



DEVELOPMENT APPLICATION

PDPLANPMTD-2026/062691

PROPOSAL: Dwelling

LOCATION: 19 Cremorne Avenue, Cremorne

RELEVANT PLANNING SCHEME: Tasmanian Planning Scheme - Clarence

ADVERTISING EXPIRY DATE: 12/10/2026

The relevant plans and documents can be inspected at the Council offices, 38 Bligh Street, Rosny Park, during normal office hours until 12/10/2026. In addition to legislative requirements, plans and documents can also be viewed at www.ccc.tas.gov.au during these times.

Any person may make representations about the application to the Chief Executive Officer, by writing to PO Box 96, Rosny Park, 7018 or by electronic mail to clarence@ccc.tas.gov.au. Representations must be received by Council on or before 12/10/2026.

To enable Council to contact you if necessary, would you please also include a day time contact number in any correspondence you may forward.

Any personal information submitted is covered by Council's privacy policy, available at www.ccc.tas.gov.au or at the Council offices.

Planning Application

Use this form to obtain planning approval for the use and development of land, including change of use, subdividing land into smaller lots, lot consolidation, or signage.

Please refer to the Planning Application checklist on the following pages to determine what documentation must be submitted with your application.

Proposal: New Dwelling

Location: 19 Cremorne Avenue, Cremorne

Personal Information Removed

Is the property on the Tasmanian Heritage Register?

Yes ☐ No ☒

If yes, we recommend you discuss your proposal with Heritage Tasmania prior to lodgement as



exemptions may apply which may save you time on your proposal.

If you had pre-application discussions with City of Clarence, please provide planner's name:

Current use of site: **Vacant**

Does the proposal involve land administered or owned by the Crown or Council? Yes ☐ No ☒

Declaration

- I have read the Certificate of Title and Schedule of Easements for the land and am satisfied that this application is not prevented by any restrictions, easements or covenants.
- I authorise the provision of a copy of any documents relating to this application to any person for the purposes of assessment or public consultation. I agree to arrange for the permission of the copyright owner of any part of this application to be obtained. I have arranged permission for Council's representatives to enter the land to assess this application
- I declare that, in accordance with Section 52 of the Land Use Planning and Approvals Act 1993, that I have notified the owner of the intention to make this application. Where the subject property is owned or controlled by Council or the Crown, their signed consent is attached.
- I declare that the information in this declaration is true and correct.

Acknowledgement

- I acknowledge that the documentation submitted in support of my application will become a public record held by Council and may be reproduced by Council in both electronic and hard copy format in order to facilitate the assessment process; for display purposes during public consultation; and to fulfil its statutory obligations. I further acknowledge that following determination of my application, Council will store documentation relating to my application in electronic format only.

Personal Information Removed



Planning Application checklist

Mandatory Documents

This information is required for the application to be valid. We are unable to proceed with an application without these documents.

- ☐ Details of the location of the proposed use or development.
- ☐ A copy of the current Certificate of Title, Sealed Plan, Plan or Diagram and Schedule of Easements and other restrictions for each parcel of land on which the use or development is proposed.
- ☐ Full description of the proposed use or development.
- ☐ Description of the proposed operation. May include where appropriate: staff/student/customer numbers; operating hours; truck movements; and loading/unloading requirements; waste generation and disposal; equipment used; pollution, including noise, fumes, smoke or vibration and mitigation/management measures.
- ☐ Declaration the owner has been notified if the applicant is not the owner.
- ☐ Crown or Council consent (if publically-owned land).
- ☐ Any reports, plans or other information required by the relevant zone or code.
- ☐ Fees prescribed by the City of Clarence.

Application fees (please phone 03 6217 9550 to determine what fees apply). An invoice will be emailed upon lodgement.

Additional Documents

In addition to the mandatory information required above, Council may, to enable it to consider an application, request further information it considers necessary to ensure that the proposed use or development will comply with any relevant standards and purpose statements in the zone, codes or specific area plan, applicable to the use or development.

- ☐ Site analysis and site plan, including where relevant:
 - Existing and proposed use(s) on site.
 - Boundaries and dimensions of the site.
 - Topography, including contours showing AHD levels and major site features.
 - Natural drainage lines, watercourses and wetlands on or adjacent to the site.
 - Soil type.
 - Vegetation types and distribution, and trees and vegetation to be removed.
 - Location and capacity of any existing services or easements on/to the site.
 - Existing pedestrian and vehicle access to the site.
 - Location of existing and proposed buildings on the site.
 - Location of existing adjoining properties, adjacent buildings and their uses.
 - Any natural hazards that may affect use or development on the site.
 - Proposed roads, driveways, car parking areas and footpaths within the site.
 - Any proposed open space, communal space, or facilities on the site.
-



- Main utility service connection points and easements.
 - Proposed subdivision lot boundaries.
- ☐ Where it is proposed to erect buildings, detailed plans with dimensions at a scale of 1:100 or 1:200 showing:
- Internal layout of each building on the site.
 - Private open space for each dwelling.
 - External storage spaces.
 - Car parking space location and layout.
 - Major elevations of every building to be erected.
 - Shadow diagrams of the proposed buildings and adjacent structures demonstrating the extent of shading of adjacent private open spaces and external windows of buildings on adjacent sites.
 - Relationship of the elevations to natural ground level, showing any proposed cut or fill.
 - Materials and colours to be used on rooves and external walls.
- ☐ Where it is proposed to erect buildings, a plan of the proposed landscaping showing:
- Planting concepts.
 - Paving materials and drainage treatments and lighting for vehicle areas and footpaths.
 - Plantings proposed for screening from adjacent sites or public places.
- ☐ Any additional reports, plans or other information required by the relevant zone or code.
-

This list is not comprehensive for all possible situations. If you require further information about what may be required as part of your application documentation, please contact City of Clarence Planning team on (03) 6217 9550.



SEARCH OF TORRENS TITLE

VOLUME 74979	FOLIO 184
EDITION 6	DATE OF ISSUE 03-July-2026

SEARCH DATE : 09-July-2026

SEARCH TIME : 10.44 am

DESCRIPTION OF LAND

City of CLARENCE

Lot 184 on Diagram 74979 (formerly being 214-13D)

Derivation : Part of 213 Acres - Gtd. to E. Grimsey.

Prior CT 3162/33

SCHEDULE 1

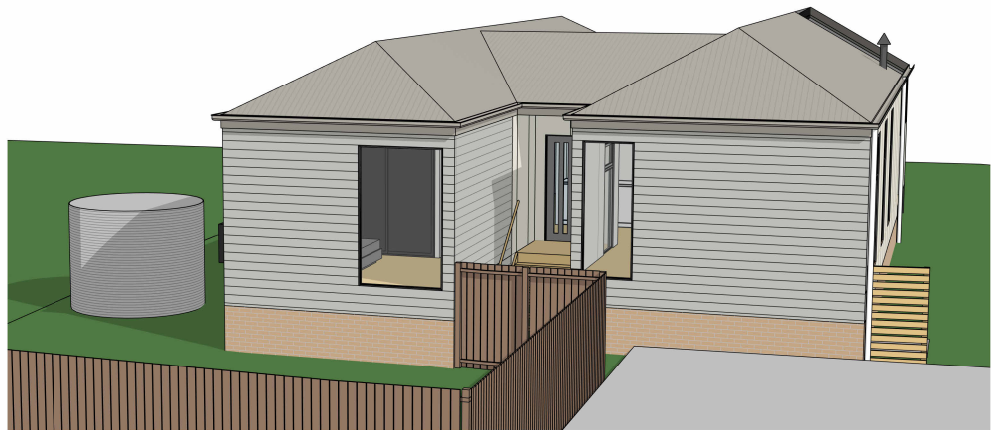
N143785 TRANSFER to SAUNDERS BOOT PTY LTD Registered
03-July-2026 at noon

SCHEDULE 2

Reservations and conditions in the Crown Grant if any

UNREGISTERED DEALINGS AND NOTATIONS

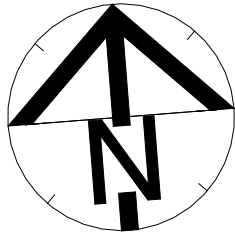
No unregistered dealings or other notations



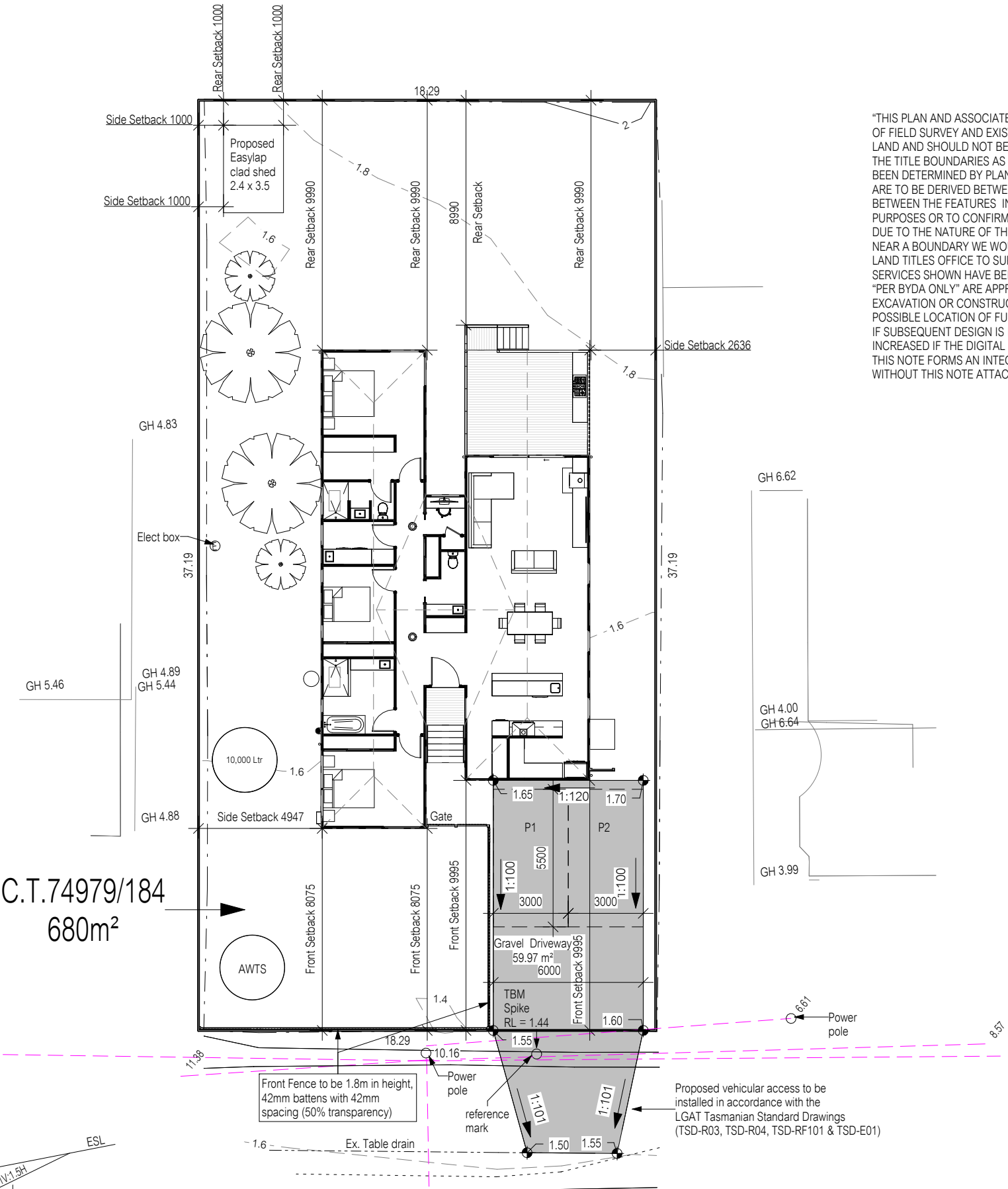
AP2026-2575 - PROPOSED SAUNDERS & BOOT RESIDENCE
19 Cremorne Avenue
CREMORNE

SHEET		DRAWING TITLE
01	D	SITE PLAN
01a	C	DRAINAGE PLAN
02	C	FLOOR PLAN
03	C	ELEVATIONS
03a	C	PERSPECTIVE VIEWS

D	Provide typical gravel driveway cross section, add gradients,widths & spot heights of driveway.	10 Sep. 2026	RJ	ST	01	Notes • Builder to verify all dimensions and levels on site prior to commencement of work • All work to be carried out in accordance with the current National Construction Code. • All materials to be installed according to manufacturers specifications. • Do not scale from these drawings. • No changes permitted without consultation with designer.	Designer: ANOTHER PERSPECTIVE PTY LTD PO BOX 171 NORTH HOBART LIC. NO. 685230609 (S. Turvey) Ph: (03) 6231 4122 Fx: (03) 6231 4166 Email: info@anotherperspective.com.au	Client / Project info PROPOSED SAUNDERS & BOOT RESIDENCE 19 Cremorne Avenue CREMORNE	Soil Classification: Title Reference: Floor Areas: Porch / Deck Areas: Wind Speed: Climate Zone: Alpine Zone: Corrosion Environment: Certified BAL: Designed BAL: (Refer to Standard Notes for Explanation)	A C.T.74979/184 157.25m² 27.19m² N2 7 N/A HIGH Not Bushfir Prone Not Bushfir Prone	COVER SHEET	
C	Inclusion of front fence, Updated roof pitch, Provide shadow diagrams (separate set).	13 Aug. 2026	SW	ST	01 - 03a, Elec, Roof						AP2026-2575	
B	Slide central section forward 1200mm, Window changes to comply with Light & Ventilation, show polycarbonate roof over deck, show subfloor as brick in lieu of blockwork	01 July 2026	RJ	ST	01-03a, Electrical & Calcs & Roof						Date	25 May 2026
	DA PLAN SET	25 June 2026	RJ	ST	01-03a						Scale	Sheet
A	Changes to floor plan, add block subfloor in lieu of posts, increase deck size to be 4000 & realign Living section to keep deck in line with Bed section, window changes, roof changes.	24 June 2026	RJ	ST	01,02-03a						00/03	
	PRELIM DA PLANS	25 May 2026	RJ	N/A	01-03a							
No.	Amendment	Date	Drawn	Checked	Sheet							



Ground Floor FFL 2.80



"THIS PLAN AND ASSOCIATED DIGITAL MODEL IS PREPARED FOR ANDREW SAUNDERS FROM A COMBINATION OF FIELD SURVEY AND EXISTING RECORDS FOR THE PURPOSE OF DESIGNING NEW CONSTRUCTIONS ON THE LAND AND SHOULD NOT BE USED FOR ANY OTHER PURPOSE.
THE TITLE BOUNDARIES AS SHOWN ON THIS PLAN WERE NOT MARKED AT THE TIME OF THE SURVEY AND HAVE BEEN DETERMINED BY PLAN DIMENSIONS ONLY AND NOT BY FIELD SURVEY. NO MEASUREMENTS OR OFFSETS ARE TO BE DERIVED BETWEEN THE FEATURES ON THIS PLAN AND THE BOUNDARY LAYER. THE RELATIONSHIP BETWEEN THE FEATURES IN THIS MODEL AND THE BOUNDARY LAYERS CANNOT BE USED FOR ANY SET OUT PURPOSES OR TO CONFIRM THE POSITION OF THE TITLE BOUNDARIES ON SITE.
DUE TO THE NATURE OF THE TITLE BOUNDARY INFORMATION, IF ANY STRUCTURES ARE DESIGNED ON OR NEAR A BOUNDARY WE WOULD RECOMMEND A RE-MARK SURVEY BE COMPLETED AND LODGED WITH THE LAND TITLES OFFICE TO SUPPORT THE BOUNDARY DEFINITION.
SERVICES SHOWN HAVE BEEN LOCATED WHERE VISIBLE BY FIELD SURVEY. SERVICES DENOTED AS BEING "PER BYDA ONLY" ARE APPROXIMATE AND FOR ILLUSTRATIVE PURPOSES ONLY. PRIOR TO ANY DEMOLITION, EXCAVATION OR CONSTRUCTION ON THE SITE, THE RELEVANT AUTHORITY SHOULD BE CONTACTED FOR POSSIBLE LOCATION OF FURTHER UNDERGROUND SERVICES AND DETAILED LOCATIONS OF ALL SERVICES. IF SUBSEQUENT DESIGN IS INTENDED FOR CONSTRUCTION SETOUT, FUTURE SURVEYING SETOUT COSTS ARE INCREASED IF THE DIGITAL DATA PROVIDED IS ROTATED, SCALED OR MOVED.
THIS NOTE FORMS AN INTEGRAL PART OF THE PLAN/DATA. ANY REPRODUCTION OF THIS PLAN/MODEL WITHOUT THIS NOTE ATTACHED WILL RENDER THE INFORMATION SHOWN INVALID.

D	10 Sep. 2026	RJ
C	13 Aug. 2026	SW
B	01 July 2026	RJ
A	24 June 2026	RJ
No.	Date	Int.

