27 August 2026

Chief Executive Officer
Mareeba Shire Council
PO Box 154,
Mareeba QLD 4880

Attention: Development Assessment

Dear Sir/Madam

RE: APPLICATION FOR DEVELOPMENT PERMIT – Material Change of Use – Secondary Dwelling – Lot 32, Mossman - Mount Molloy Road, Mount Molloy

Rapid Building Approvals acting on behalf of the owners of the abovementioned land (Brendan Williams) we seek a **Development Permit for Material Change of Use (Dwelling House) at Lot 32, Mossman - Mount Molloy Road, Mount Molloy**

The property is zoned Rural within the planning scheme identifying a Material Change of Use for a Dwelling house (secondary dwelling) as accepted development subject to requirements. The proposal requires assessment against the non-compliance with the Accommodation activities code.

Applicable Code	**Compliance**	**Comment**
Rural Zone	☑	Complies with all acceptable outcomes.
Accommodation activities code	☑	Non compliance with acceptable outcomes. Assessment attached.
Bushfire Hazard Overlay	☑	Bushfire Report attached.

In support of this development application, the following material has been provided:

1. DA Form 1
2. Plans
3. Response to relevant Planning Scheme Codes
4. Application fee
5. Bushfire Report

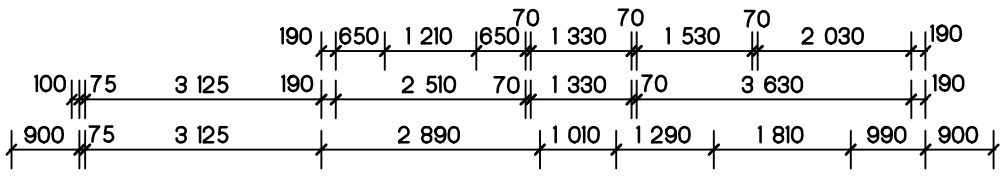
Should you require any further information or assistance in relation to this manner please don't hesitate to contact Scott Wheeler on 1300 163 814 or via email at approvals@rapidapprovals.com.au.

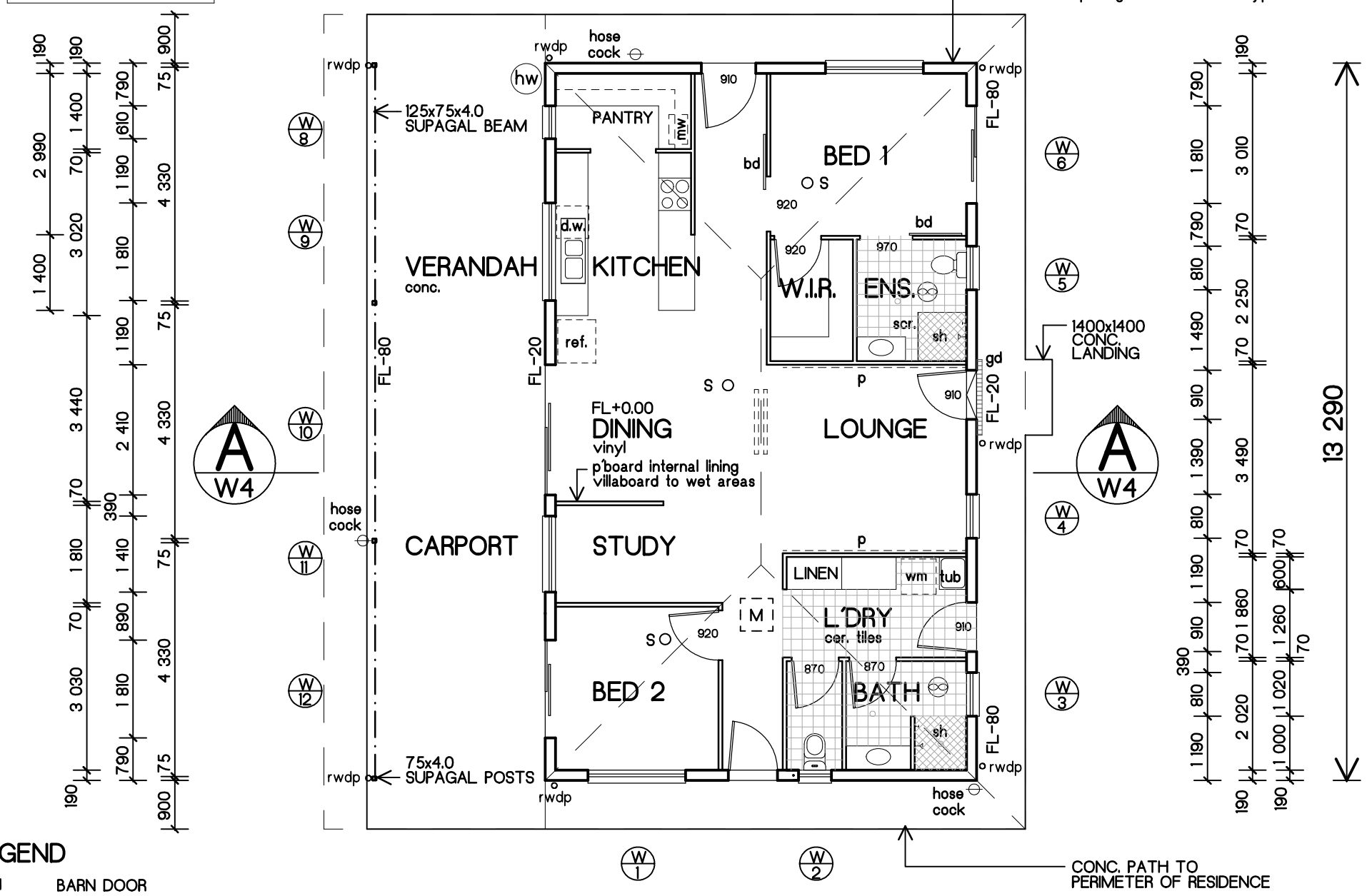
Regards,
Scott Wheeler

Accommodation Activities Code (applicable parts)

Performance outcomes	Acceptable outcomes	Applicant response
If for Dwelling house		
PO6 Where a Dwelling house involves a secondary dwelling, it is designed and located to: (d) not dominate the site; (e) remain subservient to the primary dwelling; and (f) be consistent with the character of the surrounding area; .	**AO6.1** The secondary dwelling is located within: (c) 10 metres of the primary dwelling where on a lot that has an area of 2 hectares or less; or (d) 20 metres of the primary dwelling where on a lot that has an area of greater than 2 hectares.	**Complies PO6. T**he proposal is for a dwelling house with to be located on a cleared portion of the site a large distance from the main dwelling. The proposal results in a dwelling that does not dominate the site, being located more than 200 metres from the road frontage, allowing the secondary dwelling to be screened from outside view and will be consistent with the sparse density of the area.
	AO6.2 A secondary dwelling has a maximum gross floor area of 100m2.	**Complies PO6.** The proposal secondary dwelling has a partial non-compliance with the maximum gross floor area. The dwelling size is subservient in scale to the existing dwelling on the site and cannot be seen from outside of the site due to the large setbacks from property boundaries.

FLOOR AREA :	
LIVING	- 106.19 m²
VERANDAH	- 42.53 m²
TOTAL	- 148.72 m²





LEGEND

- bd — BARN DOOR
- gd — GRATED DRAIN
- EXHAUST FAN VENTED THROUGH CEILING SPACE & OUT THROUGH ADJACENT SOFFIT
- O S — 240 V SMOKE DETECTOR FIXED TO CEILING IN ACCORDANCE WITH NCC PART 9.5, SMOKE ALARM TO COMPLY WITH AS 3786
- P — PLYWOOD SHEETING FIXED TO MANUF. SPEC. TO PROVIDE 6.0 KN/m RACKING RESISTANCE

U.N.O. PROVIDE M12 CYCLONE RODS AT EACH END OF BRACING WALL AND AT 1200 CRS. MAX. BETWEEN.

CEILING FANS ARE TO BE INSTALLED TO ALL BEDrms. LOUNGE/DINING AREAS AND VERANDAH TO ASSIST IN COMPLIANCE WITH Min. 7 STAR ENERGY RATING.

ENSURE ALL WET AREA FLOORS ARE SEALED & SHOWER & BATHROOM FLOOR TO FALL AT MIN. 1 : 80 TO FLOOR WASTES IN ACCORDANCE WITH N.C.C. PART 10.2 AND AS 3740

PROVIDE TEMPERATURE CONTROL DEVICE TO HOT WATER UNIT IN ACCORDANCE WITH A.S. 3500.4.2 1997

INSTALL 160 LITRE ELECTRIC HOT WATER SYSTEM TO MANUF. SPEC.

ALL INTERNAL BATHROOM WALLS TO BE LINED WITH MIN. 12mm STRUCTURAL PLY SHEETING UNDER VILLABOARD WALL LINING OR AS PER LIVABLE HOUSING DETAILS, SEE SHEETS W10 & W11

DOOR TO W.C. TO BE ON 'LIFT-OFF' HINGES.

ALL DOWNPIPES & STORMWATER LINES TO BE 100 Φ uPVC

PLAN
1 : 100

SEALED LED DOWNLIGHTS THROUGHOUT

PROVIDE AND INSTALL A FIXED GLASS SHOWER SCREEN TO ENSUITE SHOWER RECESS

PROVIDE AND INSTALL A 1000 X 1200 MIRROR TO ENSUITE AND MAIN BATHROOM ABOVE VANITY UNITS TYP.

WE HEREBY CERTIFY THE STRUCTURAL DETAILS AS SHOWN ON THESE DRAWINGS FOR CONSTRUCTION IN WIND CLASSIFICATION C2

14-7-2026

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208 BUCHAN ST. CAIRNS QLD. 4870
PH. 07 4031 2775
FAX. 07 4051 9013

WINDOW SCHEDULE

W1	900x1800 SLIDING GLASS WINDOW. OX
W2	600x600 SLIDING GLASS WINDOW, OBSCURE GLASS. OX
W3	1400x800 VERTICAL SLIDING SASH WINDOW, OBSCURE GLASS.
W4	1400x800 VERTICAL SLIDING SASH WINDOW
W5	800x800 SLIDING GLASS WINDOW, OBSCURE GLASS. XO
W6	2100x1800 SLIDING GLASS DOOR, XO
W7	900x1800 SLIDING GLASS WINDOW. OX
W8	1400x600 VERTICAL SLIDING SASH WINDOW
W9	1100x1800 SLIDING GLASS WINDOW. XO
W10	2100x2400 SLIDING GLASS DOOR, XO
W11	1200x1400 SLIDING GLASS WINDOW. OX
W12	2100x1800 SLIDING GLASS DOOR, OX

Note:

ALL HINGED AND SLIDING DOORS TO HAVE SECURITY SCREENS
ALL WINDOWS TO HAVE FLY SCREEN

ALL FRAMES POWDER COATED FINISH
ALL GLASS GREY TINT

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1 : 100
ON A3 SHEET

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MT MOLLOY

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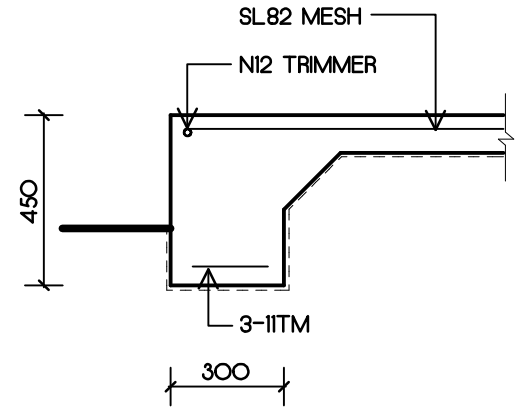
2707

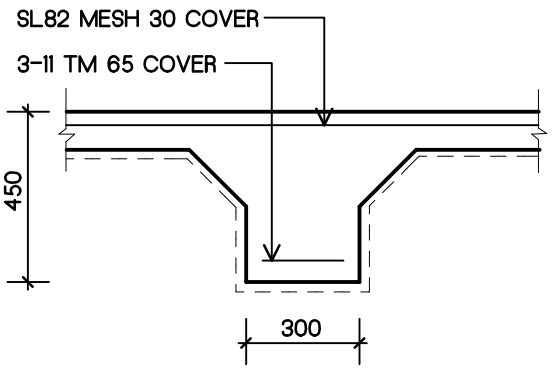
W1

OF 9

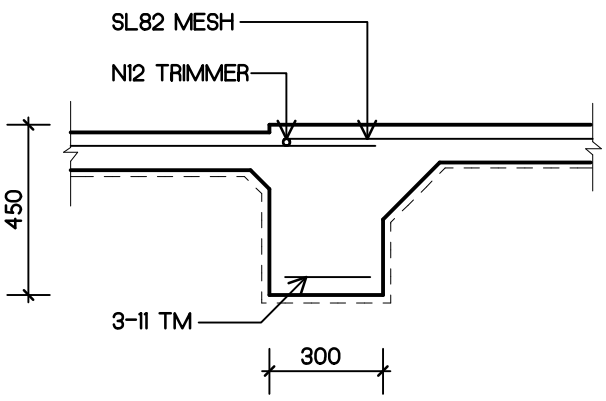
WIND CLASSIFICATION C2



FOOTING F1
1 : 20



FOOTING F2
1 : 20



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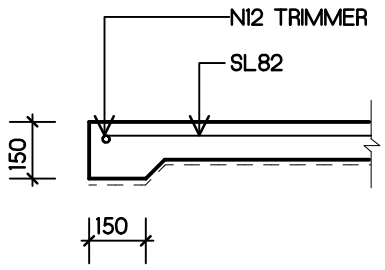
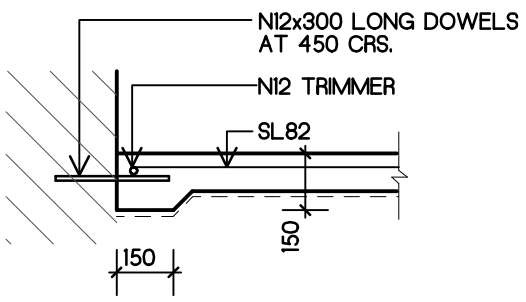


FOOTING F4
1 : 20



FOOTING F5
1 : 20

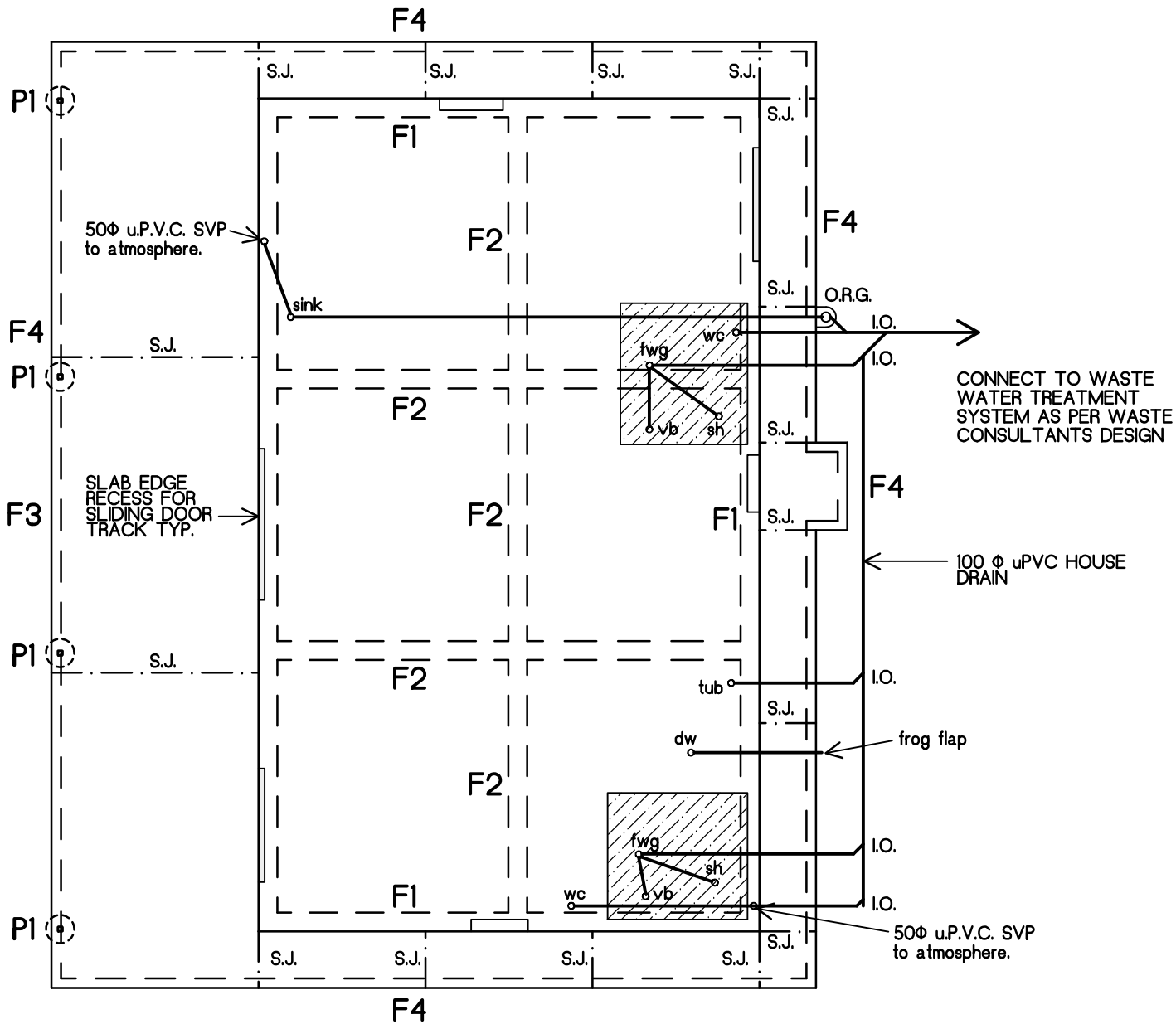
Note :

FOOTINGS HAVE BEEN DESIGNED FOR A 'M' SOIL CLASS.

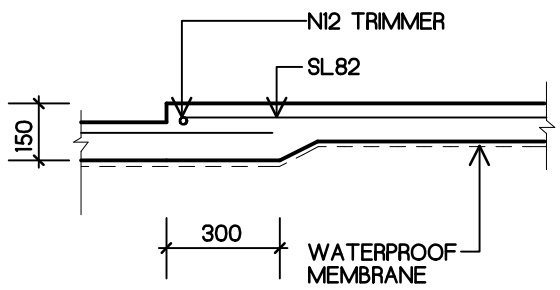
DENOTES 50mm SLAB SETDOWN TOP SLAB TO PROVIDE FALL TO FLOOR WASTE. (TYP)

Note:

HOUSE DRAINAGE SHOWN IS SCHEMATIC ONLY AND IS TO BE CONFIRMED BY A LICENCED PLUMBER TO COMPLY WITH ALL RELATIVE CODES, STANDARDS & COUNCIL ORDINANCES. LICENCED PLUMBER ONLY CAN CARRY OUT THIS WORK.



FOOTING & DRAINAGE PLAN



SLAB RECESS DETAIL
1 : 20

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1 : 100, 1 : 20, ON A3 SHEET

PROPOSED RESIDENCE FOR :
B. WILLIAMS
LOT 32, MOSSMAN MT MOLLOY RD
MT MOLLOY

JULY 2026

2707

W2

OF 9

WIND CLASSIFICATION C2

STRUCTURAL STEELWORK NOTES

1. IT IS THE CONTRACTORS RESPONSIBILITY TO CHECK ALL LEVELS AND DIMENSIONS ON SITE PRIOR TO FABRICATION OF ANY MISCELLANEOUS STEELWORK.
2. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH A.S. 1250 AND A.S. 1554.
3. UNLESS OTHERWISE SHOWN STEEL QUALITY SHALL CONFORM WITH ALL RELEVANT AUSTRALIAN STANDARDS.
4. UNLESS OTHERWISE SHOWN ALL INTERFACES BETWEEN CONNECTING STEELWORK SHALL BE EITHER BOLTED OR CONTINUOUSLY WELDED. ALL WELDS SHALL BE 6mm FILLET WELDS ON BOTH SIDES U.N.O.
5. ALL BUTT WELDS SHALL BE FULL PENETRATION BUTT WELDS UNLESS SHOWN OTHERWISE.
6. THE CONTRACTOR SHALL PROVIDE ALL CLEATS AND HOLES REQUIRED FOR FIXING NON-STRUCTURAL ELEMENTS TO STEELWORK WHETHER SHOWN OR NOT ON THE DRAWINGS.
7. SITE WELDING SHALL BE CARRIED OUT IN STRICT ACCORDANCE WITH SAFETY REGULATIONS.
8. ALL STEEL MEMBERS TO BE PAINTED WITH ZINC SILICATE PRIMER WHERE CONCEALED, & PAINTED TO MATCH SURROUNDING WALLS WHERE EXPOSED.

BLOCKWORK NOTES

1. ALL WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE FOLLOWING CODES :

   AS3700 SAA CONCRETE MASONRY CODE.

2. ALL CONCRETE MASONRY BLOCKS SHALL HAVE A CHARACTERISTIC COMPRESSIVE STRENGTH OF 12 MPa.
3. MORTAR FOR BLOCKWORK SHALL BE 1 PART CEMENT : 0.5 PARTS LIME ; 4.5 PARTS CLEAN SAND. MINIMUM 28 DAY COMPRESSIVE STRENGTH OF MORTAR SHALL BE 2.8 MPa.
4. MINIMUM 28 DAY COMPRESSIVE STRENGTH OF CORE FILLING GROUT SHALL BE 15 MPa. MINIMUM CEMENT CONTENT 360 kg/cu.m.
5. ALL PIERS SHALL HAVE CLEAN OUT BLOCKS LAID AT SLAB LEVEL. MORTAR FINS EXTRUDED INTO THE CORE SHALL BE REMOVED BY RODDING AND ALL MORTAR DROPPINGS SHALL BE REMOVED FROM THE CLEAN OUT HOLES. THE CLEANOUT HOLES SHALL BE BLOCKED & THE GROUT PLACED AND COMPACTED BY PENCIL VIBRATOR OR THROUGH RODDING WITH PLAIN BARS.
6. ALL REINFORCED CORES SHALL BE FILLED WITH GROUT.
7. NO CHASES SHALL BE CUT INTO BLOCKWORK WITHOUT PRIOR APPROVAL OF THE SUPERINTENDENT.
8. PROVIDE BAR CHAIRS AND WIRE TIES TO KEEP REINFORCEMENT IN CORRECT LOCATION.

