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16 Bangaroo Street, North Balgowlah

BCA Fire & Life Safety Audit Report (includes review of Natural Lighting)

Prepared for: Kellie Gielis

Project No: W350/Rev 2a

13 May 2022

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REPORT REVISION STATUS		
REVISION	DATE	STATUS
1	17 August 2020	Final
2a	13 May 2022	Updated minor changes including children reduced from 20 to 12

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Signature

Graham Scheffers
GRS Building Reports Pty Ltd
Registered Certifier - Accreditation No. 0364 (BDC)
Date: 13 May 2022

Executive Summary

The building, the subject of this Report, is an existing 2 storey dwelling located at No 16 Bangaroo Street, North Balgowlah.

The existing building is being used as a dwelling. The proposed is to carry out alterations and a change of use to a Pre-School Centre. The Ground Floor is to be used as the Pre-School Centre and the First Floor is to be used by staff only as a staff office area, storage, meeting room and bathroom.

The proposal varies from the BCA Report Rev 1 dated 17 August 2020 and Rev 2 dated 11 May 2021 as follows: -

- Reduce to 12 children per day.
- Reduce on site parking to 3.
- Plans prepared by Rapid Plans (previously by Distinctive Additions).

These changes are not considered to impact the BCA review contained in the previous BCA Report Rev 1 dated 17 August 2020 and Rev 2 dated 11 May 2021.

An assessment of the existing building has been undertaken in accordance with the relevant provisions of the Building Code of Australia 2019 (BCA) as required by Clause 64 of the Environmental Planning and Assessment Regulation 2021 (EP & A Reg) and is detailed in Section 3.1 of this Report.

Clause 64 of the EP & A Reg, is as follows;

“64 Consent authority may require upgrade of buildings

- (1) *This section applies to the determination of a development application that involves the rebuilding or alteration of an existing building if—*
- (a) *the proposed building work and previous building work together represent more than half of the total volume of the building, or*
- (b) *the measures contained in the building are inadequate—*
- (i) *to protect persons using the building, if there is a fire, or*
- (ii) *to facilitate the safe egress of persons using the building from the building, if there is a fire, or*
- (iii) *to restrict the spread of fire from the building to other buildings nearby.*
- (2) *The consent authority must consider whether it is appropriate to require the existing building to be brought into total or partial conformity with the Building Code of Australia.”*

Section 3.1 provides details and comments of the BCA Assessment to address the relevant provisions of BCA Parts C, D (Parts D1 & D2) & E having regard to Clause 64 of the Environmental Planning and Assessment Regulation 2021 with recommendations for consideration with the Development Application.

Section 3.2 provides details and comments of the BCA Assessment to address the provision of natural lighting. Section 3.3 outlines the relevant Fire Resistance Levels.

The Report includes the following Annexures:

1. Annexure A – Schedule of Essential Fire Safety Measures.

1. Introduction

1.1 Background

The building, the subject of this Report, is an existing 2 storey dwelling located at No 16 Bangaroo Street, North Balgowlah.

The existing building is being used as a dwelling. The proposed is to carry out alterations and a change of use to a Pre-School Centre.

GRS Building Reports Pty Ltd has been engaged by Kellie Gielis to undertake a BCA Assessment Report for the subject building.

1.2 Aim

The aim of this Report is to:

1. Undertake an inspection of the existing building.
2. Undertake an assessment of the existing building in accordance with the relevant provisions of the Building Code of Australia 2019, (BCA), ie. Undertake a BCA Review of Parts C, D1, D2 and E as detailed in Section 3.1 of this Report. This is to have regard to the provisions of Clause 64 of the Environmental Planning and Assessment Regulation 2021 for an existing building.
3. Undertake a review of the natural lighting required for compliance with the BCA.
4. Address significant non-compliances with the BCA to ensure that the building is provided with an adequate level of fire and life safety commensurate with the community's expectations having regard to the Objectives and Performance Requirements of the BCA and Section 9.34(1)(b) of and Schedule 5 to the Environmental Planning and Assessment Act 1979 which relates to the:
 - Prevention of fire
 - Suppression of fire
 - Prevention of the spread of fire
 - Safety of persons in the event of fire
5. Recommend fire and life safety upgrading works to address the non-compliances with the BCA.
6. Identify existing and proposed Essential Fire Safety Measures applicable to the subject building as detailed in Annexure A.