- Amendment changes as per cover sheet
- Notes
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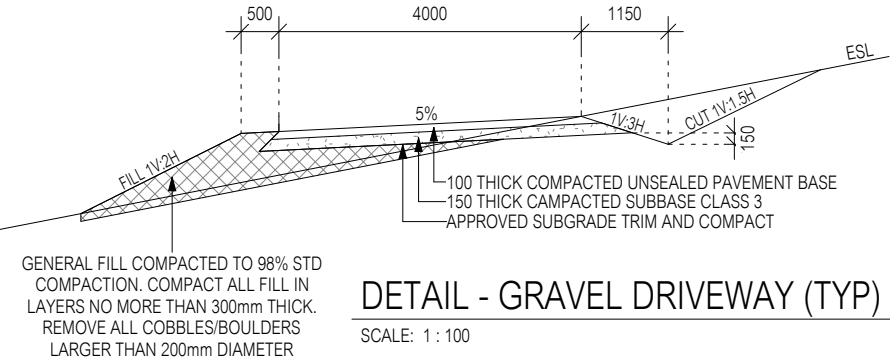
Client / Project info

PROPOSED SAUNDERS & BOOT RESIDENCE
19 Cremorne Avenue
CREMORNE



SITE PLAN

Drawn	RJ	AP2026-2575
Date	18 May 2026	Sheet
Scale	As indicated	01/03



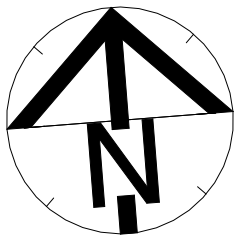
CREMORNE AVENUE

SITE PLAN

SCALE: 1 : 200

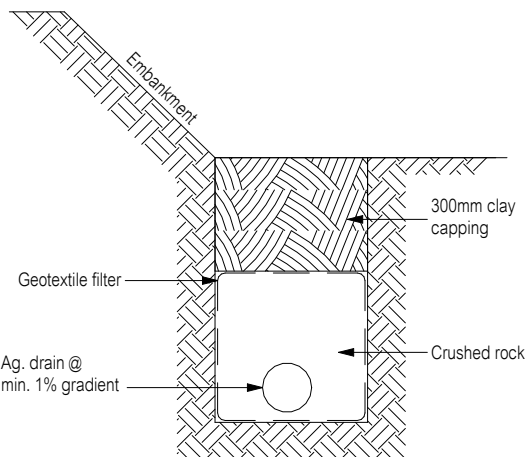
EXPLANATORY NOTES: TASMANIAN PLANNING SCHEME - CLARENCE CITY COUNCIL	
10.4.4 - Site coverage	
A1	Site Coverage: Max. 30% of site = 204.0m² Proposed site coverage 179.81m² (26.44%)



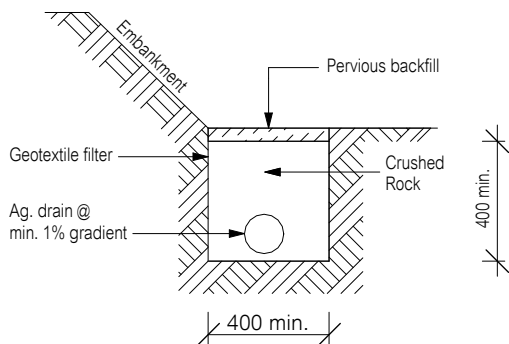


Where ag drain is < 1.8m from footing, the following engineering principles are required:

1. Ag drain to be capped with 300mm of clay to prevent ingress of surface run-off unless it is under a paving slab etc (ag drains are designed for removal of ground water, surface water should be dealt with separately).
2. Ag drain to have a minimum 1% fall to a grated pit which drains to the stormwater system.
3. Install a geotextile filter sock to the slotted drain, and enclose the whole drain in geofabric (to the underside of clay capping).
4. Provide additional grated pits / or inspection openings along the length of the ag drain and at the high point to make the effect of a blockage visible and enable a blockage to be cleared.



TYPICAL AG. DRAIN DETAIL
(<1800 FROM HOUSE)
Not to scale



TYPICAL AG. DRAIN DETAIL
(≥1800 FROM HOUSE)
Not to scale

Wastewater system:
AWTS unit vented according to NCC vol 3 Tas H101.2
min 1:60 fall from all fixtures
Modified absorption bed - 15m2
E.G. 2m x 7.5m
Min 2m from buildings
Min 1.5m from upslope or level boundaries
Min 100m from downslope surface water
Refer to GES report

ALL DOWNPIPES TO BE CONNECTED TO WATER TANK.

C.T.74979/184
680m²

STORMWATER CONNECTED TO EXISTING TABLE DRAIN

AWTS UNIT
MIN 1:60 FALL
FROM ALL
FIXTURES

10,000 Ltr

Overflow
connected to
stormwater

ORG @ 1.72
with tap over

Hot water
overflow
connected to
stormwater

50mm UPVC
vent to outside
through roof

Elect box

GH 4.83

GH 4.89

GH 5.44

GH 4.88

GH 5.46

GH 4.00

GH 6.64

GH 3.99

GH 6.62

GH 6.61

GH 8.51

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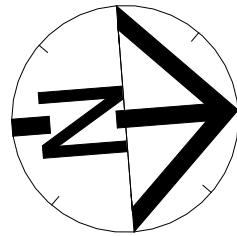
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C	13 Aug. 2026	SW
B	01 July 2026	RJ
A	24 June 2026	RJ
No.	Date	Int.

Floor Area = 157.26m²

- Circulation space to comply with Part 4.2 of the *Livable Housing Design Standard*.

Location of wall reinforcement to comply with Part 6 of the *Livable Housing Design Standard*.

All window sizes to be checked and/or confirmed on site prior to ordering glazing units

Amendment changes as per cover sheet

- Notes
- Builder to verify all dimensions and levels on site prior to commencement of work
 - All work to be carried out in accordance with the current National Construction Code.
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LIC. NO. 685230609 (S. Turvey)
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Fx: (03) 6231 4166
Email:
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Client / Project info

PROPOSED SAUNDERS & BOOT RESIDENCE
19 Cremorne Avenue
CREMORNE



FLOOR PLAN	
Drawn	RJ
Date	18 May 2026
Scale	1 : 100
Copyright ©	

Sheet
02/03

Shadows shown for stylisation purposes only



All lightweight cladding to be installed to manufacturer's guidelines. Refer to manufacturer's documentation.

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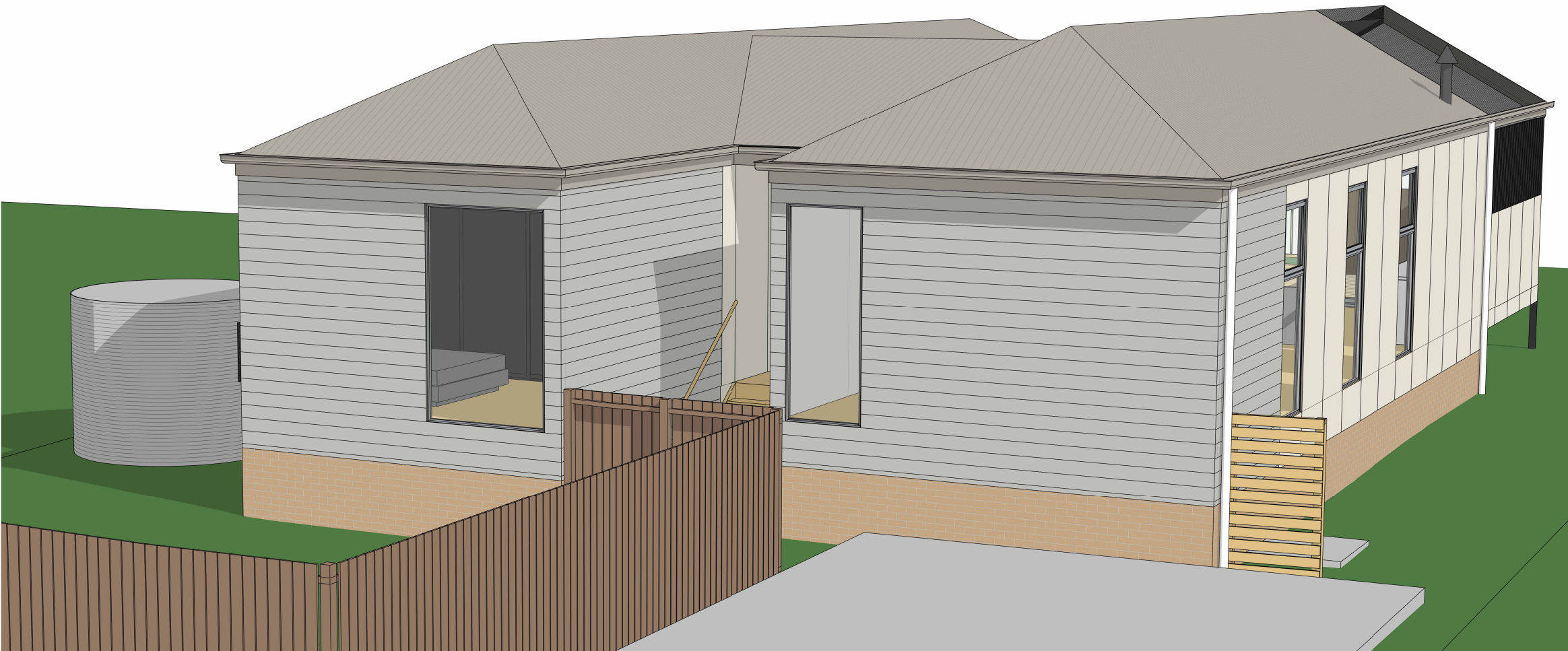
PROPOSED SAUNDERS & BOOT RESIDENCE

19 Cremorne Avenue
CREMORNE



ELEVATIONS

Drawn	RJ	AP2026-2575
Date	25 May 2026	Sheet
Scale	1 : 100	03/03
Copyright ©		



Shadows shown for stylisations purpose only

C	13 Aug. 2026	SW
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No.	Date	Int.

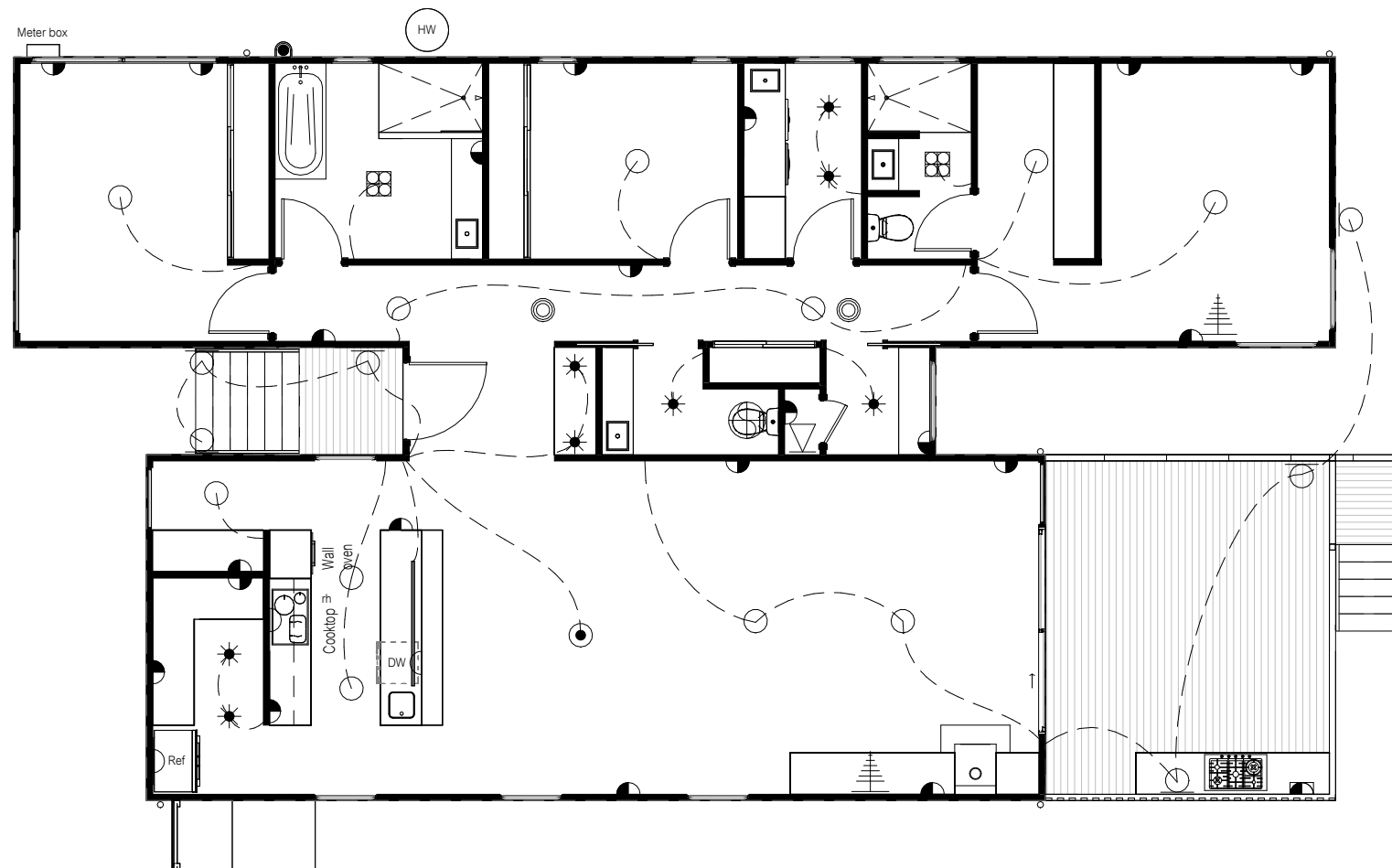
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PROPOSED SAUNDERS & BOOT RESIDENCE 19 Cremorne Avenue CREMORNE



PERSPECTIVE VIEWS		
Drawn	RJ	AP2026-2575
Date	25 May 2026	Sheet
Scale		03a/03
Copyright ©		



LEGEND (W = Wattage e.g. 35W = 35 Watts.)

- | | |
|---|--|
|  | STANDARD CEILING LIGHT POINT (30W) |
|  | DOWNLIGHT POINT (UNVENTED) (35W) |
|  | LED DOWNLIGHT POINT (10W) SUITABLE FOR & FITTED WITH INSULATION OVER. (IC RATED) |
|  | PENDANT LIGHT (30W) |
|  | WALL LIGHT POINT (30W) |
|  | 2 x 900mm FLUORESCENT LIGHT POINT (36W) |
|  | 2 x SLIM T5 900mm FLUORESCENT LIGHT POINT (28W) |
|  | SINGLE POWER POINT |
|  | DOUBLE POWER POINT |
|  | DOUBLE POWER POINT WITH USB |
|  | WATER PROOF POWER POINT |
|  | MAINS POWERED SMOKE ALARM (INTERCONNECTED WHERE MORE THAN 1) |
|  | FAN / HEATER / LIGHT (8W) (VENT IN ACCORDANCE WITH N.C.C. 10.8.2) |
|  | HEATER LIGHT (WATTAGE EXCLUDED UNDER 13.7.6(1)) |
|  | TV CONNECTION POINT |
|  | NBN/TELEPHONE CONNECTION POINT |
|  | SENSOR LIGHT |
|  | EXHAUST FAN (VENT IN ACCORDANCE WITH N.C.C. 10.8.2) |
|  | FLOOD LIGHT |
|  | CAT 6 CONNECTION POINT |
|  | TREAD LIGHTS (2W) |
|  | DUCTED VACUUM POINT |
|  | SECURITY SYSTEM KEYPAD |
|  | SECURITY SYSTEM SENSOR |

ALL EXHAUST FANS:
25 L/s for a bathroom or sanitary compartment, 40 L/s for a kitchen or laundry. Exhaust from a kitchen, kitchen range hood, bathroom, sanitary compartment, or laundry must be discharged directly or via a shaft or duct to outdoor air.

Where no external ventilation / windows provided, exhaust fans to wet areas/ laundry to be fitted with a run on timer. 20mm gap base of door to comply with N.C.C. 10.8.2 (5)(a).

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B	01 July 2026	RJ
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CREMORNE



ELECTRICAL PLAN

Drawn	RJ	AP2026-2575
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Date	24 June 2026	Sheet
------	--------------	-------

Scale 1:100 00/002

09/03

Lighting



Calculator

LEGEND:
SW = Sliding Window, AW = Awning Window, SD = Sliding door, FD = French Door,
BRPG = Bushfire Rated Privacy Glass
NOTE: Window tags including (DG) are to be Double Glazed, otherwise they are to
be single glazed.

NOTE:
Windows supplied MUST HAVE Uw better and or equal to stated figures and SHGC within +/- 5% of stated figures.
Windows labelled YES in "Restricted/protected" column to comply with N.C.C. 11.3.7 & 11.3.8
* - Glass specification changed to comply with Bushfire requirements (Refer to Sheet --)

WINDOW NUMBER	SIZE / TYPE	ID	Uw	SHGC	RESTRICTED
SL1	900 x 600				
SL2	900 x 600				
W01	06-27AW (DG)				
W02	18-06AW (DG) Opaque				
W03	15-06AW (DG)				
W04	15-06AW (DG)				
W05	12-09AW (DG)				
W06	04-12AW (DG) Opaque				
W07	21-12AW (DG)				
W08	21-12AW (DG)				
W09	12-12AW (DG)				
W10	21-09FW (DG)				
W11	21-30SD (DG)				
W12	24-09AW (DG)				
W13	24-09AW (DG)				
W14	24-09AW (DG)				
W15	24-09FW (DG)				
W16	21-09AW (DG)				
W17	24-15FW (DG)				

INSULATION SCHEDULE	
Area	Insulation Details
Roof	Sarking (vapour permeable) OR R1.3 Anticon Sarking
Ceiling	R?? bulk insulation (or equivalent) excluding GARAGE
Walls (external)	R?? bulk insulation (or equivalent) with 1 layer sisalation (vapour permeable). Sisalation only to GARAGE
Walls (Internal)	N/A or R?? bulk insulation (or equivalent) to internal walls adjacent to GARAGE / SUBFLOOR / ROOFSPACE
Floors	R?? bulk insulation (or equivalent) to all timber floors

NOTE:
Clearance is required for uncompressed installation of bulk insulation and timbers should be sized accordingly.
Bulk insulation thicknesses vary depending on manufacturer and should be selected accordingly, and installed to manufacturer's specification.
Ventilation to comply with N.C.C. 10.8.3.
Recommended to comply with *CBOS - CONDENSATION IN BUILDINGS - TASMANIAN DESIGNER'S GUIDE* (i.e. min. 25mm clearance required between roofing and sarking (i.e. batten over sarking OR sarking over batten + vented batten) & Min. 25mm air gap above bulk insulation into roof space).
Where solar tubes are located, diffusers are to be installed.
Where skylights are located, ceiling insulation is to be installed to length of shaft.

