



# Sydney Fire Safety Consultancy & Building Inspections

## BUILDING CODE OF AUSTRALIA ASSESSMENT REPORT

(BCA 2022 Edition – Volume 2)

**LOT 40, DP 16725, 19 BEBE STREET, REVESBY NSW 2212**



*The assessment was based on a Building Inspection and a review of the Architectural Plans Prepared by Concetto Design + Associates and A&K Engineering Group Sheets 1 to 7, Revision A and Dated 04/07/2023.*

BCA Inspection & Assessment Report	-	Council DA Submission	Manuyel Gregory – Senior Building Surveyor & (BCA) Consultant & Dated 12 <sup>th</sup> November, 2024.
DOC. NAME	REV.	DESCRIPTION	PREPARED/DATE

# INTRODUCTION

## 1.1 Introduction, Building & Site Description

The following Building Code of Australia (BCA) report has been prepared on behalf of the building owners regarding the conversion of the existing single storey detached outbuilding located at the rear of the property to a secondary dwelling and a single garage not associated with the subject Class 1a building.

The external walls have been constructed from brick material and the roof cladding from colourbond steel. The owners are proposing to construct an internal fire rated wall using lightweight plasterboard material to separate the garage from the secondary dwelling. New glass sliding doors are proposed to be installed on the east and west elevations of the secondary dwelling. The secondary dwelling will consist of 1 bedroom, living area, kitchen and a bathroom.

The site is described as Lot 40, DP 16725, 19 Bebe Street, REVESBY NSW 2212. The subject property fronts Bebe Lane at the rear of the property. The property slopes generally to the rear laneway. The surrounding buildings are predominantly residential dwellings.

## 1.2 Purpose of the Report

The purpose of this report is to detail all relevant deemed-to-satisfy provisions of the Building Code of Australia 2022 (BCA/NCC), Volume 2 that relate to the secondary dwelling conversion and single garage. At the request of the local Council, the owner has engaged our services to prepare a BCA Assessment Report to be lodged with DA for approval.

## 1.3 Report Basis & Information Relied Upon

This report is based on:

- i. The Building Code of Australia 2022 (Volume 2);
- ii. Architectural Plans prepared by Concetto Design + Associates, A&K Engineering Group, Drawing Numbers 1 to 7, Revision A and Dated 04/07/2023; and
- iii. Inspection of the building was undertaken by Mr Manuyel Gregory on Tuesday 29 October, 2024.

## 1.4 Exclusions

This report does not consider the following except where specifically mentioned;

- i. The requirements of other service providers (i.e., Ausgrid, Sydney Water, Jemena, NBN Co etc.)
- ii. Council or State Planning policies including Development and Complying Development Applications.
- iii. Structural adequacy of the existing building including the footings, slab, walls, roofs.
- iv. Basix Commitments (Refer to Basix Certificate).

- v. Concealed areas including roof space.
- vi. Electrical services including switchboard and RCD.
- vii. OSD and Drainage.
- viii. Waterproofing of wet areas.
- ix. Bushfire requirements. A bushfire consultant will need to be engaged if the subject property is located in a bushfire zone.
- x. Swimming Pool Fencing.
- xi. Properties in flood affected areas which will be subject to a flood study prepared by a Hydraulic Consultant.
- xii. Alternative Fire Engineering Reports.
- xiii. NDIS, Livable Housing or disability requirements.
- xiv. Flood affected properties.
- xv. The report does not consider any structural elements or geotechnical matters relating to the building.
- xvi. There was no assessment of concealed building elements such as termite protection, stormwater drainage, concrete slabs/footings etc.

BCA Clause Title	Deemed to Satisfy Provisions Parts	Description of Compliance Requirement	Proposed Design BCA "Deemed to Satisfy" OR "Performance Solution" to Satisfy BCA Performance Requirements	Comments
<b>BCA PART A6 - BUILDING CLASSIFICATION</b>				
Building Classification	A6G1	Noted as Applicable	DTS	Proposed Building Classification – Class 1a – Secondary Dwelling Class 10a – Attached Garage
<b>SECTION 3 - ACCEPTABLE CONSTRUCTION</b>				
Structural Provisions	Part 2.1 & 2.2	See Comments.	DTS	Noted. No recommendations.
Site Preparation	Part 3.1.1 & 3.1.2	Noted as Applicable.	DTS	Noted. No recommendations.  Minor internal works proposed. The proposed work involves the construction of an internal fire rated wall between the secondary dwelling and the existing garage.  <b>"No further action required"</b>
Earthworks	3.1.2	Requirements for earthworks.	DTS	Not applicable.  Our inspection of the property and assessment of the architectural plans revealed there are no earthworks and retaining walls proposed or existing which relate to the garage and secondary dwelling conversion.
Earth Retaining Structures	3.2.1	Requirements for earth retaining structures.	---	Not applicable.  Our inspection of the property and assessment of the architectural plans revealed there are no earthworks and retaining walls proposed or existing which relate to the garage and secondary dwelling conversion.
Drainage	Part 3.3.1	Requirements for site drainage – Application of this Part.	DTS	Noted. No recommendations.
Drainage	Part 3.3.2	Requirements for site drainage.	DTS	Noted. No recommendations.