CONCRETE NOTES

1. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH AS 3600
2. MINIMUM COVER TO REINFORCEMENT TO BE AS FOLLOWS UNLESS NOTED OTHERWISE ON THE DRAWING :

UNDERSIDE & SIDE OF FOOTINGS	65 mm
TOP OF FOOTINGS	30 mm
COLUMNS	50 mm
FLOOR SLAB	30 mm

3. CONTROL JOINTS SHALL BE PROPERLY FORMED AND USED ONLY WHERE SHOWN.
4. REINFORCEMENT IS SHOWN DIAGRAMATICALLY AND NOT NECESSARILY SHOWN IN THE TRUE PROJECTION.
5. SPLICES IN REINFORCEMENT SHALL BE MADE ONLY IN THE POSITIONS SHOWN OR AS OTHERWISE APPROVED BY THE SUPERINTENDENT.
6. ALL REINFORCEMENT SHALL BE SUPPORTED IN ITS CORRECT POSITION SO AS NOT TO BE DISPLACED DURING CONCRETING, ON APPROVED BAR CHAIRS AT 1000 mm MAXIMUM CENTRES BOTH WAYS. WHERE REQUIRED PROVIDE SUPPORT BARS N16 AT 1000 mm MAXIMUM CENTRES.
7. CONCRETE COMPONENTS AND QUALITY SHALL BE AS FOLLOWS :

ELEMENT	SLUMP MAX.	AGGREGATE SIZE	F'c	AGGREGATE
FOUNDATIONS GROUND SLABS	80 +- 15	20 mm	N20	NORMAL
COLUMNS	80 +- 15	20 mm	N25	NORMAL
CORE FILLING GROUT	230 +- 15	6 mm	S20	NORMAL

REQUIREMENTS FOR SUSTAINABLE BUILDINGS

ACCEPTABLE SOLUTIONS:

VOLUME OF WATER :

LICENSED PLUMBERS MUST INSTALL WELS RATED TOILETS AND WELS RATED TAPWARE FOR KITCHEN, SINKS, BASINS AND LAUNDRY TROUGHS IN NEW CLASS 1 AND CLASS 2 BUILDINGS IN ACCORD WITH RATING APPLICABLE WITH THE N.C.C.. FOR ANY MAJOR RENOVATION WORK THAT INVOLVES BOTH A BUILDING DEVELOPMENT APPROVAL AND A PLUMBING APPLICATION, THE RETROFIT OF EXISTING TOILETS WITH 4-STAR RATED TOILETS IS REQUIRED. THE RETROFITTING OF EXISTING TAPS IS NOT PART OF THIS NEW REQUIREMENT.

TOILETS MUST HAVE DUAL FLUSH CAPABILITY THAT DOES NOT EXCEED 6 LITRES ON FULL FLUSH & 3 LITRES ON HALF FLUSH.

WATER SUPPLY:

IN A SERVICE AREA FOR RETAIL WATER SERVICE UNDER THE WATER ACT 2000, THE WATER SUPPLIED TO A NEW CLASS 1 BUILDING DOES NOT EXCEED PRESSURE LEVELS SET OUT IN AS/NZ 3550.1:2003 AND IF THE MAIN WATER PRESSURE EXCEEDS OR COULD EXCEED 500 KPA, A WATER PRESSURE LIMITING DEVICE IS INSTALLED TO ENSURE THAT THE MAXIMUM OPERATING PRESSURE AT THE OUTLET WITHIN THE BOUNDARIES OF THE PROPERTY DOES NOT EXCEED 500 KPA.

AIRCONDITIONING :

MINIMUM 2.9 ENERGY EFFICIENCY RATIO (EER) (EQUIVALENT TO A CURRENT 4-STAR ENERGY RATING) FOR AIR-CONDITIONERS PERMANENTLY ATTACHED TO FIXED WIRING IN CLASS 1 AND CLASS 2 BUILDINGS (WHERE NEW AND REPLACEMENT SYSTEMS ARE INSTALLED) FROM 1 JULY 2009.

ACCEPTABLE HOT WATER SYSTEMS
IN A NEW CLASS 1 BUILDING ;
HOT WATER SYSTEMS MUST HAVE A LOW GREENHOUSE GAS EMISSION IMPACT.

SHOWER ROSES TO BE AAA RATING WHEN ASSESSED AGAINST AS/NZ 6400. 2004 OR LABELLING SCHEME (WELS)
A 4 STAR RATING UNDER THE WATER EFFICIENCY LABELLING SCHEME (WELS)

WALL FRAMING.

PREFABRICATED STEEL WALL FRAMES
DESIGN & CERTIFICATION BY MANUFACTURER
INCLUDING WALL TIE DOWN AND BRACING
ERECTED TO MANUF. SPECIFICATIONS.

ROOF TRUSS NOTES

ROOF TRUSSES TO BE DESIGNED AND CERTIFIED BY THE TRUSS MANUFACTURER.

THE DESIGN SHALL INCLUDE :-
(a) TRUSS LAYOUT.
(b) ALL NECESSARY WIND AND BOTTOM CHORD BRACING.
(c) ALL INTERNAL TRUSS CONNECTIONS.

TERMITE TREATMENT

SELECTED TREATMENT METHOD TO BE WITH PHYSICAL BARRIERS. A MONOLITHIC SLAB LAYED IN ACCORDANCE WITH AS. 2870 AND S.S. MESH PARTIAL TREATMENT TO PENETRATIONS AND PERIMETER OF SLAB EDGE OUT PAST RENDER, IN ACCORDANCE WITH AS. 3660.1. AND USE OF NON-SUSCEPTIBLE BUILDING MATERIALS E.G. STEEL & C.C.A. OR L.O.S.P. TREATED TIMBER.

REGULAR INSPECTIONS ARE REQUIRED AT 3 - 6 MONTH INTERVALS TO ENSURE THE BARRIERS HAVE NOT BEEN BRIDGED BY TERMITES.

NO GARDENS ARE TO BE BUILT UP TO THE HOUSE SO A CLEAR VIEW OF THE PERIMETER OF THE BUILDING IS READILY VISABLE FOR PERIODIC INSPECTIONS & NO BRIDGING PATHS ARE PROVIDED FOR THE TERMITES TO BYPASS THE PHYSICAL BARRIERS WITHOUT DETECTION.

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N/A
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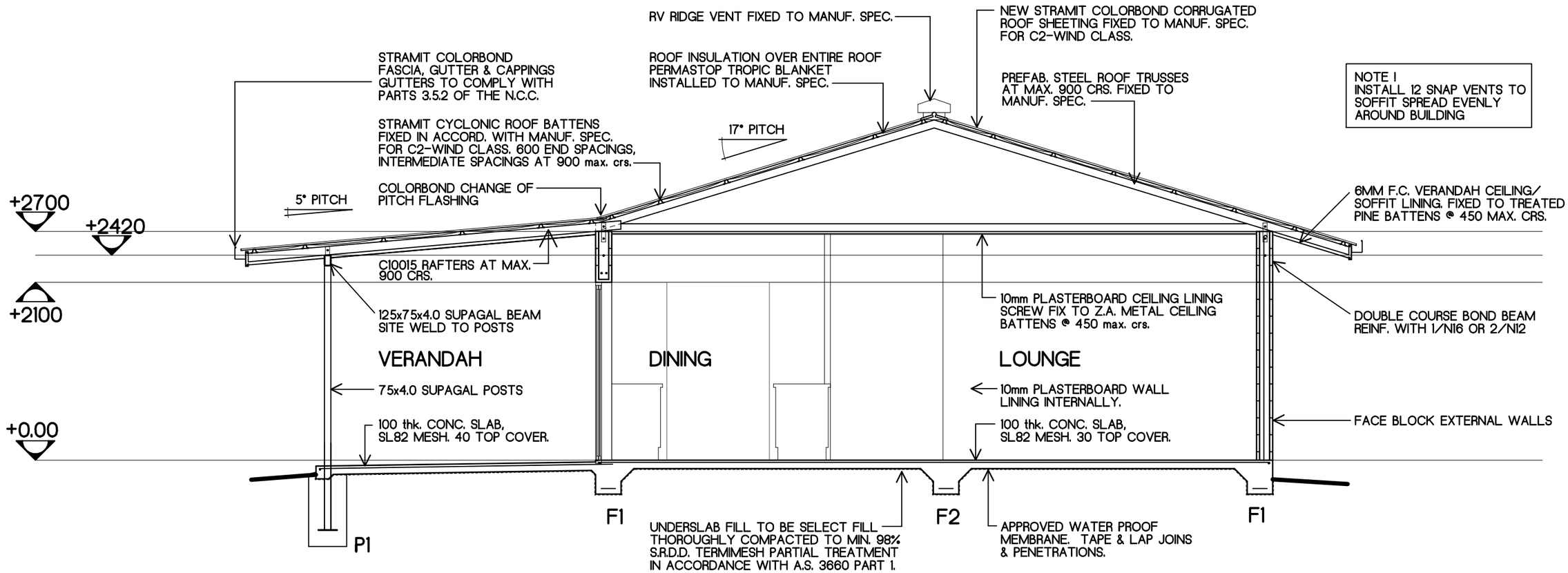
W3
OF 9

WIND CLASSIFICATION C2



SECTION

A / W1

1 : 50

BUSHFIRE BAL 19 DESIGN REQUIREMENTS

Gaps between doors and door jambs, and thresholds must be 3mm or less, or draught excluders are to be provided.

Exposed components of external walls that are less than 400mm from the ground or above decks must be clad in non-combustible material, bushfire resistant timber or a fibre cement a minimum of 6mm thick.

All joints in the external cladding must be covered sealed or overlapped to prevent gaps >3mm.

Windows with openable portions are to be screened with corrosion resistant metal flyscreens with a maximum aperture of 2mm. Window frames must be metal and glazing must be a minimum of 5mm thick toughened glass.

Side hung external doors must be either solid core, minimum of 35mm thick, hollow core with a non-combustible kick plate up to 400mm above the threshold or hollow core and fitted with a metal screen as with the windows.

Where any part of the door frame is within 400mm of the ground or decks, the frame must be constructed of timber with a density > 650kg/m or be of metal construction.

Sliding doors must have metal frames and any glazing incorporated in the frame must be a minimum of 5mm thick toughened glass.

Roof ventilation openings must be fitted with ember guards made of corrosion-resistant steel, bronze or aluminium.

Sheet roofs are to be and fully sarked (covering the entire roof area, over ridges and hips). Gaps at roof edges >3mm are to be sealed with mineral wool or other non-combustible material.

Non combustible gutter guard to be installed to all fascia and valley gutters.

Eaves are to be sealed, and ventilated eaves must be protected with ember guards.

Decking, stair treads and landings must be made from timber with a density > 650kg/m.

Above ground exposed water and gas supply pipes must be metal.

Sub-Floor supports less than 400mm above the finished ground level need to be, non-combustible and/or bushfire-resistant timber

Flooring shall be non-combustible or a bushfire-resistant timber or timber, particleboard or plywood where the underside is lined with sarking-type material or mineral wool insulation, or a combination of.

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W4

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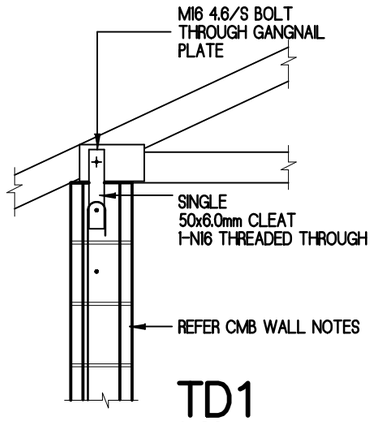

TD1
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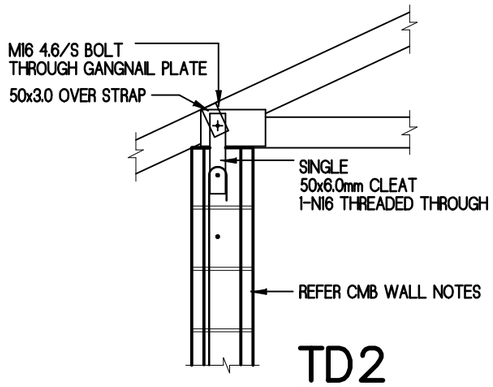

TD2
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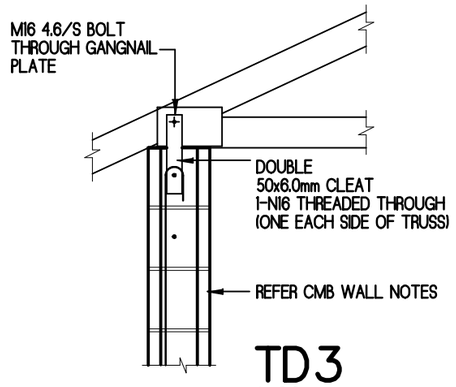

TD3
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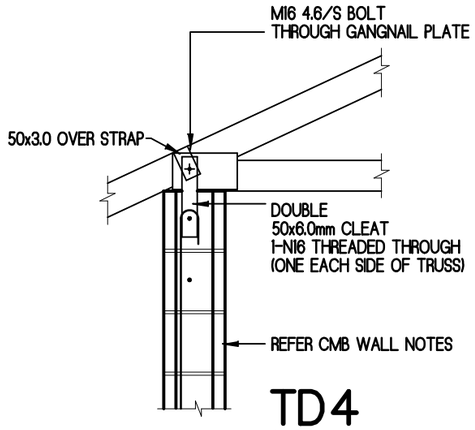
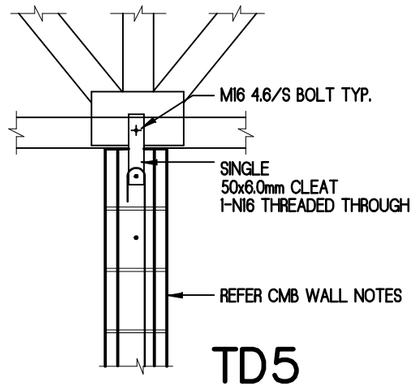


TD4
1:20

UPLIFT RESISTANCE kN
(Ultimate Limit State)

	TRUSS JOINT GROUP					
TYPE	J2	J3	J4	JD4	JD5	JD6
TD1	20	15	10	16	11	8
TD2	35	25	16	23	18	15
TD3	49	44	28	44	36	28
TD4	76	54	34	54	43	34
TD5	20	15	10	16	11	8
TD6	49	44	28	44	36	28
TD7	93	84	53	84	68	53
TD8	128	115	73	115	94	73

NOTE: PROVIDE 2-N12 (MIN.) VERTICAL REINF. BARS ADJACENT TO CLEATS WITH TIE-DOWN LOADS GREATER THAN 80kN



TD5
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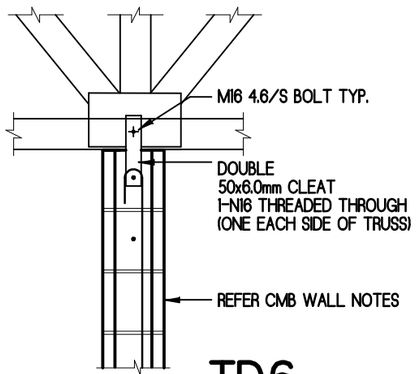
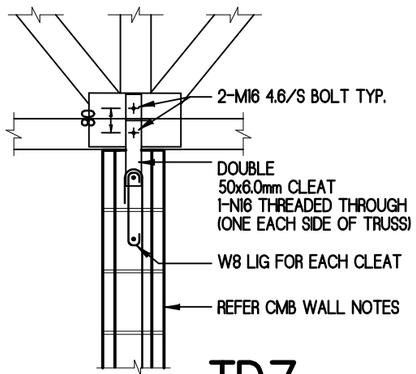
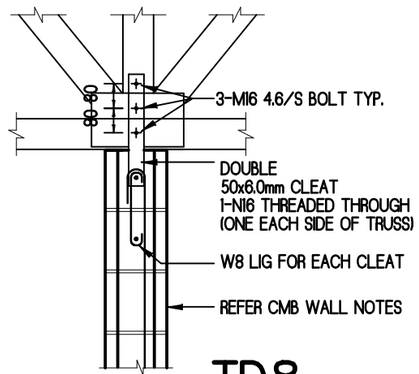


TD6
1:20



TD7
1:20



TD8
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C.M.B. WALL REINFORCEMENT NOTES

1. PROVIDE DOUBLE COURSE BOND BEAM AT UNDER SIDE OF ROOF. REINF. WITH 2/N12 OR 1/N16 BAR EACH COURSE 500 Min. LAPS.
2. PROVIDE SINGLE COURSE BOND BEAM IMMEDIATELY BELOW ALL WINDOW OPENINGS, REINF. WITH 1/N12. EXTEND BOND BEAM 200 PAST EACH SIDE OF OPENING.
3. U.N.O. ON PLAN ALL LINTELS TO BE REINF. WITH 2/N12 OR 1/N16 BAR WITH N12 TIE BARS AT 1000 crs. max.
4. U.N.O. ON PLAN ALL 200 C.M.B. WALLS TO BE REINF. WITH N12 VERTICAL BARS AT ENDS, CORNERS, INTERSECTIONS, AT EACH SIDE OF OPENINGS AND AT 1200 crs. max. CENTRES BETWEEN.
5. PROVIDE ADDITIONAL N12 VERTICAL BARS TO CORES ADJACENT TO OPENINGS GREATER THAN 1810 WIDE.
6. W.C.J. DENOTES WALL CONTROL JOINT U.N.O. TO BE REINFORCED WITH 1/N12 VERTICAL EACH SIDE OF JOINT. EXTEND BOND BEAM REINFORCEMENT THROUGH JOINT, FILL JOINT WITH COMPRESSIBLE BACKING ROD AND APPROVED SEALANT BOTH SIDES TO ARCHITECTS SPECIFICATIONS.

BLOCKWORK NOTES

1. ALL WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE FOLLOWING CODES :

   AS3700 SAA CONCRETE MASONRY CODE.

2. ALL CONCRETE MASONRY BLOCKS SHALL HAVE A CHARACTERISTIC COMPRESSIVE STRENGTH OF 12 MPa.
3. MORTAR FOR BLOCKWORK SHALL BE 1 PART CEMENT : 0.5 PARTS LIME ; 4.5 PARTS CLEAN SAND. MINIMUM 28 DAY COMPRESSIVE STRENGTH OF MORTAR SHALL BE 2.8 MPa.
4. MINIMUM 28 DAY COMPRESSIVE STRENGTH OF CORE FILLING GROUT SHALL BE 15 MPa. MINIMUM CEMENT CONTENT 360 kg/cu.m.
5. ALL PIERS SHALL HAVE CLEAN OUT BLOCKS LAID AT SLAB LEVEL. MORTAR FINS EXTRUDED INTO THE CORE SHALL BE REMOVED BY RODDING AND ALL MORTAR DROPPINGS SHALL BE REMOVED FROM THE CLEAN OUT HOLES. THE CLEANOUT HOLES SHALL BE BLOCKED & THE GROUT PLACED AND COMPACTED BY PENCIL VIBRATOR OR THROUGH RODDING WITH PLAIN BARS.
6. ALL REINFORCED CORES SHALL BE FILLED WITH GROUT.
7. NO CHASES SHALL BE CUT INTO BLOCKWORK WITHOUT PRIOR APPROVAL OF THE SUPERINTENDENT.
8. PROVIDE BAR CHAIRS AND WIRE TIES TO KEEP REINFORCEMENT IN CORRECT LOCATION.

TRUSS TIE DOWN DETAILS

(REFER TRUSS MANUF. LAYOUT AND UPLIFT LOADING)

WE HEREBY CERTIFY THE STRUCTURAL DETAILS AS SHOWN ON THESE DRAWINGS FOR CONSTRUCTION IN WIND CLASSIFICATION C2

14-7-2026

C.M.G. CONSULTING ENGINEERS PTY. LTD.
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208 BUCHAN ST.
CAIRNS QLD. 4870
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FAX. 07 4051 9013

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E peter@pddesigns.com.au
96A gordon street, gordonvale, QLD. 4865
lic. under QBCC Act 1991 - No. 1191543
abn: 73 437 147 573
acn: 143 382 899

Use figured dimensions in preference to scale. Check all dimensions on site before fabrication or building work.

