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BCA ASSESSMENT REPORT

1102 Barrenjoey Road, Palm Beach NSW 2108

Prepared for: Reform Projects / **Project No.:** 210084

Date: 14th April 2021 / **Status:** Revision 02

Registered Certifiers / Building Regulation Consultants

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REPORT STATUS				
DATE	REVISION	STATUS	AUTHOR	PEER REVIEW
12th April 2021	01	Issued for Client Information and DA Submission	Steven Rodriguez	Darko Kardum
14h April 2021	01	Re-Issued Addressing Amenities for Client Information and DA Submission	Steven Rodriguez	Darko Kardum

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1. INTRODUCTION

1.1 REPORT BACKGROUND

Concise Certification Pty Ltd has been commissioned by Reform Projects to provide professional Building Code Consultancy Services for the proposed construction of a top shop housing development which includes six (6) boutique apartments, two (2) ground floor commercial tenancies and basement carparking at 1102 Barrenjoey Road, Palm Beach NSW 2108.

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 2019 – Amendment 1 (BCA) for purposes of Clause 145 of the Environmental Planning & Assessment Regulation 2000.

1.2 REPORT PURPOSE

The key objectives of the report are as follows:

- Undertake an assessment of the proposed development against the deemed to satisfy provisions of the National Construction Code Series – Volume 1 – BCA 2019 Amendment 1.
- Identify any BCA compliance departures that require resolution/attention for the proposed development by way of design change or Fire Engineered Performance Solutions prior to the submission of the Construction Certificate application.
- Identify essential fire safety measures that are applicable to the proposed building in accordance with the Environmental Planning and Assessment Regulation 2000.
- Identify any BCA compliance issues that require resolution at the Construction Certificate stage.
- Issue a preliminary fire engineering summary outlining the key compliance matters requiring consideration by the project Fire Safety Engineer 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 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 Clause 145 of the Environmental Planning and Assessment Regulation 2000, 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.

It is important to note that this Building Certification Report is not a design development or design contribution report. This is a desktop assessment carried out against the presented design using the Building Code of Australia as a benchmark and no contribution to design advice has been provided.

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 of the Building Code of Australia 2019 - Amendment 1 (BCA).
- National Construction Code Series – Guide to the Building Code of Australia 2019 – Amendment 1.
- Environmental Planning & Assessment Act 1979
- Environmental Planning & Assessment Regulation 2000
- Access to Premises - Building Standards 2010
- Preliminary Fire Services Design Advice prepared by Intrax Projects
- Preliminary Fire Services Advice prepared by Innova Services.
- Architectural Plans prepared by Rob Mills Architecture as detailed below

Plan Number	Revision	Date	Plan Number	Revision	Date
DA 04	P6	09 April 2021	DA05	P6	09 April 2021
DA 06	P6	09 April 2021	DA 07	P7	09 April 2021
DA08	P7	09 April 2021	DA09	P6	09 April 2021
DA10	P6	09 April 2021	DA11	P5	09 April 2021
DA15	P7	09 April 2021	DA16	P4	09 April 2021

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's the responsibility of design and installation contractors to demonstrate and achieve compliance for all new works.
- Although our assessment has considered Part D3 and F5 of the BCA, detailed assessment is excluded from our services and this is to be undertaken by an Accessibility Consultant / Acoustic Consultant or addressed via design certification from the Architect.
- 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 within this BCA Assessment Report does not relieve the Design Practitioners, Principal Building Practitioners, Accredited Practitioners (Fire Safety) and/or any associated Building Suppliers and Sub Contractors from their statutory obligations under the Work Health Safety Act, Safety in Design Principles, EP&A Act/Regs, and /or their statutory duty of care obligations under the Design and Building Practitioners Act 2020.
- 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 – (C10 Certifier - Fire Safety).
- The commentary within this BCA Assessment Report does not relieve the Registered Certifier/Principal Certifier from their statutory obligations under EP&A Regs/Act, Building and Development Certifiers Act/Regs and they are to be satisfied that the proposal meets their requirements prior to approval.
- 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.
- Concise Certification Pty Limited cannot guarantee acceptance of this report by the Local Council, NSW Fire Brigades or other government authorities.
- It is important to note that this Building Certification Report is not a design development or design contribution report. This is a clause by clause summary carried out against the presented design using the Building Code of Australia as a benchmark and no contribution to design advice has been provided. The report simply identifies key compliance matters to be considered further by either way of detail, design consideration and/or via Performance Solutions as required by Clause 145 of the Environmental Planning and Assessment Regulation 2000. The Design Practitioners and Building Practitioners are to refer back to the BCA and relevant Australian standards which need to be ready in conjunction with this report.
- 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.

1.5 EXISTING & PROPOSED DEVELOPMENT

The existing site is located at 1102 Barrenjoey Road, Palm Beach NSW 2108 and consists a single allotment which is legally described as Lot 11 in DP 1207743. The site has an approximate area of 1140m² and currently consists of a single storey restaurant building which will be demolished to accommodate the construction of the proposed new residential development.



Figure 1 – Street View (Source: Google Street View)

The subject development site is irregular in shape and is accessed via Barrenjoey Road which sits on the Western side of the site. The subject site adjoins an existing residential dwelling on the Southern side, Barrenjoey House to the Northern side and a residential allotment with an access way to the Eastern side.



Figure 2 – Satellite Image (Source: SIX Maps March 2021)

The proposed development consists of the construction of a top shop housing development which includes six (6) boutique apartments, ground and roof top food and beverage tenancies and basement carparking.

Pedestrian and Vehicular access for the residential units will be via Barrenjoey Road and the proposed principal building characteristics can be defined as follows:

- **Basement** – 22 x Vehicular parking spaces, ancillary residential and commercial storage areas.
- **Ground Floor** – 2 x Commercial Tenancies, commercial terraces, residential lobby and vehicular entrance.
- **Level 1 Floor** – 3 x Residential sole occupancy units (Unit No. A1, A2 and A3);
- **Level 2 Floor** – 3 x Residential sole occupancy units (Unit No. A4, A5 and A6),
- **Roof Level** - Reinforced concrete roof structure, lift overrun and plant equipment – No Communal Open Space.



Figure 3 – Architectural Photomontage (Source: Rob Mills Architecture)

1.6 BUILDING CODE OF AUSTRALIA 2019 (BCA) – AMENDMENT 1

Pursuant to Clause 145 of the Environmental Planning and Assessment Regulation 2000 all new building work must comply with the current provisions of the National Construction Code Series (Volume 1) Building Code of Australia (BCA) – Amendment 1.

At the date of this assessment, it was anticipated that a Part 6 Construction Certificate Application for the development would be made with a PCA prior to the 1st May 2022 and as such the relevant rendition of the BCA is **BCA 2019 Amendment 1**.

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 relieve the Design Practitioners, Building Practitioner, Accredited Practitioners in Fire Safety (Fire Services Engineers), the Certifier - Fire Safety (Fire Safety Engineer) and/or the Registered and Principal Certifier from their statutory obligations which requires regulated works to be designed, installed and certified in accordance with the BCA and any respective Standards.

2. SUMMARY OF KEY COMPLIANCE DEPARTURES

The following comprises a summary of the key compliance issues identified under the BCA Assessment in Section 3 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 Certifying Authority as part of the Construction Certificate application.

Relevant BCA Clauses	Description of Compliance Matter Requiring Resolution
<p>BCA Parts B1.1- B1.4 & Spec C1.1 (Structural Performance)</p>	<p><u>BCA Part B and Spec C1.1</u> specify the key structural requirements and FRL's for buildings. 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 C1.1 (for Type A Construction).</p> <p>Having regard to the above, the following areas have been identified as matters which may be requiring consideration by the project Structural Engineer and or fire safety engineer:</p> <ul style="list-style-type: none"> (a) Where it is proposed to have structural steel columns and beams utilised, a colour coded mark-up plan to show the location of these structural members and details on the method of fire protection proposed (e.g 90/90/90 min FRL's in the residential parts) will be required with the Construction Certificate Application. (b) Where it is proposed to incorporate permanent Polymer Formwork walls such as Dincel/AFS etc, the use of these wall/load bearing systems are to be disclosed by the project structural engineer and as they do not strictly comply with the DTS provisions for external walls, their proposed use will need to be addressed under a Performance Based Solution by a qualified C10 Fire Safety Engineer. (c) It is assumed that there will be no primary timber elements proposed and as such termite mitigation measures are likely not required (TBC). Notwithstanding, it is recommended that this be formally verified to the satisfaction of the Registered Certifier at the Construction Certificate application stage. (d) Where it is proposed to not achieve a minimum 200mm thick concrete slab throughout the residential levels (as required by AS3600-2018 for load bearing wall type construction), this will need to be disclosed by the project structural engineer and addressed under a Performance Based Solution by a C10 Fire Safety Engineer. Current section depicts a 400mm thick slabs however this is to be checked through at the CC stages. <p>Note: The Structural details design certification and fire safety engineering report (where required) to the satisfaction of the Registered Certifier are to be provided with the Construction Certificate application.</p>
<p>BCA Clause C1.9 & C1.14 (External Walls / Ancillary Elements)</p>	<p><u>BCA Clause C1.9</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 C1.14</u> requires ancillary elements to meet the criteria of this clause and permits combustible materials on the premise that compliance is achieved.</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) There may be insulation and sarking materials located in the external walls, in bounding construction walls, etc, which will not meet the non-combustible criteria. b) There are external metal cladding attached to the external wall which may not strictly comply with the concessions under BCA cl.C1.9 and/or AS1530.1-1994 for combustibility and test reports are to be furnished at the Construction Certificate stage. c) There may be <u>Render coatings</u> and/or <u>Permanent PVC / Polymer Formwork wall systems</u> (e.g. Dincel, AFS Rediwall, etc) or any other linings which may not strictly comply with the concessions under BCA cl.C1.9 and/or AS1530.1 for combustibility and test reports are to be furnished at the Construction Certificate stage. <p>Fire Engineered Performance Solution: Where it is proposed to utilise external wall materials that will not strictly meet the criteria of BCA Clause C1.9 and Spec C1.1, the client will need to pursue a Performance Based Solution for the above from a C10 Fire Safety Engineer to rationalise the external wall materials by demonstrating compliance with BCA Performance Requirements.</p> <p>Note 1: Our office does not endorse the use of any ACP's on this development unless they are solid cladding materials which are 100% non-combustible and comply with AS1530.1-1994 and are 'attached' to external fire rated and/or non-combustible walls.</p>