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Drainage	Part 3.3.3	Requirements for Surface Water Drainage.	DTS	<p><b>"Building to Comply"</b></p> <p>Surface water must be diverted away from the Class 1a building as follows –</p> <ul style="list-style-type: none"> <li>(a) Slab-on-ground – finished ground level adjacent to the building: the external finished surface surrounding the slab must be drained to move surface water away from the building and grades to give a slope of not less than 25 mm over the first 1 metre from the building.</li> <li>(b) Slab-on-ground – finished slab heights: the height of the slab-on-ground above external finished surfaces must be not less than 100 mm above the finished ground level in low rainfall intensity areas or sandy, well drained areas; or 50 mm above impermeable (paved or concrete) areas that slope away from the building; or 150 mm in any other case.</li> <li>(c) The ground beneath suspended floors must be graded so that the area beneath the building is above the adjacent external finished ground level and surface water is prevented from ponding under the building.</li> </ul> <p><b>Details to demonstrate compliance shall be submitted to the local Council.</b></p>
Drainage	Part 3.3.4	Requirements for Subsoil Drainage.	DTS	<p>Noted. No recommendations.</p> <p>It is not proposed to install subsoil drainage</p> <p>The roof water is connected to an existing stormwater drainage system. UPVC stormwater pipes are currently located at the front and rear of the building.</p>
Drainage	Part 3.3.4	Requirements for Stormwater Drainage.	DTS	<p><b>"See Comments Below"</b></p> <p>The stormwater system must comply with the following –</p>

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				<p>(a) The position and manner of discharge of the stormwater drainage system must be to the satisfaction of the appropriate authority.</p> <p>(b) The stormwater drainage system must be designed so that any overflow during heavy rain periods is prevented from flowing back into the building.</p> <p>(c) Cover to stormwater drains: the cover to 90 mm Class 6 UPVC stormwater drains installed underground must not be less than -</p> <p>(i) Under soil – 100 mm;</p> <p>(ii) Under paved or concrete areas – 50 mm.</p>
Termite Risk Management	Part 3.4 (3.4.1 – 3.4.3)	Requirements for termite risk management.	DTS	<p><b>"Works Required"</b></p> <p><u>Requirement for Termite Protection</u> - Termite risk management is to be provided to the rear detached building to minimize the risk of termite attack to primary building elements in accordance with the BCA &amp; AS 3660.1-2014.</p> <p><u>Termite Durable Notice</u> - A termite durable notice is to be installed in the electrical meter box upon completion of the termite protection in accordance with the BCA Clause 3.4.3</p> <p><u>Termite Protection Certificate</u> - A certificate of compliance for the termite protection shall be submitted to the local Council prepared by a licenced termite specialist to demonstrate compliance with AS 3660.1-2014.</p> <p><b>Details to demonstrate compliance shall be submitted to the local Council.</b></p>
<b>BCA PART 3.2 - FOOTINGS AND SLABS</b>				
Footings & Slabs	Parts 4.1 & 4.2	Requirements for footings and slabs.	DTS	<b>"Works Required"</b>

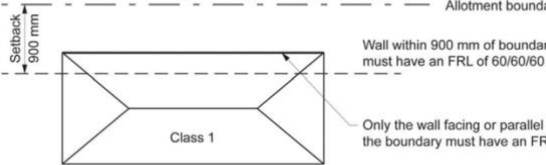
BCA Clause Title	Deemed to Satisfy Provisions Parts	Description of Compliance Requirement	Proposed Design BCA "Deemed to Satisfy" OR "Alternative Solution" to Satisfy BCA Performance Requirements	Comments
				<p>The secondary dwelling and garage are supported by an existing concrete slab.</p> <p><u>NCC Clause 4.2.8 Vapour Membrane</u> – The engineer or the applicant is to demonstrate that a vapour membrane has been installed to the existing building/concrete slab/footings in accordance with NCC Clause 4.2.8 and AS2870-2011.</p> <p><b>It is recommended that a certificate of structural adequacy prepared by a qualified Civil or Structural Engineer be submitted to the local Council for the existing concrete slab and footings. Details to demonstrate compliance with Clause 4.2.8 (vapour membrane) shall be submitted to the local Council.</b></p>
<b>BCA PART 3.3 - MASONRY</b>				
Unreinforced Masonry	Parts 5.1 & 5.2	Requirements for masonry construction.	DTS	Noted. No recommendation.
<b>BCA PART 6 - FRAMING</b>				
Framing	Part 6.1	Requirements for framing.	DTS	<p><b>"Works Required"</b></p> <p>A Certificate of Structural Adequacy is to be prepared by a qualified Civil or Structural Engineer for the existing wall/roof frames and the proposed internal alterations to the building.</p> <p><b>Details to demonstrate compliance shall be submitted to the local Council.</b></p>
Sub-floor ventilation	6.2.1	Requirements for sub-floor ventilation	---	Not applicable.
Steel framing	Part 6.3	Requirements for steel framing.	---	Not applicable.
Timber framing	Part 6.1	Requirements for timber framing.	DTS	<b>"Works Required"</b>

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				<p>A Certificate of Structural Adequacy is to be prepared by a qualified Civil or Structural Engineer for the existing wall/roof frames and the proposed internal alterations to the building.</p> <p><b>Details to demonstrate compliance shall be submitted to the local Council.</b></p>
Structural steel members.	Part 6.3	Requirements for structural steel members.	---	Not applicable.
<b>BCA PART 7 - ROOF &amp; WALL CLADDING</b>				
Sheet roofing	7.2	Requirements for roof sheeting.	DTS	<p><b>"Complies"</b></p> <p>The existing roof sheeting complies with BCA Part 7.2 and the Australian Standard.</p> <p><b>"No further action required"</b></p>
Roof tiles and shingles	7.3	Requirements for roof tiles and shingles.	---	Not applicable.
Gutters and downpipes	7.4	Requirements for gutters and downpipes.	DTS	<p><b>Noted.</b></p> <p>The gutters, stormwater downpipes, eaves and fascia's are existing and the owner has no intention to carry out works to gutters and downpipes.</p>
Timber and composite wall cladding	7.5	Requirements for timber and composite wall cladding.	---	Not applicable.
<b>BCA PART 8 - GLAZING</b>				
Glazing	8.1 - 8.4	Requirements for glazing. (windows/external glazed doors, glass sizing & installation, glazing human impact).	DTS	<p><b>"Works Required"</b></p> <p>A compliance certificate from a suitably qualified person shall be submitted to the local Council demonstrating that all newly installed glazing in the secondary dwelling complies with NCC Parts 8.1 – 8.4 of Volume 2, AS1288-2006 and AS2047-2014.</p>