1.3 Documentation

The following documentation was relied upon when preparing this Report:

- Building Code of Australia 2019, (BCA).
- Plans prepared by Rapid Plans Drawing Nos. DA1000 to DA1003, DA2001 to DA2004, DA3000, DA4000 and DA4001, dated 19 January 2021.

1.4 Reporting Team

This Report was prepared on behalf of GRS Building Reports Pty Ltd by Graham Scheffers, a Registered Grade A1 Certifier (NSW BPB) and Building Code Consultant following an inspection carried out on 12 August 2020.

1.5 BCA Terms and Definitions

The following terms are based on BCA definitions;

- **Fire Source Feature:** means-
 - (a) The far boundary of a road, river, lake or the like adjoining the allotment; or
 - (b) A side or rear boundary of the allotment; or
 - (c) An external wall of another building on the allotment which is not a Class 10 building.
- **Open Space** means a space on the allotment, or a roof or similar part of a building adequately protected from fire, open to the sky and connected directly with a public road.
- **Rise in Storeys** means the greatest number of storeys calculated in accordance with C1.2.

1.6 Limitations and Exclusions

The limitations of this report are as follows:

- The assessment is limited to providing a Building Fire and Life Safety Report for submission to the Northern Beaches Council in relation to proposed Development Application.
- The Building Certifier is to determine that the relevant documentation for proposed works satisfies the BCA for the purposes of issuing a Construction Certificate. This BCA Fire and Life Safety Assessment Report is an assessment of the existing building having regard to the change of use only. The Report is not intended to provide verification that the entire design documents satisfy the BCA as this is beyond the scope of GRS Building Report Pty Ltd and must be undertaken for the Construction Certificate Stage.
- The Report is based on a visual walk-through inspection of the accessible areas within the building. Concealed spaces such as voids, shafts, and the like were not inspected. Systems were not tested and building fabric was not removed to determine the method of construction.

The Report does not address issues in relation to the following:

1. The structural adequacy of the building including the fire resistance levels of any building elements (unless specifically referred to).
2. The design, maintenance or operation of any electrical, mechanical, hydraulic or fire protection services.
3. Works outside the boundaries /lease area, building elements or services that extend outside the boundaries and works associated with external ancillary services, structures or civil works required by relevant authorities.
4. Development Consent conditions of approval issued by the Local Authority.
5. Environmental Planning and Assessment Act and Regulations, Local Government Act and Regulations unless where nominated.
6. Work Health and Safety Act and Regulations.
7. WorkCover Authority requirements.
8. Water, drainage, gas, telecommunications and electricity supply authority requirements.
9. The provisions of BCA Part D3, the Disability Discrimination Act, National Premises Standards as this is beyond the scope.
10. Council Policy relating to Access for People with Disabilities.
11. GRS Building Reports Pty Ltd cannot guarantee acceptance of this Report by the Statutory Authorities such as Local Council, Fire & Rescue NSW or other approval authorities.

2. Building Description

2.1 Building

The building, the subject of this Report, is an existing 2 storey dwelling located at No 16 Bangaroo Street, North Balgowlah.

The existing building is being used as a single dwelling. The proposed is to carry out alterations and a change of use to a Pre-School Centre. The Ground Floor is to be used as the Pre-School Centre and the First Floor is to be used by staff only as a staff office area, storage, meeting room and bathroom.

The existing building is constructed from timber floors and timber frame external walls and metal roof.

2.2 Classification

For the purposes of the BCA, the building is classified as follows based on the proposed use:

- Class 5 (Office)
- Class 7b (Storage)
- Class 9b (Childcare Centre)

2.3 Rise in Storeys

The existing building has a rise in storeys of two (2).