1:20
ON A3 SHEET

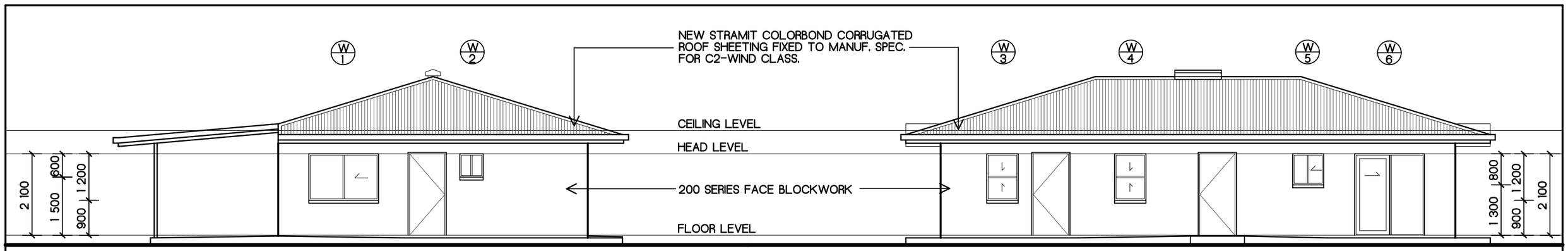
PROPOSED RESIDENCE FOR :
B. WILLIAMS
LOT 32, MOSSMAN MT MOLLOY RD.
MT MOLLOY

JULY 2026

2707

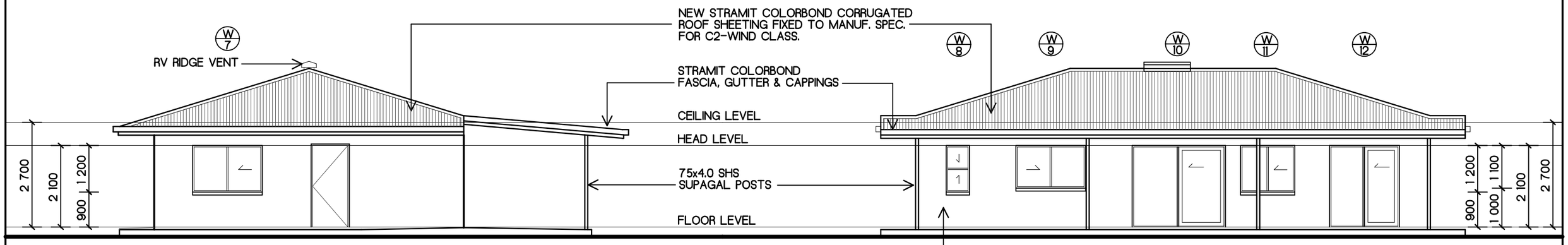
W5
OF 9

WIND CLASSIFICATION C2



ELEVATION 1

ELEVATION 2



ELEVATION 3

ELEVATION 4

WINDOW SCHEDULE	
W1	900x1800 SLIDING GLASS WINDOW. OX
W2	600x600 SLIDING GLASS WINDOW, OBSCURE GLASS. OX
W3	1400x800 VERTICAL SLIDING SASH WINDOW, OBSCURE GLASS.
W4	1400x800 VERTICAL SLIDING SASH WINDOW
W5	800x800 SLIDING GLASS WINDOW, OBSCURE GLASS. XO
W6	2100x1800 SLIDING GLASS DOOR, XO
W7	900x1800 SLIDING GLASS WINDOW. OX
W8	1400x600 VERTICAL SLIDING SASH WINDOW
W9	1100x1800 SLIDING GLASS WINDOW. XO
W10	2100x2400 SLIDING GLASS DOOR, XO
W11	1200x1400 SLIDING GLASS WINDOW. OX
W12	2100x1800 SLIDING GLASS DOOR, OX

Note:

ALL HINGED AND SLIDING DOORS TO HAVE SECURITY SCREENS
ALL WINDOWS TO HAVE FLY SCREEN

ALL FRAMES POWDER COATED FINISH
ALL GLASS GREY TINT

WE HEREBY CERTIFY THE STRUCTURAL DETAILS AS SHOWN ON THESE DRAWINGS FOR CONSTRUCTION IN WIND CLASSIFICATION C2

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1 : 100
ON A3 SHEET

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LOT 32, MOSSMAN MT MOLLOY RD.
MT MOLLOY

JULY 2026

2707

W6

OF 9

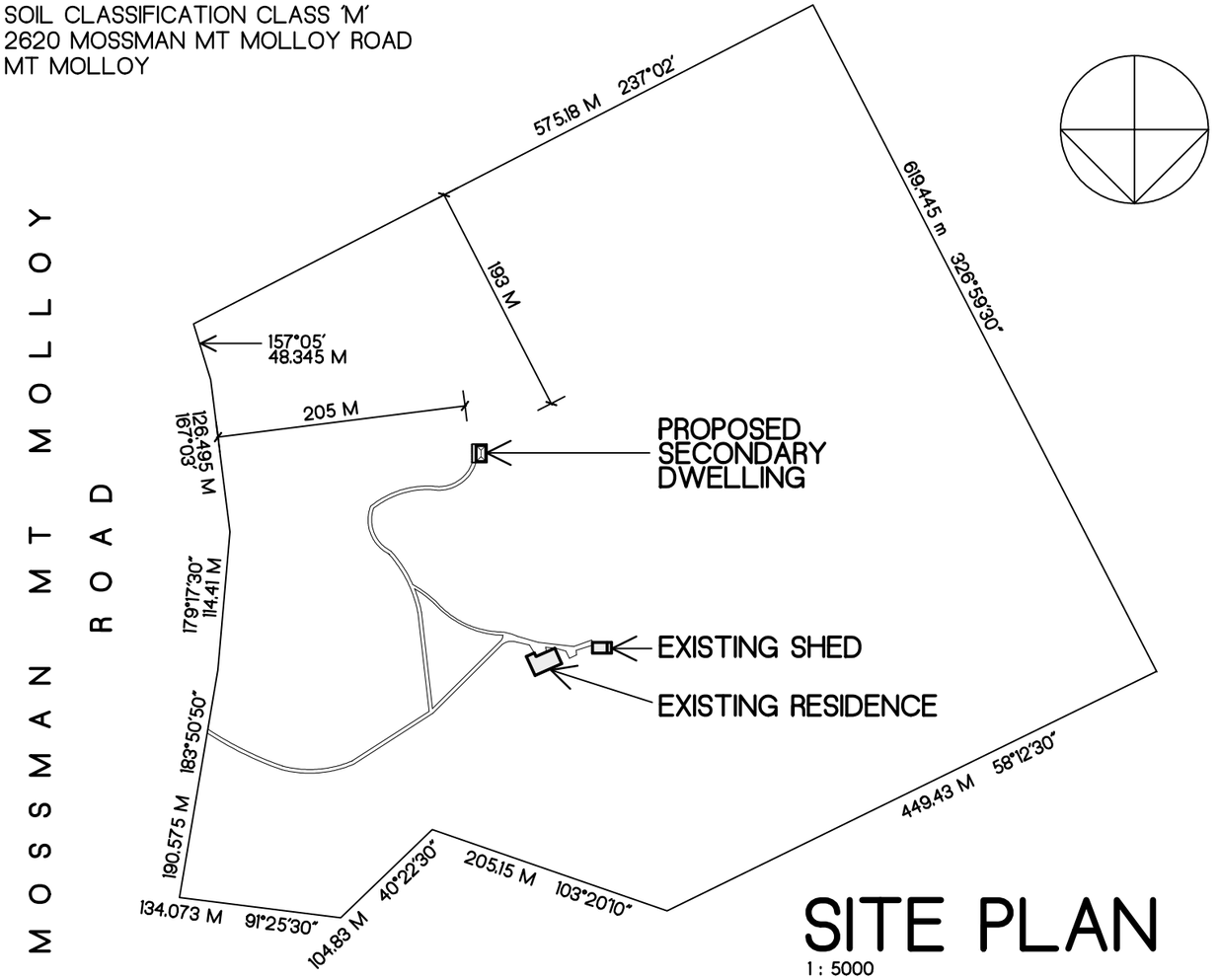
WIND CLASSIFICATION C2

BUILDING PLATFORM PREPARATION

1. AN AREA APPROXIMATELY 2000 PAST THE BUILDING LINES IS TO BE STRIPPED OF ALL TOPSOIL AND ALL ORGANIC MATTER ETC. IS TO BE GRUBBED OUT LEAVING FIRM STABLE MATERIAL ONLY. ALL TOP SOIL CAN BE STOCKPILED ON SITE FOR LATER USE IN LANDSCAPING.
2. ANY TREE STUMPS UNDER THE PLATFORM ARE TO BE REMOVED AND THE RESULTANT HOLES ARE TO BE BACKFILLED WITH APPROVED NON-PLASTIC FILL MATERIAL IN COMPACTED LAYERS NOT EXCEEDING 150 mm TO 98 % S.R.D.D.
3. THE BUILDING PLATFORM SHALL THEN BE COMPACTED WITH A MINIMUM 10 TONNE VIBRATION ROLLER. THE USE OF VIBRATORY ROLLERS FOR EARTH WORKS COMPACTION MAY CAUSE SIGNIFICANT GROUND VIBRATION & CAREFUL SITE CONTROL, OR THE USE OF HEAVY STATIC COMPACTION PLANT WILL BE REQUIRED TO AVOID DAMAGE TO ADJOINING BUILDINGS.
4. ANY FILL IS TO BE SPREAD IN LAYERS NOT EXCEEDING 150 mm & COMPACTED WITH THE ROLLER TO 98% S.R.D.D AT OPTIMUM MOISTURE CONTENT.
5. THE BUILDING PLATFORM IS TO BE SHAPED TO ALLOW FOR 50mm MINIMUM SAND BEDDING UNDER BUILDING SLABS & TO ENSURE THAT IT DRAINS TO ITS PERIMETER AND SUCH DRAINAGE IS TAKEN AWAY FROM THE BUILDING PLATFORM AREA.
6. ON COMPLETION OF ROLLING, THE BUILDER SHALL ENGAGE A SOIL TESTER TO CARRY OUT A MINIMUM OF 4 PENETROMETER TESTS OVER THE SITE, AND THE RESULTS SHALL BE FORWARDED TO THE DESIGN ENGINEER FOR APPROVAL PRIOR TO PROCEEDING WITH CONSTRUCTION.
7. RE-SPREAD TOP SOIL TO OWNERS REQUIREMENTS
8. ALL WORKS SHALL BE CARRIED OUT IN ACCORDANCE WITH THE RELEVANT AUTHORITIES & GENERALLY IN ACCORDANCE WITH A.S. 2870
9. THE CERTIFICATION OF THE FOOTINGS IS BASED ON A CLASS 'M' SITE CLASSIFICATION, MINIMUM SAFE BEARING CAPACITY 100 KPa.

PROPERTY DESCRIPTION

LOT 32, SP 198626
MAREEBA SHIRE COUNCIL
C2 WIND CLASSIFICATION
SOIL CLASSIFICATION CLASS 'M'
2620 MOSSMAN MT MOLLOY ROAD
MT MOLLOY



SITE PLAN

1 : 5000

WE HEREBY CERTIFY THE STRUCTURAL DETAILS AS SHOWN ON THESE DRAWINGS FOR CONSTRUCTION IN WIND CLASSIFICATION C2

14-7-2026

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1 : 5000
ON A3 SHEET

PROPOSED RESIDENCE FOR :
B. WILLIAMS
LOT 32, MOSSMAN MT MOLLOY RD.
MT MOLLOY

JULY 2026

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W7
OF 9

WIND CLASSIFICATION C2

Part 1. Dwelling Access

1.1 Step-free access path
(1) A continuous path to a dwelling entrance door must be provided from –
(a) the pedestrian entry at the allotment boundary from the ground level of the adjoining land; or
(b) an appurtenant Class 10a garage or carport; or
(c) a car parking space within the allotment that is provided for the exclusive use of the occupants of the dwelling.
(2) Access for the purposes of (1) must be –
(a) via a pathway that –
(i) has no steps; and
(ii) except for a step ramp provided under (5), has a maximum gradient of 1:14 in the direction of travel; and
(iii) if crossfall is provided, has a crossfall not more than 1:40; and
(iv) has a minimum width of 1000 mm; and
(v) if it incorporates a section suspended above finished ground level, is able to take loading forces in accordance with AS/NZS 1170.1; and
(vi) connects to a dwelling entrance door that complies with Section 2; or
(b) provided directly from an attached Class 10a garage or carport, via a door complying with the requirements of Section 2, other than Clause 2.3.
(3) For the purposes of (2), the following applies:
(a) Any gates along the access path must have a minimum clear opening width of 820 mm, measured as if the gate were an entrance door.
(b) A deck or boardwalk-style path constructed in accordance with AS 1684 or NASH Standard – Residential and Low-rise Steel Framing would satisfy the requirements of (2)(a)(v).
(4) Where one or more ramps are used, the following applies:
(a) The interval between landings must not be more than –
(i) 9 m for a 1:14 gradient; or
(ii) 15 m for a 1:20 gradient; or
(iii) a length determined by linear interpolation for ramps with a gradient between 1:14 and 1:20.
(b) The minimum width of the ramp must be maintained at 1000 mm between any handrails and/or kerbs (if provided) at each side of the ramp.
(c) At each end of a ramp there must be a landing that is –
(i) not less than 1200 mm long; and
(ii) at least as wide as the ramp to which it connects; and
(iii) level, or has a gradient not more than 1:40 if a gradient is necessary for drainage.
(d) A landing area required by Clause 2.3 may also be counted as a landing for the purposes of (c).
(5) The access path may incorporate one step ramp having a –
(a) height of not more than 190 mm; and
(b) gradient not more than 1:10; and
(c) width of at least 1000 mm or equivalent to that of the access path, whichever is the greater; and
(d) maximum length of 1900 mm.

1.2 Parking space incorporated into step-free access path
(1) Where one or more car parking spaces are connected to or form part of a required access path, at least one of the car parking spaces must have –
(a) a minimum unobstructed car parking space of 3200 mm wide x 5400 mm long; and
(b) a gradient not more than 1:33 for bitumen, or 1:40 for any other surface material.
(2) For the purposes of (1), a required access path means an access path provided for the purposes of compliance with Clause 1.1.

Part 2. Dwelling Entrance

2.1 Clear opening width
(1) At least one entrance door to the dwelling must have a minimum clear opening width of 820 mm.

2.2 Threshold
The threshold of an entrance door that is subject to Clause 2.1 must –
(a) be level; or
(b) have a sill height not more than 5 mm if the lip is rounded or bevelled; or
(c) have a ramped threshold that –
(i) does not extend beyond the depth of the door jamb; and
(ii) has a gradient not steeper than 1:8; and
(iii) is at least as wide as the minimum clear opening width of the entrance door; and
(iv) does not intrude into the minimum dimensions of a landing area that is required by Clause 2.3; or
(d) where the requirements of (a), (b) or (c) cannot meet the weatherproofing requirements of the NCC, for external entrance doors containing a raised door or sill –
(i) have no lip or upstand greater than 15 mm within the sill profile; and
(ii) have no more than 5 mm height difference between the edge of the top surface of the sill and the adjoining finished surface.

2.3 Landing area
An entrance door that is subject to Clause 2.1 must have a space of at least 1200 mm x 1200 mm on the external (arrival) side of the door that is –
(a) unobstructed (other than by a gate or a screen door); and
(b) level, or has a gradient not more than 1:40 if a gradient is necessary to allow for drainage.

2.4 Weatherproofing for external step-free entrance
Weatherproofing for an external step-free entrance must be provided in accordance with one or a combination of the following:
(a) Where the external surface is concrete or another impermeable surface, a channel drain that meets the requirements of Volume Two H2D2 is to be provided for the width of the entrance.
(b) Where the external trafficable surface is decking or another raised permeable surface, a drainage surface below the trafficable surface is to be provided that meets the requirements of Volume Two H2D2, and drainage gaps in the trafficable surface, such as those between decking boards, are to be no greater than –
(i) 8 mm: or
(ii) in a designated bushfire prone area, that permitted by AS 3959.
(c) A roof covering an area no smaller than 1200 mm by 1200 mm, where the area is provided with a fall away from the building not greater than 1:40.

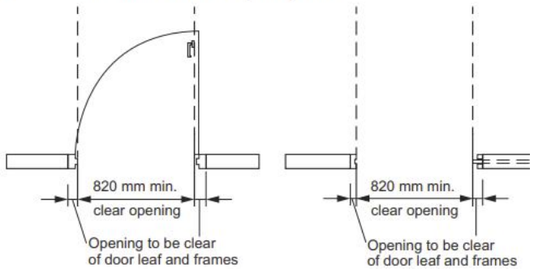
Part 3. Internal Doors and Corridors

3.1 Clear opening width
Internal doorways must provide a minimum clear opening width of 820 mm, measured in accordance with Figure 2.1.

3.2 Threshold
The threshold of an internal doorway that is subject to Clause 3.1 must –
(a) be level; or
(b) have a height not more than 5 mm if the lip is rounded or bevelled; or
(c) have a ramped threshold that –
(i) does not extend beyond the depth of the door jamb; and
(ii) has a gradient not steeper than 1:8; and
(iii) is at least as wide as the minimum clear opening width of the doorway it serves.

3.3 Corridor width
Internal corridors, hallways, passageways or the like, if connected to a door that is subject to Clause 3.1, must have a minimum clear width of 1000 mm, measured between the finished surfaces of opposing walls.

Figure 2.1: Measurement of clear opening width

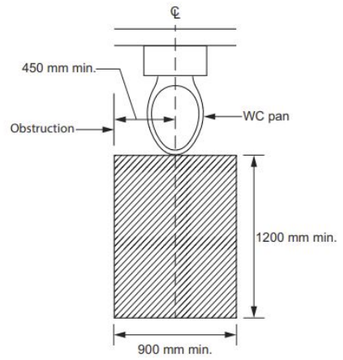


Part 4. Sanitary Compartment

4.1 Location
There must be at least one sanitary compartment located on the ground or entry level of a dwelling.

4.2 Circulation space
A sanitary compartment that is subject to Clause 4.1 must be constructed in accordance with the following:
(a) For a toilet pan located in a separate sanitary compartment, there must be a clear width of not less than 900 mm between the finished surfaces of opposing walls either side of the toilet pan.
(b) For a room containing a toilet pan, any fixed obstruction, such as a basin or a vanity unit, must be located at least 450 mm from the centreline of the toilet pan normal to the front face of the cistern.
(c) A clear minimum circulation space of 1200 mm by 900 mm must be provided from the front edge of the toilet pan.
(d) Compliance with (c) must be determined in accordance with Figure 4.2

Figure 4.2: Circulation space for a toilet pan



Part 5. Shower

5.1 Application
At least one shower must comply with Clause 5.2.

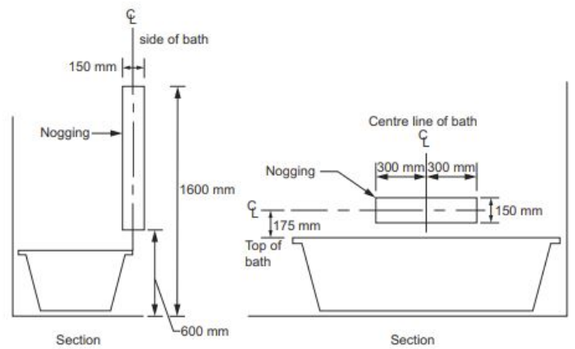
5.2 Hobless and step-free entry
(1) At least one shower must have a hobless and step-free entry.
(2) A lip not more than 5 mm in height may be provided for water retention purposes

Part 6. Reinforcement of Bathroom & Sanitary Compartment Walls

6.1 Location
(1) Reinforcing in accordance with Clause 6.2 must be provided to any –
(a) sanitary compartment that is subject to Part 4; and
(b) bathroom containing a –
(i) shower that is subject to Part 5; or
(ii) bath (if provided), other than a freestanding bath where the bath is located in a room that also contains a shower that is subject to Part 5.
(2) The requirements of (1) need not be complied with if the walls of the room are constructed of concrete, masonry or another material capable of supporting grabrails without additional reinforcement.
(3) Where the wall supporting the reinforcement includes a cavity slider, it must be designed and constructed in way to support loads imposed by reinforcement, linings and the future provision of handrails and provided for the extent required by Figures 6.2a, 6.2b, 6.2c, 6.2d, 6.2e, 6.2f and 6.2g.

6.2 Construction
(1) Reinforcing constructed in accordance with the requirements of (3) must be provided in the locations depicted in –
(a) Figures 6.2a or 6.2b for walls surrounding a bath; and
(b) Figures 6.2c or 6.2d for shower walls; and
(c) Figure 6.2e for a wall adjacent to and within 460 mm of the centreline of a toilet pan; and
(d) Figures 6.2f or 6.2g for a wall behind a toilet pan where a wall described in (c) is not provided or a window sill or a door encroaches on the area required to be provided with reinforcing or where the toilet pan is not provided in a corner of the bathroom.
(2) Reinforcing need only be provided across the available width of the wall where a wall referred to in (1)(a) or (b)(i
(a) is narrower than the width of the area required to be provided with reinforcing; or
(b) terminates at a window sill lower than the height or the area required to be provided with reinforcing.
(3) Reinforcing required by (1) must be constructed using one of the following materials:
(a) A minimum of 12 mm thick structural grade plywood, or similar.
(b) Timber noggings with a minimum thickness of 25 mm
(c) Light gauge steel framing noggings or metal plate in accordance with the NASH Standard

Figure 6.2a: Location of noggings for walls surrounding a bath



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N/A
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MT MOLLOY

JULY 2026

2707

W8
OF 9

WIND CLASSIFICATION C2

Figure 6.2b: Location of sheeting for walls surrounding a bath

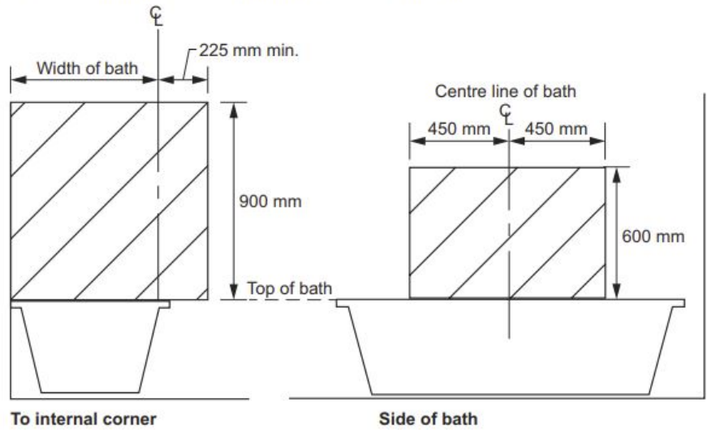

Figure 6.2c: Location of noggings for shower walls

Figure 6.2d: Location of sheeting for shower walls

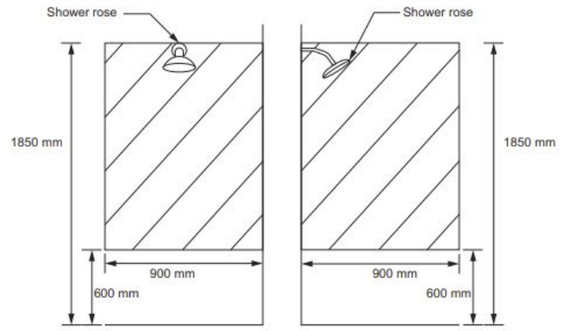

Figure 6.2e: Minimum extent of sheeting for wall adjacent to a toilet pan

Figure 6.2f: Location of noggings for a wall behind a toilet pan

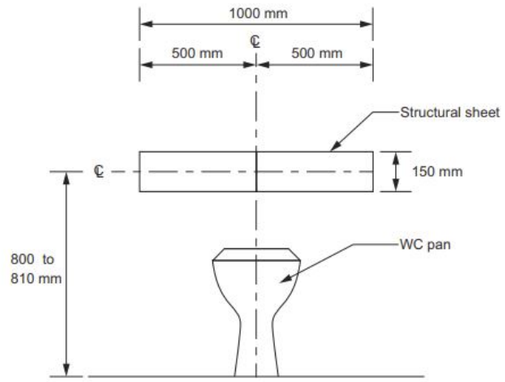

Figure 6.2g: Location of sheeting for a wall behind a toilet pan

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MT MOLLOY

JULY 2026

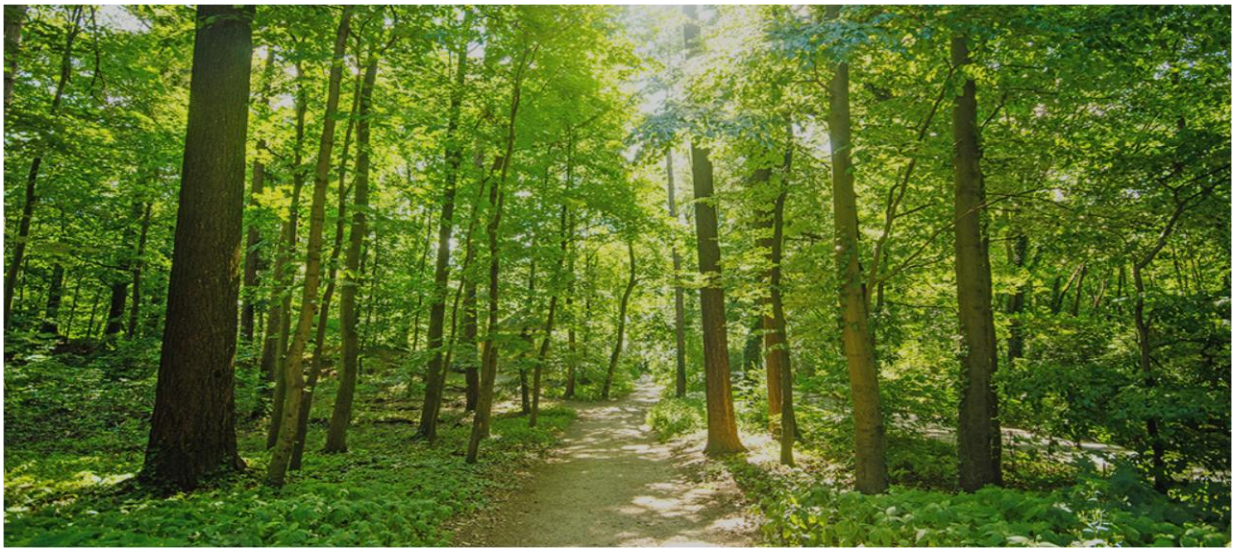
2707

W9
OF 9

WIND CLASSIFICATION C2

Bushfire Hazard Assessment

Bushfire Management Report



Project No:	B6649
Address:	2620 Mossman Mount Molloy Rd Mount Molloy QLD 4871
Lot Plan:	Lot 32 SP 198626
Local Government Area:	Mareeba Shire Council
Proposed Development:	Class1a dwelling
BAL Rating:	BAL-19

Max Bushfire Protection Consulting / ABN 81 671 088 887
Suite 1605 17 Gould Rd Herston QLD 4006 / PO BOX 186 Toowong DC QLD 4066
Mobile: 0432 89 82 82 / Email: service@maxbp.com.au
www.maxbp.com.au

Document History				
Version	**Description**	**Date**	**Author**	**Approved by**
1.0	Report - Draft	2/07/2026	LL, HL	HL
2.0	Report - Final	8/07/2026	LL, HL	HL

Report Expiry

Please be aware that the bushfire hazard assessment and BAL rating provided in this report are valid for 12 months from the date of issuance. It is advisable to consult with a qualified professional to confirm the accuracy of the assessment if this report is more than 12 months old. If any discrepancies are identified or if an update is necessary, a new report should be obtained.