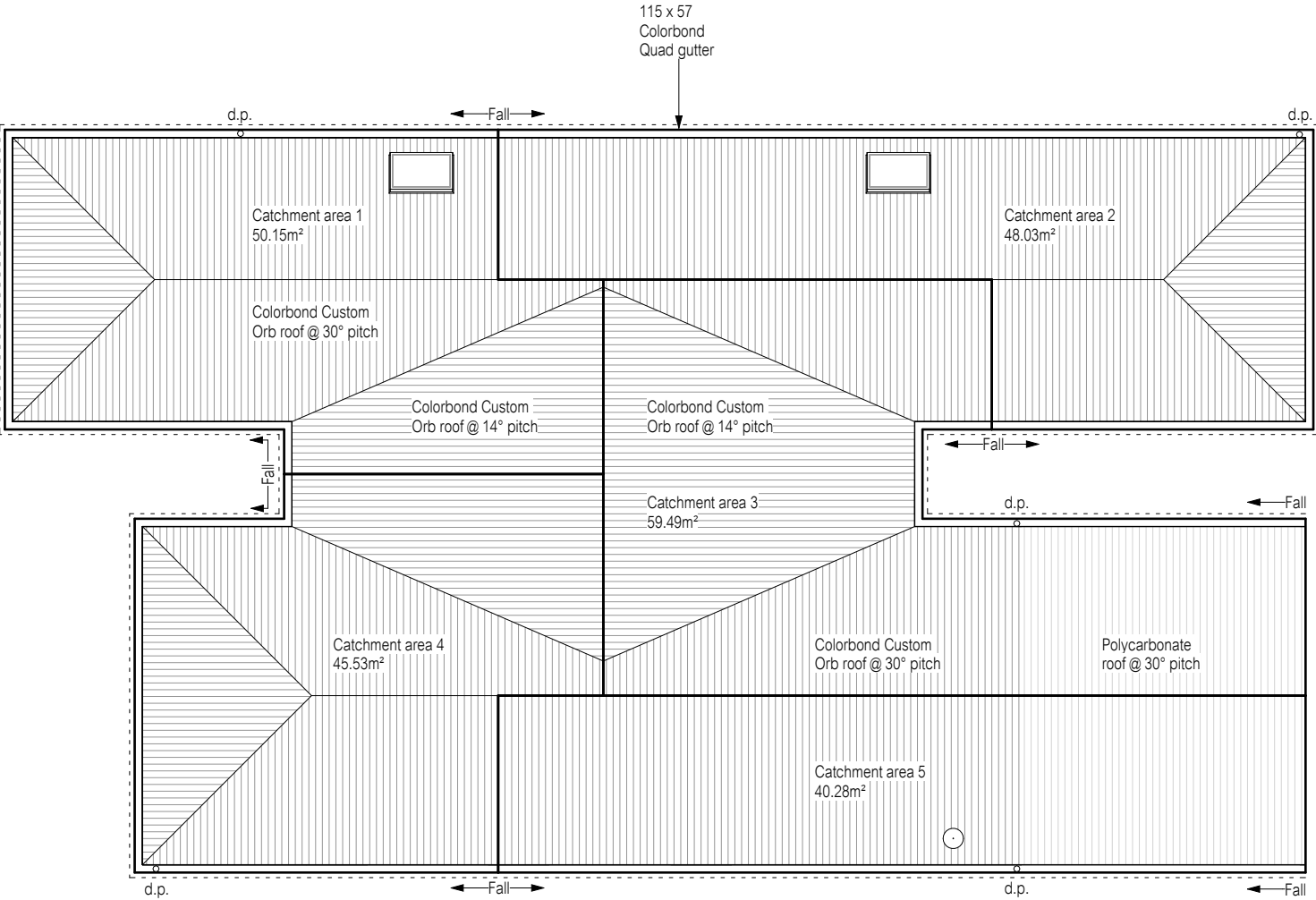
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			Notes • Builder to verify all dimensions and levels on site prior to commencement of work • All work to be carried out in accordance with the current National Construction Code. • All materials to be installed according to manufacturers specifications. • Do not scale from these drawings. • No changes permitted without consultation with designer.	Designer:	Client / Project info		CALCULATIONS & SCHEDULES		
				ANOTHER PERSPECTIVE PTY LTD PO BOX 171 NORTH HOBART LIC. NO. 685230609 (S. Turvey) Ph: (03) 6231 4122 Fx: (03) 6231 4166 Email: info@anotherperspective.com.au	PROPOSED SAUNDERS & BOOT RESIDENCE 19 Cremorne Avenue CREMORNE		Drawn	RJ	AP2026-2575
							Date	24 June 2026	Sheet
							Scale		10/03
No.	Date	Int.		Amendment changes as per cover sheet					



GUTTER OVERFLOW
REQUIREMENTS as per
N.C.C. Figure 7.4.6a:
Minimum slot opening area of 1200
mm² per metre of gutter and the lower
edge of the slots installed a minimum
of 25 mm below the top of the fascia.
The acceptable overflow capacity
must be 0.5 L/s/m.

Batten fixings:
100mm type 17, 14g bugle
screws to comply with
AS1684, or refer to AS1684
for alternatives.

Batten spacing:
75 x 38 F8
@ 900 Centre

Colorbond fixings:
50mm M6 11 x 50 EPDM
seal to comply with AS3566
or refer to AS3566 for
alternatives.

Position and quantity of downpipes
are not to be altered without
consultation with designer

Area's shown are surface areas /
catchment areas, not plan areas.

DOWNPIPE AND ROOF CATCHMENT AREA CALCULATIONS (as per AS/NZS 3500.3)		
Ah¹	180.58	Area of Roof (excluding 115mm Quad gutter) (m²)
Ah²	188.74	Area of Roof (including 115mm Quad gutter) (m²)
Ac	243.47	Ah² x Slope factor (Table 3.2 from AS/NZS 3500.3) (m²)
Ae	6555	Cross sectional area of assumed 57 x 115 Quad Gutter. (mm²)
DRI	86.9	Design Rainfall Intensity (determined from Appendix D from AS/NZS 3500.3)
ACDP	74	Catchment area per Downpipe (determined from Figure 3.5.4(A) from AS/NZS 3500.3) (m²)
Required Downpipes	3.29	Ac ÷ Acdp
Downpipes Provided	5	Additional downpipe due to gable end design.

EAVES VENT NOTE:
Vent Systems G2500N (Refer to manufacturer's
documentation for installation details)

C	13 Aug. 2026	SW
B	01 July 2026	RJ
No.	Date	Int.

Amendment changes as per cover sheet

- Notes
- Builder to verify all dimensions and levels on site prior to commencement of work
 - All work to be carried out in accordance with the current National Construction Code.
 - All materials to be installed according to manufacturers specifications.
 - Do not scale from these drawings.
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Designer:

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Client / Project info

PROPOSED SAUNDERS & BOOT RESIDENCE
19 Cremorne Avenue
CREMORNE



ROOF PLAN		
Drawn	RJ	AP2026-2575
Date	24 June 2026	Sheet
Scale	1 : 100	11/03

Prepared for
Saunders Boot Pty Ltd

19 Cremorne Avenue Cremorne

FLOOD AND COASTAL HAZARD REPORT

FE_26111
16 June 2026

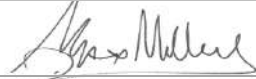


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Document Information

Title	Client	Document Number	Project Manager
19 Cremorne Avenue, Cremorne Flood and Coastal Hazard Report	Saunders Boot Pty Ltd	FE_26111	Max W. Möller <i>BEng, FIEAust, EngExec, CPEng, NER, APEC Engineer, IntPE (Aus.) Principal Hydraulic Engineer</i>

Document Initial Revision

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Reviewed by	John Holmes <i>Senior Engineer</i>		12/06/2026
Authorised by	Max W. Möller <i>Principal Hydraulic Engineer</i>		16/06/2026

Document Revision

Rev No.	Description	Prepared by	Authorised by	Date
01	Updated dwelling subfloor construction	Max W. Möller	Max W. Möller	18/06/2026

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APPENDIX A: Flood Study Maps

APPENDIX B: Risk Matrix

APPENDIX C: Coastal Inundation Declaration

1. Introduction

Flüssig Engineers have been engaged by **Saunders Boot Pty Ltd**, to undertake a Flood and Coastal Hazard Report for the development at 19 Cremorne Avenue, Cremorne in the **Clarence City Council** municipality. The purpose of this report is to determine the coastal inundation flood characteristics on the existing and post-development hazard scenarios for the 1% AEP plus climate change plus storm surge (1% AEP + CC + SS), for the purpose of development.

1.1 Development

The proposed development consists of a new 180 m² dwelling with a blockwork subfloor design, introducing impervious roof area to the property. The site is approximately 680 m² and contains no existing structures. This project triggers the provisions of the *Coastal Inundation Hazard Code* due to its location within the Clarence City Council's medium coastal inundation hazard band.

Under the Coastal Inundation Hazard Code, developments in areas identified as being subject to medium inundation hazards are required to meet specific criteria to ensure safety, resilience, and compliance with the Tasmanian Planning Scheme. This includes considerations of flood depth, velocity, and overall risk to people, properties, and infrastructure.

1.2 Objectives and Scope

This coastal analysis has been written to meet the standards of the C11.0 Coastal Inundation Hazard Code of the Tasmanian Planning Scheme, with the intent of understanding the development's risk regarding flooding. The objectives of this study are:

- Provide an assessment of the site's coastal inundation characteristics under the combined 1% AEP plus climate change (CC) + SS scenario.
- Provide comparison of coastal inundation for post-development against acceptable solution and performance criteria.
- Provide coastal mitigation recommendations for a potential future development, where appropriate.

1.3 Scope Limitations

This study is limited to the objectives of the engagement by the clients, the availability and reliability of data, and including the following:

- The coastal model is limited to a 1% AEP + CC + SS worst case temporal design storm.
- All parameters have been derived from best practice manuals and available relevant studies (if applicable) in the area.
- All provided data by the client or government bodies for the purpose of this study is deemed fit for purpose and has not been checked for accuracy.
- This assessment has been undertaken to evaluate the impact of the proposed development on coastal inundation and overland flood behaviour and should not be relied upon as a comprehensive coastal hazard study beyond the study area assessed.

1.4 Relevant Planning Scheme Requirements

Table 1. Tasmanian Planning Scheme Requirements

Planning Scheme Code	Objective
C11.6.1 Buildings and works, excluding coastal protection works, within a coastal inundation hazard area	(a) Building and works, excluding coastal protection works, within a coastal inundation hazard area, can achieve and maintain a tolerable risk from coastal inundation; and (b) buildings and works do not increase the risk from coastal inundation to adjacent land and public infrastructure.

2. Model Build

2.1 Overview of Catchment

The local overland flow catchment contributing to the site at 19 Cremorne Avenue, Cremorne is approximately 14.7 ha. This catchment was included within the 2D hydraulic model to assess runoff generated during the adopted design rainfall event and its interaction with the mapped coastal inundation conditions at the subject site.

The broader coastal inundation level is governed by coastal processes, including sea level rise and storm surge, rather than catchment runoff alone. The local catchment assessment therefore provides context for shallow overland flow behaviour across and around the site, particularly where rainfall runoff may coincide with elevated coastal tailwater conditions. The catchment is zoned predominantly Rural, Recreation, Open Space and Low Density Residential, with the subject site located within the Low-Density Residential Zone.

Figure 1 below outlines the approximate contributing catchment for the site at 19 Cremorne Avenue, Cremorne.



Figure 1. Contributing Catchment, 19 Cremorne Avenue, Cremorne

2.2 Overview of site

19 Cremorne Avenue lies near Cremorne Beach within Pipe Clay Lagoon. The site is approximately 130 m from the Pipe Clay Lagoon and approximately 250 m from Cremorne Beach. The Cremorne area is relatively low lying and prone to flooding, as the site sits at approximately 1.5 m AHD with the entire lot falling within the medium coastal inundation hazard band of the Coastal Inundation Code, as shown in Figure 2.

The site is mapped within the Medium Coastal Inundation Hazard Band, while the High and Low Coastal Inundation Hazard Bands have little to no impact on the study site. The Medium Hazard Band level for Cremorne, Pipe Clay Lagoon and Esplanade is listed as 2.2 m AHD for the 1% AEP 2050 coastal inundation event, including freeboard.

However, as the proposed development includes a habitable dwelling with an expected design life of approximately 75 years, the assessment has adopted the 1% AEP 2100 defined coastal inundation level of 2.5 m AHD as the coastal boundary condition in the hydraulic model. This approach accounts for the design life of the dwelling, adopts a conservative assessment basis, and ensures that the modelling considers the relevant long term coastal inundation risk rather than relying only on the 2050 medium hazard level.



Figure 2. Tasmanian Planning Scheme C11.0 Code Overlay

Figure 3 below outlines the approximate location for the site at 19 Cremorne Avenue, in relation to Pipe Clay Lagoon and Cremorne Beach.



Figure 3. 19 Cremorne Avenue, Cremorne

2.3 Hydrology

The following Table 2 states the adopted hydrological parameters for the RAFTS catchment.

Table 2. Parameters for RAFTS catchment

Catchment Area (ha)	Initial Loss Perv/imp (mm)	Continuing Loss Perv/imp (mm/hr)	Manning's N pervious	Manning's N impervious	Non-linearity factor
14.7	30/1	3.1/0.0	0.045	0.02	-0.285

2.3.1 Design Rainfall Events

The design rainfall assessment was undertaken to identify the critical storm event for the immediate catchment contributing runoff to the subject site. The purpose of this process was to ensure that the hydraulic model was based on the storm duration and temporal pattern that produced the most adverse local flood response, rather than relying on a single assumed rainfall event.

A range of 1% AEP storm durations and temporal patterns were assessed for the immediate catchment using a box and whisker comparison. This method allows the variability between temporal patterns to be reviewed and provides a clear indication of which storm produces the highest median model response. The results are presented in Figure 4.

The 30-minute temporal pattern 9 storm was therefore adopted as the design rainfall event for the hydraulic model. Using this event provides a representative and conservative basis for assessing flood depth, velocity, hazard and flood extent across the site. The adopted design event is considered appropriate for the immediate catchment conditions and supports the assessment of localised flooding behaviour under the 1% AEP climate change design scenario.

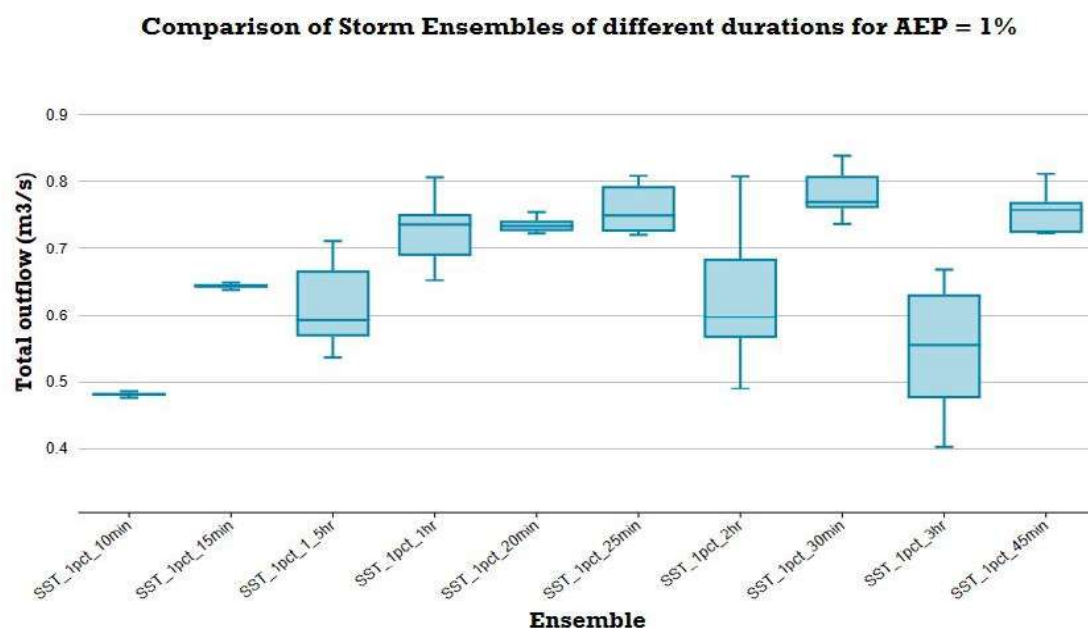


Figure 4. 1% AEP Box and Whisker Plot

2.3.2 Climate Change

The ARR 2019 Guide for Flood Estimation, Version 4.2, is regarded as the industry standard for assessing projected increases in rainfall under climate change conditions for the year 2100 scenario. According to Table 3 of the guide, a multiplication factor of 1.86 is adopted for rainfall durations of less than 1 hour for the SSP5-8.5 at 2100 scenario for the localised catchment. This factor, as stated below in Table 3, accounts for the anticipated intensification of extreme rainfall events due to climate change impacts and adopted by Council.

The ARR 2019 Guide for Flood Estimation, Version 4.2, is regarded as the industry standard for assessing projected increases in rainfall under climate change conditions for the year 2100 scenario.

Table 3. Climate Change Increases

Parameter	Localised Catchment SSP5-8.5 @ 2100
< 1 Hour Rainfall Intensity	86%

2.4 Hydraulics

A 2D hydraulic model was created to determine the flood level through the target area.

2.4.1 Calibration/Validation

This catchment has no stream gauge to calibrate the model against a real-world storm event. Similarly, there is little historical information available, and no past flood analysis undertaken to validate against the flows obtained in the model.

2.5 Coastal Processes

Coastal inundation within estuarine environments is influenced by a combination of astronomical tides, storm surge, wave set-up, wave run-up, and long-term sea level rise. The interaction of these processes can elevate water levels above normal tidal conditions and contribute to coastal flooding in low-lying areas. Figure 5 provides a conceptual illustration of the principal coastal processes that influence coastal water levels and inundation hazards.