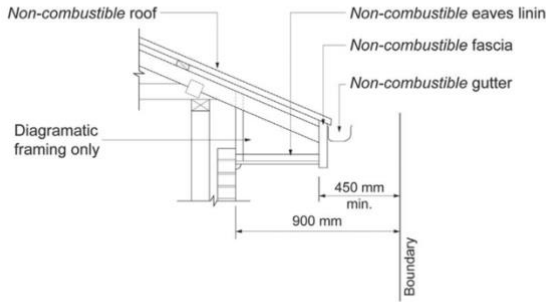


BCA Clause Title	Deemed to Satisfy Provisions Parts	Description of Compliance Requirement	Proposed Design BCA "Deemed to Satisfy" OR "Alternative Solution" to Satisfy BCA Performance Requirements	Comments
				Details to demonstrate compliance shall be submitted to the local Council.
<b>BCA PARTS 9.1, 9.2 &amp; 9.3 - FIRE SAFETY</b>				
Scope of Section 9 – Fire Safety Housing Provisions.	9.1.1	<p>Scope of the Part – Refers to Fire Safety Requirements.</p> <p>This Section sets out the Deemed-to-Satisfy Provisions for –</p> <ul style="list-style-type: none"> <li>(a) Fire separation of external walls (see Part 9.2); and</li> <li>(b) Fire protection of separating walls (see Part 9.3); and</li> <li>(c) Fire separation of garage top dwellings (see Part 9.4); and</li> <li>(d) Smoke alarms and evacuation lighting (see Part 9.5).</li> </ul>	DTS	Noted. Information Clause only.
Application of Section 9 – Fire Safety Housing Provisions.	9.1.2	Application of the Part – Refers to Fire Safety Requirements.	DTS	Noted. Information Clause only.
Fire Separation of External Walls – Class 1 Buildings	9.2.1	<p>Application of this part – External Walls of Class 1 Buildings.</p> <p>An external wall of a Class 1 building, any openings in that wall, must comply with Clause 9.2.2 &amp; 9.2.3 if the wall is less than: -</p> <ul style="list-style-type: none"> <li>(a) 900 m from the allotment boundary other than the boundary adjoining a road alignment or other public space; or</li> <li>(b) 1.8 m from another building on the same allotment other than a Class 10 building associated with the Class 1 building or detached part of the same Class 1 building.</li> </ul>	DTS	<p><b>"Complies"</b></p> <p>The distance between the external walls and to the adjoining side boundaries is more than 900 mm. The distance between the main dwelling and secondary dwelling is more than 1.8 metres.</p> <p>Fire protection to the external walls and openings located along external walls will not be required.</p> <p><b>"No further action required"</b></p>

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Fire Safety – Measurement of distances.	9.2.2	<p>Outlines the measurement of distances for external walls.</p> <p>The distance from any point of an external wall of a building to an allotment boundary or another building is the distance to that point measured along a line at right angles from the allotment boundary along a line at right angles from the allotment boundary or external wall of the other building which intersects that point being obstructed by the wall must comply with 9.2.3 below.</p> <p>Where the wall within a specified distance is required to comply with 9.2.3 below only that part (see figure below in 9.2.3), only that part of the wall including any openings) within the specified distance need to be constructed to achieve an FRL of 60/60/60.</p> <p>Where the distance measured is between attached or detached buildings of different heights, the distance must be taken from the external wall with the highest elevation measured at right angles to a point that intersects the nearest part of a vertical projection above the adjacent building, excluding eave overhang.</p>	DTS	<p><b>"Complies"</b></p> <p>The distance between the external walls and to the adjoining side boundaries is more than 900 mm. The distance between the main dwelling and secondary dwelling is more than 1.8 metres.</p> <p>Fire protection to the external walls and openings located along external walls will not be required.</p> <p><b>"No further action required"</b></p>
Construction of External Walls	9.2.3	<p>Requirements for Fire Separation.</p> <p>The NCC requires walls located less than 900 mm from the adjoining boundary or less than 1.8 m from another building on the same allotment to have a fire-resistance level (FRL) of not less than 60/60/60 when tested from the outside. The external walls must commence at the footings or ground slab and extend to the underside of a non-combustible roof-</p>	DTS	<p><b>"Complies"</b></p> <p>The distance between the external walls and to the adjoining side boundaries is more than 900 mm. The distance between the main dwelling and secondary dwelling is more than 1.8 metres.</p> <p>Fire protection to the external walls and openings located along external walls will not be required.</p> <p><b>"No further action required"</b></p>

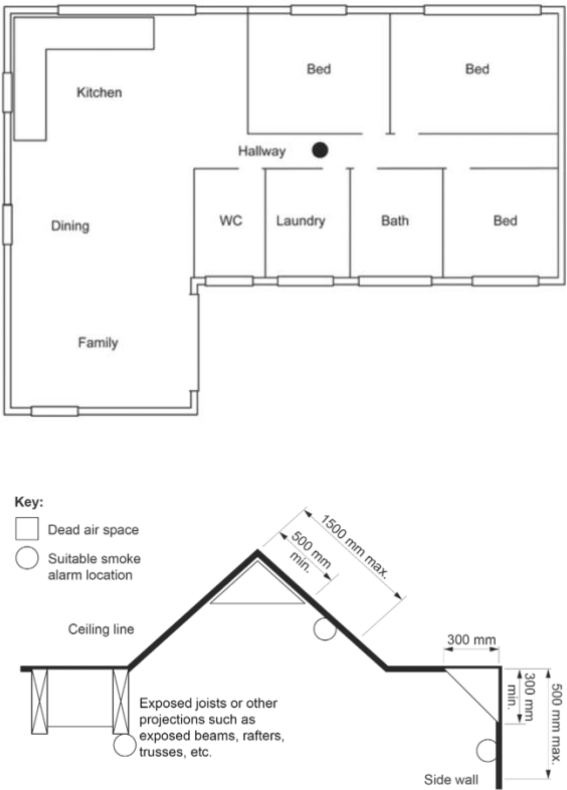
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		<p>cladding. The wall must be of masonry-veneer construction in which the external masonry veneer is not less than 90 mm thick; or be of masonry construction not less than 90 mm thick; or install CSR weatherproof fire rated plasterboard sheeting along the external walls located less than 900 mm to the adjoining boundary. Fire protection (FRL 60/60/60 when tested from the outside) will be required to the front external walls.</p> 		
Fire Safety – Class 10a Buildings & Class 10a between Class 1 and the allotment Boundary	9.2.4, 9.2.5, 9.2.6 & 9.2.7	<p>Outlines the requirement of Class 10a Buildings in relation to Class 1 Buildings.</p> <p>This Clause requires the fire protection of Class 1a buildings where a Class 10a awning building is located between or adjacent to a Class 1a building associated with and another building on the same allotment.</p>	---	<p><b>Not applicable.</b></p> <p>The external walls of the existing attached garage are located more than 900 mm to the adjoining side boundary. An FRL (Fire Resistance Level) is not required to the external garage walls.</p>
Fire Safety - Carports	9.2.8	Outlines the requirement for open carports.	---	Not applicable.
Fire Safety – Allowable Encroachments	9.2.9	<p>Outlines the requirement for allowable encroachments.</p> <p>Encroachments allowed within 900 mm of an allotment boundary or within 1.8 m of another building on the same allotment are —</p>	DTs	<p><b>"Complies"</b></p> <p><b>"No further action required"</b></p>