2.4 Type of Construction

The building is required to be Type C Construction due to the Change in Use.

2.5 Effective Height

The building has an effective height of less than 25m.

2.6 Floor Area / Volume

Maximum size of fire compartment of building.

Classification		Type C
5 or 9b	Max floor area	3,000m ²
	Max volume	18,000m ³
7b	Max floor area	2,000m ²
	Max volume	12,000m ³

2.7 Fire Source Feature

The distances to the nearest Fire Source Feature for the existing building are estimated to be:

- Northern - < 3.0 metres, i.e. approx. 900mm setback.
- Southern - < 3.0 metres, i.e. approx. 2.1m setback.
- Eastern - > 6.0 metres to far side of Bangaroo Street.
- Western - > 3.0 metres.

3. BCA Assessment

An assessment of the existing building has been undertaken in accordance with the provisions of the Building Code of Australia 2019, (BCA).

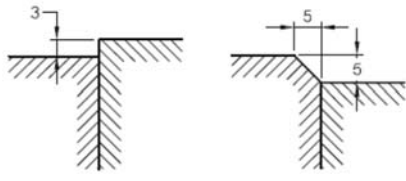
To satisfy the requirements of Clause 64 of the Environmental Planning & Assessment Regulation 2021 Section 3.1 below details a summary of the BCA Fire and Life Audit with a Recommended Strategy for consideration with the DA and to incorporate in the CC in relation to the change of use proposed. Subject to the items in Section 3.1 being addressed, it is considered that this is a reasonable strategy in relation to Clause 64. It is noted that new works will need to be assessed by the Accredited Certifier when the Construction Certificate is reviewed.

3.1 BCA Fire Audit Strategy & Recommendations

BCA Clause	Description	Strategy and Recommendations
C1.1 & Spec C1.1	<p>Fire Resistance Levels (FRL's)</p> <p>A Class 5, 7b and 9b building that is Type C Construction is required to have FRL's in accordance with BCA Specification C1.1, Table 5 as detailed in Section 3.3 of this Report. In summary FRL's for the various building elements are to be as follows: -</p> <ul style="list-style-type: none"> External Walls (loadbearing) – 90/90/90 less than 1.5m from side boundaries and 60/60/- where >1.5m to 3m from side boundaries and no FRL where >3m from side boundaries. External Columns (loadbearing) – 90/-/- less than 1.5m from the side boundaries, 60/-/- 1.5m to < 3m from side boundaries and no FRL where >3m from side boundaries 	<p>The existing building has external walls including walls perpendicular to the side boundaries (e.g. Ground and First Floor) within 3.0m of the northern and southern side boundaries and do not have an FRL of 90/90/90 (< 1.5m from boundary) or 60/60/60 (1.5m to < 3.0m from boundary).</p> <p>Recommendation:</p> <ol style="list-style-type: none"> That the external walls of the building within 3.0m of the side boundaries be provided with the relevant FRL's for a building of Type C Construction in accordance with BCA Specification C1.1, Clause 5 and Table 5 as detailed in Section 3.3 of this Report. This is to include external loadbearing walls and any non-loadbearing external walls. <p>The alternative to the above is for the existing building elements to be assessed and where non-compliant are to be addressed via a Performance Solution Report prepared by a C10 Fire Engineer. Details to be provided in conjunction with Construction Certificate Application.</p>
C1.10	<p>Early Fire Hazard Properties:-</p> <p>Materials and assemblies used in the building must comply with the requirements of Specification C1.10.</p>	<p>The existing timber floor finish for the Ground Floor and carpet for the First Floor is unknown. Whilst this may satisfy the fire hazard properties, this should be confirmed.</p> <p>Recommendation:</p> <ol style="list-style-type: none"> That confirmation be provided on the Fire Hazard Properties of the existing Ground Floor timber floor finish and existing First Floor carpet floor finish where proposed to be retained is to be confirm the materials achieve compliance with BCA Specification C1.10, i.e. <ul style="list-style-type: none"> A critical radiant flux not less than 2.2kW/m² as listed in Table 1 of Specification C1.10; and A maximum smoke development rate of 750 percent-minutes <p>as determined by AS ISO 9239.1-2003. Details to be provided in conjunction with Construction Certificate Application.</p>

