

BCA ASSESSMENT REPORT

BUILDING 28, BULLECOURT AVENUE, MILPERRA NSW 2214 (WSU)

Prepared for: Mirvac C/- Envision Group Pty Ltd

Date: 16 December 2024 **Status:** Revision 01 **Project No.:** 240321

Registered Certifiers | Building Regulation | Passive Fire

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REPORT STATUS				
DATE	REVISION	STATUS	AUTHOR	PEER REVIEW
16/12/2024	01	issued for Client Information/Comment & DA Application Submission	Darko Kardum	Steven Rodriguez

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1. INTRODUCTION

1.1 REPORT BACKGROUND

Concise Certification Pty Ltd has been commissioned by Mirvac C/- Envision Building Design to provide professional Building Code Consultancy Services for the proposed alterations and additions to the Childhood Centre located at Building 28, Bullecourt Avenue, Milperra NSW 2214 (WSU).

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

1.2 REPORT PURPOSE

The key objectives of the report are as follows:

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

1.3 REPORT DOCUMENTATION RELIED UPON

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

- National Construction Code Series – Volume 1 – Building Code of Australia 2022 (BCA)
- National Construction Code Series – Guide to the Building Code of Australia 2022
- Environmental Planning & Assessment Act 1979
- Environmental Planning & Assessment Regulation 2021
- Environmental Planning and Assessment (Development Certification and Fire Safety) Regulation 2021
- Access to Premises - Building Standards 2010
- Architectural Plans prepared by Envision Group Pty Ltd as detailed below:

Plan Number	Revision	Date
DA-01	F	25/11/2024
DA-02	F	25/11/2024
DA-03	F	25/11/2024
DA-04	F	25/11/2024
DA-05	F	25/11/2024
DA-06	F	25/11/2024
DA-07	F	25/11/2024
DA-08	F	25/11/2024
DA-09	F	25/11/2024
DA-10	F	25/11/2024
DA-11	F	25/11/2024
DA-12	F	25/11/2024
DA-13	F	25/11/2024
DA-14	F	25/11/2024
DA-15	F	25/11/2024
DA-16	F	25/11/2024
DA-17	F	25/11/2024

1.4 REPORT LIMITATIONS & EXCLUSIONS

The limitations and exclusions of this report are as follows:

- This report is based on a review of the referenced documentation in the report above.
- This report does not address issues in relation to the design, maintenance or operation electrical, mechanical, hydraulic or fire protection services, Utility Services Provider Requirements (Water, Gas, Telecommunications and Electricity supply authorities), Local Government Act and Regulations, Occupational Health and Safety Act and Regulations or the like.
- This assessment does not incorporate the detailed requirements of the BCA Referenced Australian Standards and it is the responsibility of design and installation contractors to demonstrate and achieve compliance for all new works.
- This report does not in any way imply Safety in Design criteria has been considered in full and is predominantly prepared using the **National Construction Code Series (Vol 1) BCA 2022** as a benchmark. Design consultants are to consider safety in design principles in their design documentation to the degree necessary.
- Although our assessment has considered Part D4 & Clause F4D5 of the BCA, detailed assessment is excluded from our services, and this is to be undertaken by an Accessibility Consultant; or addressed via design certification from the Architect
- Although our assessment has considered Part F of the BCA, detailed assessment of hydraulic/drainage, electrical, mechanical, weatherproofing, waterproofing, condensation management and acoustic requirements is excluded from our services, and this is to be undertaken by suitably qualified design engineers and specialised consultants disciplined in these fields.
- Although our assessment has considered Part J of the BCA, detailed assessment of the Energy Efficiency is excluded from our services, and this is to be undertaken by an Energy Efficiency Consultant; or addressed via design certification from the Architect.
- The commentary in this report is not in any way a contribution to the Fire Safety Strategy and/or meant to contribute to the Fire Engineering Brief process as this is the role of the Fire Safety Engineer – (Certifier in Fire Safety). The commentary within this BCA Assessment Report does not relieve the C10 Fire Safety Engineer from their statutory obligations under EP&A Regs/Act, Building and Development Certifiers Act/Regs.
- Services design documentation was considered however not reviewed as part of this high-level BCA Assessment. Competent Fire Safety Practitioner Certification and drawings are to be provided at the Construction Certificate stages. Further assessment of the architectural and fire services design documentation together with any supplementary documentation will be required at the Construction Certificate application stages.

- It is important to note that this Building Code Assessment Report is not to be misconstrued as being a complete assessment of the detailed design drawings and/or a report which confirms strict compliance with the BCA covering all services, structural and other engineering principles. This is a desktop summary carried out against the presented architectural drawings reference, using Volume 1 of the Building Code of Australia as a benchmark. The report identifies key compliance matters identified from our review of the Architectural drawings which are in the opinion of the author, key matters to be considered further by either way of notation on specifications, detail on plans, design certification and/or via Performance Based Design Briefs and subsequent Performance Based Solutions (where required) to be considered by the Registered Certifier under Section 19 of the Environmental Planning and Assessment (Development Certification and Fire Safety) Regulation.
- The Design Practitioners, Accredited Fire Safety Practitioners, Engineers, Consultants and Building Practitioners are to refer back to the relevant BCA Volumes, relevant Australian Standards, Guidelines, Policies and the like and/or other legislative documents which need to be ready in conjunction with this report.
- The commentary within this BCA Assessment Report does not relieve the Principal Designer, Principal Building Contractor, Structural Engineer, Competent Fire Safety Practitioners and/or the Certifying Authority from their statutory obligations under the Work Health Safety Act, Safety in Design Principles, EP&A Regs/Act, Building Professionals Regs/Act and/or the Design and Building Practitioners Act 2020. The aforementioned are to be satisfied that their designs meets the requirements prior to approval.
- It is important to note that without the written permission from Concise Certification Pty Ltd, no part of this report may be reproduced in any form or by any means. This report is based solely on client instructions and therefore should not be relied upon or used by any third party without prior knowledge and instructions from Concise Certification Pty Ltd.
- This report is based solely on client instructions and therefore should not be relied upon or used by any third party without prior knowledge and instructions from Concise Certification Pty Ltd.
- Concise Certification Pty Limited cannot guarantee acceptance of this report by the Local Council, NSW Fire Brigades, or other approval authorities.

1.5 EXISTING & PROPOSED DEVELOPMENT

The site, the subject of this report, currently consists of a single allotment that is legally known as lot 2 in deposited plan 1291984. The registered address for the site is 2 Bullecourt Avenue & 271 Horsley Road, Milperra NSW 2214.

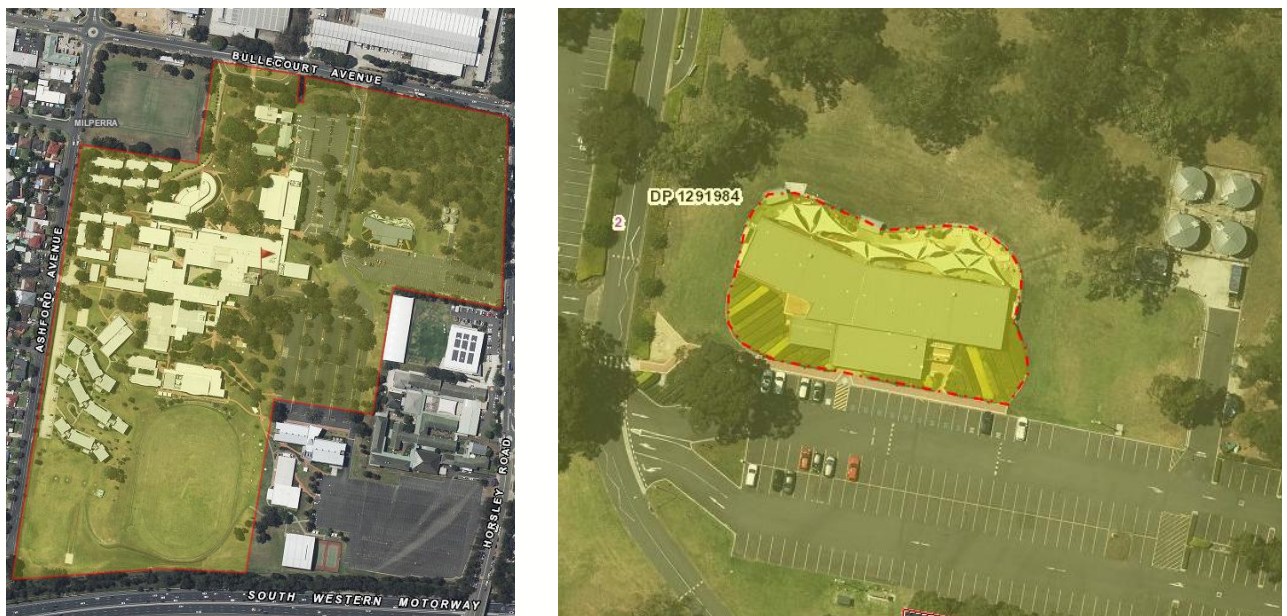


Figure 1 – Satellite Image (Source: Six Maps, November 2024)

The site is irregular in shape and has an approximate area of 19,7400 m². The site is accessed via Bullecourt Avenue to the North or Horsley Drive to the East and is bounded by industrial sites to the North/East/South, residential dwellings to the West.

The proposed development involves alteration and addition to the existing early childhood centre within the existing Western Sydney University grounds and includes a new associated external carparking area and landscaping.

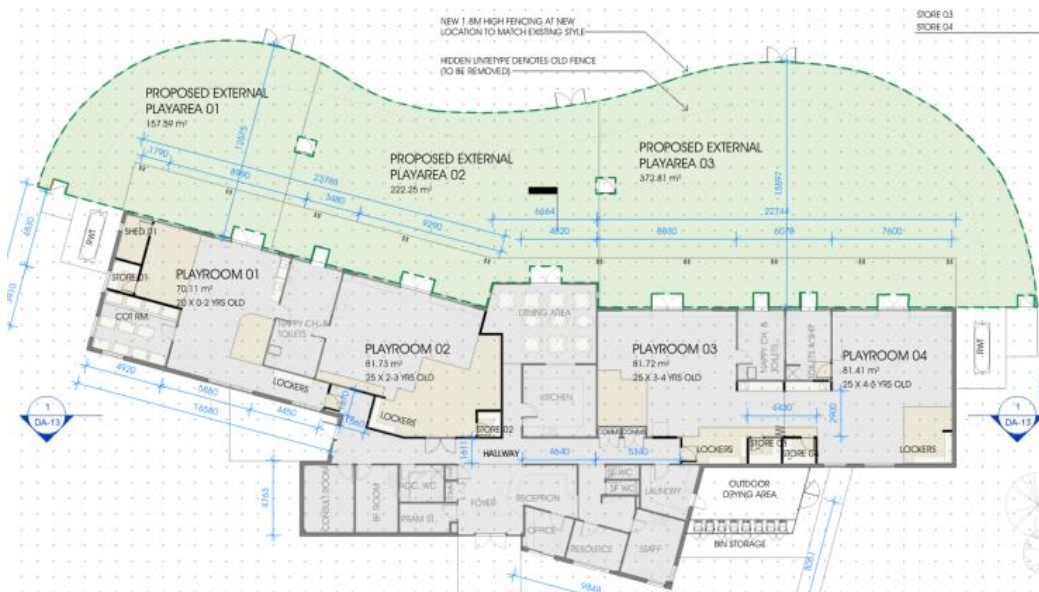


Figure 3 – Proposed 3D View (Source: Envision Group Pty Ltd).

