant Australian Standards.

Note 2: Architectural Details and Specifications are to be provided ensuring they cross reference any Fire Engineering requirements. Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier. A copy of the Fire Engineers Report prepared by an Accredited C10 Certifier – Fire Safety and who is also Registered Design Practitioner, is to also be provided.

60. **BCA cl. E1D3 – Hose Reels:** A fire hose reel system is required to serve a building (excluding the Class 2 parts) where one or more internal fire hydrants are installed or in a building where the floor area of the fire compartment is greater than 500m² and the system is to be designed to comply with AS 2441 – 2005.

Hose reels are required to be located within 4 metres of an exit or adjacent to internal Hydrants (other than hydrants located in fire isolated exits).

In addition, Fire Hose Reels must be located so that the hose will not pass through doorways fitted with a fire door, other than a door associated with Clauses C3D13, C3D14, C4D14. Furthermore, where a Hose Reel cabinet is proposed, it is to be sign posted and the open door shall not encroach on the width of the egress path of travel to an exit or fire stair doorway.

Any departures associated with the systems Standard of Performance (AS2114-2005) needs to be identified by the Competent Fire Safety Practitioner for the design team and Registered Certifiers consideration.

In this regard, the following areas have been identified as matters which may be requiring further design consideration and/or justification via Performance-Based Solutions by the project Fire Safety Engineer;

- a) **Fire Hose Reel Coverage** – Fire Hose Reel coverage is required to all areas of the Level 2 and Level 3 carpark areas and Ground floor level (including services plant rooms and waste room) without passing through a fire door;
- b) **Fire Hose Reel Coverage Plans** – Detailed sweep coverage plans with dimensions are to accompany the Construction Certificate application;
- c) **Fire Hose Reel Design Departures** – Any departures associated with the systems Standard of Performance (AS2441.1-2005) needs to be identified by the Registered Design Practitioner/Competent Fire Safety Practitioner for the Registered Certifier and Fire Safety Engineers consideration.

Note 1: The fire services design engineer must demonstrate that they are Competent Fire Safety Practitioner (CFSP) and they must be on the Register of the Fire Protection Association Australia (FPAA). Furthermore, the designer must have suitable qualifications in the respective fields they are designing to, and their design details and certifications are to identify any shortfalls or departures associated with either the BCA or the relevant Australian Standards.

Note 2: Architectural Details and Specifications are to be provided ensuring they cross reference any Fire Engineering requirements. Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier.

61. **BCA cl. E1D4, E1D5, E1D6, E1D9, Specification 17 & Specification 18 – Sprinklers:** The building is required to be sprinkler protected throughout as it has a rise in storeys of more than three (3).

It is understood that the building will be provided with a Sprinkler System which will comply with AS2118.1-2017.

The Sprinkler Booster assembly is to be within sight of the main entry as required by Section 4.14.1 & 2 of AS2118.1-2017.

Any pump room design (if required) needs to be access via a fire stair and air lock and/or directly from open space. Similarly, the sprinkler valve room/s which contains the Main Stop Valves also need to be accessed directly from open space.

In this regard, the following areas have been identified as matters which may be requiring further design consideration and/or justification via Performance-Based Solutions by the project Fire Safety Engineer;

- a) **Fire Brigade Booster Assembly** - The location of the Sprinkler Booster Assembly (on Clifford Avenue) is not within sight of all main pedestrian entrances to the building as there are two main entrances;

- b) Fire Pump Room Location – Access to the any required Fire Pump room needs to be via a fire stair and air lock and/or directly from open space. Where accessed is via a fire stair, the stair is required to be provided with stair with Stair Pressurisation in accordance with AS1668.1-2015;
- c) Fire Sprinkler Clearances – Sprinkler heads proposed to the storage areas, for clearances purposes may require addressing via a fire engineered Performance Based Solution and fire services consultant to confirm sprinkler clearance;
- d) Fire Sprinkler Design Departures – Any departures associated with the systems Standard of Performance (AS2118.1-2017) needs to be identified by the Registered Design Practitioner/Competent Fire Safety Practitioner for the Registered Certifier and Fire Safety Engineers consideration.

Fire Engineered Performance Solution: It is understood that the client will engaged the services of a Fire Safety Engineer to consider a Performance Based Solution to rationalise the Sprinkler System arrangements by demonstrating compliance with BCA Performance Requirements E1P3.

Note 1: The Fire Services Design Engineer must be an Accredited Practitioner - (Fire Safety) having relevant accreditation with the Fire Protection Association of Australia (FPAA) or the Department of Fair trading. Furthermore, the designer must have suitable qualifications in the respective fields they are designing to, and their design details and certifications are to identify any shortfalls or departures associated with the either the BCA or the relevant Australian Standards.

Note 2: Architectural Details and Specifications are to be provided ensuring they cross reference any Fire Engineering requirements. Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier. A copy of the Fire Engineers Report prepared by an Accredited C10 Certifier – Fire Safety and who is also Registered Design Practitioner, is to also be provided.

62. BCA cl. E1D14 – Portable Fire Extinguishers: Portable fire extinguishers are to be installed in accordance with Clause E1D14 and Sections 1, 2, 3 & 4 of AS 2444-2001 to serve the building. In this regard, the following locations and matters are required to be considered;
- Suitable Extinguishers are required for the Main Switch Board Room located between 2m and 10m of the exit doorway.
 - Suitable extinguishers are required in the Restaurant/Bars to serve the commercial Kitchens.
 - Suitable extinguishers are required throughout all Hotel Accommodation areas – suitably sized and located.
 - Suitable extinguishers are required throughout the building – suitably sized and located.
- (1) Portable fire extinguishers must be provided for a Class 2, 3 or 5 building or Class 4 part of a building, provided—
- (a) to serve the whole Class 2, 3 or 5 building or Class 4 part of a building where one or more internal fire hydrants are installed; or
 - (b) where internal fire hydrants are not installed, to serve any fire compartment with a floor area greater than 500 m², and for the purposes of this clause, a sole-occupancy unit in a Class 2 or 3 building or Class 4 part of a building is considered to be a fire compartment; and
 - (c) subject to (2) below, selected, located and distributed in accordance with Sections 1, 2, 3 and 4 of AS 2444.
- (2) Portable fire extinguishers provided in a Class 2 or 3 building or Class 4 part of a building must be an ABE type fire extinguisher and have a minimum size of 2.5 kg, be distributed outside a sole-occupancy unit to serve only the storey at which they are located and so that the travel distance from the entrance doorway of any sole-occupancy unit to the nearest fire extinguisher is not more than 10 m.
- (3) In Class 2 to 9 buildings (except within sole-occupancy units of a Class 9c building), portable fire extinguishers must be provided as follows:
- To cover Class AE or E fire risks associated with emergency services switchboards.
 - To cover Class F fire risks involving cooking oils and fats in kitchens.
 - To cover Class B fire risks in locations where flammable liquids in excess of 50 litres are stored or used (not including that held in fuel tanks of vehicles).

- To cover Class A fire risks in normally occupied fire compartments less than 500 m² not provided with fire hose reels (excluding open-deck carparks).
- To cover Class A fire risks in classrooms and associated corridors in primary and secondary schools not provided with fire hose reels.
- To cover Class A fire risks associated with a Class 2, 3 or 5 building or Class 4 part of a building.

For the purposes of (3) above,

- (a) Fire risks are defined in accordance with AS 2444.
- (b) An emergency services switchboard is one which sustains emergency equipment operating in the emergency mode.
- (c) Additional extinguishers may be required to cover fire risks in relation to special hazards provided for in E1D17.
- (d) The fire risks in a Class 2 or 3 building or Class 4 part of a building must include risks within any sole-occupancy units, however portable fire extinguishers are not required to be located within a sole-occupancy unit unless the sole-occupancy unit has a floor area greater than 500m².

Note: Architectural Details and Specifications are to be provided ensuring they cross reference any Fire Engineering requirements. Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier.

63. BCA cl. E1D15 – Fire Control Centres: Given the Building will not have an Effective Height greater than 25m and 50m respectively, a dedicated Fire Control Room is not required.

A fire control centre which includes a Fire Detection Control & Indicating Equipment (FDCIE) which includes the Main Fire Panel is required to be installed at the Designated Building Entry. Appropriate circulation space is required beside the panel (500mm each side) and 1.0m (in front of the panel 1.0m) to ensure firefighting operations can be appropriately facilitated.

Note 1: The Fire Services Design Engineer must be an Accredited Practitioner - (Fire Safety) having relevant accreditation with the Fire Protection Association of Australia (FPAA) or the Department of Fair trading. Furthermore, the designer must have suitable qualifications in the respective fields they are designing to, and their design details and certifications are to identify any shortfalls or departures associated with the either the BCA or the relevant Australian Standards.