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		<ol style="list-style-type: none"> <li>1. (i) non-combustible fascias, gutters and downpipes; and</li> <li>2. (ii) light fittings, electricity or gas meters, aerials or antennas; and</li> <li>3. (iii) pergolas, sun blinds or water tanks; and</li> <li>4. (iv) unroofed terraces, landings, steps and ramps, not more than 1 m in height.</li> </ol> <p>Encroachments allowed up to but not closer than 450 mm from an allotment boundary or up to but not closer than 900 mm from another building on the same allotment or associated encroachments of another building on the same allotment are —</p> <ol style="list-style-type: none"> <li>1. (i) combustible fascias, gutters and downpipes; and</li> <li>2. (ii) eaves with non-combustible roof cladding and non-combustible lining; and</li> <li>3. (iii) flues, chimneys, pipes, domestic fuel tanks, cooling or heating appliances or other services.</li> <li>4. Encroachments allowed between an external wall of a building and the vertical projection of an adjoining building on the same allotment are non-combustible fascias, gutters and downpipes.</li> </ol>		

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Fire Safety – Roof Lights	9.2.10	Outlines the requirement for roof lights.	---	Not applicable.
Fire Safety – Fire Protection of Separating Walls	9.3.1	Outlines the requirement for fire protection of internal separating walls.	DTS	<p><b>"Works Required"</b></p> <p>The proposed internal separating wall between the secondary Class 1a building and the Class 10a garage which is not associated with the Class 1a building must –</p> <ul style="list-style-type: none"> <li>(a) be constructed from material having an FRL of not less than 60/60/60.</li> <li>(b) commence at the footings or ground slab.</li> <li>(c) Extend to the underside of the non-combustible roof covering.</li> <li>(d) the separating wall of lightweight construction must be tested in accordance with Specification 6 of the BCA.</li> <li>(e) The separating wall constructed in accordance with item c above must not be crossed by timber or other combustible</li> </ul>

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				<p>building elements except for roof battens with dimensions of 75 x 50 mm or less or roof sarking and must have any gap between the top of the wall and the underside of the roof covering packed with mineral fibre or other suitable fire-resisting material.</p> <p>An assessment of the architectural plans indicates that the applicant is proposing to construct an internal fire separating wall between the secondary dwelling and the garage. Refer to Drawing No. 004 Prepared by Consetto Design+Associates, A &amp; K Engineering Revision A and dated 04/07/2023.</p> <p><b><u>Installation Certificate</u> – It is recommended that an installation certificate be submitted by the installer to demonstrate the internal separating wall has been constructed in accordance with BCA Clause 9.3.1 and the manufacturers specification to achieve a minimum Fire Resistance Level (FRL) of 60/60/60.</b></p>
Fire Safety – Services in Separating Walls	9.3.2	Outlines the requirement for fire protection of services penetrating fire walls.	DTS	<p><b>"Works to Comply"</b></p> <p><b>(Refer to Notes in BCA Clause 9.3.1 above).</b></p> <p>Any services that penetrate a fire separating wall must have an FRL of not less than -/60/60 in accordance with AS4072.1 and AS1530.4.</p>
Fire Safety – Roof Lights	9.3.3	<p>Outlines the requirement for roof lights.</p> <p>Combustible roof lights, skylights or the like installed required to be a non-combustible covering must have an aggregate of not more than 20% of the roof or roof part; and be not less than 900 mm from the vertical projection of a separating wall extending to the underside of the roof covering.</p>	---	Not applicable.

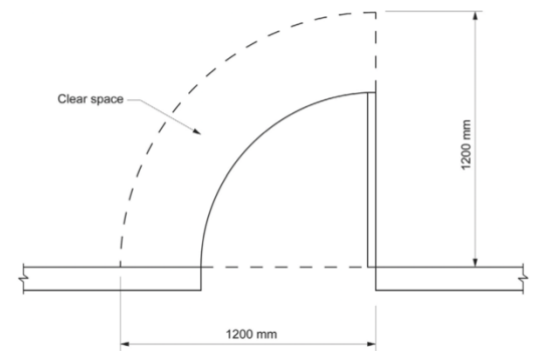
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Fire Safety - Fire Protection of Garage Top Dwellings – Wall requiring Protection	9.4.1	Outlines the requirement for Walls which require protection.	---	Not applicable.
Fire Safety - Fire Protection of Garage Top Dwellings – Separating floors	9.4.2	Outlines the requirement for separating floors.	---	Not applicable.
Fire Safety & Smoke Alarm requirements	9.5.1, 9.5.2 & 9.5.4	Requirements for smoke alarms.	DTS	<p><b>"Works Required"</b></p> <p><u>Clause 9.5.1</u> – Hard-wired smoke alarms must be installed in Class 1a building in accordance with BCA Clauses 9.5.2, 9.5.4 &amp; AS3786-2014. The smoke alarms must be powered from the consumer mains source and be interconnected where there is more than one alarm in the building.</p> <p><u>Clause 9.5.2</u> - In a Class 1a building, smoke alarms must be located in—</p> <ul style="list-style-type: none"> <li>a. any storey containing bedrooms, every corridor or hallway associated with a bedroom, or if there is no corridor or hallway, in an area between the bedrooms and the remainder of the building; and</li> <li>b. each other storey not containing bedrooms.</li> </ul> <p><u>Clause 9.5.4</u> - In a Class 1a building, smoke alarms must be located in —</p> <ul style="list-style-type: none"> <li>1. (a) any storey containing bedrooms, every corridor or hallway associated with a bedroom, or if there is no corridor or hallway, in an area between the</li> </ul>