	<p>Note 2: Our office does not support non-complying external wall materials and require verification via test certification that all external wall products comply with AS1530.1.</p> <p>Note 3: Any performance solutions for external walls must consider AS113-2016 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 C1.9 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 4: Architectural details, specification, external schedule of finishes including cross sectional wall details and design certifications are to be prepared by a suitably qualified design practitioner (Registered Architect) and submitted to the satisfaction of the Registered Certifier 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 is to also be provided</p>
BCA Clause C2.6 (Spandrel Separation)	<p><u>BCA Clause C2.6</u> specifies the need for spandrels between openings above one another in consecutive storeys.</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>East Elevation (Between Level 1 and Level 2)</u> – spandrels are required along the whole rear elevation between the Level 1 and Level 2 – including the stair lobby/corridor areas. The current details depict a minimum 600mm upturn and the fire rating details and heights from the FFL are to be re-assessed at the CC stages. b) <u>West Elevation (between Ground and Level 2)</u> – there are circular sections in the horizontal projections which don't offer compliant horizontal spandrel separation as the 1100mm projections / setbacks are compromised on level 1. c) <u>West Elevation (Between Ground and Level 2)</u>– the openings between the Ground Floor Commercial tenancy, Level 1 Sole Occupancy Unit A1 and Level 2 Sole Occupancy Unit A4 have full height glazing proposed with no horizontal or upturned spandrels. It is understood that a spandrel panel will be constructed behind the glazing and the fire rating details and heights from the FFL are to be re-assessed at the CC stages. d) <u>Central light well (Between Level 1 and Level 2)</u>– the glass openings to the corridor need spandrel and the current details depict glazed balustrades in lieu of 1.0m fire rated spandrel upturns. <p>Fire Engineered Performance Solution: It is understood that the design team have engage a C10 Fire Safety Engineer to develop a Performance based Solution to rationalise the extent of protection to openings affected by reduced levels of spandrel protection and the report will need to demonstrate compliance with the relevant BCA Performance Requirements.</p> <p>Note: Architectural design details, fire rating specifications and design certifications are to be submitted to the satisfaction of the Registered Certifier with the Construction Certificate application.</p>
BCA Clauses C3.3 (Separation of External Walls & Openings in Different Fire compartments)	<p><u>BCA Clauses C3.3</u> specify when walls and openings are exposed to each other in different fire compartments and when they need consideration.</p> <p>In this regard, the following areas have been identified as matters which may be requiring further consideration by either way of design change and/or justification from the project Fire Safety Engineer:</p> <ul style="list-style-type: none"> a) <u>Level 1 and Level 2 Courtyard/Lightwell</u> - The central courtyard/lightwell creates exposure between the external walls and openings within them of the residential Sole Occupancy Units A2 and A4 and the Public Corridors which need further consideration. <p>Fire Engineered Performance Solution: It is understood that the design team will engage a C10 Fire Safety Engineer to develop a Performance Solution to rationalise the levels of fire protection to external openings. The report will need to address the relevant BCA Performance Requirements.</p> <p>Note: Architectural details (including colour coded FRL, specifications and design certifications are to be prepared by a suitably qualified design practitioner (Registered Architect) and submitted to the satisfaction of the Registered Certifier at the Construction Certificate application stage. Where Fire Safety Engineering is proposed, a copy of the Fire Engineers Report prepared by a C10 Certifier – Fire Safety is to also be provided.</p>

<p>BCA Clause D1.2 (Number of Exits)</p>	<p><u>BCA Clause D1.2</u> specifies the number of exits required in a building and provisions relating to the path of travel to the road from the discharge point of exits.</p> <p>In this regard, the following areas have been identified as matters which may be requiring further consideration by either way of design change and/or justification from the project Fire Safety Engineer;</p> <p>a) The basement levels are only provided with a single exit where a minimum of 2 exits are required.</p> <p>Fire Engineered Performance Solution: It is understood that the design team have engage a C10 Fire Safety Engineer to develop a Performance based Solution to rationalise the single exits to the basement levels and the report will need to demonstrate compliance with all relevant BCA Performance Requirements.</p> <p>Note: Architectural details, specifications and design certifications are to be prepared by a suitably qualified design practitioner (Registered Architect) and submitted to the satisfaction of the Registered Certifier 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 is to also be provided</p>
<p>BCA Clause D1.3 (When Fire Stairs are Required) & BCA Clause D1.7 (Discharge of Exit) & BCA Clause D2.4 (Separation of rising and Descending Stairs) & BCA Clause G3 (Atrium Construction)</p>	<p><u>BCA Clause D1.3</u> specifies when egress stairs are required to be contained within fire isolated shafts</p> <p><u>BCA Clause D1.7</u> specifies the discharge requirements for stairways required to be fire isolated.</p> <p><u>BCA Clause D2.4</u> specifies when rising and descending stairs need to be smoke separated.</p> <p><u>BCA Clause G3</u> specifies when an atrium requires consideration.</p> <p>In this regard, the following areas have been identified as matters which may be requiring further consideration by either way of design change and/or justification from the project Fire Safety Engineer;</p> <p>a) The central stair connects four (4) levels in the building being the Class 7a basement carpark, Class 6 Retail at Ground Floor and the two (2) Class 2 Residential Levels. Although the building will be sprinkler protected, the concessions for a four-storey connection do not apply when the stair connects both a retail level and carpark level accordingly. As such, the stair is technically required to be a fire stair and the fire and smoke separation arrangements, the discharge arrangements and void connections are to be considered.</p> <p>Fire Engineered Performance Solution: It is understood that the design team have engage a C10 Fire Safety Engineer to develop a Performance based Solution to rationalise the single exits to the basement levels and the report will need to demonstrate compliance with all relevant BCA Performance Requirements. The basis of the Performance Solution will be fire separation of the basement level and sprinklers throughout.</p> <p>Note: Architectural details, specifications and design certifications are to be prepared by a suitably qualified design practitioner (Registered Architect) and submitted to the satisfaction of the Registered Certifier 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 is to also be provided.</p>
<p>BCA Clause D1.4 (Exit Travel Distances)</p>	<p><u>BCA Clause D1.4</u> 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 consideration by either way of design change and/or justification from the project Fire Safety Engineer;</p> <p>a) <u>Basement Carpark</u> – Egress distances from the furthest southern point of the floor is up to 32m in lieu of 20m to the single exit,</p> <p>b) <u>Ground Floor Public Corridor</u> - Egress distances from the furthest southern point of the public corridor near the stairway is up to 32m in lieu of 20m to the single exit/open space,</p> <p>c) <u>First and Second Floor SOU's</u> - Egress distances from the furthest SOU's on each level to the top riser of the open stairway are up to 12m in lieu of 6m to the single exit.</p> <p>Fire Engineered Performance Solution: It is understood that the design team have engage a C10 Fire Safety Engineer to develop a Performance based Solution to rationalise the extended egress travel distances to the basement levels and the report will need to demonstrate compliance with all relevant BCA Performance Requirements.</p> <p>Note: Architectural details of egress paths, specifications and design certifications are to be prepared by a suitably qualified design practitioner (Registered Architect) and submitted to the satisfaction of the Registered Certifier 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 is to also be provided.</p>

<p>BCA Clause D1.9 (Travel via Non-Required Fire Isolated Stairways)</p>	<p><u>BCA Clause D1.9</u> specifies the requirements for open stair arrangements that are not required to be contained within fire isolated shafts. In this regard, the following areas have been identified as matters which may be requiring further consideration by either way of design change and/or justification from the project Fire Safety Engineer;</p> <p>a) <u>Ground Level discharge location</u> – Egress distances from the discharge location of both the Basement Level ascending stairway and the residential levels descending stairways – to open space is greater than 20m to the single exit/open space (worst case 32m).</p> <p>Fire Engineered Performance Solution: It is understood that the design team have engage a C10 Fire Safety Engineer to develop a Performance based Solution to rationalise the extended egress travel distances to the stair discharge locations and the report will need to demonstrate compliance with all relevant BCA Performance Requirements.</p> <p>Note: Architectural details of egress paths, specifications and design certifications are to be prepared by a suitably qualified design practitioner (Registered Architect) and submitted to the satisfaction of the Registered Certifier 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 is to also be provided.</p>
<p>BCA Clause D2.12 (Roof as Open Space)</p>	<p><u>BCA Clause D2.12</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 consideration by either way of design change and/or justification from the project Fire Safety Engineer;</p> <p>a) <u>Ground floor</u> - Exits from the Residential corridor /common areas on the ground floor discharge over the Basement level roof slab which is considered a roof as open space. Upon discharge, occupants necessitate passing within 3m of certain openings to reach open space (i.e. commercial level openings) and the floor slab may not be designed to achieve an FRL of 120/120/120.</p> <p>Fire Engineered Performance Solution: It is understood that the design team have engage a C10 Fire Safety Engineer to develop a Performance based Solution to rationalise openings located within 3m of the path of travel and the report will need to demonstrate compliance with all relevant BCA Performance Requirements.</p> <p>Note: Architectural details, specifications and design certifications are to be prepared by a suitably qualified design practitioner (Registered Architect) and submitted to the satisfaction of the Registered Certifier 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 is to also be provided</p>
<p>BCA Part D3, AS1428.1 & AS4299 (Accessibility requirements)</p>	<p><u>BCA Part D3</u> requires accessibility compliance to be considered.</p> <p>In addition to the above we note that Council's DCP may requires a percentage of sole occupancy units to comply with the Adaptable Housing Australian Standard AS4299, 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 CC application.</p> <p>In this regard, the following areas have been identified as matters which may be requiring consideration at the Construction Certificate application stage:</p> <p>a) There may be insufficient ceiling height clearances above the accessible parking space as a minimum clearance of 2.5m is required to be maintained above the space clear of services and beams etc.</p> <p>b) Circulation space to the bedrooms doorways to be revisited at the CC stages.</p> <p>c) Circulation space to the Ground floor commercial tenancies will need to be reviewed further at the CC stages.</p> <p>d) Unisex accessible sanitary facilities have not been noted on the plans and these are required for each tenancy. Where occupants for each space will exceed more than 10, additional ambulant facilities for each gender (female and male) are required.</p> <p>e) Circulation space to the main entry door does not provide for latch side clearances and will need to be subject to a performance solution from the project access consultant.</p> <p>Accessibility Compliance Report: It is our understanding that the design team will engage the services of an accessibility consultant to review the building design and provide comments, recommendations and any Performance Solutions with regard to compliance with Part D3 of the BCA & AS1428.1-2009, AS4299 and the Access to Premises – Buildings Standards 2010 accordingly.</p> <p>Note: 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</p>

<p>BCA Clause E1.3 (Fire Hydrants)</p>	<p><u>BCA Clause E1.3</u> requires hydrants coverage to the building given the total floor areas exceeds 500msq and requires compliance with AS2419.1-2005.</p> <p>In this regard, the following areas have been identified as matters which may be requiring further consideration by either way of design change and/or justification from the project Fire Safety Engineer;</p> <ul style="list-style-type: none"> a) The fire hydrant booster is to comply with the provisions of BCA cl. E1.3 and AS2419.1-2005 and be detailed on the CC stage plans for further review. b) Details of booster, hydrant landing valves etc together with sweep diagrams of the fire hydrant system are to be provided for further review and assessment with the Construction Certificate application. A detail report identifying design parameters adopted under the FPAA101H standard that conflict with AS2419.1-2005 are to be tables at the Construction certificate stages. c) Any departures associated with the systems Standard of Performance (AS2419.1-2005) needs to be identified by the Accredited Practitioner - (Fire Safety) for the design team and Registered Certifiers consideration. <p>Fire Engineered Performance Solution: It is understood that the design team have engage a C10 Fire Safety Engineer to develop a Performance based Solution to rationalise the Hydrant & Sprinkler system departures accordingly and the report will need to demonstrate compliance with all relevant BCA Performance Requirements (EP1.3).</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 & Fire Services details and design certifications prepared by a suitably qualified design practitioners (Registered Architect and Accredited Practitioner - Fire Services) 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 is to also be provided</p>
<p>BCA Clause E1.5 (Sprinklers)</p>	<p><u>BCA Clause E1.5</u> require all residential buildings with a rise in storeys of 4 or more to be sprinkler protected throughout.</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 Fire Safety Engineer;</p> <ul style="list-style-type: none"> a) The fire sprinkler booster is to comply with the provisions of BCA cl. E1.5 and FPAA101H and be detailed on the CC stage plans for further review. b) Details of booster, sprinkler valves, hydrant connections etc are to be provided for further review and assessment with the Construction Certificate application. A detail report identifying design parameters adopted under the FPAA101H standard that conflict with AS2419.1-2005 are to be tables at the Construction certificate stages. c) The sprinkler valve room is required to be accessible directly from the roadway. d) Any departures associated with the systems Standard of Performance (FPAA101HH & AS2419.1-2005) needs to be identified by the Accredited Practitioner - (Fire Safety) for the design team and Registered Certifiers consideration. e) Any other departures associated with the systems Standard of Performance (AS2118.1-2017) needs to be identified by the Accredited Practitioner (Fire Safety) for the design team and Registered Certifiers consideration. <p>Fire Engineered Performance Solution: It is understood that the design team have engage a C10 Fire Safety Engineer to develop a Performance based Solution to rationalise the Sprinkler and Hydrant system departures accordingly and the report will need to demonstrate compliance with all relevant BCA Performance Requirements (EP1.4).</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 & Fire Services details and design certifications prepared by a suitably qualified design practitioners (Registered Architect and Accredited Practitioner - Fire Services) 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 is to also be provided.</p>