Copyright Statement

Disclaimer

This report has been prepared based on information provided by the client and is intended solely for the client's exclusive use for the stated purpose for which it was provided. Any inaccuracies or amendments to the report or development application will require revision. Please note that, despite our best efforts, there is no guarantee that desirable outcomes are achievable during extreme bushfire weather episodes, which may result in unpredictable bushfire behaviour and detrimental consequences to life, property, and the environment. Any representation, statement, opinion, or advice expressed or implied in this report is made in good faith.

Max Bushfire Protection Consulting and its employees will not be liable (whether by reason of negligence, lack of care, or otherwise) to any person for any damage or loss whatsoever that may occur in relation to that person taking or not taking action in respect of any representation, statement, or advice referred to in this report.

Legislation may impact vegetation clearing activities. It is strongly recommended that clients contact the relevant agencies to determine if their proposed vegetation clearing activity complies with local, state, and federal laws.

Practitioner Declaration

Name: **Position:**	**Henry (Hongxi) Liang** **Senior Bushfire Consultant**
I hereby certify that I have undertaken the assessment of the above-mentioned site and determined the Bushfire Attack Level stated above in accordance with the requirements of AS 3959:2018 and/or the Bushfire Resilient Communities - Technical Reference Guide published by Queensland Fire and Emergency Services. I hereby declare that I am a suitably qualified bushfire consultant, holding AQF Level 8 qualifications and tertiary degrees below: ▪ Graduate Diploma in Bushfire Protection ▪ Graduate Certificate in Bushfire Protection ▪ Master of Business Administration ▪ Bachelor in Engineering	
Signature:	
Email: service@maxbp.com.au Mobile: 0432898282	**Max Bushfire Protection Consulting** ABN: 81 671 088 887

Table of Contents

Acronyms and Abbreviations

APZ	Asset Protection Zone
AEP	Annual Exceedance Probability
AS 3959:2018	Australian Standard 3959:2018 Construction of Buildings in Bushfire prone Areas (This Standard incorporates Amendment No. 1 (June 2019) and Amendment No. 2 (December 2020))
BCA	Building Code of Australia
BPA	Bushfire Prone Area
BMP	Bushfire Management Plan
BVG	Broad Vegetation Group
FDI	Fire Danger Index
FFDI	Forest Fire Danger Index
FWS	Fire Weather Severity
IMS	Interactive Mapping System
LMP	Landscape Management Plan
MCU	Material Change of Use
NCC	National Construction Code
QFES	Queensland Fire and Emergency Services
RH	Relative Humidity
RAL/ROL	Reconfigure A Lot/Reconfiguration of Lot
SPP	State Planning Policy 2017
SPP map input data	Statewide Map of Bushfire Prone Areas Input Data E.G. FFDI (5% AEP), Maximum Landscape and Vegetation Hazard Class
VHC	Vegetation Hazard Class
VMP	Vegetation Management Plan

Executive Summary

Project No:	**B6649**
Type of bushfire assessment:	Site-specific bushfire hazard assessment Bushfire attack level assessment Bushfire management plan
Location:	2620 Mossman Mount Molloy Rd Mount Molloy QLD 4871 Lot 32 SP 198626
Site area:	393,500 sqm
Local Government Area:	Mareeba Shire Council
Client(s):	Erin Elder
Proposed Development:	Class1a dwelling
Site plan by:	The Client(s)
Asset Protection Zone:	Designed APZ with IPA and OPA
Bushfire Attack Level:	BAL-19

1. Introduction

1.1 Purpose

Max Bushfire Protection Consulting was engaged by the client(s) to conduct a site-specific bushfire hazard assessment for the proposed development on the subject site.

The objective of this report is to assess the potential bushfire hazard and related risks concerning the proposed development, aligning with several regulatory frameworks such as the Queensland State Government State Planning Policy - Part E (SPP 2017), the Bushfire Resilient Communities Technical Reference Guide (QFES, 2019), the local council planning scheme - bushfire hazard overlay code, and the Australian Standard – Construction in Bushfire Prone Areas (AS 3959:2018). These guidelines delineate the State and Council's concerns regarding bushfire hazard within the context of evaluating development applications.

The development shall be carried out on the lot referred to as the 'Subject Site,' and the dwelling shall be situated within the proposed building location envelope.

1.2 Subject site

- Site Address: 2620 Mossman Mount Molloy Rd Mount Molloy QLD 4871
- Lot Plan: Lot 32 SP 198626
- Site Area: 393,500 sqm

1.3 The proposed development

The proposed development involves the construction of a Class 1a dwelling for the use of the secondary dwelling.

1.4 Bushfire Prone Land

The Council's designation of land as "bushfire prone" carries two primary consequences:

- It mandates the formulation of a Bushfire Management Plan that conforms to the specifications delineated in the Planning Scheme. This includes strict adherence to the Bushfire Overlay Code stipulated within the planning scheme.
- It activates the application of the Building Code of Australia (BCA) and the National Construction Code (NCC), necessitating compliance with their performance objectives pertaining to bushfire mitigation. Furthermore, adherence to AS 3959:2018, which governs the construction of buildings in bushfire prone regions, is imperative.

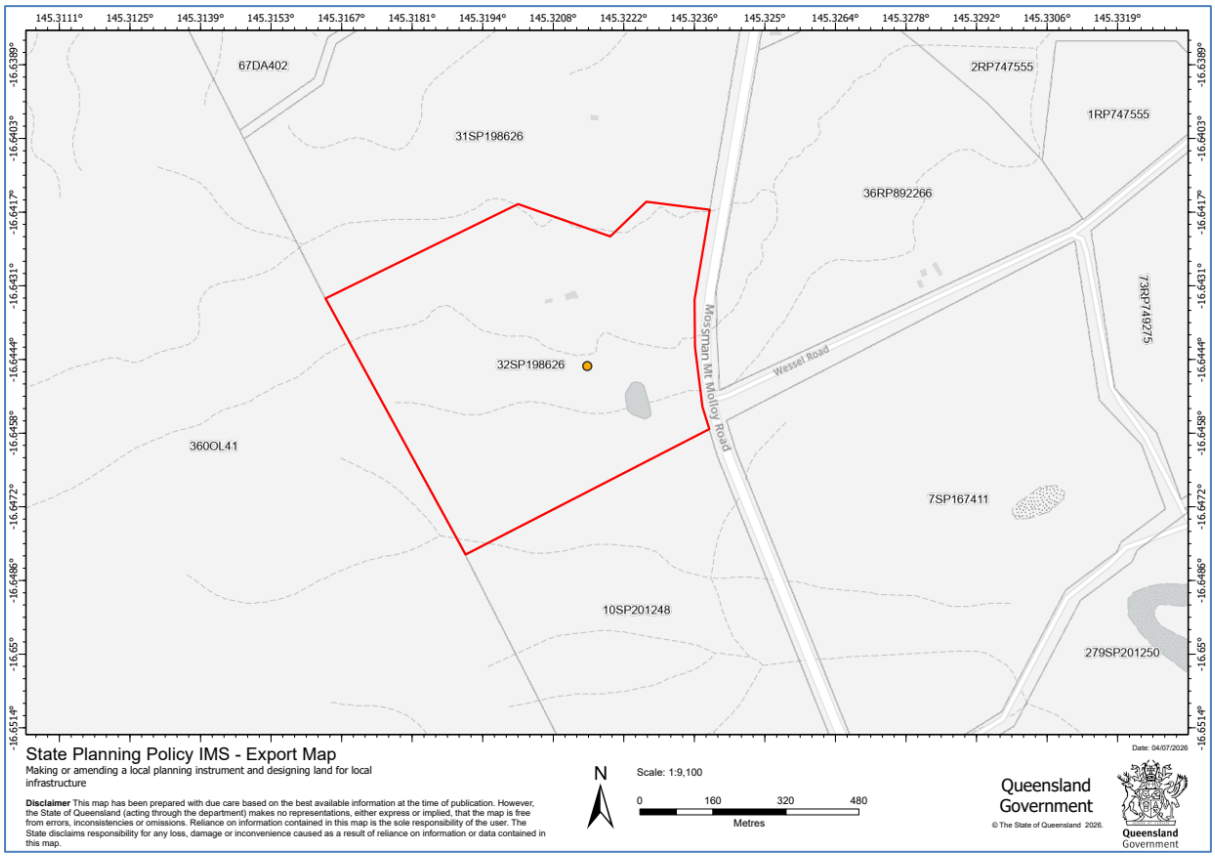


Figure 1-1: Subject Site

1.5 Scope and objectives

The scope and objectives of this assessment are to:

- Identify bushfire-related risk factors linked to the positioning of the development footprint. This includes the probable direction of bushfire attack, hazard ratings associated with existing and proposed vegetation on and around the subject site, and planning separation from potential hazards.
- Recommend suitable protective measures to alleviate the risk posed by the assessed BAL in alignment with the State Planning Policy (SPP 2017), AS 3959:2018, and the Bushfire Hazard Overlay Code of the Council Planning Scheme.
- Prepare a comprehensive site-specific bushfire management plan and conduct an assessment of compliance with the Bushfire Hazard Overlay Code to illustrate how adherence can be attained.

2. Assessment Methodology

2.1 Assessment and Legislative

Assessment and legislative review were conducted to identify overlay mapping and requirements under the SPP 2017 and Mareeba Shire planning scheme. The review included:

- Planning Act 2016 (Planning Act)
  - Planning Regulation 2017 (Planning Regulation)
  - State Planning Policy (SPP 2017) mapping
  - State Assessment and Referral Agency (SARA) mapping (Department of Infrastructure, Local Government and Planning)
- Mareeba Shire Council Planning Scheme
  - Bushfire Hazard Overlay Code
  - Planning Scheme interactive mapping
- Queensland Fire and Emergency Services
  - Catalyst/BRC interactive mapping
- Building Act 1975 (Building Act)
- National Construction Code 2022: Building Code of Australia (NCC 2022)
- AS 3959:2018 Construction of Buildings in Bushfire-prone Areas

2.2 Bushfire Hazard Assessment

A site-specific bushfire hazard assessment aims to identify and understand the bushfire hazards on the site. The site's vegetation and terrain characteristics were surveyed using a complete site examination, aerial photography, accessible databases, and relevant mapping. The site-specific assessment included:

- Recording the structure, composition, and condition of vegetation communities located in the development footprint and all land within 100m of the development footprint, extending to 150m-300m where necessary.
- Assessing site slope and effective slope.
- Determining the aspect of the site.
- Identifying waterway and wetland features within the assessment area.
- Calculating potential fire line intensity and Radiant Heat Flux.

Bushfire Hazard Assessment and subsequent BAL review were conducted in accordance with the Bushfire Resilient Communities Technical Reference Guide for the State Planning Policy State Interest ‘Natural Hazards, Risk and Resilience – Bushfire’ (QFES 2019), which was prepared by the Queensland Fire and Emergency Services to provide technical guidance for the SPP 2017 guidance material. The method involves a quantitative assessment of the vegetation communities, fuel loads, slope, and other relevant factors.

2.3 Bushfire Attack Level Assessment

The determination of the site-specific Bushfire Attack Level (BAL) for the development footprint and classified vegetation was undertaken in accordance with the Bushfire Resilient Communities – SPP Technical Reference Guide and AS 3959:2018. This includes the identification of the following input values:

- FFDI (5% AEP fire weather event)
- Vegetation hazard class, surface and overall fuel load
- Site slope, effective slope, and whether the effective slope is upslope or downslope of the development
- Distance of the development footprint from classified vegetation

Radiant heat exposure was calculated using the Bushfire Asset Protection Zone calculator provided by the Sustainable Development Unit of Queensland Fire and Emergency Services and/or the AS 3959:2018 Method 2 Calculator.

AS 3959:2018 defines the Bushfire Attack Level as a method for measuring the severity of a building's potential exposure to ember attack, radiant heat, and direct flame contact, using increments of radiant heat expressed in kilowatts per square metre. This method serves as the basis for establishing construction requirements to improve the protection of building elements from bushfire attack. Consequently, the assessment results and accompanying BAL construction requirements only apply to proposed buildings or structures, not the entire development area.

3. Legislative Context

The following key legislation, policies and guidelines are relevant to the preparation of bushfire assessment:

- State Planning Policy (July 2017, QLD)
- National Construction Code 2022
- AS 3959:2018 Construction of Buildings in Bushfire-prone Areas
- Local Council Planning Scheme
- Planning Act 2016 (Planning Act) and Building Act 1975 (Building Act)

3.1 State Planning Policy (July 2017)

Supporting the Planning Act 2016 (Planning Act) (Qld), the purpose of the SPP is to guide State and Local government in land-use planning and development by defining the Queensland Government's polices about matters of state interest, to which there are 17 state interests arranged under five broad themes:

- liveable communities and housing
- Economic growth
- Environment and heritage
- Safety and resilience to hazards
- Infrastructure

The SPP Interactive Mapping System includes bushfire hazard area (bushfire prone area) mapping based on the methodologies outlined in Leonard et al. (2014). Under the safety and resilience to hazards theme, the state's interest is to ensure that natural hazards are properly considered in all levels of the planning system. This includes the avoidance of natural hazard areas or the mitigation of risks to an acceptable or tolerable level. The SPP is supported by the SPP – State Interest Guideline – Natural Hazards, Risk and Resilience (April 2016), Technical Manual – Evaluation Report: Bushfire Hazards (April 2016), and Technical Manual – A 'Fit for Purpose' Approach in Undertaking Natural Hazard Studies and Risk Assessments (April 2016) by the Department of Infrastructure, Local Government and Planning. These documents identify the outcomes sought by the state and their application when planning development within a bushfire hazard area (bushfire prone area).

3.2 National Construction Code 2022: Building Code of Australia

The National Construction Code 2022: Building Code of Australia (NCC 2022) sets out technical requirements for the design and construction of buildings and other structures in Australia (The Australian Building Codes Board). NCC 2022 defines ten core building classes, along with various subclasses. It mandates that buildings constructed within designated bushfire prone areas must be designed and constructed to minimise the risk of ignition from bushfires.

3.3 AS 3959 Construction of Buildings in Bushfire-prone Areas

Where development is proposed in designated bushfire prone areas, AS 3959:2018 provides construction requirements designed to enhance resistance against bushfire attack. These construction specifications are determined by specific heat flux exposure thresholds and are categorized into six Bushfire Attack Levels (BAL):

Bushfire Attack Level (BAL)	Radiant Heat Exposure (AS3959:2018)	Description of Predicted Bushfire Attack and Levels of Exposure
BAL – Low	Insignificant	Minimal attack from radiant heat and flame due to the distance of the building from the vegetation, although some attack by burning debris is possible. There is insufficient threat to warrant specific construction requirements
BAL - 12.5	0 to 12.5kW/m^2	Attack by burning debris is significant with radiant heat (not greater than 12.5kW/m^2). Radiant heat is unlikely to threaten building elements (such as unscreened glass). Specific construction requirements for ember protection and accumulation of debris are warranted.
BAL - 19	12.5 to 19kW/m^2	Attack by burning debris is significant with radiant heat flux (not greater than 19kW/m^2) threatening some building elements (such as screened glass). Specific construction requirements for embers and radiant heat are warranted.
BAL – 29	19 to 29kW/m^2	Attack by burning debris is significant and radiant heat flux (not greater than 29kW/m^2) threatens building integrity. Specific construction requirements for ember and higher levels of radiant heat are warranted. Some flame contact is possible.
BAL – 40	29 to 40kW/m^2	Radiant heat flux and potential flame contact could threaten building integrity.
BAL - FZ	40kW/m^2 plus (Flame Contact)	Significant radiant heat and significantly higher likelihood of flame contact from the fire front will threaten building integrity and result in significant risk to residents.

Table 3-1: AS3959:2018 Using BAL to determine construction requirements

3.4 Mareeba Shire Council Planning Scheme

Relevant bushfire provisions of the Council's Planning Scheme reflect SPP State and Local level interests by identifying designated bushfire prone areas. Where assessable development is proposed on land mapped as containing bushfire hazard areas, a site-specific bushfire hazard assessment prepared in accordance with the planning scheme is required.

4. Bushfire Hazard Assessment

Several factors determine the likelihood and severity of bushfires in a landscape. Key factors include the type of vegetation and the amount of available fuel. Other considerations are topography and land use patterns around potentially hazardous vegetation. Additionally, connectivity between vegetation communities can influence the development and persistence of bushfires.

4.1 Current Bushfire Hazard Mapping

A review of the applicable Bushfire Hazard Overlay Mappings indicate that portions of the subject site are identified as being potentially affected by bushfire hazard,

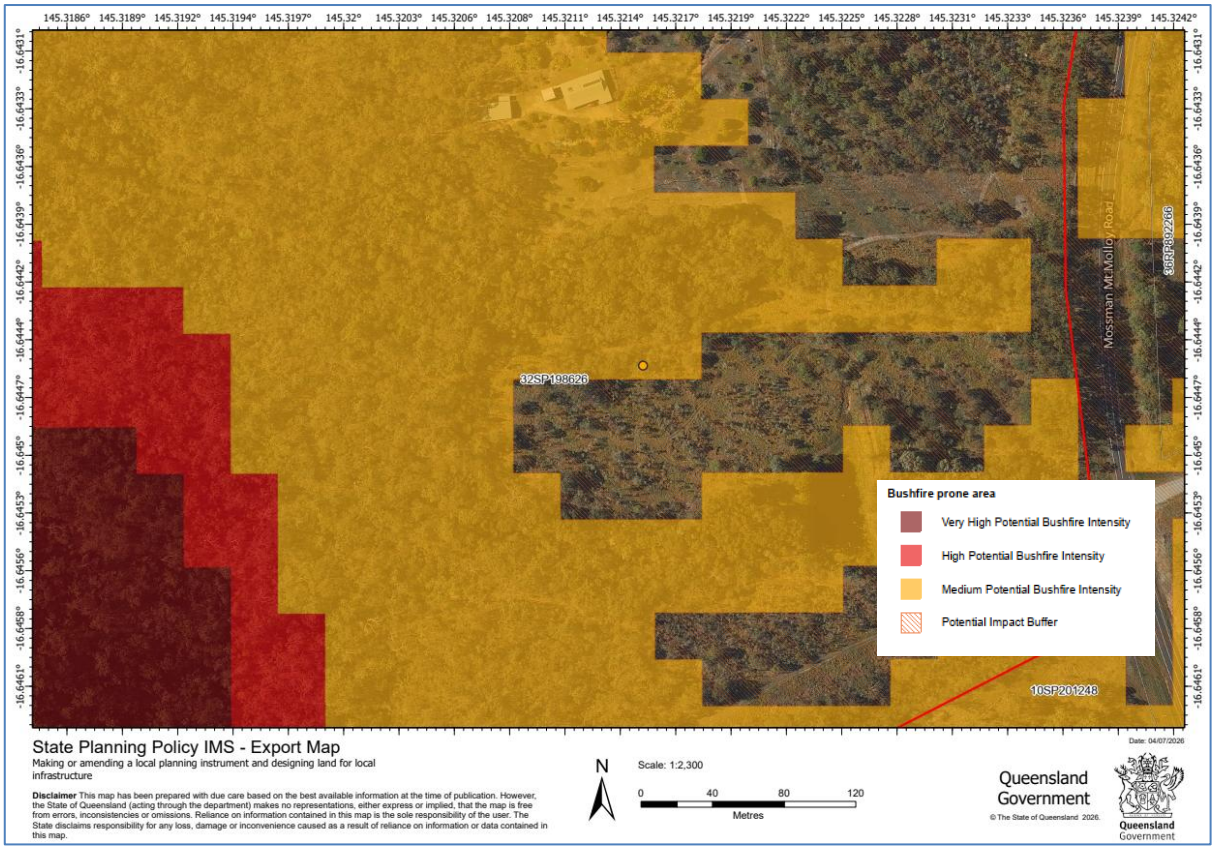


Figure 4-1: Bushfire Hazard Overlay Mapping

4.2 Local FFDI

The fire season in Queensland typically begins in the far north in July, advancing southward by spring and occasionally lasting until February in southern and far south-western regions. These timeframes vary annually due to fuel loads, long-term climate patterns, and short-term weather conditions, differing from other Australian states. In the far north and the northwest, warm, dry winters and springs, with dead grasses and dry fuels, heighten bushfire risks. In the south, the greatest danger follows dry winters and springs, with severe conditions arising when low-pressure

systems bring strong, hot, dry westerly winds to coastal areas. The season ends with the arrival of moist conditions, often influenced by tropical cyclones near the coast.