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				<p>bedrooms and the remainder of the building; and</p> <p>2. (b) A smoke alarm must be located a minimum 300 mm away from the corner junction of the wall and ceiling.</p> <p>See diagrams below showing location of smoke alarms: -</p>  <p>The floor plan shows a layout with a Kitchen, Dining, Family, Hallway, WC, Laundry, Bath, and four Bedrooms. A smoke alarm is indicated in the Hallway. The cross-section diagram shows a gable roof with a smoke alarm on the side wall. Key dimensions include: 1500 mm max. for the roof slope, 500 mm min. for the alarm height from the ceiling line, 300 mm for the alarm distance from the corner junction, and 500 mm max. for the alarm distance from the side wall.</p> <p>Key:</p> <ul style="list-style-type: none"> <li>Dead air space</li> <li>Suitable smoke alarm location</li> </ul> <p>Diagram 1 – Installation of smoke alarms to avoid dead air space</p> <p>Secondary Dwelling – An assessment of the architectural plan indicates that a smoke alarm is proposed to be located near the bedroom.</p>



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				<p>The position of the smoke alarm complies with the BCA. Refer to Drawing No. 004 Prepared by Consetto Design + Associates, A &amp; K Engineering Revision A and dated 04/07/2023.</p> <p><b><u>Smoke Alarm Installation Certificate</u> - A smoke alarm installation certificate from a licensed electrician shall be submitted to the local Council to confirm the smoke alarm has been installed in accordance with BCA Clauses 9.5.1, 9.5.2, 9.5.4 &amp; AS3786-2014 and AS/NZS3000-2018.</b></p>
<b>BCA PART 10 - HEALTH AND AMENITY</b>				
Wet Areas & External Waterproofing	10.2	Requirements for waterproofing wet areas & external above ground membranes.	DTS	<p><b>"Works Required"</b></p> <p><b><u>Waterproofing/Water-Resistant Certificate of Compliance</u> - A waterproofing &amp; water-resistant certificate of compliance from a licenced waterproofing contractor shall be submitted to the local Council confirming the waterproofing in the bathroom located in the secondary dwelling has been completed in accordance with the NCC &amp; AS3740-2010.</b></p>
Room Heights	10.3	Requirements for the height of rooms.	DTS	<p><b>"Complies"</b></p> <p>The BCA requires a minimum height of 2.4 metres for habitable rooms and 2.1 metres for non-habitable rooms. The architectural plans indicate that the existing floor to ceiling height is 2.6 metres approximately.</p> <p><b>"No further action required."</b></p>
Facilities	10.4.1	This Clause outlines required facilities.	DTS	<p><b>"Works required"</b></p> <p>The secondary dwelling currently has the following –</p> <p>(a) kitchen sink and facilities for the preparation of cooking of food; and</p>

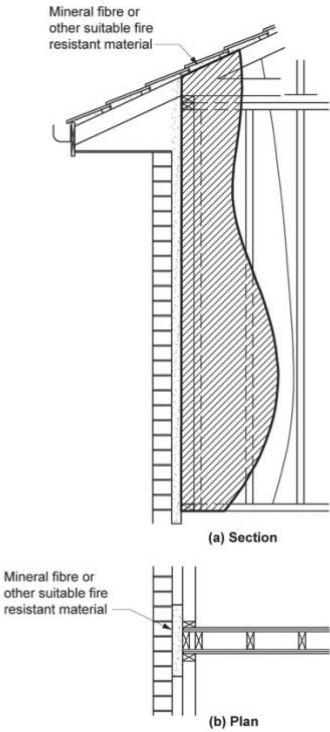
BCA Clause Title	Deemed to Satisfy Provisions Parts	Description of Compliance Requirement	Proposed Design BCA "Deemed to Satisfy" OR "Alternative Solution" to Satisfy BCA Performance Requirements	Comments
				<p>(b) a shower; and  (c) washing machine; and  (d) closet pan; and  (e) washbasin</p> <p><b>Note – A separate laundry washtub in the same room as the washing machine must be provided in the secondary dwelling. A handbasin is not considered a washtub.</b></p> <p><b>The architectural plans are to be amended to indicate that a laundry washtub will be provided in the same room as the washing machine.</b></p> <p><b>Details to demonstrate compliance shall be submitted to the local Council.</b></p>
Facilities	10.4.2	Construction of Sanitary Compartments.	DTS	<p><b>"See Comments Below"</b></p> <p>NCC/BCA Clause 3.8.3.3 Construction of sanitary compartments -</p> <p>The door to a fully enclosed sanitary compartment must—</p> <p>(a) open outwards; or  (b) slide; or  (c) be readily removable from the outside of the compartment,</p> <p>unless there is a clear space of at least 1.2 m, measured in accordance with Figure 10.4.2, between the closet pan within the sanitary compartment and the doorway.</p> <p>See below Figure 10.4.2</p>

