

Development Applications

Notice is hereby given under Section 57(3) of the *Land Use Planning & Approvals Act 1993* that an application has been made to the Break O' Day Council for a permit for the use or development of land as follows:

DA Number	DA 2026 / 00022
Applicant	J Kreltszheim (All Draw)
Proposal	Residential - Construction of a New Dwelling
Location	1 Bay Close, St Helens (CT38962/1)

Plans and documents can be inspected at the Council Office by appointment, 32 – 34 Georges Bay Esplanade, St Helens during normal office hours or online at www.bodc.tas.gov.au.

Representations must be submitted in writing to the General Manager, Break O'Day Council, 32 -34 Georges Bay Esplanade, St Helens 7216 or emailed to admin@bodc.tas.gov.au, and referenced with the Application Number in accordance with section 57(5) of the abovementioned Act during the fourteen (14) day advertised period commencing on Saturday 4th July, 2026 **until 5pm Friday 17th July, 2026.**

John Brown
GENERAL MANAGER

PROPOSED RESIDENCE: 1 Bay Close, St.Helens

CLIENT: Peter Chaplin

AREAS:	
DWELLING:	192m ²
CARPOR:	48m ²
DECK:	72m ²
TOTAL:	312m ²

GENERAL NOTES:-

- GN01 - DO NOT SCALE DRAWINGS, USE WRITTEN DIMENSIONS ONLY.
- GN02 - THE OWNER, BUILDER & SUBCONTRACTOR SHALL VERIFY ALL DIMENSIONS, LEVELS, SETBACKS & SPECIFICATIONS PRIOR TO COMMENCING ANY WORKS OR ORDERING MATERIALS & SHALL BE RESPONSIBLE FOR ENSURING THAT ALL BUILDING WORKS CONFORM TO THE BUILDING CODE OF AUSTRALIA, A.S. CODES (CURRENT EDITIONS) BUILDING REGULATIONS, LOCAL BY-LAWS & TOWN PLANNING REQUIREMENTS. FIGURED DIMENSIONS TAKE PRECEDENCE OVER SCALED DIMENSIONS
- GN03 - ALL WORKS SHALL COMPLY WITH BUT NOT BE LIMITED TO THE FOLLOWING AUSTRALIAN STANDARDS:
 A.S. 1288 GLASS IN BUILDINGS - SELECTION & INSTALLATION
 A.S. 1562 DESIGN & INSTALLATION OF SHEET ROOF & WALL CLADDINGS.
 - PART 1 METAL.
 A.S. 1684.2 NATIONAL TIMBER FRAMING CODE.
 A.S. 2870 - RESIDENTIAL SLABS AND FOOTINGS. - CONSTRUCTION.
 A.S. 2904 - DAMP-PROOF COURSES AND FLASHING.
 A.S. 3600 - CONCRETE STRUCTURES.
 A.S. 3660.1 - PROTECTION OF BUILDING AGAINST SUBTERRANEAN TERMITES
 - PART 1 NEW BUILDINGS.
 A.S. 3700 - MASONRY IN BUILDINGS.
 A.S. 3740 - WATERPROOFING OF WET AREAS IN RESIDENTIAL BUILDINGS.
 A.S. 3786 - SMOKE ALARMS.
 A.S. 4055 - WIND LOADINGS FOR HOUSING.
- GN04 - THESE PLANS SHALL BE READ IN CONJUNCTION WITH ANY STRUCTURAL OR CIVIL ENGINEERING COMPUTATIONS & DRAWINGS.
- GN05 - SOIL CLASSIFICATION. THESE PLANS SHALL BE READ IN CONJUNCTION WITH THE GEOTECHNICAL REPORT. FOOTINGS TO BE FOUNDED AT THE MINIMUM DEPTHS INDICATED IN THE SOIL REPORT.

- GN06 - WHERE THE BUILDING (OTHER THAN A CLASS 10a) IS LOCATED IN A DESIGNATED TERMITE INFESTATION AREA THE BUILDING SHALL BE PROTECTED IN ACCORDANCE WITH A.S.3660.1
- GN07 - ALL GLAZING 500mm ABOVE FLOOR LEVEL TO COMPLY WITH A.S.1288
- GN08 - WINDOW SIZES ARE NOMINAL ONLY, ACTUAL SIZE WILL VARY ACCORDING TO MANUFACTURER. WINDOWS TO BE FLASHED ALL AROUND.
- GN09 - STORMWATER SHALL BE TAKEN TO LEGAL POINT OF DISCHARGE TO THE SATISFACTION OF THE RELEVANT AUTHORITY.
- GN10 - SEWER OR SEPTIC SYSTEM SHALL BE IN ACCORDANCE WITH THE RELEVANT AUTHORITY'S REQUIREMENTS.
- GN11 - FOOTINGS NOT TO ENCROACH TITLE BOUNDARIES AND EASEMENT LINES.
- GN12 - SMOKE ALARMS COMPLY WITH A.S. 3786 AND INSTALLED IN ACCORDANCE WITH B.C.A. 1.7.7 THE SMOKE ALARM SHALL BE HARD WIRED WITH BATTERY BACKUP.
- GN13 - WATERPROOFING TO FLOORS & WALLS OF WET AREAS TO BE PROVIDED IN ACCORDANCE WITH B.C.A. PART 3.8 AND COMPLY WITH A.S.3740
- GN14 - PROVIDE WALL TIES TO BRICKWORK AT MAXIMUM 450mm CENTRES IN EACH DIRECTION AND WITHIN 300mm OF ARTICULATION JOINTS.
- GN15 - ALL WALL TILING TO WET AREAS ARE TO BE ON A BACKING OF WATERPROOF PLASTERBOARD OR FIBROUS CEMENT VILBOARD LINING TILES TO BE 1800mm MIN. ABOVE SHOWER BASE TILES TO BE 150mm MIN. ABOVE SINKS, BASINS, TROUGHS & BATHS
- GN16 - EXHAUST VENTILATION FANS TO EXHAUST TO OUTSIDE AIR OR OUT TO VENTILATED ROOF CAVITY
- GN17 - THERMAL INSULATION TO BE PROVIDED IN ACCORDANCE WITH THE ENERGY RATING REPORT

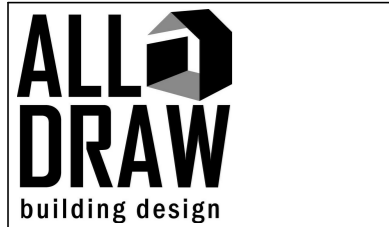
- GN18 - STAIR REQUIREMENTS:- (OTHER THAN SPIRAL STAIRS)
 RISERS - 190mm MAXIMUM, 115 mm MINIMUM.
 GOING - 355mm MAXIMUM, 240mm MINIMUM.
 PRIVATE STAIRS (& 250mm FOR PUBLIC STAIRS)
 RISERS & TREADS TO BE CONSTANT IN SIZE THROUGHOUT FLIGHT, PROVIDE NON-SLIP FINISH OR SUITABLE NON-SKID STRIP NEAR EDGE OF NOSING.
 ENSURE MAXIMUM GAP BETWEEN RISERS DOES NOT EXCEED 125mm OR USE CLOSED RISERS.
 PROVIDE CONTINUOUS HANDRAIL 1000mm MINIMUM HEIGHT TO BALCONIES & DECKS WHICH ARE 1000mm OR MORE ABOVE GROUND LEVEL.
 865mm MINIMUM HEIGHT HANDRAIL ABOVE STAIR NOSING & LANDING.
 MAXIMUM OPENING BETWEEN BALUSTRADE NOT TO EXCEED 125mm.
- GN19 - THE BUILDER SHALL TAKE ALL STEPS NECESSARY TO ENSURE THE STABILITY OF NEW & EXISTING STRUCTURES DURING ALL WORKS.
- GN20 - THE BUILDER SHALL ENSURE THE GENERAL WATER TIGHTNESS OF ALL NEW & EXISTING WORKS.

THE PROPERTY IS IN A DESIGNATED BUSHFIRE PRONE AREA . SPECIAL BUSHFIRE CONSTRUCTION REQUIREMENTS APPLY. (see page 14)
 THE BUSHFIRE ATTACK LEVEL IS **12.5**

DESIGN WIND SPEED - N3
 SOIL CLASSIFICATION - T1
 CLIMATE ZONE - 7
 SITE CLASSIFICATION - CLASS 'M'

SHEET LIST	
Sheet #	Sheet Name
0	COVER
01	SITE PLAN
02	SITE PLAN DETAIL
03	FLOOR PLAN
04	ELEVATIONS
05	ROOF DRAINAGE PLAN
06	3D ELEVATIONS
07	SECTION DETAIL
08	SECTION II
09	WATERPROOF DETAILS
10	ELECTRICAL PLAN
11	GLAZING SCHEDULE
12	GLAZING SCHEDULE II
13	WASTE DRAINAGE PLAN
14	BUSHFIRE ASSESSMENT

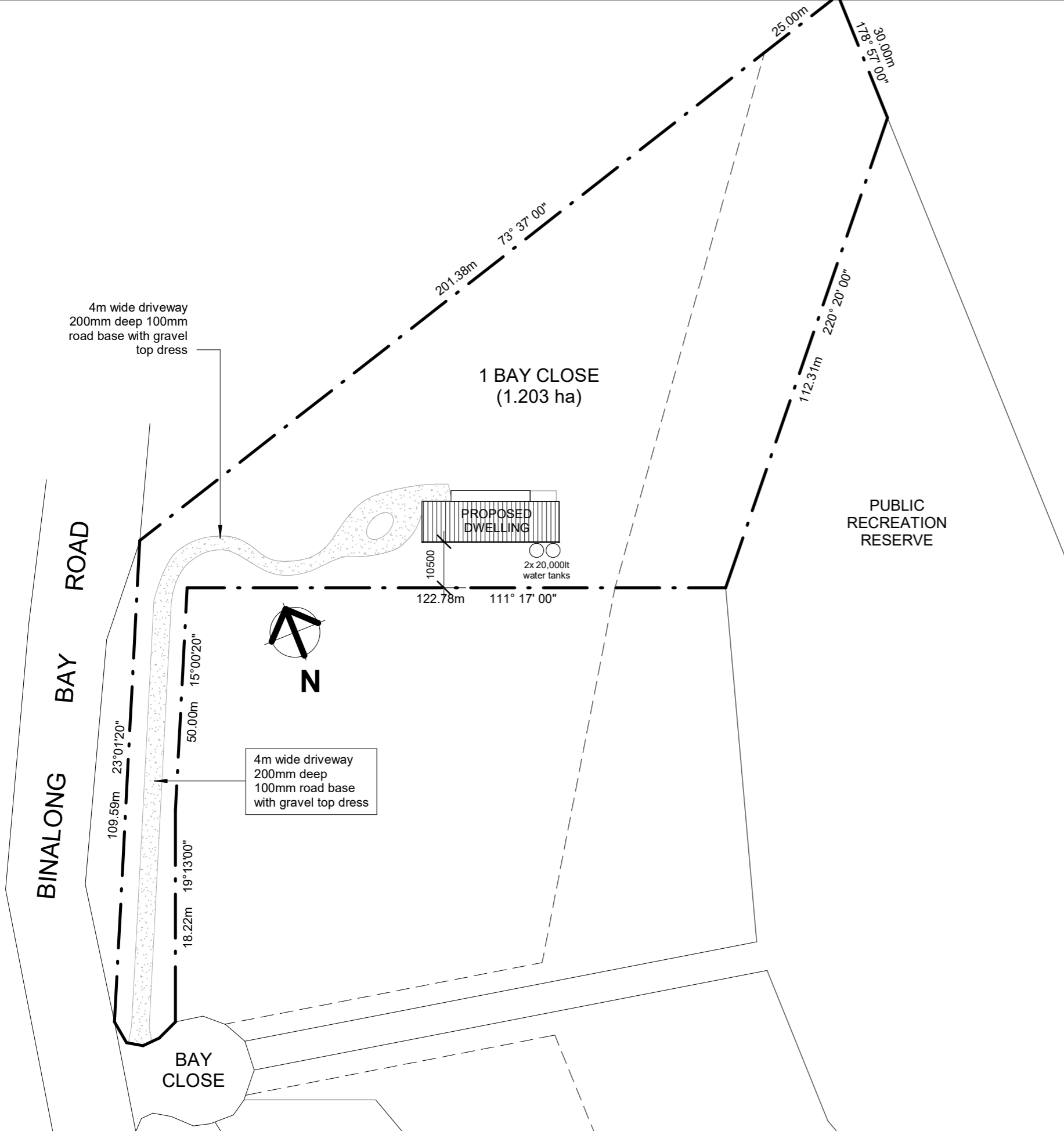
Masonry Cladding dimensions 500 x 200 x 30mm
 Weigh 2.9kg = 29kg per m



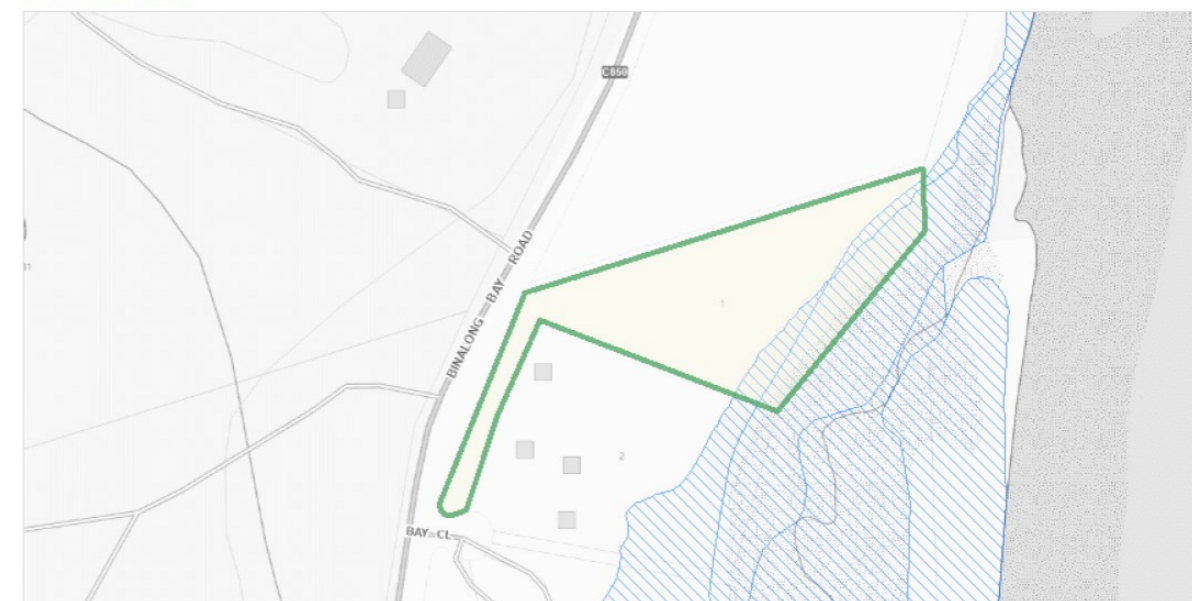
P: 0421 745 095 E: info@alldraw.com.au I: www.alldraw.com.au Licence # 911670743	<table border="1"> <thead> <tr> <th>No.</th> <th>Description</th> <th>Date</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </tbody> </table>	No.	Description	Date												
No.	Description	Date														

Proposed Dwelling
 1 Bay Close,
 St.Helens

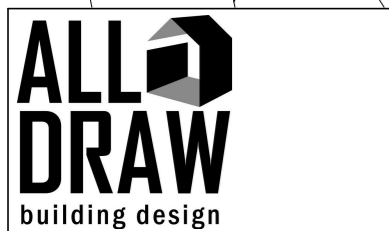
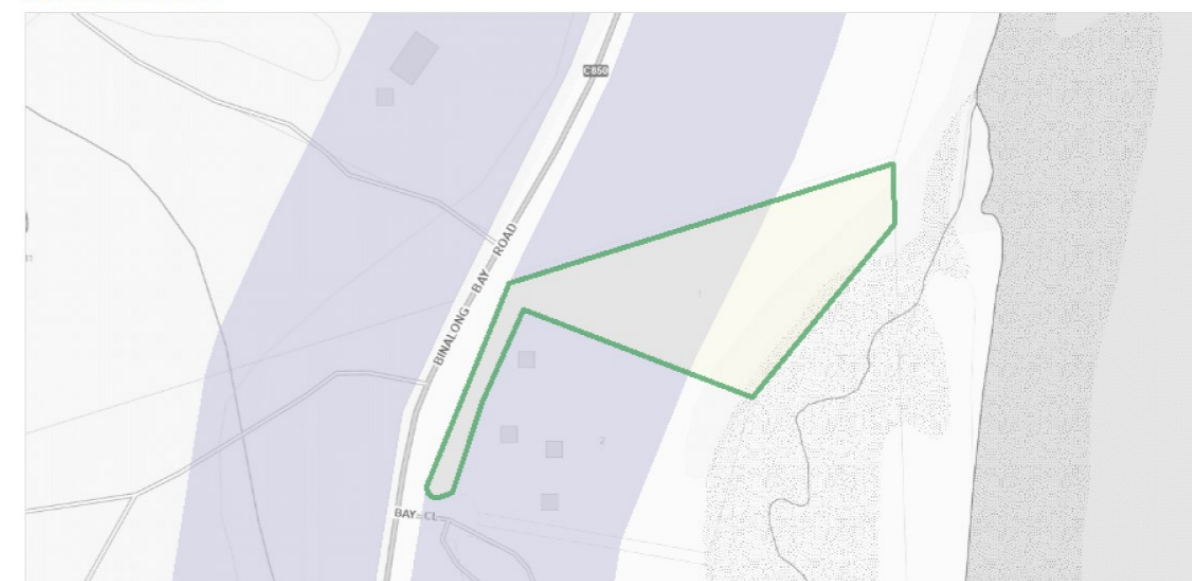
COVER		
Project number	1416	0
Date	7/04/2026	
Drawn by	JK	
Checked by	PC	
		Scale



Flood-Prone Area



Scenic Road Corridor



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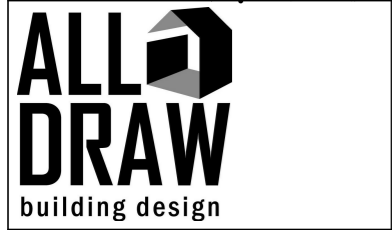
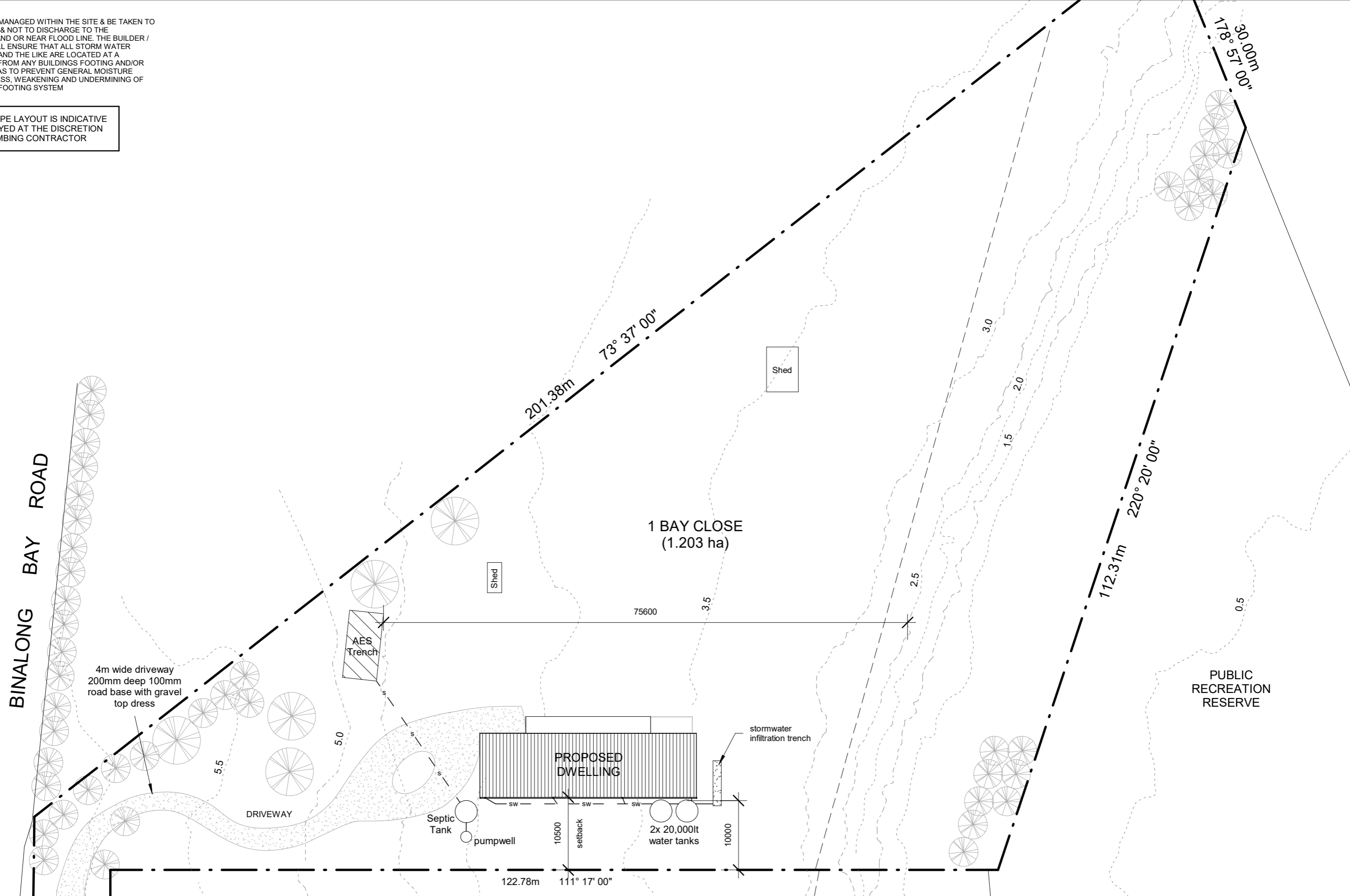
No.	Description	Date

Proposed Dwelling
1 Bay Close,
St.Helens

SITE PLAN		
	Project number	1416
	Date	7/04/2026
	Drawn by	JK
	Checked by	PC
		01
		Scale 1 : 1000

ALL STORM WATER TO MANAGED WITHIN THE SITE & BE TAKEN TO ON-SITE WATER TANKS & NOT TO DISCHARGE TO THE WATERCOARSE, WETLAND OR NEAR FLOOD LINE. THE BUILDER / SUBCONTRACTOR SHALL ENSURE THAT ALL STORM WATER DRAINS, SEWER PIPES AND THE LIKE ARE LOCATED AT A SUFFICIENT DISTANCE FROM ANY BUILDINGS FOOTING AND/OR SLAB EDGE BEAMS SO AS TO PREVENT GENERAL MOISTURE PENETRATION, DAMPNES, WEAKENING AND UNDERMINING OF ANY BUILDING AND ITS FOOTING SYSTEM

STORM WATER PIPE LAYOUT IS INDICATIVE AND IS TO BE LAYED AT THE DISCRETION OF THE PLUMBING CONTRACTOR



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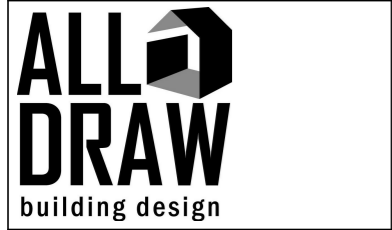
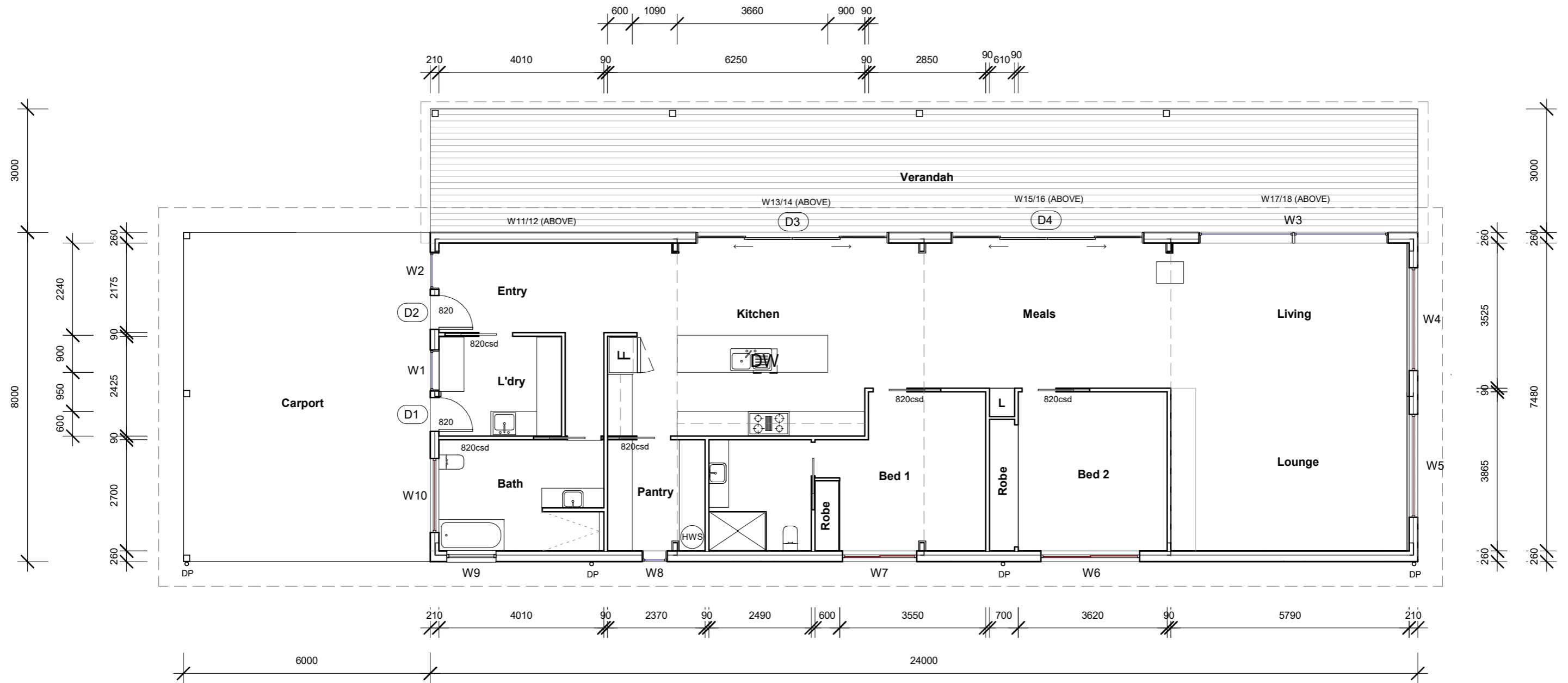
No.	Description	Date

Proposed Dwelling
 1 Bay Close,
 St. Helens

SITE PLAN DETAIL		
Project number	1416	02
Date	7/04/2026	
Drawn by	JK	
Checked by	PC	
Scale		1 : 500

AREAS:

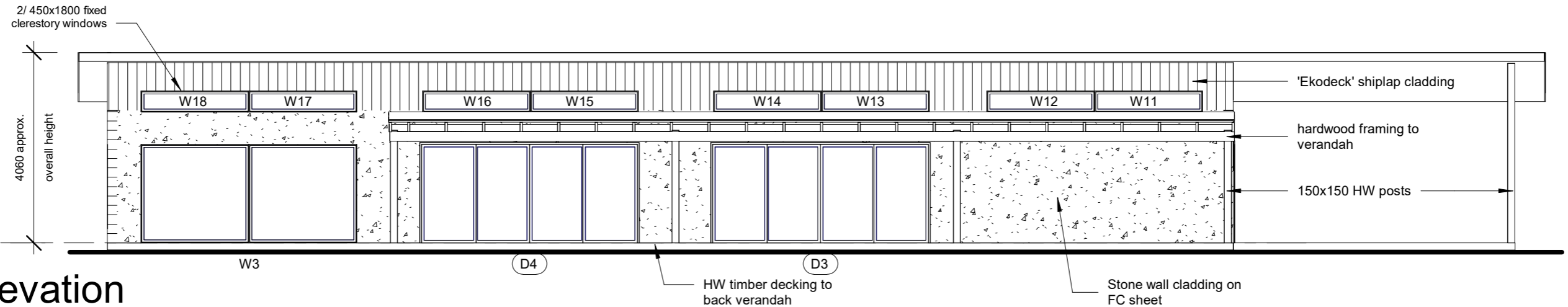
DWELLING:	192m ²
CARPORT:	48m ²
DECK:	72m ²
TOTAL:	312m²



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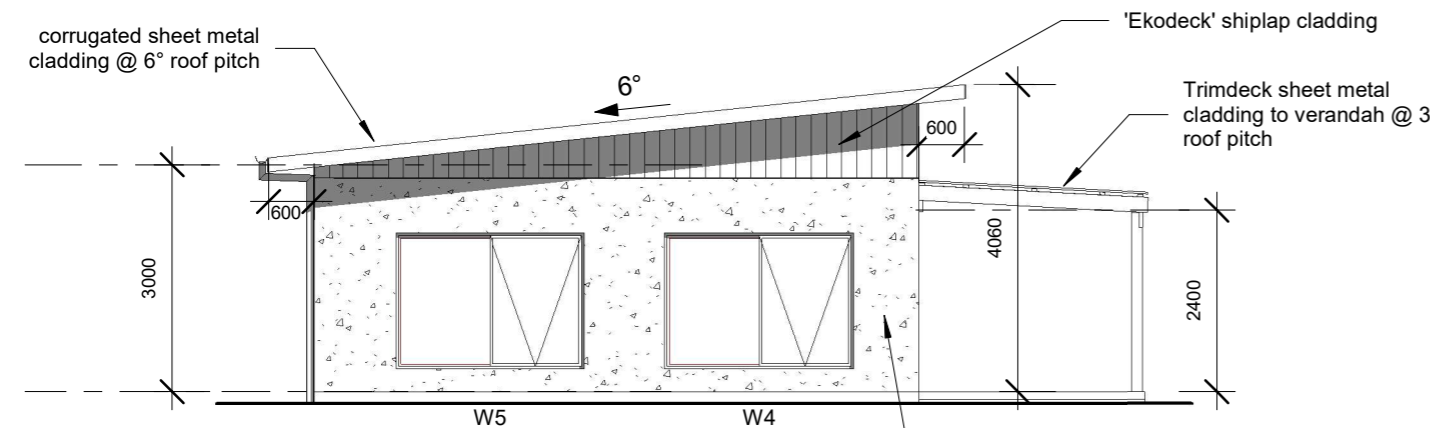
Proposed Dwelling
1 Bay Close,
St.Helens

FLOOR PLAN			
	Project number	1416	03 Scale 1 : 100
	Date	7/04/2026	
	Drawn by	JK	
	Checked by	PC	

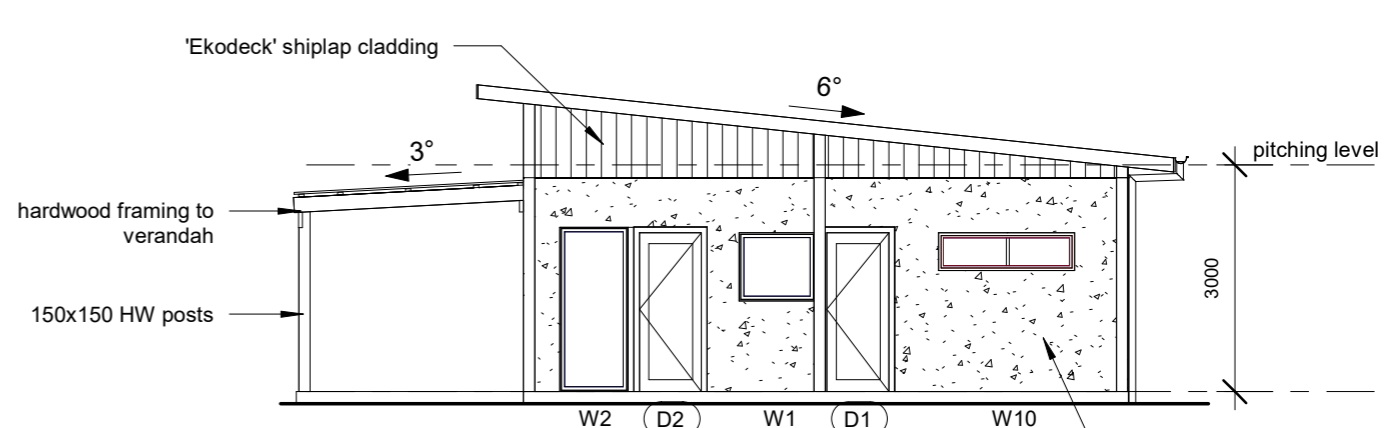


1 North Elevation
1 : 100

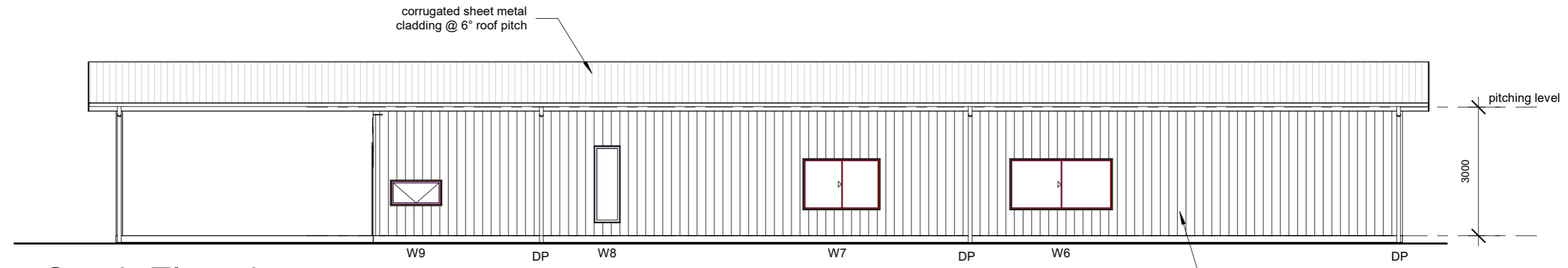
Masonry Cladding dimensions 500 x 200 x 30mm
Weigh 2.9kg = 29kg per m