1.6 BUILDING CODE OF AUSTRALIA 2019 (BCA)

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

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

1.7 REPORT STRUCTURE

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

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

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

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

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

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

Relevant BCA Clauses	Description of Compliance Matter Requiring Resolution
BCA Part D4, Clause F4D5 & AS1428.1 (Accessibility requirements)	<p><u>BCA Part D4</u> requires accessibility compliance to be 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 Alternative Solutions by the project Access Consultant;</p> <ul style="list-style-type: none"> a) <u>Accessible Accessways</u> – External and internal accessways need to comply with AS1428.1- 2009; b) <u>Frameless glass doors</u> - Sliding or Swinging, Pivot doors etc may pose compliance departures if they are not provided with colour contrasting door jams.; c) <u>Ambulant Facilities and Unisex Accessible Facilities</u> – Layouts and fixtures are to be provide at the Constriction Certificate stages. <p>Accessibility Compliance & Performance Solution Report: it is understood that an access consultant has been engaged to review the proposal and provide an Accessibility compliance / Performance Solution Report to accompany the Construction Certificate application submission to ensure that all aspects of the DDA, AS1428.1-2009 and Part D4 and Part F4 of the BCA have been addressed.</p> <p>Note: Architectural Details and Design Certification to the satisfaction of the Registered Certifier carrying our certification work are to be provided with the Construction Certificate application incorporating all recommendations of the latest rendition of the Accessibility compliance and / BCA Performance Based Design Brief and Performance Based Solution Report addressing BCA Performance Requirements D1P1 & F4P1</p>
BCA Clause E1D2 (Fire Hydrants)	<p><u>BCA Clause E1D2</u> requires hydrants coverage to the building in accordance with AS2419.1-2021.</p> <p>In this regard, the following areas have been identified as matters which may be requiring further design consideration and/or justification via Performance-Based Alternative Solutions by the project Fire Safety Engineer;</p> <ul style="list-style-type: none"> (a) <u>Fire Hydrant Coverage</u> – The drawings did not identify the location of any Fire Hydrants which are required to serve the building. Detailed sweep coverage plans with dimensions are to accompany the Construction Certificate application. Where street hydrant coverage is being relied upon, an Accredited Practitioner fire safety is to obtain a Fire Flow Enquiry from Sydney Water and confirm pressures, flows and coverage comply with the parameters of AS2419.1-2021 accordingly. (b) <u>Fire Hydrant Location</u> – Where onsite Hydrants are required, they are to be noted on the plans and where internal, located on each storey within 4m of an exit ensuring egress paths are not reduced to under 1.0m (unless otherwise addressed via a Performance Based Solution); External hydrant will need to be located no less than 10m form a non-sprinkler protected and must not be obstructed by vehicle parking spaces. (c) <u>Fire Brigade Booster Assembly Location</u> – Where required, booster assembly details are to be included on the elevations showing the proposed located of the Hydrant Boosters and arrangements to ensure appropriate heights and clearances are achieved; (d) <u>Fire Hydrant Design Departures</u> – Any departures associated with the systems Standard of Performance (AS2419.1-2021) needs to be identified by the Accredited Practitioner/Competent Fire Safety Practitioner for the Registered Certifier and Fire Safety Engineers consideration. <p>Fire Engineered Performance Solution: Where any part of design is proposed to deviate (subject to design engineers' advice) the design team will need to refer the departure to the Fire Safety Engineer to develop a Performance Based Solution and the report will need to demonstrate compliance with all relevant BCA Performance Requirement (E1P3) at the Construction Certificate stage.</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 Specifications and Design Certification are to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier. Where required, a copy of any Fire Engineers Report prepared by an Accredited C10 Certifier – Fire Safety, is to also be provided.</p>
<p>BCA Clause E1D3 (Fire Hose Reels)</p>	<p><u>BCA Clause E1D3</u> specifies the requirements for Fire Hose Reels in Buildings.</p> <p>In this regard, the following areas have been identified as matters which may be requiring further design consideration and/or justification via Performance-Based Solutions by the project Fire Safety Engineer;</p> <ul style="list-style-type: none"> a) <u>Fire Hose Reel Coverage</u> – Fire Hose Reel coverage is required to all areas of the building including services plant room and waste room without passing through a fire door. b) <u>Fire Hose Reel Coverage Plans</u> – Fire Hose reels are to be located within 4m of an exit and adjacent to any internal fire hydrant installed ensuring egress paths are not reduced to under 1.0m (unless otherwise addressed via a Performance Based Solution). Detailed sweep coverage plans with dimensions are to accompany the Construction Certificate application. c) <u>Fire Hose Reel Design Departures</u> – Any departures associated with the systems Standard of Performance (AS2441.1-2005) needs to be identified by the Accredited Practitioner/Competent Fire Safety Practitioner for the Registered Certifier and Fire Safety Engineers consideration. <p>Fire Engineered Performance Solution: It is understood that the client may engaged the services of a Fire Safety Engineer to consider a Performance Based Solution to rationalise the Fire Hose Reel & coverage arrangements by demonstrating compliance with BCA Performance Requirements E1P1.</p> <p>Note 1: The Fire Services Design Engineer must 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 Specifications and Design Certification are to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier. Where required, a copy of any Fire Engineers Report prepared by an Accredited C10 Certifier – Fire Safety, is to also be provided</p>
<p>BCA Clauses E1D4, E1D5, E1D11 & Specification 17 (Sprinklers)</p>	<p><u>BCA Clauses E1D4, E1D5, E1D11</u> requires sprinklers to buildings in accordance with AS2118.1-2017.</p> <p>In this regard, the following areas have been identified as matters which may be requiring further design consideration and/or justification via Performance-Based Alternative Solutions by the project Fire Safety Engineer;</p> <ul style="list-style-type: none"> (a) Although sprinklers coverage is not technically required given direct egress from the Early Childhood Centre to the road or open space is provided, Fire and Rescue NSW (FRNSW) have issued a Position Statement recommending all Early Childhood Centres be sprinkler protected throughout irrespective of the concessions provided in the BCA which will need to be considered by the Design Team, Fire Safety Engineer and Accredited Certifier at the Construction Certificate Stage. <p>Fire Engineered Performance Solution: It is understood that the client may engage the services of a Fire Safety Engineer to prepare a Performance Based Solution report to rationalise several BCA departures which will require stakeholder referral to FRNSW via the FEBQ process at the Construction Certificate Stage where in principal support for any fire safety strategy may not be provided if the building is not sprinkler protected. Further consideration in this regard, will be required from the Design Team, Fire Safety Engineer and Accredited Certifier to determine whether the building is to be sprinkler protected.</p> <p>Note 1: Where sprinklers are proposed as a result of the above, 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 Specifications and Design Certification are to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier. Where required, a copy of any Fire Engineers Report prepared by an Accredited C10 Certifier – Fire Safety, is to also be provided.</p>
<p>BCA Clause E1D17 (Special Hazards)</p>	<p><u>BCA Clause E1D17</u> specifies that certain building may require additional consideration for fire safety.</p> <p>In this regard, the following areas have been identified as matters which may be requiring further design consideration and/or justification via Performance-Based Alternative Solutions by the project Fire Safety Engineer;</p>

	<p>(a) <u>Photovoltaic/Solar Panels</u> – Where Photo voltaic panels are proposed on the Roof and or where any battery storage systems are proposed, these need to be identified in any FEBQ/FER. Where battery storage systems are also proposed, these may need to be contained in separate fire rated enclosures and also identified in any FEBQ/FER.</p> <p>Fire Engineered Performance Solution: It is understood that the client has engaged the services of a Fire Safety Engineer to prepare a Performance Based Solution to rationalise several DTS departures and these Special Hazards provisions need consideration accordingly.</p> <p>Note 1: Photo voltaic panels, BESS systems and EV chargers may be required in this building as a direct result of compliance with the energy efficiency requirements of Part J of the BCA.</p> <p>Note: Architectural & Fire Services Details Specifications and Design Certification are to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier. Where required, a copy of any Fire Engineers Report prepared by an Accredited C10 Certifier – Fire Safety, is to also be provided.</p>
<p>BCA Clauses E2D3, E2D4 & Specification 20 & 21 & NSW Variations E2D16 & E2D19 (Smoke Hazard Management)</p>	<p><u>BCA Clauses E2D3, E2D9 & Specification 20</u> specifies smoke hazard management systems applicable to buildings and in this case, the following are required;</p> <ul style="list-style-type: none"> - AS1670.1-2018 Automatic Fire Detection and Alarm System throughout. <p>In this regard, the following areas have been identified as matters which may be requiring further design consideration and/or justification via Performance-Based Alternative Solutions by the project Fire Safety Engineer;</p> <p>(a) <u>Smoke Detection Systems</u> – An Automatic Fire Detection and Alarm System is required throughout building in accordance with BCA Specification 20 (subclause S20C6) and AS1670.1-2018.</p> <p>(b) <u>Auto shutdown</u>, - Automatic shutdown of air handling systems is to be ensured.</p> <p>(c) <u>Fire Indicator Panel</u> – A Fire Panel (FDCIE) needs to be installed at the main designated entry to the building with clearances for brigade personnel and egress from the building maintained..</p> <p>(d) <u>Smoke Hazard management Design Departures</u> – Any departures associated with the systems Standard of Performance (AS1670.1-2018 / AS1668) needs to be identified by the Accredited Practitioner / Competent Fire Safety Practitioner for the design team and Registered Certifiers consideration.</p> <p>Fire Engineered Performance Solution: Where any part of design is proposed to deviate (subject to design engineers' advice) the design team will engage a C10 Fire Safety Engineer to develop a Performance Based Solution to rationalise certain aspects of the Smoke Hazard Management System designs and the report will need to demonstrate compliance with all relevant BCA Performance Requirements (E2P2).</p> <p>Note 1: The Fire Services Design Engineer must be an Accredited Practitioner - (Fire Safety) having relevant accreditation with the Fire Protection Association of Australia (FPAA) or the Department of Fair trading. Furthermore, the designer must have suitable qualifications in the respective fields they are designing to, and their design details and certifications are to identify any shortfalls or departures associated with the either the BCA or the relevant Australian Standards.</p> <p>Note 2: Architectural & Fire Services Details Specifications and Design Certification are to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier. Where required, a copy of any Fire Engineers Report prepared by an Accredited C10 Certifier – Fire Safety, is to also be provided.</p>
<p>BCA Clause F3D1, F3D2, F3D3, F3D4 & F3D5 (Wall Cladding / External Wall Weather proofing)</p>	<p><u>BCA Clause F3D5 and F3D1, F3D2, F3D3, F3D4 & F3D5</u> specify the need for designers to ensure the external walls are designed to prevent water and moisture ingress.</p> <p>In this regard, the following areas have been identified as matters which may be requiring further design consideration and/or justification via Performance-Based Alternative Solutions by the project Architect or Façade Engineer;</p> <p>(a) In order to comply with the deemed to satisfy provisions, the architect and façade engineers must design the building envelope and surrounding surfaces in accordance with Clauses F3D2, F3D3, F3D4 & F3D5 and where this cannot be achieved, a Performance based solution utilising Verification F3V1 and Performance Requirements F3P1.</p> <p>BCA Performance Solution: Façade Engineer to prepare a report to assess water and moisture ingress via the external walls and roof whilst considering BCA Clauses F3D1, F3D2, F3D3, F3D4, F3D5 & F8D2 to F8D5 and also develop a Performance Based Solution to address BCA Clauses F3D5 and BCA Performance Requirement F3P1, as it is unlikely that the external wall cladding will comply with these provisions accordingly.</p> <p>Note 1: External cladding that does not consist of the above options will need to be subject to performance - based solutions.</p> <p>Note 2: External wall claddings in buildings of Type A Construction must be non-combustible and tested in accordance with AS1530.1-1994 as required by BCA Clause C2D10.</p>