BCA Clause	Description	Strategy and Recommendations
C3.2	<p>Protection of openings in external walls:-</p> <p>Openings in external walls that are required to have an FRL are to be protected if they are exposed to a fire source feature in accordance with Clause C3.4 if:</p> <ul style="list-style-type: none"> • Wall is less than 3m from a side or rear boundary; • Less than 6m from the far boundary of a road, if not located in a storey at or near ground level; or • Less than 6m from another building on the same allotment <p>BCA Clause C3.4 requires protection as follows:</p> <ul style="list-style-type: none"> ➤ Fire windows with an FRL of -/60/- that are automatic closing or permanently shut (eg fire rated glass blocks), or ➤ Automatic closing fire shutters with an FRL of -/60/-, or ➤ External wall wetting drenchers on fixed / automatic closing windows. ➤ Self-closing or automatic closing fire doors with an FRL of -/60/30, or ➤ External wall wetting drenchers on self-closing or automatic closing doors. 	<p>The Ground Floor has openings in the external walls that are within 3.0m of the side boundaries, as follows:</p> <ul style="list-style-type: none"> • Openings in northern and southern external walls within 3m of side boundaries. • Openings in eastern and western external walls that are perpendicular to the side boundary are within 3m of side boundaries. <p>Recommendation:</p> <p>3. That the openings in the external walls, including walls that are perpendicular to the side boundary and within 3.0m of the northern and southern side boundaries, be protected in accordance with BCA Clause C3.4, unless addressed via a Performance Solution Report prepared by a C10 Fire Engineer. Details to be provided in conjunction with Construction Certificate Application.</p>
D1.2	<p>Number of exits required:-</p> <p>Every building must have a least one exit from each storey, and a minimum of 2 exits are required in particular circumstances.</p> <p>Without passing through another sole occupancy unit every occupant of a storey or part must have access to either an exit, or at least 2 exits if 2 or more are required.</p>	<p>The existing Ground Floor is required to have 2 exits as a result of the change in use to Class 9b. This is readily achievable subject to the provision of doors and paths of travel as recommended in this Report, therefore no further comment is necessary for this Clause.</p>

BCA Clause	Description	Strategy and Recommendations
D1.6	<p>Dimensions of exits:-</p> <ul style="list-style-type: none"> Unobstructed height of an exit not less than 2m (1980mm for doorways); 1m minimum width of a single exit; and door width to be a minimum of 750mm clear unobstructed area (or 850mm in accordance with AS 1428.1) width of exit must not diminish in direction of travel to an exit. 	<p>The following deficiencies exist:</p> <ul style="list-style-type: none"> Door separating Activity Area 1 and 2 has a bi-fold door system with the single operable door with door latch provided with a clear width of 600mm in lieu of 750mm. <p>It is proposed that this be accepted on the basis that it is advised that the bi-fold doors are to be generally held open on most occasions. The main time the doors are closed is understood to be during rest times which is for approximately 1 hour per day. Additionally the layout is such that there is the provision of an exit at the main entry directly from Activity Area 1 and an alternative exit at the rear of the building directly from Activity Area 2. As a result of this plus the relatively small population, it is unlikely the reduced door width will impact on egress.</p> <ul style="list-style-type: none"> Stairway serving First Floor office / storage area is less than 1.0m clear width, i.e. approximately 825mm wide. <p>Due to the relatively small population and use of the First Floor by staff that are likely to be familiar with the stair, this width is not considered to impact on egress.</p> <p>Recommendation:</p> <p>4. That Council accept the reduced egress to the First Floor stairway and door separating Activity Areas 1 and 2 on the basis of the layout and relatively small number of occupants.</p>
D1.10	<p>Discharge from exits:-</p> <ul style="list-style-type: none"> Not to be blocked at the point of discharge to open space with path of travel to road being not < 1.0m wide. Path of travel to the road to be via a stair or by a ramp with gradients no steeper than 1:8 (or 1:14 of ramp required for disabled access). 	<p>The discharge from the Ground Floor external rear exit door necessitates a 1.0m clear path of travel for egress to reach the street.</p> <p>Recommendation:</p> <p>5. That the plans incorporate a path of travel from the rear exit to reach the street in accordance with BCA Clause D1.10. Details to be provided in conjunction with Construction Certificate Application.</p>
D2.8	<p>Enclosure of space under stairs and ramps:-</p> <ul style="list-style-type: none"> No enclosures/cupboards permitted in a fire stair; Space below a non-fire isolated stair to remain unenclosed, unless construction with FRL of 60/60/60 with -/60/30 fire door. 	<p>The space beneath the existing internal stair is to be left open and if enclosed to form a cupboard is to be fire rated. This stair and associated proposed works is subject to review for compliance with the BCA at CC Stage.</p> <p>Recommendation:</p> <p>6. That the space beneath the existing internal stair if left open, need not be upgraded with walls enclosing the space having a fire rating to achieve an FRL of -/60/60 with self closing fire door having an FRL of -/60/30. Details to be in the Construction Certificate documentation.</p>