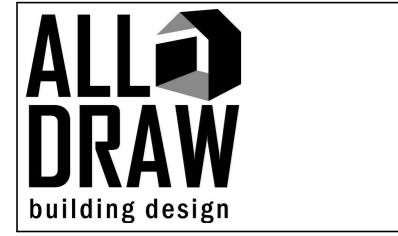
2 East Elevation
1 : 100



3 West Elevation
1 : 100



4 South Elevation
1 : 100



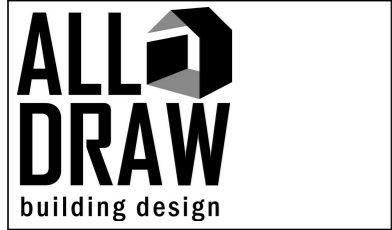
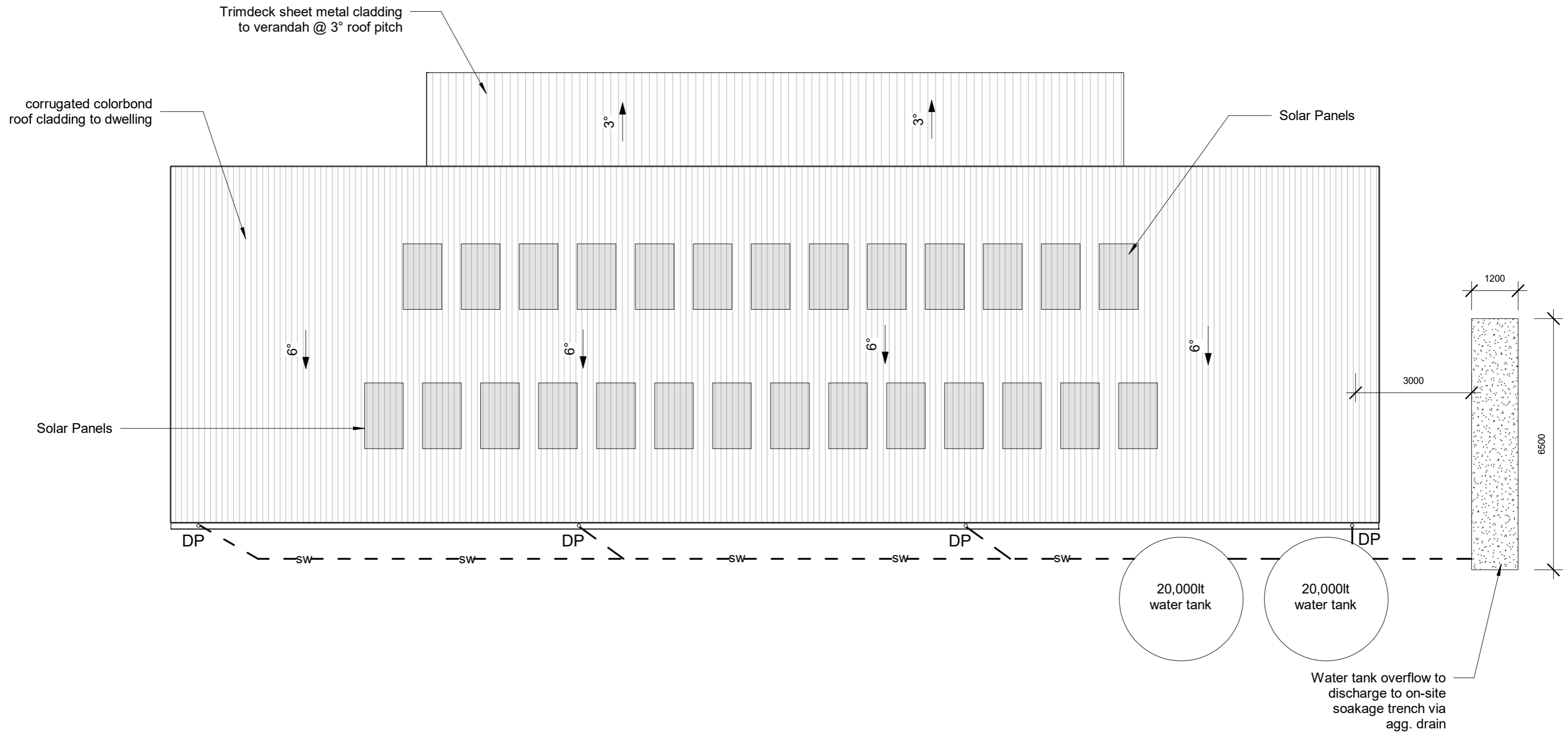
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Proposed Dwelling
1 Bay Close,
St.Helens

ELEVATIONS		
Project number	1416	04
Date	7/04/2026	
Drawn by	JK	
Checked by	PC	
Scale		1 : 100

ALL STORM WATER TO MANAGED WITHIN THE SITE & BE TAKEN TO ON-SITE WATER TANKS & NOT TO DISCHARGE TO THE WATERCOARSE, WETLAND OR NEAR FLOOD LINE. THE BUILDER / SUBCONTRACTOR SHALL ENSURE THAT ALL STORM WATER DRAINS, SEWER PIPES AND THE LIKE ARE LOCATED AT A SUFFICIENT DISTANCE FROM ANY BUILDINGS FOOTING AND/OR SLAB EDGE BEAMS SO AS TO PREVENT GENERAL MOISTURE PENETRATION, DAMPNES, WEAKENING AND UNDERMINING OF ANY BUILDING AND ITS FOOTING SYSTEM

STORM WATER PIPE LAYOUT IS INDICATIVE AND IS TO BE LAYED AT THE DISCRETION OF THE PLUMBING CONTRACTOR



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Proposed Dwelling
 1 Bay Close,
 St.Helens

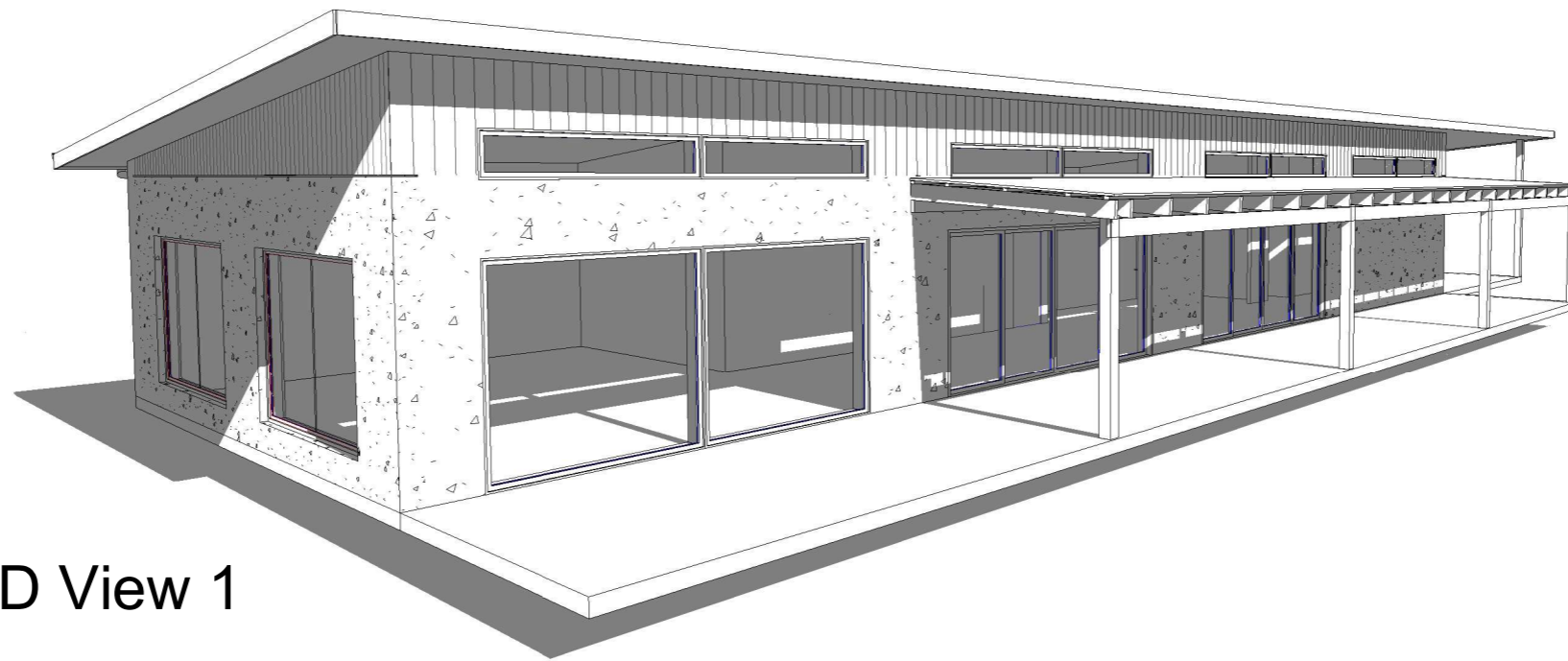
ROOF DRAINAGE PLAN



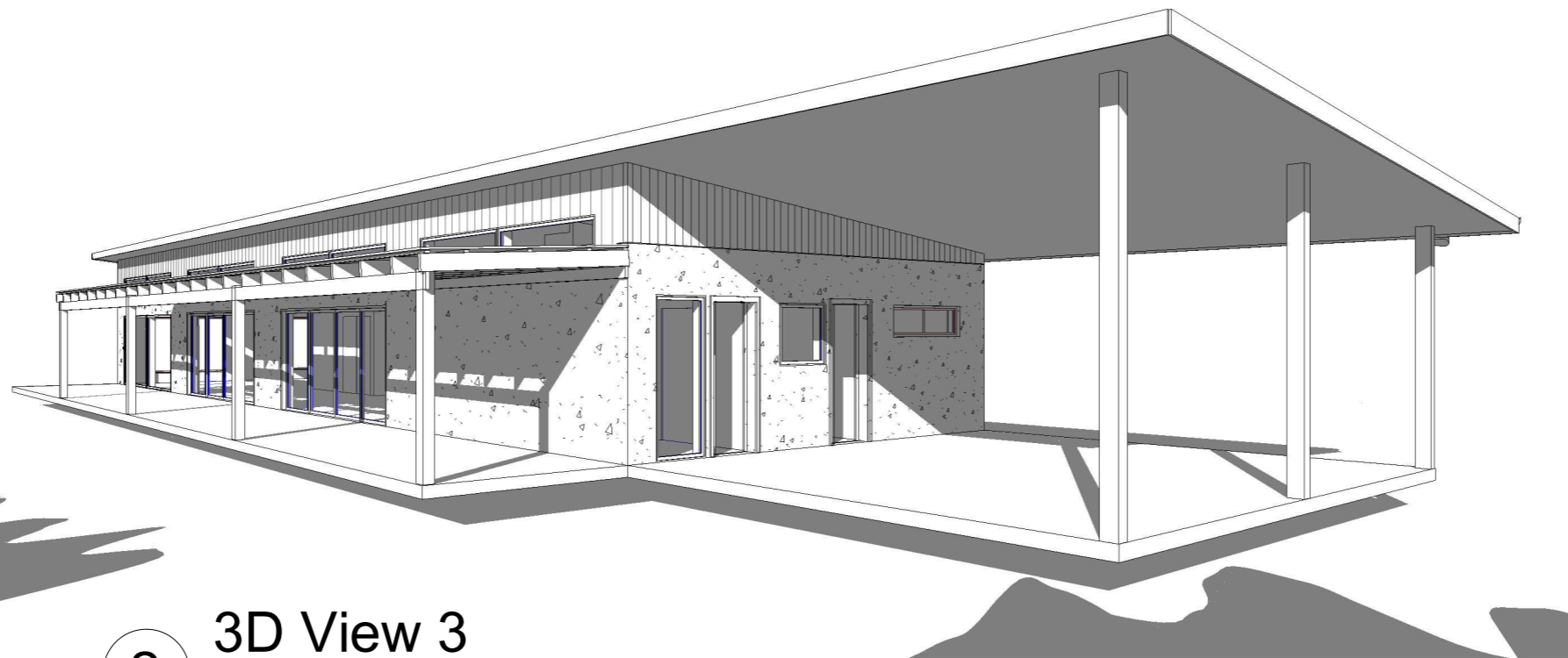
Project number	1416
Date	7/04/2026
Drawn by	JK
Checked by	PC

05

Scale 1 : 100



1 3D View 1



2 3D View 3

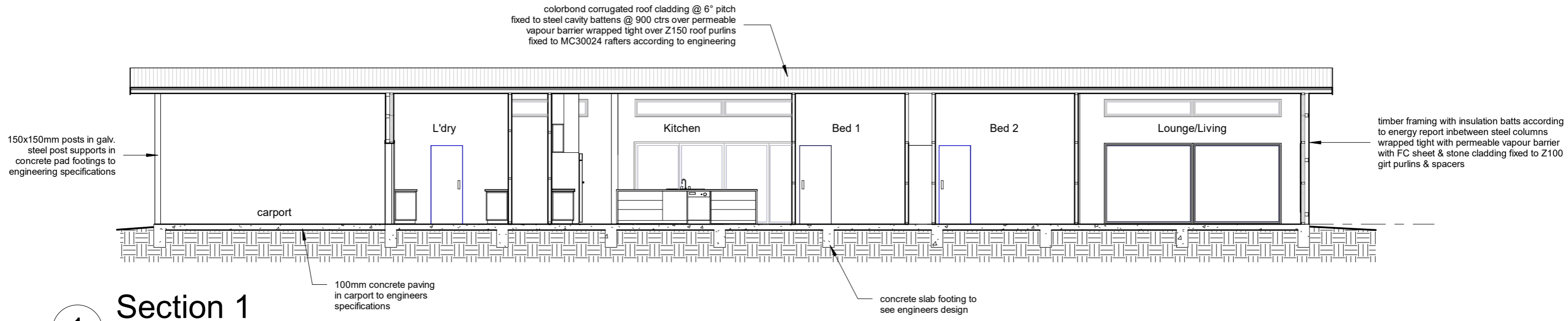
No.	Description	Date

Proposed Dwelling
1 Bay Close,
St.Helens

3D ELEVATIONS

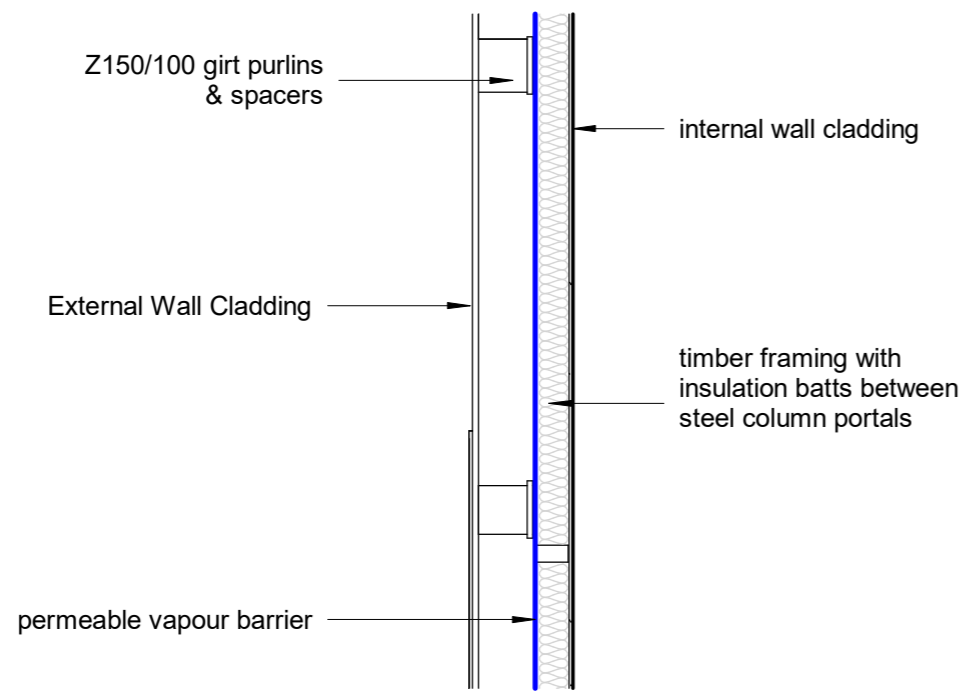
Project number	1416	06
Date	7/04/2026	
Drawn by	JK	
Checked by	PC	
Scale		

REFER TO ENGINEERING SPECIFICATIONS FOR ALL STRUCTURAL MEMBERS AND FOOTING DETAILS

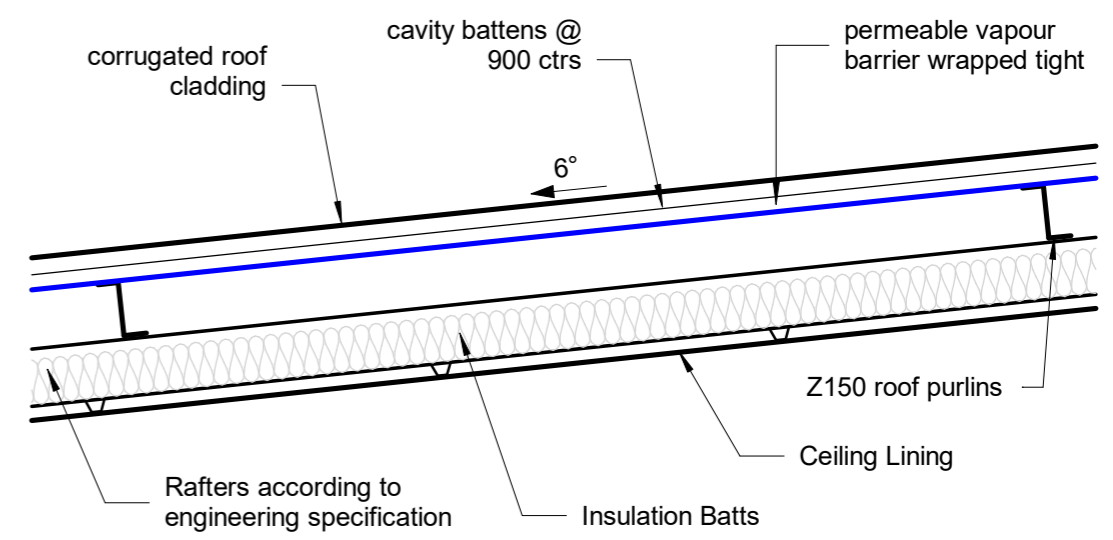


1 Section 1
1 : 100

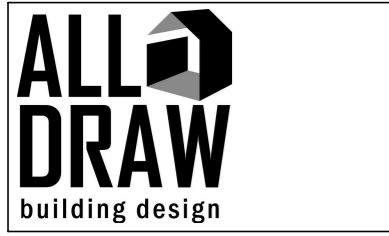
Masonry Cladding dimensions 500 x 200 x 30mm
Weigh 2.9kg = 29kg per m



WALL CLADDING DETAIL



ROOF CLADDING DETAIL



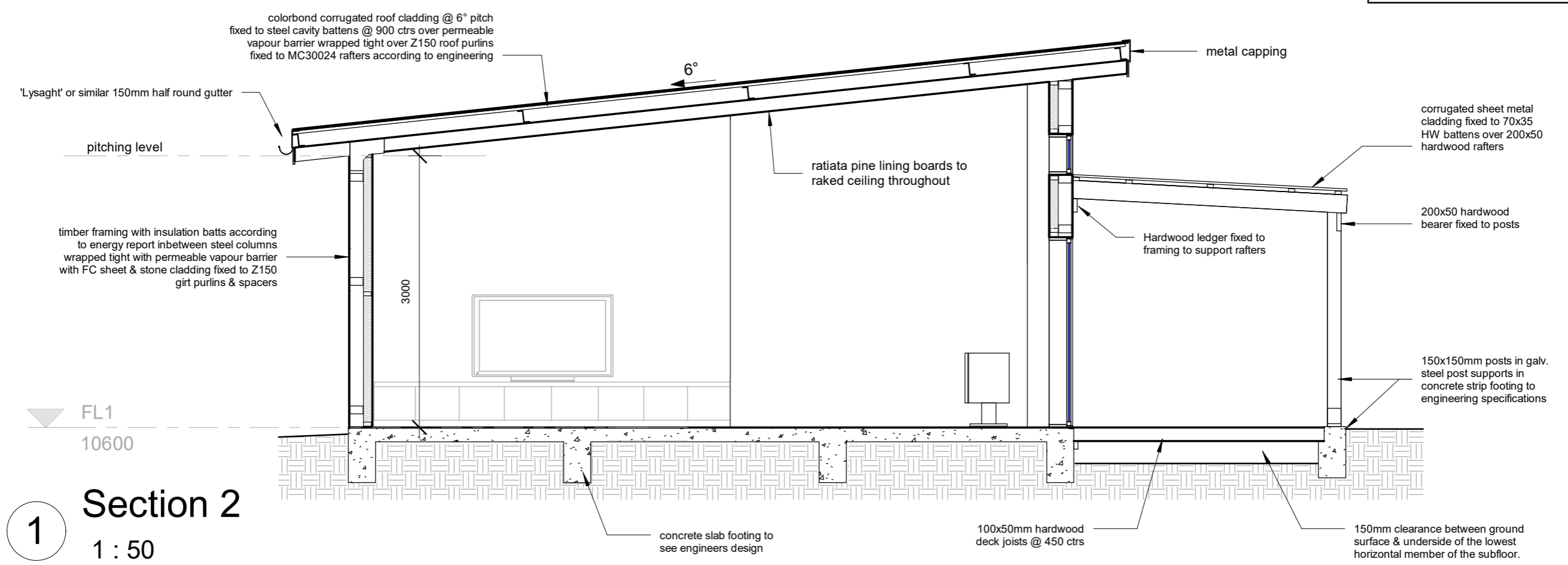
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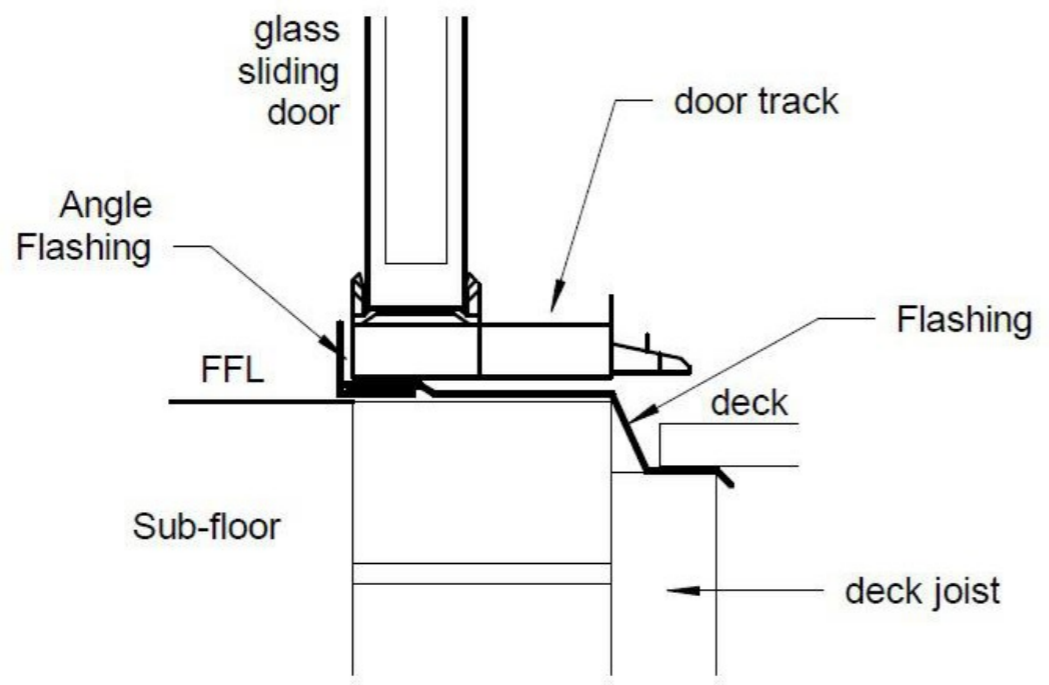
Proposed Dwelling
**1 Bay Close,
St.Helens**

SECTION DETAIL		
Project number	1416	07
Date	7/04/2026	
Drawn by	JK	
Checked by	PC	
		ScAs indicated

REFER TO ENGINEERING SPECIFICATIONS FOR ALL STRUCTURAL MEMBERS AND FOOTING DETAILS

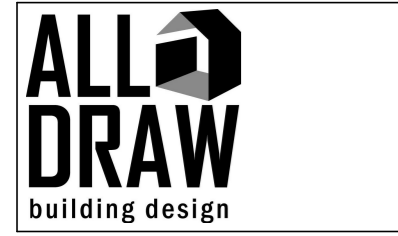


1 Section 2
1 : 50



ENTRY THRESHOLD DETAIL

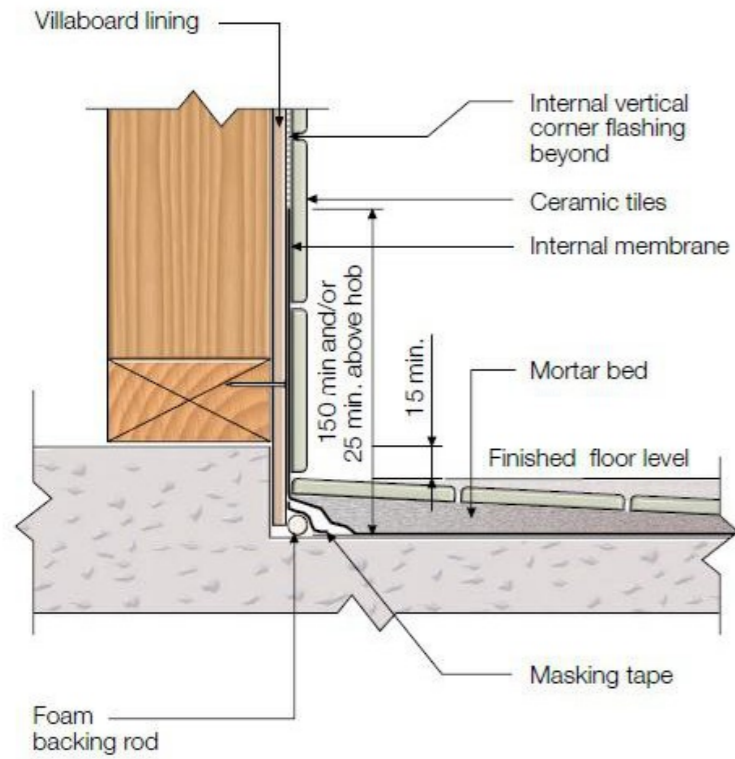
Masonry Cladding dimensions 500 x 200 x 30mm
Weigh 2.9kg = 29kg per m



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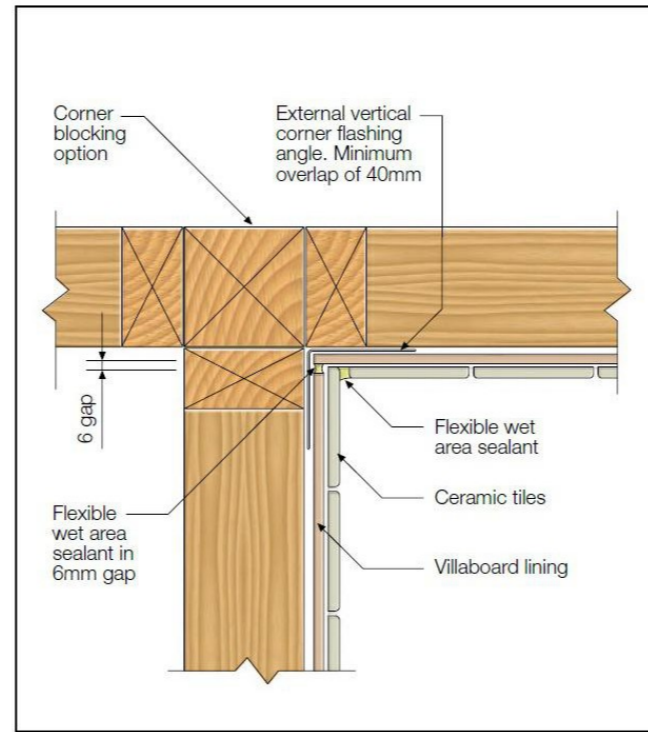
Proposed Dwelling
1 Bay Close,
St.Helens

SECTION II		
Project number	1416	08
Date	7/04/2026	
Drawn by	JK	
Checked by	PC	
		Scale 1 : 50



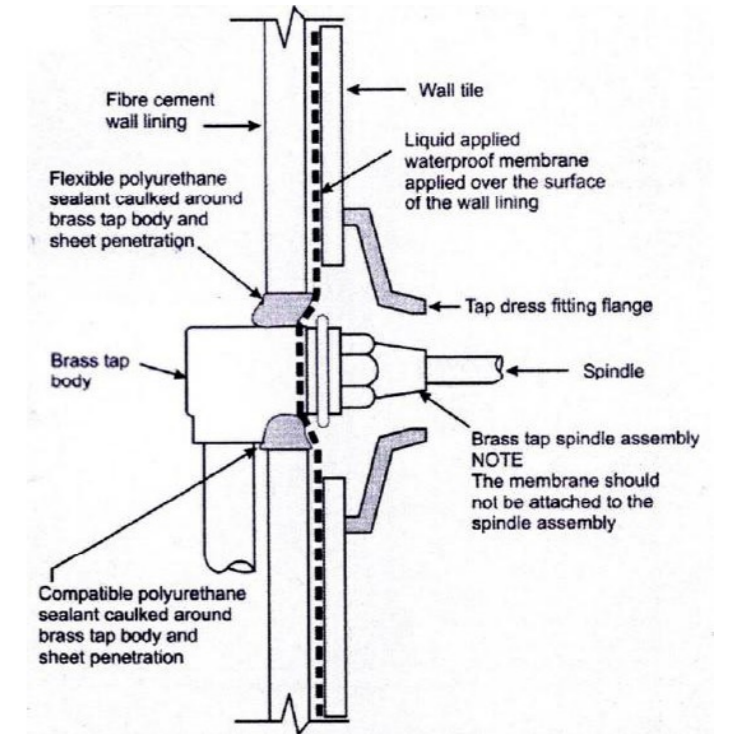
WET AREA TILING DETAIL

NTS



CORNER FLASHING DETAIL

NTS

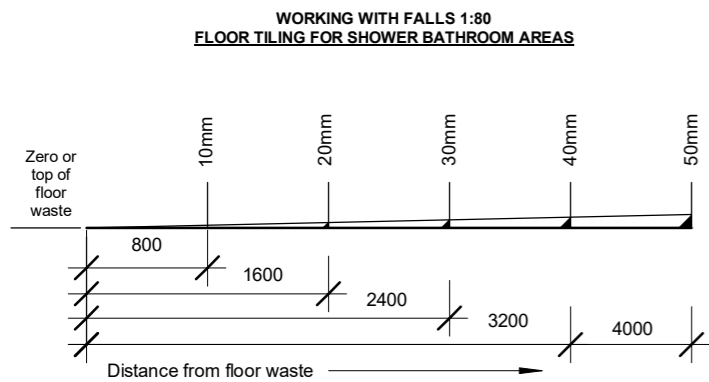


SPLASHBACK DETAIL

NTS

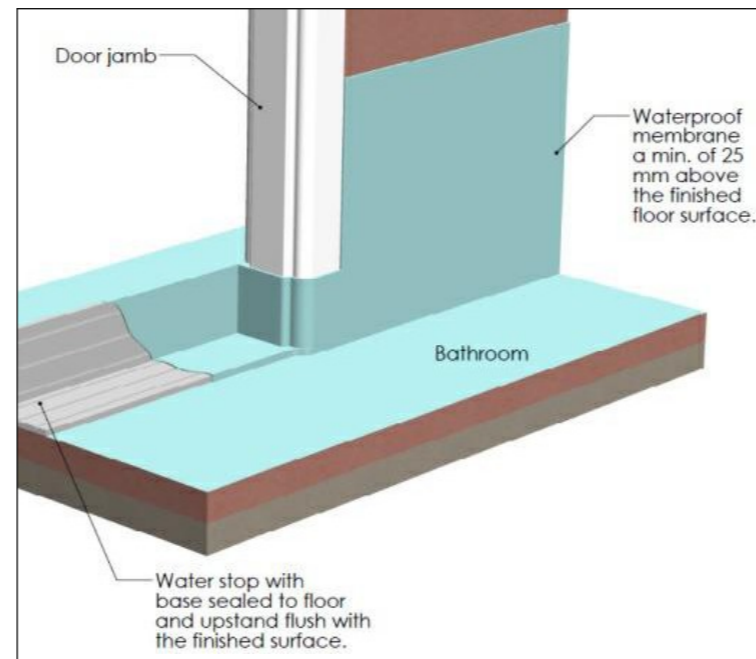
WATERPROOFING TO WET AREAS IN ACCORDANCE WITH NCC 3.8 & AS3740-2021.