Note 2: Architectural Details and Specifications are to be provided ensuring they cross reference any Fire Engineering requirements. Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier. A copy of the Fire Engineers Report prepared by an Accredited C10 Certifier – Fire Safety and who is also Registered Design Practitioner, is to also be provided.

64. BCA cl. E1D16 – Fire Precautions During Construction: Not less than one fire extinguisher to suit Class A, B and C fires and electrical fires must be provided at all times on each storey adjacent to each required exit or temporary stairway or exit. In addition, after the building has reached an effective height of 12 metres, the required fire hydrants and hose reels must be operational in at least every storey that is covered by the roof or the floor structure above, except the 2 uppermost storeys and the required booster connections must be installed. Hydraulic engineer and contractors to be advised of these requirements for consideration during construction.

Note 1: It is the responsibility of the builder to ensure the building is provided/maintained with active fire services throughout the course of construction "to the degree necessary" given the existing building is already greater than 12m in effective height.

Note 2: Architectural and Fire Services Details and Specifications are to be provided ensuring they cross reference any Fire Engineering requirements. Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier.

65. BCA cl. E1D17 & E2D21 – Provision for Special Hazards - Suitable additional provision must be made if special problems of fighting fire could arise because of the nature or quantity of materials stored, displayed or used in a building or on the allotment; or the location of the building in relation to a water supply for fire-fighting purposes.

Additional smoke hazard management measures may be required due to the special characteristics of the building, special function and use of the building, special type or quantity of materials within the building or special mix of classifications within the building or fire compartments.

Based on previous experience, Fire & Rescue NSW will consider the Photovoltaic Panels, Battery Storage Systems, Electric Charging systems and Automated parking systems as special hazards needing consideration.

In this regard, the following areas have been identified as matters which may be requiring further design consideration and/or justification via Performance-Based Alternative Solutions by the project Fire Safety Engineer;

- (a) Photovoltaic/Solar Panels – Photo voltaic panels are proposed on the Roof and these need to be identified in the FEBQ/FER. Where battery storage systems are also proposed, these may need to be contained in separate fire rated enclosures and also identified in the FEBQ/FER;
- (b) Electric Vehicle charging Facilities – The provision of any electric vehicle charging facilities in the carparks needs to be identified in the FEBQ/FER;
- (c) Impulse Fans – The use of Impulse/Jet fans could affect operation of the carpark fire systems and the firefighting operations of FRNSW. As such, consideration to FRNSW guidelines will need to be considered; https://www.fire.nsw.gov.au/gallery/files/pdf/guidelines/impulse_fans_in_carparks.pdf.
- (d) Voids – any voids connecting Levels have potential to form a quasi-atrium and should be considered.

Fire Engineered Performance Solution: It is understood that the design team will engage the services of an Accredited Fire Safety Engineer to prepare a Performance Based Solution to rationalise several BCA DTS departures and the above Special Hazard Provision will need to be considered accordingly.

Note: Architectural & Fire Services Details and Specifications are to be provided ensuring they cross reference any Fire Engineering requirements. Design Certification and Design Compliance Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier. A copy of the Fire Engineers Report prepared by an Accredited C10 Certifier – Fire Safety and who is also Registered Design Practitioner, is to also be provided.

66. BCA cl. E2D3, E2D8, E2D9, (NSW) E2D16 & Specification 20– Smoke Hazard Management: The building is required to be provided with the following smoke hazard management provisions.

The mechanical ventilation systems in the building are required to be designed in accordance with AS/NZS 1668.1-2015 and AS/NZS 1668.2-2012 (A/C systems) incorporating smoke dampers where air handling ducts penetrate any building elements separating fire - compartments served. i.e. any shared A/C equipment via fire separated areas must have fire / smoke dampers.

All ducted AC systems throughout be interfaced with the fire panel and auto shut down upon activation of any fire alarm in that compartment.

Specification 20 Sub-clause S20C2, S20C3, S20C4 & S20C5 requires an Automatic Fire Detection & Alarm System is required throughout the buildings common areas in accordance with AS1670.1-2018 (Including Amendments).

Specification 20 Sub-clause S20C2, S20C3 requires a Smoke Alarms System to be installed within each of the Sole Occupancy Units between each part of the SOU containing bedrooms and the remainder of the SOU and where bedrooms are served by a hallway, in each hallway in accordance with AS3786-2014.

Detectors may be multi-criterion/combined smoke alarm & smoke detection if desired and detectors in the Units are to be installed as per the criteria Clause S20C3 of this Specification. Where multi criterion detectors are utilised these will need to be detailed in the Fire Engineering Report and Smoke obscuration levels nominated in the FER, for reference on the AFSS and ongoing monitoring.

An Building Occupant Warning System must be provided throughout the building including the basement, residential and external communal areas in accordance with AS1670.1-2018 (Including Amendments).

A Fire Panel (FDCIE) needs to be installed at the main entry of the building and a system monitoring system with a direct communication link to the Fire Brigades is required in accordance with AS1670.3 and AS2118.1-2017.

An Automatic Fire Suppression System is to be installed throughout the building in accordance with BCA Specifications 17 and Specification 18 and AS2118.1-2017.

In this regard, the following areas have been identified as matters which may be requiring further design consideration and/or justification via Performance-Based Solutions by the project Fire Safety Engineer;

- (a) Smoke Detection Systems –Detection systems are typically required throughout all common areas in the Carpark and Residential Corridors as a compensatory measure to DTS deviations within the Fire Engineering Strategies for the building .they will also be required to automatic shutdown of ducted any air handling within the Class 9b part;
- (b) Smoke Alarms Systems –Smoke alarms within the SOU's are to strictly comply with Specification 20 and Subclause S20C3 and be located in hallways between bedrooms and any other areas or located in front of bedroom doors where there is no hallway and must not be located near ceiling fans or supply AC vents. Smoke alarms are to be interconnected within each respective unit and be located 300mm from intersecting walls;
- (c) Fire Indicator Panel – Given the building requires a Sprinkler System, an FIP with ASE will be required at the Principal Building Entrance;
- (d) Stair Pressurisation –Fire stairs providing access to any Fire Pump Room are required by AS2419.1-2021 to be provided with Stair Pressurisation system complying with AS1668.1;
- (e) Smoke Hazard management Design Departures – Any departures associated with the systems Standard of Performance (/AS2118.1-2017 / AS1670.1-2018 / AS3786 / AS1668) needs to be identified by the Competent Fire Safety Practitioner for the design team and Registered Certifiers consideration.

Fire Engineered Performance Solution: Where any part of design is proposed to deviate (subject to design engineers' advice) the design team will engage a C10 Fire Safety Engineer to develop a Performance Based Solution to rationalise certain aspects of the Smoke Hazard Management System designs and the report will need to demonstrate compliance with all relevant BCA Performance Requirements (E2P2).

Note 1: The Fire Services Design Engineer must be an Accredited Practitioner - (Fire Safety) having relevant accreditation with the Fire Protection Association of Australia (FPAA) or the Department of Fair trading. Furthermore, the designer must have suitable qualifications in the respective fields they are designing to, and their design details and certifications are to identify any shortfalls or departures associated with the either the BCA or the relevant Australian Standards.

Note 2: Architectural Details and Specifications are to be provided ensuring they cross reference any Fire Engineering requirements. Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier. A copy of the Fire Engineers Report prepared by an Accredited C10 Certifier – Fire Safety and who is also Registered Design Practitioner, is to also be provided.

67. BCA cl. E3D2 & Specification 24 – Lift Installations: All electrical passenger lift and an electrohydraulic passenger lift must comply with Specification 24 and it is the responsibility of the Vertical Transport Design Engineer/Supplier to ensure compliance will achieved.

Note 1: Vertical Transport Design Engineer/Supplier to ensure compliance will achieved and certified accordingly. Lift supplier Details and Design certification to the satisfaction of the Registered Certifier are to be provided with the Construction Certificate application.

Note 2: Architectural details, Lift design details, specifications and design certifications are to be prepared by a suitably qualified design practitioner (Architects & Vertical transport Registered Design Practitioners) and submitted to the satisfaction of the Registered Certifier with the Construction Certificate application.

68. BCA cl. E3D3 – Stretcher Lift: Given the building has an affective height of greater than 12 metres, Stretcher Lifts are required to serve lifts at each storey. As such the lift is required to have a clear space of not less than 600mm wide x 2000mm long x 1400mm high.

Note: Vertical Transport Design Engineer/Supplier to ensure compliance will achieved and certified accordingly. Lift supplier Details, Design Certification and Design Compliance Declaration (as required

under the Design and Building Practitioners Act) to the satisfaction of the Registered Certifier are to be provided with the Construction Certificate application.