	<p>Note 3: External waterproofing membranes in accordance with F1D5 and AS4654.1 or 2 - 2012 are not permissible for vertical or near vertical surfaces and relate to horizontal surfaces only.</p> <p>Note 4: Architectural and/or Façade Engineering Details, Specifications and Design Certifications are to be prepared by suitably qualified designers (Architect/ Façade Engineer) and submitted to the satisfaction of the Registered Certifier at the Construction Certificate application stage. Where design departures are proposed, a Performance Based Solution addressing BCA performance Requirement F3P1 and Verification Method F3V1 respectively, is to be prepared by the Engineer and a copy of the Report is to also be provided</p>
BCA Clause F4D3 & F4D4 (Sanitary & Other Facilities)	<p>BCA Clause F4D3 & F4D4 specify the number of sanitary facilities and accessible/ambulant required to accommodate the population numbers expected to occupy the building.</p> <p>In this regard, the following areas have been identified as matters which may be requiring further design consideration or justification via a Performance Based Solution;</p> <p>(a) Kitchen & Bottle Prep Supervision Requirements – The Kitchen and bottle pre rooms will unlikely have the ability to facilitate supervision of children from these areas and this departure will require rationalisation via a Performance Based Solution;</p> <p>(b) Supervision from Nappy Change Area – Supervision of the play areas from the nappy change bench may not be achievable and any departures will require rationalisation via a Performance Based Solution;</p> <p>a) Separate Facilities – Any proposed Gender Neutral or Unisex facilities will require justification via a BCA Performance Solution.</p> <p>BCA Performance Solution: It is understood that the applicant will engage the BCA Consultant to prepare a Performance Based Solution in accordance with Clause A2G2 to rationalise the departures above relating to supervision of children and access to sanitary facilities by demonstrating compliance with all relevant BCA Performance Requirements (F4P1/F4P3).</p> <p>Note: Architectural Details and Design Certification to the satisfaction of the Registered Certifier carrying our certification work are to be provided with the Construction Certificate application. BCA Performance Based Design Brief and Performance Based Solution Report will also need to be provide.</p>
BCA Clause F5D2 (Height of Rooms and Other Spaces)	<p>BCA Clause F5D2 specify the minimum ceiling heights required to habitable and non-habitable rooms</p> <p>In this regard, the following areas have been identified as matters which may be requiring further design consideration or justification via a Performance Based Solution;</p> <p>(a) Ceiling Heights – there are ceiling heights that may be less than 2.7m in height and any departures will require rationalisation via a Performance Based Solution;</p> <p>BCA Performance Solution: It is understood that the applicant will engage the BCA Consultant to prepare a Performance Based Solution in accordance with Clause A2G2 to rationalise the departures above relating to ceiling heights by demonstrating compliance with all relevant BCA Performance Requirements (F5P1)</p> <p>Note: Architectural Details and Design Certification to the satisfaction of the Registered Certifier carrying our certification work are to be provided with the Construction Certificate application. BCA Performance Based Design Brief and Performance Based Solution Report will also need to be provide</p>
BCA Clause F6D2 (Height of Rooms and Other Spaces)	<p>BCA Clause F6D2 specify the minimum natural light provisions required to room and minimum window sill heights to certain rooms in early childhood centres.</p> <p>In this regard, the following areas have been identified as matters which may be requiring further design consideration or justification via a Performance Based Solution;</p> <p>(a) Cot Room – window sill heights are greater than 500mm in the Cot room which will require departures rationalised via a Performance Based Solution;</p> <p>(b) Play Rooms – There may be window sill heights which are greater than 500mm for more than 50% of the windows serving these room and this will need to be confirmed by the Architect with any departures rationalised via a Performance Based Solution.</p> <p>BCA Performance Solution: It is understood that the applicant will engage the BCA Consultant to prepare a Performance Based Solution in accordance with Clause A2G2 to rationalise the departures above relating to windows sill heights in the Cot room by demonstrating compliance with all relevant BCA Performance Requirements (F6P1)</p> <p>Note: Architectural Details and Design Certification to the satisfaction of the Registered Certifier carrying our certification work are to be provided with the Construction Certificate application. BCA Performance Based Design Brief and Performance Based Solution Report will also need to be provide</p>

<p>BCA Part J (Energy Efficiency)</p>	<p><u>BCA Section J</u> specifies the energy efficiency provision applicable to the building. Detailed Section J compliance report to be provided at the Construction Certificate stage. In addition to the above, a Performance /Verification Report will be required given the extent of west face glazing.</p> <p><u>Note 1:</u> From 1 May 2023 to 30 September 2023 Section J of NCC 2019 Volume One Amendment 1 <u>may</u> apply instead of Section J of NCC 2022 Volume One. From 1 October 2023 Section J of NCC 2022 Volume One applies.</p> <p><u>Note 2:</u> In order to demonstrate compliance, it is understood that a Section J report and Verification report from an ESD Consultant will be submitted with the Construction Application. Glazing calculators to accompany reports.</p>
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It is important to note that the above is not an exhaustive list of the matters requiring attention and the summary is to be read in conjunction with the remainder of the report in Section 3 below.

3. BCA ASSESSMENT

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

SECTION A – GENERAL PROVISIONS & KEY BUILDING CHARACTERISTICS:

The key building characteristics and classifications for the proposed development as determined by Vol 1 of the **Building Code of Australia 2022** are as follows:

CHARACTERISTICS	PROPOSED GOVERNMENT SERVICES & LIBRARY BUILDING
– BCA CLASSIFICATION:	Class 9b (Childhood Centre)
– RISE IN STOREYS:	One (1)
– STOREYS CONTAINED:	One (1)
– TYPE OF CONSTRUCTION:	Type C Construction
– EFFECTIVE HEIGHT:	<12m (Single Storey)
– FIRE COMPARTMENTS:	Complies with BCA Table C2.2
– CLIMATE ZONE:	Climate Zone 5

Note: The storage rooms are considered to be ancillary to the class 9b Early Childhood Centre and the floor area of office is considered to not occupy more than 10% of the floor area of the storey and therefore, the BCA classification of the building is a Class 9b. Confirmation is to be provided by the architect and should these areas change, a reassessment of the design is required at the Construction Certificate application stage.

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	>6m from boundary of the opposite side of Bullecourt (Approx. 155m)
– SOUTHERN SIDE	>3m from the site boundary adjoining the allotment (Approx. 47m)
– EASTERN SIDE	>6m from boundary of the opposite side of Horsley Road (Approx. 123m)
– WESTERN SIDE	>3m from another building of the same allotment (Approx. 74m)

Note: The fire source features are deemed to be allotment boundaries and/or other buildings on the same allotment other than a building that is a class 10 structure. Therefore, all free-standing class 10 structures are not deemed a fire source feature.

Floor Area / Volume:

The maximum permissible fire compartment sizes for the different classification in the development must comply with the limitations of BCA Table C3D3, in a building of **Type C Construction** as per the summarised details below:

CLASSIFICATIONS	FIRE COMPARTMENT SIZES	COMPLIES
– CLASS 9b – (Early Childhood Facility)	Maximum 3,000m ² and 18,000m ³	Yes

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

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

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

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

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

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

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

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

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

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

Note 4: All DTS departures require Performance-Based Design Briefs (PBDB) to be prepared to outline their proposal for justification of the departures and for purposes of providing the relevant stakeholders with the opportunity for comment and concurrence, prior to the formalisation of the Final BCA Performance Solution Report/s

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

In this regard it is understood the building's is Classified as a Class 9b (Early Childhood Centre)

Note: The floor area of the Storage rooms and office is considered ancillary to the class 9b Early Childhood centre and in any case do not occupy more than 10% of the floor area of the storey and therefore, the BCA classification adopted on the ground floor is Class 9b throughout.

Section B – Structural Provisions:

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

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

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

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

The design must consider (but not be limited to) the following Australian Standards, their respective Amendments as adopted by BCA 2022 and any other applicable secondary standards accordingly:

- AS 1170.0 – 2002 General Principles
- AS 1170.1 – 2002 (Amendments 1 & 2), Permanent Imposed & Other Actions - including certification for balustrades (dead and live loads)
- AS 1170.2 – 2021, Wind loads
- AS 1170.4 – 2007 (Amendments 1 & 2), Earthquake Actions in Australia
- AS 1288 – 2021, Glass in Buildings Selection & Installation.
- AS1530.4-2014, Fire-Resistance Tests on Elements of Construction
- AS1657-2018, Fixed Platforms, Walkways, Stairways and Ladders
- AS/NZS 1664.1 and 2 – 1997, Aluminium construction
- AS 2159 – 2009, Piling
- AS 2047 – 2014, Windows in buildings
- AS2312.1 and AS/NZS2312.2-2014 Protection of steel – Hot Dipped and Coated. (Housing)
- AS2327-2017 (Amendment 1), Composite Steel-Concrete Construction in Buildings
- AS2699.1 & 2 – 2020, Masonry Construction and Lintels and Shelf Angles
- AS 3600 – 2018, Concrete Structures
- AS3666.1& 3 – 2014, Termite Management
- AS 3700 – 2018, Masonry code
- AS 4100 – 2020, Steel Structures
- AS/NZS 4505-2012, Garage Doors
- AS 4600 – 2018, Cold Formed Steel Structures
- AS5215-2021, Post Installed and Cast-in Fasteners in Concrete
- AS5146.1-2015 – Reinforced Autoclave Aerated Concrete Structures
- ABCB – 2011, Protocol for Structural Software, Version 2011.2
- ABCB - 2012, Buildings in Flood Hazard Areas, Version 2012.3
- ISO8336 - 1993E, Fibre Cement Flat Sheets
- Nash Standard - 2021 Steel Framed Construction in Bushfire Areas
- Nash Standard Part 1 – 2005, and Part 2-2014, Residential and Low Rise Steel Framing (Including all Amendments)
- Structural engineer to consider Importance Levels in their design declarations.
- BCA Schedule 5 – Fire Resistance of Building Elements
- All other relevant Australian Standards, Guidelines and Referenced/cross referenced standards

Note 1: It is the structural Engineers responsibility to ensure they design the building to cater for the appropriate Importance Levels of BCA. Table B1D3a identifies the Importance Levels of Building & Structures that must be considered by the structural engineer and which must be read in conjunction with AS1170.4-2007 accordingly, noting the BCA takes precedence over any inconsistencies in this regard. The Structural Engineer is responsible for determining compliance with the above.