WALL TILING:
All wall tiles to wet areas to be on a backing of waterproof plasterboard or fibrous cement villa board lining. Tiles 1800mm minimum above shower base and 150mm min. above sinks, basins, troughs & baths

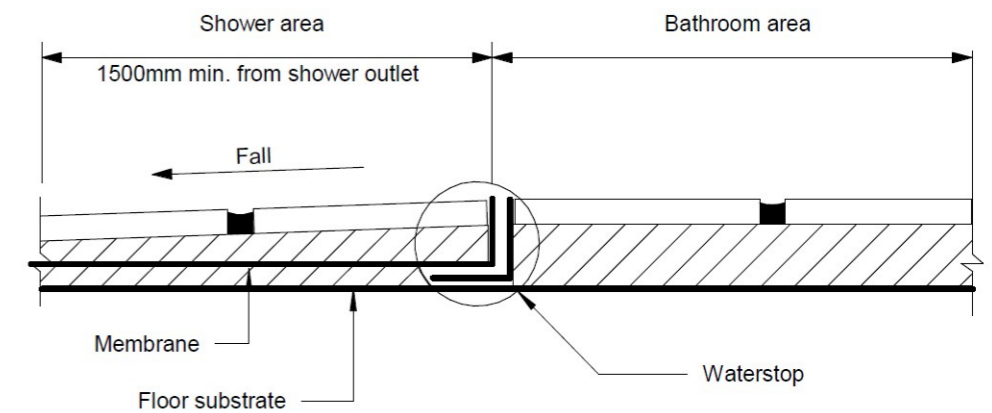


SHOWER FLOOR TILING FALLS

NTS



VERTICAL WATERSTOP DETAIL



WATERSTOP DETAIL



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Proposed Dwelling
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WATERPROOF DETAILS			
Project number	1416	09	Scale 1 : 50
Date	7/04/2026		
Drawn by	JK		
Checked by	PC		

THE LAMP POWER DENSITY OF ARTIFICIAL LIGHTING DOES NOT EXCEED:
 5W/m² OF FLOOR AREA
 4W/m² OF DECK AREA
 3W/m² OF GARAGE AREA

SMOKE DETECTORS

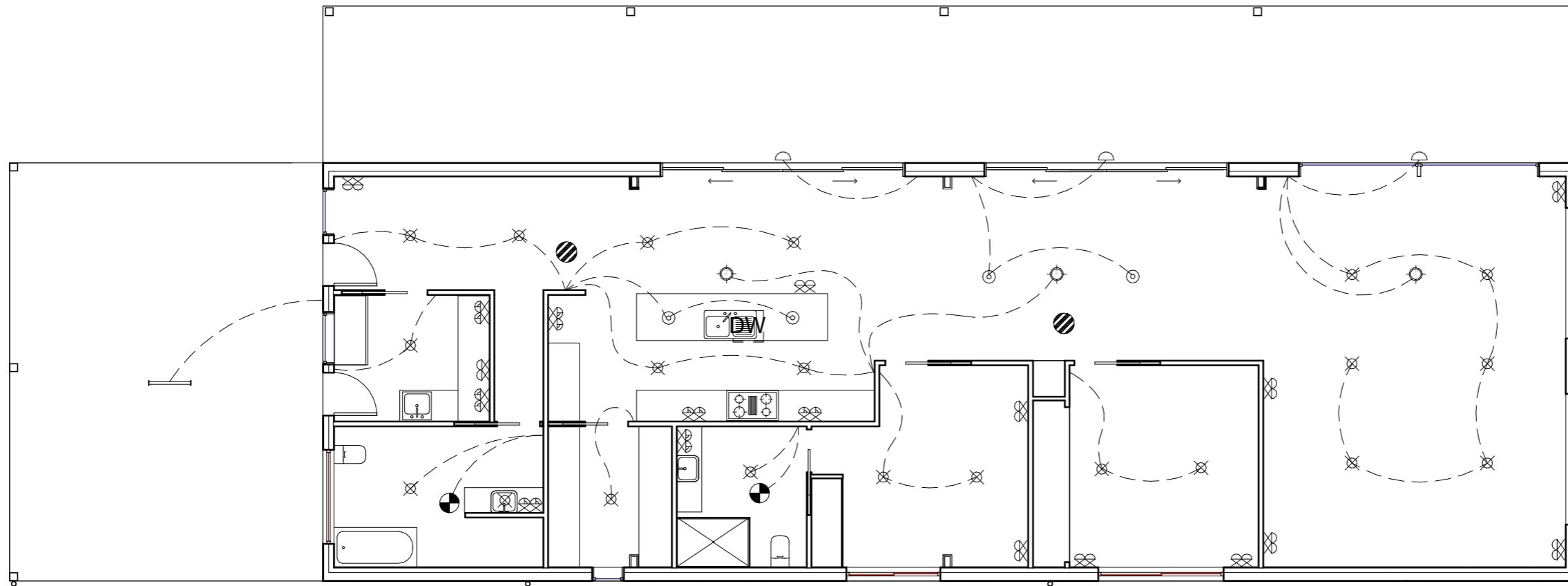
MUST COMPLY WITH AS 3786
 BE INTER-CONNECTED & INSTALLED
 IN ACCORDANCE WITH B.C.A PART 3.7.2

EXHAUST FAN:

EXHAUST VENTILATION FANS
 ARE TO DISCHARGE
 THROUGH TO OUTSIDE AIR OR
 TO ROOF CAVITY

ELECTRICAL LEGEND:

Symbol	Description
○	Ceiling Light (20W)
⊗	L.E.D. Down Light (15W)
⊙	Pendant Light
∩	Wall Mounted Light (20W)
∪	External Sensor Light
⊗⊗	Double Power Point (300mm)
⊗⊗⊗	Double Power Point (1100mm)
⊗	Smoke Detector
▭	Meter Box
▷	Television Point
⊗	Exhaust Fan - Ceiling
⊗	Tastic Heat Lamp
⊗	Ceiling Fan + Light
HWS	Hot Water Service
AC	Aircon unit
—	Fluorescent Light - Single



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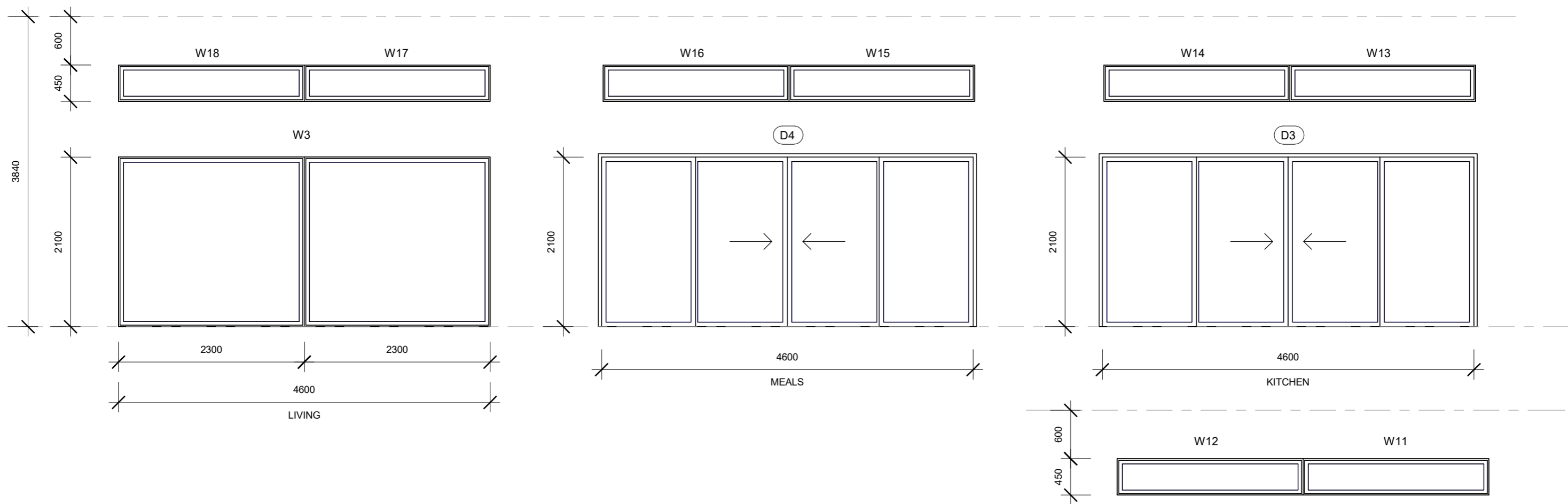
No.	Description	Date

Proposed Dwelling
 1 Bay Close,
 St. Helens

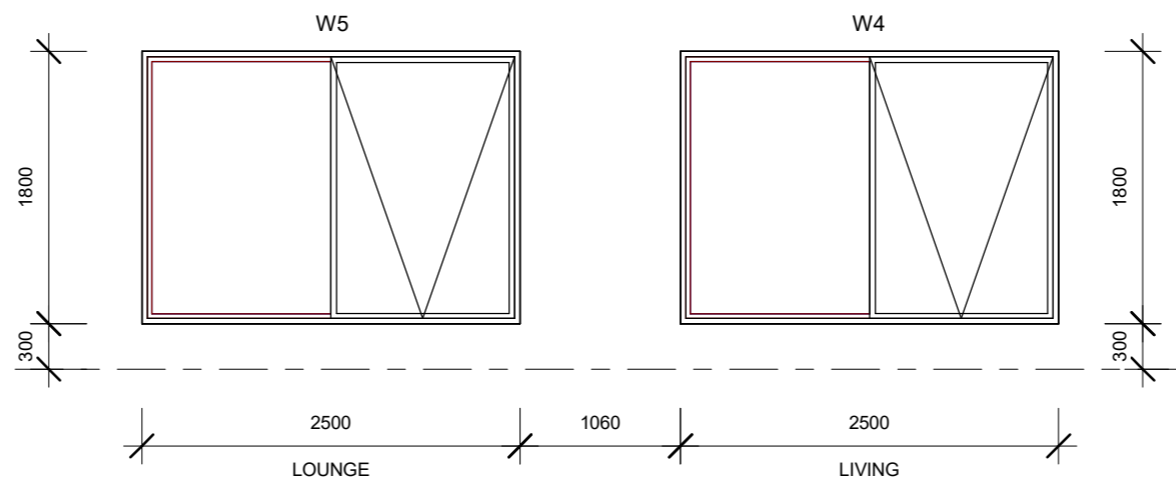
ELECTRICAL PLAN



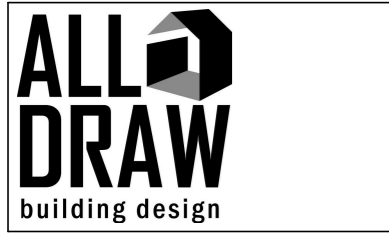
Project number	1416	10
Date	7/04/2026	
Drawn by	JK	
Checked by	PC	
Scale		1 : 100



1 North Glazing
1 : 50



2 East Glazing
1 : 50

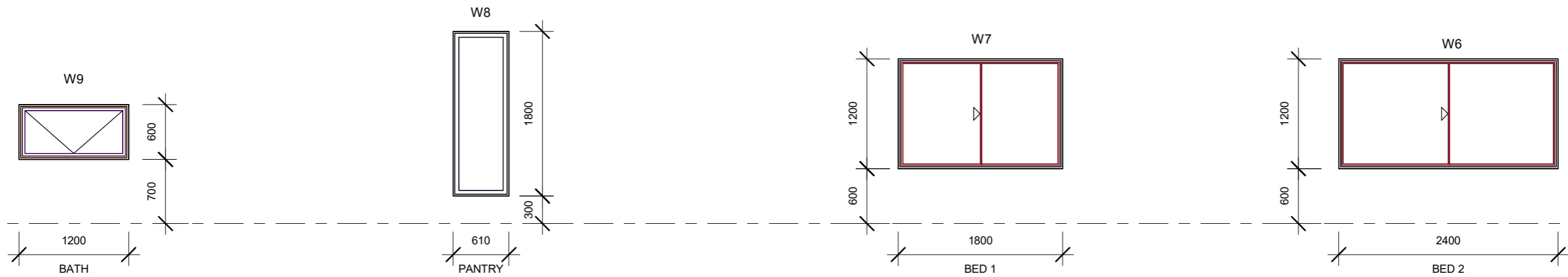


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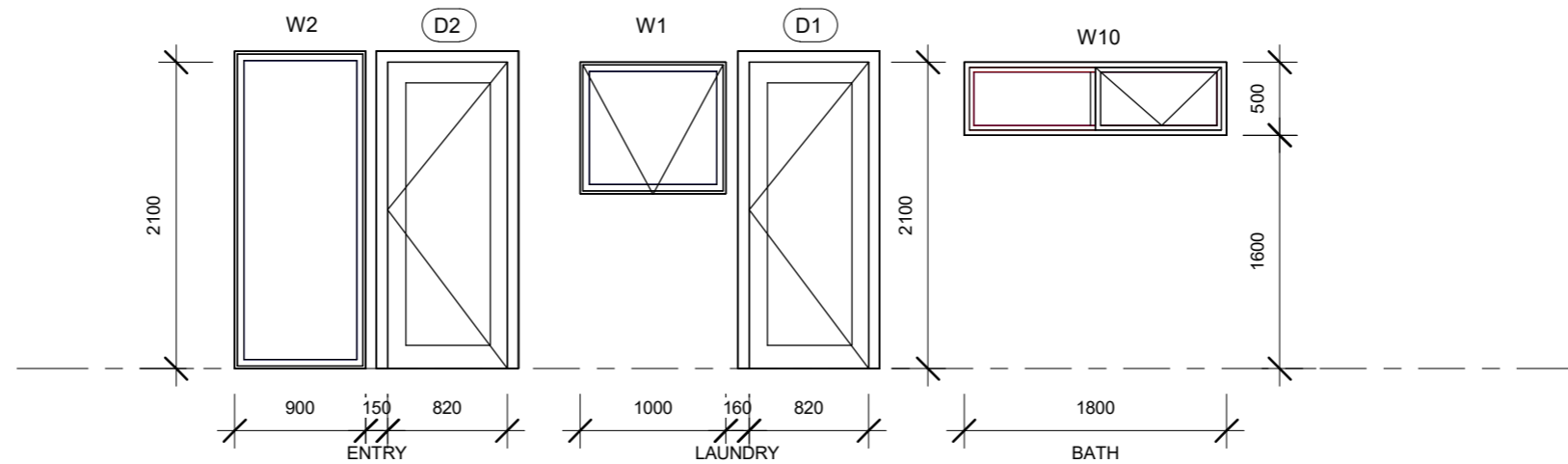
No.	Description	Date

Proposed Dwelling
1 Bay Close,
St.Helens

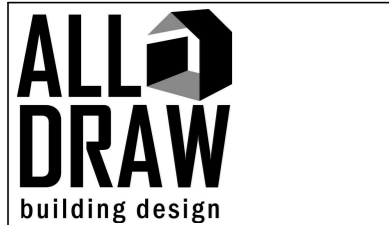
GLAZING SCHEDULE		
Project number	1416	11
Date	7/04/2026	
Drawn by	JK	
Checked by	PC	
Scale		1 : 50



1 South Glazing
1 : 50



2 West Glazing
1 : 50



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Licence # 911670743

No.	Description	Date

Proposed Dwelling
**1 Bay Close,
St.Helens**

GLAZING SCHEDULE II

Project number	1416	12
Date	7/04/2026	
Drawn by	JK	
Checked by	PC	
Scale		1 : 50

WET AREAS TO BE CONSTRUCTED IN ACCORDANCE WITH AS3740 - WATERPROOFING OF WET AREAS WITHIN RESIDENTIAL BUILDINGS, AND NCC VOL. 2 PART 3.8.1

BATHROOM ENTIRE FLOOR TO BE WATER RESISTANT. WATERPROOF ALL WALL TO FLOOR JUNCTIONS. WHERE FLASHING IS USED, THE HORIZONTAL LEG MUST BE A MINIMUM OF 40mm.

WHERE PREFORMED SHOWER BASE IS INSTALLED, WALLS TO BE WATER RESISTANT TO A MINIMUM OF 1800mm ABOVE FINISHED FLOOR LEVEL. WHERE NO PREFORMED SHOWER BASE IS USED, SHOWER AREA FLOOR MUST BE WATERPROOFED.

FOR UNENCLOSED SHOWERS, WATERPROOF FLOOR TO 1500mm BEYOND SHOWER HEAD, WATERPROOF WALLS TO 150mm ABOVE SHOWER FLOOR SUBSTRATE WITH THE REMAINDER OF THE WALLS TO BE WATER RESISTANT TO A MINIMUM OF 1800mm ABOVE FINISHED FLOOR LEVEL.

WATERPROOF CORNER JUNCTIONS AND HORIZONTAL JOINTS IN SHOWER AREA WITH A MINIMUM WIDTH OF 40mm EITHER SIDE OF JUNCTION TO A MINIMUM OF 1800mm ABOVE FINISHED FLOOR LEVEL.

SEAL ALL PENETRATIONS WITHIN SHOWER AREA.

WALLS ADJACENT TO BASIN TO BE WATER RESISTANT TO 150mm ABOVE VESSEL WHERE VESSEL IS WITHIN 75mm OF WALL. WHERE VESSEL IS FIXED TO WALL, SEAL EDGES FOR EXTENT OF VESSEL.

SEAL ALL TAP AND SPOUT PENETRATIONS ON HORIZONTAL SURFACES.

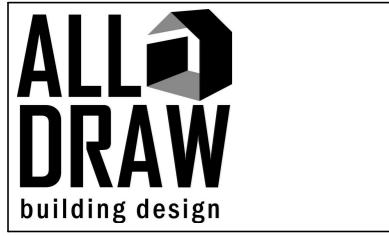
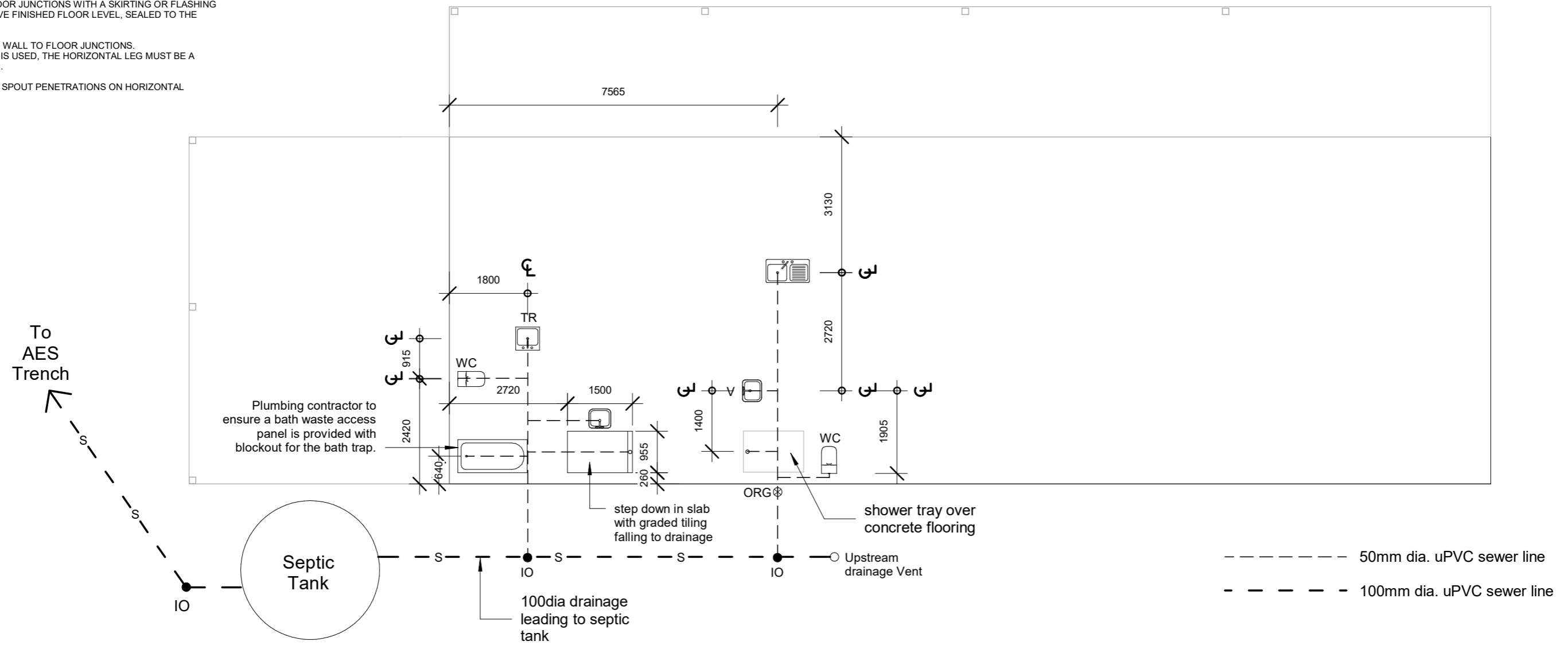
LAUNDRY + WC
ENTIRE FLOOR TO BE WATER RESISTANT. SEAL WALL TO FLOOR JUNCTIONS WITH A SKIRTING OR FLASHING TO 25mm MIN ABOVE FINISHED FLOOR LEVEL, SEALED TO THE FLOOR.

WATERPROOF ALL WALL TO FLOOR JUNCTIONS. WHERE FLASHING IS USED, THE HORIZONTAL LEG MUST BE A MINIMUM OF 40mm.

SEAL ALL TAP AND SPOUT PENETRATIONS ON HORIZONTAL SURFACES.

SEWER PIPE LAYOUT IS INDICATIVE AND IS TO BE LAYED AT THE DISCRETION OF THE PLUMBING CONTRACTOR

INSTALL INSPECTION OPENINGS FOR WC CONNECTION, EVERY CHANGE OF DIRECTION & MAX. 30m INTERVALS FOR SEWER LINE. EXACT LOCATIONS TO BE DETERMINED ON SITE



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E: info@alldraw.com.au
I: www.alldraw.com.au
Licence # 911670743

No.	Description	Date

Proposed Dwelling
1 Bay Close, St.Helens

WASTE DRAINAGE PLAN		
	Project number	1416
	Date	7/04/2026
	Drawn by	JK
	Checked by	PC
		13
		Scale 1 : 100

BUSHFIRE ASSESSMENT:

BUSHFIRE ATTACK LEVEL REPORT:

THE PROPERTY IS IN A DESIGNATED BUSHFIRE PRONE AREA . SPECIAL BUSHFIRE CONSTRUCTION REQUIREMENTS APPLY.

THE SITE IMAGE SHOWS THE VEGETATION WITHIN 100m IN ALL DIRECTIONS.

THE SURROUNDS ARE CONSIDERED 'LOW THREAT' VEGETATION.

THE SLOPE OF THE LAND IS 'FLATLAND' - LESS THAN 5°

THE BUSHFIRE ATTACK LEVEL IS **12.5**

ROOF:

FULLY SARKED (FLAMMABILITY INDEX NOT MORE THAN 5)
 INSTALLED DIRECTLY BELOW THE BATTENS. GAPS GREATER THAN 3mm TO BE SEALED WITH:
 A) MESH WITH A MAX. 2mm APERTURE MADE FROM CORROSION RESISTANT STEEL, BRONZE OR ALUMINIUM OR
 B) MINERAL WOOL OR
 C) ANOTHER NON-COMBUSTIBLE MATERIAL

WALLS:

ANY CLADDING WITHIN 400mm FROM A HORIZONTAL SURFACE IS TO BE:
 A) NON-COMBUSTIBLE
 B) FIBRE-CEMENT MIN 6mm THICK OR
 C) BUSHFIRE RESISTANT TIMBER
 ALL CLADDING TO HAVE BUSHFIRE COMPLIANT FLASHING TO GAPS AT WALL ENDS.

DECKS:

DECKING LESS THAN 300mm FROM GLAZED ELEMENT IS TO
 A) NON-COMBUSTIBLE
 B) BUSHFIRE RESISTANT TIMBER
 C) TIMBER SPECIES FROM E1



100m RADIUS OF BUILDING SITE



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No.	Description	Date

Proposed Dwelling

**1 Bay Close,
 St.Helens**

BUSHFIRE ASSESSMENT		
	Project number	1416
	Date	7/04/2026
	Drawn by	JK
	Checked by	PC
14		Scale

Planning Scheme Written Response

Prepared by Angela Kreltszheim

Date: 22nd March 2026

Site Address: 1 Bay Close, St Helens
Proposal: Construction of a single dwelling
Zone: Rural Living Zone
Overlays/Codes: C2.0 Parking and Sustainable Transport Code, C7.0 Natural Assets Code (Waterway and Coastal Protection Area, Priority Vegetation Area), C8.0 Scenic Protection Code (Scenic Road Corridor), C12.0 Flood-Prone Areas Hazard Code

Summary

This written planning response has been prepared in response to the Request for Further Information (RFI) issued by Break O'Day Council for DA 2026 / 00022.

The following sections address the relevant clauses of the Tasmanian Planning Scheme as requested, with supporting information reflected on the accompanying plans where applicable.

1. 11.0 Rural Living Zone

Clause 11.4.2 – Building height, setback and siting (P3)

Council's RFI noted that the two proposed water storage tanks were located within 10m of a side boundary. The site plan has since been amended to relocate the tanks so they comply with the applicable setback requirements, as shown on Drawings WD Site Plan 01 and Site Plan Detail 02.

As amended, the proposal provides a compliant and orderly site layout, with the tanks positioned in association with the dwelling while maintaining an appropriate relationship to adjoining land. The amended plans therefore address the setback issue raised in the RFI.

2. C2 Parking and Sustainable Transport Code

Clause C2.6.1 – Construction of parking areas (P1)

The proposal includes the construction of a new gravel driveway providing access from Bay Close to the dwelling, as shown on Drawings WD Site Plan 01 and Site Plan Detail 02. The driveway is approximately 4 metres in width and constructed with a compacted road base and gravel top dressing.

The driveway design is appropriate for the Rural Living Zone, providing safe and practical vehicle access while maintaining a low-impact surface treatment. The use of gravel allows for natural infiltration of surface water and minimises hard surface runoff.

Given the scale and nature of the development, the proposed driveway will not result in unreasonable impacts in terms of erosion, drainage or site stability. The proposal is therefore considered to satisfy the intent of the performance criteria.

3. C7 Natural Assets Code

Clause C7.6.1 – Buildings and works within a waterway and coastal protection area (P1.1)

The subject site is affected by the waterway and coastal protection area overlay. However, the proposed dwelling and associated works are located well away from the watercourse and coastal interface, as shown on Drawing WD Site Plan 01.

The siting of the development avoids disturbance to the waterway and coastal environment, with no works proposed within or in close proximity to these areas. The proposal will not result in adverse impacts on natural values, water quality or the stability of the coastal or riparian environment.

The proposal is therefore considered to satisfy the intent of the performance criteria.

Clause C7.6.2 – Clearance within a priority vegetation area

No native vegetation clearance is proposed as part of the development. The site is already cleared, and the proposal does not involve removal or disturbance of vegetation within the priority vegetation area overlay.

Accordingly, the proposal satisfies the requirements of this clause.

4. C8 Scenic Protection Code

Clause C8.6.2 – Development within a scenic road corridor

The subject site is located within a designated scenic road corridor associated with Binalong Bay Road. The proposed dwelling is sited within the central portion of the property and is set back from the road approximately 64 metres, as shown on Drawings WD Site Plan 01 and Site Plan Detail 02.

The development is well screened from the scenic road corridor by a combination of distance and existing vegetation. Additional detail illustrating the extent of the scenic road corridor and existing vegetation has been included on Site Plan Detail 02 to demonstrate the limited visual exposure of the proposed dwelling.

The siting and scale of the dwelling ensure that it will not dominate or detract from the scenic values of the area. The proposal maintains the visual character of the locality and is considered to satisfy the intent of the performance criteria.

5. C12 Flood Prone Areas Hazard Code

Clause C12.5.1 and C12.6.1 – Use and development within a flood-prone hazard area

Council's RFI identifies that a portion of the proposed gravel driveway is affected by the flood-prone hazard overlay, with an H1 classification indicated on mapping.

As shown on Drawings WD Site Plan 01 and Site Plan Detail 02, the proposed dwelling is located outside of the mapped flood-prone area, with only a limited portion of the access driveway intersecting the overlay at the eastern extent of the site.

The proposed driveway is a simple, low-impact gravel access track which will not obstruct or alter natural flow paths. Given the minor extent of the overlay in relation to the development and the nature of the works, the proposal is not expected to result in increased flood risk or adverse impacts on surrounding land.

It is noted that the mapped overlay appears to be associated with low-lying coastal land and may not represent flooding from a defined watercourse as described within the Planning Scheme definition of "flood".

On this basis, it is considered that the proposal satisfies the intent of the performance criteria. Should Council require further confirmation, written advice from a suitably qualified person can be provided.

Tuesday 24, March

To Alex McKinlay

In relation water tank position.

- A The site is level and free of obstacles.
- B The Site is of a triangular shape, proposed dwelling and tanks are on Southern boundary.
- C Neighbouring buildings appear to be approximately 10m from fence.
- D The Height of tanks are below roof line of proposed building.
- E The character of proposed development is in keeping with existing properties and supports council objectives.
- F There is no overshadowing of adjoining property or public space.

In relation to stormwater management.

Overflow from water tanks will be directed by 100mm poly pipe to trench with 50mm aggregate and backfilled. Trench will follow contour line directed to centre of property.

In relation to Uses within flood prone area.

Alex, I have approached Peter Hofto and am awaiting his reply Be advised I will get correct information as soon as possible.

PS I have instructed James to amend drawing and send it to you immediately.

I hope this information supports my Development Application in a positive way.

Sincerely Peter Chaplin.

Bushfire Hazard Assessment Report & Bushfire Hazard Management Plan



Address: 1 Bay Close, St Helens TAS 7216

PID: 7560027 (Title Ref 38962/1)

Prepared for Pete Chaplin

Prepared & Assessed by Tod Thomas

Mobile: 0415 649 708

Version	Date	Author	Job Number
1.0	7/10/25	Tod Thomas	PC-7560027
1.1	14/11/25	Tod Thomas	PC-7560027
1.2	5/12/25	Tod Thomas	PC-7560027
1.3	30/12/25	Tod Thomas	PC-7560027

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Appendix A – Bushfire Hazard Management Plan

Appendix B – Design Plan provided by Client

Appendix C – Form 55 Certificate of Specialist

1. Introduction

Client	Pete Chaplin
Property Address	1 Bay Close, St Helens TAS 7216
Property ID:	PID: 1525204 (Volume 112553/Folio 1)

The purpose of this Bushfire Attack Level (BAL) assessment is for a proposed new Class 1a residential dwelling at the above property address.

The BAL will enable the appropriate construction method and applicable construction requirements for the proposed building works to be completed in accordance with AS3959-2018 Construction of Buildings in Bushfire-Prone Areas.

It takes into consideration factors including the Fire Danger Index (FDI), the slope of the land, types of surrounding vegetation and its proximity to any building.

Scope

The scope of this report is as follows:

- Identification of the level of bushfire threat in accordance with the relevant provisions of AS3959.2018 Construction of buildings in bushfire-prone areas.
- Provide requirements for building or demolition work in bushfire-prone areas to meet the requirements of Director Determination – Bushfire Hazard Areas, version 1.2, 16th July 2024
- Provide Construction requirements to comply with AS3959.2018 Construction of buildings in bushfire-prone area.

Limitations

The inspection has been undertaken and report provided on the understanding that: -

1. The report only deals with the potential bushfire risk, all other statutory assessments are outside the scope of this report.
2. The report only identifies the size, volume and status of vegetation at the time the site inspection was undertaken and cannot be relied upon for any future development.
3. Impacts of future development and vegetation growth have not been considered. No action or reliance is to be placed on this report; other than for which it was commissioned.
4. This report is limited to an assessment of bushfire hazard to the proposed development; it is not intended to provide commentary on either the environmental impacts of any recommended vegetation clearance/management regime.

2. Site Description

Lot size	12030sqm (2.97 acres)
Existing Use	Vacant Block
Type of Proposed Building Work	Residential Dwelling
BCA Classification	Class 1
Water Supply	Tank (Static)
Road Access	Binalong Bay Road– Council maintained
Council:	Break O’Day
Planning Zone:	Rural Living
Surrounding Zones:	Land conservation area
Existing Overlays	Low coastal erosion hazard band, Medium coastal erosion hazard band, High coastal erosion hazard band, Low coastal erosion hazard , Waterway and coastal protection area, Medium coastal inundation hazard band, Future coastal refugia area, Priority vegetation area, High coastal inundation hazard band, Flood-prone areas, Bushfire-prone areas, Scenic road corridor
Planning Scheme	Tasmanian Planning Scheme – Break O’Day



Figure1: A desktop and onsite assessment was carried out on the 15 August 2025. Image above taken from ListMap (thelist.tas.gov.au)

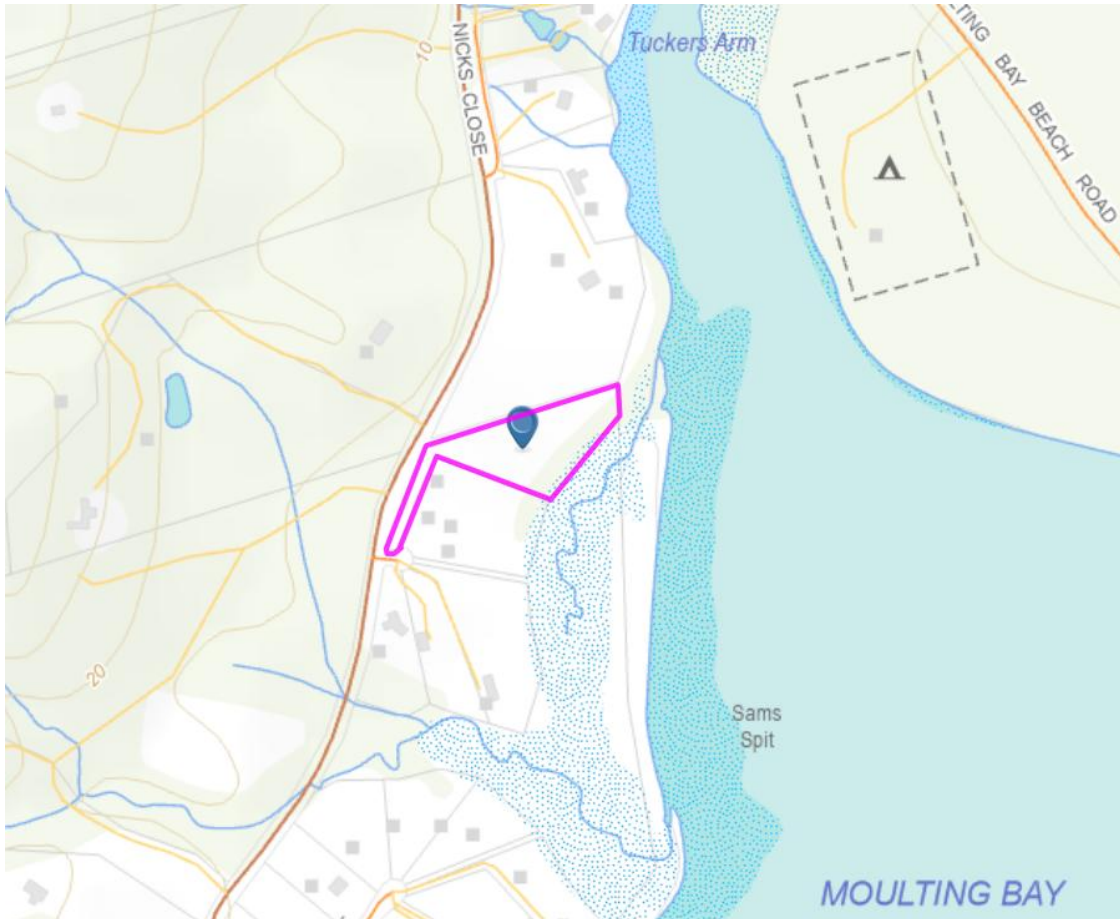


Figure 2: A topographic map illustrates the subject site and immediate surrounds. Image above taken from ListMap (thelist.tas.gov.au)

The subject site is zoned 'Rural living' and is currently a vacant block. It is accessed by a 164m flat-gradient driveway, which is presently unsealed. The block is mostly flat, with a 0°-5° downslope, and is covered in grass pasture. The owner is currently managing the grassland vegetation to maintain a minimal fuel load. There are several small sections of mature trees planted for landscaping along the southern and western boundaries.