BCA Clause F1.0 (Weather-proofing of External Walls)	<p><u>BCA Clause F1.0</u> specifies requirements for weatherproofing of external walls.</p> <p>BCA Performance Solution: As there is no DTS provision that addressed the above, the Architect will need to provide a Performance Based Solution to address BCA Clause F1.0 and BCA Performance Requirement FP4.1 to demonstrate the external façade has been designed to prevent the penetration of water through the external walls.</p> <p>Note: Architectural details, design certifications and BCA Performance Solution Report are to be prepared by a suitably qualified design practitioner (Registered Architect) to the satisfaction of the Registered Certifier and are to be provided with the Construction Certificate application</p>
BCA Clause F4.2 (Natural Lighting)	<p><u>BCA Clause F4.2</u> specifies the minimum requirements to for Natural Lighting be provided to habitable rooms in a Class 2 Building.</p> <p>In this regard, the following areas have been identified as matters which may be requiring further consideration by the design team:</p> <p>a) In this regard, it is considered that the proposed design of the building generally complies with natural light provision of clause F4.1. However, an assessment of the Natural light provisions to the Kitchen to the level 1 unit will need to be considered against the setback provisions and BCA cl. F4.2(b)(iii).</p> <p>Note: Architectural & Mechanical Services details, Specifications and design certifications are to be prepared by a suitably qualified design practitioners (Registered Architect and Mechanical Services Engineers) to the satisfaction of the Registered Certifier are to be provided with the Construction Certificate application</p>
BCA Part F (Acoustics)	<p><u>BCA Part F</u> specifies the acoustic separation provisions applicable to the residential development. Acoustic compliance report is to be provided to the satisfaction of the Registered Certifier are to be provided with the Construction Certificate application</p>
BCA Part J + Basix (Energy Efficiency)	<p><u>BCA Part J + Basix</u> specified the energy efficiency provision to be considered.</p> <p>Section J report, Basix Certificate, Basix details on the CC plans and services consultants design certification are to be provided to the satisfaction of the Registered Certifier are to be provided with the Construction Certificate application.</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 residential 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:

BUILDING CHARACTERISTICS	
BCA CLASSIFICATION:	Class 2 (Residential Flat Building), Class 6 (Retail) & Class 7a (Carparking)
RISE IN STOREYS:	Three (3)
STOREYS CONTAINED:	Four (4)
TYPE OF CONSTRUCTION:	Type A Construction
EFFECTIVE HEIGHT:	<12m (Level 2 RL of 10.350m – Ground Floor RL of 3.350m) = (7m)
FIRE COMPARTMENTATION:	Complies with BCA Clause C2.2 (as applicable)
CLIMATE ZONE	Climate Zone CZ5

Note 1: Refer to comments under Sections C relating to fire resistance Levels and performance-based solutions.

Note 2: The storage areas adjacent to each carparking space within the basement levels are considered to be ancillary to the Class 2 and Class 7a uses and not hold separate classifications for the purposes of this assessment.

FIRE SOURCE FEATURES:

The site is situated over a single allotment and the distances from the nearest Fire Source Features / allotment boundaries are as follows:

FIRE SOURCE FEATURE	DISTANCE TO FIRE SOURCE FEATURE
NORTHERN SIDE	<3m from the side boundary (Approx. 1.0m)
SOUTHERN SIDE	>3m from the side allotment boundary (Approx. 4.0m)
EASTERN SIDE	<3m from the rear allotment boundary (Approx. 3m)
WESTERN SIDE	<6m from the far side of Barrenjoey Road (Approx. 20m)

Note: Refer to BCA Clauses C3.2/C3.4 & Spec C1.1 in the report below for further commentary regarding fire source features and requirements for fire protection.

FLOOR AREA / VOLUME:

The maximum permissible fire compartment sizes for the different classification in the development must comply with the limitations of Table C2.2:

CLASSIFICATIONS	FIRE COMPARTMENT SIZES	COMPLIES
- Class 2	N/A	Yes
- CLASS 6	Maximum 5,000m ² and 30,000m ³	Yes
- CLASS 7a	Maximum 5,000m ² and 30,000m ³	Yes

Note 1: Fire Compartment limitations do not apply to Class 2 residential building parts

Note 2: Fire Compartment limitations do not apply to Class 7a carpark which are sprinkler protected in accordance with Specification E1.5 and AS2118.1 -2017. Notwithstanding the fact the building will be protected with an FPAA 101H sprinkler system (which does not gain the aforementioned concessions), the carpark fire compartment limitations still comply with the provisions of Table C2.2 accordingly.

SECTION A – CLASSIFICATION OF BUILDINGS & STRUCTURES:

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

1. BCA cl. A3.3 – Multiple Classification: Each part of a building must be classified separately 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, the storage areas adjacent to the carparking spaces are considered to be ancillary to the carpark & residential/commercial uses of the building and not hold separate classifications for the purposes of this assessment.

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:

2. BCA Part B1 – B3 Structural provisions: Structural engineering documentation for structural works must comply with the structural provisions of BCA Clauses B1.1, B1.2 & B1.3. Table B1.2 identifies the Importance Levels of Building & Structures that must be considered by the structural engineer.

***Note:** Structural plans, specifications and design certification are to be prepared by a Structural Engineer and submitted to the satisfaction of the Registered Certifier with the Construction Certificate application.*

3. BCA cl. B1.4 – Materials and Forms of Construction: Structural resistance of materials and forms of construction must comply with BCA clause B1.4. Structural details and design certification to the satisfaction of the Registered Certifier are to be provided with the Construction Certificate application.

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, including certification for balustrades (dead and live loads)
- AS 1170.2 – 2011, Wind loads
- AS 1170.4 – 2007, Earthquake loads
- AS 1288 – 2006, Glass in buildings + B1.4(h)(iii) – To protect against nickel sulphide inclusions.
- AS1530.4-2014, Fire-Resistance Tests on Elements of Construction
- AS/NZS 1664.1 and 2 – 1997, Aluminium construction
- AS/NZS 1684. 2, 3 and 4 – 2010 – Residential Timber Framing Construction
- AS 1720.1 – 2010, Design of Timber Structure
- AS 1720.5 – 2015, Nail plated timber roof structures
- AS 2159 – 2009, Piling
- AS 2047 – 2014, Windows in buildings
- AS 3600 – 2018, Concrete code
- AS3666.1 - 2014 Termite Management
- AS 3700 – 2018, Masonry code
- AS 4100 – 1998, Steel Structures and/or AS 4600 – 2018, Cold formed steel
- AS4600 – 2018 – Cold-Formed Steel Structures
- AS5146.1-2015 – Reinforced Autoclave Aerated Concrete Structures
- All other relevant Australian Standards, guidelines and Referenced/cross referenced applicable standards.

Having regard to the above, the following areas have been identified as matters which may be requiring consideration by the project Structural Engineer and or fire safety engineer:

- (a) Where it is proposed to have structural steel columns and beams utilised, a colour coded mark-up plan to show the location of these structural members and details on the method of fire protection proposed (e.g. 90/90/90 min FRL's in the residential parts) will be required with the Construction Certificate Application.
- (b) Where it is proposed to incorporate permanent Polymer Formwork walls such as Dincel/AFS etc, the use of these wall/load bearing systems are to be disclosed by the project structural engineer and as they do not strictly comply with the DTS provisions for external walls, their proposed use will need to be addressed under a Performance Based Solution by a qualified C10 Fire Safety Engineer.
- (c) It is assumed that there will be no primary timber elements proposed and as such termite mitigation measures are likely not required (TBC). Notwithstanding, it is recommended that this be formally verified to the satisfaction of the Registered Certifier at the Construction Certificate application stage.
- (d) Where it is proposed to not achieve a minimum 200mm thick concrete slab throughout the residential levels (as required by AS3600-2018 for load bearing wall type construction), this will need to be disclosed by the project structural engineer and addressed under a Performance Based Solution by a C10 Fire Safety Engineer. Current section depicts a 400mm thick slabs however this is to be checked through at the CC stages.

Note: The Structural details design certification and fire safety engineering report (where required) to the satisfaction of the Registered Certifier are to be provided with the Construction Certificate application.

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:

- 4. **BCA cl. C1.8 Lightweight Construction:** Lightweight construction must comply with Specification C1.8 if used in a wall system in accordance with sub-clauses (a) & (b). The fire rated applications must comply with manufacturers specifications and tested system reports and be certified accordingly.

Note: Architectural details, specifications and design certification are to be prepared by a suitably qualified design practitioner (Registered Architect) and submitted to the satisfaction of the Registered Certifier with the Construction Certificate application.

- 5. **BCA cl. C1.9 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 C2.10, 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 C1.1.
 - d) The requirements of (a) and (b) do not apply to gaskets, caulking, sealants & damp-proof courses.
 - e) The following materials may be used wherever a non-combustible material is required:

- (i) Plasterboard.
- (ii) Perforated gypsum lath with a normal paper finish.
- (iii) Fibrous-plaster sheet.
- (iv) Fibre-reinforced cement sheeting.
- (v) Pre-finished metal sheeting having a combustible surface finish not exceeding 1 mm thickness and where the Spread-of-Flame Index of the product is not greater than 0.
- (vi) Bonded laminated materials where—
 - A. each lamina, including any core, is non-combustible; and
 - B. each adhesive layer does not exceed 1 mm in thickness and the total thickness of the adhesive layers does not exceed 2 mm; and
 - C. the Spread-of-Flame Index and the Smoke-Developed Index of the bonded laminated material as a whole do not exceed 0 and 3 respectively.

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) There may be insulation and sarking materials located in the external walls, in bounding construction walls, etc, which will not meet the non-combustible criteria.
- b) There may be external features attached to the external wall which may not strictly comply with the concessions under BCA cl.C1.9 and/or AS1530.1-1994 for combustibility and test reports are to be furnished at the Construction Certificate stage.
- c) There may be Render coatings and/or Permanent PVC / Polymer Formwork wall systems (e.g. Dincel, AFS Rediwall, etc) or any other linings which may not strictly comply with the concessions under BCA cl.C1.9 and/or AS1530.1 for combustibility and test reports are to be furnished at the Construction Certificate stage.

Fire Engineered Performance Solution: Where it is proposed to utilise external wall materials that will not strictly meet the criteria of BCA Clause C1.9 and Spec C1.1, the client will need to pursue a Performance Based Solution for the above from a C10 Fire Safety Engineer to rationalise the external wall materials and the report will need to demonstrate compliance with all relevant BCA Performance Requirements (CP2/CP4).

Note 1: Our office does not endorse the use of any ACP's on this development unless they are solid cladding materials which are 100% non-combustible and comply with AS1530.1-1994 and are 'attached' to external fire rated and/or non-combustible walls.

Note 2: Our office does not support non-complying external wall materials and require verification via test certification that all external wall products comply with AS1530.1.

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. Any Codemark Certification must include direct reference to BCA Clause C1.9 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.

Note 4: Architectural details, specification, external schedule of finishes including cross sectional wall details and design certifications are to be prepared by a suitably qualified design practitioner (Registered Architect) and submitted to the satisfaction of the Registered Certifier 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 is to also be provided.

6. BCA cl / Spec C1.10 – Early Fire Hazard Properties: Floor, wall & ceiling linings, insulations, sarking, and any other linings and/or attachments are required to comply with the requirements under Clause & Specification C1.10 and Spec C1.1 accordingly.

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.