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

utility and services interfaces, lift machinery, escalators, lighting fixtures, electrical boards, conveyors and etc as detailed within the standards.

Note 3: Termite mitigation measures are required where primary timber elements are proposed. This includes any primary timber elements such as internal stairways, internal walls, roofs, floors or the like. Notwithstanding, it is recommended that termite mitigation, measures are considered irrespectively

Note 4: Structural engineer is to provide a list of DTS design departures needing consideration by the project fire safety engineer. Should no design departures be identified, the Registered Certifier and Building Practitioner are entitled to rely on the Design certification for BCA Compliance in this regard.

Note 5: Structural engineer is to ensure their designs comply with the referenced documents in Schedule 2 of the BCA (Including Amendments to Standards) and identify to the Registered Certifier and Registered Fire Safety Engineer, any departures to these standards of performance that need further consideration via Performance Based Solutions. Should no design departures be identified, the Registered / Principal Certifier and Building Practitioner are entitled to rely on the Design Certifications and Declaration for BCA Compliance in this regard.

Note 6: where the roof structure is proposing photovoltaic / solar panels (or as required by BCA Section J) the roof must be designed to cater for the additional loads and uplift of winds from the coastline. Design documentation must take into account these provisions and verify the design has considered these accordingly at the Construction Certificate application stage.

Note 7: Structural details labelled for construction together with Structural Specifications, Design Certification and Design Declarations (as required under the Design and Building Practitioners Act) are to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier..

Note 8: Architectural and Structural Details and Specifications identifying the relevant Australian Standards, Wall Types/Systems/Materials/FRL's/ Fire Hazard Properties, External Schedule of Finishes including cross sectional wall details are to be provided. Design Certification is also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier.

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:

1. **BCA cl. C2D2 & C2D3 & C2D4 Type of Construction and Rise in Storeys:** The building will be **Type C Construction** by virtue of the Rise in Storeys of the building being assessed as **one (1)**.

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

2. **BCA cl. C2D9 – Lightweight Construction:** Lightweight construction must comply with Specification C1.8 if used in a wall system in accordance with sub-clauses (1) & (2). The fire rated applications must comply with manufacturers specifications and be certified accordingly.

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

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

Note 3: Architectural Details, Specifications and Design Certification/s are to be prepared by a suitably qualified designer (Architect) and submitted to the satisfaction of the Registered Certifier at the Construction Certificate application stage.

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

- a) In a building required to be of Type A or B construction, the following building elements and their components must be non-combustible:
 - (i) External walls and common walls, including all components incorporated in them including the facade covering, framing and insulation.
 - (ii) The flooring and floor framing of lift pits.
 - (iii) Non-loadbearing internal walls where they are required to be fire-resisting.
- b) A shaft, being a lift, ventilating, pipe, garbage, or similar shaft that is not for the discharge of hot products of combustion, that is non-loadbearing, must be of non-combustible construction in—
 - (i) a building required to be of Type A construction; and
 - (ii) a building required to be of Type B construction, subject to 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.

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

In this regard, the building of type C construction however, it is recommended that non-combustible materials are used in all external walls in accordance with the above Clause;

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

Note 2: Our office does not endorse the use of any Aluminium Composite Panels, PVC modular wall systems and/or any other combustible components in external walls and bounding construction. All external/bounding wall assembly components must be supported by test reports in accordance with AS1530.1 -1994 or by unconditional Codemark Certification.

Note 3: Architectural Details and Specifications identifying the relevant Australian Standards, Wall Types/Systems/Materials/FRL's/ Fire Hazard Properties, External Schedule of Finishes including cross sectional wall details are to be provided. Design Certification is to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier.

9. BCA cl. C2D11 – Early Fire Hazard Properties: Floor, wall & ceiling linings, sarking, and any other linings and attachments are required to comply with the requirements under Clause & Specification 7. In this regard we provide the following notes which are to be read in conjunction with the tables in the BCA:
 - All reflective foils such as sarking/insulations need to achieve compliance and have a flammability index of not greater than 5.
 - Ceiling and wall linings are to have a Material Group Number of 1, 2 or 3 in sprinklered protected buildings and 1 or 2 in non-sprinkler protected buildings .
 - Timber feature wall or ceiling linings (or the like) are to comply with the Material Group Ratings under Table C2D11 and are also to have a Material Group Number of 1, 2 or 3 in sprinklered protected buildings and 1 or 2 in non-sprinkler protected buildings.
 - Flooring such as carpets, vinyls, floating floors etc need to achieve a Critical Radiant Flux of not less than 1.2 (where sprinklers are installed) and of not more than 2.2 (where no sprinklers are installed).

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

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

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

Note 4: Architectural Details and Specifications identifying the Wall Types/Systems/Materials and the Fire Hazard Properties achieved are to be provided. Design Certification is to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier.

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

An ancillary element must not be fixed, installed or attached to the internal parts or external face of an external wall that is required to be non-combustible unless it is one of the following:

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

In this regard, the building is of type C construction however, it is recommended that at attachments to external walls are non-combustible and/or in accordance with the above Clause

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

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

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

Note 4: Architectural Details and Specifications identifying the relevant Australian Standards, Wall Types/Systems/Materials/FRL's/ Fire Hazard Properties, External Schedule of Finishes including cross sectional wall details are to be provided. Design Certification is to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier.

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

Classification	Type A construction	Type B construction	Type C construction
<u>5, 9b</u> or 9c	Max floor area - 8 000 m ² Max volume - 48 000 m ³	Max floor area - 5 500 m ² Max volume - 33 000 m ³	Max floor area - 3 000 m ² max volume - 18 000 m ³

Figure 4 – Table C3D3 (Source: NCC/BCA 2022)

In this regard, the total floor areas and volume of the building does not exceed the fire compartment limitations as detailed above for a building of Type C construction

Note: Architectural Details, Fire Compartment Plans, Specifications and Design Certifications are to be prepared by a suitably qualified design practitioner (Architect) and submitted to the satisfaction of the Registered Certifier at the Construction Certificate application stage.

3. **BCA cl. C3D6 – Class 9 Buildings:** In a building containing a Class 9b Early Childhood Centre that does not provide direct egress to road or open space or has a rise in storeys of more than two (2), unless the Class 9b early childhood centre is the only use in the building, it must be separated from the remainder of the building by walls and/or floors with an FRL not less than that required for a fire wall; and each storey within the Class 9b early childhood centre must contain not less than 2 fire compartments.

In this regard, the Early Childhood Centre provides direct egress to the road and opens space and therefore fire separation and compartmentation as required by the above clause is not applicable.

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

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

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

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

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

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

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

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

Note 2: Additionally, there is to be a suitable portable fire extinguisher located between 2m and 10m of the room.

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

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

In this regard, the external walls are located greater than 3m from allotment boundaries and no protection is required to openings.

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

Note: Architectural Details, Design Certifications, Services Details and Specifications/ passive Fire report identifying fire seals and fire ratings proposed are to be prepared by a suitably qualified design practitioner (Architect / Passive fire consultant) and submitted to the satisfaction of the Registered Certifier at the Construction Certificate application stage.

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

Note: Architectural Details, Design Certifications, Services Details and Specifications/ passive Fire report identifying fire seals and fire ratings proposed are to be prepared by a suitably qualified design practitioner (Architect / Passive fire consultant) and submitted to the satisfaction of the Registered Certifier at the Construction Certificate application stage.

9. BCA cl. C4.D15 – Openings for Service Installations: Where service installations penetrate the walls or floors required to have an FRL with respect to integrity and insulation they are to be protected by fire seals having an FRL of the building element concerned. Fire seals are required to comply with C4.D15, Specification C3.13, AS1530.4-2014, AS 4072.1- 2005 and Manufacturers Specifications.

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

Note 2: Passive fire services consultant is to review all services penetrations and provide further details on the method of fire protection proposed identifying any additional matters that will require further consideration by the fire safety engineer that may need addressing via a performance based solution.

Note 3: Architectural Details, Design Certifications, Services Details and Specifications/ passive Fire report identifying fire seals and fire ratings proposed are to be prepared by a suitably qualified design practitioner (Architect / Passive fire consultant) and submitted to the satisfaction of the Registered Certifier at the Construction Certificate application stage..

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

Note: Architectural Details, Design Certifications, Services Details and Specifications/ passive Fire report identifying fire seals and fire ratings proposed are to be prepared by a suitably qualified design practitioner (Architect / Passive fire consultant) and submitted to the satisfaction of the Registered Certifier at the Construction Certificate application stage.

11. BCA Specification 5 – Fire Resisting Construction: The building is of **Type C Construction** and as such all new building elements will need to comply with the FRL's detailed in BCA **Specification 5, Section S5C24 – Tables S5C24a to S5C24e and Clauses S5C25 (as applicable).**

In this regard, it is noted that the setback from the adjacent allotment boundaries and other structures on the allotment is considered to be greater than 3m and therefore, internal and external walls and columns require no FRL's.

Note: Architectural Details and Specifications identifying the Wall Types/Systems/Materials and the FRL's achieved are to be prepared by a suitably qualified design practitioner (Architect / Passive fire consultant) and submitted to the satisfaction of the Registered Certifier at the Construction Certificate application stage.

SECTION D – ACCESS AND EGRESS:

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

12. BCA cl. D2D3 – Number of Exits Required: The building is required to be provided with a two (2) exits from the ground floor level.

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

- Ground Floor Level - Main entrance door and the multiple perimeter doors from the play spaces to outdoor areas;

An Exit is defined by the BCA as follows:

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

Open Space is defined by the BCA as follows:

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

Note: Architectural Details and Specifications are to be prepared by a suitably qualified design practitioner (Architect) cross referencing any Fire Engineering requirements and submitted to the satisfaction of the Registered Certifier at the Construction Certificate application stage.