3. Proposed Development

The client proposes to construct a Class 1a residential dwelling, the proposed building area required is 30m x 11m. There will also be two sheds. Figure 3 indicates the location of the two sheds. Neither shed will be included in this assessment, as they are more than 6m from the proposed dwelling.

The client has provided detailed design plans (see Appendix B).

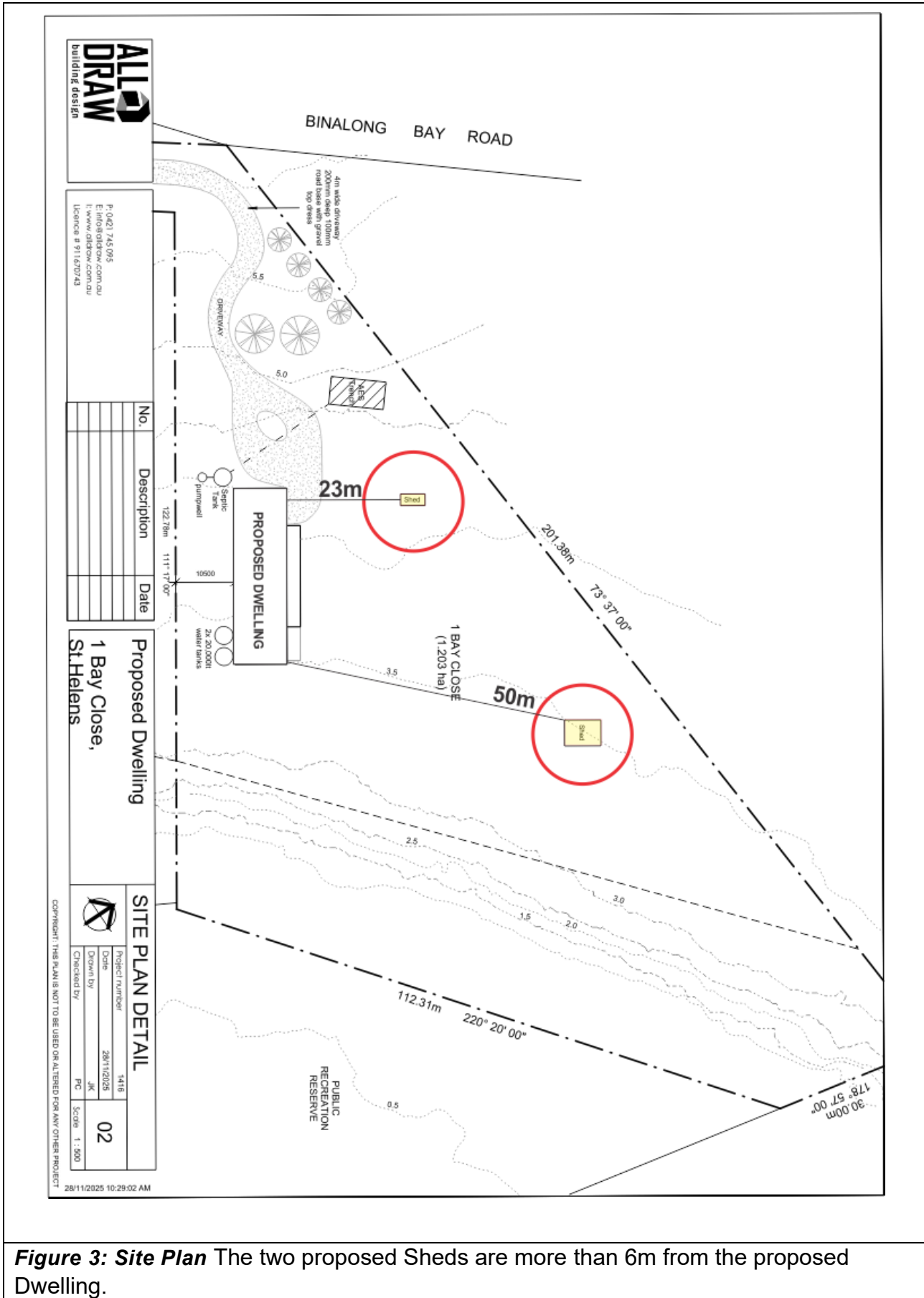
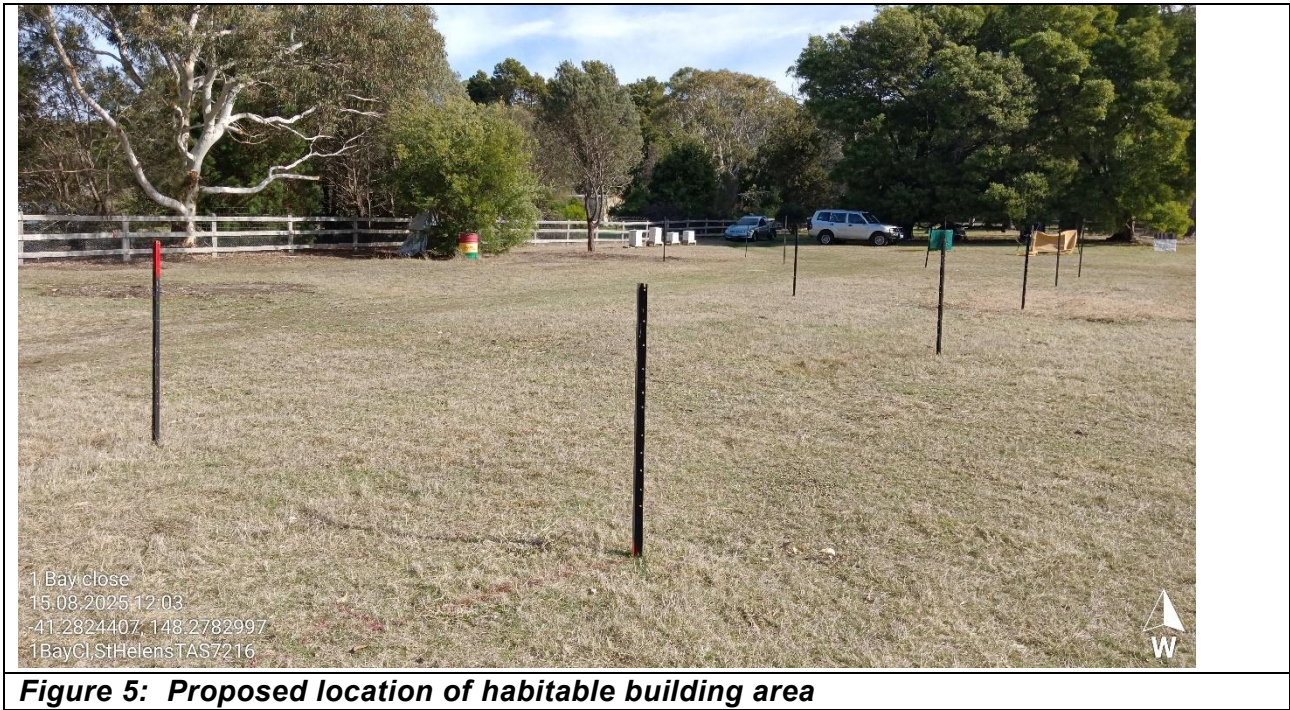


Figure 3: Site Plan The two proposed Sheds are more than 6m from the proposed Dwelling.



4. Bushfire Hazard Assessment

4.1. Vegetation & Effective Slope

Vegetation and relevant effective slopes within 150m of the proposed building work have been assessed and classified in accordance with AS 3959:2018.

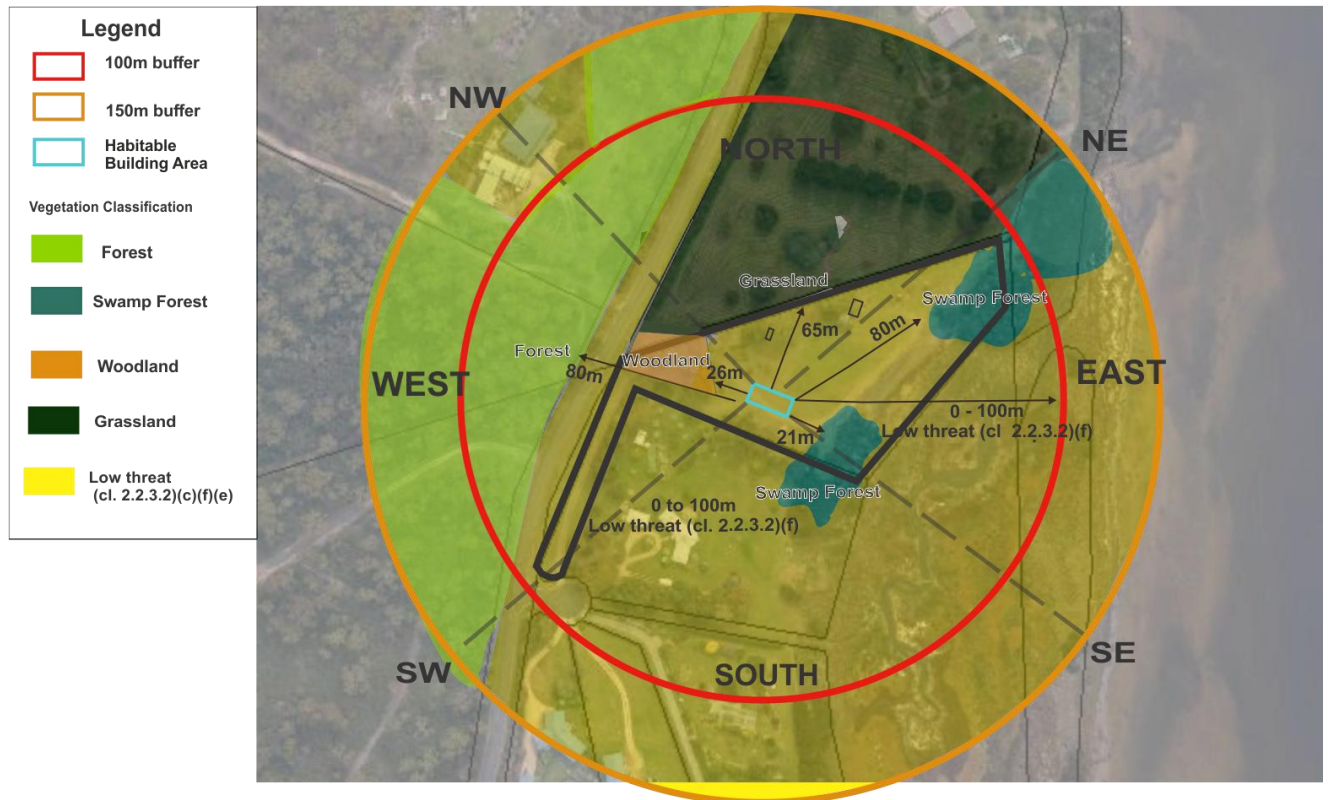


Figure 6: Vegetation Map

<p>North</p> <p>0 – 65m Low threat vegetation in accordance with clause 2.2.3.2 (f)</p> <p>>65 – 100m Grassland Vegetation</p>
<p>North East</p> <p>0 - 80m Grasslands managed to a low threat vegetation in accordance with clause 2.2.3.2 (f)</p> <p>>80 - 100m Melaleuca ericifolia swamp forest</p>
<p>East</p> <p>0 - 60 m Grasslands managed to a low threat vegetation in accordance with clause 2.2.3.2 (f)</p> <p>>60m – 100m Saline Wetlands - low threat vegetation in accordance with Clause 2.2.3.2 (f)</p>
<p>South East</p> <p>0 – 21m Grasslands managed to a low threat vegetation in accordance with clause 2.2.3.2 (f)</p> <p>>21 - 52m Melaleuca ericifolia swamp forest - exclusion under 2.2.3.2 (c) can apply provided that the grassland in between is managed as low threat in perpetuity.</p> <p>>52 - 100m Saline Wetlands - low threat vegetation in accordance with Clause 2.2.3.2 (f)</p>
<p>South</p> <p>0 – 100m Grasslands and Gardens managed to a low threat vegetation in accordance with clause 2.2.3.2 (f)</p>
<p>South West</p> <p>0 – 100m Grasslands and Gardens managed to a low threat vegetation in accordance with clause 2.2.3.2 (f)</p>
<p>West</p> <p>0 - 26m Grasslands managed to a low threat vegetation in accordance with clause 2.2.3.2 (f)</p> <p>>26 – 50m Low Woodland Vegetation</p> <p>>50 - 60m Low threat vegetation in accordance with Clause 2.2.3.2 (e)</p> <p>>60m 100m Forest Vegetation</p>
<p>North West</p> <p>0 - 50m Grasslands managed to a low threat vegetation in accordance with clause 2.2.3.2 (f)</p> <p>>50 - 70m Grasslands</p> <p>>70 - 80m Low threat vegetation in accordance with Clause 2.2.3.2 (e)</p> <p>>80m – 100m Forest Vegetation</p>

2.2.3.2 Exclusions - Low-threat vegetation and non-vegetated areas

The following vegetation shall be excluded from a BAL assessment:

- (a) Vegetation of any type that is more than 100 m from the site.
- (b) Single areas of vegetation less than 1 ha in area and not within 100 m of the other regions of vegetation being classified as vegetation.
- (c) 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.
- (d) 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.
- (e) Non-vegetated areas, that is, areas permanently cleared of vegetation, including waterways, exposed beaches, roads, footpaths, buildings and rocky outcrops.
- (f) 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.

NOTES:

- 1 Minimal fuel condition means there is insufficient fuel available to significantly increase the severity of the bushfire attack (recognizable as short-cropped grass, for example, to a nominal height of 100 mm).
- 2 A windbreak is considered a single row of trees used as a screen or to reduce the effect of wind on the leeward side of the trees.

Slope

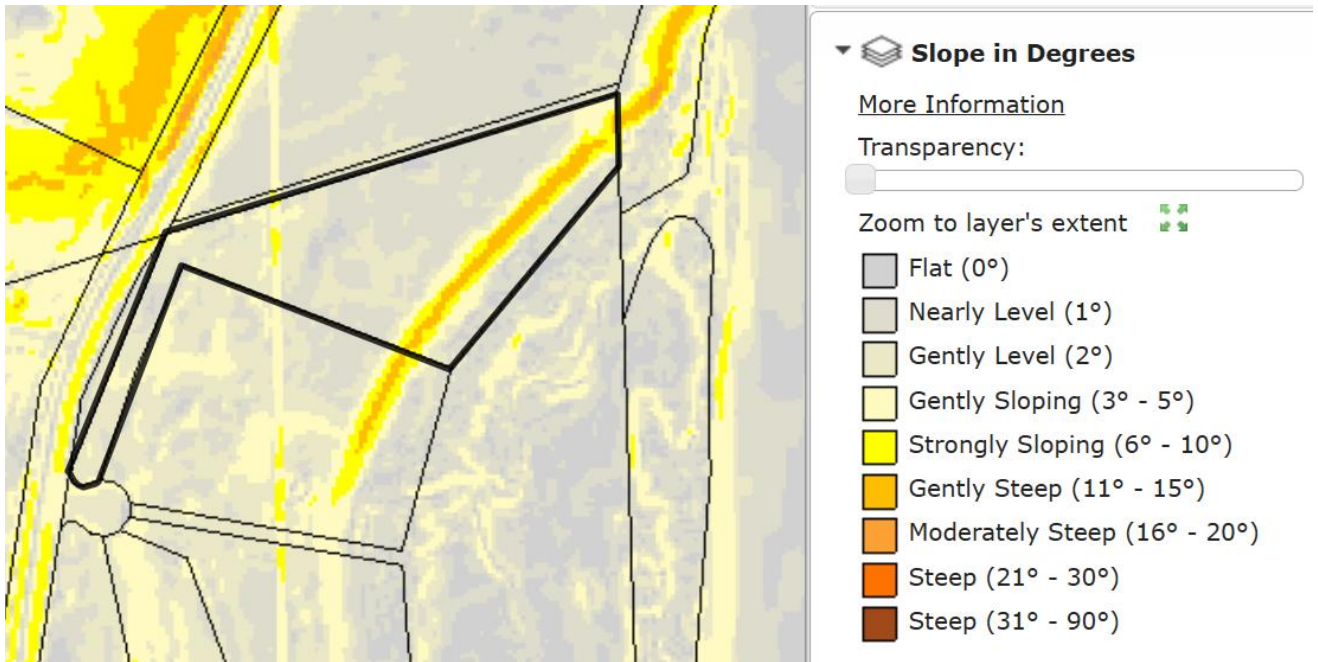


Figure 7: An aerial photo from ListMap (thelist.tas.gov.au) indicates that the subject site is mostly flat, with slopes ranging from 0 to 2 degrees. There is a small, narrow section of an 11-15-degree upslope adjacent to low-threat saline wetland vegetation.



Figure 8: Reference to Tasmanian Vegetation Monitoring & Mapping Program (TASVEG) indicates the different types of Vegetation <250m from the subject site.

The reference to the Tasmanian Vegetation Monitoring & Mapping Program (TASVEG) indicates that the vegetation to the North and East of the title lot is grassland within Agricultural land (FAG). Residential dwellings are located on adjacent blocks, with gardens and grassland currently managed in a minimal fuel condition.

Photos of Vegetation from Site Assessment – taken 15th August 2025



Small section of Low woodland Vegetation, approximately 26m north-west of the proposed building site.

This is the most significant fire threat. Although the woodland area is fairly small at 750 m², there is a large area of forest vegetation approximately 20m to the west, separated only by Binalong Bay Road and nature strip. (see photo below)





1 Bay close
15.08.2025 12:05
55G 607019.81 5429104.54
1 Bay CI, St Helens TAS 7216



I have also noted that the property owner has planted new trees next to the section of woodland vegetation. The trees are currently saplings and do not yet pose any threat; however, future management and selective removal may be required to ensure compliance with BHMP.

The photo also illustrates the proximity of Forest vegetation in the foreground.



Neighbouring property on the Southern boundary, next to the proposed building site, indicates Gardens managed to a low-threat vegetation in accordance with clause 2.2.3.2 (f)



View of Forest vegetation to the West of Binalong Bay Road.



View of Forest vegetation to the South West of Binalong Bay Road taken from property boundary.



The view of vegetation from the proposed building site, facing northwest, indicates that Grasslands vegetation during the site visit is currently being managed at a low threat level, in accordance with Clause 2.2.3.2 (f).



The *Melaleuca ericifolia* swamp forest is located 21m southeast of the proposed building area.



Melaleuca ericifolia swamp forest and saline grassland next to Georges Inlet, located approximately. 80m from the proposed building area.



Looking East towards Georges Bay Inlet, vegetation consists of managed grasslands and Saline wetlands. There is also a small, narrow slope between both, as shown in Figure 7.

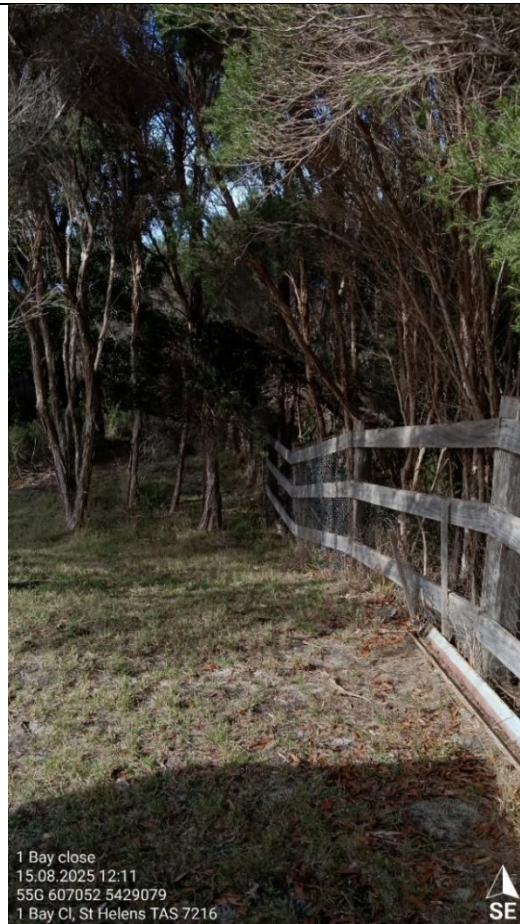


A small section of the Melaleuca ericifolia swamp forest is located approximately 21m southeast of the proposed building area.



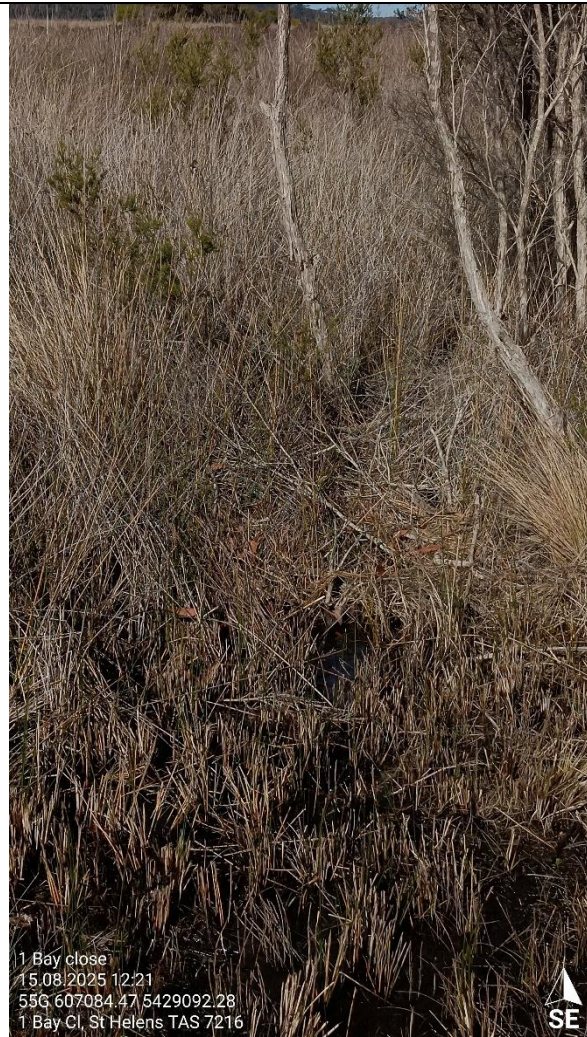
1 Bay close
15.08.2025 12:02
-41.28257, 148.27843
1 Bay Cl, St Helens TAS 7216

South East view of *Melaleuca ericifolia* swamp forest located approximately. 21m southeast of the proposed building area.



1 Bay close
15.08.2025 12:11
55G 607052 5429079
1 Bay Cl, St Helens TAS 7216

View from the south boundary fence looking southeast towards the section of *Melaleuca ericifolia* swamp forest



1 Bay close
15.08.2025 12:21
55G 607084.47 5429092.28
1 Bay Cl, St Helens TAS 7216



Saline grasslands surrounding the *Melaleuca ericifolia* swamp forest



1 Bay close
15.08.2025 12:20
55G 607096.24 5429118.18
1 Bay Cl, St Helens TAS 7216



Close-up of Saline Grassland vegetation



Low-threat vegetation from the Bay Close access road.

4.2. Bushfire Attack Level

A Bushfire Attack Level assessment has been completed using Method 1 of AS 3959:2018.

Step 1: Relevant fire danger index (clause 2.2.2): FDI 50

Step 2: Assess the vegetation within 100m in all directions

Vegetation Classification	North	NE	East	SE	South	SW	West	NW
Group A - Forest		X					X	X
Group B – Woodland							X	X
Group C – Shrubland								
Group D – Scrub								
Group E – Mallee/Mulga								
Group F – Rainforest								
Group G – Grassland	X							X
Group H – Tussock moorland								
Low threat (cl. 2.2.3.2) (f)	X	X	X	X	X	X	X	X
Low threat (cl. 2.2.3.2) (e)							X	X

Step 3: Distance from classified vegetation (clause 2.2.4)

	North	NE	East	SE	South	SW	West	NW
Existing separation (m)	<p>0 – 30m Low threat grassland vegetation in accordance with clause 2.2.3.2 (f)</p> <p>>65 – 100m Grassland Vegetation</p>	<p>0 - 80m Grasslands managed to a low threat vegetation in accordance with clause 2.2.3.2 (f)</p> <p>>80 - 100m Melaleuca ericifolia swamp forest</p>	<p>0 - 60 m Grasslands managed to a low threat vegetation in accordance with clause 2.2.3.2 (f)</p> <p>>60m – 100m Saline Wetlands - low threat vegetation in accordance with Clause 2.2.3.2 (f)</p>	<p>0 – 21m Grasslands managed to a low threat vegetation in accordance with clause 2.2.3.2 (f)</p> <p>>21 - 52m Melaleuca ericifolia swamp forest - exclusion under 2.2.3.2 (c) can apply provided that the grassland in between is managed as low threat in perpetuity.</p> <p>>52 - 100m Saline Wetlands - low threat vegetation in accordance with Clause 2.2.3.2 (f)</p>	<p>0 – 100m Grasslands and Gardens managed to a low threat vegetation in accordance with clause 2.2.3.2 (f)</p>	<p>0 – 100m Grasslands and Gardens managed to a low threat vegetation in accordance with clause 2.2.3.2 (f)</p>	<p>0 - 26m Grasslands managed to a low threat vegetation in accordance with clause 2.2.3.2 (f)</p> <p>>26 – 50m Low Woodland Vegetation</p> <p>>50 - 60m Sealed Road - Low threat vegetation in accordance with Clause 2.2.3.2 (e)</p> <p>>80m - 100m Forest Vegetation</p>	<p>0 - 50m Grasslands managed to a low threat vegetation in accordance with clause 2.2.3.2 (f)</p> <p>>50 - 70m Grasslands</p> <p>>70 - 80m Sealed Road - Low threat vegetation in accordance with Clause 2.2.3.2 (e)</p> <p>>80m – 100m Forest Vegetation</p>

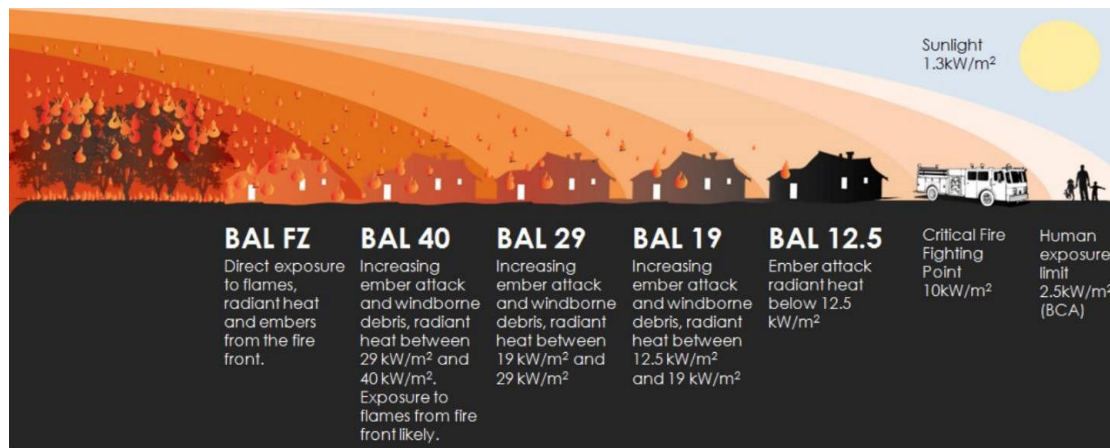
Step 4: Effective slope under classified vegetation

Vegetation	North	NE	East	SE	South	SW	West	NW
Woodland							>0-5°	>0-5°
Grassland	>0-5°	>0-5°	>0-5°	>0-5°	>0-5°	>0-5°		>0-5°
Forest		>10-15°		>5-10°			>5-10°	>10-15°

Step 5: Determination of Bushfire Attack Level (BAL)

	North	North East	West	North West
BAL value for each quadrant	BAL-12.5	BAL-12.5	BAL-12.5	BAL-12.5

The applicable Bushfire Attack Level is: BAL-12.5



5. Required Bushfire Protection Measures

The proposed building work is required to comply with the Director’s Determination – Bushfire-Hazard Areas v1.2. Each required element of protection is discussed in this section of the report.

The required protective features have been consolidated in the Bushfire Hazard Management Plan (BHMP), which is enclosed as Appendix A.

Subject to the implementation of the BHMP, the project will comply with the applicable requirements of the Director’s Determination.

5.1. Hazard management area

A Hazard Management area must be established and maintained in accordance with the Bushfire Hazard Management Plan (Appendix A) and verified by the building surveyor before occupancy and maintained in perpetuity.

A Bushfire Hazard Management Area (BHMA) is to be established and maintained between the bushfire-prone vegetation and the building at a distance equal to, or greater than, the distance shown in the table below.

The Bushfire Hazard Management Area to achieve the determined BAL – 12.5

	North	East	South	West
Proposed hazard management area min. dimension (m)	To Boundary	16m (To Boundary)	16m (To Boundary)	38m (To Boundary)

The Bushfire Hazard Management Plan (Appendix A) has been developed from the results of a Bushfire Attack Level (BAL) Assessment Report prepared for the site in accordance with Australian Standard 3959-2018, Construction of Buildings in bushfire-prone areas.

The BHMP provides reference and information to existing and subsequent owners on their responsibilities for the establishment, maintenance, and future management of their property to reduce the risk of bushfire attack.

Director's Determination Clause 2.3.4 - Hazard Management Areas

- (1) The following building work must be provided with a hazard management area of sufficient dimensions and which provides an area around the building which separates the building from the bushfire hazard and complies with subclauses (2), (3) and (4):
 - (a) a new habitable building;
- (2) The hazard management area must comply with the requirements specified in Table 4.
- (3) The hazard management area for a particular BAL must have the minimum dimensions required for the separation distances specified for that BAL in Table 2.6 of AS 3959 (Method 1).
- (4) The hazard management area must be established and maintained such that fuels are reduced sufficiently, and other hazards are removed such that the fuels and other hazards do not significantly contribute to the bushfire attack.

Director's Determination Table 4 - Requirements for Hazard Management Area

Element		Requirement
B.	New buildings on lots not provided with a BAL at the time of subdivision.	A new building must: <ol style="list-style-type: none">(a) be provided with a HMA no smaller than the required separation distances required for BAL-29; and(b) have a HMA established in accordance with a certified bushfire hazard management plan.

HMA Guidelines

A hazard management area is the area between a habitable building or building area and the bushfire-prone vegetation, which provides access to a fire front for firefighting, which is maintained in a minimal fuel condition, and in which there are no other hazards present that will significantly contribute to the spread of a bushfire. This can be achieved through, but is not limited to, the following strategies;

- Remove fallen limbs, sticks, leaves, and bark litter;
- Maintaining grass at less than 100mm height;
- Avoid or minimise the use of flammable mulches (especially against buildings);
- Thin out under-story vegetation to provide horizontal separation between fuels;

- Prune low-hanging tree branches (<2m from the ground) to provide vertical separation between fuel layers;
- Remove and or prune larger trees to maintain horizontal separation between canopies;
- Minimise the storage of flammable materials such as firewood;
- Maintaining vegetation clearance around vehicular access;
- Use low-flammability plant species for landscaping purposes where possible;
- Clear out any accumulated leaf and other debris from roof gutters and other debris accumulation points.

Future plantings/landscaping should be planned with this in mind and be appropriately managed.

For more information, I recommend the Tasmania Fire Service Booklet “[Fire Resisting Garden Plants for the urban fringe and rural areas, 2017](#).” and also *Landscaping for Bushfire: Garden Design and Plant Selection* provides information on garden design and plant selection which can be used for new or existing gardens in high-risk bushfire areas. [Landscaping for Bushfire: Garden Design and Plant Selection](#)

- Download [Landscaping for Bushfire: Garden Design and Plant Selection \(PDF 4.1MB\)](#)

5.2. Design and construction

Director’s Determination Clause 2.3.1 Design and Construction

- (1) Building work (including additions or alterations to an existing building) in a bushfire-prone area must be designed and constructed in accordance with the relevant Deemed-to-Satisfy provisions of:
 - (b) NCC Volume 2, Part H7 for Class 1 Building and Class 10a Building or deck associated with a building to which this Division applies.