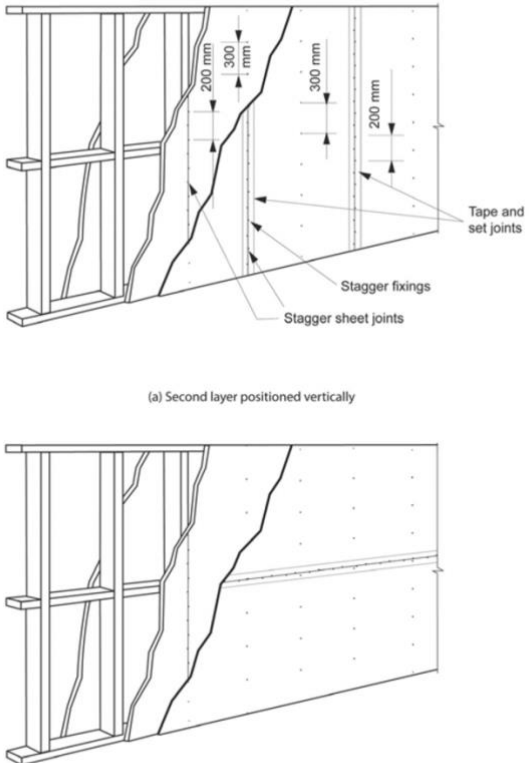
BCA Clause Title	Deemed to Satisfy Provisions Parts	Description of Compliance Requirement	Proposed Design BCA "Deemed to Satisfy" OR "Alternative Solution" to Satisfy BCA Performance Requirements	Comments
				
Health & Amenity - Natural Light	10.5.1	Requirements for light.	DTS	<p><b>"Complies"</b></p> <p>The BCA requires 10% natural light of the floor area of the room be provided by openings such as windows in habitable rooms.</p> <p>Natural lighting in accordance with the BCA Clause 10.5.1 has been provided to the habitable rooms by windows and glass doors in the secondary dwelling (bedroom, sitting area and kitchen).</p> <p><b>"No further action required."</b></p>
Health & Amenity – Artificial Lighting	10.5.2	Requirements for Artificial lighting.	DTS	<p><b>"Complies"</b></p> <p>Artificial lighting has been provided throughout the unauthorised parts in accordance with AS/NZS 1680.0-2009 or at a rate of not less than one (1) light fitting per 16 m2 of floor area.</p> <p><b>"No further action required."</b></p>
Health & Amenity - Ventilation	10.6.1	Application - Requirements for Ventilation.	DTS	Noted. Information Clause only.
Health & Amenity – Natural Ventilation	10.6.2	Requirement for Natural Ventilation.	DTS	<b>"Complies."</b>

BCA Clause Title	Deemed to Satisfy Provisions Parts	Description of Compliance Requirement	Proposed Design BCA "Deemed to Satisfy" OR "Alternative Solution" to Satisfy BCA Performance Requirements	Comments
				<p>The BCA requires 5% natural ventilation of the floor area of the room to be provided by openings such as windows for habitable rooms.</p> <p>Natural ventilation in accordance with the BCA Clause 10.6.2 has been provided to the habitable rooms by windows and glass doors in the secondary dwelling (bedroom, sitting area and kitchen).</p> <p>Natural ventilation has been provided in the bathroom by an existing window.</p> <p><b>"No further action required."</b></p>
Health & Amenity	10.6.3	Location of sanitary compartments.	DTS	<p><b>"Works Required"</b></p> <p>Sanitary compartments must not open directly into a kitchen or pantry unless—</p> <ol style="list-style-type: none"> <li>1. (a) access is by an airlock, hallway or other room; or</li> <li>2. (b) if the sanitary compartment is provided with an exhaust fan or other means of mechanical exhaust ventilation.</li> </ol> <p>The sanitary compartment does open directly into the kitchen area. The applicant must install a mechanical exhaust fan to satisfy.</p> <p><b>The architectural plans shall be amended to indicate that a mechanical exhaust fan will be installed in the bathroom to satisfy Clause 10.6.3 of the BCA.</b></p>

BCA Clause Title	Deemed to Satisfy Provisions Parts	Description of Compliance Requirement	Proposed Design BCA "Deemed to Satisfy" OR "Alternative Solution" to Satisfy BCA Performance Requirements	Comments
Sound Insulation	10.7.1	Sound insulation Requirements.	DTS	<p><b>"Works Required"</b></p> <p>Internal separating walls must have an <math>R_w + C_{tr}</math> (airborne) not less than 50; and be of discontinuous construction if it separates a bathroom, sanitary compartment, laundry or a Class 1a part from a Class 10a part which is not associated with the Class 1a.</p> <p>A wall required to have sound insulation must continue to – the underside of the roof above; or a ceiling that provides the sound insulation for the wall.</p> <p><b>Details of Compliance shall be indicated on the architectural plans.</b></p>
Sound Insulation – Airborne Ratings	10.7.2	Determination of airborne sound insulation ratings.	DTS	<p><b>"Works Required"</b></p> <p>The <math>R_w + C_{tr}</math> sound insulation rating required by 10.7.1 above must –</p> <ul style="list-style-type: none"> <li>(f) Be determined in accordance with AS/NZS ISO 717.1; or</li> <li>(g) Comply with 10.7.5 to 10.7.8 and the relevant provisions of 10.7.3.</li> </ul> <p><b>Details of Compliance shall be indicated on the architectural plans.</b></p>
Sound Insulated Walls	10.7.3	Construction of sound insulated walls.	DTS	<p><b>"Works Required"</b></p> <p>To achieve the appropriate level of sound insulation, the internal separating walls must be constructed as follows –</p> <ul style="list-style-type: none"> <li>(a) Stud Wall Junction – junctions of sound insulated walls with any perimeter walls and roof cladding must be sealed.</li> <li>(b) Plasterboard Sheeting – If two layers are required, the second layer joints must not coincide with those of the first layer. Joints between sheets including the outer layer or between sheets and any</li> </ul>