BCA Clause	Description	Strategy and Recommendations								
D2.13	<p>Goings and risers:-</p> <ul style="list-style-type: none"> Minimum 2 risers and maximum of 18 risers in any flight; Riser 115mm minimum, 190mm maximum dimensions – treads 250mm going to 355 maximum going. 2R+G 550mm min and 700 maximum. Goings and risers to be constant throughout. Constant means within each flight that variations between; <ul style="list-style-type: none"> a) adjacent risers, or between adjacent goings is no more than 5mm, and b) the largest and smallest riser, or largest and smallest going does not exceed 10mm. Risers not to permit a 125mm sphere to pass through; Treads to have slip resistance classification in accordance with Table D2.14 and AS4586-2013; No winders in lieu of a quarter landing 	<p>The existing internal stair and rear external stair used for egress has dimensions that vary from the BCA and slip resistance is unknown.</p> <p>The internal stair has open risers and the lowest riser is approximately 35mm and the top riser is approximately 165mm compared to the remainder that is approximately 185mm.</p> <p>Recommendations:</p> <ol style="list-style-type: none"> That the existing internal stairway is to have gaps between treads reduced to be less than 125mm or infilled. That the existing internal stairway and rear external stairway be accepted by Council subject to the following: - <ol style="list-style-type: none"> Installation of nosing strips 50 to 75mm deep, across the full width of the stairs with the strip having a minimum luminance contrast of 30% to the background to identify the nosings being provided, Nosings may be painted or stick-on where suitable for tiles or concrete stairs. Should nosings strips be proposed, they must be fitted so that the abutment of surfaces has a smooth transition with the following construction tolerances: 1) +/- 3mm vertically, or 2) +/- 5mm provided the edges have a bevelled or round edge to reduce the likelihood of tripping as detailed in Figure 2 below. <div style="text-align: center;">  </div> <p>Figure 1 – Acceptable Tolerance for Abutment of Surfaces</p> <ol style="list-style-type: none"> Verification the new nosings strips have an acceptable slip resistance classification in accordance with BCA Table D2.14 as shown in Figure 2 below and AS4586-2013. <table border="1"> <thead> <tr> <th rowspan="2">Application</th> <th colspan="2">Surface Conditions</th> </tr> <tr> <th>Dry</th> <th>Wet</th> </tr> </thead> <tbody> <tr> <td>Nosing</td> <td>P3</td> <td>P4</td> </tr> </tbody> </table> <p>Figure 2 – Extract BCA Table D2.14</p> <p>Details to be provided in conjunction with Construction Certificate Application.</p>	Application	Surface Conditions		Dry	Wet	Nosing	P3	P4
Application	Surface Conditions									
	Dry	Wet								
Nosing	P3	P4								