- 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 or 2 or 3.
- Timber feature wall or ceiling linings (or the like) are to comply with the Material Group Ratings under Table C1.10 and are also to have a Material Group Number of 1 or 2 or 3.
- Flooring such as carpets, vinyls, floating floors etc need to achieve a Critical Radiant Flux of not less than 2.2 (in non-sprinkler protected parts) and not less than 1.2 (within the fire stairs).
- Combustible Materials in stairs and lifts are not permitted.

Note 1: The Supporting Fire Test and/or Design Certification to the satisfaction of the Registered Certifier are to be provided with the Construction Certificate application. BCA Clause C1.10 relates to internal linings only and not linings associated with external walls.

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

7. BCA cl. C1.14 – 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) A paint, lacquer or a similar finish.
- m) A gasket, caulking, sealant or adhesive directly associated with (a) to (k).

Note 1: In this regard all materials need to demonstrate compliance with the above or be supported by other fire test data. BCA Clause C1.10 relates to internal linings only and not linings associated with external walls.

Note 2: Architectural details, specifications and design certifications are to be prepared by a suitably qualified design practitioner (Registered Architect) and submitted to the satisfaction of the Registered Certifier at the Construction Certificate application stage. Where Fire Safety Engineering is proposed, a copy of the Fire Engineers Report prepared by a C10 Certifier – Fire Safety is to also be provided.

8. BCA cl. C2.6 – Vertical Separation of Openings in External Walls: Although the building **is required to be sprinkler protected throughout**, spandrel concessions are only adopted where either via a AS 2118.1-2017 or a AS 2118.6-2012 Combined Sprinkler / Hydrant System is installed.

Given our understanding that an FPAA101H sprinkler system is proposed, spandrel separation is required to be provided between openings in consecutive levels and it is to be ensured that the spandrels achieve a minimum FRL of 60/60/60 mins rated in both directions and comply with the dimensions set out in BCA Clause C2.6 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) East Elevation (Between Level 1 and Level 2) – spandrels are required along the whole rear elevation between the Level 1 and Level 2 – including the stair lobby/corridor areas. The current details depict a minimum 600mm upturn and the fire rating details and heights from the FFL are to be re-assessed at the CC stages.
- b) West Elevation (between Ground and Level 2) – there are circular sections in the horizontal projections which don't offer compliant horizontal spandrel separation as the 1100mm projections / setbacks are compromised on level 1.
- c) West Elevation (Between Ground and Level 2)– the openings between the Ground Floor Commercial tenancy, Level 1 Sole Occupancy Unit A1 and Level 2 Sole Occupancy Unit A4 have full height glazing proposed with no horizontal or upturned spandrels. It is understood that a spandrel panel will be constructed behind the glazing and the fire rating details and heights from the FFL are to be re-assessed at the CC stages.
- d) Central light well (Between Level 1 and Level 2)– the glass openings to the corridor need spandrel and the current details depict glazed balustrades in lieu of 1.0m fire rated spandrel upturns.

Fire Engineered Performance Solution: It is understood that the design team have engage a C10 Fire Safety Engineer to develop a Performance based Solution to rationalise the extent of protection to openings affected by reduced levels of spandrel separation and the report will need to demonstrate compliance with all relevant BCA Performance Requirement (CP2).

Note: Architectural design details, fire rating specifications and design certifications are to be submitted to the satisfaction of the Registered Certifier with the Construction Certificate application.

9. BCA cl. C2.10 Separation of Lift Shafts: Given the proposed lifts connect more than a total of three (3) consecutive storeys, the shafts they are situated within are required to be fire rated under this clause. Lift landing doors are to be protected in accordance with BCA cl. C3.10 achieving a minimum FRL of --/60/- - fire doors that comply with AS1735.11.

Note 1: Fire ratings will need to be commensurate to the classifications of the areas they connect or pass by in accordance with Table 3 of Specification C1.1.

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

10. BCA cl. C2.12 Separation of Equipment: Any emergency generators, lift motor equipment, 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.

Note: Consideration will need to be given for the need for fire separation to any lift motor equipment or any new server/comms room where it is proposed to have Batteries/UPS's with a total voltage of 12 volts or more and a storage capacity of 200kWh or more. Lift services contractor & Electrical/IT contractor to advise further in this regard with the Construction Certificate Application.

11. BCA cl. C2.13 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: The implementation of any required fire hydrant pumps, mechanical supply systems to fire services rooms and/or other essential services needing to continue to operate in fire mode will necessitate the MSB to be fire rated accordingly.

Note 2: There is to be a suitable portable fire extinguisher located in accordance with Clause E1.6 for the BCA and AS2444 – 2001 (e.g. located between 2m and 10m of the MSB room) and the Fire Rating details are to be detailed on the Construction Certificate drawings.

Note 3: Architectural details, specifications and design certifications are to be prepared by a suitably qualified design practitioner (Registered Architect) and submitted to the satisfaction of the Registered Certifier at the Construction Certificate application stage.

12. BCA cl. C3.2 – Protection of Openings in External Walls: Any openings proposed within the external walls that are located within 3m of a side or rear allotment boundary, 3m 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 C3.4. 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, there were no windows identified that are located within 3m of the boundary and which are requiring protection pursuant to this clause.

13. BCA cl. C3.3 Separation of External Walls and Associated Openings in different Fire Compartments:

The distance between parts of the external walls and any openings with them in different fire compartments must not be less than that set out in Table 3 unless;

- a) Those parts of each wall have an FRL not less than 60/60/60 mins; and
- b) Any openings protected in accordance with C3.4.

In this regard, the following areas have been identified as matters which may be requiring further consideration by either way of design change and/or justification from the project Fire Safety Engineer:

- b) Level 1 and Level 2 Courtyard/Lightwell - The central courtyard/lightwell creates exposure between the external walls and openings within them of the residential Sole Occupancy Units A2 and A4 and the Public Corridors which need further consideration.

Fire Engineered Performance Solution: It is understood that the design team will engage a C10 Fire Safety Engineer to develop a Performance Solution to rationalise the levels of fire protection to external openings and the report will need to demonstrate compliance with all relevant BCA Performance Requirement (CP2).

Note: Architectural details (including colour coded FRL, specifications and design certifications are to be prepared by a suitably qualified design practitioner (Registered Architect) and submitted to the satisfaction of the Registered Certifier at the Construction Certificate application stage. Where Fire Safety Engineering is proposed, a copy of the Fire Engineers Report prepared by a C10 Certifier – Fire Safety is to also be provided.

14. BCA cl. C3.4 – 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: Architectural details, specifications and design certifications are to be prepared by a suitably qualified design practitioner (Registered Architect) and submitted to the satisfaction of the Registered Certifier with the Construction Certificate application.

15. BCA cl. C3.10 – 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.

Note: Architectural details, specifications and design certifications are to be prepared by a suitably qualified design practitioner (Registered Architect) and submitted to the satisfaction of the Registered Certifier at the Construction Certificate application stage.

16. BCA cl. C3.11 – 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.

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.

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 provide with the Construction Certificate application.

Note 2: Architectural details, specifications and design certifications are to be prepared by a suitably qualified design practitioner (Registered Architect) and submitted to the satisfaction of the Registered Certifier 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 is to also be provided.

17. BCA cl. C3.12 – Openings in Floor 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 Table 3 of BCA Specification C1.1, or the service must be protected with appropriate fire seals conforming to BCA C3.15.

Note: Architectural details, specifications and design certifications are to be prepared by a suitably qualified design practitioner (Registered Architect) and submitted to the satisfaction of the Registered Certifier with the Construction Certificate application.

18. BCA cl. C3.13 – 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, specifications and design certifications are to be prepared by a suitably qualified design practitioner (Registered Architect) and submitted to the satisfaction of the Registered Certifier with the Construction Certificate application.

19. BCA cl. C3.15 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 Specification C3.15. Where the mechanical ventilation system penetrates floors or walls that require an FRL the installation is to comply with AS/NZS 1668.1 and AS1682.1/2. All GPO and light switch installations in fire rated lightweight walls will require fire seals (e.g. intumescent boxes). All down lights and/or other installations will also require fire seals (e.g. fire boxes).

Note: Architectural details, specifications and design certifications are to be prepared by a suitably qualified design practitioner (Registered Architect) and submitted to the satisfaction of the Registered Certifier 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 is to also be provided.

20. BCA cl. C3.16 – Construction Joints: Any construction joints must be fire rated as per the ratings of the building elements within which they are installed.

Note: Architectural details, specifications and design certifications are to be prepared by a suitably qualified design practitioner (Registered Architect) and submitted to the satisfaction of the Registered Certifier at the Construction Certificate application stage.

21. BCA Spec. C1.1 – Fire Resisting Construction: The building is of Type A Construction and as such all new building elements will need to comply with the FRL's detailed in Section 3 and Table 3 of BCA Specification C1.1. Architect and Structural engineer to ensure design compliance and builder to confirm as built works achieve relevant FRL's.

BUILDING ELEMENT	Class 2	Class 6	Class 7a
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 3m or more For non-load bearing parts- Less than 1.5m 1.5 to less than 3m 3m or more	 90/90/90 90/60/60 90/60/30 --/90/90 --/60/60 --/--/--	 180/180/180 180/180/120 180/120/90 --/180/180 --/180/120 --/--/--	 120/120/120 120/90/90 120/60/30 --/120/120 --/90/90 --/--/--
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 3m or more	 90/--/-- --/--/--	 120/--/-- --/--/--	 120/--/-- --/--/--
COMMON WALLS & FIRE WALLS	90/90/90	180/180/180	120/120/120
INTERNAL WALLS Fire Resisting lift and stair shafts – Loadbearing Non-loadbearing Bounding public corridors, public hallways and the like – <i>Loadbearing</i> <i>Non-loadbearing</i> Between or bounding SOU's – <i>Loadbearing</i> <i>Non-loadbearing</i> Ventilating, pipe, garbage, and the like shafts not used for the discharge of hot products of combustion – <i>Loadbearing</i> <i>Non-loadbearing</i>	 90/90/90 --/90/90 90/90/90 --/60/60 90/90/90 --/60/60 90/90/90 --/90/90	 180/120/120 --/120/120 180/--/-- --/--/-- 180/--/-- --/--/-- 180/120/120 --/90/90	 120/120/120 --/120/120 120/--/-- --/--/-- 120/--/-- --/--/-- 120/90/90 --/90/90
OTHER LOADBEARING INTERNAL WALLS & COLUMNS	90/--/--	180/--/--	120/--/--

FLOORS	90/90/90	180/180/180	120/120/120
ROOFS	Non-Combustible	120/120/120 for roofs that are Roof as Open Space	120/120/120 for roofs that are Roof as Open Space

Additional Notes / Requirements

Note 1: The concession granted under Sub-Clause 2.8 of Specification C1.1 have been considered in this assessment and are applicable if desired as the building is no more than 4 Storeys and has one level of carparking.

Note 2: All external wall systems including insulations, Render & Metal Cladding must be non-combustible construction and where required to be fire resisting, they must achieve an FRL in line with Table 3 above – refer to BCA Clause C1.9 & C1.14 for further commentary in this regard.

Note 3: All fire resisting wall systems including insulations are also to be non-combustible and achieve an FRL in both directions. All external load bearing walls irrespective of distance and non-load bearing walls and columns within 3m of the fire source features in the Class 2 parts must achieve an FRL in accordance with the above table for the classifications concerned.

Note 4: All load bearing internal walls including loadbearing shaft walls and fire walls are to be concrete or masonry construction and generally achieve FRL's of in accordance with the above table for the classifications concerned.

Note 5: All internal fire resisting walls must be non-combustible construction and 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 non-combustible roof structure.

Note 6: All floors structures must be non-combustible construction and achieve FRL's FRL in accordance with the above table for the classifications concerned.