The Forest Fire Danger Index (FFDI) evaluates the likelihood of fire ignition, its propagation rate, intensity, and the difficulties encountered during suppression, amalgamating factors like air temperature, relative humidity, wind speed, and drought effects. This assessment is accessible through state mappings, revealing an annual exceedance probability FFDI of 52 at a 5% probability level for the subject site. Fire Danger Ratings (FDR) are determined by forecasted weather conditions, particularly the FFDI, offering insight into the level of bushfire threat on a given day. This FFDI corresponds to a high FDR, indicating hot, dry, and windy conditions. Under such circumstances, the ignition and spread of fires may present significant challenges for containment, especially in areas with extensive bushland vegetation.

For grassland, a Fire Danger Index (GFDI) of 130 is applied in the calculation of the specific Bushfire Attack Level (BAL).

4.3 Site-Specific Hazard Assessment

This Site-Specific Bushfire Hazard Assessment draws upon several key references and sources, including:

- Vegetation Hazard Classification and Potential Fire-line Intensity for Queensland, as outlined in "A new methodology for state-wide mapping of bushfire prone areas in Queensland" by CSIRO, Australia (2014).
- The Bushfire Resilient Communities Technical Reference Guide (QFES, 2019).
- The Bushfire Attack Level (BAL), Building setback requirements, and Construction Standards as specified in the Australian Standard AS3959:2018 Construction of buildings in bushfire prone areas.
- Bushfire Risk Mitigation Measures aligned with current industry best-practice assessment methodologies and compliance with Council's Planning Scheme.

This assessment will utilize factors such as vegetation composition and extent, slope, and industry-standard fuel load calculations to determine the potential bushfire hazard affecting the proposed development. Furthermore, this Bushfire Management Plan (BMP) will ensure compliance with the Council's Bushfire Overlay Code in relation to the proposed development.

The assessment involved an analysis of the site and its immediate 100 m radius surroundings to determine the typical bushfire risk characteristics. It included the application of Vegetation Hazard Classifications to vegetation located within 100 m of the site. Where necessary, it was expanded to cover an additional area ranging from 150 to 300 m.

According to AS3959:2018, the following vegetation shall be excluded from a BAL assessment, which is considered as low threat vegetation and/or non-vegetation areas:

- Vegetation of any type that is more than 100m from the site.
- Single areas of vegetation less than 1 ha in area and not within 100 m of other areas of vegetation being classified vegetation.
- Multiple areas of vegetation less than 0.25 ha in area and not within 20 m of the site, or each other or of other areas of vegetation being classified vegetation.
- Strips of vegetation less than 20 m in width (measured perpendicular to the elevation exposed to the strip of vegetation) regardless of length and not within 20 m of the site or each other, or other areas of vegetation being classified vegetation.
- Non-vegetated areas, that is, areas permanently cleared of vegetation, including waterways, exposed beaches, roads, footpaths, buildings and rocky outcrops.
- Vegetation regarded as low threat due to factors such as flammability, moisture content or fuel load. This includes grassland managed in a minimal fuel condition, mangroves and other saline wetlands, maintained lawns, golf courses (such as playing areas and fairways), maintained public reserves and parklands, sporting fields, vineyards, orchards, banana plantations, market gardens (and other non-curing crops), cultivated gardens, commercial nurseries, nature strips and windbreaks.

The assessment also takes into account the small and or isolated patches and corridor filtering process of Bushfire Resilient Communities:

- Sub-hectare areas of continuous fuel (i.e. surrounded by either no fuel or non-continuous fuel) those are further than 100 m from any other continuous fuel greater than two hectares.
- Downgrade the effective fuel load of continuous vegetation patches measuring (a) 1 to 2 hectares (by 66 per cent), and (b) 2-3 hectares patches (by 50 per cent) if the patch is surrounded by either non-continuous fuel or a low-hazard vegetation or land use type, and if the patch is further than 100 m from any other continuous-fuel vegetation patch greater than two hectares.
- Remove narrow corridors and areas of continuous fuel < 50 m in width that are not sufficiently wide to support a fully developed flame front.
- Small fragments are removed because of the varied quality of the vegetation mapping inputs.

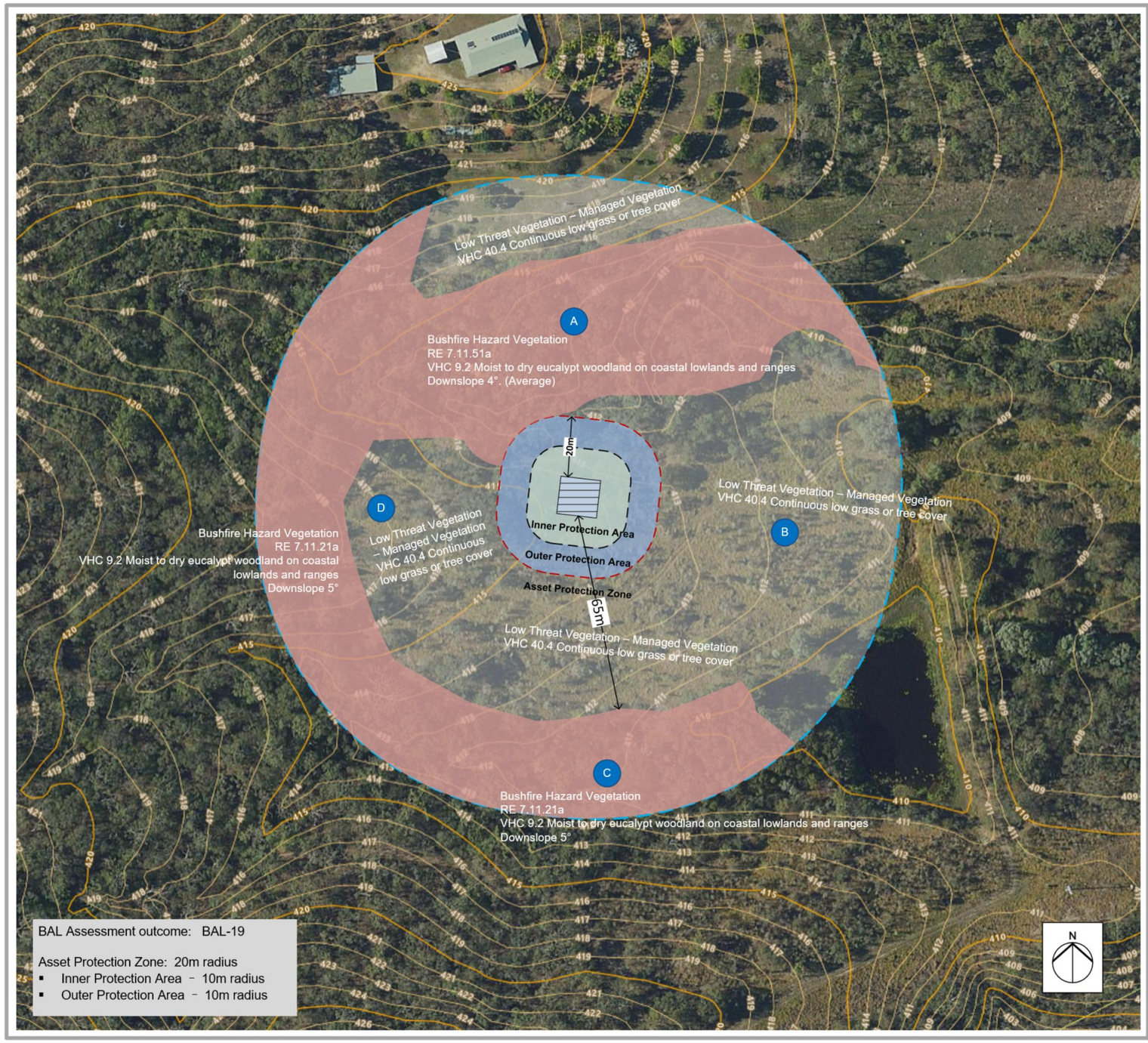
It is noted that the client is actively undertaking vegetation management activities on the site, including the removal of invasive weeds, thinning of overgrown vegetation, and general landscape and property maintenance.

4.3.1 Ground-Truthed VHC

The locations of site assessment plots are shown on Figure 4-2. Table 2 presents a summary of observations and the features of site assessment points.

Aspect	Assessment Plot	Mapped VHC	Ground-Truthed VHC
North	A	VHC 9.2 Moist to dry eucalypt woodland on coastal lowlands and ranges	VHC 9.2 Moist to dry eucalypt woodland on coastal lowlands and ranges
East	B	Low Hazard - VHC 40.4 Continuous low grass or tree cover	Low Hazard - VHC 40.4 Continuous low grass or tree cover
South	C	VHC 9.2 Moist to dry eucalypt woodland on coastal lowlands and ranges	VHC 9.2 Moist to dry eucalypt woodland on coastal lowlands and ranges
West	D	VHC 9.2 Moist to dry eucalypt woodland on coastal lowlands and ranges	Low Hazard - VHC 40.4 Continuous low grass or tree cover

Table 4-1: Ground-Truthed VHC



Bushfire Hazard Assessment
Bushfire Attack Level Assessment

Drawing No.	B6649
Client	As in the assessment report
Project address	2620 Mossman Mount Molloy Rd Mount Molloy QLD 4871
Date	7/7/2026
Version	1.0
Drawing Sheet	Sheet 1 of 1
Drawn by	A.L. & H.L.
Coordinate	GDA 95: MGA Zone 56

LEGEND

- Property boundaries
- Bushfire hazard assessment area (100m radius)
- Assessment plot location
- Exclusions – Low threat vegetation and non-vegetated areas
- Contour
- Bushfire hazard vegetation
- Proposed development
- Outer Protection Area
- Inner Protection Area

NOTE:
Figured dimensions to be taken in preference to scaled. Verify all dimensions on site before commencing work or making shop drawings. When printing from electronic files it is the responsibility of the operator to ensure the required scale is achieved. Perspectives are for illustration purposes only. IF IN DOUBT, ASK.

0 30m 50m 100m
SCALE @ A3 1:1200

Map source: QLD SPP map 2026

Figure 4-2: Ground-Truthed VHC and local Bushfire Prone Area map

Figure 4-3: Asset Protection Zone

- **Classified vegetation conditions to North, South and West**

Land at assessment plot A, C and D, a large continuous patch of hazardous vegetation VHC 9.2 Moist to dry eucalypt woodland on coastal lowlands and ranges was identified approximately 20 m from the proposed development area to the north, 65m to the south and 66m to the west, where the designed Asset Protection Zone was applied.

This vegetation patch may contain RE 7.11.51a Corymbia clarksoniana and/or Eucalyptus drepanophylla open forest to woodland on metamorphics and RE 7.11.21a Eucalyptus leptophleba woodland to open forest on metamorphic uplands of the dry rainfall zone. Limited regular maintenance activities have been carried out within this hazardous vegetation patch.

Trees 10 – 30 m in height with a canopy providing 10 – 30% foliage cover, typically dominated by eucalypts. The understorey includes grasses, herbs, and scattered shrubs, with some areas supporting a grassy ground layer. Elevated fuel may occur as young trees. A diverse range of weeds and invasive plant species, including weedy grasses and Lantana, is widespread across the area, occurring under conditions varying from sparse to moderately dense. The predominant tree canopy reaches a height of approximately 20m.

The potential fuel load of the bushfire hazard vegetation patch is determined as following:

Vegetation context	VHC 9.2
Vegetation structure	Woodland
AS3959:2018 Classification of vegetation	Group B Woodland – Woodland 05
Effective slope under the hazardous vegetation	Downslope 4° North (Average) Downslope 5° South Upslope. West
Slope Between Site and hazardous vegetation	Downslope 4° North (Average) Downslope 5° South Upslope. West
Understorey fuel load	14.9 t/ha
Total fuel load	17.2 t/ha

Table 4-2: Potential fuel load

- **Surrounding unmanaged vegetation**

Unmanaged vegetation such as grassland, grassy woodland, shrubland and scrub that is characterised by overgrowth typically exceeding 100 mm in height, dense ground cover, and the accumulation of dry or dead vegetation due to a lack of mowing, slashing or grazing can result in a build-up of fine fuels. Fine fuels are readily ignitable and can promote rapid fire spread under dry and windy conditions, thereby increasing bushfire risk to the site. Surrounding vegetation is to be maintained in a low fuel condition at all times.

- **Low hazard conditions to East, South and West**

Well managed vegetation to the east, the south and the west presents the characters VHC 40.4 Continuous low grass or tree cover. The area comprises managed gardens, residential house, well-maintained lawns, and paddocks, with trees regularly trimmed, mowing, slashing, and weed removal conducted to minimise fuel load. As a result, it is classified as managed vegetation with a low bushfire hazard.

Rural residential properties with landscaped gardens and paddocks under regular maintenance, managed gardens and lawns are present within the curtilage of residential houses and roads in this area, which is categorized as managed vegetation. The groundcovers are regularly maintained, shrubs are removed and trimmed frequently, maintaining in low-fuel condition.

- **Vegetation conditions within the proposed development**

Within the proposed development area and the designed Asset Protection Zone, vegetation conditions will be consistently maintained in a low-fuel state, aligning with the characteristics of VHC 40.4 Continuous low grass or tree cover.

Figure 4-4: Aerial view providing landscape context for the site (Sourced from QLD SPP mapping, captured 07/2026)

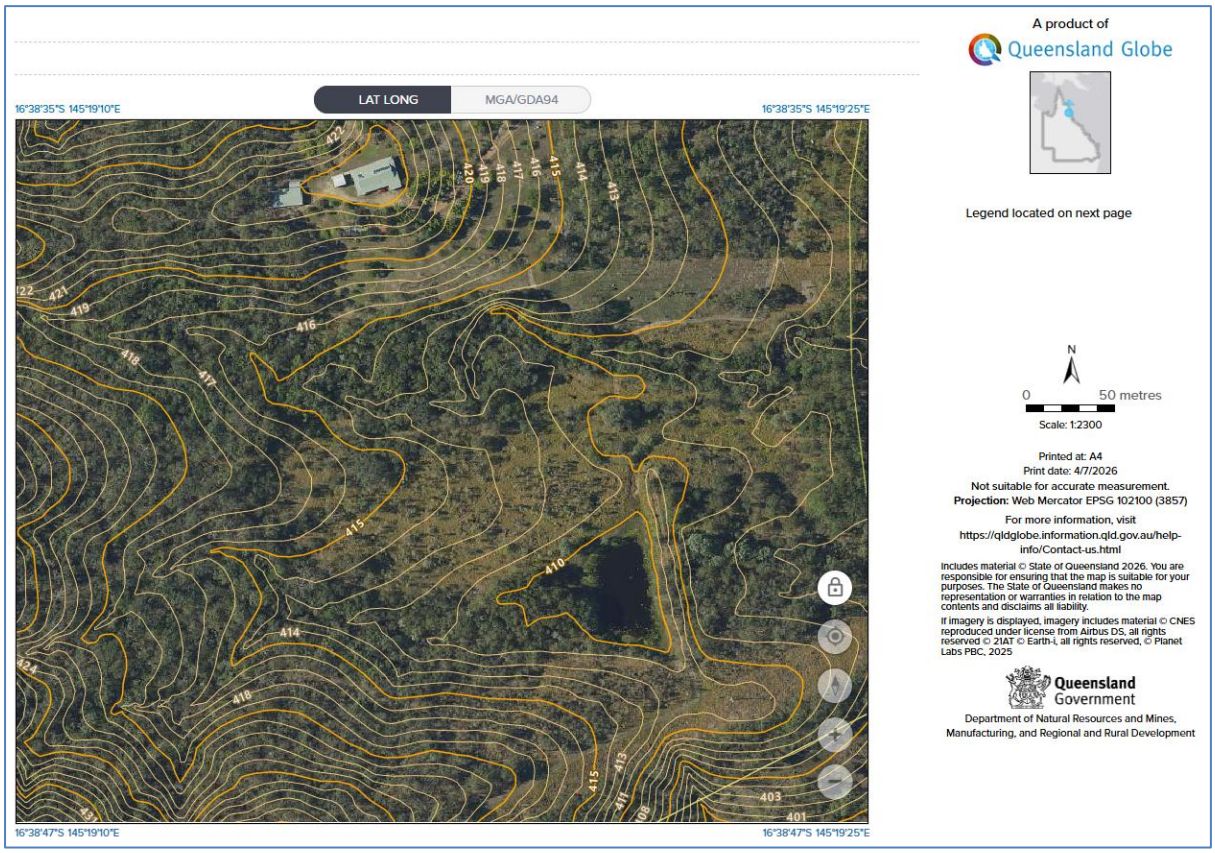


Figure 4-5: 1m interval contour map (Sourced from Queensland Globe mapping, captured 07/2026)

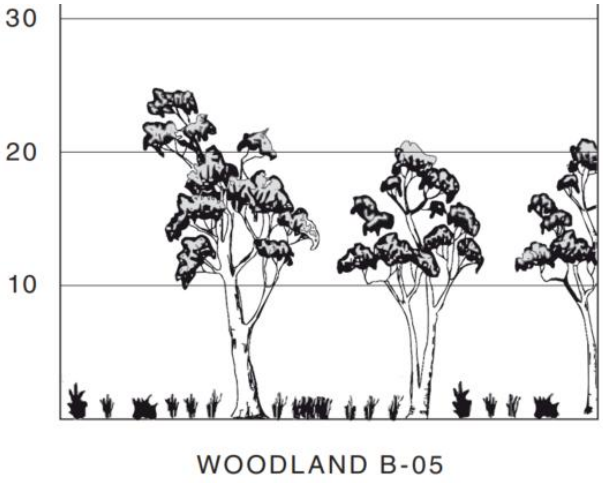


Figure 4-6: AS 3959:2018 Classification of vegetation

Regional ecosystem details for 7.11.51

Regional ecosystem	7.11.51
Vegetation Management Act class	Least concern
Wetlands	Not a Wetland
Biodiversity status	Of concern
Subregion	8, 7, 9, (3.2), (3), (1), (9.3), (4)
Estimated extent[1]	Pre-clearing 19000 ha; Remnant 2021 16000 ha
Short description	Corymbia clarksoniana and/or Eucalyptus drepanophylla open forest to woodland on metamorphics
Structure code	Open Forest
Description	Corymbia clarksoniana (Clarkson's bloodwood) and/or Eucalyptus drepanophylla (ironbark) open forest to woodland. Metamorphics. Not a Wetland. (BVG1M: 9c). Vegetation communities in this regional ecosystem include: 7.11.51a: Corymbia clarksoniana, Eucalyptus tereticornis, E. drepanophylla woodland, low woodland to open forest with Allocasuarina torulosa, Allocasuarina littoralis, Lophostemon suaveolens, Acacia cincinnata, A. flavescens, Banksia aquilonia, Xanthorrhoea johnsonii. Metamorphics. Not a Wetland. (BVG1M: 9c). 7.11.51b: Eucalyptus drepanophylla woodland. Foothills and uplands on metamorphics, of the moist to dry rainfall zones. Not a Wetland. (BVG1M: 13c). 7.11.51c: Corymbia clarksoniana woodland. Metamorphics. Not a Wetland. (BVG1M: 9c).

Fire management guidelines	SEASON: Cool, dry season (June-Sep). b: April-Sep. c: Begin burning after the wet season (April-May), but avoid hot, dry season unless a high intensity fire is required to manage thickening, then undertake storm burn. INTENSITY: Low to moderate. c: Low, with occasional moderate or high intensity to manage thickening and/or stimulate germination. INTERVAL: 2-5 years. INTERVAL_MIN: 2. INTERVAL_MAX: 5. STRATEGY: Mosaic burn < 30%. Begin burning early in the fire season, with progressive patch fires burnt through the year. Stop burning when the network of fires and other breaks is sufficient to impede fire spread later in the year. Storm-burning may be used to add further diversity to the fire mosaic. c: Mosaic burn 25-60%. Storm-burning may be used to add further diversity to fire mosaic, promote perennial grasses and arrest woody thickening. ISSUES: Ignition is most likely during hot, dry season (Oct - Jan). These fires are typically high intensity fires that can be difficult to control. Maintaining a fire mosaic will ensure protection of animal habitats and mitigate against wildfires. b: An occasional moderate severity fire may be used to manage overabundant recruitment of trees. Maintaining a fire mosaic will ensure protection of animal habitats and mitigate against wildfires. c: In the absence of fire an abundance of rainforest pioneers (e.g., Melastoma spp., Chionanthus ramiflora, Mallotus philippensis, Alyxia spicata and Glochidion spp.) and bracken fern can establish. This development can be rapid (within about 15 years) after which system change is difficult to reverse. Thickening with rainforest species can be detrimental to habitat trees and endangered species (e.g., mahogany glider). Where fire is more common the understorey is usually dominated by tall grasses (e.g., Themeda triandra and Eriachne pallescens), herbaceous plants, lilies and sedges (e.g., Tricoryne anceps, Gonocarpus acanthocarpus, Lomandra longifolia, Dianella caerulea).