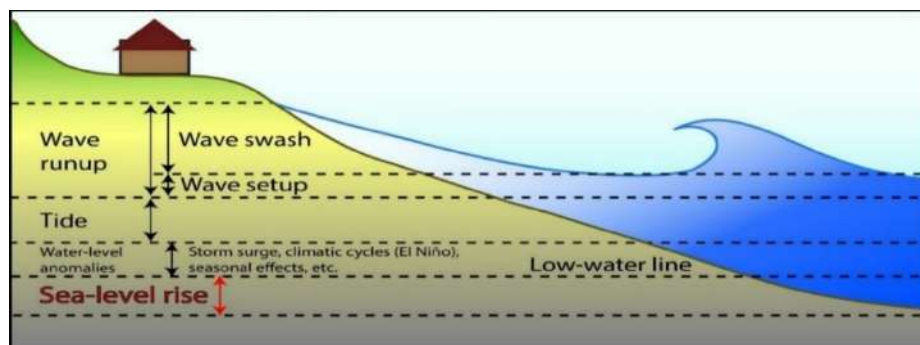


Figure 5. Coastal Processes Diagram

SGS Economics and Planning and WRL (2008) identified the Cremorne area as being subject to coastal hazards associated with its low lying coastal and lagoon setting. For the Pipe Clay Esplanade side of Cremorne, the relevant coastal process is primarily inundation from Pipe Clay Lagoon, rather than direct open coast erosion or wave run up from Cremorne Beach.

The study indicates that coastal inundation risk in this area is influenced by elevated sea levels, storm tide conditions, local wind and wave effects within the lagoon, and the relatively flat surrounding landform. These processes are relevant to the current assessment and support the inclusion of a coastal inundation boundary condition in the hydraulic model.

2.5.1 Wind and Swell Waves

Table 4 provides an extract from Clarence City Local Provisions Schedule CLA-Table C11.1 for the Clarence City Municipality, as values for Cremorne – Pipe Clay Esplanade were used. The modelling included ocean and near shore wave modelling. The resultant wave modelling was calibrated for the defined flood 1% AEP 2100.

The proposed development includes a habitable dwelling with an expected design life of approximately 75 years. As the assessment is being undertaken in 2026, this design life extends the relevant planning horizon to approximately 2100. On this basis, the Defined Flood Level shown in the below table has been adopted for this scenario as the coastal boundary condition for the hydraulic model, rather than relying only on the 2050 Medium Hazard Band level.

Table 4. CLA-Table C11.1 Coastal Inundation Hazard Bands AHD Levels (Extract)

Locality	High Hazard Band (m AHD)	Medium Hazard Band (m AHD)	Low Hazard Band (m AHD)	Defined Flood
	Sea Level Rise 2050	1% AEP 2050 with freeboard	1% AEP 2100 (design flood level with freeboard)	1% AEP 2100
Cremorne – Pipe Clay Esplanade	0.9	2.2	2.8	2.5

2.5.2 Sea Level Rise

Sea level rise is a primary driver of coastal inundation hazard within low lying coastal and lagoon environments such as Cremorne and Pipe Clay Lagoon. For the purposes of this assessment, coastal water levels have been adopted in accordance with SOR Table C11.1 of the Clarence City Local Provisions Schedule, which defines the applicable Coastal Inundation Hazard Band levels for Cremorne.

The adopted AHD thresholds are as follows:

- High Hazard Band: 0.9 m AHD, representing the 2050 sea level rise trigger.
- Medium Hazard Band: 2.2 m AHD, representing the 1% AEP 2050 event including freeboard.

- Low Hazard Band: 2.8 m AHD, representing the 1% AEP 2100 design flood level including freeboard.
- Defined Flood Level 2100: 2.5 m AHD for the 1% AEP coastal event

These levels incorporate projected sea level rise to year 2100 and provide a consistent statutory basis for coastal inundation mapping and planning assessment. The thresholds reflect progressively more severe coastal water levels and are used to define the spatial extent of the Medium Coastal Inundation Hazard Band across the site.

Application of these adopted AHD levels ensures that the assessment aligns with current Tasmanian Planning Scheme requirements and provides a robust, policy consistent framework for evaluating long term coastal inundation risk under climate change conditions.

These projections ensure uniform, location-specific planning to manage future risks effectively.

2.5.3 Medium Hazard Coastal Inundation

The entirety of the site is classified within the Medium Coastal Inundation Hazard Band, as shown in Figure 2. Land within this band is projected to be vulnerable to a 1% annual exceedance probability (AEP) storm surge event by the year 2050.

For the purpose of this assessment, the hydraulic modelling has considered the potential interaction between local overland flooding and elevated coastal water levels within Pipe Clay Lagoon. This represents a conservative assessment approach, as it allows for the possibility that catchment runoff and coastal inundation conditions may occur concurrently during an adverse storm event.

The Medium Coastal Inundation Hazard Band is therefore relevant to the assessment of the site, particularly in relation to flood behaviour, local drainage response, and the suitability of the proposed dwelling within the mapped coastal inundation area.

2.6 Survey

The 2D surface model was taken from Geoscience Australia to create a 1m cell size DEM. For the purposes of this report, 1m cells are enough to capture accurate flow paths. The DEM with hill shading can be seen below in Figure 6.



Figure 6. 1.0 m DEM (Hill shade) of Lot Area

2.6.1 Key Stormwater Assets including Pipes and Pits

Pipes and pits were modelled as 1D underground network within the localised catchment model to provide insight into the capacity of the stormwater system. Where data was missing, this was inferred from surrounding data and where invert levels were missing, a 600 mm cover was applied.

2.6.2 Roads

Roads often form the basis for overland flow in high frequency events; however, the kerb and channel are not always picked up by the DEM surface. To correct for the drainage lines, mesh polygons were used to delineate road corridors with the roads incorporating a z-line along the gutter to ensure the kerb invert is represented in the mesh.

2.6.3 Structures

In the process of crafting a two-dimensional grid to depict the ground surface of the floodplain, we initiated by re-sampling high-resolution LiDAR data to generate a digital elevation model (DEM) through the utilisation of GIS software.

Within this procedure, the attention was directed towards identifying and incorporating pertinent features such as residential structures, commercial buildings, walls, and roadways. Ensuring the comprehensive inclusion of these features within the re-sampled DEM was of utmost importance.

2.6.4 Buildings

Specifically, residential houses and commercial buildings were integrated into the DEM by elevating the corresponding grid cells representing these structures by a standardised height of 0.3 meters above the natural ground surface. Subsequently, the re-sampled grids were utilised to establish the Infoworks ICM model, thus forming a foundational framework for the subsequent analysis and simulation of flood dynamics.

This method allows for flow through the building if the flood levels/ pressure become great enough. The aim is to mimic flow through passageways such as doors, windows, and hallways.

2.6.5 Boundary Conditions

The hydraulic model was developed within InfoWorks ICM using a two-dimensional rain on grid approach to simulate runoff generation and overland flow behaviour across the study area. Design rainfall was applied directly to the model surface, allowing rainfall losses, runoff generation and flow routing processes to be represented dynamically within the hydraulic model.

To assess the combined effects of local overland flooding and coastal inundation, a downstream water level boundary condition was applied concurrently with the design rainfall event. A two-dimensional hydraulic zone representing Pipe Clay Lagoon was assigned the adopted coastal inundation level of 2.5 m AHD, being the Defined Flood Level adopted from Table 4. This allowed elevated coastal water levels to interact with local catchment runoff within the model domain. This approach represents a coincident coastal inundation and catchment flooding scenario and provides a conservative assessment of flood behaviour affecting the site.

2.6.6 Walls

All significant fences and retaining structures were incorporated into the 2D model as 2D linear wall elements. Paling fences were modelled with a maximum height of 250 mm, representing the estimated depth at which they are likely to collapse during a 1% AEP rainfall event. Solid material walls were modelled using a realistic height to reflect their structural integrity and expected behaviour under flood conditions.

2.6.7 Roughness (Manning's n)

Proposed structures were set to the finished works as shown on design drawings by Saunders Boot Pty Ltd.

The model grid's roughness and equivalent Manning's n values were derived from land use data. The specific values utilised are outlined in Table 5 provided below. These parameters have proven effective in previous flood mapping projects undertaken in Tasmania.

Table 5. Manning's Coefficients (ARR 2019)

Land Use	Roads	Open Channel	Rural	Residential	Parks	Buildings	Piped Infrastructure
Manning's n	0.018	0.035	0.04	0.045	0.05	0.3	0.013

3. Model Results

The hydraulic modelling results for the flood and coastal inundation assessment have been divided into two key scenarios: pre-development and post-development. This division enables a clear comparison of the impacts of the proposed development and ensures that any changes in flood dynamics within the lot boundaries and surrounding areas are thoroughly evaluated.

3.1 Pre-Development Scenario

Based on the pre-development flood mapping shown in Figure 7, the site at 19 Cremorne Avenue, Cremorne is inundated during the 1% Annual Exceedance Probability (AEP) flood event incorporating projected climate change and sea level rise to the year 2100. Flooding across the site results from a combination of overland flood behaviour and elevated downstream coastal water levels, causing widespread inundation across the entire lot. The flood mapping demonstrates that inundation is generally uniform in nature, with no defined high-velocity flow paths traversing the site. Flood behaviour is characterised by broad, low-energy flooding conditions.

Maximum flood depths of approximately 1.24 m occur within a localised area along the southern portion of the site. Flood depths across the remainder of the lot are generally shallower, typically ranging between 0.30 m and 0.95 m, with the northern and central portions of the site experiencing depths toward the lower end of this range. The deeper flooding along the southern boundary is associated with localised ponding and the accumulation of floodwaters within a natural topographic depression rather than concentrated overland flow.

Flow velocities across the site are relatively low due to the site's low-lying position adjacent to Pipe Clay Lagoon and the predominance of coastal inundation resulting from elevated sea levels. The maximum velocity recorded along the cross-sectional results line was 0.64 m/s, indicating slow-moving floodwaters. Localised areas of reduced velocity and deeper inundation occur within topographic depressions where floodwaters accumulate and pond.

Consistent with the Australian Flood Resilience and Design Handbook hazard classification criteria, flood hazard across the majority of the site falls within the H3 classification, reflecting moderate inundation depths combined with low flow velocities. Localised H4 hazard conditions occur within the deeper ponded areas along the southern boundary where flood depths increase. These areas remain characterised by slow-moving floodwaters and do not represent significant hydraulic flow paths.

The pre-development flood assessment demonstrates that the site is entirely inundated during the 1% AEP + Sea Level Rise design event as a result of the combined influence of overland flooding and coastal inundation. As the Cremorne area is low-lying and highly influenced by elevated coastal water levels, widespread inundation extends throughout the surrounding floodplain, with the highest flood impacts occurring within localised depressions where floodwaters accumulate and pond.

3.2 Post-Development Scenario

In the post-development scenario shown in Figure 8, modelling of the 1% Annual Exceedance Probability (AEP) flood event incorporating projected climate change and sea level rise to the year 2100 demonstrates that the proposed development results in only minor localised changes to flood behaviour across the site at 19 Cremorne Avenue, Cremorne. The proposed works comprise a new dwelling located within the central portion of the lot, with a blockwork subfloor design. As the building footprint forms a solid obstruction to coastal inundation levels, inundation is redirected around the structure during the design coastal inundation event.

The post-development flood mapping shows that inundation continues to occur across the entirety of the lot under the assessed design event, with flood behaviour remaining dominated by broad, low-energy flooding associated with the combined influence of overland flooding and elevated coastal water levels. Flood depths surrounding the proposed dwelling remain generally consistent with pre-development conditions, typically ranging between approximately 0.30 m and 1.11 m. The deepest inundation of approximately 1.28 m occurs within a localised area along the southern boundary of the site where floodwaters accumulate within a natural topographic depression. Comparison with the pre-development scenario confirms that while floodwaters are locally redirected around the proposed dwelling footprint, the overall flood extent and distribution of floodwaters across the site and surrounding area remain substantially unchanged.

Flood velocities remain low under post-development conditions. The cross-sectional results indicate a reduction in maximum velocity from approximately 0.50 m/s in the pre-development scenario to approximately 0.38 m/s in the post-development scenario. This reduction is consistent with the proposed dwelling forming a solid obstruction within the coastal inundation extent, reducing direct flow conveyance through the building footprint and redirecting inundation around the structure. Minor localised changes in velocity occur adjacent to the dwelling; however, these changes are limited to the immediate vicinity of the building footprint and do not create new concentrated flow paths or materially alter flood behaviour elsewhere on the site.

Flood hazard classifications across the site also remain largely unchanged from the pre-development scenario. The majority of the lot continues to be characterised by H3 hazard conditions, reflecting moderate inundation depths combined with low flow velocities. The localised area of H4 hazard remains confined to the southern boundary where deeper ponding occurs within the natural topographic depression. Importantly, the proposed development does not result in any meaningful increase in the extent or severity of flood hazard classifications either on-site or beyond the property boundaries.

Given the proposed dwelling includes solid blockwork subfloor walls, materials and structural elements below the adopted flood planning level should be suitably flood resilient and designed to withstand coastal inundation conditions, including hydrostatic and hydrodynamic loading, debris impacts and long-term coastal exposure. While inundation is redirected around the structure, modelling confirms that this redirection does not result in adverse impacts to adjoining properties or significant increases in flood hazard.

Overall, the proposed dwelling results in negligible changes to flood behaviour and does not materially increase flood risk to neighbouring properties. Subject to appropriate structural design and flood-compatible construction below the adopted flood planning level, the development is considered capable of proceeding with a tolerable level of flood risk under the assessed 2100 coastal inundation scenario.



Figure 7. Pre-Development 1% AEP + CC Depth



Figure 8. Post-Development 1% AEP + CC Depth

3.3 Displacement of Overland Flow on Third Party Property

As shown in Figures 7 and 8, comparison of the pre- and post-development flood modelling confirms that the proposed dwelling at 19 Cremorne Avenue does not result in any material change to flood behaviour on adjoining properties or surrounding infrastructure.

The site is predominantly affected by broad floodplain inundation associated with elevated coastal water levels and projected sea level rise to the year 2100. Flood extents and overall flow patterns remain largely unchanged between the pre- and post-development scenarios, with floodwaters continuing to occupy the same general inundation pathways and ponding areas observed under existing conditions.

The proposed dwelling is elevated on blockwork foundations, resulting in shallow floodwaters being redirected around the building footprint during the assessed design event. While this produces minor localised changes to flow distribution immediately adjacent to the structure, the modelling demonstrates that these changes remain confined to the site and do not result in any measurable displacement of overland flow onto neighbouring properties. Flood depths, velocities and hazard classifications along the site boundaries remain generally consistent with pre-development conditions, confirming that the development does not adversely affect surrounding land or infrastructure.

Accordingly, the proposed development does not adversely affect surrounding properties or infrastructure and does not materially alter existing flood behaviour outside the site boundaries.

3.4 Development Effects on Flooding

Figure 9 shows the net discharge hydrograph from the cross-sectional result line on the western and southern lot boundaries. The peak discharge in the pre-development scenario is 7.49 m³/s which decreases by 1.88 m³/s to 5.61 m³/s in the post-development scenario. The maximum velocity also decreased by 0.12 m/s from 0.50 m/s in the pre-development scenario to 0.38 m/s in the post-development scenario.

The reduction in both peak discharge and flow velocity is attributable to the introduction of the proposed dwelling and supporting blockwork foundations, which obstruct shallow flood flows from passing through the building footprint. As a result, floodwaters are redirected around the structure, reducing the volume and velocity of flow crossing the cross-sectional results line. While these changes are evident within the immediate vicinity of the development, hydraulic modelling confirms that they are localised and do not result in any material increase elsewhere on the site or adjoining properties.

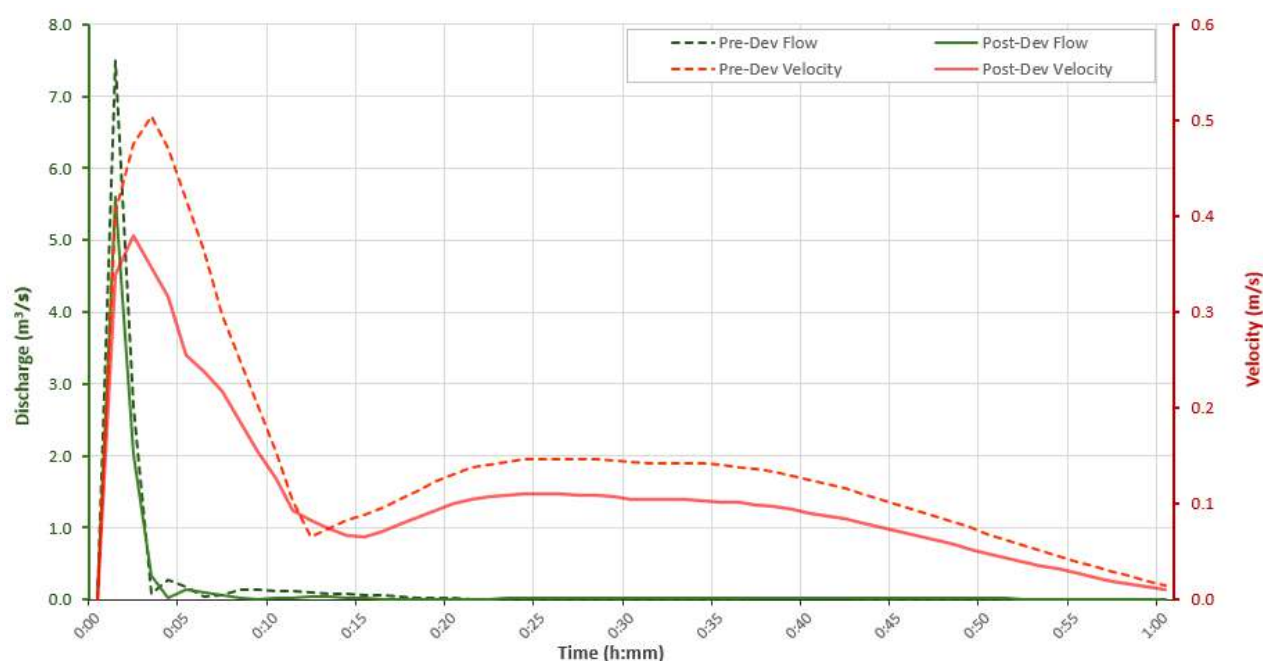


Figure 9. Pre and Post development net discharge and velocity 1% AEP + CC

3.5 Model Summary

The following results provided in Table 6 were obtained from the flood model at the cross-sectional result line on the western lot boundary.