Note 7: The walls to all fire rated shafts (lifts, 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 which is the same as the shaft. See subclause 2.7 for exemptions to this clause for services shafts that project beyond the roof.

Note 8: The use of structural steel columns & beams supporting floors, roofs, balconies must achieve generally achieve FRL's that are in accordance with the above table for the classifications concerned.

The use of structural steel columns & beams are to be disclosed and noted on the architectural drawings and fire rated and certified by the architect, structural engineer and fire contractor accordingly. Methods of fire separation of columns is to be consulted with the project structural engineer and detailed on the Construction Certificate drawings.

Note 9: Spandrels are not required between openings in consecutive levels as the building will be sprinkler protected throughout with an AS2118.1-2017 or AS 2118.6-2012 sprinkler system.

Note 10: The 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 11: 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 required by the specification. Refer to BCA Clause C1.9 and C1.14 for external walls and ancillary attachments. The use of any Aluminium Composite Panels (ACP's) will need to comply with the combustibility provisions under AS1530.1 and/or AS5113-2016 and be 'attached to external walls – not form part of the external walls' or be subject to a Performance Solution – Refer to BCA Clause C1.9 and C1.14. similarly, for all other external cladding products utilised.

Note 12: The use of Permanent PVC / Polymer Formwork wall system (e.g. Dincel, AFS Rediwall, etc) & Acrylic Render must comply with manufacturer's specifications and their use is to be justified via Codemark Produce Certification, AS 1530.1-1994 Test Certificate or a Performance Solution report prepared by the project fire safety engineer. In this regard, the use of a Permanent PVC Formwork wall

and Acrylic Render systems may trigger the need for a Performance Based Solution from a Fire Safety Engineer.

Note 13: It is to be ensured that the sky lights in the units are located a minimum distance of 3m away from each other and a minimum 3m distance from any skylights in the common areas.

Note 14: All designers are to review BCA Specification C1.1 for further clarifications regarding required Fire Resistance Levels. Departures are to be identified and consultation with the C10 Fire Safety Engineer undertaken to determine whether these can be addressed under Performance Solutions.

Note 15: Architectural details (including colour coded FRL plans and separation details, specifications and design certifications are to be prepared by a suitably qualified design practitioner (Registered Architect) and submitted to the satisfaction of the Registered Certifier 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 is to also be provided.

SECTION D – ACCESS AND EGRESS:

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

22. **BCA cl. D1.2 – Number of Exits Required:** The building is required to be provided with a minimum of one (1) exit from each above ground level storey and a minimum of two (2) exits from each basement level.

In this regard, it should be noted that the basement is not a rise in storeys by definition as it sits wholly beneath the ground level and as such requires a minimum of two (2) exits.

In this regard, the following areas have been identified as matters which may be requiring further consideration by either way of design change and/or justification from the project Fire Safety Engineer;

- a) The basement levels are only provided with a single exit where a minimum of 2 exits are required.

Fire Engineered Performance Solution: It is understood that the design team have engage a C10 Fire Safety Engineer to develop a Performance based Solution to rationalise the single exits to the basement levels and the report will need to demonstrate compliance with all relevant BCA Performance Requirements (DP4/EP2.2).

Note: Architectural details, specifications and design certifications are to be prepared by a suitably qualified design practitioner (Registered Architect) and submitted to the satisfaction of the Registered Certifier 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 is to also be provided.

23. **BCA cl. D1.3 – When Fire Isolated Exits are Required:** Where an exit stair passes through more than 2 or more than 3 consecutive storeys in a mixed-use building (depending on circumstance), 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, the following areas have been identified as matters which may be requiring further consideration by either way of design change and/or justification from the project Fire Safety Engineer;

- a) The central stair connects four (4) levels in the building being the Class 7a basement carpark, Class 6 Retail at Ground Floor and the two (2) Class 2 Residential Levels. Although the building will be sprinkler protected, the concessions for a four-storey connection do not apply when the stair connects both a retail level and carpark level accordingly. As such, the stair is technically required to be a fire stair and the fire and smoke separation arrangements and the discharge arrangements are to be considered.

Fire Engineered Performance Solution: It is understood that the design team have engage a C10 Fire Safety Engineer to develop a Performance based Solution to rationalise the single exits to the basement levels and the report will need to demonstrate compliance with all relevant BCA Performance Requirements (CP2/DP5/EP2.2). The basis of the Performance Solution will be fire separation of the basement level and sprinklers throughout.

Note: Architectural details, specifications and design certifications are to be prepared by a suitably qualified design practitioner (Registered Architect) and submitted to the satisfaction of the Registered

Certifier 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 is to also be provided.

24. **BCA cl. D1.4 – Exit Travel Distances: Class 2 part** - The exit travel distances from the entrance doorway of the Hotel rooms, must not be more than 6 metres to an exit or to a point of choice where two (2) exits are available. Given the building will not be Sprinkler protected throughout in accordance with AS2118.1 – 2017 or AS2118.4 - 2012, concessions are not provided under Specification E1.5a permitting extended travel distances from the entrance doorway of the residential sole occupancy units. As such egress from each SOU door to the top riser of the open stair way must be no greater than 6m.

The exit travel distances from other ancillary areas within the Class 3 parts (not from the Hotel Room entrances) must not be more than 20 metres to an exit or to a point of choice where two (2) exits are available.

Class 6 and 7a part/s - The exit travel distances in the commercial and carpark areas are required to be not 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 may be increased to 40m accordingly.

Note: Open space means 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.

In this regard, the following areas have been identified as matters which may be requiring further consideration by either way of design change and/or justification from the project Fire Safety Engineer;

- a) Basement Carpark – Egress distances from the furthest southern point of the floor is up to 32m in lieu of 20m to the single exit,
- b) Ground Floor Public Corridor - Egress distances from the furthest southern point of the public corridor near the stairway is up to 32m in lieu of 20m to the single exit/open space,
- c) First and Second Floor SOU's - Egress distances from the furthest SOU's on each level to the top riser of the open stairway are up to 12m in lieu of 6m to the single exit.

Fire Engineered Performance Solution: It is understood that the design team have engaged a C10 Fire Safety Engineer to develop a Performance based Solution to rationalise the extended egress travel distances to the basement levels and the report will need to demonstrate compliance with all relevant BCA Performance Requirements (DP4/EP2.2).

Note: Architectural details of egress paths, specifications and design certifications are to be prepared by a suitably qualified design practitioner (Registered Architect) and submitted to the satisfaction of the Registered Certifier 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 is to also be provided.

25. **BCA cl. D1.5 – 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.

In this regard, It is considered that the building generally complies with the egress travel distance provisions of D1.5.

Note: Architectural details of egress paths, specifications and design certifications are to be prepared by a suitably qualified design practitioner (Registered Architect) and submitted to the satisfaction of the Registered Certifier with the Construction Certificate application.

26. **BCA cl. D1.6 – Dimensions of Exits and Paths of Travel to Exits:** 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 addition, the unobstructed width of an exit or a path of travel to an exit must be not less than 1 metre or the required exit width determined under D1.6.

It is considered that the proposed design of the base building generally complies with the egress provisions of D1.6. However, the Fire Services consultant is to confirm whether there are any departures with the minimum egress widths and heights within the hydrant / Sprinkler pump room once the pump set locations / orientation have been determined (if required).

Note: Architectural details of egress paths, specifications and design certifications are to be prepared by a suitably qualified design practitioner (Registered Architect) and submitted to the satisfaction of the Registered Certifier with the Construction Certificate application.

27. BCA cl. D1.7 Travel Via Fire Isolated Exits: A fire stair is required to discharge directly to the road or open space unless otherwise into a covered area of the building that is open for at least 1/3 of its perimeter, has a minimum unobstructed height of no less than 3m with and is within 6m to the road or open space.

In addition to the above requirements, where a path of travel from the point of discharge from a fire isolated exit necessitates passing within 6m of any external wall or opening within an external wall of the same building (measure horizontally at right angles), that part of the wall must achieve a minimum FRL of 60/60/60 mins and any opening protected **internally** in accordance with BCA Clause C3.4 i.e. fire shutters, or drenchers etc.

In this regard, the following areas have been identified as matters which may be requiring further consideration by either way of design change and/or justification from the project Fire Safety Engineer;

- a) The central stair connects four (4) levels in the building being the Class 7a basement carpark, Class 6 Retail at Ground Floor and the two (2) Class 2 Residential Levels. Although the building will be sprinkler protected, the concessions for a four-storey connection do not apply when the stair connects both a retail level and carpark level accordingly. As such, the stair is technically required to be a fire stair and the discharge arrangements as well as the fire and smoke separation arrangements are to be considered.

Fire Engineered Performance Solution: It is understood that the design team have engage a C10 Fire Safety Engineer to develop a Performance based Solution to rationalise the open fire stair arrangements and the report will need to demonstrate compliance with all relevant BCA Performance Requirements (CP2/DP5/EP2.2). The basis of the Performance Solution will be fire separation of the basement level and sprinklers throughout.

Note: Architectural details, specifications and design certifications are to be prepared by a suitably qualified design practitioner (Registered Architect) and submitted to the satisfaction of the Registered Certifier 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 is to also be provided.

28. BCA cl. D1.9 – 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..

In this regard, the following areas have been identified as matters which may be requiring further consideration by either way of design change and/or justification from the project Fire Safety Engineer;

- b) Ground Level discharge location – Egress distances from the discharge location of both the Basement Level ascending stairway and the residential levels descending stairways – to open space is greater than 20m to the single exit/open space (worst case 32m).

Fire Engineered Performance Solution: It is understood that the design team have engage a C10 Fire Safety Engineer to develop a Performance based Solution to rationalise the extended egress travel distances to the stair discharge locations and the report will need to demonstrate compliance with all relevant BCA Performance Requirement (CP2/EP2.2).

Note: Architectural details of egress paths, specifications and design certifications are to be prepared by a suitably qualified design practitioner (Registered Architect) and submitted to the satisfaction of the Registered Certifier 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 is to also be provided.

29. BCA cl. D1.10 - 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 any ramps or stairways will require handrails.

In this regard, it is considered that the building generally complies with the egress provisions of D1.10.

Note: Architectural details of egress paths gradients, specifications and design certifications are to be prepared by a suitably qualified design practitioner (Registered Architect) and submitted to the satisfaction of the Registered Certifier with the Construction Certificate application.

30. BCA cl. D1.13 – Number of Persons Accommodated: Clause D1.13 and Table D1.13 are 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.

It is considered that the proposed design of the building generally complies with the egress provisions of D1.6 and that the building has ample exits to accommodate the population numbers calculated using Clause D1.13.

31. BCA Part D2 Construction of Exits: The stair treads and risers, stair landings, door thresholds, balustrades and handrails are to comply with the provisions of these clauses. Further details will be required prior to issue of the Construction Certificate.

Note: Architectural details, specifications and design certifications are to be prepared by a suitably qualified design practitioner (Registered Architect) and submitted to the satisfaction of the Registered Certifier with the Construction Certificate application.

32. BCA cl. D2.2 - Fire Isolated Stairways and Ramps: A stairway required to be located in a fire resisting shaft must be constructed from non-combustible construction and if there is structural failure it must not impair the fire resisting performance of the shaft.

Note: Architectural & Structural details, specifications and design certifications are to be prepared by a suitably qualified design practitioner (Registered Architect) and Structural Engineer and submitted to the satisfaction of the Registered Certifier with the Construction Certificate application.

33. BCA Part D2.3 – 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;

- a) Reinforced Concrete
- b) Steel with no part less than 6mm thick,

Note: Architectural & Structural details, specifications and design certifications are to be prepared by a suitably qualified design practitioner (Registered Architect) and Structural Engineer and submitted to the satisfaction of the Registered Certifier with the Construction Certificate application.