Regional ecosystem details for 7.11.21

Regional ecosystem	7.11.21
Vegetation Management Act class	Least concern
Wetlands	Not a Wetland
Biodiversity status	No concern at present
Subregion	9, 8, 3.2, (3.5), (7), (9.3)
Estimated extent[1]	Pre-clearing 13000 ha; Remnant 2021 12000 ha
Short description	Eucalyptus leptophleba woodland to open forest on metamorphic uplands of the dry rainfall zone
Structure code	Open Forest
Description	Eucalyptus leptophleba (Molloy red box) woodland to open forest. Metamorphic uplands of the dry rainfall zone. Not a Wetland. (BVG1M: 9b). Vegetation communities in this regional ecosystem include: 7.11.21a: Eucalyptus leptophleba, Corymbia clarksoniana, C. tessellaris, C. dallachiana, E. platyphylla, E. tereticornis, Erythrophleum chlorostachys, Lophostemon grandiflorus woodland, low-woodland and open forest with Melaleuca viridiflora, M. monantha, Allocasuarina littoralis and A. luehmannii. Foothills and uplands on metamorphics, of the dry rainfall zone. Not a Wetland. (BVG1M: 9b). 7.11.21b: Grassland dominated by Themeda triandra (excluding Black Mountain examples). Foothills and uplands on metamorphics, of the dry rainfall zone. Not a Wetland. (BVG1M: 32b).
Fire management guidelines	SEASON: Cool, dry season (April-Sep). b: Early season burns (April-June). Later burns during storm season will reduce shrub invasion. INTENSITY: Low to moderate. b: Low, with occasional moderate. INTERVAL: 2-5 years. b: 2-3 years. INTERVAL_MIN: 2. INTERVAL_MAX: 5. STRATEGY: Mosaic burn < 30%. Begin burning early in the fire season, with progressive patch fires burnt through the year. Stop burning when the network of fires and other breaks is sufficient to impede fire spread later in the year. Storm-burning may be used to add further diversity to the fire mosaic. b: Mosaic burn at a range of frequencies to create mosaic of post-fire responses. ISSUES: An occasional moderate severity fire may be used to manage overabundant recruitment of trees. Maintaining a fire mosaic will ensure protection of animal habitats and mitigate against wildfires. b: Absence of fire can lead to a transition to shrubland. Moderate intensity fire will reduce this change and assist with weeds.
Comments	7.11.21: Distinguished from 7.11.49 by its occurrence in drier, more north-western areas and by the common occurrence of species such as Erythrophleum chlorostachys, Melaleuca monantha, and Allocasuarina luehmannii. Texture contrast soils lower slopes. Poorly represented in protected tenures and threatened in some areas by timber harvesting. Western parts of ranges, north from about Gordonvale. The northern examples are generally in good condition, whist the southwest examples are suffering clearing and fragmentation.

Figure 4-7: Ecological Condition Profile of RE

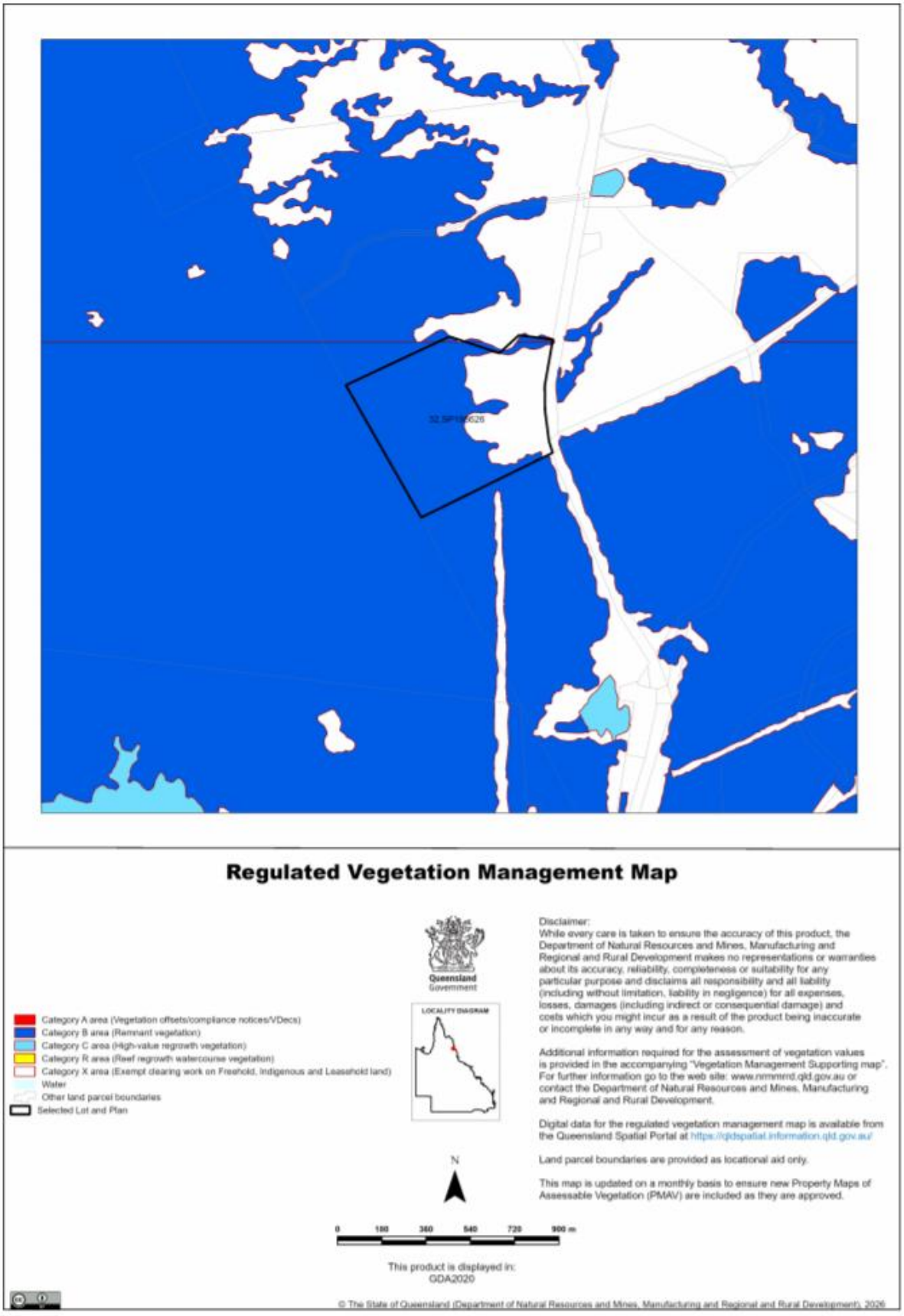


Figure 4-8: Regulated vegetation management map (sourced from Vegetation management report, Department of Resources, 2026)

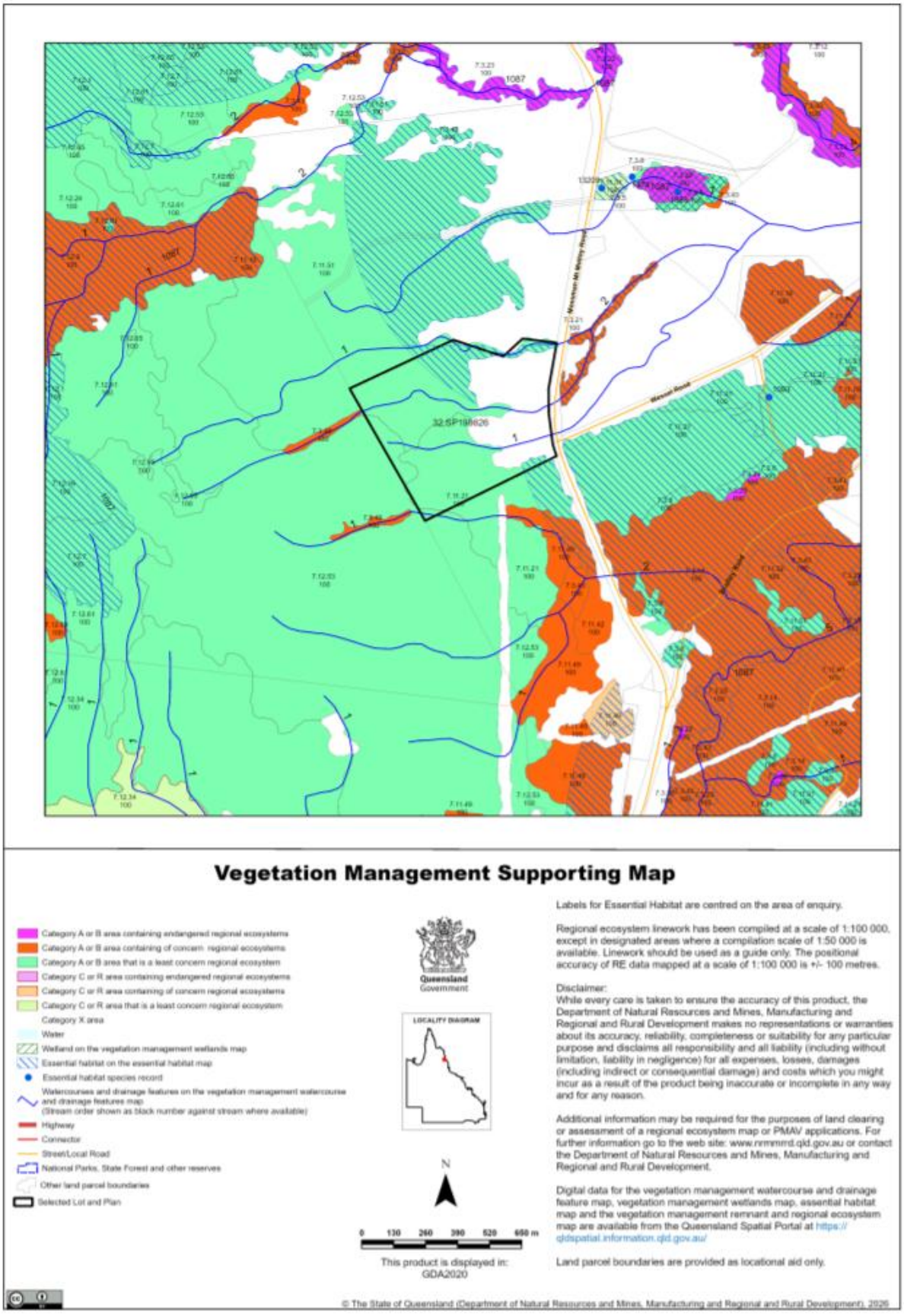


Figure 4-9: Vegetation Management Support Map providing RE context on the site (sourced from Vegetation management report, Department of Resources, 2026)

Photo 1: The proposed development area

Photo 2: Site entrance

Photo 3: Bushfire hazard vegetation nearby

4.4 Probable Direction of Bushfire Attack

The anticipated directions of bushfire threat to the proposed development are expected to originate from any direction, primarily in areas classified as having medium, high and very high bushfire hazard levels.

4.5 Fire History

Fire history information from QFES reveals that between 2010 and 2025, there were no recorded fires within a 1-kilometre radius of the location. Both the historical fire data and observations of fire scars suggest that it has been a substantial amount of time since the site was last exposed to a large-scale fire event. However, it is important to note that while this information does not guarantee the site will remain free from future fires, the likelihood of such events occurring appears to be decreasing due to the surrounding residential and commercial land development patterns.

4.6 Building Envelope and Asset Protection Zone

The Asset Protection Zone (APZ) will need to be established and maintained on the subject site to ensure adequate separation from hazardous vegetation. This designed APZ will have a radius of 20 m around the proposed building(s) as minimum, consisting of a 10 m for the Inner Protection Area and a further 10 m for the Outer Protection Area.

Figure 4-2 and Figure 4-3 illustrate the minimum APZ requirements. All distance measurements for the APZ should be taken as horizontal distances. Management strategies within the APZ will ensure that vegetation or other structures proposed do not increase the overall potential fuel load. The Bushfire Management Plan will detail these requirements comprehensively.

In the remaining areas on the subject site, the client should continue to maintain the current vegetation management practices. Unmanaged vegetation will increase the bushfire risk.

It is critically important to note that failure to maintain the Asset Protection Zone (APZ) will compromise its effectiveness, leading to an elevated bushfire risk to the proposed development.

To assist in managing the impacts of bushfires in Queensland, the Queensland Government has developed guidelines aimed at enhancing the resilience of both new and existing homes. These guidelines provide practical, site-specific recommendations on building design and landscaping measures to improve bushfire resilience.

It is recommended that the client refer to and apply these guidelines to strengthen the bushfire resilience of the dwelling.

- Queensland Reconstruction Authority (2024). Bushfire Resilient Building Guidance for Queensland Homes. https://www.qra.qld.gov.au/sites/default/files/2024-02/0873_QRA%20CSIRO%20Bushfire%20Guideline%20(updated%20February%202024).pdf

4.7 Bushfire Attack Level and Construction Requirements

Where considering the application of the designed Asset Protection Zone, the overall Bushfire Attack Level (BAL) for the proposed development has been assessed as being BAL-19.

BAL-19 is primarily concerned with protection from ember attack and radiant heat greater than 12.5 kW/m² up to and including 19 kW/m².

To meet the construction standards outlined in AS3959:2018, both Section 3 "Construction General" and Section 6 "Construction Requirements for BAL-19" should be adhered to.

Bushfire Impact from VHC 9.2 to North

Minimum Distance Calculator - AS3959-2018 (Method 2)			
Inputs		Outputs	
Fire Danger Index	47	Rate of spread	1.1 km/h
Vegetation Classification	Woodland	Flame length	9.26 m
Understorey fuel load	14.9 t/ha	Flame angle	56 °, 67 °, 76 °, 81 °, 83 ° & 88 °
Total fuel load	17.2 t/ha	Elevation of receiver	3.3 m, 3.54 m, 3.41 m, 3 m, 2.7 m & 0 m
Vegetation height	n/a	Fire intensity	9,841 kW/m
Effective slope	4 °	Transmissivity	0.883, 0.869, 0.848, 0.826, 0.813 & 0.743
Site slope	4 °	Viewfactor	0.5894, 0.437, 0.2926, 0.1984, 0.1612 & 0.0441
Flame width	100 m	Minimum distance to < 40 kW/m²	7.5 m
Windspeed	n/a	Minimum distance to < 29 kW/m²	10.2 m
Heat of combustion	18,600 kJ/kg	Minimum distance to < 19 kW/m²	15.3 m
Flame temperature	1,090 K	Minimum distance to < 12.5 kW/m²	22.4 m
		Minimum distance to < 10 kW/m²	27.1 m

Rate of Spread - Mcarthur, 1973 & Noble et al., 1980

Flame length - NSW Rural Fire Service, 2001 & Noble et al., 1980

Elevation of receiver - Douglas & Tan, 2005

Flame angle - Douglas & Tan, 2005

Figure 4-10: Radiant Heat Flux Modelling and BAL Rating

5. Bushfire Management Plan

This Bushfire Management Plan (BMP) identifies the bushfire protection measures that should be implemented as part of the proposed development to manage and to reduce the risk from bushfire to an acceptable level. It is important to understand the processes that influence bushfire behaviour and the sources of damage that threaten people and property.

5.1 Bushfire Behaviours

Understanding bushfire behaviour is crucial when planning development on bushfire prone land to effectively mitigate the risks associated with bushfires. Three primary elements significantly influence bushfire behaviour, as follows:

5.1.1 Topography

The physical characteristics of the landscape significantly influence bushfire behaviour. It is well-established that fires tend to spread more rapidly when they move uphill. This is because flames can easily access unburnt fuel ahead of the fire, which is pre-heated by radiant heat, making it more combustible. Studies indicate that for every 10-degree increase in slope, the fire's speed can double. For example, if a fire is moving at a rate of 5 km per hour on flat ground, and it encounters a 10-degree slope, its speed can double to 10 km per hour uphill. As the fire gains momentum, it also increases in intensity, becoming even hotter.

Conversely, when a fire moves downhill, its speed decreases because the flames have less fuel to consume, and radiant heat pre-heats less fuel in front of the fire. For every 10-degree decrease in slope, the fire's speed is halved. It is important to note that fires typically move more slowly as the slope declines.

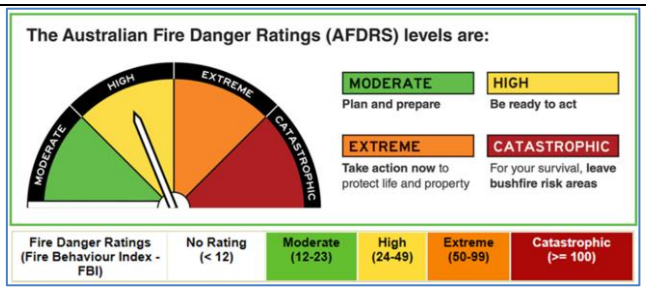
5.1.2 Weather Conditions

Weather conditions are a major factor in the behaviour and spread of bushfires. Hot, dry, and windy conditions can make fires more intense and difficult to control, while cooler and more humid conditions can slow their spread. Wind can also influence the direction and speed of the fire, and changes in wind direction can make it more difficult for firefighters to predict the fire's behaviour. Weather forecasting is a critical component of bushfire management, as it allows firefighters and other responders to anticipate changes in fire behaviour and take action to mitigate the risks. In addition, many communities now use tools like automated alert systems to warn residents of potential fire danger based on weather conditions.

The new Australian Fire Danger Rating System (AFDRS) improves and simplifies the reporting of fire danger. Fire danger ratings describe the potential level of danger should a bushfire starts. It is a valuable information for taking actions to protect people and property. The AFDRS has four levels, each with a distinct title, colour and key message.

5.1.3 Vegetation

The amount and type of fuel available can greatly influence the behaviour of a bushfire. Vegetation is the source of fuel of a bushfire. Vegetation that is dry and dead, or that is densely packed, can create more intense and long-lasting fires. In contrast, areas with little fuel or sparse vegetation may not support a fire at all. The arrangement of fuel can also play a role, as fires that encounter a continuous "fuel ladder" from the ground up into the canopy can become more severe. The amount of fuel surrounding a building can directly impact a buildings survival. Vegetation management, landscaping for bushfire and breaking the continuity of vegetation can limit the spread of fire.



Moderate: Plan and Prepare
Most fires can be controlled

- Stay up to date and be ready to act if there is a fire.

High: Be Ready to Act
Fires can be dangerous

- Decide what you will do if a fire starts.
- There's a heightened risk. Be alert for fires in your area.
- If a fire starts, your life and property may be at risk. The safest option is to avoid bushfire risk areas.

Extreme: Take Action Now to protect your life and property
Fires will spread quickly and be extremely dangerous

- These are dangerous fire conditions.
- Check your bushfire plan and make sure your property is fire ready.
- If a fire starts, take immediate action.
- If you and your property are not prepared to the highest level, go to a safer location well before the fire impacts.
- Reconsider travel through bushfire risk areas.

Catastrophic: For your survival, leave bushfire risk areas
If a fire starts to take hold, lives are likely to be lost

- These are the most dangerous conditions for a fire.
- Your life may depend on the decisions you make, even before there is a fire.
- For your survival, do not be in bushfire risk areas.
- Stay safe by going to a safer location early in the morning or the night before.
- If a fire starts and takes hold, lives and properties are likely to be lost.
- Homes cannot withstand fires in these conditions. You may not be able to leave and help may not be available.

Table 5-1: Australian Fire Danger Rating

5.2 Potential Bushfire Impacts and Attack Mechanisms

Bushfire attack mechanisms are typically interconnected, rarely occurring in isolation. Both people and property often face a combination of bushfire attack factors, each operating across different spatial scales. Nevertheless, strategies aimed at mitigating the impacts of direct flame contact, radiant heat exposure, and ember attack can be effectively addressed within the framework of land use planning and development assessments, conducted at manageable scales.

The main sources of direct bushfire attack that give rise to loss of life, and damage to property and infrastructure are as follows:

5.2.1 Direct Flame Contact

Direct flame contact occurs when flames from a bushfire come into direct contact with a building, structure, or individuals. When this happens, the flames can ignite any flammable material present and cause fires to spread rapidly. Direct flame contact can also cause burns and other heat-related injuries to people who are in the path of the flames.

Direct flame contact is a significant concern during a bushfire, especially for buildings and structures that are located in close proximity to the fire. The intensity of the flames and the duration of the exposure can have a significant impact on the severity of the damage.

To reduce the risk of direct flame contact during a bushfire, it's essential to create a defensible space around buildings and structures, clear flammable materials from the area, and use fire-resistant building materials when constructing or renovating buildings. Additionally, it's crucial to follow evacuation orders and stay informed about the fire's behaviour and movement to ensure personal safety.

5.2.2 Radiant Heat Exposure

Radiant heat exposure is a significant danger during a bushfire. When a bushfire occurs, the heat generated by the flames causes the air surrounding the fire to heat up, and this heat energy is then radiated out in the form of electromagnetic waves. These waves can travel a considerable distance from the fire and can cause surfaces that are not in direct contact with the flames to heat up.

During a bushfire, radiant heat exposure can be intense, and the effects can be severe. Radiant heat can ignite flammable materials, such as dry vegetation or wooden structures, and cause them to catch fire. It can also cause buildings and structures to overheat, leading to structural damage or collapse. Additionally, people who are too close to the flames can suffer from heat stress, dehydration, and serious burns.

The risk of radiant heat exposure during a bushfire can be mitigated by creating a defensible space around buildings and structures, clearing flammable materials from

the area, and using fire-resistant building materials when constructing or renovating buildings. It's also important to follow evacuation orders and stay informed about the fire's behaviour and movement to ensure personal safety.

5.2.3 Ember Attack

Ember attack, often referred to as spot fires, represents a prominent hazard during bushfires. This phenomenon occurs when burning embers, also known as firebrands or spot fires, are carried by the wind and land in different locations, potentially igniting new fires.

In the midst of a bushfire, the combination of hot air and flames generates updrafts capable of lifting burning embers over considerable distances. These embers can alight on rooftops, in gutters, or on flammable materials near buildings and structures, leading to ignition and the potential initiation of new fires.

Ember attack poses a unique danger because it can manifest hours or even days after the primary fire front has passed, and it has the capacity to ignite fires in areas previously unaffected by the bushfire. Consequently, it is imperative to prepare for ember attack through measures such as establishing a defensible space around buildings and structures, removing flammable materials from the vicinity, and sealing gaps and openings in buildings to prevent ember ingress.

5.2.4 Wind and Smoke Attack

Strong winds can cause a bushfire to spread more rapidly and can also increase the likelihood of ember attack, as burning embers can be carried by the wind over long distances. Wind can also push flames and radiant heat towards buildings and structures, increasing the risk of direct flame contact and radiant heat exposure.

Smoke from a bushfire can also pose a danger to people's health, particularly for those with respiratory problems. Smoke can contain particulate matter, carbon monoxide, and other harmful pollutants that can irritate the lungs and worsen respiratory conditions. In addition to health effects, smoke can reduce visibility, making it more difficult for firefighters to contain the fire and for people to evacuate safely.