BCA Clause Title	Deemed to Satisfy Provisions Parts	Description of Compliance Requirement	Proposed Design BCA "Deemed to Satisfy" OR "Alternative Solution" to Satisfy BCA Performance Requirements	Comments
				<p>adjoining construction must be taped and filled solid.</p> <p>(c) Timber-Framed Construction – Timber studs and perimeter members must be installed as follows –</p> <ul style="list-style-type: none"> <li>- Noggings and the like members must not bridge between studs supporting the different wall leaves.</li> <li>- All timber members at the perimeter of the wall must be securely fixed to the adjoining structure and the joints must be caulked so there are no voids between the timber members and the wall.</li> </ul> <p><u>Note</u> – We have assumed that the applicant is proposing to use fire rated plasterboard material with sound insulation to construct the internal separating wall between the garage and the secondary dwelling.</p>

BCA Clause Title	Deemed to Satisfy Provisions Parts	Description of Compliance Requirement	Proposed Design BCA “Deemed to Satisfy” OR “Alternative Solution” to Satisfy BCA Performance Requirements	Comments
				 <p>Mineral fibre or other suitable fire resistant material</p> <p>(a) Section</p> <p>Mineral fibre or other suitable fire resistant material</p> <p>(b) Plan</p>

BCA Clause Title	Deemed to Satisfy Provisions Parts	Description of Compliance Requirement	Proposed Design BCA "Deemed to Satisfy" OR "Alternative Solution" to Satisfy BCA Performance Requirements	Comments
				 <p>(a) Second layer positioned vertically</p> <p>(b) Second layer positioned horizontally</p> <p><b>Installation Certificate – An installation certificate to demonstrate that the internal walls will achieve the required sound insulation in accordance with Part 10.7 of the BCA.</b></p> <p><b>Details of Compliance shall be indicated on the architectural plans.</b></p>



BCA Clause Title	Deemed to Satisfy Provisions Parts	Description of Compliance Requirement	Proposed Design BCA "Deemed to Satisfy" OR "Alternative Solution" to Satisfy BCA Performance Requirements	Comments
Sound Insulation - Services	10.7.4	Method of providing insulation for services.	DTS	<b>"Works to Comply"</b> Details of compliance shall be indicated on the architectural plans regarding the insulation of any services penetrating the internal wall between the garage and secondary dwelling. <b>We recommend a notation referencing the relevant BCA Clause 10/7.4 be included on the architectural plans.</b>
Sound Insulation – Acceptable Forms of Construction for Masonry	10.7.5	Method of providing acceptable forms of construction for masonry.	---	Not applicable.
Sound Insulation – Acceptable Forms of Construction for Concrete Walls	10.7.6	Method of providing acceptable forms of construction for concrete walls.	---	Not applicable.
Sound Insulation – Acceptable Forms of Construction for autoclaved aerated Concrete Walls	10.7.7	Method of providing acceptable forms of construction for autoclaved aerated concrete walls.	---	Not applicable.
Sound Insulation – Acceptable Forms of Construction for Timber and Steel Framed Walls	10.7.7	Method of providing acceptable forms of construction for timber and steel framed walls.	DTS	<b>"Works to Comply"</b> <ol style="list-style-type: none"> <li>(1) Acceptable forms of construction for timber and steel framed walls are set out in (2) and (3).</li> <li>(2) Two rows of 90 mm x 35 mm timber studs or two rows of 64 mm steel studs at 600 mm centres with —  (a) an air gap not less than 20 mm between the rows of studs; and (b) 50 mm thick glass wool insulation or</li> </ol>

BCA Clause Title	Deemed to Satisfy Provisions Parts	Description of Compliance Requirement	Proposed Design BCA "Deemed to Satisfy" OR "Alternative Solution" to Satisfy BCA Performance Requirements	Comments
				<p>60 mm thick polyester insulation with a density of 11 kg/m<sup>3</sup>, positioned</p> <p>between one row of studs, and</p> <p>(c) two layers of 13 mm fire protective grade plasterboard or one layer of 6 mm fibre cement sheet and one layer of 13 mm fire protective grade plasterboard, fixed to outside face of studs,</p> <p>has an <math>R_w + C_{tr}</math> of not less than 50, if constructed in accordance with Figure 10.7.8a.</p> <p>3. (3) Two rows of 64 mm steel studs at 600 mm centres with —</p> <p>(a) an air gap not less than 80 mm between the rows of studs; and</p> <p>(b) 200 mm thick polyester insulation with a density of 14 kg/m<sup>3</sup> positioned between studs; and</p> <p>(c) one layer of 13 mm fire-protective grade plasterboard and one layer 13 mm plasterboard on one outside face and one layer of 13 mm fire-protective grade plasterboard on the other outside face,</p> <p><b>Details of Compliance shall be indicated on the architectural plans.</b></p>
Condensation Management –	10.8.1	Requirements for Condensation regarding the construction of external walls.	DTS	<p>Noted.</p> <p>Where a pliable building membrane is installed in an external wall, it must –</p>

BCA Clause Title	Deemed to Satisfy Provisions Parts	Description of Compliance Requirement	Proposed Design BCA "Deemed to Satisfy" OR "Alternative Solution" to Satisfy BCA Performance Requirements	Comments
External Wall Construction.				<ul style="list-style-type: none"> <li>- Comply with AS4200.1; and</li> <li>- Be installed in accordance with AS4200.2; and</li> <li>- Be located on the exterior side of the primary insulation layer of the wall assemblies that form the external envelope of a building.</li> </ul>
Condensation Management – Exhaust System	10.8.2	Requirements for Condensation regarding exhaust systems.	DTS	<p><b>"Works to Comply"</b></p> <p>The mechanical exhaust system in the bathroom must have a minimum flow rate of 25 L/s for a bathroom. The exhaust from the bathroom must discharge directly or via a shaft or duct to outdoor air.</p> <p><b>The architect is to demonstrate that the mechanical exhaust fan in the bathroom will comply with BCA Clause 10.8.2 on the architectural plans.</b></p>
Condensation Management – Ventilation of Roof Spaces	10.8.3	Requirements for Condensation regarding ventilation of roof spaces.	DTS	<p><b>"See Comments Below"</b></p> <p>In climate zones 6, 7 and 8, a roof must have roof space that is located immediately above the primary layer; or immediately above sarking with vapour permeance of not less than 1.14ug/N.s which immediately above the primary insulation layer; or immediately above ceiling insulation that meets requirements of Clauses 13.2.3(3) and AS13.2.3(4) of the BCA and has a height of not less than 20 mm; and is either ventilated to outdoor air through evenly distributed openings in accordance with Table 10.8.3 of the BCA.</p>
<b>BCA PART 11 - SAFE MOVEMENT &amp; ACCESS</b>				