34. BCA cl. D2.4 Separation of rising and descending Stair Flights: If a stairway is required to be fire isolated, there must be no connection between rising and descending stair flights and smoke separation between flights in the same shaft are 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 Alternative Solutions by the project Fire Safety Engineer;

- a) The central stair connects four (4) levels in the building being the Class 7a basement carpark, Class 6 Retail at Ground Floor and the two (2) Class 2 Residential Levels. Although the building will be sprinkler protected, the concessions for a four-storey connection do not apply when the stair connects both a retail level and carpark level accordingly. As such, the stair is technically required to be a fire stair and the discharge arrangements as well as the fire and smoke separation arrangements are to be considered.

Fire Engineered Performance Solution: It is understood that the design team have engage a C10 Fire Safety Engineer to develop a Performance based Solution to rationalise the open stair arrangements and the report will need to demonstrate compliance with all relevant BCA Performance Requirements (CP2/EP2.2).

Note: Architectural details of egress paths, specifications and design certifications are to be prepared by a suitably qualified design practitioner (Registered Architect) and submitted to the satisfaction of the Registered Certifier 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 is to also be provided.

35. BCA cl. D2.7 Installations in Exits and Paths of Travel: Services or equipment comprising electricity meters, distribution boards, central telecommunication distribution boards/equipment, electrical motors etc installed in a corridor or the like leading to a required exit are to be enclosed with non-combustible construction or appropriate fire-protection covering and doorways suitably sealed against smoke spread from the enclosure.

36. BCA cl. D2.8 Enclosure Beneath Stairways: The enclosure beneath the stairway in the basement level needs to be constructed to ensure it achieves an FRL of 60/60/60 mins rated in both directions. The opening is to be protected with a self losing --/60/30 fire door.

Note: Architectural details, specifications and design certifications are to be prepared by a suitably qualified design practitioner (Registered Architect) and submitted to the satisfaction of the Registered Certifier with the Construction Certificate application.

37. BCA cl. D2.12 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 consideration by either way of design change and/or justification from the project Fire Safety Engineer;

- a) Ground floor - Exits from the Residential corridor /common areas on the ground floor discharge over the Basement level roof slab which is considered a roof as open space. Upon discharge, occupants necessitate passing within 3m of certain openings to reach open space (i.e. commercial level openings) and the floor slab may not be designed to achieve an FRL of 120/120/120.

Fire Engineered Performance Solution: It is understood that the design team have engage a C10 Fire Safety Engineer to develop a Performance based Solution to rationalise openings located within 3m of the path of travel and the report will need to demonstrate compliance with all relevant BCA Performance Requirement (CP2).

Note: Architectural details, specifications and design certifications are to be prepared by a suitably qualified design practitioner (Registered Architect) and submitted to the satisfaction of the Registered Certifier 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 is to also be provided.

38. BCA cl. D2.13 – 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 D2.13 i.e.:

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

- Risers must be solid construction with no gaps and treads must have non-slip finishes and stair nosings in accordance with BCA Part D3 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

Note: Architectural details, specifications and design certifications are to be prepared by a suitably qualified design practitioner (Registered Architect) and submitted to the satisfaction of the Registered Certifier with the Construction Certificate application.

39. BCA cl. D2.14 – Landings: A review of the plans has confirmed that landings are compliant throughout.

Note: Architectural details, specifications and design certifications are to be prepared by a suitably qualified design practitioner (Registered Architect) and submitted to the satisfaction of the Registered Certifier with the Construction Certificate application.

40. **BCA cl. D2.15 – 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 other case.

Note 2: Architectural details, specifications and design certifications are to be prepared by a suitably qualified design practitioner (Registered Architect) and submitted to the satisfaction of the Registered Certifier with the Construction Certificate application

41. **BCA cl. D2.16 - Balustrades or other barriers:** Balustrades throughout are to comply with the provisions of this clause. The following summary is provided 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.

Note: This includes any feature lighting installed within the inside face of concrete / Masonry upturns, gas bouyanettes, water taps, AC units and any external planter beds located within 1.0m of the balustrades which could serve as a climbable element and/or footholds.

- 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 & AS1288-2006 requiring interlinking rails and end point fixtures. NB: No frameless glass balustrades are permitted.

Note: Architectural details, specifications and design certifications are to be prepared by a suitably qualified design practitioner (Registered Architect) and submitted to the satisfaction of the Registered Certifier with the Construction Certificate application.

42. **BCA cl. D2.17 – Handrails:** A handrail is required along one side of all proposed stairways located a minimum of 865-mm above the stair nosing and 1.0m above landings greater than 500mm. The handrail must also be continuous between flights. Please note the additional handrail requirements for stairs required to be accessible under AS1428.1-2009.

Note: Architectural details, specifications and design certifications are to be prepared by a suitably qualified design practitioner (Registered Architect) and submitted to the satisfaction of the Registered Certifier with the Construction Certificate application.

43. **BCA cl. D2.21 - 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: Architectural details, specifications and design certifications are to be prepared by a suitably qualified design practitioner (Registered Architect) and submitted to the satisfaction of the Registered Certifier with the Construction Certificate application.

44. **BCA cl. D2.24 - 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.

Note: Architectural details, specifications and design certifications are to be prepared by a suitably qualified design practitioner (Registered Architect) and submitted to the satisfaction of the Registered Certifier with the Construction Certificate application.

45. **BCA Part D3 - 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. Under Table D3.1, the subject building must be accessible as follows:

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.
Class 6	To and within all areas normally used by the occupants
Class 7a	To and within any level containing accessible parking spaces.

In this regard, the above and below details are to be 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. In this regard, we note compliance is readily achieved.
- 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.
- 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 D2.17(a)(iii)(vi) & Clause D3.3(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 exit 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 2013 provisions at every designated exit door provided with an Exit sign required under E4.5 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.
- A minimum of 1 accessible car parking space is required where commercial parking spaces are provided in accordance with BCA Clause D3.5 and AS2890.6-2009.
- 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.

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, 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 consideration at the Construction Certificate application stage:

- a) There may be insufficient ceiling height clearances above the accessible parking space as a minimum clearance of 2.5m is required to be maintained above the space clear of services and beams etc.*
- b) Circulation space to the bedrooms doorways to be revisited at the CC stages.*

- c) Circulation space to the Ground floor commercial tenancies will need to be reviewed further at the CC stages.
- d) Unisex accessible sanitary facilities have not been noted on the plans and these are required for each tenancy. Where occupants for each space will exceed more than 10, additional ambulant facilities for each gender (female and male) are required.
- e) Circulation space to the main entry door does not provide for latch side clearances and will need to be subject to a performance solution from the project access consultant.

Accessibility Compliance Report: It is our understanding that the design team will engage the services of an accessibility consultant to review the building design and provide comments, recommendations and any Performance Solutions with regard to compliance with Part D3 of the BCA, AS4299 (ADAPTABLE HOUSING) & AS1428.1-2009, and the Access to Premises – Buildings Standards 2010 accordingly.

Note: 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.

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:

46. BCA cl. E1.3 – Fire Hydrants: A Hydrant system is required to be installed in accordance with AS 2419.1 – 2005 given the total floor area of the building exceeding 500msq.

Any required Fire Hydrant Booster assembly that is required must be affixed to the external wall and protected by a radiant heat shield that has an FRL of 90/90/90 located 2 metres either side and 3 metres above the outlets in non-sprinkler protected buildings. Boosters are to be located at least 10m from any high voltage mains and at least 2m from any gas meters.

Any Internal Hydrants are to be located within the fire isolated stairways at the landing of the storey they serve or within 4m of an exit on each level. In addition, if floor coverage cannot be achieved supplementary fire hydrants may be provided to suit the operational requirements of the NSW Fire Brigades.

Any 'required' hydrant pump room is 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.

In this regard, the following areas have been identified as matters which may be requiring further consideration by either way of design change and/or justification from the project Fire Safety Engineer;

- a) The fire hydrant booster is to comply with the provisions of BCA cl. E1.3 and AS2419.1-2005 and be detailed on the CC stage plans for further review.
- b) Details of booster, hydrant landing valves etc together with sweep diagrams of the fire hydrant system are to be provided for further review and assessment with the Construction Certificate application. A detail report identifying design parameters adopted under the FPAA101H standard that conflict with AS2419.1-2005 are to be tables at the Construction certificate stages.
- c) Any departures associated with the systems Standard of Performance (AS2419.1-2005) needs to be identified by the Accredited Practitioner - (Fire Safety) for the design team and Registered Certifiers consideration.

Fire Engineered Performance Solution: It is understood that the design team have engage a C10 Fire Safety Engineer to develop a Performance based Solution to rationalise the Hydrant & Sprinkler system departures accordingly and the report will need to demonstrate compliance with all relevant BCA Performance Requirement (EP1.3).

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 & Fire Services details and design certifications prepared by a suitably qualified design practitioners (Registered Architect and Accredited Practitioner - Fire Services) 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 is to also be provided.

47. **BCA cl. E1.4 – 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 C2.12, C2.13, C3.11 and C3.13.

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 doorway.

In this regard, it is considered that the building generally complies with the hose reel provisions of provisions of E1.4 with regard to their location in the building.

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 & Fire Services details and design certifications prepared by a suitably qualified design practitioners (Registered Architect and Accredited Practitioner - Fire Services) to the satisfaction of the Registered Certifier are to be provided with the Construction Certificate application.

48. **BCA cl. E1.5 – Sprinklers:** A sprinkler system in accordance with FPAS 101H is proposed. Although the sprinklers may technically not be required due to the basement level being below ground and not considered a rise in storeys, it is noted that the sprinklers will be required to address design departures such as spandrels and extended egress distances.

The sprinkler valves are to be enclosed in a secured room and be accessible directly from the road and open space.

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 Fire Safety Engineer;

- a) The fire sprinkler booster is to comply with the provisions of BCA cl. E1.5 and FPAA101H and be detailed on the CC stage plans for further review.
- b) Details of booster, sprinkler valves, hydrant connections etc are to be provided for further review and assessment with the Construction Certificate application. A detail report identifying design parameters adopted under the FPAA101H standard that conflict with AS2419.1-2005 are to be tables at the Construction certificate stages.
- c) The sprinkler valve room is required to be accessible directly from the roadway.
- d) Any departures associated with the systems Standard of Performance (FPAA101HH & AS2419.1-2005) needs to be identified by the Accredited Practitioner - (Fire Safety) for the design team and Registered Certifiers consideration.
- e) Any other departures associated with the systems Standard of Performance (AS2118.1-2017) needs to be identified by the Accredited Practitioner (Fire Safety) for the design team and Registered Certifiers consideration.

Fire Engineered Performance Solution: It is understood that the design team have engaged a C10 Fire Safety Engineer to develop a Performance based Solution to rationalise the Sprinkler and Hydrant system departures accordingly and the report will need to demonstrate compliance with all relevant BCA Performance Requirements (EP1.4).

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 & Fire Services details and design certifications prepared by a suitably qualified design practitioners (Registered Architect and Accredited Practitioner - Fire Services) 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 is to also be provided.

49. **BCA cl. E1.6 – Portable Fire Extinguishers:** Portable fire extinguishers are to be installed in accordance with clause E1.6 and AS 2444. (e.g. within 2 and 10m from any MSB, within 10m of each SOU entry door. Refer to E1.6 for type of extinguishers required.

Note: Architectural & Fire Services details and design certifications are to be prepared by a suitably qualified design practitioners (Registered Architect and Accredited Practitioner - Fire Services) to the satisfaction of the Registered Certifier are to be provided with the Construction Certificate application.

50. **BCA cl. E2.2 – Smoke Hazard Management:** Class 2 to 9 buildings must comply with the provisions of the Clause / Specification and Tables within to manage smoke during a fire. Smoke hazard provisions apply to buildings and are to be installed in accordance with Table E2.2a & E2.2b as applicable.

Any mechanical ventilation systems in the building are required to be designed in accordance with AS/NZS 1668.2 (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.