BCA Clause	Description	Strategy and Recommendations
D2.15	<p>Thresholds:-</p> <p>No step or ramp at any point closer to the doorway than the width of the door leaf, unless:</p> <ul style="list-style-type: none"> • Door opens to road or open space (and door sill not more than 190mm high). 	<p>The following deficiencies exist:</p> <ul style="list-style-type: none"> • Internal Door between Activity Area 1 and Activity Area 2 has a step of approximately 180mm at the door, where as no step is permitted at an internal doorway. <p>It is proposed that this be accepted on the basis that it is advised that the bi-fold doors are to be generally held open on most occasions. The main time the doors are closed is understood to be during rest times which is for approximately 1 hour per day. Additionally the layout is such that there is the provision of an exit at the main entry directly from Activity Area 1 and an alternative exit at the rear of the building directly from Activity Area 2. A contrast nosing is able to be installed for the full length of this opening to further minimise the risk of tripping.</p> <ul style="list-style-type: none"> • External door from Activity Area 2 has 3 steps with a combined height of approximately 410mm at the door in lieu of a maximum of 190mm step at any point closer to the doorway than the width of the door. <p>It is proposed that this be rectified with a ramp having a gradient of not steeper than 1:14.</p> <p><u>Recommendations:</u></p> <ol style="list-style-type: none"> 9. That the existing internal step at the doorway between Activity Area 1 and Activity Area 2 be accepted subject to the installation of a slip resistant contrast nosing consistent with Recommendation 8 of this Report. 10. That the existing steps at the rear external doorway be upgraded with a ramp commencing at the height of the internal floor level and having a gradient not steeper than 1:14, except where a landing and steps are provided in accordance with BCA Clause D2.15. <p>Details to be provided in conjunction with Construction Certificate Application.</p>

BCA Clause	Description	Strategy and Recommendations
D2.16	<p>Barriers to prevent falls (Balustrades):-</p> <p>A continuous barrier/balustrade to be provided along the side of any roof to which public access is provided, any stairway or ramp, any floor, corridor, hallway, balcony, veranda, mezzanine, access bridge or the like and along the side of any access path to a building if it is not bounded by a wall and the surface beneath is more than 4m for an openable window and 1m in any other case. Balustrade height to be at least 1.0m above level surfaces, 865mm above stair nosings and gaps to be not greater than 125mm (ie 125mm sphere must not pass through it).</p>	<p>The following deficiencies exist:</p> <ul style="list-style-type: none"> • Balustrade to First Floor office balcony is less than 1.0m (i.e. approx. 980 to 995mm) in height in places. • Balustrade to internal stairway is less than 865mm above stair flight nosings (i.e. approx. 775mm) and contains gaps greater than 125mm (i.e. approx. 220mm). <p>Recommendations:</p> <p>11. That the existing First Floor balcony balustrade be upgraded with the top rail increased in height to at least 1.0m above the balcony floor.</p> <p>12. That the balustrade to the internal stairway be upgraded with a height not less than 865mm above stair flight nosings and reduce gaps to be not greater than 125mm (i.e. does not permit a 125mm sphere to pass through).</p> <p>Details to be provided in conjunction with Construction Certificate Application.</p>
D2.17	<p>Handrails:-</p> <ul style="list-style-type: none"> • Located on at least one side of ramp or stairs at a height of at least 865mm; • Located on two sides of stairs when in excess of 2m in width (and where required by Clause D3.3 and AS1428.1); • 865mm above the stair nosings; • continuous between stair flight landings. 	<p>The following deficiencies exist:</p> <ul style="list-style-type: none"> • No handrail provided to rear external stairway. • Handrail to internal First Floor office stair is less than 865mm above stair flight nosings (i.e. approx. 775mm). <p>Recommendations:</p> <p>13. That the existing rear external stairway be provided with a handrail to at least 1 side at a height of 865mm above stair flight nosings.</p> <p>14. That a continuous handrail be provided to the internal First Floor office stair to at least 1 side at a height of 865mm above stair flight nosings so that the existing clear width is not reduced.</p> <p>Details to be provided in conjunction with Construction Certificate Application.</p>
D2.20	<p>Swinging doors:-</p> <p>Must not encroach more than 500mm into the required width of the stair, or when fully open not more than 100mm into the width of the exit.</p> <p>Door in exit to swing in the direction of egress unless the door serves a part of the building having an area not more than 200m² and the door is fitted with a hold open device.</p>	<p>The existing Ground Floor front entry (exit door) swings inwards in lieu of in the direction of egress. It is considered appropriate that this may be retained to swing inwards due to the relatively low population and availability of a second exit, subject to an automatic hold open device being installed.</p> <p>Recommendation:</p> <p>15. That the existing front egress door be accepted to swing inwards subject to an automatic hold open device (i.e. parrot beak type device) being installed. Details to be in Construction Certificate documentation.</p>