Table 6. Pre-development and post-development at the cross-sectional line

	Pre-development	Post-development	Net Change
Depth (m)	1.11	1.11	-
Velocity (m/s)	0.50	0.38	- 0.12
Discharge (m ³ /s)	7.49	5.61	- 1.88

3.6 New Habitable Building

To meet the performance criteria S.54 of the Building Regulations, the proposed dwelling is required to have a habitable floor level >300mm above the >1% AEP + CC +SLR level. The development at 19 Cremorne Avenue must meet this regulation as shown in Table 7. (The floor level 300mm > 1% AEP + CC + SLR does not apply for non-habitable areas including garages).

Table 7. Habitable Floor Construction Levels

Habitable Floor	1% AEP +CC +SLR (mAHD)	Minimum Floor Level Required (mAHD)
Proposed Dwelling	2.50	2.80

The proposed dwelling must be constructed with a habitable floor level at or above 2.8 mAHD to comply with the minimum habitable floor level requirement.

4. Flood Hazard

In accordance with the Clarence City Council Coastal Inundation Levels, the proposed development at 19 Cremorne Avenue is subject to flooding during the 1% AEP event incorporating projected climate change and sea level rise to the year 2100. Flood depths across the site are generally shallow to moderate and are associated with low-velocity floodwaters characteristic of broad floodplain inundation and elevated coastal water levels.

Assessment against the hazard classifications defined in the Australian Flood Resilience and Design Handbook indicates that the majority of the site is characterised by H3 hazard conditions. This hazard rating reflects flood conditions that may be unsafe for vehicles, children and the elderly during the design event. A localised area of increased hazard up to H4 occurs along the southern boundary of the lot, where a natural topographic depression results in deeper ponding and correspondingly higher hazard conditions. These higher hazard areas are confined to the southern portion of the site and are not associated with concentrated or high-velocity flow paths.

The proposed dwelling footprint is located outside the identified H4 area and is elevated above surrounding ground levels on blockwork foundations. While the building footprint redirects shallow floodwaters around the structure, the modelling demonstrates that resulting changes to flood behaviour are minor and remain confined to the immediate vicinity of the dwelling. Flood hazard classifications surrounding the proposed dwelling remain consistent with the broader site conditions and no material increase in flood hazard occurs beyond the development footprint.

The principal flood risk is associated with the site's exposure to future coastal inundation conditions rather than concentrated overland flow or high-velocity flooding. Accordingly, the key risk management response is a resilient building design suitable for the assessed 2100 coastal inundation condition. Structural elements below the adopted flood planning level should be designed to resist hydrostatic and hydrodynamic forces, buoyancy effects, debris loading and long-term coastal durability impacts.

A detailed summary of the different hazard classifications is provided in Figure 10.

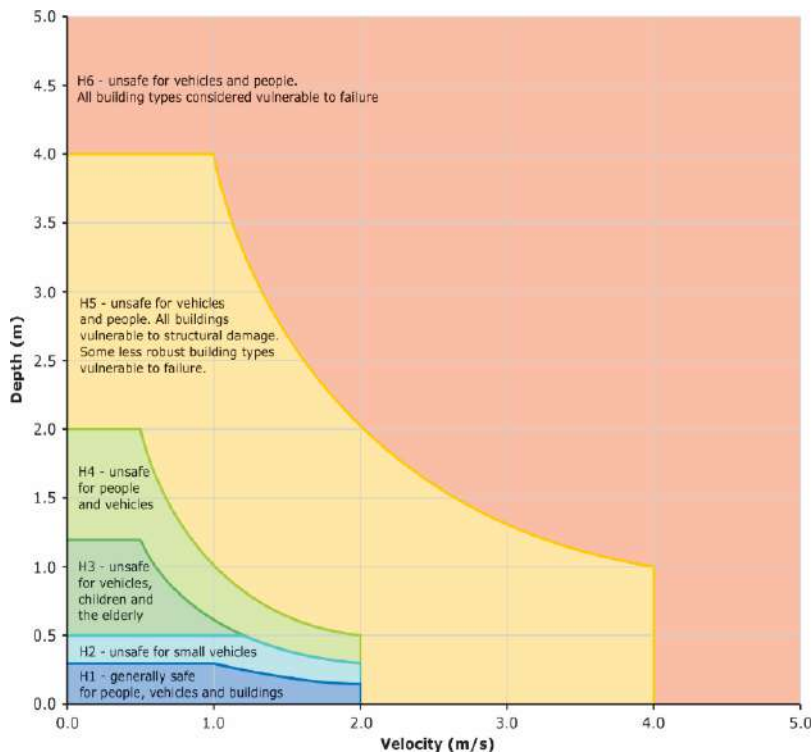


Figure 10. Hazard Categories Australian Disaster and Resilience Handbook

4.1 Tolerable Risk

The site is subject to widespread inundation during the assessed 1% Annual Exceedance Probability (AEP) flood event incorporating projected climate change and sea level rise to the year 2100. Flood behaviour across the lot is characterised by broad coastal inundation, low-velocity flow and localised ponding associated with elevated coastal water levels. As outlined in Section 4, model results indicate that the majority of the site is subject to H3 hazard conditions, with a localised area of H4 hazard present along the southern boundary where a natural topographic depression results in increased flood depths and ponding. Although H3 hazard conditions affect most of the site and may present a risk to vehicles, children and the elderly during extreme events, the H4 hazard area remains confined to a small portion of the southern boundary and is not associated with concentrated high-velocity flow paths.

A key factor in the tolerability of flood risk for the proposed development is the use of flood-compatible construction below the adopted flood planning level. The proposed dwelling should include solid blockwork subfloor walls, with materials and structural elements below the adopted flood planning level designed to withstand coastal inundation conditions, including hydrostatic and hydrodynamic loading, debris impacts and long-term coastal exposure. While inundation is redirected around the dwelling footprint, hydraulic modelling demonstrates that these changes are minor, remain confined to the immediate vicinity of the structure, and do not materially alter flood behaviour elsewhere on the site or surrounding properties.

Accordingly, subject to appropriate structural design and flood-compatible construction below the adopted flood planning level, the proposed development is considered to achieve a tolerable level of flood risk under the assessed 2100 coastal inundation scenario.

Provided all recommendations contained within this report are implemented and maintained for the life of the development, the proposed Class 1a dwelling, designed in accordance with the BCA 2022 fifty-year asset life requirements, is considered capable of achieving an acceptable and manageable level of flood resilience under the assessed future design conditions without resulting in unacceptable risks to occupants, property, or surrounding land.

4.2 Planning Scheme Assessment

The following tables summarise the assessment of the proposed development against the relevant provisions of the Tasmanian Planning Scheme.

Table 8. Report Summary against TPS C11.6.1

C11.6.1 Buildings and works, excluding coastal protection works, within a coastal inundation hazard area			
Objectives: That: a) building and works, excluding coastal protection works, within a coastal inundation hazard area, can achieve and maintain a tolerable risk from coastal inundation; and b) buildings and works do not increase the risk from coastal inundation to adjacent land and public infrastructure.			
Performance Criteria			
P1.1		P1.1	
Buildings and works, excluding coastal protection works, within a coastal inundation hazard area must have a tolerable risk, having regard to:		Response from flood report	
(a)	whether any increase in the level of risk from coastal inundation requires any specific hazard reduction or protection measures;	(a)	The proposed dwelling works does not require any hazard reduction or protection measures.
(b)	any advice from a state authority, regulated entity or a council; and	(b)	N/A
(c)	the advice contained in a coastal inundation hazard report.	(c)	Refer to this report and recommendations.
P1.2		P1.2	
A coastal inundation hazard report also demonstrates that the building or works:		Response from flood report	
(a)	do not cause or contribute to coastal inundation on the site, on adjacent land or public infrastructure; and	(a)	The proposed development will not cause or contribute to coastal inundation on the site, adjoining land, or public infrastructure.
(b)	can achieve and maintain a tolerable risk from a 1% annual exceedance probability coastal inundation event in 2100 for the intended life of the use without requiring any specific coastal inundation protection works.	(b)	The proposed dwelling can achieve a tolerable level of risk, subject to the habitable floor level being set above the adopted flood planning level. The blockwork subfloor design redirects inundation around the structure, with modelling indicating only localised changes to flood behaviour. Subject to appropriate structural design of subfloor elements exposed to coastal inundation, the development is considered capable of proceeding without requiring coastal inundation protection works.

5. Conclusion

This assessment has been undertaken with consideration of the Coastal Inundation Hazard Code provisions of the Tasmanian Planning Scheme, together with the applicable Clarence City Local Provisions Schedule coastal inundation levels. A combined assessment of coastal inundation and coincident overland flooding was completed using a two-dimensional hydraulic model. The assessment has considered the proposed development at 19 Cremorne Avenue, Cremorne under the adopted 1% AEP event including climate change and sea level rise to the year 2100, with the defined coastal inundation level of 2.5 m AHD adopted as the boundary condition.

The assessment demonstrates that the site is inundated during the design event, with flood behaviour predominantly influenced by elevated coastal water levels and characterised by broad, low-velocity inundation and localised ponding. The majority of the site is characterised by H3 hazard conditions, while a localised area of H4 hazard occurs along the southern boundary where lower ground levels result in deeper ponding. The proposed dwelling footprint is located outside this higher hazard area and is elevated above surrounding flood levels on blockwork foundations.

Hydraulic modelling confirms that the dwelling results in only minor localised redirection of floodwaters around the building footprint and does not materially alter flood extents, flood depths, flow velocities or hazard classifications across the site or adjoining properties. The development therefore maintains the broader flood storage and conveyance characteristics of the site without creating adverse third-party impacts.

Subject to appropriate structural design of the building foundations and any elements exposed to inundation, including consideration of hydrostatic loading, buoyancy, debris impacts and long-term coastal durability, the proposed dwelling is considered capable of achieving and maintaining a tolerable level of flood risk for its intended use and design life.

6. Recommendations

Flüssig Engineers has conducted a detailed evaluation and based on our findings we recommend the implementation of the following engineering design measures for the proposed development. These recommendations are designed to ensure compliance with the stringent requirements of the Coastal Inundation Hazard Code:

1. Proposed habitable floor level must have a minimum FFL as outlined in Table 7.
2. The proposed dwelling to be constructed with elevated blockwork redirecting flood depths around the proposed with limited obstruction to flood storage and conveyance.
3. During major storm events where site access may be temporarily affected, occupants should adopt a shelter-in-place approach and follow advice issued by the Tasmania State Emergency Service (SES) or other emergency personnel.
4. The building and blockwork design must be assessed by a suitably qualified structural engineer to confirm that structural elements exposed to inundation can resist relevant hydrostatic and hydrodynamic forces, buoyancy effects, debris loading and coastal durability impacts.
5. Any additional works not shown on the provided plans, including any alterations to the subfloor area, should be subject to further flood assessment to confirm that flood behaviour and conveyance are maintained.
6. A proactive approach to risk management should include periodic review of future coastal studies, planning scheme updates and sea level rise projections to confirm their relevance to the site over the life of the development.

7. Limitations

Flüssig Engineers was engaged by **Saunders Boot Pty Ltd**, to conduct a site-specific Flood and Coastal Inundation Report for the property located at 19 Cremorne Avenue, Cremorne, in accordance with C11.0 Coastal Inundation Hazard Code of the Tasmanian Planning Scheme 2021. The study conducted was considered appropriate for its intended purpose at the time of its execution. However, it is imperative to note that if any conditions of the site undergo changes, the report will necessitate a thorough review to ensure its continued relevance and accuracy.

The results, findings, and interpretations contained in this report are based on the existing site conditions, available LiDAR surface data, hydraulic modelling, and other third-party information provided to Flüssig Engineers. Should any aspect of the site, catchment, or proposed development design change, including modifications to ground levels, drainage patterns, or surrounding infrastructure, the flood behaviour and associated risks may also change. In such cases, this report must be re-evaluated and updated to reflect those modifications before further use.

This report must be read and used in its entirety. It may not be quoted, reproduced, or relied upon in part or for any purpose other than that expressly stated within, unless prior written consent is obtained from Flüssig Engineers.

Flüssig Engineers accepts no responsibility or liability for errors or inaccuracies arising from information supplied by external sources, third-party consultants, or other data providers used in preparing this report. The outcomes and conclusions presented herein are valid only for the conditions and assumptions explicitly described in this document.

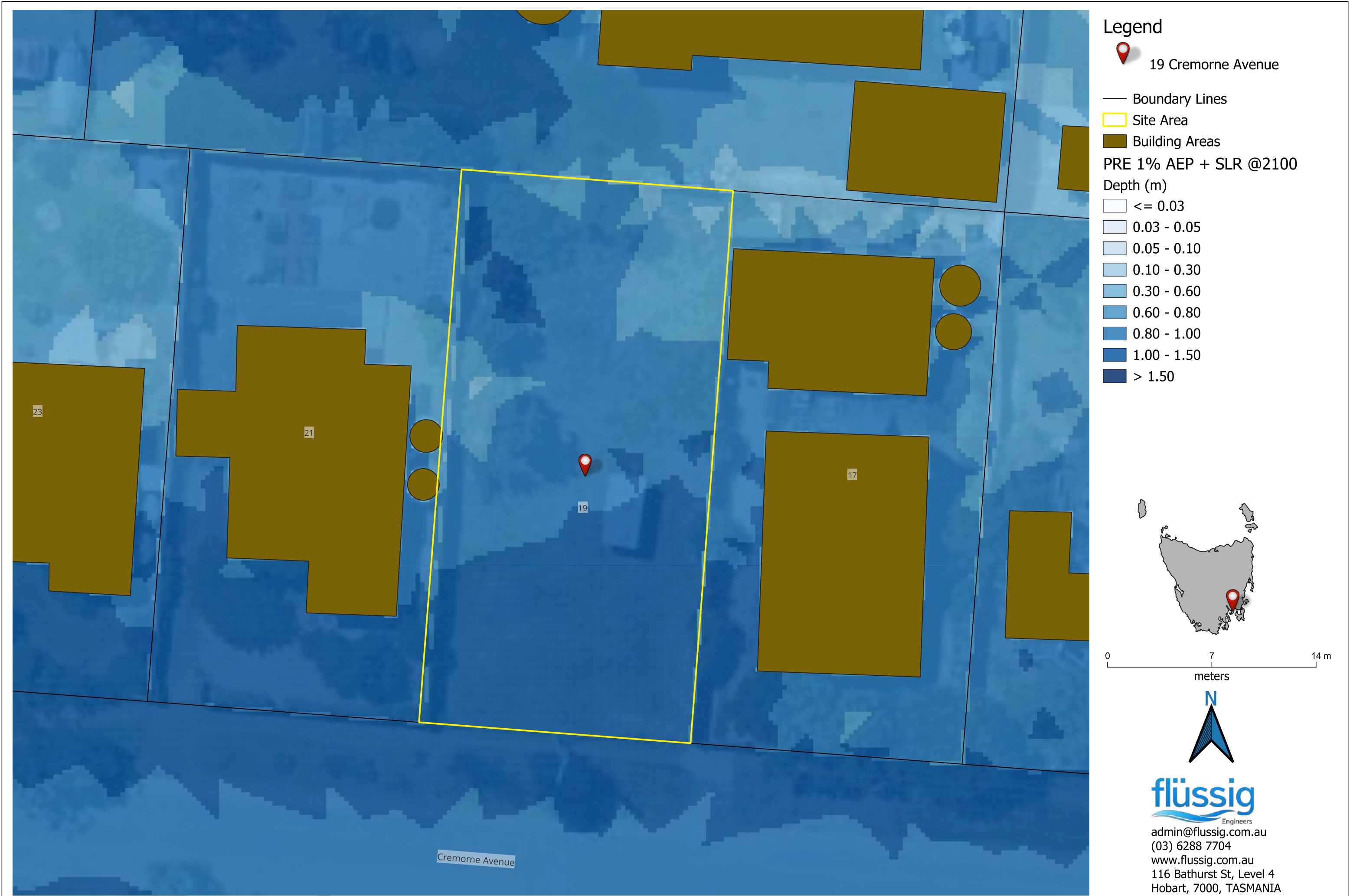
8. References

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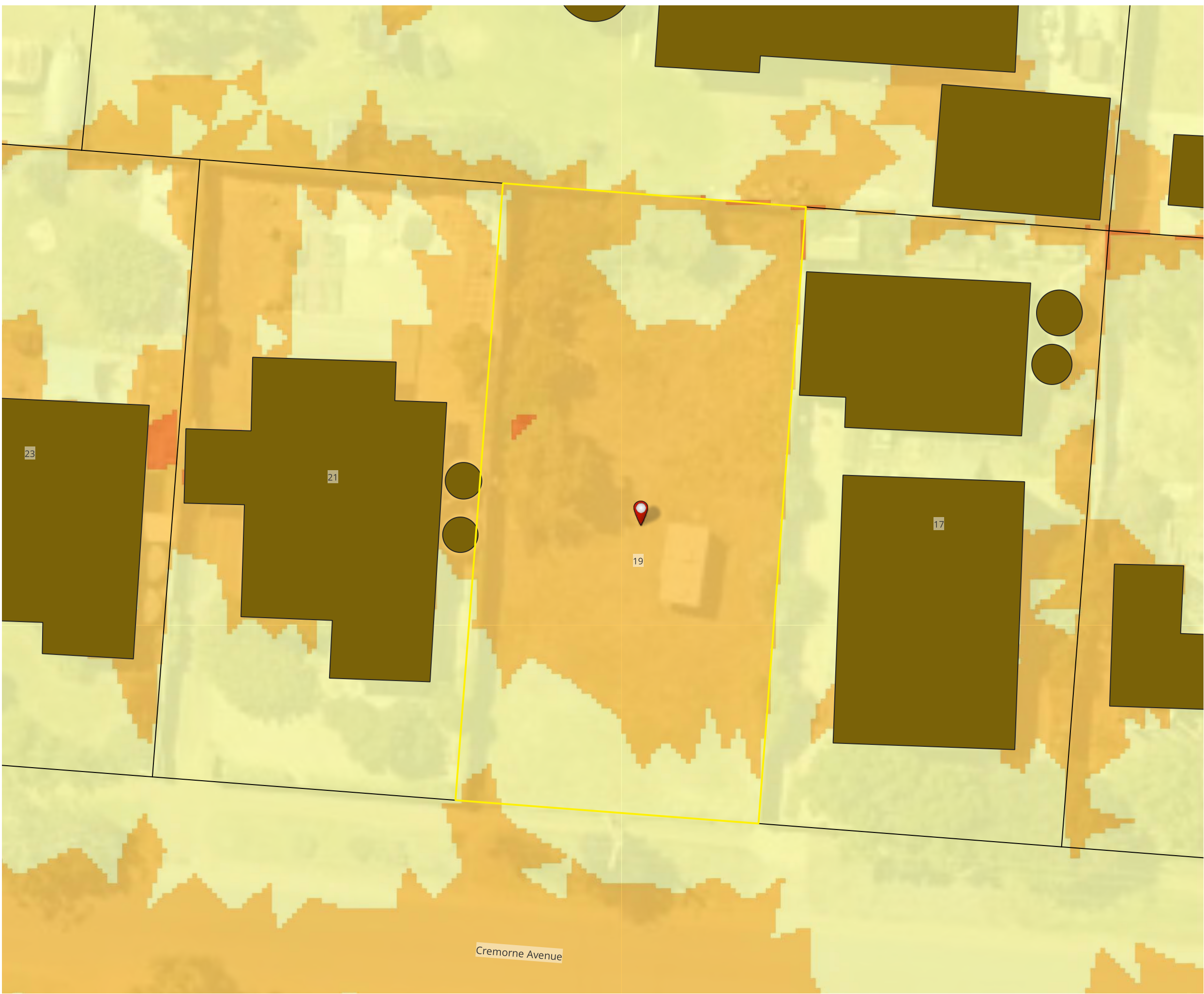
Appendices