BCA Clause Title	Deemed to Satisfy Provisions Parts	Description of Compliance Requirement	Proposed Design BCA "Deemed to Satisfy" OR "Alternative Solution" to Satisfy BCA Performance Requirements	Comments
Stairway & Ramp Construction	11.2 (11.2.1 – 11.2.6)	Requirements for Stairway/Ramp construction.	---	Not applicable.
Barriers & Handrails	11.3 (11.3.1 – 11.3.6)	Requirements for barriers and handrails.	---	Not applicable.
Protection of Openable Windows	11.3 (11.3.7 – 11.3.8)	Requirements for the Protection of Window Openable Windows bedrooms and rooms other than bedrooms.	---	Not applicable.
<b>BCA PART 13 - STRUCTURAL DESIGN MANUALS</b>				
Energy Efficiency	13.2.1	Application - Energy efficiency.	DTS	Refer to BASIX Certificate.
Building Fabric - Energy Efficiency	13.2.2	Building fabric & thermal Insulation.	DTS	Refer to BASIX Certificate.
Energy Efficiency	13.2.3	Roofs and Ceilings.	DTS	Refer to BASIX Certificate.
Energy Efficiency	13.2.4	Roof lights.	---	Not applicable.
Energy Efficiency	13.2.5	External walls.	DTS	Refer to BASIX Certificate.
Building Fabric - Energy Efficiency	13.2.6	Floors & Subfloor Walls.	DTS	Refer to BASIX Certificate.
Building Fabric - Energy Efficiency	13.2.7	Attached Class 10a buildings.	DTS	Refer to BASIX Certificate.
Energy Efficiency	13.3.1	Application - External glazing.	DTS	Refer to BASIX Certificate.
Energy Efficiency	13.3.2	External Glazing – Winter.	DTS	Refer to BASIX Certificate.
Energy Efficiency	13.3.3	External Glazing – Summer.	DTS	Refer to BASIX Certificate.
Energy Efficiency	13.3.4	Shading.	DTS	Refer to BASIX Certificate.

BCA Clause Title	Deemed to Satisfy Provisions Parts	Description of Compliance Requirement	Proposed Design BCA "Deemed to Satisfy" OR "Alternative Solution" to Satisfy BCA Performance Requirements	Comments
Energy Efficiency	13.4.1	Application – Building Sealing.	DTS	Refer to BASIX Certificate.
Energy Efficiency	13.4.2	Building Sealing – Chimneys & Flues.	---	Not applicable.
Energy Efficiency	13.4.3	Building Sealing – Roof Lights.	---	Not applicable.
Energy Efficiency	13.4.4	Building Sealing – External Doors & Windows.	DTS	Refer to BASIX Certificate.
Energy Efficiency	13.4.5	Building Sealing – Exhaust Fans.	DTS	Refer to BASIX Certificate.
Energy Efficiency	13.4.6	Building Sealing – Construction of Ceilings, Walls & Floors.	DTS	Refer to BASIX Certificate.
Energy Efficiency	13.4.7	Building Sealing – Evaporative Coolers.	DTS	Refer to BASIX Certificate.
Energy Efficiency	13.5.1	Ceiling Fans – Application of Part 13.5.	DTS	Refer to BASIX Certificate.
Energy Efficiency	13.5.2	Ceiling Fans.	DTS	Refer to BASIX Certificate.
Energy Efficiency	13.6.1	Whole of Home Energy Usage – Application of Part 13.6	DTS	Refer to BASIX Certificate.
Energy Efficiency	13.6.2	Whole of Home Energy Usage – Net Equivalent Usage.	DTS	Refer to BASIX Certificate.
Services - Energy Efficiency	13.7.1	Services - Application of Part 13.7.	DTS	Noted. Information Clause only.
Services - Energy Efficiency	13.7.2	Services - Insulation of services.	DTS	Refer to BASIX Certificate.
Services - Energy Efficiency	13.7.3	Services - Central heating water piping.	DTS	Refer to BASIX Certificate.
Services - Energy Efficiency	13.7.4	Services - Heating and cooling ductwork.	DTS	Refer to BASIX Certificate.
Services - Energy Efficiency	13.7.5	Services - Electric resistance space heating.	DTS	Refer to BASIX Certificate.

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Services - Energy Efficiency	13.7.6	Services - Artificial lighting.	DTS	Refer to BASIX Certificate.
Services - Energy Efficiency	13.7.7	Services - Water heater in a heated water supply system.	DTS	Refer to BASIX Certificate.
Swimming Pools - Energy Efficiency	13.7.8	Services - Swimming pool heating and pumping.	---	Not applicable
Swimming Pools - Energy Efficiency	13.7.9	Services - Spa pool heating and pumping.	---	Not applicable
<b><u>NSW BCA PART 3.12 - ENERGY EFFICIENCY</u></b>				
<b><u>The energy efficiency provisions of BASIX and NSW Part 3.12.1 (Building Fabric Thermal Insulation), NSW Part 3.12.3 (Building Sealing), NSW Part 3.12.5 have not been assessed.</u></b>				

## **Recommendation/Conclusion**

We recommend the items listed in the BCA Report be addressed with the Development Application.

Where compliance with Deemed-to-Satisfy Provisions of the BCA cannot be achieved, we recommend that an alternative fire engineering solution be prepared by a Registered Certifier - Fire Safety.

Report Prepared by:



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*12 November, 2024*