5.2.5 Convection and Conduction

Both convection and conduction can play a significant role in the spread and intensity of a bushfire. To reduce the risk of a bushfire spreading through convection and conduction, it's important to create a defensible space around buildings and structures, clear flammable materials from the area, and use fire-resistant building materials when constructing or renovating buildings. It's also crucial to follow evacuation orders and stay informed about the fire's behaviour and movement to ensure personal safety.

5.3 Bushfire Protection Measures

This section identifies the bushfire protection measures that will be implemented as part of the proposed development to comply with the requirements of both the State and local council's Bushfire Prone Area code and to minimise the impact of potential bushfires on people and property.

The proposed measures are prepared in accordance with Queensland State Government State Planning Policy - Part E (SPP 2017), the Bushfire Resilient Communities Technical Reference Guide (QFES, 2019), the local council's Bushfire Overlay Code, and the Australian Standard (AS 3959:2018) for Construction of buildings in bushfire prone areas.

The legislation mentioned above aims to protect individuals and buildings from bushfires by ensuring that new developments meet specific Performance Outcomes that are appropriate for the identified bushfire hazard. These Performance Outcomes are typically achieved by properly separating the development from the bushfire hazard, providing adequate access for firefighting vehicles, and constructing buildings to the appropriate standards. Additionally, the legislation includes other relevant factors that are deemed necessary for ensuring the safety of individuals and buildings during a bushfire emergency.

5.3.1 Asset Protection Zone (APZ)

An Asset Protection Zone (APZ) is the most important bushfire protection measure. An APZ is a designed area surrounding a building or structure that has been well managed to reduce the risk of a bushfire impacting the building or structure. An APZ provides:

- A buffer zone between a bushfire hazard and an asset
- An area of reduced bushfire fuel that allows suppression of fire
- An area from which backburning may be conducted
- An area which allows emergency services access and provides a relatively safe area for firefighters and homeowners to defend their property.

A correctly designed and regularly maintained APZ will reduce the risk of:

- Direct flame contact on the asset
- Damage to the build asset from intense radiant heat
- Ember attack on the asset

An APZ is typically designed and created by removing vegetation and other combustible materials from around the building or structure, reducing the fuel available for a bushfire. The width of the APZ and the level of vegetation removal required depend on a number of site-specific factors, including the slope of the land, the hazardous vegetation type, and the intensity of the bushfire hazard. The property owner is responsible for creating and maintaining regularly the designed APZ.

(1) Creating APZ by reducing bushfire fuel

The intensity of bush fires can be greatly reduced where there is little to no available fuel for burning. To effectively manage bushfire fuels, there are several approaches to reduce, remove, or change the condition of the fuel.

- Raking or manual removal of fine fuels
- Mowing or grazing of grass
- Removal or pruning of trees, shrubs and understorey
- Slashing and trittering

It is important to note that reducing fuel does not always require removal of all vegetation, which would cause environmental damage. Trees and plants also provide protection against bushfires by mitigating the impact of strong winds, intense heat and flying embers (by filtering embers) and changing wind patterns. Some ground cover vegetation is also needed to prevent soil erosion.

(2) Ongoing management for APZ

The creation of an Asset Protection Zone (APZ) establishes a controlled fuel-managed area that serves to reduce the potential impact of direct flame contact and radiant heat on property development, effectively acting as a defensible space. It is crucial to emphasize that the management of vegetation and landscaping within the APZ is of paramount importance and should maintain a minimal fuel load.

An APZ should be maintained in perpetuity to ensure ongoing protection from the impact of bushfires, and maintenance of the APZ should be regularly undertaken, especially in advance of the bushfire season. The requirements are set out as follows.

(i) Inner Protection Area

The Inner Protection Area is the area closest to the building and creates a fuel-managed area which can minimise the impact of direct flame contact and radiant heat on the proposed development and act as an important space. Vegetation within this area should be kept below 100 mm in height and be discontinuous.

In practical terms the Inner Protection Area is typically the curtilage around the building, consisting of a mown lawn and well-maintained gardens.

Where establishing and maintaining the inner protection zone, the following requirements apply:

- General
  - Recommend a 1m wide area, suitable for pedestrian traffic, to be provided around the immediate curtilage of the building
  - Planting is limited in the immediate vicinity of the building
  - All leaves and vegetation debris must be removed at regular intervals during the declared fire danger period
  - Planting should not provide continuous connection to the building

- Plants greater than 10 cm in height are not recommended to be located within 3 m of glazed element of the building
- Low flammability vegetation species are used

- Trees
  - Tree canopy cover should be less than 15% at maturity
  - Trees at maturity should not touch or overhang the building
  - Lower limbs should be removed up to a height of 2 m above the ground
  - Tree canopies should be separated by 2 to 5 m
  - Preference should be given to smooth barked and evergreen trees
- Shrubs
  - Create large discontinuities or gaps in the vegetation to slow down or break the progress of fire towards buildings should be provided
  - Shrubs should not be located under trees
  - Shrubs should not form more than 10% ground cover
  - Clumps of shrubs should be separated from exposed windows and doors by a distance of at least twice the height of the vegetation
- Grass
  - Grass should be kept mown regularly (as a guide grass, should be kept to no more than 100 mm in height)
  - Leaves and vegetation debris should be removed regularly

(ii) Outer Protection Area

The Outer Protection Area is located between the Inner Protection Area and unmanaged vegetation. It is an area where there is maintenance of the understorey and some separation in the canopy. The reduction of fuel in this area aims to decrease the intensity of an approaching fire and restricts the potential for fire spread from crowns, reducing the level of direct flame, radiant heat and ember attack on the inner protection zone.

- Trees
  - Tree canopy cover should be less than 30% at maturity
  - Tree canopies should be separated by 2 to 5 m
- Shrubs
  - Shrubs should not form a continuous canopy, and
  - Shrubs should not form more than 20% ground cover
- Grass
  - Grass should be kept mown regularly to height of less than 100 mm
  - Leaves and other debris should be removed regularly.

It is noted that, due to topographical and other site constraints, establishing and maintaining the Outer Protection Zone (OPZ) or fire management lines in certain areas may be difficult to implement. Accordingly, the client shall implement appropriate alternative measures suited to local site conditions — such as locating

fire management lines or firebreaks in practicable areas — to achieve an equivalent level of bushfire risk mitigation.

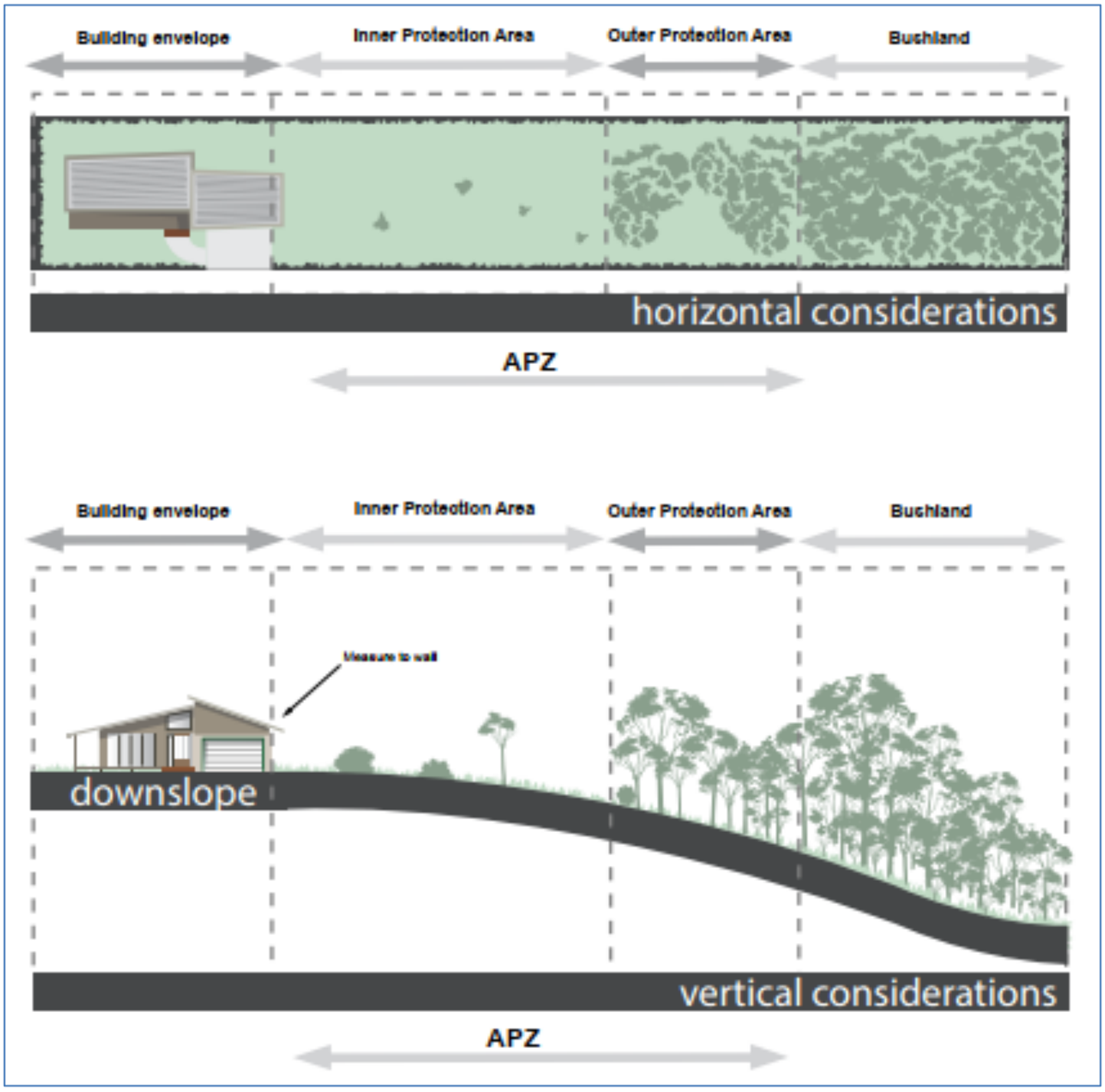


Figure 5-1: Inner protection area and Outer protection area

5.3.2 Building Construction, Siting and Design

The appropriate design and construction of buildings enhance their survivability from bushfires. Construction measures should not be applied as a stand-alone mitigation solution but should form part of a suite of measures. This should also include APZ, appropriate access, water supply and landscaping. Building design needs to ensure adequate protection of vulnerable building elements. Construction standards are outlined in AS 3959:2018 and the NASH Standard to provide various levels of protection for different building elements.

The outcome of the BAL assessment is BAL-19 in accordance with AS 3959:2018 and the Bushfire Resilient Communities.

It should be noted the Building Code of Australia only requires Classes 1, 2 and 3 and certain Class 9 buildings and Class 10a building associated with those buildings to comply with the bushfire provisions of the NCC 2022.

5.3.3 Access and Egress Arrangement

Access and driveway design and construction are critical components of bushfire risk management. In a bushfire hazard area, vehicular access, including public roads, private driveways and internal accessways, should be designed to mitigate bushfire risk by ensuring adequate access and egress for:

(a) fire-fighting and other emergency vehicles; and
(b) the safe evacuation of residents, occupants and emergency personnel during a bushfire event.

The design and construction of the accessway are to comply with the State Government's Fire Hydrant and Vehicle Access Guidelines for Residential, Commercial and Industrial Lots (QFES, 2015), together with the relevant requirements of the local council planning scheme and applicable guidelines.

These guidelines identify key design considerations, including trafficable width, horizontal and vertical clearance, all-weather access, load-bearing capacity, grades, dips, exit angles, turning areas and passing bay requirements. These matters should be addressed having regard to both the relevant Acceptable Outcomes and Performance Outcomes.

The accessway should be designed or certified by a suitably qualified person, such as a RPEQ civil engineer, traffic engineer or pavement engineer, and constructed in accordance with the relevant Australian Standards and applicable authority requirements.

5.3.4 Water Supply

It is noted that AS 3959:2018 – Construction of buildings in bushfire prone areas does not include requirements for water supply for firefighting purposes; nor is water supply a factor in determining a building's Bushfire Attack Level (BAL) rating. Accordingly, the building certifier should not impose conditions on the building approval relating to water supply for firefighting purposes, unless such conditions are required under a development permit issued by the local council or are specified in the applicable local planning scheme.

An adequate supply of water is essential for firefighting purposes and suitable water supply arrangements shall be provided. The proposed development should provide

an appropriate water supply to support effective emergency services response includes reticulated water and/or appropriate static water supply.

(1) If the development is serviced by public fire hydrant, this is considered an accepted solution, as the infrastructure is maintained by the local authority and no further assessment or testing, such as pressure test, by the client is required.
(2) Where a private fire hydrant system is proposed, the reticulated hydrant network must be designed, installed, and certified in accordance with the Queensland Fire and Emergency Services (QFES) Fire Hydrant and Vehicle Access Guidelines.
(3) Where reticulated water is unavailable, an appropriate static water supply should consist of a dedicated water tank specifically for firefighting purposes, with suitable access for firefighting appliances.

    It is recommended that the tank be located within 10 m of the building. To ensure durability and compliance with safety standards, it is strongly recommended that the tank be constructed underground or from non-combustible materials, such as steel or concrete. The tank must include a take-off connection providing a minimum of 10,000 litres of static water exclusively for firefighting access.

    The site must permit clear access for a medium rigid fire appliance (15 tonnes) to within 6 m of the tank. Tanks and associated pumps must be protected from bushfire impact in accordance with AS 2304:2011 – Water storage tanks for fire protection systems. Where the site is serviced by a rural fire brigade, the tank shall be fitted with brigade-compatible fittings, including a 50-millimetre ball valve and a male camlock coupling. If the tank is underground, a minimum 200-millimetre access hole must be provided to allow suction line access. Directional signage must clearly indicate the tank's location at the street frontage.

    The water tank and associated pump infrastructure are to be protected from bushfire attack, including appropriate shielding, in accordance with AS 2304:2011 – Water storage tanks for fire protection systems.

5.3.5 Emergency Response Procedures

A site-based fire management and evacuation strategy should be developed, maintained and made available for implementation in the event of an emergency.

In the event of an actual or imminent fire emergency, the strategy should be activated immediately, and emergency assistance should be obtained by calling 000.

5.3.6 Landscaping Management Plan

The type, location and ongoing maintenance of landscaping are considered a necessary bushfire protection measure. Landscaping management for bushfire is the process of designing, constructing, and maintaining a landscape in a way that reduces the risk of bushfire. The management strategies typically involve creating fire breaks, reducing fuel loads, and selecting vegetation that is less flammable.

Appendix A provides a list of less flammable plants.

The landscaping management shall be carried out as the requirements set out for Asset Protection Zone in Section 5.3.1.

5.3.7 Reducing Fuel Load and Weed Management

Removing excess ground fuels and combustible material is a crucial aspect of effective fire prevention and management. This process involves the careful clearance of various flammable materials, including long dry grass, accumulated dead leaves, and fallen branches. By systematically reducing these fuel sources, the risk of fire ignition and spread is significantly mitigated. Regular maintenance of such clearance efforts is essential to ensure ongoing fire safety and resilience within the environment.

Unmanaged invasive pest plants can swiftly amplify fuel loads, comprising fast-growing introduced grasses, dense woody weeds, and invasive climbing vines. These factors collectively escalate fuel loads, fostering a "laddering" effect, intensifying fire spread and allowing it to transition from ground to canopy. Effective weed management markedly diminishes bushfire risk to the site and surrounding properties.

5.3.8 Importance of Ongoing Vegetation Management

Ongoing vegetation management is essential to maintain the effectiveness of bushfire protection measures and ensure the site continues to meet relevant performance requirements. Without regular maintenance, vegetation can quickly regenerate, resulting in increased fuel loads, higher flame heights, and elevated radiant heat exposure to buildings and access routes.

Routine activities such as mowing, slashing, mulching, weed control, and the removal of fallen branches or debris should be undertaken on a regular basis. The maintenance program should be implemented on an ongoing and scheduled cycle, taking into account seasonal growth patterns, rainfall, and local climatic conditions. Regular monitoring and prompt intervention are critical to ensure that vegetation conditions remain consistent with the prescribed bushfire protection objectives.

5.4 Biodiversity Overlay

Bushfire risk is defined in the Natural Hazards, Risk and Resilience - Bushfire State Planning Policy – State Interest Guidance Material (December 2019) and is categorized as Acceptable or Tolerable risk. It is noted that exemptions under Schedule 6, Part 3, Section 20A(a)(i) of the Planning Regulation 2017 allow for the clearing of vegetation for essential management, specifically for "establishing or maintaining a necessary firebreak to protect infrastructure, if the maximum width of the firebreak is equal to 1.5 times the height of the tallest vegetation next to the infrastructure or 20 m, whichever is wider."

The Bushfire Management Plan has been designed to have minimal impact on the Biodiversity Overlay Area. This includes the implementation of asset protection zones and measures aimed at reducing vegetation clearing. The majority of the proposed Asset Protection Zone utilizes existing cleared and landscaped areas, thereby minimising further disturbance. In the Outer Protection Area of the designed Asset Protection Zone, a small portion may intersect with an area mapped under the Biodiversity MSES Overlay. Within this zone, fuel load reduction activities will be carefully targeted, focusing exclusively on the management of invasive weeds, overgrown ground cover, and understorey vegetation. Importantly, these measures will not require the removal of mature native trees, ensuring the preservation of significant ecological values.

6. Conclusion

The following recommendations are provided in relation to the requirements of Council's Bushfire Hazard Overlay Code.

- An asset protection zone has been designed and shall be established and managed.
- Construction of building to meet BAL-19 construction requirements of AS 3959:2018.
- Provision of water and service to be in accordance with the requirements.
- The location of the proposed dwelling maximises the use of existing cleared and open space while minimising the clearing of native vegetation and its impact on the environment.

In conclusion, the proposed development has been designed and managed to ensure that the exposure of people and property to unacceptable bushfire hazard risks has not increased. The development will mitigate bushfire risk through appropriate siting, design, and management measures. It provides suitable access and evacuation routes for both private and emergency service vehicles, in line with the nature of the development and the level of bushfire risk. An adequate water supply for firefighting purposes will be provided, and no hazardous goods will be stored on-site. Overall, the development meets all necessary requirements to minimise the risk of bushfires to people, property, public health, and the environment.

This assessment assumes that vegetation on the site will be maintained according to the client's outlined plans. Should the proposed development require the removal of site vegetation to meet specific BAL requirements set by either the developer or the client, it is the client's responsibility to comply with relevant regulations regarding native vegetation clearing.

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7. References

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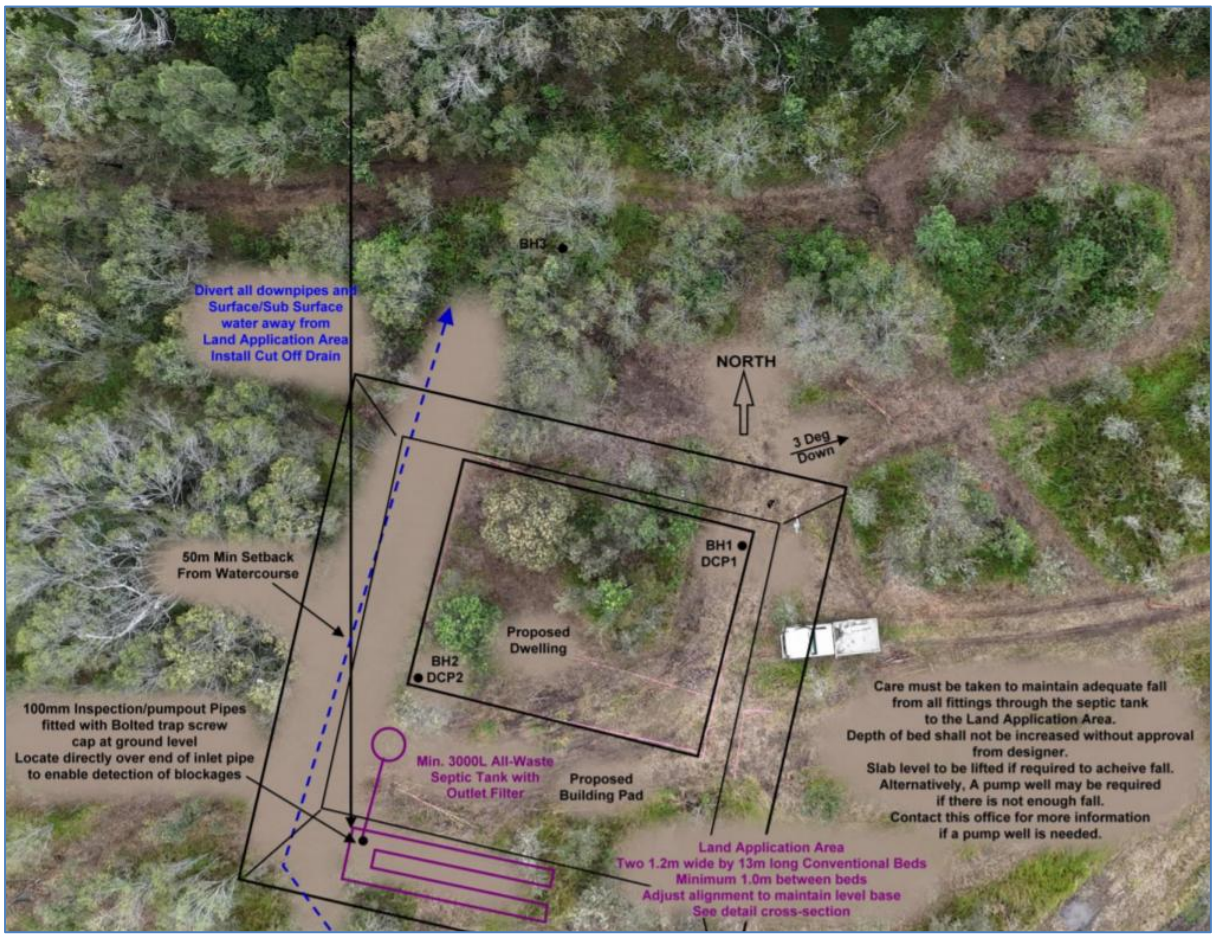
8. Appendix

Appendix A： Site Plan

Appendix B： Low Flammability Plant Species List

Appendix C： Summary of AS3959-2018 Construction Requirements for Bushfire Attack Level