BCA Clause	Description	Strategy and Recommendations
D2.21	<p>Operation of latch:-</p> <p>Exit doors and doors in the path of travel to an exit to be provided with lever latch handle device located between 900mm and 1100mm above the floor and openable with a single handed downward action without recourse to a key and if serving an area required to be accessible by Part D3 of the BCA and:</p> <ul style="list-style-type: none"> • be such that the hand of a person who cannot grip will not slip from the handle during the operation of the latch; and • have a clearance between the handle and the back plate or door face at the centre grip section of the handle of not < 35mm and not > 45mm. 	<p>The external doors used for egress, i.e. front entry door and rear door from Activity Area 2 plus door separating Activity Area 1 and Activity Area 2 require review and modification where necessary with confirmation the doors have single device lever handles operable at all times on the side facing a person seeking egress.</p> <p>Recommendation:</p> <p>16. That the external doors used for egress, i.e. front entry door and rear door from Activity Area 2 plus door separating Activity Area 1 and Activity Area 2 require review and modification so that the doors have single device lever handles operable at all times on the side facing a person seeking egress. Details to be in Construction Certificate documentation.</p>
E1.6	<p>Portable Extinguishers:-</p> <p>To be installed to AS2444</p>	<p>There are no existing portable fire extinguishers provided.</p> <p>Recommendation:</p> <p>17. That portable fire extinguisher/s be provided in accordance with BCA Clause E1.6 & AS2444-2001 to be provided. Details required with Construction Certificate documentation.</p>
E4.2	<p>Emergency Lighting:-</p> <p>Required (in accordance with AS 2293.1) in:</p> <ul style="list-style-type: none"> • Every fire isolated exit; • every storey >300m² in area • path of travel to an exit and in any room with floor area > 100m² that does not open to a corridor/space with emergency lighting and any room having a floor area in excess of 300m²; • any room with floor area >300m²; • any room or space to which there is public access in every storey in a Class 6 or 9b building if that storey has a floor area >300m², or any point more than 20m from a doorway leading directly to stairway of open space; • every non-fire isolated stairway 	<p>There is currently no emergency lighting provided. This is required to the internal stairway.</p> <p>Recommendation:</p> <p>18. That emergency lighting be provided to the internal stairway including with lux levels and test facilities to enable certification to be obtained confirming compliance with BCA Clause E4.2, E4.4 & AS/NZS2293.1-2018. Details to be provided with Construction Certificate documentation.</p>
E4.5 & E4.6	<p>Exit signs and Directional Signs:-</p> <p>Clearly visible to persons approaching an exit, above doors:</p> <ul style="list-style-type: none"> • to enclosed or external stairs, passageways and ramps • to external access balcony, • from an enclosed stair, passageway or ramp at the level of discharge to the road; • serving as or forming part of a required exit in a storey with emergency lighting. <p>Exits must be readily apparent with directional exit signage as required.</p>	<p>There are no existing illuminated exit signs above the external exit doors.</p> <p>Recommendation:</p> <p>19. That illuminated exit signs be provided above the front and rear exit doors including with discharge test facilities, labelling etc. Details confirming compliance with BCA Clause E4.5, E4.6 & AS/NZS2293.1-2018 to be provided with Construction Certificate documentation.</p>