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

9b (Early Childhood Centre) - The exit travel distances throughout these 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 to one of the exits accordingly.

In this regard, given there are multiple exit doors within the Early Childhood Centre, egress travel distances are considered compliant throughout the development.

Note: Architectural Details and Specifications are to be prepared by a suitably qualified design practitioner (Architect) cross referencing any Fire Engineering requirements and submitted to the satisfaction of the Registered Certifier at the Construction Certificate application stage.

14. BCA cl. D2D6 – Distances Between Alternative Exits: The distance between alternative exits within the building must not exceed 60 metres and/or be located less than 9m apart.

In this regard, given there are multiple exit doors within the Early Childhood Centre, egress travel distances between alternative exits are considered compliant.

Note: Architectural Details and Specifications are to be prepared by a suitably qualified design practitioner (Architect) cross referencing any Fire Engineering requirements and submitted to the satisfaction of the Registered Certifier at the Construction Certificate application stage.

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

In this regard, it is considered that the proposed design of the building generally complies with the egress heights provisions of D2D7 however, services design details are to be reviewed and confirmation is to be provided that services are not encroaching below the minimum head height clearances of 2.0m including such items as kitchen exhaust hoods, mechanical ducting, service pipes, etc.

Note: Architectural Details and Specifications are to be prepared by a suitably qualified design practitioner (Architect) cross referencing any Fire Engineering requirements and submitted to the satisfaction of the Registered Certifier at the Construction Certificate application stage.

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

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

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

As part of the following assessment total population numbers that are considered in the assessment is understood to be 94 Children (as nominated on the plans) and 12 Staff (based on the number of Staff parking spaces) totalling – 106 people.

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

Note: Architectural Details and Specifications are to be prepared by a suitably qualified design practitioner (Architect) cross referencing any Fire Engineering requirements and submitted to the satisfaction of the Registered Certifier at the Construction Certificate application stage.

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

In this regard, it is considered that the proposed design of the building generally complies with the egress dimension provisions of D2D9. Access Consultant to provide comments on doors widths required to be accessible.

Note: Architectural Details and Specifications are to be prepared by a suitably qualified design practitioner (Architect) cross referencing any Fire Engineering requirements and submitted to the satisfaction of the Registered Certifier at the Construction Certificate application stage.

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

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

Note: Architectural Details and Specifications are to be prepared by a suitably qualified design practitioner (Architect) cross referencing any Fire Engineering requirements and submitted to the satisfaction of the Registered Certifier at the Construction Certificate application stage.

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

Note: Architectural Details and Specifications are to be prepared by a suitably qualified design practitioner (Architect) cross referencing any Fire Engineering requirements and submitted to the satisfaction of the Registered Certifier at the Construction Certificate application stage.

20. BCA cl. D2D15 – Discharge from Exits: Upon egress occupants must have suitable paths of travel including compliant stairways and ramps (where required) between the building and the Roadway. Graded surfaces must not be steeper than 1:8 and pedestrian egress ramps require handrails and non-slip finishes.

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

In this regard, It is considered that the proposed design of the external walkway and pavements between the discharge doors of the exits and the road way will be no steeper than 1:20 and or provided with appropriate stairs and ramps accordingly.

Note: Architectural Details and Specifications are to be prepared by a suitably qualified design practitioner (Architect) cross referencing any Fire Engineering requirements and submitted to the satisfaction of the Registered Certifier at the Construction Certificate application stage.

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

As part of the following assessment the following total population numbers were considered in the assessment:

LIBRARY BUILDING	POPULATION NUMBERS	EGRESS WIDTH REQUIRED	EGRESS WIDTH PROPOSED	COMPLIES
Ground Level	Max 111 Persons	1.25m	>5.0m	Yes

Note 1: The above ground floor population number has been derived from the number of children stated on the design plans and the number of staff carparking areas. The architect and client are to review the populations numbers above and provide their confirmation as to being acceptable at the Construction Certificate Stage .

Note 2: Architectural Details and Specifications are to be prepared by a suitably qualified design practitioner (Architect) and submitted to the satisfaction of the Registered Certifier at the Construction Certificate application stage.

22. **BCA Part D3 - Construction of Exits:** The stair treads and risers, stair landings, door thresholds, balustrades and handrails in stairways used by the occupants are to comply with the technical provisions of these Clauses within Part D3 and AS1428.1-2009. Stairways providing Access for Maintenance Personnel to rooms defined by BCA Clause D3D23 may be subject to variation designs complying with AS1657-2018.

In this regard, It is considered that the proposed design of the external walkway and pavements between the discharge doors of the exits and the road way will be no steeper than 1:20 and or provided with appropriate stairs and ramps accordingly and further details will be required prior to issue of the Construction Certificate.

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

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

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

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

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

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

	Riser (R)	Going (G)	Quantity (2R+G)
Maximum	190	355	700

Minimum	115	250	550
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Figure 5 – Stair Tread & Riser Details (Source: NCC/BCA Clause D3D14)

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

Figure 6 – Stair, Landing & Ramp Details (Source: NCC/BCA Clause D3D15)

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

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

Landings surfaces and/or the nosing strip at the edge of the landing, must also have slip resistance classifications not less than those specified in Table D3D15 above when tested against AS4586-2013.

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

26. **BCA cl. D3D16 – Thresholds:** Doors must not have a ramp or step closer to the door than the width of the door leaf except where opening to open space, where the change in level may be a maximum of 190mm.

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

Note 2: Architectural Details and Specifications are to be prepared by a suitably qualified design practitioner (Architect) and submitted to the satisfaction of the Registered Certifier at the Construction Certificate application stage.

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

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

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

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

- For non-fire isolated stairs where the fall exceeds 1m the balustrading must be a minimum of 865mm above the line of the nosing's of the treads, 1m at the floors and landings and there must be no gaps greater than 125mm throughout.

- Glass balustrades are to comply with AS1170.1-2002 & AS1288-2021 requiring interlinking rails and end point fixtures. NB: No frameless glass balustrades are permitted without strictly complying with the provisions of AS1288-2021.
- Rooftop Communal open space areas or areas where there are suspended floor slabs are to ensure no fixed furniture, planter boxes or the like compromise balustrade provisions and all planters are to be designed as 1.0m or higher from FFL to negate the need for additional balustrades at the perimeter edges.
- Balconies are to ensure no fixed bench seating/BBQ,s AC units, gas, water light services are located within 1.0m of the balustrades.

Note 1: In addition to the above, reference should be made to BCA clause G1D4 of the BCA which specifies barrier requirements to outdoor play areas to Early Childhood Centre e.g.the provisions of a 1.8m high barrier where the edge of trafficable surface to the outdoor play space is more than 2m above the surface beneath.

Note 2: Architectural Details and Specifications are to be prepared by a suitably qualified design practitioner (Architect and submitted to the satisfaction of the Registered Certifier at the Construction Certificate application stage. We recommend detailed shop drawings be prepared for submission to the Certifier. Structural Engineer is to review balustrade designs and also provide Design Certification.

28. **BCA cl. D3D22 – Handrails:** A handrail is required along one side of all proposed stairways and along both sides where the stairway has a width of 2m or more, 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.

Secondary handrails are required to all stairways with a cross-sectional dimension not less than 16mm and not greater than 45mm as measured in any direction across its centre, fixed at a height between 450mm and 700mm above the stair nosings or the floor surface of the ramp / landing.

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

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

29. **BCA cl. D3D23 – Fixed Platforms, walkways, stairways and ladders:** A fixed platform, walkway, stairway, ladder and any going and riser, landing, handrail or barrier attached thereto may comply with the provisions of AS1657-2018 in lieu of D3D14, D3D16, D3D17, D3D18, D3D19, D3D20, D3D21 & D3D22 if it only serves a machine rooms, boiler houses, lift machine rooms, plant rooms and the like, or non-habitable rooms such as attics, store rooms and the like that are not used on a frequent or daily basis in the internal parts of Class 2 or Class 4 residential building.

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

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

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

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

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

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

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

31. **BCA cl. D3D25 - Swinging Door:** All hinged exit doors are required to swing in the direction of egress. Doors serving compartments less than 200msq may swing inwards if they are provided with hold open devices.

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

Note 2: Architectural Details and Specifications are to be prepared by a suitably qualified design practitioner (Architect) and submitted to the satisfaction of the Registered Certifier at the Construction Certificate application stage.

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

The above does not apply to the secure parts of an Early Childhood Centre where doors must be immediately unlocked by hand by a person specifically nominated by the owner properly instructed as to the duties and responsibilities involved and available at all times when the building is lawfully occupied so that persons in the building or part may immediately escape if there is a fire.

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

Note 2: Architectural Details and Specifications are to be prepared by a suitably qualified design practitioner (Registered Architect) and submitted to the satisfaction of the Registered Certifier at the Construction Certificate application stage. A copy of the Fire Engineers Report prepared by an Accredited C10 Certifier – Fire Safety, is to also be provided.

33. **BCA Part D4 – Access for People with a Disability:** Access and facilities for people with disabilities will need to be provided to satisfy the requirements of Part D4 of the BCA & AS1428.1-2009, and the Access to Premises – Buildings Standards 2010 satisfying the client's obligations under the DDA. Clauses that directly related to compliance with this part are D3D11, D3D16, D3D22, D4D2, D4D3, D4D4, D4D6, D4D7, D4D9, D4D10, D4D12, D4D13, Spec 16, E3D10, F4D5, F4D6 and the definitions in Schedule 1.

Pursuant to Clause D4D2, the subject building holds Class 7b and Class 9b Classifications must be accessible and access must be provided to and within all areas normally used by the occupants.

Class of Building	Access Requirements
Class 9b	To and within all areas normally used by the occupants.

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

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

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

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

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

- All frameless glass panels or fully glazed doors on an accessway are to be clearly marking in accordance with AS 1428.1. In this instance, all frameless glass panel or fully glazed doors, including glazing capable of being mistaken for a doorway or opening, shall be marked with a full width solid non transparent contrast line not less than 75mm wide and is required to be located between 900mm and 1000mm above floor level.
- Every stairway and ramp are required to comply with the requirements under Clause 10 and 11 of AS 1428.1 – 2009. Notwithstanding all the stairs are to be provided with contrast stair nosing's between 50 and 75mm deep across the full width of the path of travel. The strip may be set back 15mm from the front of the nosing and must possess a minimum luminance contrast of 30% to the background. The strip must not extend down the riser more than 10mm.
- Handrails are required to both sides with 300mm extensions and full 180 degree turn downs in accordance with Section 11 of AS1428.1-2009.