69. BCA cl. E3D4 – Warning Against use of Lifts in Fire: Signage “DO NO USE LIFT IF THERE IS A FIRE” is to be provided near the lift call button in letters not less than 10-mm in height.

Note 1: Vertical Transport Design Engineer/Supplier to ensure compliance will be achieved and certified accordingly. Lift supplier Details and Design certification to the satisfaction of the Registered Certifier are to be provided with the Construction Certificate application.

Note 2: Architectural details, Lift design details, specifications and design certifications are to be prepared by a suitably qualified design practitioner (Architects & Vertical transport Registered Design Practitioners) and submitted to the satisfaction of the Registered Certifier with the Construction Certificate application.

70. BCA cl. E3D5 – Emergency Lifts: Emergency lifts are not required to be provided in the building as the building does not have an effective height of more than 25m.

71. BCA cl. E3D6, E3D7 and E3D8 – Facilities for People with Disabilities: As the lifts are required to be provided for disabled access, they must be compliant with a lift specified under the above BCA Clauses and the provisions of AS1735.12 as follows:

- Selection of appropriate lifts required as noted in BCA Clause E3D7 & E3D8
- Have lift landings in accordance with BCA Parts D2, D3 and D4 (access consultant to comment)
- Have complying handrails.
- Have minimum door and internal floor dimensions depending on the lift required..
- Be fitted with a series of door opening sensory devices / passenger protection devices.
- Upper lift landing door requirements.
- Have lift and landing control buttons.
- Appropriate lighting provisions.
- Audible and visual indications, and
- Emergency hands free communication devices.

Note 1: Architect and Vertical Transport Design Engineer/Supplier to ensure compliance will be achieved and certified accordingly. Architectural Details, Lift design details and Specifications are to be prepared by a suitably qualified design practitioner (Architects & Vertical transport Registered Design Practitioners) and submitted to the satisfaction of the Registered Certifier with the Construction Certificate application.

Note 2: Architectural details, Lift design details, specifications and design certifications are to be prepared by a suitably qualified design practitioner (Architects & Vertical transport Registered Design Practitioners) and submitted to the satisfaction of the Registered Certifier with the Construction Certificate application.

72. BCA cl. E3D9, E3D11 & E3D12 – Fire Service Controls, Recall Control and Drive Control Switch's: The lifts serving the building must be provided with all required fire service controls. Confirmation is required from the Lift Design Engineers and Contractors required.

Note 1: Vertical Transport Design Engineer/Supplier to ensure compliance will be achieved and certified accordingly. Lift supplier Details and Design certification to the satisfaction of the Registered Certifier are to be provided with the Construction Certificate application.

Note 2: Architectural details, Lift design details, specifications and design certifications are to be prepared by a suitably qualified design practitioner (Architects & Vertical transport Registered Design Practitioners) and submitted to the satisfaction of the Registered Certifier with the Construction Certificate application.

73. BCA cl. E4D2 to E4D4 – Emergency Lighting: Emergency Lighting is required in the building in accordance with AS/NZS 2293.1 -2018 (including amendments).

All stairs (internal and external egress stairways) are to ensure adequate lux levels are provided throughout the stairs and landings in the event of an emergency and all floor areas requiring coverage are to have suitably located emergency lighting provisions installed.

Note: Architectural Electrical Details and Specifications are to be provided. Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier.

74. **BCA cl. E4D5 to E4D8– Exit Signs:** Illuminated Exit signs must be clearly visible to persons approaching the exit and must be installed on, above or adjacent to each door providing egress from a building. Signs are required to comply with AS/NZS 2293.1-2018 (including amendments).

Note: Architectural Electrical Details and Specifications are to be provided. Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier.

BCA SECTION F – HEALTH & AMENITY:

The proposed development will generally satisfy the DTS provisions & Performance Requirements of Section F of the BCA subject to the compliance with the following:

75. **BCA cl. F1D3 – Stormwater Drainage:** Stormwater drainage must be installed as per AS3500.3 -2021.

In addition to the above, compliance with the other Parts of AS3500 must also be complied with together with the relevant provisions of the National Construction Series – Volume 3 – Plumbing Code of Australia.

Note: Hydraulic and Civil Details and Specifications are to be provided. Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier. Where design departures are proposed, a performance based solution addressing BCA Performance Requirement F1P3 is to be prepared by the Civil / Hydraulic Engineer and a copy of the Report is to also be provided.

76. **BCA cl. F1D4 – Exposed Joints:** Exposed joints (i.e construction joint, expansion joint, control joint, movement joint, etc) in the drainage surface on a roof, balcony, podium or similar horizontal surface part of a building must be protected in accordance with Section 2.9 of AS4654-2012 and not be located beneath or run through a planter box, water feature or similar part of the building.

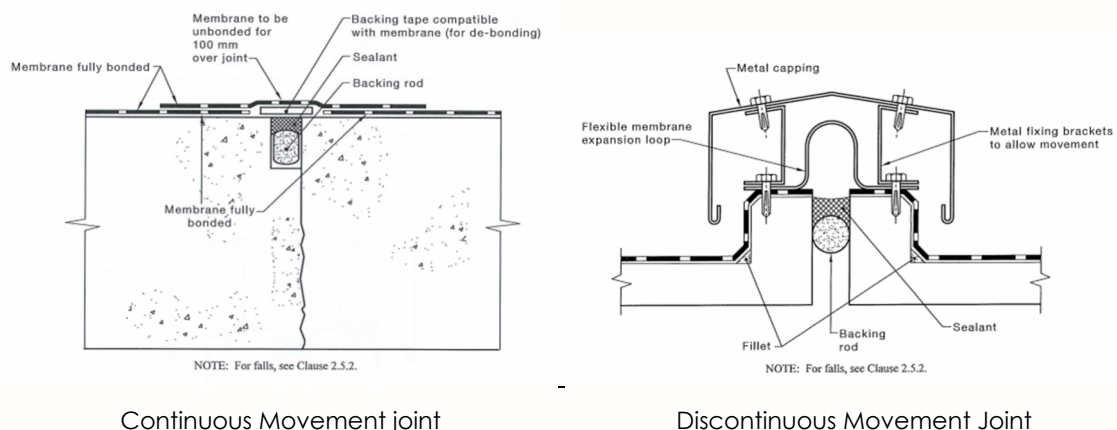


Figure 9 – Movement & Control Joint Details (Source: Section 2.9 of AS 4654.2-2012)

In this regard, it is noted that the current details do not specify control or movement joints and therefore, where these are provided, the Architect /waterproofing consultant is to ensure compliance with the Clause D1D4

Note 1: F1D4 and F1D5 do not apply to a roof designed to comply with F3D2 (a) to (d). Also, F1D3 to F1D5 do not apply to a balcony, podium or singular horizontal surface part of a building where the flooring is of timber decking or other perforated flooring; or which is located directly above ground – refer to F1D2 Application of Part for further guidance in this regard.

Note 2: Architectural Details and Specifications are to be provided. Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier. Where design departures are proposed, a performance based solution addressing BCA performance Requirement F1P2 is to be prepared by the Engineer and a copy of the Report is to also be provided.

77. **BCA cl. F1D5 – External Above Ground Membranes:** Waterproofing membranes for external above ground use must comply with AS4654 Parts 1 and 2 -2012.

Poly paver / Pedestal Paver systems require performance based solutions as the pavers do not provide the required 1:80 falls to the finished floor surface as required by the Standards.

Please not that 1:80 falls are required throughout on the FFL to all areas where there is a floor waste as per BCA Clause F2D2 which takes precedence over the Standard.