Future habitable buildings located within the specified hazard management area are to be designed and constructed to a minimum Bushfire Attack Level 12.5 (BAL-12.5). The construction requirements are set out in Sections 3 & 5 of the Australian Standard AS3959-2018 Construction of Buildings in Bushfire-Prone Areas. Section 3 covers general requirements, while Section 5 focuses on the construction details for BAL-12.5.

5.3. Property access

Driveways are to be constructed to provide vehicle access to the site to assist firefighting and emergency personnel to defend the building or evacuate occupants; and provide access at all times to the water supply for firefighting purposes on the building site.

Director's Determination Clause 2.3.2 - Property Access

- (1) The following building work must be provided with property access to the building and the firefighting water point, accessible by a carriageway, designed and constructed as specified in subclause (4) below:
 - (a) a new habitable building;

- (2) Vehicular access from a public road to a building must:
 - (a) comply with the property access requirements specified in Table 2;
 - (b) include access from a public road to a hardstand within 90 metres of the furthest part of the building as measured by a hose lay;
 - (c) include access to the hardstand area for the firefighting water point.

The existing property access is 164m long.

The following design and construction requirements apply to property access:

The proposed new habitable building must be provided with property access to the building and the firefighting water point, accessible by a carriageway, designed and constructed as specified in Table 2 – Requirements for Property Access – Elements B.

Table 2 - Requirements for Property Access

	Element	Requirement
B.	Property access length is 30 metres or greater, or access is required for a fire appliance to access a firefighting water point.	<p>The following design and construction requirements apply to property access:</p> <ul style="list-style-type: none"> (a) all-weather construction; (b) load capacity of at least 20 tonnes, including for bridges and culverts; (c) minimum carriageway width of 4 metres; (d) minimum vertical clearance of 4 metres; (e) minimum horizontal clearance of 0.5 metres from the edge of the carriageway, excluding gate posts; (f) cross falls of less than 3 degrees (1:20 or 5%); (g) dips less than 7 degrees (1:8 or 12.5%) entry and exit angle; (h) curves with a minimum inner radius of 10 metres; (i) maximum gradient of 15 degrees (1:3.5 or 28%) for sealed roads, and 10 degrees (1:5.5 or 18%) for unsealed roads; and (j) terminate with a turning area for fire appliances provided by one of the following: <ul style="list-style-type: none"> a) a turning circle with a minimum outer radius of 10 metres; b) a property access encircling the building; or c) a hammerhead “T” or “Y” turning head 4 metres wide and 8 metres long.



The width of the existing driveway gate at the driveway is 3m (10ft).



View of existing accessway into the property. To meet the requirements of Table 2, Element B, it needs to be upgraded to all-weather construction.

5.4. Firefighting water supplies

Director's Determination Clause 2.3.3 - Water Supply for Firefighting

- (a) The following building work must be provided with a water supply dedicated for firefighting purposes which complies with the requirements specified in Table 3B: *a new habitable building*

Table 3B - Requirements for Static Water Supply for Firefighting

Element		Requirement
A.	Distance between building to be protected and water supply	<p>The following requirements apply:</p> <ul style="list-style-type: none"> (a) the building to be protected must be located within 90 metres of the firefighting water point of a static water supply; and (b) the distance must be measured as a hose lay between the firefighting water point and the furthest part of the building.
B.	Static Water Supplies	<p>A static water supply:</p> <ul style="list-style-type: none"> (a) may have a remotely located offtake connected to the static water supply; (b) may be a supply for combined use (firefighting and other uses) but the specified minimum quantity of firefighting water must be available at all times; (c) must be a minimum of 10,000 litres per building including associated Class 10 Building or deck to be protected. This volume of water must not be used for any other purpose, including firefighting sprinkler or spray systems; (d) must be metal, concrete or lagged by non-combustible materials if above ground; and (e) if a tank can be located, so it is shielded in all directions in compliance with Section 3.5 of AS 3959, the tank may be constructed of any material provided that the lowest 400 mm of the tank exterior is protected by: <ul style="list-style-type: none"> (i) metal; (ii) non-combustible material; or (iii) fibre-cement a minimum of 6 mm thickness.

C.	Fittings, pipework and accessories (including stands and tank supports)	<p>Fittings and pipework associated with a firefighting water point for a static water supply must:</p> <ul style="list-style-type: none"> (a) have a minimum nominal internal diameter of 50mm; (b) be fitted with a valve with a minimum nominal internal diameter of 50mm; (c) be metal or lagged by non-combustible materials if above ground; (d) if buried, have a minimum depth of 300mm; (e) provide a DIN or NEN standard forged Storz 65 mm coupling fitted with a suction washer for connection to firefighting equipment; (f) ensure the coupling is accessible and available for connection at all times; (g) ensure the coupling is fitted with a blank cap and securing chain (minimum 220mm length); (h) ensure underground tanks have either an opening at the top of not less than 250mm diameter or a coupling compliant with this Table; and (i) where a remote offtake is installed, ensure the offtake is in a position that is: <ul style="list-style-type: none"> (i) visible; (ii) accessible to allow connection by firefighting equipment; (iii) at a working height of 450mm – 600mm above ground level; and (iv) protected from possible damage, including damage by vehicles.
D.	Signage for static water connections	<p>The firefighting water point for a static water supply must be identified by a sign permanently fixed to the exterior of the assembly in a visible location. The sign must:</p> <ul style="list-style-type: none"> (a) comply with water tank signage requirements within AS 2304; or (b) comply with the Tasmania Fire Service Water Supply Signage Guideline published by the Tasmania Fire Service.
E.	Hardstand	<p>A hardstand area for fire appliances must be provided:</p> <ul style="list-style-type: none"> (a) no more than three metres from the firefighting water point measured as a hose lay (including the minimum water level in dams, swimming pools and the like); (b) no closer than six metres from the building to be protected; (c) with a minimum width of three metres and a minimum length of six metres constructed to the same standard as the carriageway; and (d) connected to the property access by a carriageway equivalent to the standard of the property access.

There is no existing firefighting water supply to protect the proposed Class 1a Building.

The new dwelling is to be supplied with a compliant water supply tank of at least 10,000 litres, with a fitting compliant with the requirements of Table 3B above.

Compliance with Table 3B - Requirements for Static Water Supply for Firefighting is to be verified by a building surveyor.

5.5. Emergency planning

As per the Director's Determination, a Class 1a building is not required to have a Bushfire Emergency Plan. Should the class of building change, such as to a Class 1b for a visitor's accommodation, a Bushfire Emergency Plan would be required.

6. Additional Bushfire Protection Measures

I also recommend that the client prepare a 5 Minute Bushfire Plan and refer to the TFS website for more information. Additionally, they should download a copy of the [Bushfire Safety Guide PDF](#).

Additional bushfire protection measures may include preparing your property by clearing gutters and vegetation, building a defensible space around your home by including a non-combustible path around the building and strategic landscaping.

7. Conclusion

Direction	Deemed to satisfy requirements (Elements)	Requirement & Compliance
2.3.1	Construction requirements	<p>The construction requirements are set out in Sections 3 & 5 of the Australian Standard AS3959-2018 Construction of Buildings in Bushfire-Prone Areas for Bushfire Attack Level 12.5 (BAL-12.5). Section 3 covers general requirements, while Section 5 focuses on the construction details for BAL-12.5</p> <p>The BHMP specifies construction to BAL-12.5 standards of AS3959-2018.</p> <p>If the proposed building is designed and constructed in accordance with BAL-12.5 construction standards, the development will comply with clause 2.3.1.</p> <p>To be determined by a building surveyor</p>
2.3.2	Property Access Table 2, Element B	<p>A new habitable building must be provided with property access to the building and the firefighting water point, accessible by a carriageway, designed and constructed as specified below:</p> <p>The following design and construction requirements apply to property access:</p> <ol style="list-style-type: none"> 1) all-weather construction; 2) load capacity of at least 20 tonnes, including for bridges and culverts; 3) minimum carriageway width of 4 metres; 4) minimum vertical clearance of 4 metres; 5) minimum horizontal clearance of 0.5 metres from the edge of the carriageway, excluding gate posts; 6) cross falls of less than 3 degrees (1:20 or 5%); 7) dips less than 7 degrees (1:8 or 12.5%) entry and exit angle; 8) curves with a minimum inner radius of 10 metres; 9) maximum gradient of 15 degrees (1:3.5 or 28%) for sealed roads, and 10 degrees (1:5.5 or 18%) for unsealed roads; and 10) terminate with a turning area for fire appliances provided by one of the following: <ol style="list-style-type: none"> (i) a turning circle with a minimum outer radius of 10 metres; (ii) a property access encircling the building; or (iii) a hammerhead “T” or “Y” turning head 4 metres wide and 8 metres long. <p>Design and construction requirements are specified within this report and are required for compliance on the BHMP.</p>

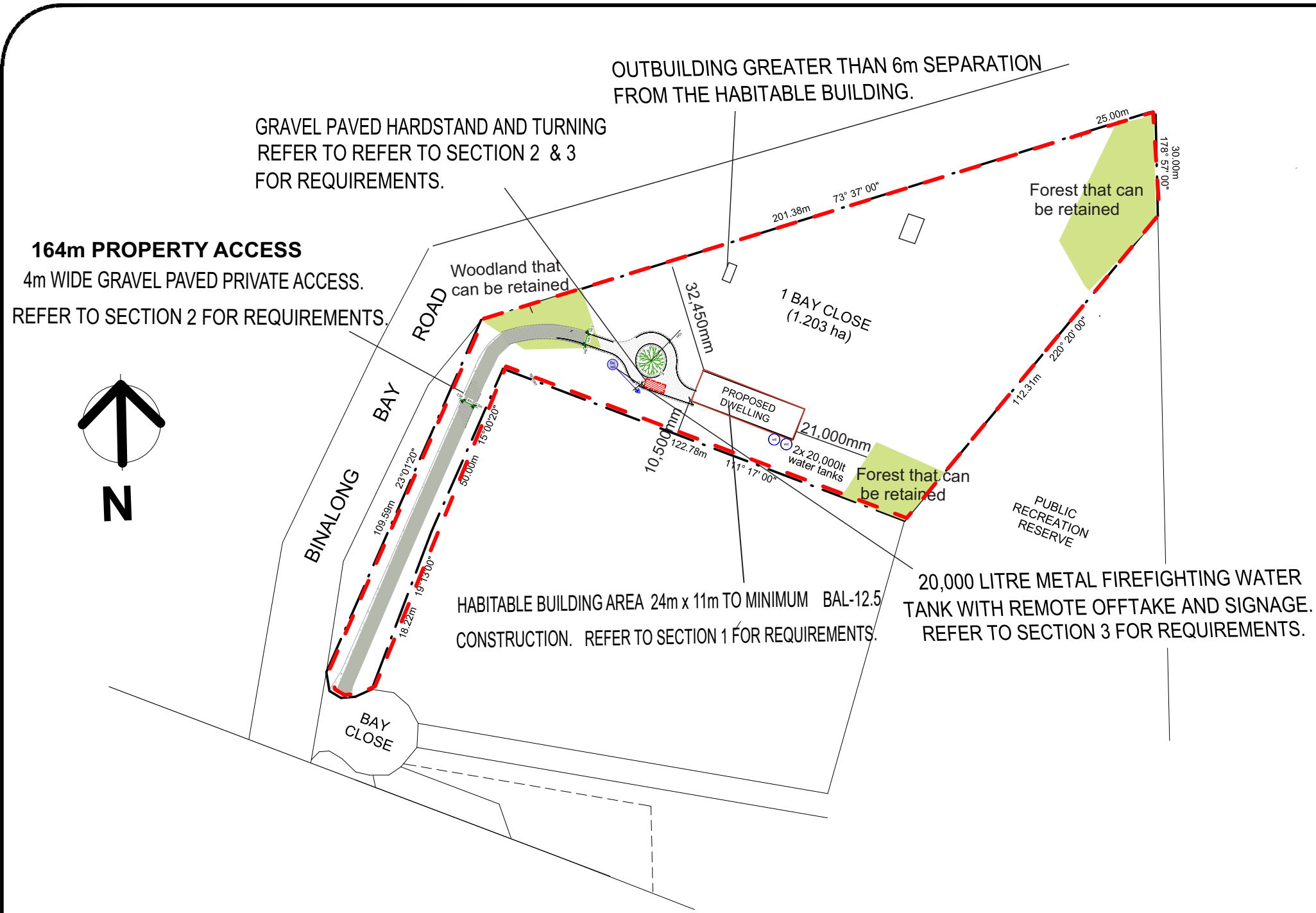
		<p>If the property access is designed and constructed in accordance with the requirements of section 5.3 of this report, the proposal will comply with clause 2.3.2.</p>
2.3.3	<p>Static Water supply for firefighting Table 3B</p>	<p>Required – There is no existing firefighting water supply to protect the proposed Class 1a Building.</p> <p>The new dwelling is to be supplied with a compliant water supply tank of at least 10,000 litres, with a fitting suitable for TFS access.</p> <p>Static water supplies consistent with Table 3B have been specified in this report and are required for compliance on the BHMP.</p> <p>If the requirements of section 5.4 of this report are implemented, the proposal will comply with clause 2.3.3.</p>
2.3.4	<p>Hazard management areas Table 4</p>	<p>Subject to the hazard management area being established and maintained in accordance with the certified bushfire hazard management plan (Refer to Appendix A) HMA's are shown on the BHMP and are specified to the minimum widths required to achieve BAL-12.5 for the site.</p> <p>This report and the BHMP specify requirements for hazard management areas.</p> <p>If the HMA's are established in accordance with the BHMP the proposal will comply with clause 2.3.4</p>

2.3.5	Bushfire Emergency Plan Table 5	<p>(1) In a bushfire prone area, a bushfire emergency plan must be prepared for:</p> <p>(a) a new building;</p> <p>(b) an existing building in the case of an addition or alteration to a building;</p> <p>(c) an existing building in the case of a change of building class;</p> <p>(d) a building associated with the use, handling, generation or storage of a hazardous chemical or explosive;</p> <p>(i) clause (1) does not apply to following:</p> <p>(a) Class 1a Buildings;</p> <p>(b) Class 10a Buildings; or</p> <p>(c) decks associated with another class of building.</p> <p>The proposal is for a class 1a building; in this circumstance, there is no requirement for Emergency Plans to achieve compliance with the Determination.</p>
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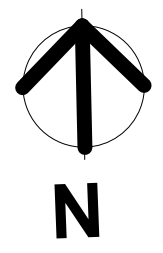
6. References

- AS 3959:2018 Construction of buildings in bushfire prone areas, : Standards Australia Limited 2018.
- Director's Determination - Bushfire Hazard Areas - 2024 v1.2, 16th July 2024.
- Aerial photos, LISTmap, Tasmania, <https://maps.thelist.tas.gov.au>

Appendix A



164m PROPERTY ACCESS
4m WIDE GRAVEL PAVED PRIVATE ACCESS.
REFER TO SECTION 2 FOR REQUIREMENTS.



GRAVEL PAVED HARDSTAND AND TURNING REFER TO SECTION 2 & 3 FOR REQUIREMENTS.

OUTBUILDING GREATER THAN 6m SEPARATION FROM THE HABITABLE BUILDING.

HABITABLE BUILDING AREA 24m x 11m TO MINIMUM BAL-12.5 CONSTRUCTION. REFER TO SECTION 1 FOR REQUIREMENTS.

20,000 LITRE METAL FIREFIGHTING WATER TANK WITH REMOTE OFFTAKE AND SIGNAGE. REFER TO SECTION 3 FOR REQUIREMENTS.

BAL 12.5 REQUIRES SEPARATION DISTANCE FROM PROPOSED HABITABLE BUILDING AREA TO BUSHFIRE-PRONE VEGETATION MUST BE TO THE BOUNDARY

BUSHFIRE HAZARD MANAGEMENT PLAN BAL-12.5

NOMINAL SCALE A3 @ 1:1000

- GENERAL**
- PLAN TO BE READ IN CONJUNCTION WITH BUSHFIRE HAZARD REPORT v1.3 - 30/12/2025 REF: PC - 7560027
 - ENSURE THAT ALL RELEVANT CONSULTANTS AND CONTRACTORS PROVIDED WITH A FULL COPY OF THIS PLAN AND SUPPORTING REPORT.

SCHEDULE OF REQUIREMENTS

- BUILDING DESIGN & CONSTRUCTION**
 - SPECIFIED SEPARATION DISTANCES SHOWN ON THIS PLAN PROVIDE FOR A BAL-12.5 SOLUTION.
 - CLASS 1A DWELLING WITHIN THE HABITABLE BUILDING AREA TO BE DESIGNED AND CONSTRUCTED TO COMPLY WITH AS 3959:2018 - SECTION 3 FOR GENERAL REQUIREMENTS AND SECTION 5 FOR BAL-12.5 REQUIREMENTS. HIGHER LEVELS OF CONSTRUCTION ARE ACCEPTABLE.
 - NO SPECIFIC CONSTRUCTION REQUIREMENTS FOR OUTBUILDINGS FIRE SEPARATED FROM THE HABITABLE BUILDINGS IN ACCORDANCE WITH AS 3959 CLAUSE 3.2 OR WITH GREATER THAN 6m SEPARATION FROM THE HABITABLE BUILDINGS.
- PROPERTY ACCESS**
 - CONSTRUCT ALL WEATHER PROPERTY ACCESS WITH 4m WIDE CARRIAGEWAY FROM THE PUBLIC ROAD TO WITHIN <90m OF THE FURTHEST PART OF THE HABITABLE BUILDING MEASURED AS A HOSELAY AND TO THE HARDSTAND LOCATED WITHIN <3m OF THE WATER CONNECTION POINT.
 - LOAD CAPACITY GREATER THAN 20 TONNES (INC. BRIDGES AND CULVERTS), CROSS FALL LESS THAN 3°, DIPS LESS THAN 7°, CURVES MIN. 10m INNER RADIUS, 10° MAX. GRADIENT FOR UNSEALED ROADS AND 15° MAX. GRADIENT FOR SEALED ROADS.
 - TERMINATE IN A TURNING CIRCLE WITH A 10m MIN. OUTER RADIUS OR 4m WIDE PROPERTY ACCESS ENCIRCLING THE BUILDING + 0.5m HORIZONTAL CLEARANCE FROM THE EDGE OF THE CARRIAGEWAY OR IN
 - KEEP CLEAR OF VEGETATION AND OTHER OBSTRUCTIONS 0.5m EITHER SIDE AND 4m ABOVE CARRIAGEWAY.
- STATIC WATER SUPPLY FOR FIREFIGHTING**
 - INSTALL METAL OR CONCRETE FIREFIGHTING WATER TANK WITH A MINIMUM OF 10,000 LITRES STORED WATER DEDICATED TO FIREFIGHTING PURPOSE FITTED WITH A COMPLIANT STORZ WATER CONNECTION POINT LOCATED WITHIN <90m OF FURTHEST ELEMENT OF THE HABITABLE BUILDING, MEASURED AS A HOSE LAY, & ACCESSIBLE WITHIN <3m OF THE HARDSTAND. MAY HAVE REMOTE OFFTAKE CONNECTED TO THE STATIC WATER SUPPLY.
 - IDENTIFY THE FIREFIGHTING WATER POINT WITH PERMANENTLY FIXED COMPLIANT SIGNAGE COMPLYING WITH TFS GUIDELINES. KEEP CLEAR OF VEGETATION IMMEDIATELY ABOVE & AROUND THE CONNECTION POINT.
 - CONSTRUCT HARDSTAND AREA FOR FIRE APPLIANCE ACCESS TO THE FIREFIGHTING WATER POINT. MINIMUM 3m WIDE, CONSTRUCTED TO THE SAME STANDARD AS THE PROPERTY ACCESS AND LOCATED <3m FROM THE FIREFIGHTING WATER POINT AND >6m FROM THE BUILDING TO BE PROTECTED.
- HAZARD MANAGEMENT AREA**
 - ESTABLISH HAZARD MANAGEMENT AREA AS DIMENSIONED ON THIS PLAN.
 - MAINTAIN IN A MINIMAL FUEL CONDITION IN PERPETUITY, ENSURING FUELS ARE REDUCED SUFFICIENTLY AND OTHER HAZARDS ARE REMOVED SUCH THAT THE FUELS & OTHER HAZARDS DO NOT SIGNIFICANTLY CONTRIBUTE TO THE BUSHFIRE ATTACK.
 - LIMITED AMOUNTS OF LOW FLAMMABILITY PLANTS ARE ACCEPTABLE WITHIN THE HMA; INCLUDING MAINTAINED LAWN, LOW GROWING PLANTS & GROUND COVERS, LOW FLAMMABILITY ORNAMENTAL GARDENS, VEGETABLE GARDENS AND THE LIKE.
 - DO NOT PLANT ADJACENT TO WALLS & DECKS OR DIRECTLY UNDER GLAZED ELEMENTS.
 - REGULARLY REMOVE GROUND FUELS SUCH AS FALLEN BRANCHES, STICKS, LEAVES, BARK, LAWN CLIPPINGS ETC.
 - MAINTAIN LAWN TO A HEIGHT LESS THAN 100mm.
 - DO NOT USE PINE BARK AND OTHER FLAMMABLE MULCH.
 - THIN-OUT UNDERSTORY VEGETATION AND PRUNE LOW-HANGING TREE BRANCHES.
 - PRUNE TREES TO MAINTAIN HORIZONTAL SEPARATION BETWEEN CANOPIES.
 - SELECTIVELY POSITION TREES AND SHRUBS TO CREATE DISCONTINUOUS ROWS AND CLUMPS.
 - MINIMISE STORAGE OF FLAMMABLE MATERIALS SUCH AS FIREWOOD AND BUILDING MATERIALS.
 - CLEAR ACCUMULATED LEAVES AND OTHER DEBRIS FROM ROOF GUTTERS.
 - SLASH SURROUNDING PASTURE PERIODICALLY TO PREVENT PASTURE FROM BECOMING WOODY WEED INFESTED OR REGENERATING TO BUSHLAND.

LEGEND

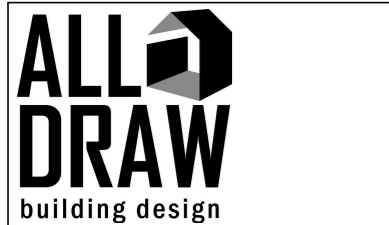
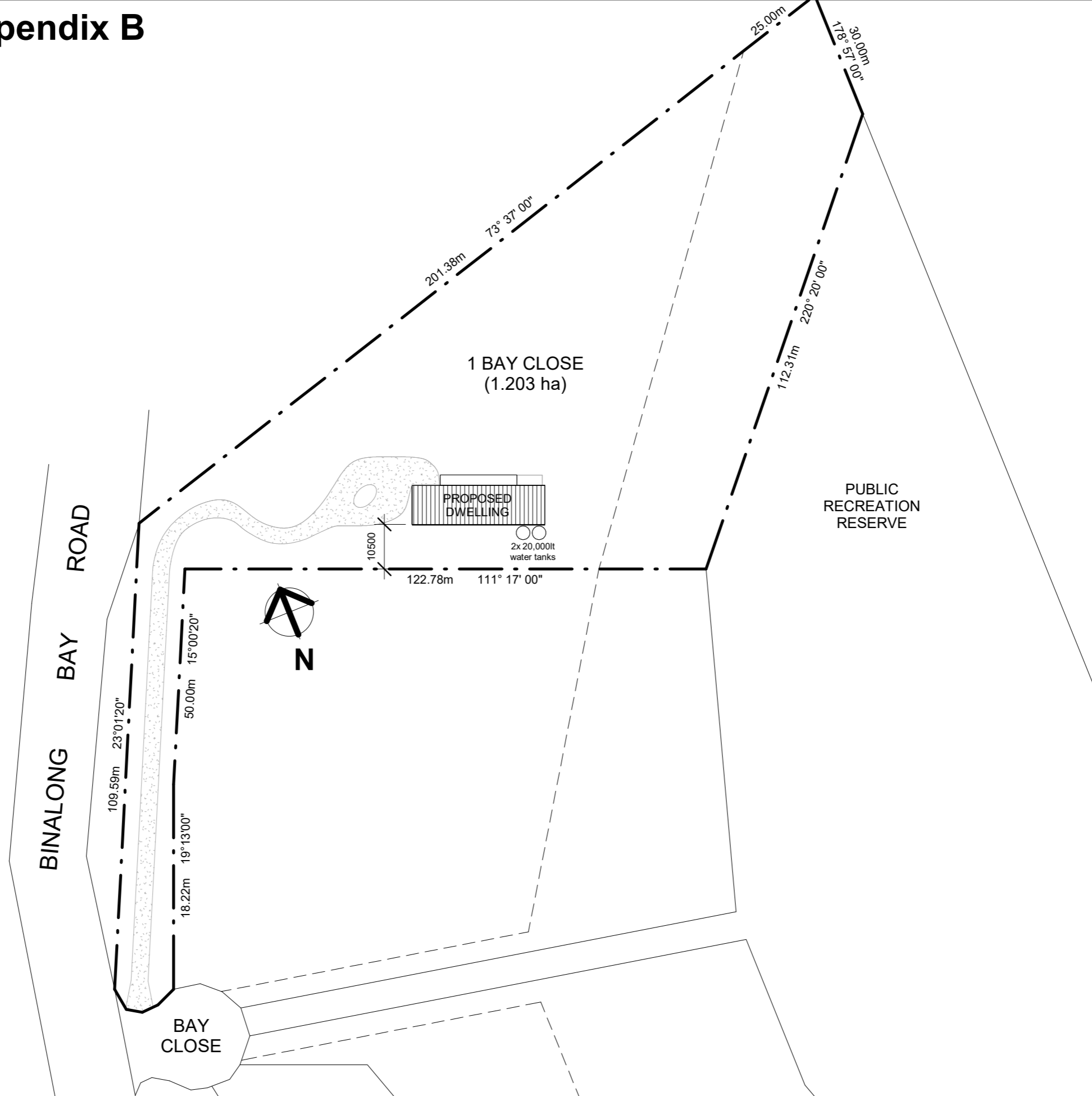
- HAZARD MANAGEMENT AREA
- FIREFIGHTING WATER SUPPLY
- DOMESTIC WATER SUPPLY
- HARDSTAND - 3m x 6m
- TURNING AREA - 4m x 8m TURNING HEADS
- HABITABLE BUILDING AREA

BALTAS
 Tod Thomas
 11 Groves St
 Gladstone, TAS 7264
 0415649708
 admin@baltas.com.au

CLIENT
 Pete Chaplin
 1 Bay Close,
 St Helens, Tas 7216
 PID: 7560027
 Title Reference 38962/1

PROJECT	PC - 7560027	SHEET	1
DATE	30th December 2025		
SCALE	AS NOTED		

Appendix B



P: 0421 745 095
 E: info@alldraw.com.au
 I: www.alldraw.com.au
 Licence # 911670743

No.	Description	Date

Proposed Dwelling

1 Bay Close, St. Helens

SITE PLAN		01
Project number	1416	
Date	28/11/2025	
Drawn by	JK	
Checked by	PC	
Scale 1 : 1000		

CERTIFICATE OF QUALIFIED PERSON – ASSESSABLE ITEM

Section 321

To: Owner /Agent
 Address
 Suburb/postcode

Form **55**

Qualified person details:

Qualified person:
Address:
 Phone No:
 Fax No:
Licence No: Email address:

Qualifications and Insurance details: (description from Column 3 of the Director's Determination - Certificates by Qualified Persons for Assessable Items)

Speciality area of expertise: (description from Column 4 of the Director's Determination - Certificates by Qualified Persons for Assessable Items)

Details of work:

Address: Lot No:
 Certificate of title No:
The assessable item related to this certificate: (description of the assessable item being certified)
Assessable item includes –

- a material;
- a design
- a form of construction
- a document
- testing of a component, building system or plumbing system
- an inspection, or assessment, performed

Certificate details:

Certificate type: (description from Column 1 of Schedule 1 of the Director's Determination - Certificates by Qualified Persons for Assessable Items n)

This certificate is in relation to the above assessable items, at any stage, as part of – (tick one)

building work, plumbing work or plumbing installation or demolition work

OR

a building, temporary structure or plumbing installation

In issuing this certificate the following matters are relevant –

Documents:

Bushfire Hazard Management Plan - 1 Bay Close, St Helens v1.3 by Tod Thomas - dated 30 December 2025
Bushfire Hazard Report - 1 Bay Close, St Helens v1.3 by Tod Thomas - dated 30 December 2025

Relevant

AS 3959:2018 - Method 1 BAL assessment

References:

N/A

Substance of Certificate: (what it is that is being certified)

1. The proposed building work - if designed and implemented in accordance with the bushfire hazard management plan referred to in this certificate – will comply with the deemed-to-satisfy requirements of the *Director's Determination – Bushfire Hazard Areas v1.2*.
2. The applicable Bushfire Attack Level (BAL) determined using AS 3959:2018 for design and construction is **BAL-12.5**.

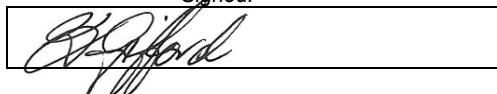
Scope and/or Limitations

1. The scope of this certification is limited to compliance with the requirements of the *Director's Determination – Bushfire Hazard Areas v1.2*
2. The effectiveness of the measures prescribed in the bushfire hazard management plan and supporting report are dependent on their correct implementation and maintenance for the life of the development.
3. No guarantee that the building work will survive every bushfire event.
4. This certificate has been provided on the understanding that the bushfire hazard assessment only deals with bushfire risk and all other statutory requirements are outside the scope of this certificate.
5. No action or reliance is to be placed on this certificate or report other than for which it was commissioned.
6. This certification may only be used for compliance purposes for 6 years from the date of certification.

I certify the matters described in this certificate.

Qualified person:

Signed:



Certificate No:

TFS-V1

Date:

09/01/2026

Hobart

Lower Ground, 199 Macquarie Street
Hobart, Tasmania 7000
PO Box 1248, Hobart, TAS 7001

Launceston

22-24 Paterson Street
Launceston, Tasmania 7250
PO Box 1898, Launceston TAS 7250

Devonport

33-35 Steele Street
Devonport, Tasmania 7310
PO Box 1898, Launceston TAS 7250

04/06/2026

Peter Chaplin
petechaplin@bigpond.com

Dear Peter,

Re: 1 Bay Close, St Helens – Council RFI

Thank you for your correspondence regarding the proposed works at 1 Bay Close, St Helens with respect to the Flood-Prone Areas Hazard overlay. This letter addresses the nature of flooding at the site based on the available data in relation to the Break O'Day Council (BODC) and the Tasmanian Planning Scheme (TPS) Flood-Prone Areas Hazard Code.

The proposed works situated on 1 Bay Close, St Helens, Tasmania (the subject site) include a new dwelling and resurfaced driveway access. This property (title reference 38962/1) contains extents of the BODC flood overlay and SES statewide 1% Annual Exceedance Probability (AEP) climate change flood extent, indicating that portions of the site are potentially subject to flooding. The site location is presented in **Figure 1**.

The subject site borders a major local thoroughfare and state-controlled Binalong Bay Road, with an overland flow catchment of 0.45 km² draining from the adjacent hills. The site itself has an area of 1.2 ha. Site elevations vary from approximately 0.6 – 6 m AHD. The site predominantly slopes down from the high point adjacent to Binalong Bay Road down to the estuary of Moulting Bay at a gradient of approximately 2 – 3 %. Refer to **Figure 2** for the site catchment and key local surface water features.

BODC have provided council-owned flood mapping data for the site surrounds for the purpose of this assessment. These data were produced in Water Technology's 2025 *Break O'Day Flood Mapping Climate Change Updates*, a study which updated previous 2019 flood modelling for BODC catchments to include Australian Rainfall & Runoff (ARR) V4.2 updated climate change guidelines. Following sensitivity analyses of various climate change scenarios, the study ultimately utilised the year 2100 Shared Socioeconomic Pathway (SSP) 3–7.0 climate change scenario to include climate change rainfall increases into BODC regional flood mapping. Peak year 2100, 1% AEP SSP3-7.0 flood depths for the subject site catchment are presented in **Figure 3** and peak velocity in **Figure 4**.