A Clause 3, 4 or 5 Automatic Fire Detection & Alarm System is required to be installed throughout the **entire building** in accordance with BCA Spec E2.2a and AS1670.1-2018 and/or AS3786-2014.

A Clause 7 Building Occupant Warning system must be provided **THROUGHOUT THE BUILDING** including carpark, residential and external communal areas in accordance with AS1670.4-2018.

A fire indicator panel needs to be installed at the **MAIN ENTRANCE** of the building and within close proximity of the fire hydrant booster assemblies and clear access around the panel so that it is 500mm from any internal wall or other obstruction.

Note 1: Given the building will be provided with a Sprinkler system in accordance with FPAA101H throughout, the concession under Clause 3 & 4 of Specification E2.2a permits the omission of smoke detectors/ Alarms within common areas and other public spaces. Notwithstanding, a review of the system is required by the fire safety engineer to consider whether any additional fire detectors are required as part of the fire safety strategy for the building.

Note 2: 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 3: Architectural details, specifications and design certifications are to be prepared by a suitably qualified design practitioner (Registered Architect) and submitted to the satisfaction of the Registered Certifier 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 is to also be provided.

51. **BCA cl. E3.3 – Warning Against use of Lifts in Fire:** Signage "DO NOT 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: Architectural details, specifications and design certifications are to be prepared by a suitably qualified design practitioner (Registered Architect) and submitted to the satisfaction of the Registered Certifier with the Construction Certificate application.

52. BCA cl. E3.6 – 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 Table E3.6a (as appropriate) and the provisions of AS1735.12 as follows:

- Have complying handrails.
- Have minimum internal floor dimensions of 1400 x 1600mm (also refer to stretcher lift dimensions).
- Have doors with a minimum clear width of 900mm.
- 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: Lift supplier details, specifications and design certifications are to be prepared by a suitably qualified person and submitted to the satisfaction of the Registered Certifier with the Construction Certificate application.

53. BCA cl. E4.2 & E4.4 – Emergency Lighting: Emergency Lighting is required in the building in accordance with AS 2293.1-2018.

Note: Architectural & Fire Services details and design certifications are to be prepared by a suitably qualified design practitioners (Registered Architect and Accredited Practitioner - Fire Services) to the satisfaction of the Registered Certifier are to be provided with the Construction Certificate application.

54. BCA cl. E4.5 & E4.6 – Exit Signs: 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 2293.1-2018.

Note: Architectural & Fire Services details and design certifications are to be prepared by a suitably qualified design practitioners (Registered Architect and Accredited Practitioner - Fire Services) to the satisfaction of the Registered Certifier are to be provided with the Construction Certificate application.

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:

55. BCA cl. F1.0 – Weatherproofing of external walls: External walls are to prevent the penetration of water that could cause unhealthy, dangerous condition or loss of amenity to occupants and cause undue dampness or deterioration of building elements.

BCA Performance Solution: As there is no DTS provision that addressed the above, the Architect will need to provide a Performance Based Solution to address BCA Clause F1.0 and BCA Performance Requirement FP4.1 to demonstrate the external façade has been designed to prevent the penetration of water through the external walls.

Note: Architectural details, design certifications and BCA Performance Solution Report are to be prepared by a suitably qualified design practitioner (Registered Architect) to the satisfaction of the Registered Certifier and are to be provided with the Construction Certificate application.

56. BCA cl. F1.1 – Stormwater Drainage: Stormwater drainage must be installed as per AS 3500.3 -2018. All plumbing works are to comply with National Construction Code (NCC) Volumes 1 - Building Code of Australia and Volume 3 - Plumbing Code of Australia.

Note: Architectural & Hydraulic Services details and design certifications are to be prepared by a suitably qualified design practitioners (Registered Architect and Civil/Hydraulic Engineer) to the satisfaction of the Registered Certifier are to be provided with the Construction Certificate application.

57. BCA cl. F1.4 – External Above Ground Membranes: Waterproofing membranes for external above ground use must comply with AS4654 Parts 1 and 2.

Note: Architectural details, specifications and design certifications are to be prepared by a suitably qualified design practitioner (Registered Architect) and submitted to the satisfaction of the Registered Certifier with the Construction Certificate application.

58. BCA cl. F1.5 – Roof Coverings: This clause details the materials and appropriate standards, with which roofs must be covered with. The roofing requirements are set out in sub-clauses (a), (b) (c), (d), (e) & (f) which set out the types of materials that may be used and the adopted Australian Standards that apply to their quality and installation. A roof must be covered with-

- Concrete roof tiles complying with AS 2049-2002 and fixed as per AS 2050 -2018.
- Cellulose cement corrugated sheeting complying with AS/NZS 2908.1-2000 and installed as per AS/NZS 1562.2 - 1999
- Metal roof sheeting comply with AS 1562.1 - 2018
- Plastic roof sheeting complying with AS/NZS 4256 parts 1, 2 3 and 5 and AS/NZS 1562.3 - 1996
- Asphalt shingles complying with ASTM D3018-90 class A.

Note: Architectural details, specifications and design certifications are to be prepared by a suitably qualified design practitioner (Registered Architect) and submitted to the satisfaction of the Registered Certifier with the Construction Certificate application.

59. BCA cl. F1.6 – Sarking: Sarking must be installed to roof and walls for weatherproofing as per AS/NZS 4200.1 and 2 - 2017.

Note: Architectural details, specifications and design certifications are to be prepared by a suitably qualified design practitioner (Registered Architect) and submitted to the satisfaction of the Registered Certifier with the Construction Certificate application

60. BCA cl. F1.7 – Waterproofing of Wet Areas: Wet areas in the building are required to comply with AS 3740-2010.

Note 1: 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.

Note 2: Architectural details, specifications and design certifications are to be prepared by a suitably qualified design practitioner (Registered Architect) and submitted to the satisfaction of the Registered Certifier with the Construction Certificate application

61. BCA cl. F1.9 & F1.10 – Damp Proofing: Compliance with the provisions of the BCA and the referenced Australian Standard is required.

Note: Architectural details, specifications and design certifications are to be prepared by a suitably qualified design practitioner (Registered Architect) and submitted to the satisfaction of the Registered Certifier with the Construction Certificate application.

62. BCA cl. F1.11 – Provisions of floor wastes: All bathroom & laundry facilities within the class 2 Residential Sole Occupancy Units are to have floors that are graded to a floor waste to permit the drainage of water.

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

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

63. BCA cl. F1.13 – 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 AS1288-2006 and full height glazing is to be toughened glass and provided with decals/motifs.

Note: Architectural details, specifications and design certifications are to be prepared by a suitably qualified design practitioner (Registered Architect) and submitted to the satisfaction of the Registered Certifier with the Construction Certificate application.

64. BCA cl. F2.1 – Facilities in Residential Buildings: Each Class 2 sole-occupant unit is to be provided with a Kitchen sink and facilities for the preparation and cooking of food, bath or shower, closet pan & wash basins, laundry facilities including wash tub, and space for a washing machine and dryer proposed in the same room as the washing machine or clothes line with no less than 7.5m of line.

In this regard, it is considered that the proposed design of the building is capable of complying with provision of clause F2.1.

Note: Architectural details, specifications and design certifications are to be prepared by a suitably qualified design practitioner (Registered Architect) and submitted to the satisfaction of the Registered Certifier with the Construction Certificate application.

65. BCA cl. F2.3 – Facilities in Class 3-9 buildings: This clause provides the minimum requirements for sanitary facilities to be provided in Class 2-9 buildings.

It is noted that although the commercial tenancies show sanitary facility, final numbers are to be assessed once the tenancies are let – in particular where and F&B will consist of more than 20 occupants in each space.

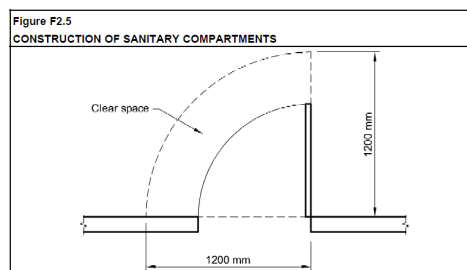
Note: Architectural details, specifications and design certifications are to be prepared by a suitably qualified design practitioner (Registered Architect) and submitted to the satisfaction of the Registered Certifier with the Construction Certificate application.

66. BCA cl. F2.4 – Facilities for people with a Disability: A unisex accessible sanitary facility is required and it must comply with Section 15 of AS1428.1-2009. Where the commercial tenancies will be for food and beverage purposes and more than 20 occupants are proposed in either tenancy or combined, additional facilities will be required and female and male ambulant facilities will be required to be provided and they must comply with Section 16 of AS1428.1-2009.

It is noted that although the commercial tenancies show sanitary facility, final numbers are to be assessed once the tenancies are let – in particular where and F&B will consist of more than 20 occupants in each space.

Note: Architectural details, specifications and design certifications are to be prepared by a suitably qualified design practitioner (Registered Architect) and submitted to the satisfaction of the Registered Certifier with the Construction Certificate application.

67. BCA cl. F2.5 – 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 figure F2.5.



In this regard, details of all doors to fully enclosed sanitary facilities throughout all buildings are to be provided accordingly on the Construction Certificate drawings: The door schedule has noted the doors within 1.2m of the WC to be provided with lift off hinges.

Note: Architectural details, Specifications and design certification are to be prepared by a suitably qualified design practitioners (Registered Architect) to the satisfaction of the Registered Certifier are to be provided with the Construction Certificate application.

68. BCA cl. F3.1 – Height of Rooms: 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.

In addition, the floor to ceiling heights in the remainder must be 2.4 metres (generally in common areas) and the store areas, toilets and corridors etc may be 2.1-metres.

The floor to ceiling height in 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.

Note: Architectural details of ceiling height calculation, Specifications and design certifications are to be prepared by a suitably qualified design practitioners (Registered Architect) to the satisfaction of the Registered Certifier are to be provided with the Construction Certificate application.

69. BCA cl. F4.2 – Provision of Natural Light: Natural light is required to be provided to all habitable rooms in accordance with F4.2. NB: The definition of Habitable Room includes a bedroom, living/dining room, kitchen, study etc.

In this regard, it is considered that the proposed design of the building generally complies with natural light provision of clause F4.1. However, an assessment of the Natural light provisions to the Kitchen to the level 1 unit will need to be considered against the setback provisions and BCA cl. F4.2(b)(iii).

Note: Architectural details of the natural light provision, Specifications and design certifications are to be prepared by a suitably qualified design practitioners (Registered Architect) to the satisfaction of the Registered Certifier are to be provided with the Construction Certificate application.

70. BCA cl. F4.3 – Natural Light Borrowed from Adjoining Room: Natural light is required to be provided to all habitable rooms in accordance with F4.2 and where borrowed light from an adjoining room is relied upon it must comply with the parameters of this clause being:

- The glazed panel in the external wall has an opening area of not less than 10% of the room it serves, and
- 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.
- Refer to BCA guide for further assistance.

71. BCA cl. F4.4 – 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.

Note: Design statement to the satisfaction of the Registered Certifier is to be provided with the Construction Certificate application.

72. BCA cl. F4.5 – Ventilation of Rooms: 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: Architectural & Mechanical Services details, Specifications and design certifications are to be prepared by a suitably qualified design practitioners (Registered Architect and Mechanical Services Engineers) to the satisfaction of the Registered Certifier are to be provided with the Construction Certificate application.

73. BCA cl. F4.11 – Carparks: The carpark is required to be ventilated in accordance with AS1668.2 - 2012.

Note: Mechanical Services details, Specifications and design certifications are to be prepared by a suitably qualified design practitioners (Mechanical Services Engineers) to the satisfaction of the Registered Certifier are to be provided with the Construction Certificate application.

74. BCA Part F5 - 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 F5.

75. BCA cl. F5.3 - Determination of Impact Sound Insulation Ratings: The walls within the Class 2 Residential part of the building that are required to have an impact sound insulation rating must be of discontinuous construction.