In this regard, the following areas have been identified as matters which may be requiring consideration by either way of redesign or via justification from the project Architect or waterproofing consultant via a performance based solution,

- a) External Waterproofing/Freeboard heights – Architect/Hydraulic/Façade Engineer/s to determine freeboard heights and design door threshold/step down accordingly. They are also to design external waterproofing membranes to walls, planter boxes, podium roof tops, concrete roofs etc;
- b) External Waterproofing - The waterproofing and flashing details of the planter boxes, door and windows are to be in accordance with AS4654 noted above – refer to diagrams below for assistance;

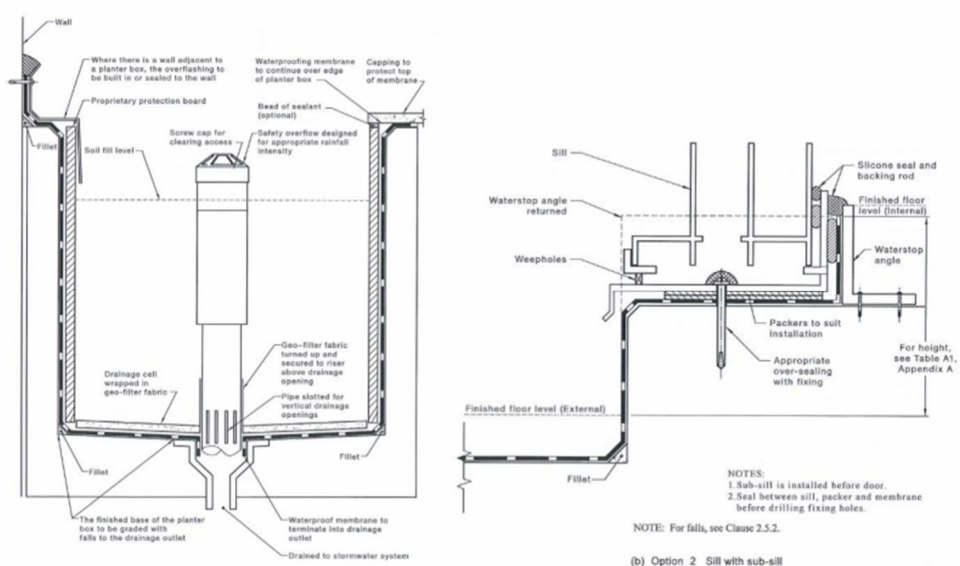


Figure 10 – Movement & Control Joint Details (Source: AS 4654.2-2012)

- c) Pedestal Paver Systems – Where Poly Paver / Pedestal Paver systems are proposed to balconies, terraces, podium common areas etc, they will require Performance Based Solutions as the pavers do not provide the required 1:80 falls required to finished floor levels as per the applicable Australian Standards;

In this regard, 1:80 falls or positive falls are typically required at the concrete substrate level as part of the justification from the Waterproof Consultant developing the Performance Based Design Brief/BCA Performance Solution Report;

- d) Waterproof Membranes on External Walls – BCA Clauses C2D10 and C2D14 permits external waterproofing materials to be applied to an adjacent floor surface and roof surface including vertical upturns and below ground membranes projecting above natural ground floor to a maximum height of 250mm. Wherever this is proposed to deviate from the above clauses, this will require justification via a Performance Based Solution.

BCA Performance Solution: Where any part of design is proposed to deviate (subject to design engineers' advice) the design team will engage a C10 Fire Safety Engineer and/or Professional Waterproofing Consultant to develop a Performance Based Solution to rationalise certain aspects of the waterproofing system designs and the report will need to demonstrate compliance with all relevant BCA Performance Requirements F1P2 & C1P2.

Note 1: F1D4 and F1D5 do not apply to a roof designed to comply with F3D2 (a) to (d). Also, F1D3 to F1D5 do not apply to a balcony, podium or singular horizontal surface part of a building where the flooring is of timber decking or other perforated flooring; or which is located directly above ground – refer to F1D2 Application of Part for further guidance in this regard.

Note 2: Architectural, Hydraulic and Waterproofing Details and Specification are to be provided. Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier. Where design departures are proposed, a Performance Based Solutions addressing BCA performance Requirement F1P2 is to be prepared by the Engineer and waterproofing consultant and a copy of the Report is to also be provided.

78. **BCA cl. F1D6 & F1D7 – Damp Proofing:** Compliance with the provisions of the BCA and the referenced Australian Standard is required.

Note: Architectural Details and Specification are to be provided. Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier. Where design departures are proposed, a Performance Based Solutions addressing BCA performance Requirement F1P2 is to be prepared by the Engineer and a copy of the Report is to also be provided

79. **BCA cl. F2D2 & F2D3 – Waterproofing of Wet Areas & Rooms Containing Urinals:** Wet areas in the building are required to comply with AS 3740 -2021.

In a Class 2 and 3 building and a Class 4 part of a building, building elements in wet areas must be water resistant or waterproof in accordance with Specification 26 and comply with **AS 3740-2021**.

Class 5-9 buildings must have building elements in a bathroom or shower room, a slop hopper or sink compartment, a laundry or sanitary compartment to be water resistant or waterproofed in accordance with Specification 26.

Please ensure the new standard is reviewed to ensure appropriate details are adopted in the proposed design, noting 1:100 falls are now required at the membrane substrate level (concrete floor) and additionally, 1:80 falls are required throughout on the FFL in Internal wet areas (including laundries) and to all areas where there is a floor waste as per BCA Clause F2D2 which takes precedence over the Standard.

In this regard, the following areas have been identified as matters which may be requiring consideration by either way of redesign or via justification from the project Architect or waterproofing consultant via a performance based solution:

- (a) **Windows in Showers** – there are windows in showers that may not strictly comply with the provision of AS3740.1-2021.

BCA Performance Solution: Where any part of design is proposed to deviate (subject to design engineers' advice) the design team will need to engage a Professional Waterproofing Consultant to develop a Performance Based Solution to rationalise certain aspects of the waterproofing system designs and the report will need to demonstrate compliance with all relevant BCA Performance Requirement F1P2.

Note 1: Refer to definitions for explanations of Water resistant and Waterproofed and also Specification 26 for further requirements that need to be complied with.

Note 2: Drainage/Puddle floor waste flanges are required to ALL floor wastes. Shower roses which are ceiling mounted require waterproofing application to extend to the full height to the wall and ceilings to be water resistant. Falls to floor wastes in all internal wet areas are to be 1:80.

Note 3: Third party Water proofing consultants are to be engaged to assist the Architect with detailing compliance requirements.

Note 4: Architectural, Hydraulic and Waterproofing Details and Specification are to be provided. Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier. Where design departures are proposed, a Performance Based Solutions addressing BCA performance

Requirement F1P2 is to be prepared by the waterproofing consultant and a copy of the Report is to also be provided.

80. BCA cl. F2D4 – Floor Wastes: All bathroom & laundry facilities within Class 2, 3 or 4 Residential Sole Occupancy Units are to have floors that are graded to a floor waste to permit the drainage of water.

Where a floor waste is required to be installed;

- (a) the minimum continuous fall of a floor plane to the waste must be **1:80**; and
- (b) the maximum continuous fall of a floor plane to the waste must be 1:50.

Please ensure the new standard is reviewed to ensure appropriate details are adopted in the proposed design, noting 1:100 falls are now required at the membrane substrate level (concrete floor) and additionally, 1:80 falls are required throughout on the FFL in Internal wet areas (including laundries) and to all areas where there is a floor waste as per BCA Clause F2D2 which takes precedence over the Standard.

Note 1: Drainage/Puddle floor waste flanges are required to ALL internal and external floor wastes.

Note 2: Architectural & Hydraulic Details and Specification are to be provided. Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier.

81. BCA cl. F3D2 – Roof Coverings: All new roofing must be covered with

- Roof tiles complying with AS 2049-2002 and fixed as per AS 2050 -2018; or
- Metal roof sheeting comply with AS 1562.1 -2018; or
- Plastic roof sheeting complying with AS1562.3 -2006; or
- Terracotta, Fibre Cement, and timber slates and shingles designed and installed in accordance with AS4597 - 1999 (except in cyclonic areas); or
- An external waterproofing membrane complying with F1D5 and AS4654 Parts 1 and 2 -2012

Note: Architectural Details and Specification are to be provided. Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier.

82. BCA cl. F3D3 – Sarking: Sarking must be installed to roof and walls for weatherproofing as per AS4200.1-2017 & AS4200.2 - 2017. Damp proofing between external abutting walls of any adjacent buildings is also to be considered and detailed.

Note 1: Sarking Type Materials are defined as a material such as a reflective insulation or other flexible membrane of a type normally used for the purpose of waterproofing, vapour management or thermal reflectance.

Note 2: Sarking type materials in Type B or Type A Construction must not exceed 1mm thickness and have a Flammability Index not greater than 5 to be installed on external walls of buildings and if this is not complied with, the sarking Type Materials must be non-combustible and tested in accordance with AS1530.1-1994 as required by BCA Clause C2D10.

Note 3: Architectural Details and Specification are to be provided. Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier.

83. BCA Clause F3D1, F3D2, F3D3, F3D4 & F3D5 – Roof & Wall Cladding / External Wall Weatherproofing: The buildings external walls and roof elements are to be designed to prevent the risk of water (including surface water and rainwater) from entering the building and causing musty, damp and unhealthy conditions or damaging building elements by corrosion or other degradation.

It is also intended to prevent water redirected away from the outside of the building damaging nearby properties.

In this regard, the following areas have been identified as matters which may be requiring further design consideration and/or justification via a Performance-Based Alternative Solutions by the project Facade Engineer.