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

- Stair treads in the fire stairs will need to be off-set as per the diagrams in AS1428.1-2009.
- Accessways must have passing spaces complying with AS 1428.1 at maximum 20 metre intervals on those paths of travel where a direct line of sight is not available and turning spaces within 2 metres of the end of a path of travel and at maximum 20 metre intervals (corridor width of 1540mm required).
- Circulation space and corridor widths are to comply with Section 13 of AS1428.1-2009. Circulation space and door dimensions 850mm will be required to all doors and all common areas such as letter boxes, garbage rooms, communal areas etc, and comments from the accessibility consultant will be required.
- Turning bays are required at the end of each corridor where travel is discontinuous.
- External and internal surfaces are to comply with Section 7 of AS1428.1-2009.
 - o Walking surfaces to be slip resistant and certification in respect to the slip resistance of any tiles and vinyl will be required at the Occupation Certificate stage to verify compliance with AS/NZS 4586.
 - o Any proposed carpets within the building are to have a pile height or pile thickness not exceeding 11mm and the carpet backing thickness shall not exceed 4mm (total thickness shall not exceed 15mm).
- Braille tactile signage is to be provided to all sanitary facilities and ambulant facilities. In addition, the signage to the accessible facilities is to also identify the facility for left & right-handed use.
- Braille signage is also required in accordance with the new BCA 2022 provisions at every designated exit door provided with an Exit sign required under E4D7 and state "Exit – Ground".
- Tactile indicators are to be provided to all stairs and ramps in the site. In addition, tactile indicators or another type of barrier will need to be provided around the stair obstruction where the stair is less than 2 metre above floor level. Tactiles are also required between the shared zone and vehicular driveway.
- Accessible sanitary facility to comply with Section 15 of AS1428.1-2009.
- Ambulant facilities (where required) are to comply with Section 16 of AS1428.1-2009

- Areas that would be considered inappropriate because of the particular purpose for which the area is used or where it would pose a health or safety risk for people with a disability access is not required to be provided and written confirmation will be required by the client e.g. plant / storage areas / Commercial kitchens.
- A minimum of one (1) accessible space for every 100 vehicles is required to be provided.

Accessibility Compliance & Performance Solution Report: it is understood that an access consultant has been engaged to review the proposal and provide an Accessibility compliance / Performance Solution Report to accompany the Construction Certificate application submission to ensure that all aspects of the DDA, AS1428.1-2009 and Part D4 and Part F4 of the BCA have been addressed.

Note: Architectural Details and Design Certification to the satisfaction of the Registered Certifier carrying out the certification work are to be provided with the Construction Certificate application incorporating all recommendations of the latest rendition of the Accessibility compliance and / BCA Performance Based Design Brief and Performance Based Solution Report addressing BCA Performance Requirements D1P1 & F4P1.

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:

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

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

The Fire Hydrant Booster assembly is to be within sight of the main entry of the building and will need to be protected by a radiant heat shield that has an FRL of 90/90/90 FRL (located 2 metres either side and 3 metres above the outlets) where the booster it is located on or within 10m of the building, unless the building is proposed to be sprinkler protected by a sprinkler system in accordance with AS2118.1-2017.

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

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

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

The Fire Hydrant Booster assembly will need to be protected by a radiant heat shield that has an FRL of 90/90/90 FRL (located 2 metres either side and 3 metres above the outlets) where the booster it is located on or within 10m of the building, unless the building is proposed to be sprinkler protected by a sprinkler system in accordance with AS2118.1-2017

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

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

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

Any Internal Hydrants are to be located within 4m of an exit of the storey they serve

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

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

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

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

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

- (a) Fire Hydrant Coverage – The drawings did not identify the location of any Fire Hydrants which are required to serve the building. Detailed sweep coverage plans with dimensions are to accompany the Construction Certificate application. Where street hydrant coverage is being relied upon, an Accredited Practitioner fire safety is to obtain a Fire Flow Enquiry from Sydney Water and confirm pressures, flows and coverage comply with the parameters of AS2419.1-2021 accordingly.
- (b) Fire Hydrant Location – Where onsite Hydrants are required, they are to be noted on the plans and where internal, located on each storey within 4m of an exit ensuring egress paths are not reduced to under 1.0m (unless otherwise addressed via a Performance Based Solution); External hydrant will need to be located no less than 10m from a non-sprinkler protected and must not be obstructed by vehicle parking spaces.
- (c) Fire Brigade Booster Assembly Location – Where required, booster assembly details are to be included on the elevations showing the proposed location of the Hydrant Boosters and arrangements to ensure appropriate heights and clearances are achieved;
- (d) Fire Hydrant Design Departures – Any departures associated with the systems Standard of Performance (AS2419.1-2021) needs to be identified by the Accredited Practitioner/Competent Fire Safety Practitioner for the Registered Certifier and Fire Safety Engineers consideration.

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

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

Note 2: Architectural & Fire Services Details Specifications and Design Certification are to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier. Where required, a copy of any Fire Engineers Report prepared by an Accredited C10 Certifier – Fire Safety, is to also be provided.

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

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

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

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

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

- a) Fire Hose Reel Coverage – Fire Hose Reel coverage is required to all areas of the building including services plant room and waste room without passing through a fire door.
- b) Fire Hose Reel Coverage Plans – Fire Hose reels are to be located within 4m of an exit and adjacent to any internal fire hydrant installed ensuring egress paths are not reduced to under 1.0m (unless otherwise addressed via a Performance Based Solution). Detailed sweep coverage plans with dimensions are to accompany the Construction Certificate application.
- c) Fire Hose Reel Design Departures – Any departures associated with the systems Standard of Performance (AS2441.1-2005) needs to be identified by the Accredited Practitioner/Competent Fire Safety Practitioner for the Registered Certifier and Fire Safety Engineers consideration.

Fire Engineered Performance Solution: It is understood that the client may engaged the services of a Fire Safety Engineer to consider a Performance Based Solution to rationalise the Fire Hose Reel & coverage arrangements by demonstrating compliance with BCA Performance Requirements E1P1.

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 Specifications and Design Certification are to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier. Where required, a copy of any Fire Engineers Report prepared by an Accredited C10 Certifier – Fire Safety, is to also be provided.

35. BCA cl. E1D4, E1D5, E1D11, & Specification 17 – Sprinklers: Early Childhood Centres are required to be sprinkler protected throughout in accordance with AS2118.1-2017 (incorporating Amendment's 1 and 2) other than an Early Childhood Centres that are located wholly within a storey that provides direct egress to a road or open space or the building has a rise in storey of not more than 2 where the early childhood centre is the only use in the building.

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

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

- (a) Although sprinklers coverage is not technically required given direct egress from the Early Childhood Centre to the road or open space is provided, Fire and Rescue NSW (FRNSW) have issued a Position Statement recommending all Early Childhood Centres be sprinkler protected throughout irrespective of the concessions provided in the BCA which will need to be considered by the Design Tea, Fire Safety Engineer and Accredited Certifier at the Construction Certificate Stage.

Note 1: Where sprinklers are proposed as a result of the above, 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 Specifications and Design Certification are to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier. Where required, a copy of any Fire Engineers Report prepared by an Accredited C10 Certifier – Fire Safety, is to also be provided.

23. BCA cl. E1D14 – Portable Fire Extinguishers: Portable fire extinguishers are to be installed in accordance with Clause E1D14 and Sections 1, 2, 3 & 4 of AS 2444-2001 to serve the building. In this regard, the following locations and matters are required to be considered;

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

For the purposes of (3) above,

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

Note 1: In this regard, the drawings do not currently denote location of the portable fire extinguishers that are required to be provided. Refer to above for type of extinguishers required.

Note 2: Architectural & Fire Services Details Specifications and Design Certification are to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier.

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

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

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

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

- (a) Photovoltaic/Solar Panels – Where Photo voltaic panels are proposed on the Roof and or and where any battery storage systems are proposed, these need to be identified in any FEBQ/FER. Where battery storage systems are also proposed, these may need to be contained in separate fire rated enclosures and also identified in any FEBQ/FER.

Note: Architectural & Fire Services Details Specifications and Design Certification are to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier. Where required, a copy of any Fire Engineers Report prepared by an Accredited C10 Certifier – Fire Safety, is to also be provided.

36. BCA cl. E2D3, E2D9 & Specification 20 and NSW Variations E2D16 & E2D19 – Smoke Hazard Management The building is required to be provided with the following smoke hazard management provisions.

An air-handling system which does not form part of a smoke hazard management system in accordance with E2D4 to E2D20 and which recycles air from one fire compartment to another fire compartment or operates in a manner that may unduly contribute to the spread of smoke from one fire compartment to another fire compartment must be designed and installed to operate as;

- a smoke control system in accordance with AS 1668.1-2015; or
- such that it incorporates smoke dampers where the air-handling ducts penetrate any elements separating the fire compartments served and is arranged such that the air-handling system is shut down and the smoke dampers are activated to close automatically by smoke detectors complying with clause 7.5 of AS 1670.1.

The mechanical ventilation systems in the building are required to be designed in accordance with AS/NZS 1668.1-2015 and AS/NZS1668.2-2012 (A/C systems) and incorporate smoke dampers where air handling ducts penetrate any building elements separating fire / smoke compartments served. i.e. any shared A/C equipment via fire separated areas must have fire / smoke dampers.

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

Kitchen exhaust systems need to be in their own dedicated fire rated shafts and discharge in accordance with AS1668.1-2015

NSW Variations E2D16 and E2D19 requires a Class 9b Early Childhood Centre buildings to be protected with an Automatic Fire and Smoke Detection System in accordance with Specification 20. In this regard, the building is proposed to be protected with an automatic Smoke Detection System in accordance with AS1670.1-2018.

Specification 20 Sub-clause S20C4 & S20C6 requires an Automatic Fire Detection & Alarm System throughout the building/s in accordance with AS1670.1-2018 (Including Amendments).

Although not technically required, an Automatic Fire Suppression System may be installed throughout the building given the Class 9b Early Childhood centre use and FRNSW Position Statement regarding these uses which may require sprinkler protection to form part of the overall Fire Safety Strategy in accordance with AS2118.1-2017.

Specification 20 Sub-clause S20C7 requires an Occupant Warning System to be provided throughout the building/s in accordance with AS1670.1-2018 (including Amendments).

A Fire Panel (FDCIE) needs to be installed at the main entrance of the building. An Alarm Signalling Equipment (ASE) / system monitoring with a direct communication link to the Fire Brigades is recommended in with accordance with AS1670.3-2018.

Additional smoke hazard management measures may be necessary due to the special characteristics of the building or special function or use of the building or special type or quantity of materials stored, displayed or used in a building or special mix of classifications within a building or fire compartments which are not addressed in E2D4 to E2D20.

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) Smoke Detection Systems – An Automatic Fire Detection and Alarm System is required throughout building in accordance with BCA Specification 20 (subclause S20C6) and AS1670.1-2018.
- (b) Auto shutdown – Automatic shutdown of air handling systems is to be ensured
- (c) Fire Indicator Panel – A Fire Panel (FDCIE) needs to be installed at the main designated entry to the building with clearances for brigade personnel and egress from the building maintained..
- (d) Smoke Hazard management Design Departures – Any departures associated with the systems Standard of Performance (AS1670.1-2018 / AS1668) needs to be identified by the Accredited Practitioner / Competent Fire Safety Practitioner for the design team and Registered Certifiers consideration.