Figure 1: Subject Site Location

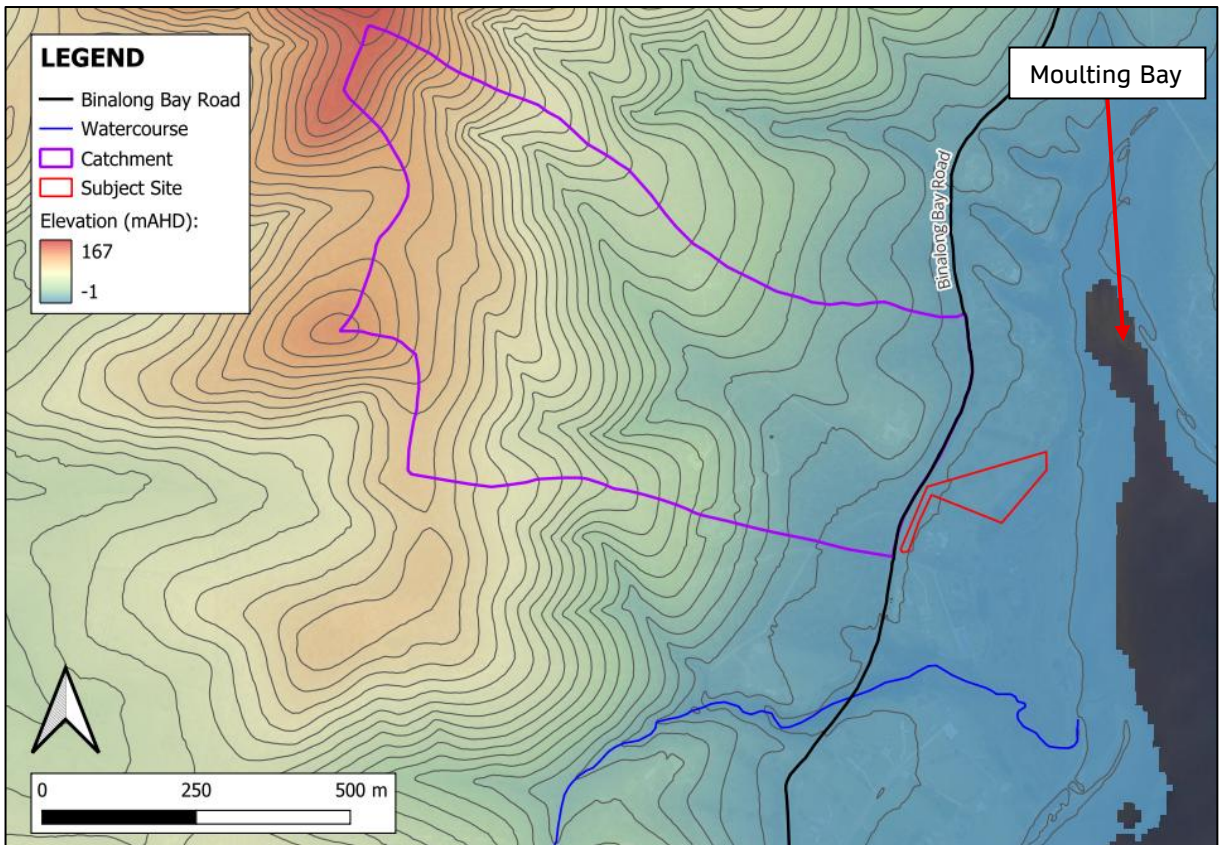


Figure 2: Local Catchment Upstream of the Subject Site and Binalong Bay Road

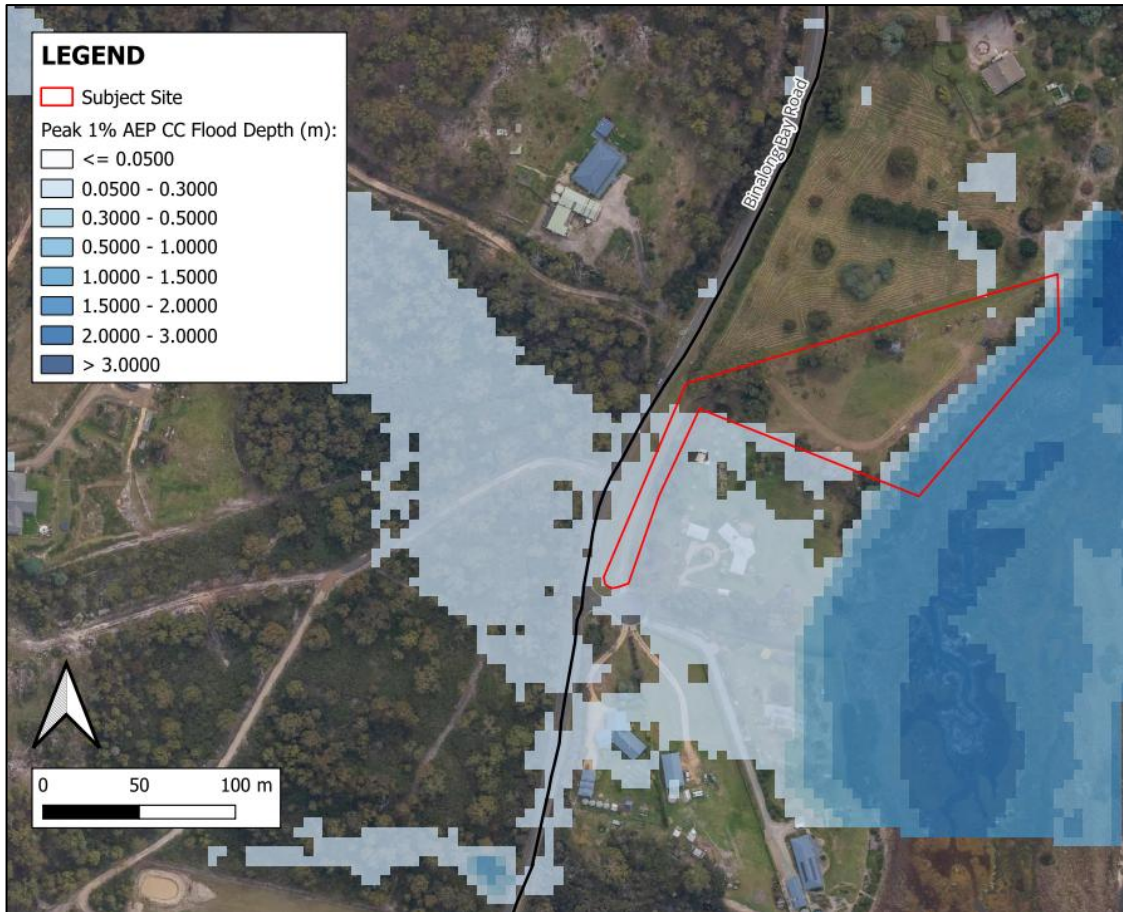


Figure 3: Peak SSP3-7.0, 1% AEP Climate Change Flood Depth for the Year 2100

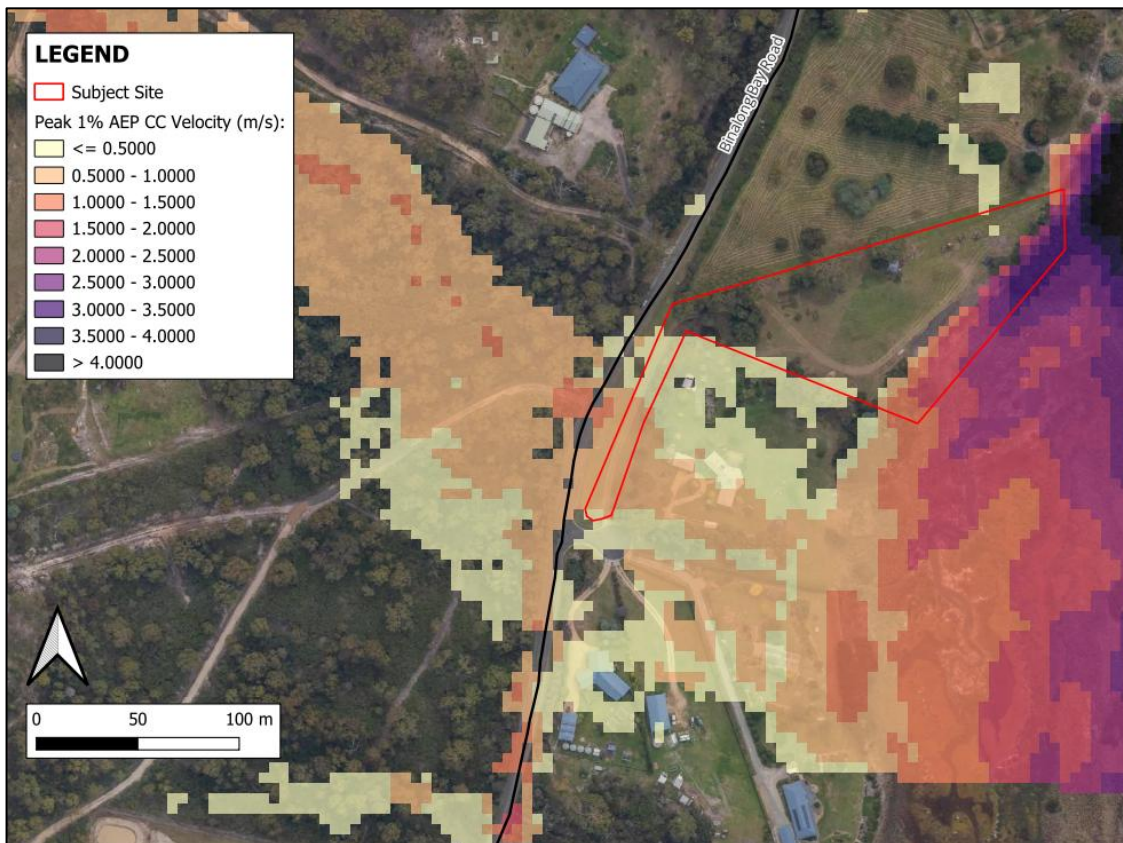


Figure 4: Peak SSP3-7.0, 1% AEP Climate Change Flow Velocity for the Year 2100

Flood hazard based on peak depth and velocity combination thresholds adopted as part of the Australian Institute for Disaster Resilience (AIDR)'s *Technical Flood Risk Management Guideline: Flood Hazard* are used in this assessment. The AIDR flood hazard categories and depth – velocity thresholds are presented in **Figure 5**. Peak year 2100, 1% AEP SSP3-7.0 AIDR flood hazard for the site catchment is presented in **Figure 6**.

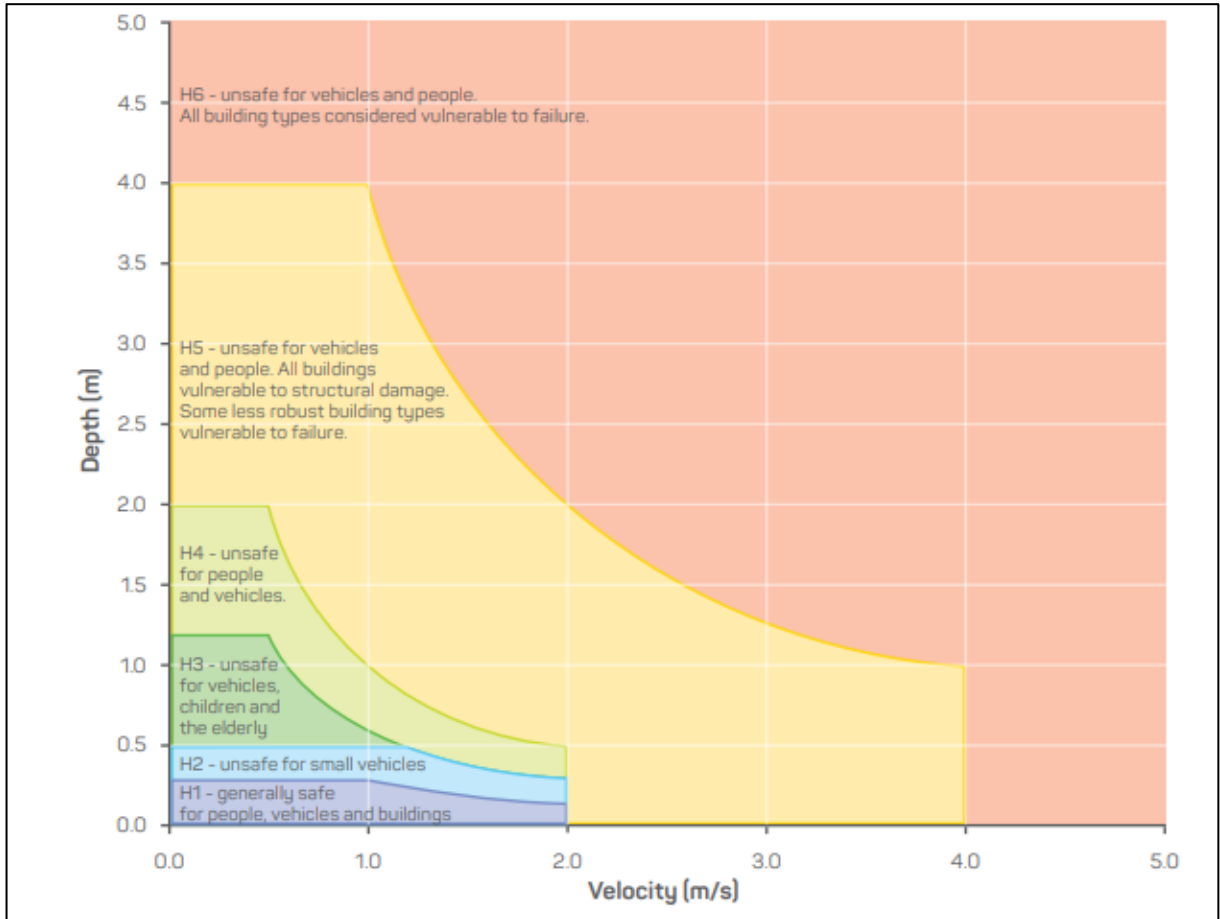


Figure 5: AIDR Flood Hazard Classification Depth and Velocity Thresholds (source: Australian Disaster Resilience Handbook Collection: Guideline 7-3, AIDR 2017)

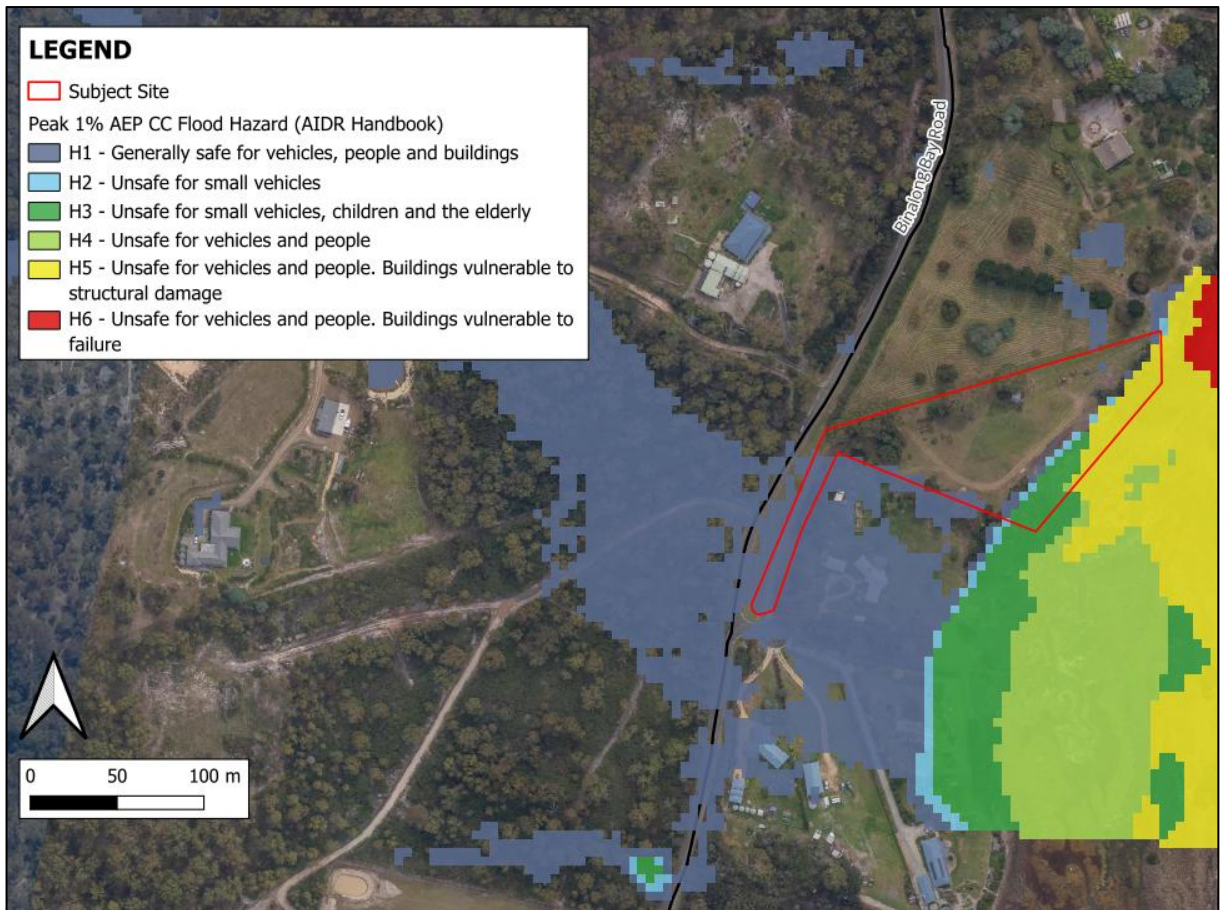


Figure 6: Peak SSP3-7.0, 1% AEP Climate Change Flood Hazard for the Year 2100

Generally, the results indicate that in the 1% AEP SSP3-7.0 year 2100 flood event, overland flows from the local catchment overtop Binalong Bay Road from the west, continuing over the access driveway of the subject site and adjacent properties. The lowest elevation areas of the site (on the eastern boundary) are subject to flooding of the Moulting Bay Estuary. In the central portion of the site, an area of approximately 0.7 ha is outside the flood extent. Some ponding occurs near the north-eastern corner of the site. Site flood behaviour based on the 1% AEP SSP3-7.0 year 2100 flood event is presented in **Figure 7**.

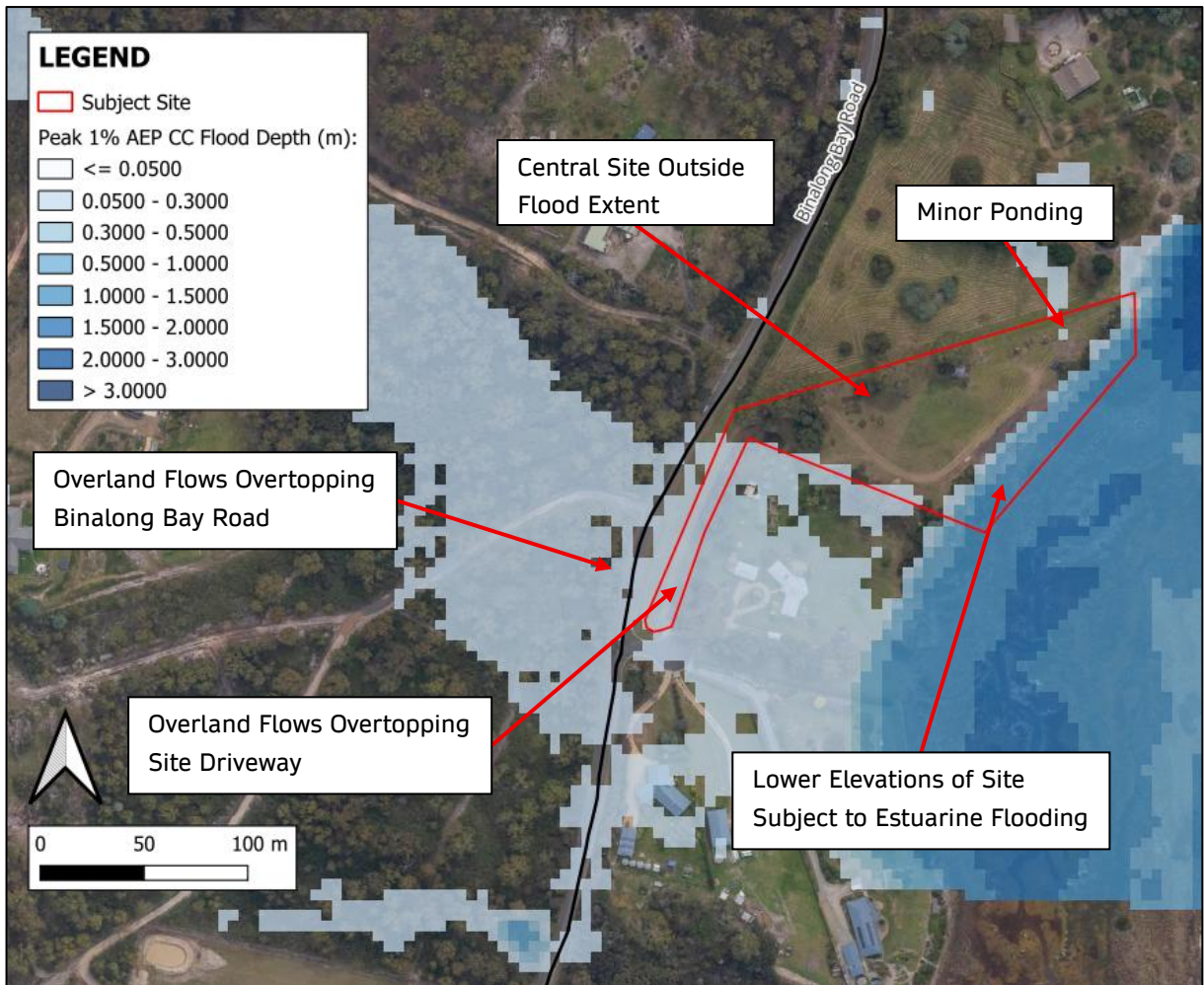


Figure 7: SSP3-7.0, 1% AEP Climate Change Flood Behaviour in the Site Vicinity

A summary of peak 1% AEP flood depth, velocity and hazard experienced for the SSP3-7.0 year 2100 climate change scenario at key locations in/around the subject site are presented in **Table 1**.

Table 1: Peak 1% AEP Climate Change Depths and Velocities at Key Locations in the Site Vicinity

LOCATION	PEAK FLOOD DEPTH (m)	PEAK VELOCITY (m/s)	PEAK AIDR FLOOD HAZARD
Site Access Driveway Extent	0.15	0.86	H1 – Generally safe for vehicles, people, and buildings
Binalong Bay Road (Maximum at Any Point Along Extents of Overland Flow Crossing)	0.22	1.69	H1 – Generally safe for vehicles, people, and buildings
Lower Elevations of the Site, within Moulting Estuary	1.36	3.41	H5 – Unsafe for vehicles and people. Buildings vulnerable to structural damage

To address section C12.0: Flood-Prone Areas Hazard Code of the TPS State Planning Provisions, an assessment is required to inform the following codes:

C12.1.1 - To ensure that use or development subject to risk from flood is appropriately located and managed, so that:

- (a) people, property and infrastructure are not exposed to an unacceptable level of risk
- (b) future costs associated with options for adaptation, protection, retreat or abandonment of property and infrastructure are minimised; and
- (c) it does not increase the risk from flood to other land or public infrastructure.

C12.2 – To preclude development on land that will unreasonably affect flood flow or be affected by permanent or periodic flood.

C12.6.1 – Buildings and Works within a Flood-Prone Area - That:

- (a) Buildings and works within a flood-prone area can achieve and maintain a tolerable risk from flood; and
- (b) Buildings and works do not increase the risk from flood to adjacent land and public infrastructure.

A key, notable definition relevant to section C12 of the TPS State Planning Provisions is “tolerable risk” which is defined in Section 3.1: Planning Terms and Definitions as the following:

The lowest level of likely risk from the relevant hazard:

- (a) To secure the benefits of a use or development in a relevant hazard area; and
- (b) Which can be managed through:
 - (i) Routine regulatory measures; or
 - (ii) By specific hazard management measures for the intended life of each use or development.

Flood risk is associated with a combined assessment of probability and consequence of flood exposure. Specifically, the *Australian Disaster Resilience Handbook Collection* detail flood risk as the combined consideration of human interaction with flooding and the associated exposure to flood hazard (Guideline 7-3, AIDR, Section 1). Thus, in consideration of flood risk and tolerable risk as per the TPS, the following items must be specified:

- Potential usage of the development;
- Benefits of the development/use of the development;
- Exposure to flood hazard of people using the development;
- Potential increase in exposure to flood hazard of people in neighbouring properties;
- Consequence of any exposure to flood hazard;
- Consideration of probability/likelihood of flood exposure.

Additionally, the author has been requested to assess risk of reduced emergency access due to broader flood inundation of the road network external to the site based on correspondence with BODC. It is assumed for this assessment that the proposed dwelling is to be located in the area of the site outside the 1% AEP climate change flood extent as specified in **Figure 7**. As per the TPS State Planning Provisions, the probability assigned to the flood behaviour detailed in this assessment is a 1% probability of exceedance in the year 2100, specifically for the SSP3-7.0 climate change scenario. Determination of the above items is presented in **Table 2**.

Table 2: Key Definitions of Site Flood Risk Considerations and Constraints

Risk Item/Constraint	Definition for the Site
Potential use of the development	Residential dwelling to be constructed on the site.
Benefits of the use	Housing provisions and shelter on the property. Additional housing stock in regional Tasmania.
Potential level of exposure of development users to flood hazard.	<p>Users remain inside the dwelling or within the flood-free area of the site during the 1% AEP CC flood event (no exposure).</p> <p>Crossing overland flow when entering or exiting the property along the driveway access during an overland flow event.</p> <p>Driving on Binalong Bay Road through overtopping flood waters during an overland flow event whilst entering/exiting the site.</p> <p>Entering the low-lying estuarine areas of the site during a riverine/estuarine flood event.</p> <p>Reduced emergency access to site due to broader inundation of road network.</p>
Potential increase in exposure to flood hazard by users of adjacent properties due to the development	<p>Vehicles or debris swept from the access driveway of the site onto downstream properties.</p> <p>Change in flood hydraulics of the overland flow path which would worsen flooding on neighbouring properties.</p>
Consequence of flood exposure.	<p>Zero consequence if users remain inside the dwelling or within the flood-free area of the site during the 1% AEP CC flood event.</p> <p>Vehicular or pedestrian exposure to shallow overland flow on driveway, specifically H1 hazard class (Generally safe for vehicles, people, and buildings).</p> <p>Vehicular or pedestrian exposure to shallow overland flow on Binalong Bay Road, specifically H1 hazard class (Generally safe for vehicles, people, and buildings).</p> <p>Pedestrian exposure to deep, fast-flowing estuarine flood waters on the lower section of the property, specifically H5 (Unsafe for vehicles and people. Buildings vulnerable to structural damage).</p> <p>Additional residence on road network isolated from emergency services due to external road network flooding.</p>

Having established key risk considerations and constraints relevant to the site and 1% AEP climate change flood behaviour, a risk assessment of potential hazard exposures and interactions resulting from the development has been completed and presented in **Table 3** along with relevant treatment/adaption measures to secure the benefit of the development use.

Table 3: Risk Assessment and Treatment/Adaption Measures

Potential Hazard Exposure/Interaction	Risk Assessment	Treatment/Adaption Measures to Secure Benefit of Use
Crossing overland flow along site access driveway	LOW – crossing the driveway presents exposure to a maximum of class H1 flood hazard (generally safe for vehicles, people, and buildings). Emergency ingress/egress to site from Binalong Bay Road is trafficable if required. Users of the dwelling are likely to stay indoors during intense rainfall. Shelter in-place is available on the site and residence not subject to flooding.	None required. Proposed residence is outside the flood extent. Driveway access/egress is trafficable if required.
Crossing overland flow along Binalong Bay Road to access the site	LOW – traversing Binalong Bay Road in the vicinity of the site presents exposure to a maximum of class H1 flood hazard (generally safe for vehicles, people, and buildings). Emergency access/egress to site from Binalong Bay Road is trafficable if required.	None required. Site access is trafficable along Binalong Bay Road.
Users entering the estuary during a riverine/estuarine flood event	LOW – Primary residence and immediate surrounds are outside of the estuarine flood extent. Site access unaffected by estuarine flooding. Reasonable behaviour of development users is unlikely to result in entering estuarine flood waters during a 1% AEP flood event.	Not building the proposed residence within the extent of estuarine flooding (which is in line with proposed development).
Vehicles or debris getting washed downstream onto neighbouring properties	LOW – the driveway experiences a maximum of class H1 flood hazard (generally safe for vehicles, people, and buildings). Flow velocities and depths are not sufficiently high to destabilise vehicles or introduce significant erosion potential.	None required.
Altered flood hydraulics increasing flood hazard exposure to downstream properties	LOW – no changes to vertical alignment of driveway or land cover are proposed. No buildings proposed within flow paths.	None required.
Reduced emergency access during regional flooding of the external road network	LOW – immediate site vicinity is trafficable in the 1% AEP CC flood event if required. The proposed residence is outside of the flood extent thus shelter in-place is safe/available with no flood evacuation required. Likelihood of emergency medical assistance for one single residence coinciding with large-scale inundation elsewhere in the road network is low. Acute medical care utilising aerial transport for regional patients is currently practised in Tasmania regardless of road network inundation. Incremental access risk to total external road network due to a single new dwelling is negligible.	None required.

Based on these findings, Verto provides the following classification for the site in terms of the TPS State Planning Provisions Flood-Prone Areas Hazard Code P1.2:

C12.5.1 Uses within a flood-prone hazard area

Objective: That a habitable building can achieve and maintain a tolerable risk from flood

Performance Criteria P1.2	Verto Response
a) Any increase in the level of risk from flood does not require any specific hazard reduction or protection measures	There is no significant increase in flood risk. Access risks to the site are low. The proposed dwelling location is outside of the flood extent. The site meets the definition of tolerable risk such that the benefits of the use are secured without the need for major or ongoing mitigation measures.
b) The use can achieve and maintain a tolerable risk from a 1% annual exceedance probability flood event for the intended lifetime of the use without requiring any flood protection measures	<p>The modelling results are based on the 1% AEP climate change storm, specifically the year 2100 SSP3-7.0 scenario, of which the risk assessment has used and deduced that access and safety risks are low. This covers potential future climate rainfall increases for 74 years from the date of this report – which is in excess of the typical residential building design life durations specified as 50 years in the National Construction Code (NCC).</p> <p>The site meets the definition of tolerable risk from flooding for the intended lifetime of the use.</p>

To summarise, the proposed works at 1 Bay Close St Helens are not subject to intolerable flood risk and perform adequately in regard to the TPS C12.0 Flood-Prone Areas Hazard Code of the State Planning Provisions. The risk to the site due to periodic flooding is minimal. For any queries please contact me at ebeswick@vertotas.com.au.

Yours sincerely,



Elliott Beswick
Civil Engineer

GEOTECH 25-018

ROCK SOLID GEOTECHNICS PTY LTD

Peter Hofto

163 Orielton Road

Orielton

TAS 7172

Ph 0417 960 769

peter@rocksolidgeotechnics.com.au

13/2/2025

Geotechnical Assessment / Classification for Proposed Residential Development

1 Bay Close, St Helens

CLIENT: Peter Chaplin 0400247253 petechaplin@bigpond.com

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CONDITIONS OF INVESTIGATION	4

FIGURE 1 Site Plan

APPENDIX 1	Certificate of Others (Building) – Form 55
APPENDIX 2	CSIRO ‘Guide to home-owners on foundation maintenance and footing performance’
APPENDIX 3	Onsite Wastewater Assessment & System Design
APPENDIX 4	Onsite Wastewater Forms 35s & 55s
APPENDIX 5	Wastewater Loading Certificate

SUMMARY

A residential development is proposed by Peter Chaplin at 1 Bay Close, St Helens ([Plate 1, Figure 1](#)). The site is underlain by sandy topsoils over Tertiary clays.

The site is classified as **Class 'M'** in accordance with AS2870-2011.

Suitable upslope site drainage should be installed prior to the commencement of construction.

The following Wind Load Classifications (AS4055-2012: Wind Loads for Housing) are appropriate.

- | | | |
|-----------------------------------|-----------|--------------|
| • Terrain Category Classification | TC2 | Open Terrain |
| • Shielding Classification | NS | No Shielding |
| • Topographic Classification | T1 | |
| • Wind Load Classification | N3 | |

INVESTIGATION

The Tasmanian 1:50000 Geological Atlas do not cover this area.

A site investigation was completed on Friday 24 January, 2025. This included the augering of four test holes to assess the site for foundation conditions and onsite wastewater disposal (4WD mounted SAMPLA25 mechanical auger with 100mm solid flight augers). The locations of the test holes are marked on [Figure 1](#).

It is proposed to construct a dwelling on the currently vacant block. The proposed house site is covered in grass pasture and is devoid of trees (several semi-mature trees on southern property boundary). The site slopes at 1-2 degrees to the southeast.

The profiles displayed in [Test Holes #1 & #2](#) ([Plate 2](#)) consisted of:

0.00 – 0.20m	SAND: medium to coarse grained, greyish brown, trace rootlets - TOPSOIL
0.20 – 0.65m	SAND: medium to coarse grained, grey, dry
0.65 – 1.40m	sandy CLAY / clayey SAND: medium plasticity clay, medium to coarse grained sand, grey / brown, moist
1.40 – 1.80m	sandy CLAY; medium plasticity, grey, 35% medium to coarse grained sand, moist, Bearing Capacity 180kPa
1.80 – 2.10m	sandy CLAY; medium plasticity, light grey, 35% medium to coarse grained sand, some silt, moist, Bearing Capacity 200kPa
2.10m+	Holes terminated at required depths – 2.10m.

Groundwater was not encountered in either hole.

Plate 1 – Development site - Looking to the southeast.



Plate 2 – Looking to the south/southwest (Test Hole #2).



CONDITIONS OF INVESTIGATION

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This report should not be used for submission for Building or Development Application until RSG has been paid in full for its production. RSG accepts no liability for the contents of this report until full payment has been received. The results & interpretation of conditions presented in this report are current at the time of the investigation only. The investigation has been conducted in accordance with the specific client's requirements &/or with their servants or agent's instructions.

This report contains observations & interpretations based often on limited subsurface evaluation. Where interpretative information or evaluation has been reported, this information has been identified accordingly & is presented based on professional judgement. RSG does not accept responsibility for variations between interpreted conditions & those that may be subsequently revealed by whatever means.

Due to the possibility of variation in subsurface conditions & materials, the characteristics of materials can vary between sample & observation sites. RSG takes no responsibility for changed or unexpected variations in ground conditions that may affect any aspect of the project. The classifications in this report are based on samples taken from specific sites. The information is not transferable to different sites, no matter how close (ie. if the development site is moved from the original assessment site an additional assessment will be required). It is recommended to notify the author should it be revealed that the sub-surface conditions differ from those presented in this report, so additional assessment & advice may be provided.

Investigations are conducted to standards outlined in Australian Standards:

- AS1726-1993: Geotechnical Site Investigations
- AS2870-2011: Residential Slabs and Footings
- AS4055-2012: Wind Loads for Housing
- AS1547-2012: Onsite Domestic Wastewater Management

& as specified in 'Guidelines for Geotechnical Assessment of Subdivisions and Recommended Code of Practise for Site Classification to AS2870 in Tasmania' - Institute of Engineers, Tasmanian Division.