Appendix A: Flood Study Maps

PRE 1% AEP + SLR @ 2100



PRE 1% AEP + SLR @ 2100



Legend

 19 Cremorne Avenue

— Boundary Lines

 Site Area

 Building Areas

PRE 1% AEP + SLR @2100

Velocity (m/s)

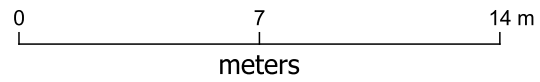
 ≤ 0.50

 0.50 - 1.00

 1.00 - 1.50

 1.50 - 2.00

 > 2.00



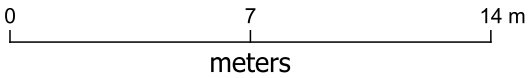
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Hobart, 7000, TASMANIA

PRE 1% AEP + SLR @ 2100



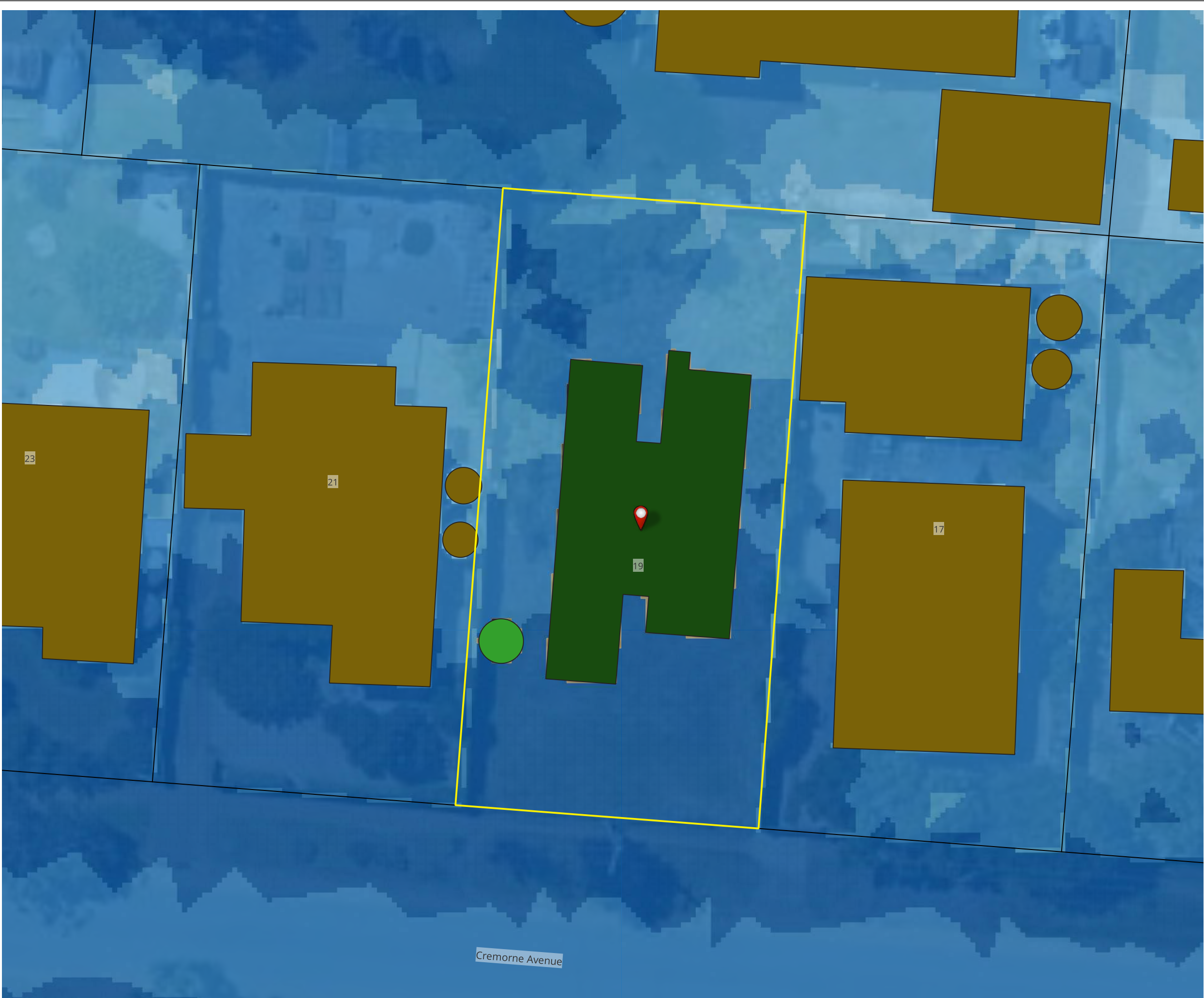
Legend

- 19 Cremorne Avenue
- Boundary Lines
- Site Area
- Building Areas
- PRE 1% AEP + SLR @2100 Hazard**
- H1
- H2
- H3
- H4
- H5
- H6



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POST 1% AEP + SLR @ 2100



Legend

19 Cremorne Avenue

— Boundary Lines

Site Area

Building Areas

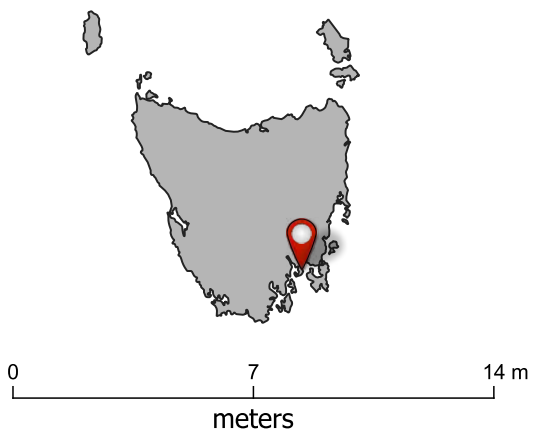
Proposed Building Area

Proposed Water Tank

POST 1% AEP + SLR @2100

Depth (m)

	<= 0.03
	0.03 - 0.05
	0.05 - 0.10
	0.10 - 0.30
	0.30 - 0.60
	0.60 - 0.80
	0.80 - 1.00
	1.00 - 1.50
	> 1.50



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POST 1% AEP + SLR @ 2100



Legend

 19 Cremorne Avenue

 Boundary Lines

 Site Area

 Building Areas

 Proposed Building Area

 Proposed Water Tank

POST 1% AEP + SLR @2100

Velocity (m/s)

 ≤ 0.50

 0.50 - 1.00

 1.00 - 1.50

 1.50 - 2.00

 > 2.00



0 7 14 m
meters



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POST 1% AEP + SLR @ 2100



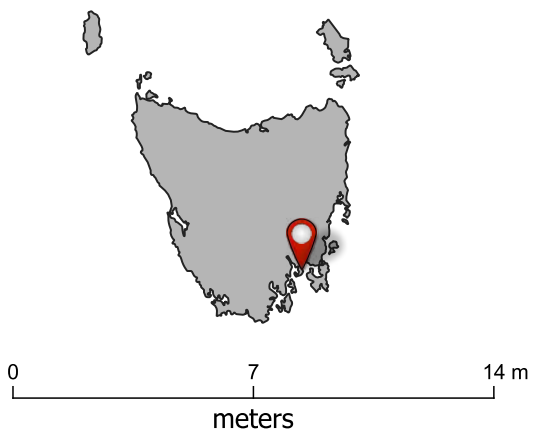
Legend

- 19 Cremorne Avenue
- Boundary Lines
- Site Area
- Building Areas
- Proposed Building Area
- Proposed Water Tank

POST 1% AEP + SLR @2100

Hazard

- H1
- H2
- H3
- H4
- H5
- H6



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Appendix B: Risk Matrix

	Site/ job number	FE_26111_19 Cremorne Avenue Cremorne Flood and Coastal Inundation Report	RISKS OF THE DEVELOPMENT IMPACTING ON EXISTING FLOOD BEHAVIOUR							
Pre-Development Risk Identification (1% AEP + CC + SS)			Post-Development				Recommendations			
Risk Ref No	Risk Type A - Asset P - Project F - Financial S - Safety	Risk Description	Conclusions derived from report for the post development scenario	Risk with no Treatment			Treatment	Risk following recommended treatment		
				Likelihood	Consequence	Risk Level		Likelihood	Consequence	Risk Level
P1	A, F, S	There is a risk that the use or development is likely to cause or contribute to coastal inundation on the site or on adjacent land.	No increased displacement of flood waters observed in flood model. No treatment recommended	Rare	Minor	Low	none required	Rare	Minor	Low
P2	A, F, S	There is a risk that the use or development cannot achieve and maintain a tolerable risk for the intended life of the use or development, having regard to the nature, intensity and duration of the use.	The development will achieve and maintain a tolerable risk without any additional flood risk measures that those outlined in the flood report.	Rare	Minor	Low	No additional coastal inundation protection works are required, provided the proposed habitable floor level, structural elements, building materials, services and access arrangements are designed to respond to the mapped coastal inundation hazard conditions. The proposed finished floor level must be set at or above the minimum floor level specified in this report. Subject to these measures, the development can achieve and maintain a tolerable level of risk over its intended life.	Rare	Minor	Low
P3	A, F, S	There is a risk that the use or development cannot achieve and maintain a tolerable risk for the intended life of the use or development, having regard to the ability to adapt to a change in the level of risk.	The proposed development is expected to achieve and maintain a tolerable level of risk under the assessed climate change scenario, provided the recommendations in the flood report are implemented. If future coastal inundation or flood hazard mapping is updated, the risk assessment should be reviewed against the updated information.	Rare	Minor	Low	Review the flood and coastal inundation assessment if future adopted climate change projections, coastal hazard levels, or flood mapping materially change.	Rare	Minor	Low
P4	A, F, S	There is a risk that the use or development cannot achieve and maintain a tolerable risk for the intended life of the use or development, having regard to the ability to maintain access to utilities and services.	The development will achieve and maintain a tolerable risk including access to utilities and services.	Rare	Minor	Low	Access to the site and surrounding public road network may be affected during significant coastal inundation conditions. This is an existing coastal hazard constraint and is not expected to be materially increased by the proposed development. No specific access treatment is required, provided future occupants are made aware that access may be temporarily restricted during extreme coastal inundation events.	Rare	Minor	Low
P5	A, F, S	There is a risk that the use or development cannot achieve and maintain a tolerable risk for the intended life of the use or development, having regard to the need for specific coastal inundation hazard reduction or protection measures on the site.	The development will achieve and maintain a tolerable risk without the need for specific coastal reduction or protection measures on the site.	Rare	Minor	Low	none required	Rare	Minor	Low

Appendix C: Coastal Inundation Declaration

Coastal Hazards Report Declaration

Section 1: About the practitioner and methodology

1.1 Practitioner details

Lead / coordinating consultant name (must be an individual)	Max Moller
Academic Qualification/s	<i>Bachelor of Engineering.</i> <i>Post Graduated Certificate in Hydraulic Services Design.</i> Introduction to Coastal Processes and Coastal Engineering <i>FIEAust, EngExec, CPEng, NER, APEC Engineer, IntPE(Aus)</i>
Relevant Experience	20 + years of undertaking various Riverine and Coastal inundation Studies that meets the requirements of current legislation.
Business name and address	Flussig Engineers – 4/116 Bathurst Street, Hobart, 7000
Contact phone number	0431 080 279
Email address	max@flussig.com.au
Signature	
Date	18/06/2026

Supporting consultant name (must be an individual)	Max Moller
Academic Qualification/s	<i>Bachelor of Engineering.</i> <i>Post Graduated Certificate in Hydraulic Services Design.</i> Introduction to Coastal Processes and Coastal Engineering <i>FIEAust, EngExec, CPEng, NER, APEC Engineer, IntPE(Aus)</i>

Relevant Experience	20+ years of undertaking various Riverine and Coastal inundation Studies that meets the requirements of current legislation.
Business address	Flussig Engineers – 4/116 Bathurst Street, Hobart, 7000
Contact phone number	0431 080 279
Email address	max@flussig.com.au
Signature	
Date	18/06/2026

Professional Indemnity

- Insured Company: Flussig Engineers
- Insurance Period: 17/10/25 to 17/10/26
- Amount: \$10,000.000.00

1.2 Methodology

The Methodology adopted for No.19 Cremorne Avenue, Cremorne Flood and Coastal Inundation study has been prepared in accordance with the *Tasmanian Planning Scheme, Building Act 2016* and regulation 51 and *Director Determination - Coastal Inundation Hazard Areas 2021*.

Section 2: Conclusions about the proposal

Likelihood of the proposed use or development to cause or contribute to the occurrence of coastal erosion and/or coastal inundation on the site or adjacent land¹

Based on the hydraulic assessment prepared by Flüssig Engineers, the proposed dwelling at 19 Cremorne Avenue, Cremorne is not expected to cause or contribute to increased coastal inundation impacts on the site or adjacent land. Comparison of the pre-development and post-development scenarios indicates no material increase in inundation extent, depth, velocity or hazard on adjoining properties. The proposed blockwork subfloor design redirects inundation around the dwelling footprint, with changes remaining localised and not materially altering flood storage or conveyance across the lot.

Can the proposed use or development achieve and maintain a tolerable risk for the intended life of the use or development, having regard to:

the nature, intensity and duration of the use	The proposal is for a Class 1a residential dwelling built on solid elevated blockwork foundations and is subject to the recommendations of the Flood and Coastal Hazard Report. It is capable of achieving and maintaining a tolerable level of risk over the intended life of the development.
the type, form and duration of any development	The proposed development consists of a new approximately 180 m ² dwelling with a blockwork subfloor design. The dwelling forms a solid building footprint below floor level and redirects coastal inundation around the structure, with modelling indicating no material impact to flood storage or conveyance across the lot.
the likely change in the risk across the intended life of the use or development	The assessment has allowed for projected sea level rise to 2100. The site is affected by broad coastal inundation, with most of the lot subject to H3 hazard and a localised H4 area along the southern boundary. The proposed dwelling footprint is outside the localised H4 area and is elevated above the adopted flood planning level. The modelling indicates negligible change in flood behaviour as a result of the development.

the ability to adapt to a change in the level of risk	The proposed blockwork subfloor design provides a flood-resilient building response for the assessed 2100 coastal inundation condition, subject to the adopted finished floor level and structural design requirements being achieved. Materials and structural elements below the adopted flood planning level should be flood-compatible and designed for coastal exposure. Future additions, enclosure of the subfloor area, or changes to ground levels should be reassessed to confirm that flood storage and conveyance are not materially affected.
the ability to maintain access to utilities and services	The site is subject to coastal inundation risk; however, the proposed development is expected to maintain access to utilities and services over its intended life.
the need for specific coastal erosion or coastal inundation hazard reduction or protection measures on the site ³	No specific protection measures required.
the need for coastal erosion or coastal inundation reduction or protection measures beyond the boundary of the site ³	No broader scale protection measures required.
any coastal erosion or coastal inundation management plan in place for the site or adjacent land ³	No specific inundation measurement plan required.

Any advice relating to the ongoing management of the use or development

The recommendations of the Flood and Coastal Hazard Report should be implemented. The proposed blockwork subfloor walls and any structural elements below the adopted flood planning level should be maintained in a condition suitable for coastal inundation exposure. Any future additions, alterations to the subfloor area, retaining walls, filling, or changes to ground levels that may affect flood storage or conveyance should be subject to further flood and coastal inundation assessment.

Is the use or development located on an actively mobile landform within the coastal zone?

☐ Yes

☒ No

Conclusions relating to any matter specifically required by Performance Criteria in the Coastal Erosion Hazard Code (C10.5 – C10.7) or the Coastal Inundation Hazard Code (C11.6)

The proposed dwelling is considered to satisfy the applicable performance criteria of Clause C11.6.1 of the Coastal Inundation Hazard Code.



Capability and Expertise

Flood, stormwater, coastal and water engineering specialists

● Flood modelling

2D hydraulic modelling and flood hazard assessment

● Coastal inundation

Sea level rise, storm tide and coastal hazard response

● Water quality

WSUD, treatment trains and MUSIC assessment

● Stormwater

Drainage strategy, detention and overland flow design

● Dam breach assessment

Dam safety, breach modelling and consequence mapping

● Engineering Feasibility

Feasibility assessments and practical advice to support planning, approvals and early project decisions.