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

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

Note 2: Architectural & Fire Services Details Specifications and Design Certification are to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier. Where required, a copy of any Fire Engineers Report prepared by an Accredited C10 Certifier – Fire Safety, is to also be provided.

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

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

Note: Architectural, Electrical Details, Specifications and Design Certification to the satisfaction of the Registered Certifier are to be provided with the Construction Certificate application.

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

Exist signs are not to be of the tinted/dark type signs unless otherwise addressed via a Performance Based Solution.

Note: Architectural, Electrical Details, Specifications and Design Certification 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:

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

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

Note: Hydraulic and Civil Details, Specifications and Design Certifications are to be prepared by a suitably qualified designer (Hydraulic and Civil Engineer) and submitted to the satisfaction of the Registered Certifier at the Construction Certificate application stage. Where design departures are proposed, a performance based solution addressing BCA Performance Requirement F1P3 is to be prepared by the Civil Engineer and a copy of the Report is to also be provided.

40. BCA cl. F1D5 – External Above Ground Membranes: Waterproofing membranes for external above ground use must comply with AS4654 Parts 1 and 2 -2013.

NB: Poly paver / Pedestal Paver and Timber Decking systems require performance based solutions as the pavers / decking do not provide the required 1:80 falls required by the BCA Standards.

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

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

Note 2: Architectural and Hydraulic Details, Design Certification and waterproof consultant specification/reports are to be prepared by a suitably qualified consultants and submitted to the satisfaction of the Registered Certifier at the Construction Certificate application stage. Where design departures are proposed, a Performance Based Solutions addressing BCA performance Requirement F1P2 is to be prepared by the Engineer and a copy of the Report is to also be provided.

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

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

41. **BCA cl. F2D2 & F2D3 – Waterproofing of Wet Areas & Rooms Containing Urinals:** Wet areas in the building are required to comply with Specification 26 and comply with AS 3740-2021.

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

Please ensure the new standard is reviewed to ensure appropriate details are adopted in the proposed design, noting 1:100 falls are now required at the membrane substrate level (concrete floor) and additionally, 1:80 falls are required throughout on the FFL in Internal wet areas as per BCA Clause F2D4 which takes precedence over the Standard. Where 1:80 falls cannot be achieved, this will need to be addressed via a performance based solution prepared by a Professional Waterproofing Consultant

Rooms with urinals installed must have appropriate falls, floor wastes, finishes and other design criteria of F2D3 specified.

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

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

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

Note 4: Architectural, Hydraulic and Waterproofing Details, Specification and Design Certification is to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier. Where design departures are proposed, a Performance Based Solutions addressing BCA performance Requirement F1P2 is to be prepared by the waterproofing consultant and a copy of the Report is to also be provided.

42. BCA cl. F2D4 – Floor Wastes: All bathroom & laundry facilities within Class 2, 3 or 4 Residential Sole Occupancy Units are to have floors that are graded to a floor waste to permit the drainage of water. It is recommended that floor wastes also be considered in Class 5-9 building – considering the Plumbing code of Australia and AS3500.

Where a floor waste is required to be installed;

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

Please ensure the new standard is reviewed to ensure appropriate details are adopted in the proposed design, noting 1:100 falls are now required at the membrane substrate level (concrete floor) and additionally, 1:80 falls are required throughout on the FFL in internal wet areas (including laundries) and to all areas where there is a floor waste as per BCA Clause F2D4 which takes precedence over the Standard. Where 1:80 falls cannot be achieved, this will need to be addressed via a performance based solution prepared by a Professional Waterproofing Consultant

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

Note 2: Architectural, Hydraulic and Waterproofing Details, Specification and Design Certification is to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier.

43. BCA cl. F3D2 – Roof Coverings: All new roofing must be covered with
- Roof tiles complying with AS 2049-2002 and fixed as per AS 2050 -2018; or
 - Metal roof sheeting comply with AS 1562.1 -2018; or
 - Plastic roof sheeting complying with AS1562.3 -2006; or
 - Terracotta, Fibre Cement, and timber slates and shingles designed and installed in accordance with AS4597 - 1999 (except in cyclonic areas); or
 - An external waterproofing membrane complying with F1D5 and AS4654 Parts 1 and 2 -2012

Note: Architectural Details and Design Certifications are to be prepared by a suitably qualified designer and submitted to the satisfaction of the Registered Certifier at the Construction Certificate application stage.

44. BCA Clause F3D3 – Sarking: Sarking-type material used for weatherproofing of roofs and walls must comply with AS 4200.1- 2017 and AS 4200.2 - 2017.

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

Note 2: Architectural Details and Design Certifications are to be prepared by a suitably qualified designer and submitted to the satisfaction of the Registered Certifier at the Construction Certificate application stage.

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

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

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

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

BCA Performance Solution: Façade Engineer to prepare a report to assess water and moisture ingress via the external walls and roof whilst considering BCA Clauses F3D1, F3D2, F3D3, F3D4, F3D5 & F8D2 to F8D5 and also

develop a Performance Based Solution to address BCA Clauses F3D5 and BCA Performance Requirement F3P1, as it is unlikely that the external wall cladding will comply with these provisions accordingly.

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

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

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

Note 4: Architectural and/or Façade Engineering Details, Specifications and Design Certifications are to be prepared by suitably qualified designers (Architect/ Façade Engineer) and submitted to the satisfaction of the Registered Certifier at the Construction Certificate application stage. Where design departures are proposed, a Performance Based Solution addressing BCA performance Requirement F3P1 and Verification Method F3V1 respectively, is to be prepared by the Engineer and a copy of the Report is to also be provided.

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

Note: Architectural and/or Façade Engineering Details, Specifications and Design Certification is to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier.

47. **BCA Clause F3D5 – Wall Cladding / External Wall Weatherproofing:** External wall cladding must comply with one or a combination of the following:

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

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

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

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

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

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

Note 3: Architectural and/or Façade Engineering Details, Specifications and Design Certifications are to be prepared by suitably qualified designers (Architect/ Façade Engineer) and submitted to the satisfaction of the Registered Certifier at the Construction Certificate application stage. Where design departures are proposed, a performance based solution addressing BCA performance Requirement F3P1 and Verification Method F3V1 is to be prepared by the Engineer and a copy of the Report is to also be provided.

48. **BCA cl. F4D3 & F4D4 – Calculation of Number of Occupants and Facilities in Class 3 to 9 Buildings:** This clause provides the requirements for sanitary facilities to be installed in Class 3, 5, 6, 7, 8 and 9 buildings in accordance with Tables F4D4a to F4D4l (as applicable).

As part of the following assessment the following total population numbers were considered in the assessment and the number of sanitary facilities required are detailed in the table below:

POPULATION NO.S	FIXTURES REQUIRED	FIXTURES PROPOSED	COMPLIES
Max 95 Children	7 x Closet Pan & 7 x Washbasin	9 x Closet Pan & 9 x Washbasin	Yes
Employees Male = 8	1 x Closet Pan & 1 x Washbasin	1 x Closet Pan & 1 x Washbasins	Yes
Employees Female = 8	1 x Closet Pan & 1 x Washbasin	1 x Closet Pan & 1 x Washbasin	Yes

Note 1: The single unisex accessible facility has been counted as 1 Closet Pan and 1 wash basin for each Male and Female employee.

Note 2: A class 9b Early Childhood centre must be provided with a kitchen, separate hand washing facilities, space for a refrigerator and cooking facilities. The facilities are to be protected by a door or gate with child proof latches and the ability to supervise children younger than 2 years old.

Note 3: The Early childhood centre is required to have one bath, shower or shower bath detailed on the plans

Note 4: As the centre accommodates children younger than 3 years old, a laundry facility comprising of a washtub and space in the same room for a washing machine and a bench type baby bath, is to be located within 1m of the nappy change bench. In addition, the nappy changing bench is to be within 1 metre of a separate adult hand washing facility and bench type baby bath. Furthermore, the napping changing bench must be not less than 0.9m² in area and at a height of not less than 850mm, but not more than 900mm above the finished level and must have a space not less than 800mm high, 500mm wide and 800mm deep for the storage of steps.

Note 5: Th nappy change bench is to be positioned to permit staff members changing a nappy to have visibility of the play area at all times.

Note 6: The facilities for children must be junior pans, and washbasins with a rim height not exceeding 600mm and accessible from both indoor and outdoor play areas

Note 7: facilities for use by children must have each sanitary compartment screened by a partition which, except for the doorway, is opaque for a height of at least 900 mm but not more than 1200 mm above the floor level.

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

- (a) Kitchen & Bottle Prep Supervision Requirements – The Kitchen and bottle pre rooms will unlikely have the ability to facilitate supervision of children from these areas and this departure will require rationalisation via a Performance Based Solution;
- (b) Supervision from Nappy Change Area – Supervision of the play areas from the nappy change bench may not be achievable and any departures will require rationalisation via a Performance Based Solution;
- (c) Separate Facilities - Any proposed Gender Neutral or Unisex facilities will require justification via a BCA Performance Solution.

BCA Performance Solution: It is understood that the applicant will engage the BCA Consultant to prepare a Performance Based Solution in accordance with Clause A2G2 to rationalise the departures above relating to supervision of children and access to sanitary facilities by demonstrating compliance with all relevant BCA Performance Requirements (F4P1/F4P3)

Note: Architectural Details and Design Certification to the satisfaction of the Registered Certifier carrying our certification work are to be provided with the Construction Certificate application. BCA Performance Based Design Brief and Performance Based Solution Report will also need to be provide.

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

Additionally, the Ambulant Facilities is to be located at the bank of toilets adjacent to the Accessible WC need also comply with Section 16 of AS1428.1-2009.

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

- a) Separate Facilities – Any proposed Gender Neutral or Unisex facilities will require justification via a BCA Performance Solution.
- b) Ambulant Facilities and Unisex Accessible Facilities – Layouts and fixtures are to be provide at the Constriction Certificate stages.

Accessibility Compliance & Performance Solution Report: It is understood that an access consultant will be engaged to review the proposal and provide an Accessibility compliance / Performance Solution Report to accompany the Construction Certificate application submission to ensure that all aspects of the DDA,

AS1428.1-2009 and Part D4 of the BCA have been addressed. Access consultant to prepare a BCA Performance Solution to justify the sanitary facility numbers and accessible/unisex arrangements accordingly.

Note: Architectural Details and Design Certification to the satisfaction of the Registered Certifier carrying our certification work are to be provided with the Construction Certificate application incorporating all recommendations of the latest rendition of the Accessibility compliance and / BCA Performance Based Design Brief and Performance Based Solution Report addressing BCA Performance Requirements D1P1 & F4P1.