All new developments should subject to strict site maintenance. Attention is drawn to the enclosed information reproduced with the permission from Standards Australia:

- CSIRO Information Sheet No. BTF18 – 'Guide to home-owners on foundation maintenance & footing performance'.

Any assessment that has included an onsite wastewater system design will require a further site visit / inspection once the system has been installed. After the inspection to verify that the system has been installed as per RSG's design a statement will be provided. An additional fee applies for the site visit & issuing the certificate.

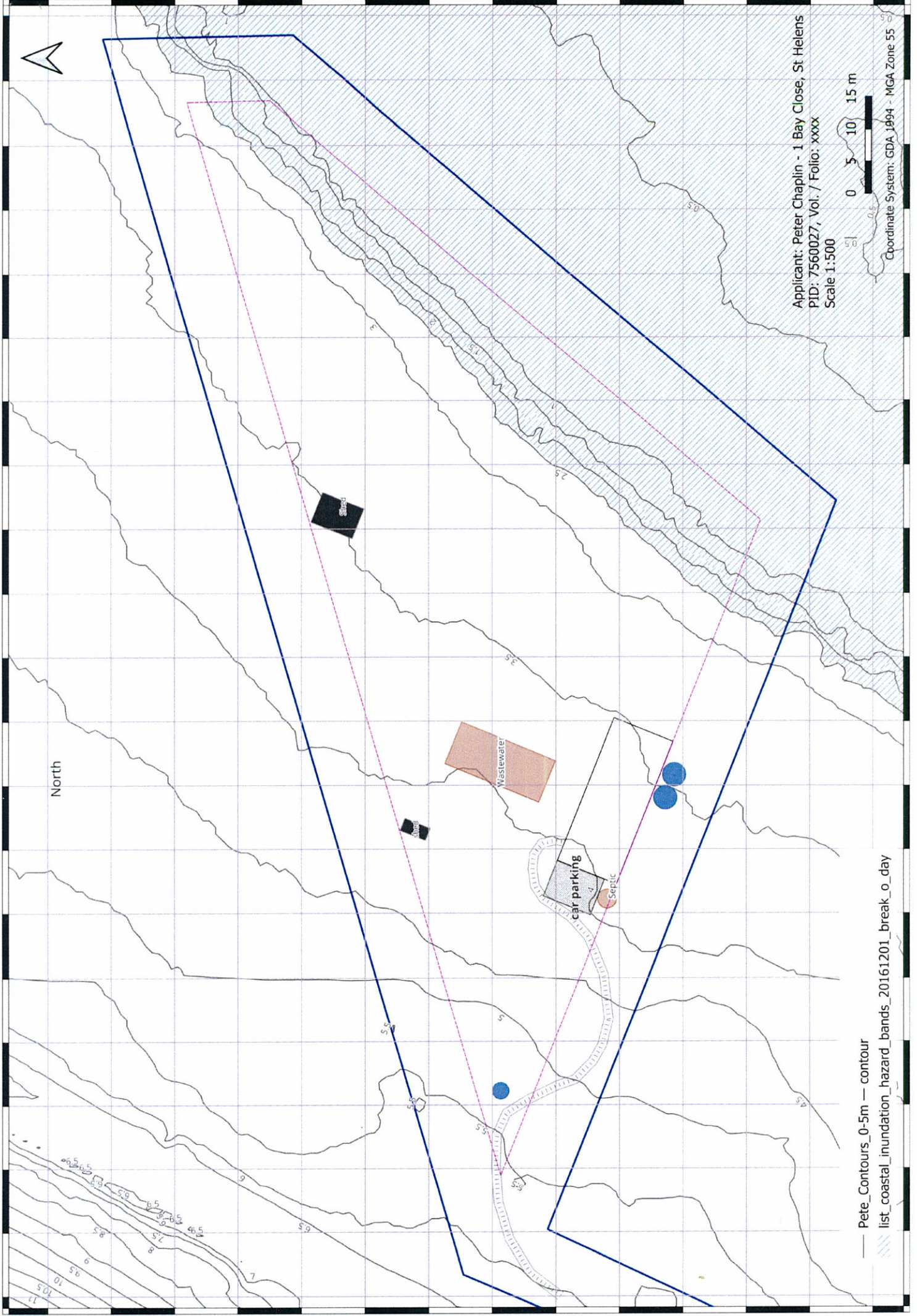
RSG is not responsible for the correct installation of wastewater systems. Any wastewater installation is the sole responsibility of the owner/agent and certified plumber. Any variation to the wastewater design must be approved by RSG, and an amended Special Plumbing Permit obtained from the relevant council. The registered plumber must obtain a copy and carefully follow the details in the council issued Special Plumbing Permit. A "Certificate of Completion" will be based on surface visual inspection only, to verify the location of the system. All underground plumbing works are the responsibility of the certified plumber.

Copyright: The concepts & information contained in this report are the Copyright of Rock Solid Geotechnics Pty. Ltd.



PETER HOFTO

ROCK SOLID GEOTECHNICS PTY LTD



Applicant: Peter Chaplin - 1 Bay Close, St Helens
 PID: 7560027, Vol. / Folio: xxxx
 Scale 1:500

— Pete_Contours_0-5m — contour
 list_coastal_inundation_hazard_bands_20161201_break_o_day



North

Applicant: Peter Chaplin - 1 Bay Close, St Helens
PID: 7560027, Vol. / Folio: xxxx
Scale 1:500



Coordinate System: GDA 1994 - MGA Zone 55

— Pete_Contours_0-5m — contour

shed

Wastewater

car parking

Septic

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CERTIFICATE OF QUALIFIED PERSON – ASSESSABLE ITEM

Section 321

Form **55**

To: Owner /Agent
 Address
 Suburb/postcode

Qualified person details:

Qualified person:
Address: Phone No:
 Fax No:
Licence No: Email address:

Qualifications and Insurance details: (description from Column 3 of the Director's Determination - Certificates by Qualified Persons for Assessable Items)
Speciality area of expertise: (description from Column 4 of the Director's Determination - Certificates by Qualified Persons for Assessable Items)

Details of work:

Address: Lot No:
 Certificate of title No:
The assessable item related to this certificate: (description of the assessable item being certified)
Assessable item includes –
- a material;
- a design
- a form of construction
- a document
- testing of a component, building system or plumbing system
- an inspection, or assessment, performed

Certificate details:

Certificate type: (description from Column 1 of Schedule 1 of the Director's Determination – Certificates by Qualified Persons for Assessable Items n)

This certificate is in relation to the above assessable items, at any stage, as part of – (tick one)

building work, plumbing work or plumbing installation or demolition work

OR

a building, temporary structure or plumbing installation

In issuing this certificate the following matters are relevant –

Documents:

Relevant calculations:

AS2870

References:


Substance of Certificate: (what it is that is being certified)

Scope and/or Limitations

I certify the matters described in this certificate.

Qualified person:

Signed:



Certificate No:

GEOTECH
25-018

Date:

13/2/2025

Foundation Maintenance and Footing Performance: A Homeowner's Guide



CSIRO

BTF 18
replaces
Information
Sheet 10/91

Buildings can and often do move. This movement can be up, down, lateral or rotational. The fundamental cause of movement in buildings can usually be related to one or more problems in the foundation soil. It is important for the homeowner to identify the soil type in order to ascertain the measures that should be put in place in order to ensure that problems in the foundation soil can be prevented, thus protecting against building movement.

This Building Technology File is designed to identify causes of soil-related building movement, and to suggest methods of prevention of resultant cracking in buildings.

Soil Types

The types of soils usually present under the topsoil in land zoned for residential buildings can be split into two approximate groups – granular and clay. Quite often, foundation soil is a mixture of both types. The general problems associated with soils having granular content are usually caused by erosion. Clay soils are subject to saturation and swell/shrink problems.

Classifications for a given area can generally be obtained by application to the local authority, but these are sometimes unreliable and if there is doubt, a geotechnical report should be commissioned. As most buildings suffering movement problems are founded on clay soils, there is an emphasis on classification of soils according to the amount of swell and shrinkage they experience with variations of water content. The table below is Table 2.1 from AS 2870, the Residential Slab and Footing Code.

Causes of Movement

Settlement due to construction

There are two types of settlement that occur as a result of construction:

- Immediate settlement occurs when a building is first placed on its foundation soil, as a result of compaction of the soil under the weight of the structure. The cohesive quality of clay soil mitigates against this, but granular (particularly sandy) soil is susceptible.
- Consolidation settlement is a feature of clay soil and may take place because of the expulsion of moisture from the soil or because of the soil's lack of resistance to local compressive or shear stresses. This will usually take place during the first few months after construction, but has been known to take many years in exceptional cases.

These problems are the province of the builder and should be taken into consideration as part of the preparation of the site for construction. Building Technology File 19 (BTF 19) deals with these problems.

Erosion

All soils are prone to erosion, but sandy soil is particularly susceptible to being washed away. Even clay with a sand component of say 10% or more can suffer from erosion.

Saturation

This is particularly a problem in clay soils. Saturation creates a bog-like suspension of the soil that causes it to lose virtually all of its bearing capacity. To a lesser degree, sand is affected by saturation because saturated sand may undergo a reduction in volume – particularly imported sand fill for bedding and blinding layers. However, this usually occurs as immediate settlement and should normally be the province of the builder.

Seasonal swelling and shrinkage of soil

All clays react to the presence of water by slowly absorbing it, making the soil increase in volume (see table below). The degree of increase varies considerably between different clays, as does the degree of decrease during the subsequent drying out caused by fair weather periods. Because of the low absorption and expulsion rate, this phenomenon will not usually be noticeable unless there are prolonged rainy or dry periods, usually of weeks or months, depending on the land and soil characteristics.

The swelling of soil creates an upward force on the footings of the building, and shrinkage creates subsidence that takes away the support needed by the footing to retain equilibrium.

Shear failure

This phenomenon occurs when the foundation soil does not have sufficient strength to support the weight of the footing. There are two major post-construction causes:

- Significant load increase.
- Reduction of lateral support of the soil under the footing due to erosion or excavation.
- In clay soil, shear failure can be caused by saturation of the soil adjacent to or under the footing.

GENERAL DEFINITIONS OF SITE CLASSES

Class	Foundation
I	Most sand and rock sites with little or no ground movement from moisture changes
S	Slightly reactive clay sites with only slight ground movement from moisture changes
M	Moderately reactive clay or silt sites, which can experience moderate ground movement from moisture changes
H	Highly reactive clay sites, which can experience high ground movement from moisture changes
E	Extremely reactive sites, which can experience extreme ground movement from moisture changes
A to P	Filled sites
P	Sites which include soft soils, such as soft clay or silt or loose sands; landslip; mine subsidence; collapsing soils; soils subject to erosion; reactive sites subject to abnormal moisture conditions or sites which cannot be classified otherwise

Tree root growth

Trees and shrubs that are allowed to grow in the vicinity of footings can cause foundation soil movement in two ways:

- Roots that grow under footings may increase in cross-sectional size, exerting upward pressure on footings.
- Roots in the vicinity of footings will absorb much of the moisture in the foundation soil, causing shrinkage or subsidence.

Unevenness of Movement

The types of ground movement described above usually occur unevenly throughout the building's foundation soil. Settlement due to construction tends to be uneven because of:

- Differing compaction of foundation soil prior to construction.
- Differing moisture content of foundation soil prior to construction.

Movement due to non-construction causes is usually more uneven still. Erosion can undermine a footing that traverses the flow or can create the conditions for shear failure by eroding soil adjacent to a footing that runs in the same direction as the flow.

Saturation of clay foundation soil may occur where subfloor walls create a dam that makes water pond. It can also occur wherever there is a source of water near footings in clay soil. This leads to a severe reduction in the strength of the soil which may create local shear failure.

Seasonal swelling and shrinkage of clay soil affects the perimeter of the building first, then gradually spreads to the interior. The swelling process will usually begin at the uphill extreme of the building, or on the weather side where the land is flat. Swelling gradually reaches the interior soil as absorption continues. Shrinkage usually begins where the sun's heat is greatest.

Effects of Uneven Soil Movement on Structures

Erosion and saturation

Erosion removes the support from under footings, tending to create subsidence of the part of the structure under which it occurs. Brickwork walls will resist the stress created by this removal of support by bridging the gap or cantilevering until the bricks or the mortar bedding fail. Older masonry has little resistance. Evidence of failure varies according to circumstances and symptoms may include:

- Step cracking in the mortar beds in the body of the wall or above/below openings such as doors or windows.
- Vertical cracking in the bricks (usually but not necessarily in line with the vertical beds or pendants).

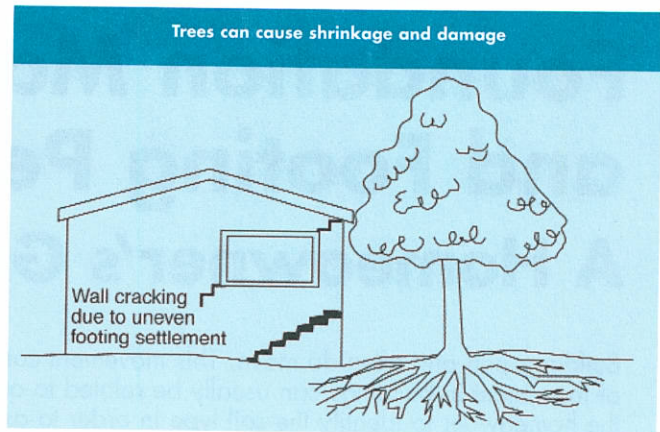
Isolated piers affected by erosion or saturation of foundations will eventually lose contact with the bearers they support and may tilt or fall over. The floors that have lost this support will become bouncy, sometimes rattling ornaments etc.

Seasonal swelling/shrinkage in clay

Swelling foundation soil due to rainy periods first lifts the most exposed extremities of the footing system, then the remainder of the perimeter footings while gradually permeating inside the building footprint to lift internal footings. This swelling first tends to create a dish effect, because the external footings are pushed higher than the internal ones.

The first noticeable symptom may be that the floor appears slightly dished. This is often accompanied by some doors binding on the floor or the door head, together with some cracking of cornice mitres. In buildings with timber flooring supported by bearers and joists, the floor can be bouncy. Externally there may be visible dishing of the hip or ridge lines.

As the moisture absorption process completes its journey to the innermost areas of the building, the internal footings will rise. If the spread of moisture is roughly even, it may be that the symptoms will temporarily disappear, but it is more likely that swelling will be uneven, creating a difference rather than a disappearance in symptoms. In buildings with timber flooring supported by bearers and joists, the isolated piers will rise more easily than the strip footings or piers under walls, creating noticeable doming of flooring.



As the weather pattern changes and the soil begins to dry out, the external footings will be first affected, beginning with the locations where the sun's effect is strongest. This has the effect of lowering the external footings. The doming is accentuated and cracking reduces or disappears where it occurred because of dishing, but other cracks open up. The roof lines may become convex.

Doming and dishing are also affected by weather in other ways. In areas where warm, wet summers and cooler dry winters prevail, water migration tends to be toward the interior and doming will be accentuated, whereas where summers are dry and winters are cold and wet, migration tends to be toward the exterior and the underlying propensity is toward dishing.

Movement caused by tree roots

In general, growing roots will exert an upward pressure on footings, whereas soil subject to drying because of tree or shrub roots will tend to remove support from under footings by inducing shrinkage.

Complications caused by the structure itself

Most forces that the soil causes to be exerted on structures are vertical – i.e. either up or down. However, because these forces are seldom spread evenly around the footings, and because the building resists uneven movement because of its rigidity, forces are exerted from one part of the building to another. The net result of all these forces is usually rotational. This resultant force often complicates the diagnosis because the visible symptoms do not simply reflect the original cause. A common symptom is binding of doors on the vertical member of the frame.

Effects on full masonry structures

Brickwork will resist cracking where it can. It will attempt to span areas that lose support because of subsided foundations or raised points. It is therefore usual to see cracking at weak points, such as openings for windows or doors.

In the event of construction settlement, cracking will usually remain unchanged after the process of settlement has ceased.

With local shear or erosion, cracking will usually continue to develop until the original cause has been remedied, or until the subsidence has completely neutralised the affected portion of footing and the structure has stabilised on other footings that remain effective.

In the case of swell/shrink effects, the brickwork will in some cases return to its original position after completion of a cycle, however it is more likely that the rotational effect will not be exactly reversed, and it is also usual that brickwork will settle in its new position and will resist the forces trying to return it to its original position. This means that in a case where swelling takes place after construction and cracking occurs, the cracking is likely to at least partly remain after the shrink segment of the cycle is complete. Thus, each time the cycle is repeated, the likelihood is that the cracking will become wider until the sections of brickwork become virtually independent.

With repeated cycles, once the cracking is established, if there is no other complication, it is normal for the incidence of cracking to stabilise, as the building has the articulation it needs to cope with the problem. This is by no means always the case, however, and monitoring of cracks in walls and floors should always be treated seriously.

Upheaval caused by growth of tree roots under footings is not a simple vertical shear stress. There is a tendency for the root to also exert lateral forces that attempt to separate sections of brickwork after initial cracking has occurred.

The normal structural arrangement is that the inner leaf of brickwork in the external walls and at least some of the internal walls (depending on the roof type) comprise the load-bearing structure on which any upper floors, ceilings and the roof are supported. In these cases, it is internally visible cracking that should be the main focus of attention, however there are a few examples of dwellings whose external leaf of masonry plays some supporting role, so this should be checked if there is any doubt. In any case, externally visible cracking is important as a guide to stresses on the structure generally, and it should also be remembered that the external walls must be capable of supporting themselves.

Effects on framed structures

Timber or steel framed buildings are less likely to exhibit cracking due to swell/shrink than masonry buildings because of their flexibility. Also, the doming/dishing effects tend to be lower because of the lighter weight of walls. The main risks to framed buildings are encountered because of the isolated pier footings used under walls. Where erosion or saturation cause a footing to fall away, this can double the span which a wall must bridge. This additional stress can create cracking in wall linings, particularly where there is a weak point in the structure caused by a door or window opening. It is, however, unlikely that framed structures will be so stressed as to suffer serious damage without first exhibiting some or all of the above symptoms for a considerable period. The same warning period should apply in the case of upheaval. It should be noted, however, that where framed buildings are supported by strip footings there is only one leaf of brickwork and therefore the externally visible walls are the supporting structure for the building. In this case, the subfloor masonry walls can be expected to behave as full brickwork walls.

Effects on brick veneer structures

Because the load-bearing structure of a brick veneer building is the frame that makes up the interior leaf of the external walls plus perhaps the internal walls, depending on the type of roof, the building can be expected to behave as a framed structure, except that the external masonry will behave in a similar way to the external leaf of a full masonry structure.

Water Service and Drainage

Where a water service pipe, a sewer or stormwater drainage pipe is in the vicinity of a building, a water leak can cause erosion, swelling or saturation of susceptible soil. Even a minuscule leak can be enough to saturate a clay foundation. A leaking tap near a building can have the same effect. In addition, trenches containing pipes can become watercourses even though backfilled, particularly where broken rubble is used as fill. Water that runs along these trenches can be responsible for serious erosion, interstrata seepage into subfloor areas and saturation.

Pipe leakage and trench water flows also encourage tree and shrub roots to the source of water, complicating and exacerbating the problem.

Poor roof plumbing can result in large volumes of rainwater being concentrated in a small area of soil:

- Incorrect falls in roof guttering may result in overflows, as may gutters blocked with leaves etc.

- Corroded guttering or downpipes can spill water to ground.
- Downpipes not positively connected to a proper stormwater collection system will direct a concentration of water to soil that is directly adjacent to footings, sometimes causing large-scale problems such as erosion, saturation and migration of water under the building.

Seriousness of Cracking

In general, most cracking found in masonry walls is a cosmetic nuisance only and can be kept in repair or even ignored. The table below is a reproduction of Table C1 of AS 2870.

AS 2870 also publishes figures relating to cracking in concrete floors, however because wall cracking will usually reach the critical point significantly earlier than cracking in slabs, this table is not reproduced here.

Prevention/Cure

Plumbing

Where building movement is caused by water service, roof plumbing, sewer or stormwater failure, the remedy is to repair the problem. It is prudent, however, to consider also rerouting pipes away from the building where possible, and relocating taps to positions where any leakage will not direct water to the building vicinity. Even where gully traps are present, there is sometimes sufficient spill to create erosion or saturation, particularly in modern installations using smaller diameter PVC fixtures. Indeed, some gully traps are not situated directly under the taps that are installed to charge them, with the result that water from the tap may enter the backfilled trench that houses the sewer piping. If the trench has been poorly backfilled, the water will either pond or flow along the bottom of the trench. As these trenches usually run alongside the footings and can be at a similar depth, it is not hard to see how any water that is thus directed into a trench can easily affect the foundation's ability to support footings or even gain entry to the subfloor area.

Ground drainage

In all soils there is the capacity for water to travel on the surface and below it. Surface water flows can be established by inspection during and after heavy or prolonged rain. If necessary, a grated drain system connected to the stormwater collection system is usually an easy solution.

It is, however, sometimes necessary when attempting to prevent water migration that testing be carried out to establish watertable height and subsoil water flows. This subject is referred to in BTF 19 and may properly be regarded as an area for an expert consultant.

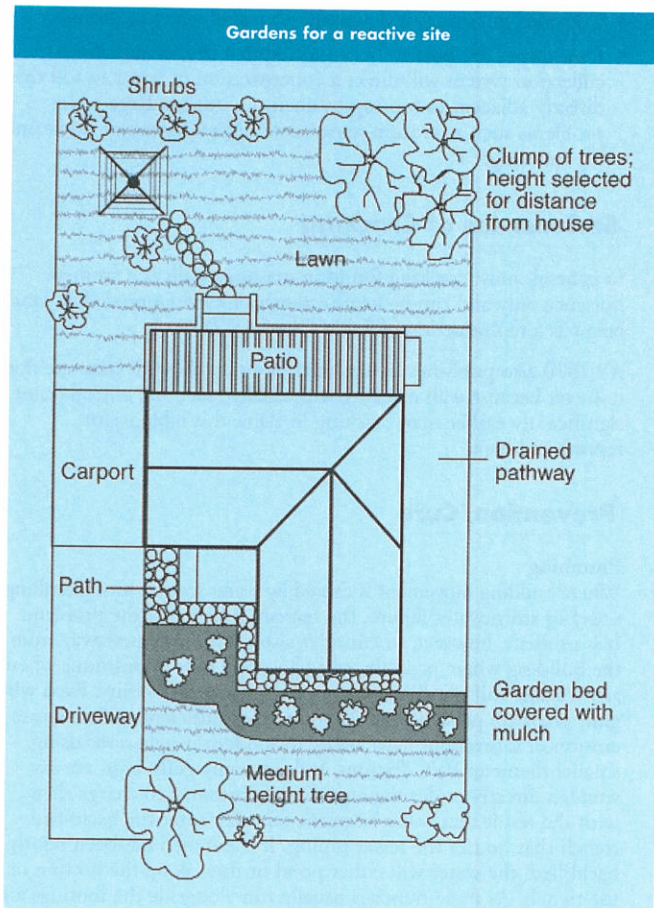
Protection of the building perimeter

It is essential to remember that the soil that affects footings extends well beyond the actual building line. Watering of garden plants, shrubs and trees causes some of the most serious water problems.

For this reason, particularly where problems exist or are likely to occur, it is recommended that an apron of paving be installed around as much of the building perimeter as necessary. This paving

CLASSIFICATION OF DAMAGE WITH REFERENCE TO WALLS

Description of typical damage and required repair	Approximate crack width limit (see Note 3)	Damage category
Hairline cracks	<0.1 mm	0
Fine cracks which do not need repair	<1 mm	1
Cracks noticeable but easily filled. Doors and windows stick slightly	<5 mm	2
Cracks can be repaired and possibly a small amount of wall will need to be replaced. Doors and windows stick. Service pipes can fracture. Weathertightness often impaired	5–15 mm (or a number of cracks 3 mm or more in one group)	3
Extensive repair work involving breaking-out and replacing sections of walls, especially over doors and windows. Window and door frames distort. Walls lean or bulge noticeably, some loss of bearing in beams. Service pipes disrupted	15–25 mm but also depend on number of cracks	4



- Water that is transmitted into masonry, metal or timber building elements causes damage and/or decay to those elements.
- High subfloor humidity and moisture content create an ideal environment for various pests, including termites and spiders.
- Where high moisture levels are transmitted to the flooring and walls, an increase in the dust mite count can ensue within the living areas. Dust mites, as well as dampness in general, can be a health hazard to inhabitants, particularly those who are abnormally susceptible to respiratory ailments.

The garden

The ideal vegetation layout is to have lawn or plants that require only light watering immediately adjacent to the drainage or paving edge, then more demanding plants, shrubs and trees spread out in that order.

Overwatering due to misuse of automatic watering systems is a common cause of saturation and water migration under footings. If it is necessary to use these systems, it is important to remove garden beds to a completely safe distance from buildings.

Existing trees

Where a tree is causing a problem of soil drying or there is the existence or threat of upheaval of footings, if the offending roots are subsidiary and their removal will not significantly damage the tree, they should be severed and a concrete or metal barrier placed vertically in the soil to prevent future root growth in the direction of the building. If it is not possible to remove the relevant roots without damage to the tree, an application to remove the tree should be made to the local authority. A prudent plan is to transplant likely offenders before they become a problem.

Information on trees, plants and shrubs

State departments overseeing agriculture can give information regarding root patterns, volume of water needed and safe distance from buildings of most species. Botanic gardens are also sources of information. For information on plant roots and drains, see Building Technology File 17.

Excavation

Excavation around footings must be properly engineered. Soil supporting footings can only be safely excavated at an angle that allows the soil under the footing to remain stable. This angle is called the angle of repose (or friction) and varies significantly between soil types and conditions. Removal of soil within the angle of repose will cause subsidence.

Remediation

Where erosion has occurred that has washed away soil adjacent to footings, soil of the same classification should be introduced and compacted to the same density. Where footings have been undermined, augmentation or other specialist work may be required. Remediation of footings and foundations is generally the realm of a specialist consultant.

Where isolated footings rise and fall because of swell/shrink effect, the homeowner may be tempted to alleviate floor bounce by filling the gap that has appeared between the bearer and the pier with blocking. The danger here is that when the next swell segment of the cycle occurs, the extra blocking will push the floor up into an accentuated dome and may also cause local shear failure in the soil. If it is necessary to use blocking, it should be by a pair of fine wedges and monitoring should be carried out fortnightly.

This BTF was prepared by John Lewer FAIB, MIAMA, Partner, Construction Diagnosis.

should extend outwards a minimum of 900 mm (more in highly reactive soil) and should have a minimum fall away from the building of 1:60. The finished paving should be no less than 100 mm below brick vent bases.

It is prudent to relocate drainage pipes away from this paving, if possible, to avoid complications from future leakage. If this is not practical, earthenware pipes should be replaced by PVC and backfilling should be of the same soil type as the surrounding soil and compacted to the same density.

Except in areas where freezing of water is an issue, it is wise to remove taps in the building area and relocate them well away from the building – preferably not uphill from it (see BTF 19).

It may be desirable to install a grated drain at the outside edge of the paving on the uphill side of the building. If subsoil drainage is needed this can be installed under the surface drain.

Condensation

In buildings with a subfloor void such as where bearers and joists support flooring, insufficient ventilation creates ideal conditions for condensation, particularly where there is little clearance between the floor and the ground. Condensation adds to the moisture already present in the subfloor and significantly slows the process of drying out. Installation of an adequate subfloor ventilation system, either natural or mechanical, is desirable.

Warning: Although this Building Technology File deals with cracking in buildings, it should be said that subfloor moisture can result in the development of other problems, notably:

The information in this and other issues in the series was derived from various sources and was believed to be correct when published.

The information is advisory. It is provided in good faith and not claimed to be an exhaustive treatment of the relevant subject.

Further professional advice needs to be obtained before taking any action based on the information provided.

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APPENDIX 3

Below find a wastewater design for the proposed residence at 1 Bay Close, St Helens (Figure 1). This assessment should be read in conjunction with Site & Soil Evaluation Report (GEOTECH 25-018) - enclosed.

A site investigation was completed on Friday 24 January, 2025. This included the augering of four test holes to assess the site for foundation conditions and onsite wastewater disposal (4WD mounted SAMPLA25 mechanical auger with 100mm solid flight augers).

It is proposed to construct a new, 2-bedroom dwelling on the currently vacant block. The site bounds the coastal area of Moulting Bay adjacent to Sams Spit. The Waterway and Coastal Protection Area Map (Figure 2) shows that the lower, eastern portion of the block (coloured in blue) is located in the wetlands on the foreshore at Sams Spit. The Green zone on the plan signifies the defined protection zone.

The area adjacent to the central northern property boundary is considered most suitable for the wastewater Land Application Area (LAA). This portion of the site is outside the Waterway and Coastal Protection Area and well setback from the foreshore of Moulting Bay. This portion of the block is notably higher (in elevation) than the eastern portion of the site.

This area slopes at 1-2 degrees to the southeast, and is covered in grass (several mature trees established around the area (Plate 3).

Typical of the profiles displayed in the Test Holes was:

0.00 – 0.20m	SAND: medium to coarse grained, greyish brown, trace rootlets - TOPSOIL
0.20 – 0.55m	SAND: medium to coarse grained, grey, dry
0.55 – 1.20m	sandy CLAY / clayey SAND: medium plasticity clay, medium to coarse grained sand, grey / brown, moist
1.20 – 1.80m	sandy CLAY; medium plasticity, grey, 35% medium to coarse grained sand, moist
1.80m+	Holes terminated at required depths – 1.80m.

Groundwater was not encountered in any of the holes.

The site is classified as Class 1 (SAND) over Class 4 (clay LOAM) with an Indicative Permeability of 0.12-0.5m/d and a Design Loading Rate (DLR) of 10mm/day.

Plate 3 – Proposed LAA - Looking to the northwest.



The design will need to comply with the *2016 Director's Guidelines for Onsite Wastewater Systems*.

Compliance Table Directors Guidelines for OSWM		
Acceptable Solutions	Performance Criteria	Compliance achieved by
<p>7. Standards for Wastewater Land Application Areas</p> <p>A1 Horizontal separation distance from a building to a LAA must comply with one of the following: a) be no less than 6m; b) be no less than: (i) 3m from an upslope boundary or level building; (ii) If primary treated effluent to be no less than 4m plus 1m for every degree of average gradient from a downslope building; (iii) If secondary treated effluent and subsurface application, no less than 2m plus 0.25m for every degree of average gradient from a downslope building.</p>	<p>P1 The LAA is located so that the risk of wastewater reducing the bearing capacity of a building's foundations is acceptably low.</p>	<p>Complies with A1</p> <p>Distance between any building & the LAA >6m.</p>

<p>A2 Horizontal separation distance from downslope surface water to a LAA must comply with (a) or (b) (a) be no less than 100m; or (b) be no less than the following: (i) if primary treated effluent 15m plus 7m for every degree of average gradient to downslope surface water; or (ii) if secondary treated effluent and subsurface application, 15m plus 2m for every degree of average gradient to down slope surface water.</p>	<p>P2 Horizontal separation distance from downslope surface water to a LAA must comply with all of the following: a) Setbacks must be consistent with AS/NZS 1547 Appendix R; b) A risk assessment in accordance with Appendix A of AS/NZS 1547 has been completed that demonstrates that the risk is acceptable.</p>	<p>Complies with A2 LAA approx. 60m from surface water (foreshore). Secondary treater effluent. 3° slope to HWM. Setback required; $15m + (2m \times 3^\circ) = 21m$</p>
<p>A3 Horizontal separation distance from a property boundary to a LAA must comply with either of the following: (a) be no less than 40m from a property boundary; or (b) be no less than: (i) 1.5m from an upslope or level property boundary; & (ii) If primary treated effluent 2m for every degree of average gradient from a downslope property boundary; or (iii) If secondary treated effluent and subsurface application, 1.5m plus 1m for every degree of average gradient from a downslope property boundary.</p>	<p>P3 Horizontal separation distance from a property boundary to a LAA must comply with all of the following: (a) Setback must be consistent with AS/NZS 1547 Appendix R; and (b) A risk assessment in accordance with Appendix A of AS/NZS 1547 has been completed that demonstrates that the risk is acceptable.</p>	<p>Complies with A3 LAA > 1.5m from upslope and side-slope property boundary. LAA >40m from downslope property boundary.</p>
<p>A4 Horizontal separation distance from a downslope bore, well or similar water supply to a LAA must be no less than 50m and not be within the zone of influence of the bore whether up or down gradient.</p>	<p>P4 Horizontal separation distance from a downslope bore, well or similar water supply to a LAA must comply with all of the following: (a) Setback must be consistent with AS/NZS 1547 Appendix R; and (b) A risk assessment completed in accordance with Appendix A of AS/NZS 1547 demonstrates that the risk is acceptable.</p>	<p>Complies with A4 No known potable bores within 50m of the site.</p>
<p>A5 Vertical separation distance between groundwater & a LAA must be no less than: (a) 1.5m if primary treated effluent; or (b) 0.6m if secondary treated effluent</p>	<p>P5 Vertical separation distance between groundwater and a LAA must comply with the following: (a) Setback must be consistent with AS/NZS 1547 Appendix R; and (b) A risk assessment completed in accordance with Appendix A of AS/NZS 1547 that demonstrates that the risk is acceptable.</p>	<p>Complies with A5 Groundwater not encountered.</p>
<p>A6 Vertical separation distance between a limiting layer & a LAA must be no less than: (a) 1.5m if primary treated effluent; or (b) 0.5m if secondary treated effluent.</p>	<p>P6 Vertical setback must be consistent with AS/NZS1547 Appendix R.</p>	<p>Complies with A6 Limiting layer not encountered.</p>
<p>A7 Nil</p>	<p>P7 A wastewater treatment unit must be located a sufficient distance from buildings or neighbouring properties so that emissions (odour, noise or aerosols) from the unit do not create an environmental nuisance to the residents of those properties.</p>	<p>Complies with P7</p>

ONSITE WASTEWATER SYSTEM DESIGN

Secondary treatment of wastewater prior to land disposal/absorption is preferred; an Advanced Enviro-Septic meets this definition, as provided by the *Director's Guidelines for Onsite Wastewater Management* (means effluent that has been treated via aerobic biological processing and settling or filtering of wastewater to a quality equal to, or less than, 20mg/l BOD⁵ and 30mg/l suspended solids).