- (a) External Wall Weatherproofing/Façade Engineering - In order to comply with the deemed to satisfy provisions, the architect and façade engineers must design the building envelope and surrounding surfaces in accordance with Clauses F3D2, F3D3, F3D4 & F3D5 and where this cannot be achieved, a Performance based solution utilising Verification F3V1 and addressing Performance Requirements F3P1 will need to be provided.

BCA Performance Solution: Façade Engineer to prepare a report to assess water and moisture ingress via the external walls and roof whilst considering BCA Clauses F3D1, F3D2, F3D3, F3D4, F3D5 & F8D2 to F8D5 and also develop a Performance Based Solution to address BCA Clauses F3D5 and BCA Performance Requirement F3P1, F8P1 where the external wall cladding will not comply with these provisions accordingly.

Note 1: External cladding that does not consist of the above options will need to be subject to performance-based solutions.

Note 2: External wall claddings in buildings of Type A Construction must be non-combustible and tested in accordance with AS1530.1-1994 as required by BCA Clause C2D10.

Note 3: External waterproofing membranes in accordance with F1D5 and AS4654.1 or 2 - 2012 are not permissible for vertical or near vertical surfaces and relate to horizontal surfaces only.

Note 4: From 1 May 2023 to 30 September 2023 Part F6 of NCC 2019 Volume One Amendment 1 may apply instead of Part F8 of NCC 2022 Volume One. From 1 October 2023 Part F8 of NCC 2022 Volume One applies.

Note 5: Architectural and/or Façade Engineering Details, Specifications are to be provided. Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier. Where design departures are proposed, a Performance Based Solution addressing BCA performance Requirement F3P1 and Verification Method F3V1 and BCA performance Requirement F8P1 and Verification Method F8V1 respectively, is to be prepared by the Engineer and a copy of the Report is to also be provided.

84. BCA cl. F3D4 – Glazed Assemblies: Glazed assemblies in an external wall of a building are required to comply with AS 2047-2014 requirements for resistance to water penetration. All other glazing installations are to comply with AS1288-2021 and full height glazing is to be toughened glass and provided with decals/motifs.

Note: Architectural and/or Façade Engineering Details, Specifications are to be provided. Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier.

85. BCA Clause F3D5 – Wall Cladding / External Wall Weatherproofing (New): External wall cladding must comply with one or a combination of the following:

- Masonry, including masonry veneer, unreinforced or reinforced masonry in accordance with AS3700 – 2018; or
- Autoclaved aerated concrete in accordance with AS5146.3 - 23018; or
- Metal wall cladding in accordance with AS1562.1 - 2018;

In this regard, the following areas have been identified as matters which may be requiring further design consideration;

- a) External Wall Weatherproofing/Façade Engineering - In order to comply with the deemed to satisfy provisions, the architect and façade engineers must design the building envelope and surrounding surfaces in accordance with Clauses F3D2, F3D3, F3D4 & F3D5 and where this cannot be achieved, a Performance based solution utilising Verification F3V1 and addressing Performance Requirements F3P1 will need to be provided.

BCA Performance Solution: Façade Engineer to prepare a report to assess water and moisture ingress via the external walls and roof whilst considering BCA Clauses F3D1, F3D2, F3D3, F3D4, F3D5 & F8D2 to F8D5 and also develop a Performance Based Solution to address BCA Clauses F3D5 and BCA Performance Requirement F3P1 where the external wall cladding will not comply with these provisions accordingly.

Note 1: External cladding that does not consist of the above options will need to be subject to performance-based solutions.

Note 2: External wall claddings in buildings of Type A Construction must be non-combustible and tested in accordance with AS1530.1-1994 as required by BCA Clause C2D10.

Note 3: External waterproofing membranes in accordance with F1D5 and AS4654.1 or 2 - 2012 are not permissible for vertical or near vertical surfaces and relate to horizontal surfaces only.

Note 4: Sarking type materials in Type B or Type A Construction must not exceed 1mm thickness and have a Flammability Index not greater than 5 to be installed on external walls of buildings and if this is not complied with, the sarking Type Materials must be non-combustible and tested in accordance with AS1530.1-1994 as required by BCA Clause C2D10.

Note 5: Architectural and/or Façade Engineering Details, Specifications are to be provided. Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier. Where design departures are proposed, a Performance Based Solution addressing BCA performance Requirement F3P1 and Verification Method F3V1 and BCA Performance Requirement F8P1 and Verification Method F8V1 respectively, is to be prepared by the Engineer and a copy of the Report is to also be provided.

86. **BCA cl. F4D2 – Facilities in Residential Buildings:** Each Class 2 SOU is to be provided with their own private facilities which includes a bath/shower, closet pan & wash basin, laundry tub, and space for a washing machine and dryer.

Note: Architectural Details and Specifications prepared by a suitably Registered design practitioner (Registered Architect) are to be provided. Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are to be provided also with the Construction Certificate application to the satisfaction of the Registered Certifier.

87. **BCA cl. F4D5, F4D6 & F4D7 – Accessible Sanitary Facilities -** The accessible WC's must be designed in accordance with the requirements of Section 15 of AS 1428.1-2009.

Note: Architectural Details and Design Certification to the satisfaction of the Registered Certifier carrying our certification work are to be provided with the Construction Certificate application incorporating all recommendations of the latest rendition of the Accessibility compliance.

88. **BCA cl. F4D8 – Construction of Sanitary Compartments:** The door to fully enclosed sanitary facilities must open outwards, slide or be readily removable from the outside unless there is a clear space of 1.2 metres measured in accordance with BCA Figure F4D9 between the closet pan within the sanitary compartment and the doorway.

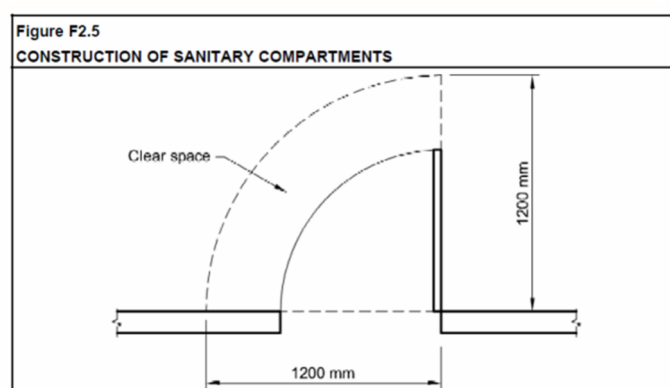


Figure 8 – Distance between the door openings and the closet Plans (Source: NCC/BCA)

In this regard, the following areas have been identified as matters which may be requiring further design consideration i.e. (lift off hinges, cavity sliding doors, etc);

- (a) **Level 4 Unit 8** – the WC is located within 1.2m of the inward swinging door to the Powder room and Ensuite;
- (b) **Level 5 Unit 10 & 11** – the WC is located within 1.2m of the inward swinging door to the Ensuites.

Note: Architectural Details and Specifications are to be prepared by a suitably Registered design practitioner (Registered Architect) are to be provided. Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier.

89. **BCA cl. F5D2 – Height of Rooms and Other Spaces:** The floor to ceiling heights in the Class 2 Residential part of the building must not be less than 2.4 metres in habitable rooms and 2.1 metres in kitchens, laundries, and bathrooms. Notwithstanding, SEPP 65 requirement necessitate higher ceiling heights of **2.7m** and commitments made under the Statement of Environmental Effect will need to consider compliance accordingly. Notations showing finished ceiling heights are recommended on the Construction Certificate drawings.

The floor to ceiling height in the Class 7a car parking areas must be not less than 2.2 metres to comply with BCA minimum requirements and AS2890.1 the carparking design standard. NB: Accessible parking spaces require 2.5m above the designated spots. Floor to ceiling heights in the remainder must be 2.4 metres generally in retail space and store areas, toilets and corridors etc may be 2.1-metres.

In this regard, the following areas have been identified as matters which may be requiring further design consideration or justification via a Performance Based Solution ;

- a) **Storage Cages** – The minimum sprinkler head clearances required for sprinklers within the storage cages may reduce the head height clearance of the cages / rooms to be less than the minimum 2.1m and this will require addressing via performance based solution.

BCA Performance Solution: It is understood that the applicant may engaged the services of a BCA Consultant to prepare a Performance Based Solution in accordance with Clause A2G2 to rationalise the departures above by demonstrating compliance with all relevant BCA Performance Requirements (F5P1).

Note 1: Services design details are to be reviewed and confirmation is to be provided that services are not encroaching below the minimum head height clearances.

Note 2: Architectural Details and Specifications are to be provided ensuring they cross reference any Fire Engineering requirements. Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier. A copy of the Performance Solution Report is to also be provided.