Appendix A： Site Plan

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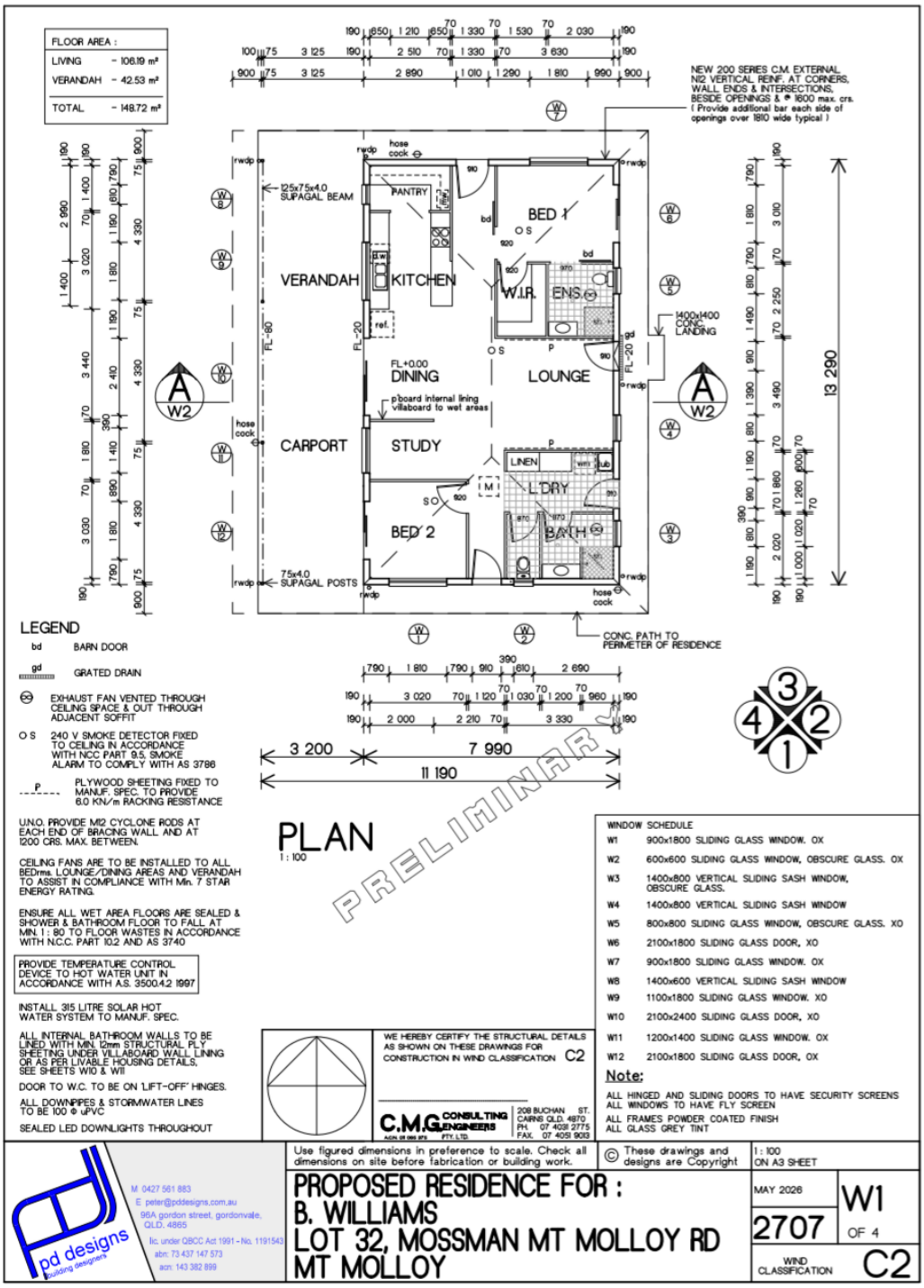
FLOOR AREA :
LIVING - 106.19 m²
VERANDAH - 42.53 m²
TOTAL - 148.72 m²
NEW 200 SERIES C.M. EXTERNAL N12 VERTICAL REINF. AT CORNERS, WALL ENDS & INTERSECTIONS, BESIDE OPENINGS & @ 1600 max. crs. (Provide additional bar each side of openings over 1810 wide typical)
125x75x4.0 SUPAGAL BEAM
PANTRY
BED 1
VERANDAH
KITCHEN
W.I.R.
ENS
1400x1400 CONC. LANDING
FL+0.00
DINING
LOUNGE
p'board internal lining villaboard to wet areas
CARPORT
STUDY
LINEN
L'DRY
BED 2
BATH
75x4.0 SUPAGAL POSTS
CONC. PATH TO PERIMETER OF RESIDENCE
13 290
3 200
7 990
11 190
LEGEND
bd BARN DOOR
gd GRATED DRAIN
EXHAUST FAN VENTED THROUGH CEILING SPACE & OUT THROUGH ADJACENT SOFFIT
O S 240 V SMOKE DETECTOR FIXED TO CEILING IN ACCORDANCE WITH NCC PART 9.5, SMOKE ALARM TO COMPLY WITH AS 3786
P PLYWOOD SHEETING FIXED TO MANUF. SPEC. TO PROVIDE 6.0 KN/m RACKING RESISTANCE
U.N.O. PROVIDE M12 CYCLONE RODS AT EACH END OF BRACING WALL AND AT 1200 CRS. MAX. BETWEEN.
CEILING FANS ARE TO BE INSTALLED TO ALL BEDrms, LOUNGE/DINING AREAS AND VERANDAH TO ASSIST IN COMPLIANCE WITH Min. 7 STAR ENERGY RATING.
ENSURE ALL WET AREA FLOORS ARE SEALED & SHOWER & BATHROOM FLOOR TO FALL AT MIN. 1 : 80 TO FLOOR WASTES IN ACCORDANCE WITH N.C.C. PART 10.2 AND AS 3740
PROVIDE TEMPERATURE CONTROL DEVICE TO HOT WATER UNIT IN ACCORDANCE WITH A.S. 3500.4.2 1997
INSTALL 315 LITRE SOLAR HOT WATER SYSTEM TO MANUF. SPEC.
ALL INTERNAL BATHROOM WALLS TO BE LINED WITH MIN. 12mm STRUCTURAL PLY SHEETING UNDER VILLABOARD WALL LINING OR AS PER LIVABLE HOUSING DETAILS, SEE SHEETS W10 & W11
DOOR TO W.C. TO BE ON 'LIFT-OFF' HINGES.
ALL DOWNPIPES & STORMWATER LINES TO BE 100 Φ uPVC
SEALED LED DOWNLIGHTS THROUGHOUT
PLAN
1 : 100
PRELIMINARY
WINDOW SCHEDULE
W1 900x1800 SLIDING GLASS WINDOW. OX
W2 600x600 SLIDING GLASS WINDOW, OBSCURE GLASS. OX
W3 1400x800 VERTICAL SLIDING SASH WINDOW, OBSCURE GLASS.
W4 1400x800 VERTICAL SLIDING SASH WINDOW
W5 800x800 SLIDING GLASS WINDOW, OBSCURE GLASS. XO
W6 2100x1800 SLIDING GLASS DOOR, XO
W7 900x1800 SLIDING GLASS WINDOW. OX
W8 1400x600 VERTICAL SLIDING SASH WINDOW
W9 1100x1800 SLIDING GLASS WINDOW. XO
W10 2100x2400 SLIDING GLASS DOOR, XO
W11 1200x1400 SLIDING GLASS WINDOW. OX
W12 2100x1800 SLIDING GLASS DOOR, OX
Note;
ALL HINGED AND SLIDING DOORS TO HAVE SECURITY SCREENS
ALL WINDOWS TO HAVE FLY SCREEN
ALL FRAMES POWDER COATED FINISH
ALL GLASS GREY TINT
WE HEREBY CERTIFY THE STRUCTURAL DETAILS AS SHOWN ON THESE DRAWINGS FOR CONSTRUCTION IN WIND CLASSIFICATION C2
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Use figured dimensions in preference to scale. Check all dimensions on site before fabrication or building work.
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1 : 100 ON A3 SHEET
PROPOSED RESIDENCE FOR :
B. WILLIAMS
LOT 32, MOSSMAN MT MOLLOY RD
MT MOLLOY
MAY 2026
2707
W1
OF 4
WIND CLASSIFICATION C2

Appendix B: Low Flammability Plant Species List

This list is intended as a general guide. It is essential to conduct independent research to identify fire-resistant species specific to the region of the subject site, as suitability varies across Queensland. Notably, all plants, whether native or exotic, will combust when exposed to extreme heat or flame; therefore, additional precautions may be required.

Ground covers and creeping plants
• Casuarina glauca prostrate, commonly known as grey she oak or marsh she oak
• Anigozanthos, commonly known as kangaroo paw
• Carpobrotus glaucescens, commonly known as pigface
• Hardenbergia violacea, commonly known as sarsparilla or purple coral pea
• Liriope muscari, commonly known as lilyturf
• Lomandra longifolia, commonly known as spiny-headed mat-rush
• Lomandra hystrix, commonly known as mat-rush
• Varieties of Brachyscome
• Varieties of Dampiera
• Dianella caerulea, commonly known as blue berry lily
• Varieties of Dianella prunina
• Dianella revoluta, commonly known as blue berry lily or spreading flax lily
• Dichondra repens, commonly known as kidney weed
• Einadia nutans, commonly known as climbing saltbush
• Hardenbergia violacea, commonly known as false sarsaparilla, purple coral pea, happy wanderer, native lilac or waraburra
• Scaevola aemula, commonly known as fairy fan flower
• Scaevola humilis, commonly known as sandplain fan flower
• Varieties of Cotyledon
• Myoporum insulare, commonly known as boobialla, native juniper or blueberry tree
• Eremophila glabra, commonly known as kalbarri carpet
• Eremophila debilis, commonly known as winter apple
• Elaeocarpus eumundi, commonly known as eumundi quandong
• Elaeocarpus prima donna, commonly known as blueberry ash
• Kennedia rubicunda, commonly known as Dusky coral pea or red kennedy pea
• Rhododendron hybrid, commonly known as azalea
• Varieties of Arctotis
• Varieties of Photinia
• Westringia fruticosa, commonly known as native rosemary

Shrubs
• All varieties of Aloe
• Correa reflexa, commonly known as nativefuchsia
• Varieties of Acacia
• Nerium oleander, commonly known as oleander
• Varieties of Atriplex, commonly known as saltbushes
• Varieties of Escallonia
• Varieties of Maireana, commonly known as cottonbush
• Varieties of Eremophila, commonly known as emu bushes or fuchsia bushes
• Varieties of Grevillea
• Melaleuca nodosa, commonly known as prickly leaf paperbark
• Varieties of Syzygium
• Varieties of Photinia
• Varieties of Rhagodia
• Rhaphiolepis indica, commonly known as india hawthorn
• Strelitziacae hutch
• Strelitzia banks
• Strelitzia nicolai
• Sambucus australasica, commonly known as yellow elderberry or native elderberry
• Varieties of Coprosma
• Varieties of Plectranthus
• Senna artemisioides, commonly known as silver cassia

Deciduous trees
• Brachychiton acerifolius, commonly known as the flame kurrajong
• Ulmus parvifolia, commonly known as chinese elm
• Morus alba, commonly known as the mullberry tree
• Eriobotrya japonica, commonly known as loquot
• Gleditsia triacanthos, commonly known as honey locust
• Trees from the genus Prunus, including ornamental cherries, plums and peaches
• Trees from the genus Malus, including apples and crab apples

Evergreen trees
• Grevillea robusta, commonly known as silky oak
• Melia azedarach, commonly known as cape lilac, white cedar, persian lilac or chinaberry
• Lophostemon confertus, commonly known as brush box, queensland box, brisbane box or pink box
• Tristaniopsis laurina, commonly known as water gum, kanooka or kanuka
• Rapanea variabilis, commonly known as muttonwood
• Varieties of Acacia
• Varieties of Acmena
• Varieties of Magnolia
• Cupaniopsis anacardioides, commonly known as tuckeroo or beach tamarind
• Elaeocarpus reticulatus, commonly known as blueberry ash
• Alectryon subcinereus, commonly known as native quince
• Callicoma serratifolia, commonly known as black wattle
• Canthium coprosmoides, commonly known as supple jack or sweet susie
• Cassine australis, commonly known as red olive berry or red olive plum
• Croton insularis, commonly known as Queensland cascarilla, native cascarilla bark or silver croton
• Cuttsia viburnea, commonly known as native elderberry
• Varieties of Citrus
• Denhamia celastroides, commonly known as denhamia or orange boxwood
• Diospyros australis, commonly known as black plum or yellow persimmon
• Eupomatia laurina, commonly known as bolwarra, grey beech or native guava
• Glochidion ferdinandi, commonly known as the cheese tree or buttonwood
• Guioa semiglauca, commonly known as guioa or wild quince
• Hodgkinsonia ovatiflora, commonly known as golden ash
• Hymenosporum flavum, commonly known as native frangipani or Queensland frangipani
• Petalostigma triloculare, commonly known as quinine berry, forest quinine or bitter bark
• Podocarpus elatus, commonly known as she pine
• Rhodosphaera rhodanthema, commonly known as yellow cedar, tulip satinwood or deep yellow wood
• Sarcopteryx stipata, commonly known as corduroy
• Scolopia braunii, commonly known as scolopia or brown birch
• Stenocarpus sinuatus, commonly known as white silky oak, tulip flower, white beefwood Or wheel of flower tree
• Streblus brunonianus, commonly known as the whalebone tree, axehandle wood or white handlewood
• Symplocos stawellii, commonly known as white hazelwood
• Symplocos thwaitesii, commonly known as buff hazelwood
• Varieties of Ficus (fig trees)

Appendix C: Summary of AS3959-2018 BAL-19 construction requirements

Note: this is a summary of some portions of the standard - the building designer, builder and subcontractors should refer to AS3959-2018 in full prior to construction.

- **Subfloor supports**

The Standard does not provide construction requirements for sub-floor supports where the sub-floor is enclosed in accordance with wall that conforms to the requirements for walls listed below or is enclosed with corrosion resistant steel, bronze or aluminium mesh with a maximum aperture of 2 mm.

Where the subfloor space is unenclosed, the support posts, columns, stumps, piers and poles are to be of non-combustible material or bushfire resisting timber.

- **Floors**

The Standard does not provide construction requirements for concrete slabs on the ground.

Unenclosed subfloor space

The standard does not provide construction requirements for bearers, joists and floors if the underside element is greater than 400mm above finished ground level

- **External walls**

The exposed components of external walls shall be as follows:

(a) made of non-combustible materials (e.g. full masonry, brick veneer etc.) with a minimum thickness of 90 mm, or

(b) timber logs with a density of 680 kg/m3 and a minimum nominal thickness of 90mm; or

(c) cladding that is fixed externally to a timber or metal frame and is:

(i) non-combustible; or

(ii) fibre cement a minimum of 6mm thick; or

(iii) bushfire-resisting timber.

- **Joints**

All joints in the external surface material of walls shall be covered, sealed, overlapped, backed or butt-jointed.

Vents and weepholes

Vents and weepholes in external walls are to be screened with corrosion-resistant steel, bronze or aluminium mesh with a maximum aperture of 2 mm.

External glazed elements, assemblies and doors

- **Screens for windows and doors**

Where fitted, screens for windows and doors shall have mesh or perforated sheet made of corrosion-resistant steel, bronze or aluminium with a maximum aperture of 2 mm, with framing made from metal or bushfire resisting timber.

- **Windows**

Frame material for windows are to be made from bushfire-resisting timber, metal or metal-reinforced uPVC.

Glazing is to be toughened glass with a minimum thickness of 5 mm if the glazing is less than 400mm from the ground.

The openable portions of windows shall be screened with a mesh with a max aperture of 2 mm made of corrosion resistant steel, bronze or aluminium.

- **Doors - side hung external doors, panel fold & sliding doors**

Doors- shall be completely protected externally by a screen with a mesh with a max aperture of 2mm made of corrosion resistant steel, bronze or aluminium, OR

Door panel material shall be:

(a) non-combustible; or

(b) solid timber, laminated timber or reconstituted timber, having a minimum thickness of 35 mm for the first 400 mm above the threshold; or

(c) fully framed glazed door panels with framing made from metal, bushfire resisting timber or uPVC.

Door frames shall be made from metal bushfire resisting timber, metal or metal reinforced uPVC.

Where doors incorporate glazing, the glazing shall be toughened glass with a minimum thickness of 5mm.

Doors shall be tight fitting to the door frame and to an abutting door, if applicable.

Weather strips, draught excluders or draught seals shall be installed.

There is no requirement to screen the openable part of a door at this level.

- **Garage doors**

Vehicle access doors shall be made from:

(i) non-combustible material; or

(ii) bushfire-resisting timber; or

(iii) fibre-cement sheet, a minimum of 6 mm in thickness; or

(iv) a combination of any of items (i), (ii) or (iii) above.

All vehicle access doors to be protected with suitable weather strips, draught excluders, draught seals or brushes.

- **Roofs**

The following apply to all types of roofs and roofing systems:

(a) roof tiles, roof sheets and roof covering accessories shall be non-combustible,

(b) the roof/wall and roof/roof junction shall be sealed, or otherwise protected to prevent openings greater than 2mm,

(c) roof ventilation openings, such as gable and roof vents, shall be fitted with ember guards made of non-combustible material or a mesh or perforated sheet with a max aperture of 2mm made of corrosion resistant steel, bronze or aluminium.

(d) A pipe or conduit that penetrates the roof covering shall be non-combustible

Tiled roofs shall be fully sarked with the sarking covering the entire roof area including ridges and hips and extend into gutters and fascias.

Sheet roofs shall:

(a) be fully sarked with sarking, except that foil backed insulation blankets may be installed over battens; OR

(b) have any gaps sealed at the fascia, or wall line, hips and ridges by:

(i) a mesh or perforated sheet with a maximum aperture of 2 mm, made of corrosion-resistant steel, bronze or aluminium, or

(ii) mineral wool, or

(iii) other non-combustible material, or

(iv) -a combination of any of the above.

- **Roof penetrations**

The following apply to roof penetrations:

(a) roof penetrations, including roof lights, roof ventilators, roof-mounted evaporative cooling units, aerials, vent pipes and supports for solar collectors, shall be sealed. Sealing material is to be non-combustible.

(b) openings in vented roof lights, roof ventilators or vent pipes shall be fitted with ember guards made from a mesh or perforated sheet with a maximum aperture of 2 mm, made of corrosion-resistant steel, bronze or aluminium.

(c) all overhead glazing shall be Grade A safety glass complying with AS 1288.

(d) flashing elements shall be non-combustible.

- **Eaves linings, fascias and gables**

The following apply to eaves linings, fascias and gables:

(a) gables shall comply with requirements for walls.

(b) fascias and bargeboards shall be made from bushfire-resisting timber or metal.

(c) eave linings shall be fibre-cement sheet with a minimum thickness of 4.5mm or bushfire resisting timber.

(d) eave penetrations shall be protected as for roof penetrations.

(e) eaves ventilation openings are to be fitted with ember guards and be made of corrosion resistant steel, bronze or aluminium.

(f) joints in eave linings, fascias and gables may be sealed with plastic joining strips or timber storm moulds.

- **Gutters and downpipes**

The Standard does not provide material requirements for gutters and downpipes, with the exception of box gutters.

Box gutters are to be non-combustible and flashed at the roof junction with non-combustible material.

If installed, gutter and valley leaf guards are to be non-combustible.

- **Verandas, decks, steps, ramps and landings**

Decking may be spaced. There is no requirement to enclose the subfloor spaces of verandas, decks, steps, ramps or landings.

Decking, stair treads, trafficable surfaces of ramps and landings, balustrades and handrails are to be made from:

(a) of non-combustible material; or

(b) of bushfire-resisting timber; or

(c) a combination of items (a) and (b) above.

Veranda posts shall be made from non-combustible material or bushfire-resisting timber.

- **Water and gas supply pipes**

Above ground, exposed water and gas supply pipes shall be metal. The metal pipe shall extend a minimum of 400mm within the building and 100 mm below the ground.

APPENDIX F

BUSHFIRE-RESISTING TIMBER

(Normative)

F1 GENERAL

Bushfire-resisting timber is timber that is in solid, laminated or reconstituted form and has been tested and is deemed to be acceptable to withstand exposure up to a BAL—29 condition.

Timber may be 'bushfire-resisting' by means of one or more of—

(a) the inherent properties of the material itself;

(b) being impregnated with fire-retardant chemicals; or

(c) the application of fire-retardant coatings or substrates.

F2 TESTING

The following applies:

(a) To satisfy the requirements for bushfire-resisting timber, timber shall be tested in accordance with AS/NZS 3837 and shall meet the following criteria:

(i) The maximum heat release rate shall be not greater than 100 kW/m^2.

(ii) The average heat release rate for 10 minutes following ignition shall be not greater than 60 kW/m^2 when the material is exposed to an irradiance level of 25 kW/m^2.

(b) Where the timber has been altered by chemicals, the test samples shall be subjected to the regime of accelerated weathering described in Paragraph F3 except that where the timber is protected from the weather, as described in the AS 1684 series (for example, cladding protected by a veranda), accelerated weathering of the test samples is not required before being tested to AS/NZS 3837.

External timbers are deemed to be protected if they are covered by a roof projection (or similar) at 30 degrees or greater to the vertical and they are well detailed and maintained (painted or stained and kept well ventilated).

NOTE: The purpose of testing is to assess timber performance rather than to simulate a bushfire. The irradiance set for the test is not to be considered to be correlated to the BAL.

F3 ACCELERATED WEATHERING

Where accelerated weathering is required before testing to AS/NZS 3837, external fire-retardant-coated substrates shall be subjected to the ASTM D2898 Method B weathering regime, with the water flow rate modified to be the same as that within ASTM D2898 Method A.

NOTE: Accelerated weathering does not account for mechanical wear and tear within trafficable areas and care should be exercised when using coating materials.

F4 BUSHFIRE-RESISTING SPECIES

The species listed in Table F1 have been tested and have met the requirements of Paragraph F2.

TABLE F1

BUSHFIRE-RESISTANT SPECIES

Standard trade name	Botanical name
Ash, silvertop	*Eucalyptus sieberi*
Blackbutt	*Eucalyptus pilularis*
Gum, red, river	*Eucalyptus camaldulensis*
Gum, spotted	*Corymbia maculata*
Ironbark, red	*Eucalyptus sideroxylon*
Kwila (Merbau)	*Intsia bijuga*
Turpentine	*Syncarpia glomulifera*