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

In an early childhood centre, facilities for use by children must have each sanitary compartment screened by a partition which, except for the doorway, is opaque for a height of at least 900 mm but not more than 1200 mm above the floor level.

Note: Architectural Details and Design Certification to the satisfaction of the Registered Certifier carrying our certification work are to be provided with the Construction Certificate application.

51. **BCA cl. F5D2 – Height of Rooms and Other Spaces:** The floor to ceiling heights in the Class 9b part of the building must not be less than 2.7 metres throughout as given there are more than 100 people occupying the space and not less and 2.4 metres in the kitchens, and not less than 2.1m in laundries, storerooms and bathrooms.

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

- (a) **Ceiling Heights** – there are ceiling heights that may be less than 2.7m in height and any departures will require rationalisation via a Performance Based Solution;

BCA Performance Solution: It is understood that the applicant will engage the BCA Consultant to prepare a Performance Based Solution in accordance with Clause A2G2 to rationalise the departures above relating to ceiling heights by demonstrating compliance with all relevant BCA Performance Requirements (F5P1)

Note: Architectural Details and Design Certification to the satisfaction of the Registered Certifier carrying our certification work are to be provided with the Construction Certificate application. BCA Performance Based Design Brief and Performance Based Solution Report will also need to be provide.

52. **BCA cl. F6D2 – Provision of Natural Light:** Natural light is required to be provided to all playrooms or the like for the use of children in an early childhood centre in accordance with F6D3 and all other areas can be provided with artificial lighting in accordance with BCA Clause F6D5. Refer to F6D3 for methods of Natural Light compliance where required.

In addition to the above, the sills of 50% of windows in children's rooms are to have a sill height of no less than 500mm above the finished floor.

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

- (a) **Cot Room** – window sill heights are greater than 500mm in the Cot room which will require departures rationalised via a Performance Based Solution;
- (b) **Play Rooms** – There may be window sill heights which are greater than 500mm for more than 50% of the windows serving these room and this will need to be confirmed by the Architect with any departures rationalised via a Performance Based Solution.

BCA Performance Solution: It is understood that the applicant will engage the BCA Consultant to prepare a Performance Based Solution in accordance with Clause A2G2 to rationalise the departures above relating to windows sill heights in the Cot room by demonstrating compliance with all relevant BCA Performance Requirements (F6P1)

Note: Architectural Details and Design Certification to the satisfaction of the Registered Certifier carrying our certification work are to be provided with the Construction Certificate application. BCA Performance Based Design Brief and Performance Based Solution Report will also need to be provide

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

Note: Electrical Services Details, Specifications and Design Certifications are to be prepared by suitably qualified designers (Electrical Consultant/Contractor) and submitted to the satisfaction of the Registered Certifier at the Construction Certificate application stage.

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

Note: Mechanical Services Details, Specifications and Design Certifications are to be prepared by suitably qualified designers (Mechanical Consultant/Contractor) and submitted to the satisfaction of the Registered Certifier at the Construction Certificate application stage.

55. BCA cl. F6D9 – Restrictions on locations of Sanitary Facilities: A sanitary compartment must not open directly to a workplace normally occupied more than one (1) person.

In this regard, it is considered that the proposed design of the building complies with the privacy provisions of F6D9.

56. BCA cl. F6D12 – Kitchen local exhaust ventilation: Any new mechanical exhaust to a kitchen would need to be installed in accordance with AS 1668.1 – 2015 and AS 1668.2 – 2012.

Note: Mechanical Services Details, Specifications and Design Certifications are to be prepared by suitably qualified designers (Mechanical Consultant/Contractor) and submitted to the satisfaction of the Registered Certifier at the Construction Certificate application stage.

57. BCA Part F8 Clauses F8D2 to F8D5 - Condensation Management: Architectural details and design certification is required to address the condensation management provisions of the BCA.

The provisions apply to external wall construction where pliable membrane and sarkings are installed and also deals with the discharge locations of kitchen, bathrooms and laundries. It also specifies the need for ventilated roof spaces in Climate Zones 6, 7 and 8 which need to be considered.

Note: This Part strictly only applies to Class 2 and 4 building however it is recommended that the design team give consideration to these provisions in any case.

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:

58. BCA cl. G1D3 - Refrigerated Chambers: A refrigerated chamber where person can enter requires the following;

- A door which is capable of being opened by hand from the inside without a key; and
- Internal lighting controlled from, within the chamber; and
- An indicator lamp on the outside to notify persons when the lights are on in the chamber; and
- An alarm located on the door that can be operated from the inside and which has a minimal decibel reading of 90 dB(A) when measured 3m from the door.

Note: Architectural details, specifications and design certification to the satisfaction of the Registered Certifier are to be provided with the Construction Certificate application.

59. BCA cl. G1D4 -Outdoor Play Areas: Any outdoor play space in a Class 9b Early Childhood Centre must be enclosed on all sides with a barrier which complies with AS 1926.1 – 2012 for areas at the same level of less than 2m from the surface beneath or where above 2m the following will apply;

- Barrier not less than 1.8 m high, as measured from above the trafficable surface; and
- The Barrier is non-climbable and does not contain horizontal or other elements that could facilitate climbing; and
- does not have any openings or apertures through which a 100 mm or greater sphere could pass; and

- is not within 1.8 m, as measured directly from the top of the barrier, of any elements within the outdoor play space that facilitate climbing; and
- is not within 900 mm of elements in a wall that facilitate climbing; and
- has strength and rigidity complying with AS 1926.1-2012

Note 1: AS 1926.1-2012 is applied as if there is a swimming pool located outside the outdoor play space, so that the barrier restricts children from exiting the premises without the knowledge of staff in the centre.

Note 2: Architectural details, specifications and design certification 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:

60. **BCA Section J Energy Efficiency:** The building will be subject to the DTS requirements of Section J (Energy Efficiency) of the BCA will need to apply to the proposed Early Childhood building.

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

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

Note: Part J3 applies to residential building along side Basix, however these provision are not applicable to this development.

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

Note: Architectural Details and Design Certifications are to the satisfaction of the Registered Certifier are to be provided with the Construction Certificate application.

GENERAL REQUIREMENTS:

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

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

- Photovoltaic Panels and any onsite Battery storage systems are to meet the operational requirements of FRNSW.
- Electric vehicle charging provisions are to meet the operational requirements of FRNSW.
- Frameless glass balustrades require interconnecting rails and end fixing in accordance with AS1288-2021.
- External and internal surfaces are to comply with the slip resistance criteria referenced under AS/NZS 4586-2013.
- All safety and toughened glazing need to have permanently affixed labels as required by AS1288 -2021.
- Roof anchoring systems and roof access provisions need to comply with Work Health Safety and Work Cover requirements.
- Areas where occupants could trip, fall and cause injury (over and above areas listed in the BCA) should be provided with suitable signs, high visibility markings, gates, barriers or the like in this regard.
- 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.

- (i) Access for maintenance is to comply with Work Health Safety and Work Cover requirements via AS1657-2018 fixed and/or removable type ladders and platforms etc .
- (j) external carpark areas including driveways, turning circles and car spaces are to comply with AS2890.1 -2004 and AS2890.6-2009.

Note: Architectural Details and Design Certification are also to be provided with the Construction Certificate application to the satisfaction of the Registered Certifier.

4. CONCLUSION

This BCA Assessment Report contains an assessment of the referenced architectural documentation for the proposed development against the deemed-to-satisfy provisions of Volume 1 of the **Building Code of Australia 2022** (BCA).

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

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

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

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

Note: Refer to Attached Appendix - Fire Safety Schedule

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APPENDIX: PRELIMINARY FIRE SAFETY SCHEDULE

The following list of 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 as listed in the schedule, which for the purposes of Section 78 and 79 of the Environmental Planning and Assessment (Development Certification and Fire Safety) Regulation 2021, is deemed to be the current Fire Safety Schedule for the building.

Statutory Fire Safety Measure	Design/Installation Standard
Automatic Fire Detection and Alarm System - Automatic Shutdown of Air Handling Systems	BCA 2022 - Clause E2D16 & E2D19, BCA Specification 20 (S20C6)AS 1670.1 – 2018 & Manufacturer's Specifications
Automatic Fire Suppressions System - Recommended installation as required by FRNSW Position Statement	BCA 2022 - Clause E1D4, Specifications 17 AS 2118.1 – 2017, Manufacturer's Specifications
Emergency Lighting	BCA 2022 - Clause E4D2, E4D3 & E4D4 & AS 2293.1 - 2018 and Manufacturer's Specifications
Exit Signs	BCA 2022 - Clauses E4D5, E4D6 & E4D8 and AS 2293.1 – 2018 and Manufacturer's Specifications
Emergency Evacuation Plan	BCA 2022 & AS 3745-2010
Fire Blankets	BCA 2022 – AS2444-2001
Fire Hose Reels	BCA 2022 - Clause E1D3 & AS 2441 – 2005 and Manufacturer's Specifications
Fire Hydrant Systems	BCA 2022 - Clause E1D2 & AS 2419.1 – 2021, Manufacturer's Specifications
Fire Resisting Elements & Structures	BCA 2022 – Clause C3D13, C3D14& S1530.4 -2014 & Manufacturer's Specifications
Fire Seals	BCA 2022 - Clause C4D15 & AS 1530.4 – 2014 & AS 4072.1 – 2005, Manufacturer's Specifications
Lightweight Construction	BCA 2022 - Clause C2D9, C3D13, C3D14 AS 1530.4 – 2014 and Manufacturer's Specifications
Mechanical Air Handling Systems - Automatic shutdown of air handling system + Kitchen Exhaust	BCA 2022 - Clause E2D3, E2D4 E2D16 & Specification 20 AS/NZS 1668.1 – 2015, AS 1668.2 – 2012, AS1670.1-2018 and Manufacturers Specifications
Paths of Travel	BCA 2022 –Section 109 of the EP&A (Development Certification and Fire Safety) Regulation + Fire Engineered Performance Based Solution
Portable Fire Extinguishers	BCA 2022 - Clause E1D14 & AS 2444 – 2001
Warning & Operational Signs - Braille Signage, Fire Services Block Plans, Fire Services Infrastructure Signage & other	BCA 2022 - Clauses D4D7 + Fire Engineered Performance Based Solution
Fire Engineered Performance Solutions (Refer to Summary in Section 2 above)	BCA 2022 - The relevant Performance Requirements associated with the proposed Fire Engineered Performance Solutions: ; - E1P4 & E2P2

Note 1: The above List of Fire Safety Measures is a indicative only and the provision of the schedule above may change during the design development and Construction Certificate Stages .

Note 2: Where Performance Based Solutions include fire safety provisions, pursuant to Section 27 of the EP&A (Development Certification and Fire Safety) Regulation 2021, formal fire engineering brief and report referrals to Fire & Rescue NSW will be require prior to the Construction Certificate application stages.