A new, 3250 litre, dual purpose septic tank will be installed to collect all the residential wastewater from the dwelling. The effluent leaving the septic tank will be pumped to an Advanced Enviro-Septic (AES) bed (configured as a mound), utilising a pumpwell and submersible pump. The septic tank **should** be fitted with an outlet filter to protect the submersible pump.

The AES bed will be configured as a mound (500mm high) due to the clay LOAM subsoils (mound ensures that the effluent is evenly distributed in the sandy topsoil and 'A' horizon).

The pumpwell (minimum 600 litre capacity) must be fitted with an alarm in case of malfunction. A strobe light alarm is recommended. A 32mm diameter line will distribute the effluent between the pump and the AES Bed. A Netco pumpwell is recommended as these tanks are supplied with lids and all the required internal fittings.

The following calculations determine the size of the AES Bed designed to service the dwelling.

2-bedroom dwelling	4 persons
Tank water	120 litres / person / day
Wastewater Flow Rate	4 x 120 = 480 litres / day
Design Loading Rate (DLR)	10mm/day
DLR	10 litres / m ² / day
Basal Area of Land Application Area	480 / 10 = 48m²

This AES module consists of 2 runs of 3 x 300mm diameter AES pipes, 150mm apart, with 300mm side-wall clearance on each side - total width 1350mm.

Distribution unit length	AES pipe length + (0.3m x 2) 9m + 0.6m = 9.6m
Width of 2-pipe wide AES unit	1.35m
A System Extension is required for this site.	9.6m long x 3.65m wide = 35m²
Area of AES bed	9.6m x 5m = 48m²

The AES system should be installed by a plumber who has been accredited by Chankar Environmental Proprietary Limited to install Advanced Enviro Septic systems, and who has appropriate experience.

Site Preparation

- Rope off the site to prevent damage to the area during other construction activity on the lot.
- Vehicular traffic over the area must be prohibited to avoid compaction.
- Excavate the existing soil surface, parallel with the contour (cross slope) to a depth of 350mm over the selected wastewater land application area. Build the 400mm high mound.
- Rake/scarify the exposed soil surface.
- Connect the septic tank and AES bed in accordance with the AES site instructions (see below) and the design plans attached.
- The AES pipe must be laid in a bed of approved "system sand" - a coarse sand meeting the specifications listed below.

AES System Sand Specifications

- Percentage Restrictions - 35% or less of the total sand may be gravel. 40%-90% of the total sand is to be coarse and very coarse sand.
- Gravel Quality Restrictions - No gravel is to exceed 9mm in diameter. No gravel is smaller than 2mm in diameter.
- Coarse Sand Quality Restrictions - No coarse sand is smaller than 0.5mm in diameter.
- Fines Quality Restrictions - No more than 2% of the total sand may pass through a 75µ m sieve.

Venting – AES system and septic tank

- Ensure that roof vent comprises a minimum of single 80mm diameter pipe or 2 x 40mm diameter vent pipes.
- Roof vent to be a minimum of 3m above ground vent.
- Venting of the septic tank is to be consistent with NCC Pt 3 Tas F101.2.

Low vent as per AES pipe layout plan (Low vent at end of pipework).

FIGURE 2
WATERWAY + COASTAL PROTECTION ZONE



GDA94 MGA55 : 606950E, 5429174N 1:846 **Disclaimer and Copyright Notice**

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Site Address	1 Bay Close, St Helens	State	TAS	Post Code	
Client Name	Peter Chaplin			Date of Site Visit	24/1/25
Designers Name	Peter Hofto, Rock Solid Geotechnics Pty Ltd	Designers Ph Number	0417 960 769	Designer Lic (e.gQBCC)	CC61591
Lic Plumber	TBA	Plumber Ph Number		Plumb / Drainer Lic Number	TBA
Council Area	Break'O Day	Designers AES Cert Number	1463	Date	5/2/25

This Calculator is a guide only, receiving soil classification, surface water, water tables and all other site constraints addressed by the qualified designer.

System Designers site and soil calculation data entry	IMPORTANT NOTES	
Enter AES L/m loading rate, "30" for ADV Secondary or "38" Secondary	38	>> <i>This design is for a SECONDARY system.</i>
Is this a new installation Y or N	Y	>> Minimum single vent size is 80mm or 2 x 50mm house vents
Number of Bedrooms	2	>> This is not used in ANY Calculation. If not known use N/A or 0.
Number of persons	4	>> A septic tank outlet filter is NOT RECOMMENDED
Daily Design Flow Allowance Litre/Person/Day	120	
Number of rows required to suit site constraints	2	>> The maximum length of a single AES pipe run is 30m or 10 PIPES
Infiltration Soil Category from site/soil evaluation. CATEGORY	1	
Design Loading Rate based on site & soil evaluation DLR (mm/day)	10	
Bore log depth below system Basal area	1.5m	>> Min depth 1.5m. Check water table/restrictive layer
Is this design a GRAVITY system with no outlet filter? Y or N	n	>> PUMPED. HIGH & LOW vent required including a Velocity Diffuser

COMMENTS :- "The outcome must be important to everyone."

- Designers need to be familiar with special requirements of Local Authorities. ie - Minimum falls from Septic tank outlets to Land application areas etc
- Plumbers are reminded good construction techniques as per AS1547 are especially important in these soil types. Refer AS1547 & AES installation Instructions

AES System Calculator Outcomes			AES dimensions	
Total System load - litres / day (Q).	480	l/d	AES System	System Extension
Min Length of AES pipe rows to treat loading	6.32	lm	Length:(L)	9.60m
Number of FULL AES Pipe lengths per row	3	lths	Width:(W)	3.65m
Total Capacity of AES System pipe in Litres	1272	ltr.	Sand Depth :	0.15m
			Area m2	13.0 m^2
				35.0 m^2

USE CUT LENGTHS OF PIPE IN THIS DESIGN? (ENTER Y or N) n

IF YOU WISH TO USE A TRENCH EXTENSION DESIGN OPTION ENTER "Y"

Enter Custom Width in metre

AES INFILTRATION FOOT PRINT AREA - $L = Q / (DLR \times W)$	Length	Width	Minimum AES foot print required	
<i>for this Basic Serial design is</i>	9.600m	x 5.00m	=	48.0 m2 total

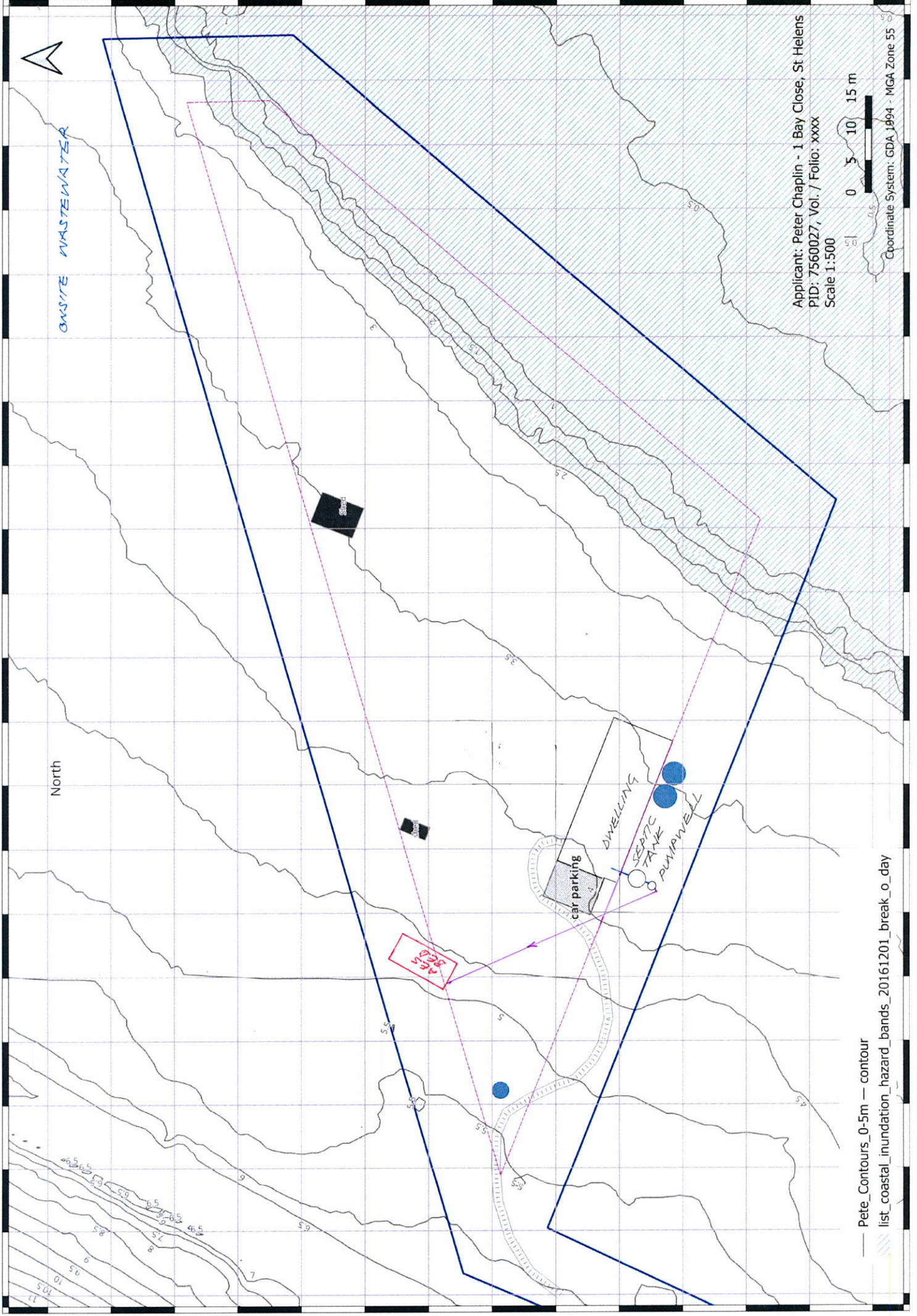
AES pipes are best centered in the trench parallel to the site slope

Code	AES System Bill of Materials.			Chankar Environmental Use Only	
AES-PIPE	AES 3 metre Lengths required	6	lths		
AESC	AES Couplings required	4	ea		
AESO	AES Offset adaptors	4	ea		
AESODV	AES Oxygen demand vent	2	ea		
AES-IPB	AES 100mm Inspection point base	2	ea		
TD Kit 4	4 Hole Distribution Box Kit		ea		
TD Kit 7	7 Hole Distribution Box Kit		ea		
VS43-4	Sweet Air Filter VS43-4		ea		
AES DESO	Double Offset Adaptors		ea		
TOTAL SYSTEM SAND REQUIRED (Estimate Only)		18	m3		

Please email your AES Calculator (EXCEL FORMAT), Site Layout & AES Design to designreview@enviro-septic.com.au

designreview@enviro-septic.com.au

- > The AES Calculator is a design aid to allow checking of the AES components, configuration and is a guide only. Site and soil conditions referencing AS1547 are calculated and designed by a Qualified Wastewater Designer.
- > Chankar Environmental accepts no responsibility for the soil evaluation, loading calculations or DLR entered by the designer for this calculator.
- > AES pipes can be cut to length on site. They are supplied in 3 meter lengths only.
- > AES ONLY supply AES components as detailed in the Bill of Materials.
- > SEPTIC Tank & other components including SAND will need to be sourced from other suppliers. Refer to our WEBSITE www.enviro-septic.com.au OR 07 5474 4055



GAS/SE WASTEWATER

North

Applicant: Peter Chaplin - 1 Bay Close, St Helens
 PID: 7560027, Vol. / Folio: xxxx
 Scale 1:500



Coordinate System: GDA 1994 - MGA Zone 55

— Pete_Contours_0-5m — contour
 list_coastal_inundation_hazard_bands_20161201_break_o_day

14.5

car parking

DWELLING

SEPTIC TANK

PUMPWELL

10.5
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SITE AND SOIL EVALUATION REPORT

<u>Soil Category:</u> (as stated in AS/NZS 1547-2000) 1,...2,...3,...4,...5,...6	Modified Emerson Test Required If Yes, Emerson Class No.	No
<u>Measured or Estimated Soil Permeability (m/d):</u>	0.12-0.5m/d	
<u>Design Loading Rate: (mm/d)</u>	10 mm/day (secondary treated effluent)	
<u>Geology:</u>	Quaternary sediments.	
<hr/>		
<u>Slope:</u>		1-2 degrees to the SE
<u>Drainage lines / water courses:</u>		Nil
<u>Vegetation:</u>		Grass mature trees
<u>Site History: (land use)</u>		Large residential block
<u>Aspect:</u>		SE
<u>Pre-dominant wind direction:</u>		Northwest to southwest
<u>Site Stability:</u> Will on-site wastewater disposal affect site stability?		No
<u>Is geological advice required?</u>		No
<u>Drainage/Groundwater:</u>		No
<u>Depth to seasonal groundwater (m):</u>		1.20m
<u>Are surface or sub-surface drains required upslope of the land application area</u>		Yes
<u>Water Supply:</u>		
<input checked="" type="checkbox"/> Tank		
<u>Date of Site Evaluation:</u>		24/1/2025
<u>Weather Conditions:</u>		Fine

Peter Chaplin
djb73v@gmail.com

13/2/2025

ROCK SOLID GEOTECHNICS PTY LTD
Peter Hofto
163 Orielton Rd
Orielton
TAS 7172
0417960769
peter@rocksolidgeotechnics.com.au

Loading Certificate for Onsite Wastewater System – 1 Bay Close, St Helens

- 1 System Capacity:
 - (medium/long term) 2-bedroom dwelling
 - 4 persons, 480 litres/day

- 2 Design Criteria Summary:
 - Primary Treated Effluent 3250 litre (minimum) dual-purpose septic tank.
 - Soil Category Class 1 SAND / Class 4 (clay LOAM)
 - Land Application System AES Bed 9.6m x 5m

- 3 Reserve Area:
 - Suitable available reserve area.

- 4 Variation from design flows etc:
 - The system should successfully assimilate additional peak loadings which may result from occasional social gatherings if this does not exceed use by more than 8 persons in a 24-hour period for a period not exceeding 4 days. Visitors should be advised of the requirement to minimise time spent in showers, not running taps whilst cleaning teeth, and other common sense water conservation measures.

- 5 Consequences of overloading the system:
 - Long term use by more than 4 residents or equivalent may result in overloading of the system, surfacing of effluent, public and environmental health nuisances, pollution of surface water etc.

- 6 Consequences of under-loading the system:
 - Nil.

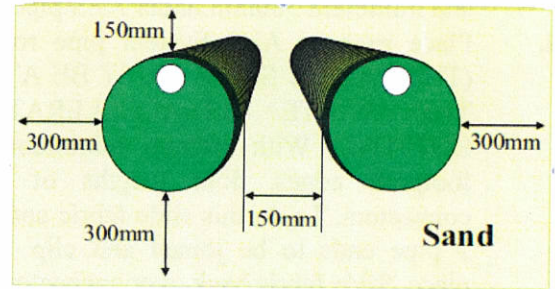
- 7 Consequences of lack of operation, maintenance and monitoring attention:
 - The septic tank should be pumped at least every 3 years. The outlet filter should be cleaned every 6 months.

Peter Hofto
Rock Solid Geotechnics Pty Ltd



1. SET OUT

- i. Set out should be in accordance with the design approved by Council.
- ii. The length of each run of AES System pipe must be horizontal
- iii. AES calculator footprint dimensions are based upon the DLR of the receiving soil and are the minimum footprint area.
- iv. Any system extension must be to the down slope side unless the infiltration footprint is level.



AES Sand Coverage Minimums

2. EXCAVATION – (track machinery causes less compaction of the soil.)

- i. Excavate as required leaving the base of excavation loose to aid infiltration. Strip and separate top soil for covering installation as per AS 1547:2012.
DO NOT damage infiltration area by driving equipment or walking on excavation prior to placement of sand layer. Refer to Appendix L Sec L7 of AS1547: 2012. Construction Techniques. Rip or scarify the infiltration area to a depth of 150 to 200mm minimum parallel to the AES pipe on all systems especially systems in Cat 4,5,6 soil with high clay content. (Refer to the design and report for this onsite installation)

“L7.1 Good construction technique AS 1547:2010

The following excavation techniques shall be observed so as to minimise the risk of damage to the soil:

- (a) Plan to excavate only when the weather is fine;
 - (b) Avoid excavation when the soil has a moisture content above the plastic limit. This can be tested by seeing if the soil forms a ‘wire’ when rolled between the palms;
 - (c) During wet seasons or when construction cannot be delayed until the weather becomes fine, smeared soil surfaces may be raked to reinstate a more natural soil surface, taking care to use fine tines and only at the surface;
 - (d) When excavating by machine, fit the bucket with ‘raker teeth’ if possible, and excavate in small ‘bites’ to minimise compaction; and
 - (e) Avoid compaction by keeping people off the finished trench or bed floor.
- In particular for trenches and beds:
- (f) If rain is forecast then cover any open trenches, to protect them from rain damage;
 - (g) Excavate perpendicular to the line of fall or parallel to the contour of sloping ground; and
 - (h) Ensure that the inverts are horizontal.



CL7.1

Damage can be done by:

- (a) Smearing, where the soil surface is smoothed, filling cracks and pores;
- (b) Compacting, where the soil porosity is reduced; and
- (c) Puddling, where washed clay settles on the base of the trench to form a relatively impermeable layer.

In particular, cohesive soils, or soils containing a significant quantity of clay, are susceptible to damage by excavation equipment during construction.

- ii. If using a raised bed configuration ensure you have sufficient soil to cover entire mound or bring in enough sand to fill out batters prior to covering with topsoil etc. as per AS 1547:2012.

3. SYSTEM SAND – Course washed sand with less than 2mm silt (ASTM C-33)

- i. Place minimum 150mm system sand to extension area and minimum 300mm under AES pipe footprint area.
- ii. Place runs of AES System pipe roughly in position (THE FABRIC SEAM MUST BE AT THE TOP AND THE WHITE BIO-ACCELERATOR AT THE BOTTOM.) With 300mm minimum clearance to all footprint edges. Join lengths of AES with AES connectors. To do this slide fabric and fibre back on the 2 pipe ends to be joined and clip AES connector in place. Slide fabric back over connector.
- iii. Place offset adaptors on each run with the 100mm hole at the top.
- iv. Ensure minimum 150mm between AES system pipes. This can be done with pegs, short pieces of 150mm pvc or reusable AES Spacer Plates. One side provides the 300m spacing required for minimum system sand. The opposite side must have a minimum of 300mm of system sand beyond the edge of the AES System pipe.
- v. Place system sand around AES pipes ensuring they stay level and in position. Remove and progressively position spacer plates or PVC pipe until all system pipes are surrounded by system sand to the top. **Walk sand between rows to aid compaction.**
- vi. EXTENSION SAND depth is a minimum of 150mm.



4. CONNECTING ROWS

- i. Connect rows with 100mm pipe as required with a maximum 100mm extending into the AES system pipe. (Raised connection – After placing raised connection pipes the top of the PVC pipe must be level with the top of the AES pipe. Lift and pack with sand.) This ensures airflow is not restricted and buffer capacity is maximised.



5. VENTING

- i. Ensure the system has a High Vent and a low vent. As per design. Low vent is a minimum 150mm above ground. Vents can be located any distance from the system provide they have no water traps that can block oxygen flow through the system. The High Vent must be 3 meters higher than the low vent.
- ii. Pressurised or steep gravity systems will require a **Velocity Diffuser**

6. BACK FILLING

- i. Ensure a minimum of 150mm System sand covers the AES pipes and PVC pipe work.
- ii. Refer to the Onsite design and Council approval and ensure that all diversions drains or site specific requirements are correctly installed.
- iii. Back fill with natural soil and compact. System extensions may require compaction in a couple of layers depending on the depth.
- iv. On mounds and down slopes strip vegetation and place fill evenly and level to all sides to avoid breakout from low points during high seasonal loadings.
- v. Cover excavation area with topsoil creating a finished surface level 50 to 100mm higher than the natural surface level ensuring that water sheds off the land application area and does not pond, compact lightly and seed or grass when completed.

For Installation support phone 0754744055

CERTIFICATE OF THE RESPONSIBLE DESIGNER

Section 94
Section 106
Section 129
Section 155

Form **35**

To: Owner name
 Address
 Suburb/postcode

Designer details:

Name: Category:
 Business name: Phone No:
 Business address:
 Fax No:
 Licence No: Email address:

Details of the proposed work:

Owner/Applicant Designer's project reference No.
 Address: Lot No:

Type of work: Building work Plumbing work (X all applicable)

Description of work:

(new building / alteration / addition / repair / removal / re-erection / water / sewerage / stormwater / on-site wastewater management system / backflow prevention / other)

Description of the Design Work (Scope, limitations or exclusions): (X all applicable certificates)

Certificate Type:	Certificate	Responsible Practitioner
	<input type="checkbox"/> Building design	Architect or Building Designer
	<input type="checkbox"/> Structural design	Engineer or Civil Designer
	<input type="checkbox"/> Fire Safety design	Fire Engineer
	<input type="checkbox"/> Civil design	Civil Engineer or Civil Designer
	<input checked="" type="checkbox"/> Hydraulic design	Building Services Designer
	<input type="checkbox"/> Fire service design	Building Services Designer
	<input type="checkbox"/> Electrical design	Building Services Designer
	<input type="checkbox"/> Mechanical design	Building Service Designer
	Plumbing design	Plumber-Certifier; Architect, Building Designer or Engineer
	<input type="checkbox"/> Other (specify)	

Deemed-to-Satisfy: Performance Solution: (X the appropriate box)

Other details:

Design documents provided:	
-----------------------------------	--

The following documents are provided with this Certificate –

Document description:

Drawing numbers:	Prepared by: ROCK SOLID GEOTECHNICS	Date: 13/2/2025
Schedules:	Prepared by:	Date:
Specifications:	Prepared by: ROCK SOLID GEOTECHNICS	Date: 13/2/2025
Computations:	Prepared by: ROCK SOLID GEOTECHNICS	Date: 13/2/2025
Performance solution proposals:	Prepared by:	Date:
Test reports:	Prepared by:	Date:

Standards, codes or guidelines relied on in design process:	
--	--

AS 1547:2021 On-site domestic wastewater management
Director's Guidelines for Onsite Wastewater Management

Any other relevant documentation:	
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Advanced Enviro Septic Design & Installation Manual.
Advanced Enviro Septic Design Installation Instructions & Home-Owner's Manual.
All by Chandlers Environmental Pty Ltd

Site & Soil Evaluation and design report, 1 Bay Close, St Helens, dated 13/2/2025

Form 55 by Rock Solid Geotechnics P/L, dated 13/2/2025, certifying Site & Soil Evaluation Report

Attribution as designer:	
---------------------------------	--

I Peter Hofto – ROCK SOLID GEOTECHNICS P/L am responsible for the design of that part of the work as described in this certificate;

The documentation relating to the design includes sufficient information for the assessment of the work in accordance with the *Building Act 2016* and sufficient detail for the builder or plumber to carry out the work in accordance with the documents and the Act;

This certificate confirms compliance and is evidence of suitability of this design with the requirements of the National Construction Code.

	<i>Name: (print)</i>	<i>Signed</i>	<i>Date</i>
Designer:	<input type="text" value="Peter Hofto"/>	<input type="text" value="PHO"/>	<input type="text" value="13/2/2025"/>
Licence No:	<input type="text" value="CC6159I"/>		

Assessment of Certifiable Works: (TasWater)

Note: single residential dwellings and outbuildings on a lot with an existing sewer connection are not considered to increase demand and are not certifiable.
If you cannot check ALL of these boxes, LEAVE THIS SECTION BLANK.
TasWater must then be contacted to determine if the proposed works are Certifiable Works.

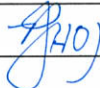
I confirm that the proposed works are not Certifiable Works, in accordance with the Guidelines for TasWater CCW Assessments, by virtue that all of the following are satisfied:

- The works will not increase the demand for water supplied by TasWater
- The works will not increase or decrease the amount of sewage or toxins that is to be removed by, or discharged into, TasWater's sewerage infrastructure
- The works will not require a new connection, or a modification to an existing connection, to be made to TasWater's infrastructure
- The works will not damage or interfere with TasWater's works
- The works will not adversely affect TasWater's operations
- The works are not within 2m of TasWater's infrastructure and are outside any TasWater easement
- I have checked the LISTMap to confirm the location of TasWater infrastructure
- If the property is connected to TasWater's water system, a water meter is in place, or has been applied for to TasWater.

Certification:

IPeter Hofto – ROCK SOLID GEOTECHNICS P/L.....
being responsible for the proposed work, am satisfied that the works described above are not Certifiable Works, as defined within the *Water and Sewerage Industry Act 2008*, that I have answered the above questions with all due diligence and have read and understood the Guidelines for TasWater CCW Assessments.

Note: the Guidelines for TasWater Certification of Certifiable Works Assessments are available at: www.taswater.com.au

	<i>Name: (print)</i>	<i>Signed</i>	<i>Date</i>
Designer:	Peter Hofto		13/2/2025

CERTIFICATE OF QUALIFIED PERSON – ASSESSABLE ITEM

Section 321

Form **55**

To: Owner /Agent
 Address
 Suburb/postcode

Qualified person details:

Qualified person:
 Address: Phone No:
 Fax No:
 Licence No: Email address:
 Qualifications and Insurance details: (description from Column 3 of the Director's Determination - Certificates by Qualified Persons for Assessable Items)

 Speciality area of expertise: (description from Column 4 of the Director's Determination - Certificates by Qualified Persons for Assessable Items)

Details of work:

Address: Lot No:
 Certificate of title No:
 The assessable item related to this certificate: (description of the assessable item being certified)
 Assessable item includes –
 - a material;
 - a design
 - a form of construction
 - a document
 - testing of a component, building system or plumbing system
 - an inspection, or assessment, performed

Certificate details:

Certificate type: (description from Column 1 of Schedule 1 of the Director's Determination - Certificates by Qualified Persons for Assessable Items n)

This certificate is in relation to the above assessable items, at any stage, as part of – (tick one)

building work, plumbing work or plumbing installation or demolition work

OR

a building, temporary structure or plumbing installation

In issuing this certificate the following matters are relevant –

Documents:

AS 1547:2021 On-site domestic wastewater management

Relevant calculations:

References:

AS/NZS 1547.2012 - Onsite domestic wastewater management

Director's Guidelines for Onsite Wastewater Management – CBOS - 2017

Substance of Certificate: (what it is that is being certified)

Site & Soil Evaluation & Design Report – 1 Bay Close, St Helens by Rock Solid Geotechnics P/L dated 13/2/2025

Scope and/or Limitations

Exclusions: Design of AES Bed

I certify the matters described in this certificate.

Qualified person:

Signed:



Certificate No:

GEOTECH
25-018

Date:

13/2/2025

CERTIFICATE OF THE RESPONSIBLE DESIGNER

Section 94
Section 106
Section 129
Section 155

Form **35**

To: Owner name
 Address
 Suburb/postcode

Designer details:

Name: Category:
 Business name: Phone No:
 Business address:
 Fax No:
 Licence No: Email address:

Details of the proposed work:

Owner/Applicant Designer's project reference No.
Address: Lot No:

Type of work: Building work Plumbing work (X all applicable)

Description of work:

(new building / alteration / addition / repair / removal / re-erection water / sewerage / stormwater / on-site wastewater management system / backflow prevention / other)

Description of the Design Work (Scope, limitations or exclusions): (X all applicable certificates)

Certificate Type:	Certificate	Responsible Practitioner
	<input checked="" type="checkbox"/> Hydraulic design	Building Services Designer
	<input type="checkbox"/> Other (specify)	

Deemed-to-Satisfy: Performance Solution: (X the appropriate box)

Other details:

Performance solution, consistent with NCC Vol 3 with respect to:
 Advanced Enviro Septic unit producing secondary treated effluent consistent with definition provided by Director's Guidelines for onsite wastewater management systems 2017.

Design documents provided:

The following documents are provided with this Certificate –

Document description:

Drawing numbers:	Prepared by: ROCK SOLID GEOTECHNICS	Date: 13/2/2025
Schedules:	Prepared by:	Date:
Specifications:	Prepared by: ROCK SOLID GEOTECHNICS	Date: 13/2/2025
Computations:	Prepared by: ROCK SOLID GEOTECHNICS	Date: 13/2/2025
Performance solution proposals:	Prepared by: Stephen Dennis	Date: 13/2/2025
Test reports:	Prepared by:	Date:

Standards, codes or guidelines relied on in design process:

AS 1547:2021 On-site domestic wastewater management
Director's Guidelines for Onsite Wastewater Management

Any other relevant documentation:

Advanced Enviro Septic Design & Installation Manual.
Advanced Enviro Septic Design Installation Instructions & Home-Owner's Manual.
All by Chandlers Environmental Pty Ltd

Site & Soil Evaluation and design report by Rock Solid Geotechnics P/L for 1 Bay Close, St Helens, dated 13/2/2025.

Form 55 by Rock Solid Geotechnics P/L, dated 12/2/2025, certifying Site & Soil Evaluation Report.

Attribution as designer:

I, Stephen Dennis, am responsible for the design of that part of the work as described in this certificate;

The documentation relating to the design includes sufficient information for the assessment of the work in accordance with the *Building Act 2016* and sufficient detail for the builder or plumber to carry out the work in accordance with the documents and the Act;

This certificate confirms compliance and is evidence of suitability of this design with the requirements of the National Construction Code.

	<i>Name: (print)</i>	<i>Signed</i>	<i>Date</i>
Designer:	<input type="text" value="Stephen Dennis"/>	<input type="text"/>	<input type="text" value="13/2/2025"/>
Licence No:	<input type="text" value="373083211"/>		

[]

Assessment of Certifiable Works: (TasWater)	
--	--

Note: single residential dwellings and outbuildings on a lot with an existing sewer connection are not considered to increase demand and are not certifiable.

If you cannot check ALL of these boxes, LEAVE THIS SECTION BLANK.

TasWater must then be contacted to determine if the proposed works are Certifiable Works.

I confirm that the proposed works are not Certifiable Works, in accordance with the Guidelines for TasWater CCW Assessments, by virtue that all of the following are satisfied:

- The works will not increase the demand for water supplied by TasWater
- The works will not increase or decrease the amount of sewage or toxins that is to be removed by, or discharged into, TasWater's sewerage infrastructure
- The works will not require a new connection, or a modification to an existing connection, to be made to TasWater's infrastructure
- The works will not damage or interfere with TasWater's works
- The works will not adversely affect TasWater's operations
- The works are not within 2m of TasWater's infrastructure and are outside any TasWater easement
- I have checked the LISTMap to confirm the location of TasWater infrastructure
- If the property is connected to TasWater's water system, a water meter is in place, or has been applied for to TasWater.

Certification:	
-----------------------	--

I, Stephen Dennis, being responsible for the proposed work, am satisfied that the works described above are not Certifiable Works, as defined within the *Water and Sewerage Industry Act 2008*, that I have answered the above questions with all due diligence and have read and understood the Guidelines for TasWater CCW Assessments.

Note: the Guidelines for TasWater Certification of Certifiable Works Assessments are available at: www.taswater.com.au

	<i>Name: (print)</i>	<i>Signed</i>	<i>Date</i>
Designer:	Stephen Dennis		13/2/2025

CERTIFICATE OF QUALIFIED PERSON – ASSESSABLE ITEM

Section 321

Form **55**

To: Owner /Agent
 Address
 Suburb/postcode

Qualified person details:

Qualified person:
 Address: Phone No:
 Fax No:
 Licence No: Email address:
 Qualifications and Insurance details: *(description from Column 3 of the Director's Determination - Certificates by Qualified Persons for Assessable Items)*
 Speciality area of expertise: *(description from Column 4 of the Director's Determination - Certificates by Qualified Persons for Assessable Items)*

Details of work:

Address: Lot No:
 Certificate of title No:
 The assessable item related to this certificate: *(description of the assessable item being certified)*
 Assessable item includes –
 - a material;
 - a design
 - a form of construction
 - a document
 - testing of a component, building system or plumbing system
 - an inspection, or assessment, performed

Certificate details:

Certificate type: *(description from Column 1 of Schedule 1 of the Director's Determination - Certificates by Qualified Persons for Assessable Items n)*

This certificate is in relation to the above assessable items, at any stage, as part of – (tick one)

building work, plumbing work or plumbing installation or demolition work

OR

a building, temporary structure or plumbing installation

In issuing this certificate the following matters are relevant –

Documents:

Geotech 25-018 Rock Solid Geotechnics P/L

Relevant calculations:

References:

NCC Vol 3. Refer to AES Tasmania NCC Performance Solution V4.

AS/NZS 1547.2012 - Onsite domestic wastewater management

Director's Guidelines for Onsite Wastewater Management 2017

Advanced Enviro Septic Design & Installation Manual,
Advanced Enviro-Septic Installation Instructions and,
Home Owner's Manual; all by Chankar Environmental Pty Ltd, 62 Rene Street, Noosaville QLD 4566

Substance of Certificate: (what it is that is being certified)

Confirmation of the performance solution for design of Advanced Enviro-Septic System on 27/5/2024.

(Evidence of compliance with NCC Vol 3 TAS Section H is provided in the appended document headed "AES Tasmanian NCC Performance Solution")

Scope and/or Limitations

Exclusions: All works other than the above.

I certify the matters described in this certificate.

Qualified person: *Signed:* *Certificate No:* *Date:*