Trusted specialists in water engineering, flood modelling and resilient infrastructure

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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:
Speciality area of expertise:

Details of work:

Address:
Lot No:
Certificate of title No:
The assessable item related to this certificate:

Certificate details:

Certificate type:

This certificate is in relation to the above assessable item, 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:

References:

1. Australian Disaster Resilience Guideline 7-3: Technical flood risk management guideline: Flood hazard, 2014, Australian Institute for Disaster Resilience CC BY-NC
2. Building Act 1993, the Building Regulations 2018 and the National Construction Code
3. Climate Futures for Tasmania: General Climate Impacts Technical Report.
4. Australian Rainfall and Runoff: A Guide to Flood Estimation, Commonwealth of Australia

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

Flood and Coastal Hazard Report and Recommendations

Scope and/or Limitations

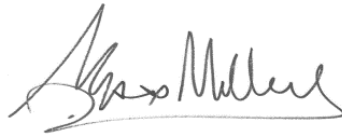
This flood analysis has been written in response to a request for information from Clarence City Council to address clause C11.6.1 to meet the standards of the Tasmanian Planning Scheme, with the intent of understanding the development risk with respect to overland and coastal inundation.

This study is deemed suitable for purpose at the time of undertaking the study. If the conditions of the development should change, the plan will need to be reviewed against all changes.

We must be advised of any proposed alterations to the certified drawings or design discrepancies due to variations of levels or site conditions to those contained in the referenced documents.

This report is to be used in full and may not be used in part to support any other objective other than what has been outlined within, unless specific written approval to do otherwise is granted by Flüssig Engineers

Qualified person:



Certificate No: FE-26111-55 F

Date: 18/06/2026

GEO-ENVIRONMENTAL ASSESSMENT

19 Cremorne Avenue

Cremorne

June 2026



GEO-ENVIRONMENTAL

S O L U T I O N S

Disclaimer: The author does not warrant the information contained in this document is free from errors or omissions. The author shall not in any way be liable for any loss, damage or injury suffered by the User consequent upon, or incidental to, the existence of errors in the information.

Investigation Details

Client:	Lucy Boot
Site Address:	19 Cremorne Avenue, Cremorne
Date of Inspection:	25/02/2026
Proposed Works:	New house
Investigation Method:	Geoprobe 540UD - Direct Push
Inspected by:	C. Cooper

Site Details

Certificate of Title (CT):	74979/184
Title Area:	Approx. 686.1 m ²
Applicable Planning Overlays:	Coastal Inundation Hazard, Flood-prone Areas, Airport obstacle limitation area
Slope & Aspect:	Flat with no dominant aspect
Vegetation:	Grass & Weeds
Ground Surface:	Disturbed

Background Information

Geology Map:	MRT 1:250000
Geological Unit:	Quaternary Sediments
Climate:	Annual rainfall 550mm
Water Connection:	Tank
Sewer Connection:	Unserviced-On-site required
Testing and Classification:	AS2870:2011, AS1726:2017 & AS1547:2012

Investigation

A number of bore holes were completed to identify the distribution and variation of the soil materials at the site, bore hole locations are indicated on the site plan. See soil profile conditions presented below. Tests were conducted across the site to obtain bearing capacities of the material at the time of this investigation.

Soil Profile Summary

TH 1 Depth (m)	TH 2 Depth (m)	TH 3 Depth (m)	USCS	Description
0.00-0.30	0.00-0.20	0.00-0.40	SP	Silty SAND (SP): Fine grained, brown, dry medium dense.
0.30-1.40	0.20-1.60	0.40-1.50	SP	Silty SAND: Medium grained, pale brown-yellow, slightly moist, dense.
1.40-3.00	1.60-2.00	1.50-2.00	SP	Silty SAND: Medium grained, dark grey, wet, very dense, no refusal.

Site Notes

The soils on site consist of deep sand developing from Quaternary Sediments.

Site Classification

The site has been assessed and classified in accordance with AS2870:2011 “*Residential Slabs and Footings*”.

The site has been classified as:

Class A

Y^s range: **0mm**

Notes: The site has been classified as Class A, which is an unreactive sand site and isn’t expected to exhibit any ground surface movement due to moisture fluctuations. Design and construction should be made in accordance with this classification.

Wind Loading Classification

According to “AS4055:2021 - Wind Loads for Housing” the house site is classified below:

Wind Classification:	N2
Region:	A
Terrain Category:	1.0
Shielding Classification:	PS
Topographic Classification:	T0
Wind Classification:	N2
Design Wind Gust Speed – m/s ($V_{h,u}$):	50

Wastewater Classification & Recommendations

According to AS1547-2012 (on-site waste-water management) the natural soil is classified as **Sand (category 1)**. The site is unsuited to the installation of a traditional septic tank and limited space available. Secondary treatment of effluent will be required, and it is proposed to install a package treatment system (e.g. Econocycle, Envirocycle, Ozzikleen UbiAqua etc) with treated effluent disposed in a modified absorption bed. A Design Loading Rate (DLR) of 40L/m²/day has been assigned for this site.

The proposed three-bedroom dwelling has a calculated maximum wastewater output of 600L/day. This is based on a tank water supply and a maximum occupancy of 5 people (120L/day/person). With secondary treatment this will require an absorption area of at least 15m². This can be accommodated in a modified absorption bed. . For all calculations please refer to the Trench summary reports.

Due to the highly permeable topsoils a cut-off drain will not be required. A 100% reserve area should be set aside for future wastewater requirements.

The following setback distances are consistent with the Building Act 2016:

Upslope or level buildings:	2m
Upslope or level boundaries:	1.5m
Downslope surface water:	100m

with Building Act 2016 Guidelines for On-site Wastewater Management Systems is outlined in the attached table.

During construction GES will need to be notified of any variation to the soil conditions or wastewater loading as outlined in this report.

Construction Notes & Recommendations

The site has been classified as **Class A**.

It is recommended that all footings be founded in the natural material with bearing capacities >100kPa.

All earthworks on site must comply with AS3798:2007, and I further recommend that consideration be given to drainage and sediment control on site during and after construction. Care should also be taken to ensure there is adequate drainage in the construction area to avoid the potential for weak bearing and foundation settlement associated with excessive soil moisture.

During construction GES will need to be notified of any variation to the soil conditions or wastewater loading as outlined in this report.



Dr John Paul Cumming B.Agr.Sc (hons) PhD CPSS GAICD

Director

GES

Land suitability and system sizing for on-site wastewater management

Trench 3.0 (Australian Institute of Environmental Health)

Assessment Report

Site assessment for wastewater system

Assessment for Lucy Boot

Assess. Date

10-Jun-26

Ref. No.

Assessed site(s) 19 Cremourne Avenue

Site(s) inspected

25-Feb-26

Local authority Clarence

Assessed by John Paul Cumming

This report summarises wastewater volumes, climatic inputs for the site, soil characteristics and system sizing and design issues. Site Capability and Environmental sensitivity issues are reported separately, where 'Alert' columns flag factors with high (A) or very high (AA) limitations which probably require special consideration for system design(s). Blank spaces on this page indicate data have not been entered into TRENCH.

Wastewater Characteristics

Wastewater volume (L/day) used for this assessment = 600 (using the 'No. of bedrooms in a dwelling' method)

Septic tank wastewater volume (L/day) = 200

Sullage volume (L/day) = 400

Total nitrogen (kg/year) generated by wastewater = 3.2

Total phosphorus (kg/year) generated by wastewater = 1.5

Climatic assumptions for site

(Evapotranspiration calculated using the crop factor method)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Mean rainfall (mm)	43	42	45	52	34	29	38	50	55	53	56	56
Adopted rainfall (R, mm)	43	42	45	52	34	29	38	50	55	53	56	56
Retained rain (Rr, mm)	39	38	41	47	31	26	34	45	50	48	50	50
Max. daily temp. (deg. C)												
Evapotrans (ET, mm)	130	110	91	63	42	29	32	42	63	84	105	126
Evapotr. less rain (mm)	92	72	51	16	11	3	-3	-3	14	36	55	76

Annual evapotranspiration less retained rain (mm) = 419

Soil characteristics

Texture = Sand

Category = 1

Thick. (m) = 3

Adopted permeability (m/day) = 3

Adopted LTAR (L/sq m/day) = 40

Min depth (m) to water = 3

Proposed disposal and treatment methods

Proportion of wastewater to be retained on site: All wastewater will be disposed of on the site

The preferred method of on-site primary treatment: In a package treatment plant

The preferred method of on-site secondary treatment: In-ground

The preferred type of in-ground secondary treatment: Evapotranspiration bed(s)

The preferred type of above-ground secondary treatment: None

Site modifications or specific designs: Not needed

Suggested dimensions for on-site secondary treatment system

Total length (m) = 7

Width (m) = 2

Depth (m) = 0.6

Total disposal area (sq m) required = 15

comprising a Primary Area (sq m) of: 15

and a Secondary (backup) Area (sq m) of:

Sufficient area is available on site

Comments

An absorption bed with area of 15sqm has sufficient capacity to accommodate the expected wastewater load of the proposed dwelling

GES

Land suitability and system sizing for on-site wastewater management

Trench 3.0 (Australian Institute of Environmental Health)

Site Capability Report

Site assessment for wastewater system

Assessment for Lucy Boot

Assess. Date

10-Jun-26

Ref. No.

Assessed site(s) 19 Cremourne Avenue

Site(s) inspected

25-Feb-26

Local authority Clarence

Assessed by John Paul Cumming

This report summarises data relating to the physical capability of the assessed site(s) to accept wastewater. Environmental sensitivity and system design issues are reported separately. The 'Alert' column flags factors with high (A) or very high (AA) site limitations which probably require special consideration in site acceptability or for system design(s). Blank spaces indicate data have not been entered into TRENCH.

Alert	Factor	Units	Value	Confid level	Limitation		Remarks
					Trench	Amended	
	Expected design area	sq m	2,000	V. high	Low		
	Density of disposal systems	/sq km	15	High	Moderate		
	Slope angle	degrees	1	V. high	Very low		
	Slope form	Convex spreading		V. high	Very low		
	Surface drainage	Good		High	Very low		
	Flood potential	Site floods <1:100 yrs		High	Very low		
	Heavy rain events	Infrequent		High	Moderate		
	Aspect (Southern hemi.)	Faces E or W		V. high	Moderate		
	Frequency of strong winds	Common		High	Low		
	Wastewater volume	L/day	600	High	Moderate		
	SAR of septic tank effluent		1.7	Mod.	Low		
	SAR of sullage		2.1	Mod.	Moderate		
	Soil thickness	m	3.0	V. high	Very low		
	Depth to bedrock	m	3.0	High	Very low		
	Surface rock outcrop	%	0	High	Very low		
	Cobbles in soil	%	0	High	Very low		
	Soil pH		7.0	High	Very low		
	Soil bulk density	gm/cub. cm	1.5	High	Low		
	Soil dispersion	Emerson No.	8	V. high	Very low		
AA	Adopted permeability	m/day	3	High	Very high		
	Long Term Accept. Rate	L/day/sq m	40	High	Very high	Moderate	Other factors lessen impact

The site has the capability to accept onsite wastewater

GES

Land suitability and system sizing for on-site wastewater management

Trench 3.0 (Australian Institute of Environmental Health)

Environmental Sensitivity Report

Site assessment for wastewater system

Assessment for Lucy Boot

Assess. Date

10-Jun-26

Ref. No.

Assessed site(s) 19 Cremourne Avenue

Site(s) inspected

25-Feb-26

Local authority Clarence

Assessed by John Paul Cumming

This report summarises data relating to the environmental sensitivity of the assessed site(s) in relation to applied wastewater. Physical capability and system design issues are reported separately. The 'Alert' column flags factors with high (A) or very high (AA) limitations which probably require special consideration in site acceptability or for system design(s). Blank spaces indicate data have not been entered into TRENCH.

Alert	Factor	Units	Value	Confid level	Limitation		Remarks
					Trench	Amended	
A	Cation exchange capacity	mmol/100g	35	High	High		
A	Phos. adsorp. capacity	kg/cub m	0.4	Mod.	High		
	Annual rainfall excess	mm	-419	High	Very low		
	Min. depth to water table	m	3	High	Very low		
	Annual nutrient load	kg	4.7	High	Very low		
	G'water environ. value	Agric non-sensit		High	Low		
	Min. separation dist. required	m	3	High	Very low		
	Risk to adjacent bores	Very low		High	Very low		
	Surf. water env. value	Agric non-sensit		High	Low		
A	Dist. to nearest surface water	m	107	High	High		
AA	Dist. to nearest other feature	m	1.5	V. high	Very high		
	Risk of slope instability	Very low		High	Very low		
	Distance to landslip	m	650	Mod.	Very low		

There is low risk of environmental harm associated with onsite wastewater at this site.

APPENDIX 1 - PSP Results Table

Perth Sand Penetrometer (PSP) Conversion to Californian Bearing Ratio
(ref: Australian Standard AS 1289.6.3.3 - 1997)

PSP Location TH3

Depth (mm)	PSP	PSP	PSP Resistance	Allowable Bearing Capacity	CBR (Rounded Up)
	(Blows/100mm)	(mm/Blow)	(mPa)	(kPa)	
0-100	2	50.0	0.6	74	4
100-200	2	50.0	0.6	74	4
200-300	2	50.0	0.6	74	4
300-400	3	33.3	0.9	110	6
400-500	4	25.0	1.3	147	8
500-600	4	25.0	1.3	147	8
600-700	7	14.3	2.2	257	15
700-800	10	10.0	3.1	368	22
800-900	10	10.0	3.1	368	22
900-1000	9	11.1	2.8	331	20
1000-1100	9	11.1	2.8	331	20
1100-1200	10	10.0	3.1	368	22
1200-1300	9	11.1	2.8	331	20
1300-1400	9	11.1	2.8	331	20
1400-1500	7	14.3	2.2	257	15
1500-1600	9	11.1	2.8	331	20

Demonstration of wastewater system consistency with the *Building Act 2016 Guidelines for On-site Wastewater*

Acceptable Solutions	Performance Criteria	Compliance
A1 Horizontal separation distance from a building to a land application area must comply with one of the following: a) be no less than 6m; or b) be no less than: (i) 3m from an upslope building 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.	P1 a) The land application area is located so that (i) the risk of wastewater reducing the bearing capacity of a building's foundations is acceptably low.; and (ii) is setback a sufficient distance from a downslope excavation around or under a building to prevent inadequately treated wastewater seeping out of that excavation	Consistent with P1 (a) (i) & (ii) Land application area will be located with a minimum separation distance of 2m from an upslope or level building. Consistent with A1 (b) (iii) Land application area will be located with a minimum separation distance of 2.25m from a downslope building.
A2 Horizontal separation distance from downslope surface water to a land application area 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.	P2 Horizontal separation distance from downslope surface water to a land application area 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.	Consistent with A2 (b) (ii) Land application area will be located a minimum of 100m from downslope surface water

A3 Horizontal separation distance from a property boundary to a land application area 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; and (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.	P3 Horizontal separation distance from a property boundary to a land application area 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.	Consistent with A3 (b) (i) Land application area will be located with a minimum separation distance of 1.5m from an upslope or level property boundary Consistent with A3 (b) (iii) Land application area will be located with a minimum separation distance of 2.5m from a downslope property boundary.
A4 Horizontal separation distance from a downslope bore, well or similar water supply to a land application area must be no less than 50m and not be within the zone of influence of the bore whether up or down gradient.	P4 Horizontal separation distance from a downslope bore, well or similar water supply to a land application area 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	Consistent with A4 No bore or well identified within 50m

A5 Vertical separation distance between groundwater and a land application area must be no less than: (a) 1.5m if primary treated effluent; or (b) 0.6m if secondary treated effluent	P5 Vertical separation distance between groundwater and a land application area 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	Consistent with A5 (b) No groundwater encountered
A6 Vertical separation distance between a limiting layer and a land application area must be no less than: (a) 1.5m if primary treated effluent; or (b) 0.5m if secondary treated effluent	P6 Vertical setback must be consistent with AS/NZS1547 Appendix R.	Consistent with A5 (b)
A7 nil	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	Consistent

ASSESSMENT OF HORIZONTAL AND VERTICAL SETBACK DISTANCES

(adapted from Table R1 in AS1547 - to be used in conjunction with Site Constraint Table)

Site feature	Setback distance range (m)	Site constraint items of specific concern (from Site Constraint Table)	Assessment	Adopted setback distance (m)
	<i>Horizontal setback distance</i> (m)			
Property boundary	1.5 – 50	A, D, J	2.5	>2.5
Buildings/houses	2.0 – > 6	A, D, J	2	>2m
Surface water	15 – 100	A, B, D, E, F, G, J	100	100
Bore, well	15 – 50	A, C, H, J	N/A	N/A
Recreational areas (Children's play areas, swimming pools and so on)	3 – 15	A, E, J	N/A	N/A
In-ground water tank	4 – 15	A, E, J	N/A	N/A
Retaining wall and Embankments, escarpments, cuttings	3.0 m or 45° angle from toe of wall (whichever is greatest)	D, G, H	N/A	N/A
	<i>Vertical setback distance</i> (m)			
Groundwater	0.6 – > 1.5	A, C, F, H, I, J	0.6	N/A
Hardpan or bedrock	0.5 – ≥ 1.5	A, C, J	0.5	0.6

SITE CONSTRAINT RATING

(adapted from Table R2 in AS1547 - used as a guide in determining appropriate setback distances)

Item	Site/system feature	Constraint scale (see Note 1)		Sensitive features	Comment	Constraint Rating
		LOWER	HIGHER			
		Examples of constraint factors (see Note 2)				
A	Microbial quality of effluent	Effluent quality consistently producing ≤ 10 cfu/100 mL <i>E. coli</i> (secondary treated effluent with disinfection)	Effluent quality consistently ⁶ <i>E. coli</i> (for example, primary treated effluent)	Groundwater and surface pollution hazard, public health hazard	Secondary treated effluent	Low
B	Surface water	Category 1 to 3 soils, no surface water down gradient within > 100 m, low rainfall area	Category 4 to 6 soils, permanent surface water <50 m down gradient, high rainfall area, high resource/environmental value	Surface water pollution hazard for low permeable soils, low lying or poorly draining areas	Downslope surface water 100m	Consistent with Acceptable Solutions
C	Groundwater	Category 5 and 6 soils, low resource/environmental value	Category 1 and 2 soils, gravel aquifers, high resource/environmental value	Groundwater pollution hazard	Sand (category 1) soil No groundwater encountered	Low
D	Slope	0 – 6% (surface effluent application) 0 – 10% (subsurface effluent application)	> 10% (surface effluent application), > 30% subsurface effluent application	Off-site export of effluent, erosion	Flat aspect, subsurface effluent	Low
E	Position of land application area in landscape.	Downgradient of surface water, property boundary, recreational area	Upgradient of surface water, property boundary, recreational area	Surface water pollution hazard, off-site export of effluent	Downslope boundary minimum 2.5m	Consistent with Acceptable Solutions
F	Drainage	Category 1 and 2 soils, gently sloping area	Category 6 soils, sites with visible seepage, moisture tolerant vegetation, low lying area	Groundwater pollution hazard	Sand (category 1) soil No visible seepage or moisture tolerant sp	Consistent with Acceptable Solutions
G	Flood potential	Above 1 in 20 year flood contour	Below 1 in 20 year flood contour	Off-site export of effluent, system failure, mechanical faults	Above 1:20 year flood contour	Consistent with Acceptable Solutions

SITE CONSTRAINT RATING (cont)

Item	Site/system feature	Constraint scale (see Note 1)		Sensitive features	Comment	Constraint Rating
		LOWER	HIGHER			
		Examples of constraint factors (see Note 2)				
H	Geology and soils	Category 3 and 4 soils, low porous regolith, deep, uniform soils	Category 1 and 6 soils, fractured rock, gravel aquifers, highly porous regolith	Groundwater pollution hazard for porous regolith and permeable soils	Sand (category 1) soil High permeability	Consistent with Acceptable Solutions
I	Landform	Hill crests, convex side slopes, and plains	Drainage plains and incise channels	Groundwater pollution hazard, resurfacing hazard	side slope	Consistent with Acceptable Solutions
J	Application method	Drip irrigation or subsurface application of effluent	Surface/above ground application of effluent	Off-site export of effluent, surface water pollution	Subsurface application	Low

AS1547:2012 – Loading Certificate – AWTs Design

This loading certificate sets out the design criteria and the limitations associated with use of the system.