Note: 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.

76. BCA cl. F5.4 - Sound Insulation Rating of Floors: The floors separating the sole occupancy units in the Class 2 part of the building as well as between 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.

77. BCA cl. F5.5 – 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 F5.3b.
78. BCA cl. F5.6 – 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.
79. BCA cl. F5.7 – 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.
80. BCA Part F6 Condensation Management: Architectural details and design certification is required to address the condensation management provisions of the BCA.

***Note:** Architectural details, Specifications and design certifications are to be prepared by a suitably qualified design practitioners (Registered Architect) to the satisfaction of the Registered Certifier are to be provided with the Construction Certificate application.*

81. BCA cl. F6.2 – Pliable Building Membranes: The provision of this clause applies to Class 2 parts of the building and requires any pliable building membrane used in external walls to comply with AS/NZS 4200.1 & 2 and the provisions of Clause F6.2 above.

***Note:** Architectural details, specifications and design certifications are to be prepared by a suitably qualified design practitioners (Registered Architect) to the satisfaction of the Registered Certifier are to be provided with the Construction Certificate application.*

82. BCA cl. F6.3 – Flow rate and Ventilation of Exhaust Systems: The provision of this clause requires kitchen, bathroom and laundry exhaust systems in class 2 Buildings to have a minimum flow rate of 25L/s for a bathroom and 40L/s to a Kitchen and laundry and is to discharge directly to outdoor air via a shaft or duct.

***Note:** Architectural & Mechanical Services details, Specifications and design certifications are to be prepared by a suitably qualified design practitioners (Registered Architect and Mechanical Services Engineers) to the satisfaction of the Registered Certifier are to be provided with the Construction Certificate application.*

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:

83. BCA cl. G1.01 (NSW) – Provision for Cleaning of Windows: A building must provide a safe manner of cleaning windows located three (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:** Architectural details, Specifications and design certifications are to be prepared by a suitably qualified design practitioners (Registered Architect) to the satisfaction of the Registered Certifier are to be provided with the Construction Certificate application*

84. BCA cl. G3 – Atrium Construction: This clause specifies when atrium voids are permitted in building which typically allows a 2 storey connection with no sprinklers and 3 storey with sprinklers.

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;

- b) *The central stair connects four (4) levels in the building being the Class 7a basement carpark, Class 6 Retail at Ground Floor and the two (2) Class 2 Residential Levels. Although the building will be sprinkler protected, the concessions for a four-storey connection do not apply. As such, the stair is technically required to be a fire stair and the discharge arrangements as well as the fire and smoke separation arrangements are to be considered.*

Fire Engineered Performance Solution: It is understood that the design team have engaged a C10 Fire Safety Engineer to develop a Performance based Solution to rationalise the open stair/void connections and the report will need to demonstrate compliance with all relevant BCA Performance Requirements (CP2/EP2.2).

Note: Architectural details of egress paths, specifications and design certifications are to be prepared by a suitably qualified design practitioner (Registered Architect) and submitted to the satisfaction of the Registered Certifier 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 is to also be provided.

85. BCA cl. G2.2 & G2.3 – Heating Appliances and Fireplaces: This clause details the Standards and methods of construction of solid fuel burning heating appliances and open fireplaces. The open fireplace construction requirements are set out in sub-clauses (a), (b) (c) & (d), and the installation of a domestic solid burning fuel appliance is to comply with AS/NZS 2918.

Note: Architectural details, Specifications and design certifications are to be prepared by a suitably qualified design practitioners (Registered Architect) to the satisfaction of the Registered Certifier (if these are proposed) and are to be provided with the DA and Construction Certificate application.

86. BCA cl. G6.2 – Fire Hazard Properties: This clause sets out requirements for Open Occupiable Outdoor Areas.

Floor, wall & ceiling linings, insulations, sarking, and any other linings and/or attachments in an open occupiable outdoor area (i.e. Common Open Balcony, terrace walkway, etc) are required to comply with the requirements under this Clause and the Clause & Specification C1.10 accordingly:

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.
- 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.
- Ceiling and wall linings are to have a Material Group Number of 1, 2 or 3 in sprinklered protected buildings.
- Timber feature wall or ceiling linings (or the like) are to comply with the Material Group Ratings under Table C1.10 and are also to have a Material Group Number of 1, 2 or 3 in sprinklered protected buildings.
- Flooring such as timber decking, vinyls, floating floors etc need to achieve a Critical Radiant Flux of not less than 2.2 (in non-sprinkler protected parts) and not less than 1.2 (where sprinklers are installed)

Note: Architectural details, specifications and design certifications are to be prepared by a suitably qualified design practitioners (Registered Architect) to the satisfaction of the Registered Certifier are to be provided with the Construction Certificate application.

BCA SECTION J – ENERGY EFFICIENCY

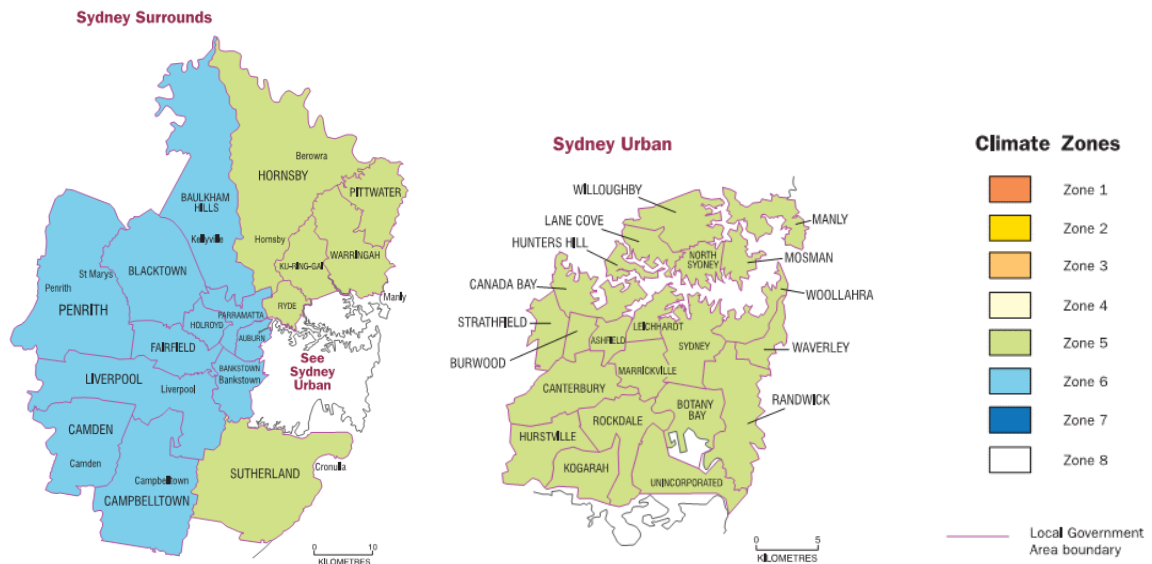
The proposed development will generally satisfy the DTS provisions & Performance Requirements of Section J of the BCA subject to the compliance with the following:

87. 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.

The proposed 7a parts of the building will also be subject to the Energy Efficiency requirements under this section. In this regard the applicable requirements include J1 – Building Fabric, J3 – Building Sealing, J5 – Air Conditioning and Ventilation Systems, J6 – Artificial Lighting and Power, J7 – Hot Water Supply and J8 – 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 adoringly.



Note: In order to demonstrate compliance, it is understood that a Basix Certificate/Section J report from an ESD Consultant will be submitted with the Construction Certificate Application. Glazing calculators to accompany reports.

GENERAL REQUIREMENTS:

88. External and internal surfaces are to comply with the slip resistance criteria referenced under AS/NZS 4586-2013.
89. All safety and toughened glazing need to have permanently affixed labels as required by AS1288 -2006.
90. Roof anchoring systems and roof access provisions need to comply with WH&S and Work Cover requirements.
91. Internal and external carpark areas including driveways, turning circles and car spaces are to comply with AS2890.1 -2004 and AS2890.6-2009.
92. 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.

4. CONCLUSION

This BCA Assessment report contains an assessment of the referenced architectural documentation for the proposed development located at 1102 Barrenjoey Road, Palm Beach NSW 2108, against the Deemed-to-Satisfy provisions and Performance Requirements of the National Construction Code Series (Volume 1) Building Code of Australia 2019 Amendment 1.

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.

In accordance with the above, Concise Certification can verify that the proposed building design will entail a combination of compliance with the DTS provisions and Performance Requirements of the BCA, by virtue of the 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 the compliance matters outlined under **Section 2** and **Section 3** being appropriately addressed by the project Fire Safety Engineer, Competent Fire Safety Practitioners/Design Consultants, Access Consultant, and other key Stakeholders, that compliance with the BCA is readily achievable.

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	BCA Clause C3.13 & AS 1530.4 - 2014 and Manufacturer's Specification
Alarm Signalling Equipment	AS 1670.3 – 2018 and Manufacturer's Specification
Automatic Fire Suppression Systems (sprinklers) (Throughout)	BCA Specification E1.5 & FPAA101H Manufacturer's Specification + Fire Engineered Performance Based Solution
Automatic Fire Detection and Alarm System	BCA Spec E2.2a, AS1670.1-2018 and/or AS3786-2014 and Manufacturer's Specification
Building Occupant Warning System (Throughout)	BCA Spec E2.2 and Clause 3.22 of AS 1670.1 – 2018 and the nominated Sprinkler standards and Manufacturer's Specification
Emergency Lighting	BCA Clause E4.4 & AS2293.1 - 2018 and Manufacturer's Specification
Exit Signs	BCA Clauses E4.5, E4.6 & E4.8 and AS 2293.1 - 2018 and Manufacturer's Specification
Fire Dampers	BCA Clause C3.15, AS1668.1 - 2015 & AS 1682.1 & 2 - 2015 and Manufacturer's Specification
Fire Doors	BCA Clause C2.12, C2.13, C3.8, C3.11, D2.8 and AS 1905.1 – 2015 and Manufacturer's Specification
Fire Hose Reels	BCA Clause E1.4 & AS 2441 – 2005 and Manufacturer's Specification
Fire Hydrant Systems	Clause E1.3 & AS 2419.1 – 2005, FPAA101H and Manufacturer's Specification + Fire Engineered Performance Based Solution
Fire Seals	BCA Clause C3.15, AS 1530.4 – 2014 & AS 4072.1 – 2005 and Manufacturer's Specification
Mechanical Air Handling Systems (Carpark Exhaust + Manual Override at FIP)	BCA Clause E2.2, AS/NZS 1668.1 - 2015 & AS 1668.2 – 2012 and Manufacturers Specifications
Lightweight Construction (Bounding Construction)	BCA Clause C1.8, AS1530.4-2014 and Manufacturers Specifications
Paths of Travel	EP & A Regulation Clause 186 + Fire Engineered Performance Based Solution
Portable Fire Extinguishers (Within 10m of the Residential unit doors, Common areas and MSB)	BCA Clause E1.6 & AS 2444 – 2001
Smoke and Heat Alarms (within Sole Occupancy Units)	BCA Spec E2.2a and AS3786-2014 and Manufacturer's Specification.
Wall-Wetting Sprinklers (Used to protect Openings)	BCA Clause C3.4, & AS 2118.2 – 2010 and Manufacturer's Specification + Fire Engineered Performance Based Solution
Warning & Operational signs	Section 183 of the EP & A Regulations 2000, BCA Clause E3.3
Fire Engineered Performance Solution Report Specifying all DTS departures - Subject to design teams review and assessment and as noted in the report above:	All relevant Performance Requirements associated with the proposed Fire Engineered Performance Solutions

Note: The above schedule may be subject to change upon recommendation from the fire safety engineer or FRNSW at the Construction Certificate stages.