90. **BCA cl. F6D2 – Provision of Natural Light:** Natural light is required to be provided to all habitable rooms in accordance with F6D2 and all other areas can be provided with artificial lighting in accordance with BCA Clause F6D5. Refer to F6D3 for methods of Natural Light compliance where required.

The definition of Habitable Room includes a bedroom, living/dining room, study, kitchen, etc and in this regard we note compliance is readily achieved.

Note: Architectural Details and Specifications are to be prepared by a suitably Registered design practitioner (Registered Architect) are to be provided. Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier.

91. **BCA cl. F6D3 & F6D4 – Method and Extent of Natural Light and Borrowed Light from an Adjoining Room:** Natural light is required to be provided to all habitable rooms in the Class 2 parts of the building in accordance with F4.2 and where borrowed light from an adjoining room is relied upon it must comply with the parameters of F4.3 and consist of the following:
- The glazed panel in the external wall has an opening area of not less than 10% of the room it serves,
 - The adjoining room has openings that have an aggregate light transmitting area of not less than 10% of the combined floor areas of both rooms.
 - Natural light can be via roof lights if the total light transmitting area is 3% of the area of the room it serves.
 - Natural light can be through light wells and the like on the premise that there are no obstructions located either 1.0m from the window or 50% of the square root of the exterior height of the wall measured from the windowsill.

- Refer to BCA guide for further assistance.

Note: Architectural Details and Specifications are to be prepared by a suitably Registered design practitioner (Registered Architect) are to be provided. Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier.

92. **BCA cl. F6D5 – Artificial Lighting:** Artificial lighting is required where it is necessary to minimise the hazard to occupants during an emergency evacuation. In this regard, we note that artificial lighting is required throughout the building in accordance with AS/NZS 1680.0-2009

Note: Electrical Details and Specifications are to be prepared by a suitably Registered design practitioner (Registered Electrician) are to be provided. Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier.

93. **BCA cl. F6D6 & F6D7 – Ventilation of Rooms & Natural Ventilation:** The building is required to be provided with either mechanical ventilation complying with AS1668.2-2012 or natural ventilation achieving 5% of the floor area of the room served.

Note 1: The Architect & Mechanical Services Consultant is to be satisfied all rooms (including Cellars, Storage rooms, bathroom, Powder rooms etc, etc) that are not provided with natural ventilation (including borrowed ventilation) are provided with mechanical ventilation (supply air ventilation systems) accordingly to the satisfaction of the Registered Certifier..

Note 2: Architectural & Mechanical Details and Specifications are to be prepared by a suitably Registered design practitioners (Registered Architect and Mechanical Services Engineers) are to be provided. Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier.

94. **BCA cl. F6D9 – Restrictions on locations of Sanitary Facilities:** A sanitary compartment must not open directly to a kitchen or pantry area in a Class 2 building.

It is considered that the proposed design of the building complies with the provisions of F6D9.

Note: Architectural Details and Specifications are to be provided. Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier

95. **BCA Part F7 - Determination of Impact Sound Insulation Ratings:** A report from an acoustic consultant is to be submitted prior to the issue of the Construction Certificate to confirm the design complies with the requirements of Part F7.

Note 1: Refer to Specification 28 and 29 for further requirements that need to be complied with.

Note 2: Architectural & Acoustic Consultant Details and Specifications are to be prepared by a suitably Registered design practitioner (Registered Architect and/or Acoustic Consultant) are to be provided. Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier.

96. **BCA cl. F7D3 & F7D4 - Determination of Impact Sound Insulation Ratings:** The walls within the Class 2 part of the building that are required to have an impact sound insulation rating must be of discontinuous construction.

Note 1: Discontinuous construction means a wall having a minimum 20mm cavity between 2 separate leaves, and for masonry, wall ties are of a resilient type. For all other construction, there is no mechanical link between leaves except at the periphery.

Note 2: Architectural & Acoustic Consultant Details and Specifications are to be prepared by a suitably Registered design practitioner (Registered Architect and/or Acoustic Consultant) are to be provided. Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier.

97. BCA cl. F7D5 - Sound Insulation Rating of Floors: The floors separating the sole occupancy units in the Class 2 and other classes are required to have an airborne sound insulation rating of not less than 50 and an impact sound pressure level of not more than 62.

Note: Architectural & Acoustic Consultant Details and Specifications are to be prepared by a suitably Registered design practitioner (Registered Architect and/or Acoustic Consultant) are to be provided. Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier

98. BCA cl. F7D6 – Sound Insulation Rating of Walls: A wall separating a sole occupancy unit from another part of the building must have an $R_w + C_{tr}$ airborne of not less than 50 where separating sole-occupancy units. Where separating units from a bathroom, sanitary compartment, laundry, kitchen in another sole occupancy unit or a plant room/ lift shaft/other classification have an R_w (airborne) not less than 50 and are provided with discontinuous construction as per clause F7D7.

A door may be incorporated in a wall in a Class 2 or 3 building that separates a sole-occupancy unit from a stairway, public corridor, public lobby or the like, provided the door assembly has an R_w not less than 30.

In this regard, the following areas have been identified as matters which may be requiring further design consideration or justification via a Performance Based Solution by the acoustic engineer:

- a) Level 5 Building A - Penthouse Level – There is a lift landing doors that provide direct access into the residential Sole Occupancy unit which will not achieve the minimum R_w of 30.

BCA Performance Solution: it is understood that the applicant will engaged the services of an Acoustic Consultant to develop a Performance Based Solution in accordance with Clause A2G2 to rationalise the departures above by demonstrating compliance with all relevant BCA Performance Requirements (F7P2).

Note: Architectural & Acoustic Consultant Details and Specifications are to be provided. Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier. A copy of the Performance Solution Report is to also be provided.

99. BCA cl. F7D7– Sound Insulation rating of Services: Where a duct, soil, waste or water supply pipe passes through more than one sole occupancy unit, the duct or pipe must be separated from the rooms of a sole occupancy unit by construction having an airborne sound insulation rating of not less than 40 if the adjoining room is habitable or 25 if it is a kitchen or non-habitable room.

Note: Architectural & Acoustic Consultant Details and Specifications prepared by a suitably Registered design practitioner (Registered Architect and/or Acoustic Consultant) are to be provided. Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier.

100. BCA cl. F7D8 – Sound Insulation of Pumps: A design certificate is to be provided from an Acoustic Consultant confirming that the proposed design can meet the requirements of Part F5.

Note: Architectural & Acoustic Consultant Details and Specifications prepared by a suitably Registered design practitioner (Registered Architect and/or Acoustic Consultant) are to be provided. Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier.

101. BCA Clause F8D3 – External Wall Construction: Where a pliable building membrane is installed in an external wall, it must comply with AS 4200.1; and be installed in accordance with AS 4200.2; and be located on the exterior side of the primary insulation layer of wall assemblies that form the external envelope of a building.

Where a pliable building membrane, sarking-type material or insulation layer is installed on the exterior side of the primary insulation layer of an external wall it must have a vapour permeance of not less than—

- (a) in climate zones 4 and 5, $0.143 \mu\text{g}/\text{N.s}$; and
(b) in climate zones 6, 7 and 8, $1.14 \mu\text{g}/\text{N.s}$.

Except for single skin masonry & single skin concrete, where a pliable building membrane is not installed in an external wall, the primary water control layer must be separated from water sensitive materials by a drained cavity.

Note 1: From 1 May 2023 to 30 September 2023 Part F6 of NCC 2019 Volume One Amendment 1 may apply instead of Part F8 of NCC 2022 Volume One. From 1 October 2023 Part F8 of NCC 2022 Volume One applies.

Note 2: External wall claddings in buildings of Type A Construction must be non-combustible and tested in accordance with AS1530.1-1994 as required by BCA Clause C2D10.

Note 3: External waterproofing membranes in accordance with F1D5 and AS4654.1 or 2 - 2013 are not permissible for vertical or near vertical surfaces and relate to horizontal surfaces only

Note 4: Architectural & Façade Engineers Details and Specifications prepared by a suitably Registered design practitioner (Registered Architect and/or Façade Engineer) are to be provided. Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier.

102. **BCA Clause F8D4 – Exhaust Systems:** An exhaust system installed in a kitchen, bathroom, sanitary compartment or laundry must have a minimum flow rate of—

- a) 25 L/s for a bathroom or sanitary compartment; and
- b) 40 L/s for a kitchen or laundry.

Exhaust from a kitchen, kitchen range hood, bathroom, sanitary compartment or laundry must discharge directly or via a shaft or duct to outdoor air.