Site Address: 19 Cremourne Avenue

System Capacity: 5 persons @ 120L/person/day

Summary of Design Criteria

DLR: 40mm/day.

Absorption area: 15m²

Reserve area location /use: Assigned

Water saving features fitted: Standard fixtures

Allowable variation from design flows: 1 event @ 200% daily loading per quarter

Typical loading change consequences: Expected to be minimal due to use of AWTs and large land area

Overloading consequences: Continued overloading may cause hydraulic failure of the absorption area and require upgrading/extension of the area. Risk considered acceptable due to monitoring through quarterly maintenance reports.

Underloading consequences: Lower than expected flows will have minimal consequences on system operation unless the house has long periods of non occupation. Under such circumstances additional maintenance of the system may be required. Long term under loading of the system may also result in vegetation die off in the absorption area and additional watering may be required. Risk considered acceptable due to monitoring through quarterly maintenance reports.

Lack of maintenance / monitoring consequences: Issues of underloading/overloading and condition of the irrigation area require monitoring and maintenance, if not completed system failure may result in unacceptable health and environmental risks. Monitoring and regulation by the permit authority required to ensure compliance.

Other considerations: Owners/occupiers must be made aware of the operational requirements and limitations of the system by the installer/maintenance contractor.

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:

On-site wastewater management system - design

(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
	☐ Building design	Architect or Building Designer
	☐ Structural design	Engineer or Civil Designer
	☐ Fire Safety design	Fire Engineer
	☐ Civil design	Civil Engineer or Civil Designer
	☒ Hydraulic design	Building Services Designer
	☐ Fire service design	Building Services Designer
	☐ Electrical design	Building Services Designer
	☐ Mechanical design	Building Service Designer
	☐ Plumbing design	Plumber-Certifier; Architect, Building Designer or Engineer
	☐ Other (specify)	

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

Other details:

AWTS with modified absorption bed

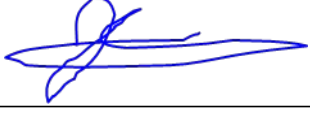
Design documents provided:

The following documents are provided with this Certificate –
Document description:

Drawing numbers:	Prepared by: Geo-Environmental Solutions	Date: Jun-26
Schedules:	Prepared by:	Date:
Specifications:	Prepared by: Geo-Environmental Solutions	Date: Jun-26
Computations:	Prepared by:	Date:
Performance solution proposals:	Prepared by:	Date:
Test reports:	Prepared by: Geo-Environmental Solutions	Date: Jun-26

Standards, codes or guidelines relied on in design process:	
AS1547:2012 On-site domestic wastewater management.	
AS3500 (Parts 0-5)-2013 Plumbing and drainage set.	

Any other relevant documentation:	
Geo-Environmental Assessment - 19 Cremorne Avenue Cremorne - Jun-26	
Geo-Environmental Assessment - 19 Cremorne Avenue Cremorne - Jun-26	

Attribution as designer:	
I John-Paul Cumming, 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 <i>Building Act 2016</i> 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.	
Name: (print) Designer: John-Paul Cumming Licence No: CC774A	Signed  Date 10/06/2026

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:

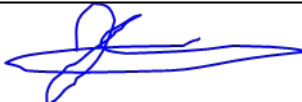
- ☒ The works will not increase the demand for water supplied by TasWater
- ☒ The works will not increase or decrease the amount of sewage or toxins that is to be removed by, or discharged into, TasWater's sewerage infrastructure
- ☒ The works will not require a new connection, or a modification to an 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 work 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 John-Paul Cumming..... 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

	Name: (print)	Signed	Date
Designer:	John-Paul Cumming		10/06/2026



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 item, 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:	The attached soil report for the address detailed above in 'details of work'
Relevant calculations:	Reference the above report.
References:	AS2870:2011 residential slabs and footings AS1726:2017 Geotechnical site investigations CSIRO Building technology file – 18.

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

Site Classification consistent with AS2870-2011.

Scope and/or Limitations

The classification applies to the site as inspected and does not account for future alteration to foundation conditions as a result of earth works, drainage condition changes or variations in site maintenance.

I, John-Paul Cumming certify the matters described in this certificate.

Qualified person:

Signed:

Certificate No:

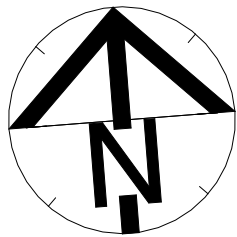
Date:

J12732

10/06/2026



A handwritten signature in black ink, appearing to be "John Paul Cumming", written over a light grey circular background.



Ground Floor FFL 1.95

Wastewater system:

AWTS unit vented according to
NCC vol 3 Tas H101.2
min 1:60 fall from all fixtures

Modified absorption bed - 15m²
E.G. 2m x 7.5m

Min 2m from buildings
Min 1.5m from upslope or level boundaries
Min 100m from downslope surface water

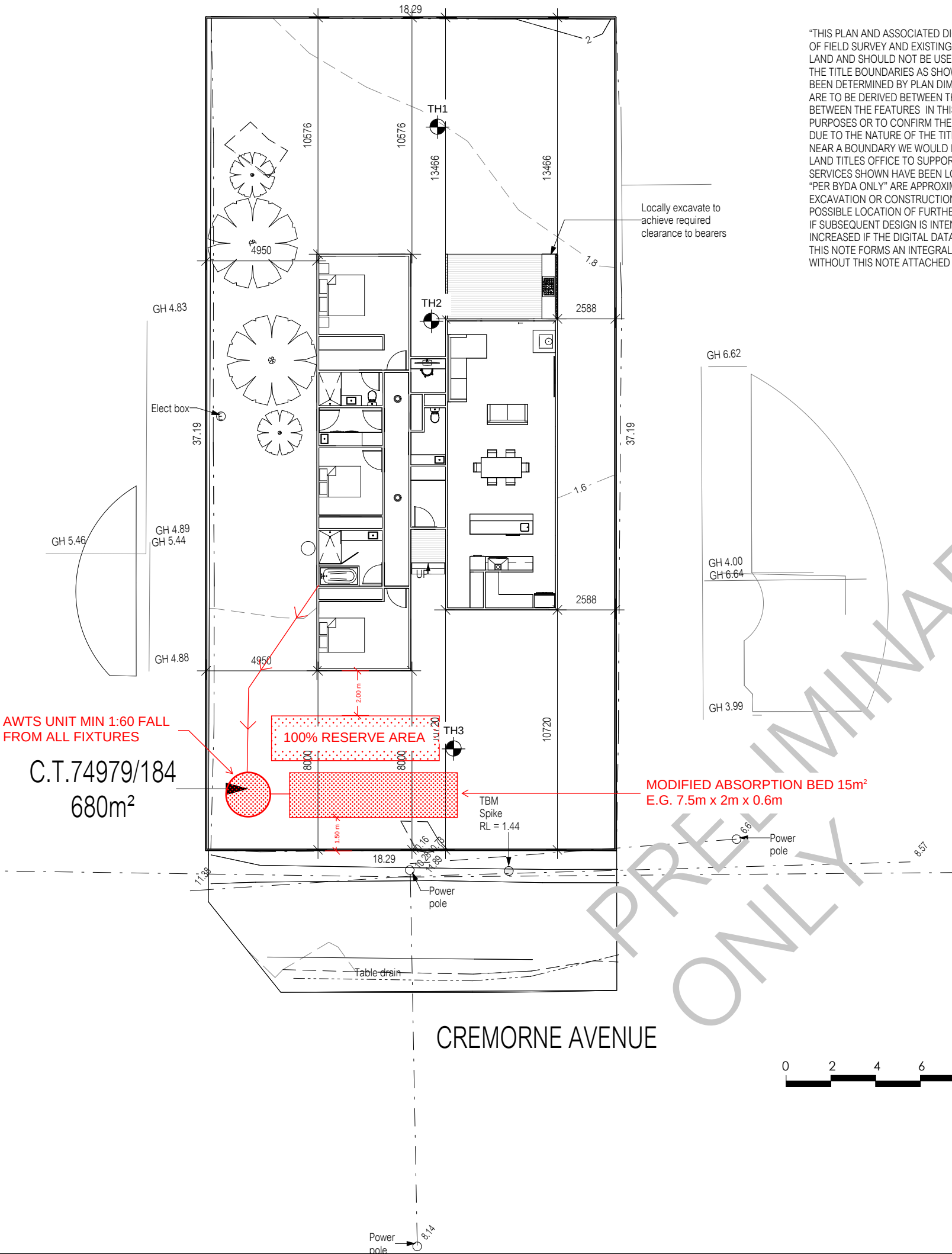
Refer to GES report



Dr. John Paul Cumming
Building Services Designer-
Hydraulic
CCC774A

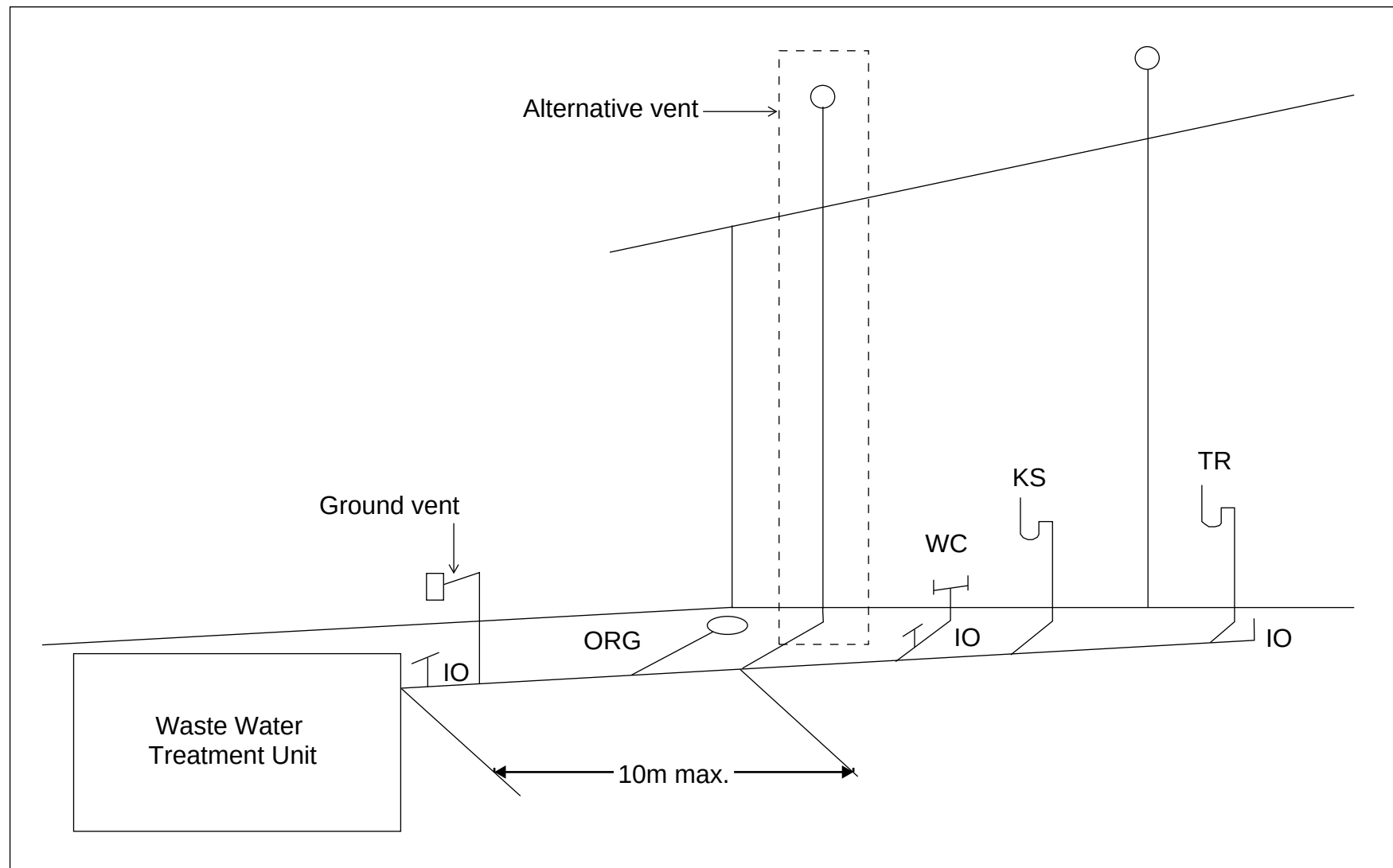
28 Kinksey Place Battery Point
T: 0223 1839 S: office@gesolutions.net.au

10/06/2026



"THIS PLAN AND ASSOCIATED DIGITAL MODEL IS PREPARED FOR ANDREW SAUNDERS FROM A COMBINATION OF FIELD SURVEY AND EXISTING RECORDS FOR THE PURPOSE OF DESIGNING NEW CONSTRUCTIONS ON THE LAND AND SHOULD NOT BE USED FOR ANY OTHER PURPOSE.
THE TITLE BOUNDARIES AS SHOWN ON THIS PLAN WERE NOT MARKED AT THE TIME OF THE SURVEY AND HAVE BEEN DETERMINED BY PLAN DIMENSIONS ONLY AND NOT BY FIELD SURVEY. NO MEASUREMENTS OR OFFSETS ARE TO BE DERIVED BETWEEN THE FEATURES ON THIS PLAN AND THE BOUNDARY LAYER. THE RELATIONSHIP BETWEEN THE FEATURES IN THIS MODEL AND THE BOUNDARY LAYERS CANNOT BE USED FOR ANY SET OUT PURPOSES OR TO CONFIRM THE POSITION OF THE TITLE BOUNDARIES ON SITE.
DUE TO THE NATURE OF THE TITLE BOUNDARY INFORMATION, IF ANY STRUCTURES ARE DESIGNED ON OR NEAR A BOUNDARY WE WOULD RECOMMEND A RE-MARK SURVEY BE COMPLETED AND LODGED WITH THE LAND TITLES OFFICE TO SUPPORT THE BOUNDARY DEFINITION.
SERVICES SHOWN HAVE BEEN LOCATED WHERE VISIBLE BY FIELD SURVEY. SERVICES DENOTED AS BEING "PER BYDA ONLY" ARE APPROXIMATE AND FOR ILLUSTRATIVE PURPOSES ONLY. PRIOR TO ANY DEMOLITION, EXCAVATION OR CONSTRUCTION ON THE SITE, THE RELEVANT AUTHORITY SHOULD BE CONTACTED FOR POSSIBLE LOCATION OF FURTHER UNDERGROUND SERVICES AND DETAILED LOCATIONS OF ALL SERVICES. IF SUBSEQUENT DESIGN IS INTENDED FOR CONSTRUCTION SETOUT, FUTURE SURVEYING SETOUT COSTS ARE INCREASED IF THE DIGITAL DATA PROVIDED IS ROTATED, SCALED OR MOVED.
THIS NOTE FORMS AN INTEGRAL PART OF THE PLAN/DATA. ANY REPRODUCTION OF THIS PLAN/MODEL WITHOUT THIS NOTE ATTACHED WILL RENDER THE INFORMATION SHOWN INVALID.

No.	Date	Int.
Amendment changes as per cover sheet		
Notes		
• Builder to verify all dimensions and levels on site prior to commencement of work		
• All work to be carried out in accordance with the current National Construction Code.		
• All materials to be installed according to manufacturers specifications.		
• Do not scale from these drawings.		
• No changes permitted without consultation with designer.		
Designer:		
ANOTHER PERSPECTIVE PTY LTD PO BOX 171 NORTH HOBART LIC. NO. 685230609 (S. Turvey) Ph: (03) 6231 4122 Fx: (03) 6231 4166 Email: info@anotherperspective.com.au		
Client / Project info		
PROPOSED SAUNDERS & BOOT RESIDENCE 19 Cremorne Avenue CREMORNE		
SITE PLAN		
Drawn	RJ	AP2026-2575
Date	18 May 2026	Sheet
Scale	1:200	01/03



Tas Figure C2D6 Alternative Venting Arrangements

Vents must terminate in accordance with AS/NZS 3500.2

Alternative venting to be used by extending a vent to terminate as if an upstream vent, with the vent connection between the last sanitary fixture or sanitary appliance and the on-site wastewater management system. Use of a ground vent is not recommended

Inspection openings must be located at the inlet to an on-site wastewater management system treatment unit and the point of connection to the land application system and must terminate as close as practicable to the underside of an approved inspection opening cover installed at the finished surface level

Access openings providing access for desludging or maintenance of on-site wastewater management system treatment units must terminate at or above finished surface level