Table 3.1 – BCA Fire & Life Safety Audit Strategy and Recommendations

3.2 BCA Assessment Natural Lighting Only

BCA Clause	Description	Natural Lighting Assessment
F4.1	<p>Provision of Natural light:-</p> <p>This is required to all Class 9b – classrooms for schools; playrooms for childhood centres</p>	Refer to F4.2.
F4.2	<p>Methods and extent of natural lighting:-</p> <ul style="list-style-type: none"> • Provided by windows with light transmission and are open to sky or face a courtyard; <p>Natural lighting must be via windows required that are not less than 10% of the floor area of the room, or by rooflights that a not less than 3% of the floor area of the room.</p>	<p>Activity Area 1 appears to have approximately 4.1m2 natural ighting via windows and the front door, whereas approximately 5.5m2 is required. Note: Unlike dwellings natural lighting is unable to be borrowed via adjacent rooms to achieve compliance.</p> <p><u>Recommendation:</u></p> <p>20. That Activity Area 1 requires review to confirm the space has natural lighting via windows that are not less than 10% of the floor area of the room, or by rooflights that a not less than 3% of the floor area of the room. Details to be in Construction Certificate documentation.</p>

Table 3.2 – BCA Natural Lighting Review

3.3 BCA Fire Resistance Levels

Building elements are required to contain a Fire Resistance Level (FRL) in accordance with Specification C1.1 and Table 5 of the BCA as follows:

BUILDING ELEMENT	Class 5, 7b or 9b
EXTERNAL WALL (including any column and other building element incorporated therein) or other external building element, where the distance from any fire-source feature to which it is exposed is – Less than 1.5m 1.5m to less than 3m 3m or more	90/90/90 60/60/60 -/-/
EXTERNAL COLUMN not incorporated in an external wall, where the distance from any fire-source feature to which it is exposed is – Less than 1.5m 1.5m to less than 3m 3m or more	90/-/ 60/-/ -/-/
COMMON WALLS & FIRE WALLS-	90/90/90
INTERNAL WALLS Between or bounding SOU's. Bounding public corridors, public lobby or the like– <ul style="list-style-type: none"> • Loadbearing parts • Non-loadbearing parts Bounding a stair if required to be fire rated	-/-/ -/-/ 60/60/60
ROOFS	-/-/

Table 3.1 – Fire Resistance Levels

The following additional information is provided:

- (a) External walls required to have an FRL need only be tested from outside to satisfy the FRL.

ANNEXURE A

Schedule of Essential Fire Safety Measures (Existing and Proposed)

The building is currently provided with the following existing essential fire safety measures and it is recommended that the building be provided with the following proposed essential fire safety measures, capable of performing and being maintained to the standard listed in the Schedule below. For the purposes of Clause 168 of the Environmental Planning and Assessment Regulation 2021, these standards will be considered to be the current fire safety schedule for the building.

SCHEDULE

Measure	Design/ Installation Standard	Existing Installation	Proposed Installation
Emergency Lighting	BCA Clauses E4.2, E 4.4 & AS/NZS 2293.1 – 2018	Nil	✓
Exit Signs	BCA Clause E4.5, E4.6, E4.8 & AS/NZS 2293.1 – 2018	Nil	✓
Fire Door (enclosure / beneath stairway if proposed)	BCA Clauses D2.8, C3.4 & AS1905.1 - 2015	Nil	✓
Paths of Travel	EP&A (Development Certification and Fire Safety) Reg 2021 Clause 186	Nil	✓
Portable Fire Extinguishers	BCA Clause E1.6 & AS2444 – 2001	Nil	✓
Protection of Openings in External Walls	Subject to confirmation of works to address BCA Report by GRS Reports Pty Ltd dated 13 May 2022	Nil	?

The above list may be subject to variation with any Alternative Fire Engineered Solution Report.