Where space for a clothes drying appliance is provided in accordance with F4D2(1)(b), space must also be provided for ducting from the clothes drying appliance to outdoor air (however this does not apply if a condensing-type clothes drying appliance is installed).

An exhaust system that is not run continuously and is serving a bathroom or sanitary compartment that is not ventilated in accordance with F6D7 must—

- a) be interlocked with the room's light switch; and
- b) include a run-on timer so that the exhaust system continues to operate for 10 minutes after the light switch is turned off.

Except for rooms that are ventilated in accordance with F6D7, a room with space for ducting a clothes drying appliance to outdoor air in accordance with (3) must be provided with make-up air in accordance with AS 1668.2-2012.

Note 1: A range hood installed in a kitchen must comply with F8D4(2).

Note 2: Part F6 & F8 includes other ventilation requirements which must be met, including a requirement for make-up air to be provided to mechanically ventilated rooms in accordance with AS 1668.2..

Note 3: Architectural & Mechanical Details and Specifications are to be prepared by a suitably Registered design practitioner (Registered Architect) are to be provided. Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier

103. **BCA Clause F8D5 – Ventilation of Roof Spaces :** In climate Zones 6, 7 and 8, a roof must have a roof space that is located—

- a) Immediately above the primary insulation layer; or
- b) Immediately above sarking with a vapour permeance of not less than 1.14 µg/N.s, which is immediately above the primary insulation layer; or
- c) Immediately above ceiling insulation which meets the requirements of J3D7(3) and J3D7(4); and

Has a height of not less than 20 mm; and is either—

- a) ventilated to outdoor air through evenly distributed openings in accordance with Table F8D5; or
- b) located immediately underneath roof tiles of an unsarked tiled roof.

The requirements of (1) do not apply to a concrete roof; or roof that is made of structural insulated panels; or roof that is subject to Bushfire Attack Level FZ requirements in accordance with AS 3959.

Note 1: Refer to Table F8D5 for Roof Space ventilation Requirements.

Note 2: From 1 May 2023 to 30 September 2023 Part F6 of NCC 2019 Volume One Amendment 1 may apply instead of Part F8 of NCC 2022 Volume One. From 1 October 2023 Part F8 of NCC 2022 Volume One applies.

Note 3: Architectural & Mechanical Details and Specifications are to be prepared by a suitably Registered design practitioner (Registered Architect) are to be provided. Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier

BCA SECTION G – HEALTH & AMENITY:

The proposed development will generally satisfy the DTS provisions & Performance Requirements of Section G of the BCA subject to the compliance with the following:

104. **BCA Part G1D2 (NSW) Swimming Pools (G1.1):** A swimming pool or body of water with a depth of greater than 300mm and which is associated with a Class 2 building must have suitable barriers to restrict access by young children to the immediate pool surrounds in accordance with AS1926.1 Parts 1 and 2 – 2012.

Filtration and water recirculation provisions must also comply with AS1926.3 and a safety resuscitation chart is to be erected in a suitable location within the enclosure.

In this regard, the following areas have been identified as matters which may be requiring consideration at the Construction Certificate application stage and or addressed via a Performance Based Solution:

- (d) **Level 5 Building A - Private Pool / Spa – Barriers** are to be provide in accordance with AS1926.1-2012 or Clause 9 of the Swimming Pool Regulation 2018;
- (e) **Pool & Spa Drainage** – There is not DTS provisions that satisfied the performance requirement G1P1 for the drainage of pool/spa water and as such, this will need to be addressed via a Performance Based Solution;
- (f) **E1 Registered Certifier's Compliance Statement** – We recommend an E1 registered Certifier be engaged to review the plans and provide design advice and a design compliance statement to confirm the proposed barriers comply with the BCA and AS1926.1 and the Swimming Pool Regulation.

BCA Performance Solution: It is understood that the applicant will engage the services of an Hydraulic Consultant to develop a Performance Based Solution in accordance with Clause A2G2 to rationalise the swimming pool drainage by demonstrating compliance with all relevant BCA Performance Requirements (G1P1).

Note: Architectural Details and Specifications are to be prepared by a suitably Registered design practitioner (Registered Architect) are to be provided. Design Certification and Design Compliance Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier

105. **BCA cl. G1D5 (NSW) – Provision for Cleaning of Windows:** A building must provide a safe manner of cleaning windows located 3 or more storeys above ground level. In this regard, the windows must be able to be cleaned from within the building, or provisions made for cleaning of windows by a method complying with the WH&S Act 2000 and regulations made under the Act e.g. roof anchors etc.

Note 1: Consideration for the method of cleaning windows with double glazing, louvres, shutters or the like is to be given by the design team whilst considering this clause and WorkSafe NSW requirements.

Note 2: Architectural Details and Specifications are to be prepared by a suitably Registered design practitioner (Registered Architect) are to be provided. Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier.

106. **BCA Part G6 – Occupiable Outdoor Areas:** The provisions of this clause specify the requirements for Occupiable Outdoor Areas which are defines as follows;

Occupiable outdoor area means a space on a roof, balcony or similar part of a building—

- (a) that is open to the sky; and
- (b) to which access is provided, other than access only for maintenance; and
- (c) that is not *open space* or directly connected with *open space*.

Figure 10 – Occupiable Outdoor Area Definition (Source: NCC/BCA Schedule 3)

In this regard, the following provisions are to be considered for the Class 2 Balconies accordingly.

- Fire Hazard properties to any feature linings (facades, floors ceilings); and
- Fire separation between storeys – (readily achieved by virtue of the concrete floors); and
- Fire Fighting services including hydrants, must be provided to provide coverage to these areas as per the requirements of this Part.

In this regard, the following areas have been identified as matters which may be requiring further design consideration and/or justification via Performance-Based Solutions by the project Fire Safety Engineer

- (a) *Poly/Plastic Pedestal Pavers supports and Decking - Where plastic/poly pedestal pavers and timber decking are proposed to be used on balconies, roof top and common areas, these may not comply with the required Fire Hazard Properties in accordance with Specification 7 of the BCA 2022 and will require justification via a performance based solution.*

Fire Engineered Performance Solution: *It is understood that the design team may engaged the services of an Accredited Fire Safety Engineer to consider a Performance Based Solution to rationalise the Early Fire Hazard Properties of the pedestal pavers supports and decking by demonstrating compliance with BCA Performance Requirement C1P2, C1P4.*

Note 1: *Notwithstanding provisions above, AS2419.1-2021 still requires fire hydrant coverage and AS2118.1-2017 still requires sprinkler coverage to outdoor balconies / terraces and details need to ensure these areas are appropriately covered.*

Note 2: *Architectural Details and Specifications are to be prepared by a suitably Registered design practitioner (Registered Architect) are to be provided. Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier.*

BCA SECTION J – ENERGY EFFICIENCY

The proposed development will generally satisfy the DTS provisions & Performance Requirements of Section J of the BCA subject to the compliance with the following:

107. **BCA Section J Energy Efficiency:** The Class 2 Building part will be subject to the Building Sustainability Index (**BASIX**) which will require the recommendations on the certificate to be *clearly demonstrated on the Construction Certificate drawings.*

In addition, the DTS requirements of NSW Variations of Section J (Energy Efficiency) of the BCA will need to apply to the proposed Class 2 parts of the development. Refer to NSW Variation Clauses J2D2(2), J3D5, J3D6 J4D2, J4D3, J3D10(3), J3D10(5), J3D10(6), J5D2 to J5D5, J6D2 to J6D13, J8D2 & Part B2 of the PCA, J9D3, J9D4 and J9D5.

For a Class 2 to 9 building, other than a sole-occupancy unit of a Class 2 building or a Class 4 part of a building, Performance Requirement J1P1 is satisfied by complying with—

- Part J4, for the building fabric; and –
- Part J5, for building sealing; and –
- Part J6, for air-conditioning and ventilation; and –
- Part J7, for artificial lighting and power; and –
- Part J8, for heated water supply and swimming pool and spa pool plant; and –
- J9D3, for facilities for energy monitoring.

The building is located in **Climate Zone 5** and the relevant provisions of the BCA are to be applied to each classification concerned accordingly.

Note 1: In order to demonstrate compliance, it is understood that a Section J report and Verification report from an qualified ESD Consultant will be submitted with the Construction Application.

Note 2: Architectural & ESD Consultant Details and Specifications prepared by a suitably Registered design practitioner (Registered Architect & ESD Consultant) are to be provided. Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier..

GENERAL REQUIREMENTS:

The proposed development should consider safety in design provisions and in this regard, we note the following:

In this regard, the following areas have been identified as preliminary matters which may be requiring consideration at the Construction Certificate application stage:

- (a) Photovoltaic Panels and any onsite Battery storage systems are to meet the operational requirements of FRNSW.
- (b) Electric vehicle charging provisions are to meet the operational requirements of FRNSW.
- (c) The use of impulse fans in the carpark are to meet the operational requirements of FRNSW.
- (d) Climbable elements near balustrades including but not limited to AC units, Gas/water fixtures, light fixtures or other climbable elements located within 900mm non climbable zone (likened to non-climbable zone provisions within the swimming pool code)
- (e) Privacy screens between balconies are to ensure they have no climbable elements located between 150mm-760mm from the finished floor level.
- (f) Frameless glass balustrades require interconnecting rails and end fixing in accordance with AS1288-2021.
- (g) Structural and external building elements (and other) are to consider the proximity of the shoreline and coastal construction design principles must be considered for longevity of the building
- (h) External and internal surfaces are to comply with the slip resistance criteria referenced under AS/NZS 4586-2013.
- (i) All safety and toughened glazing need to have permanently affixed labels as required by AS1288 -2021.
- (j) Roof anchoring systems and roof access provisions need to comply with Work Health Safety and Work Cover requirements.
- (k) Areas where occupants could trip, fall and cause injury (over and above areas listed in the BCA) should be provided with suitable signs, high visibility markings, gates, barriers or the like in this regard.
- (l) Safety in design principles to be considered by all consultants for areas outside the minimum requirements of the BCA – namely in relation to slips trips, falls and workplace health and safety.
- (m) Access for maintenance is to comply with Work Health Safety and Work Cover requirements via AS1657-2018 fixed and/or removable type ladders and platforms etc .
- (n) Internal and external carpark areas including driveways, turning circles and car spaces are to comply with AS2890.1 -2004 and AS2890.6-2009. Safety provisions associated with the vehicular accessways and lift landings and pedestrian thoroughfares are to be considered.

Note 1: The above list of matters are preliminary matters of consideration that we have identified and is in no way meant to be limited to these. The Design team has their own responsibility to consider these and any other matters from a safety in design perspective.

Note 2: Architectural Details and Specifications are to be prepared by a suitably Registered design practitioner (Registered Architect) are to be provided. Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier.

4. CONCLUSION

This BCA Assessment Report contains an assessment of the referenced architectural documentation for the proposed residential development against the deemed-to-satisfy provisions of the **Building Code of Australia 2022 (BCA)**.

The detailed desktop assessment of the building was carried out against the technical provisions of the BCA. It is noted that the proposed development must comply with the relevant requirements, and this can be achieved by complying with the following:

- a) Complying with the Deemed-to-satisfy (DTS) Provisions; or
- b) Formulating a Performance Solution which considers one or more of the BCA Assessment methods and which –
 - i) Complies with the Performance Requirements; or
 - ii) Is shown to be at least equivalent to the DTS provisions; or
- c) A combination of the above.

Arising from our review of the design team's documentation and instructions from the applicant, the proposed building design will entail a combination of compliance with the DTS provisions and Performance Requirements of the BCA, by the development and justification of Performance Based Solutions prepared by a C10 Accredited Fire Safety Engineer and Access Consultant.

In view of the above assessment, we can confirm that subject to the matters outlined under **Section 2 & Section 3** of this report above being adequately addressed by the project Architect, Structural Engineer, Fire Safety Engineer, Competent Fire Safety Practitioners/Design Consultants, Access Consultant, ESD consultants and other key Stakeholders, that compliance with the BCA will be readily achievable.

Note: Refer to Attached Appendix - Fire Safety Schedule

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APPENDIX: PRELIMINARY FIRE SAFETY SCHEDULE

The following essential fire safety measures shall be implemented in the whole of the building premises and each of the fire safety measures must satisfy the standard of performance listed in the schedule, which, for the purposes of Clause 168 of the Environmental Planning and Assessment Regulation 2000, will be deemed to be the current fire safety schedule for the building.

Statutory Fire Safety Measure	Design/Installation Standard
Access Panels, Doors & Hoppers to fire resisting shafts	BCA 2022 - Clause C4D13 & AS 1530.4 - 2014 and Manufacturer's Specifications
Alarm Signalling Equipment	BCA 2022 - Clause E1D4, Specifications 17 & 18 & 20, AS 1670.3 – 2018 and Manufacturer's Specification
Automatic Fire Detection and Alarm System	BCA 2022 - Clause E2D8, BCA Specification 20, AS 1670.1 – 2018 & Manufacturer's Specifications + Fire Engineered Performance Based Solution
Automatic Fire Suppressions System	BCA 2022 - Clause E1D4, Specifications 17 & 18, AS 2118.1 – 2017, Manufacturer's Specifications + Fire Engineered Performance Based Solution
Building Occupant Warning System	BCA 2022 - Clause E2D8, BCA Specification 20 and AS 1670.1 – 2018 and Manufacturer's Specifications + Fire Engineered Performance Based Solution
Emergency Lighting	BCA 2022 - Clause E4D2, E4D3 & E4D4 & AS 2293.1 - 2018 and Manufacturer's Specifications
Exit Signs	BCA 2022 - Clauses E4D5, E4D6 & E4D8 and AS 2293.1 – 2018 and Manufacturer's Specifications
Fire & Smoke Dampers	BCA Clause C4D15, AS 1668.1 – 2015 & AS 1682.1 & 2 – 2015 and Manufacturer's Specifications
Fire Doors	BCA 2022 - Clause C3D13, C3D14, C4D3, C4D5, C4D6 C4D9, C4D11, C4D12, D2D12, D3D9 and AS 1905.1 – 2015 and Manufacturer's Specifications + Fire Engineered Performance Based Solution
Fire Hose Reels	BCA 2022 - Clause E1D3 & AS 2441 – 2005 and Manufacturer's Specifications + Fire Engineered Performance Based Solution
Fire Hydrant Systems	BCA 2022 - Clause E1D2 & AS 2419.1 – 2021, Manufacturer's Specifications + Fire Engineered Performance Based Solution
Fire Seals – <i>Protecting openings in fire-resisting components of the building</i>	BCA Clause C4D15 & AS 1530.4 – 2014 & AS 4072.1 – 2005, Manufacturer's Specifications + Fire Engineered Performance Based Solution
Fire Resisting Elements & Structures – <i>Including Fire Walls, Stair & Lift Shafts, Services Shafts, Fire Rated Columns, Fire Rated Bulkheads, External walls, Floors & Other</i>	BCA 2022 – Clause C2D2/Specification 5 and AS 1530.4-2014
Lightweight Construction – <i>Including Fire Walls and Cavity Fire Stopping Fire rated Steel Columns and beams</i>	BCA 2022 - Clause C2D9 & AS 1530.4 – 2014 and Manufacturer's Specifications
Paths of Travel – <i>Fire Exits and Fire Exit Doors</i>	BCA 2022 Part D - Section 109 of the EP&A (Development Certification and Fire Safety) Regulation + Fire Engineered Performance Based Solution
Portable Fire Extinguishers – <i>Within 10m of each SOU entrance in Common areas and within 2m &-10m of the MSB</i>	BCA 2022 - Clause E1D14 & AS 2444 – 2001 - and Manufacturer's Specification
Smoke and Heat Alarms – <i>Located within Sole Occupancy Units</i>	BCA 2022 – Clause E2D8 and Specification 20 and AS3786-2014 and Manufacturer's Specification

Statutory Fire Safety Measure	Design/Installation Standard
Wall-Wetting Sprinklers – Internal -where proposed to protect openings	BCA 2022- Clause C4D3, C4D5, D2D12 & AS2118.2-2021 and Manufacturers specifications
Warning & Operational Signs – <i>Including Fire Safety Notices, Fire Door Signage, Offences Relating to Fire Stairs, Braille Signage, Lift Warning Signs, Fire Services Block Plans, Fire Services Infrastructure Signage & other</i>	BCA 2022 - Clauses D3D28, D4D7 and E3D4 (as applicable), AS 1905.1 – 2015 and Section 108 of the EP&A (Development Certification and Fire Safety) Regulation
Fire Engineered Performance Solutions (Refer to Summary in Section 2 above)	BCA 2022 – BCA Sections C, D & E (as applicable) The relevant Performance Requirements associated with the proposed Fire Engineered Performance Solutions: <ul style="list-style-type: none"> – Part B – B1P1 – Part C - C1P1, C1P2, C1P4 & C1P8 – Part D - D1P2, D1P4, D1P5 & D1P6 – Part E - E1P1, E1P3, E1P4 & E2P2

Note: As the performance solutions include departures with fire safety matters, pursuant to Section 27 of the EP&A (Development Certification and Fire Safety) Regulation 2021, formal fire engineering brief and report referrals to Fire & Rescue NSW will be require prior to the Construction Certificate application stages..