ABN 68 300 116 092

PLANNING APPLICATION FORM

Section 57 & 58

OFFICE USE ONLY		
Application Number: DA 2024 **/** 4		**Date:**
PID: 9820464	**Zone:** Low Density Residential	**Permitted or Discretionary**

DEVELOPMENT APPLICATION DETAILS

Applicant Name:	**Michael & Lorna Clifford**				
Location/Address:	**77B Arnold Street George Town**				
Title Reference:	**181938 / 2**				
Existing Development/Use: (describe the way the land is used now)	**Single Dwelling**				
Development Type:	New dwelling ☐	Outbuilding ☐	Addition/extension ☐		
	Fencing ☐	Demolition ☐	Signage ☐		
	Subdivision ☒	Change of use ☐	Other ☐		
Description/Use:	**5 Lot Subdivision**				
New floor area:	*n/a*	**Total floor area:**	*n/a*	**New building height:**	*n/a*
Water Supply:	TasWater ☒ Tank ☐	**Wastewater:**	TasWater ☐ On-Site Wastewater System ☒		
Driveway/Vehicle Crossover:	Existing ☐ Proposed ☒ Alteration Required ☐ ***Contact Council's engineering department for details on crossover construction***				
Does the application include Crown Land or access via a Crown Access License?	Yes ☐ No ☒	If 'yes', please provide Crown consent to lodge the planning application in accordance with section 52 (1B) of the *Land Use Planning and Approvals Act 1993.*			

SUBDIVISION N/A ☐

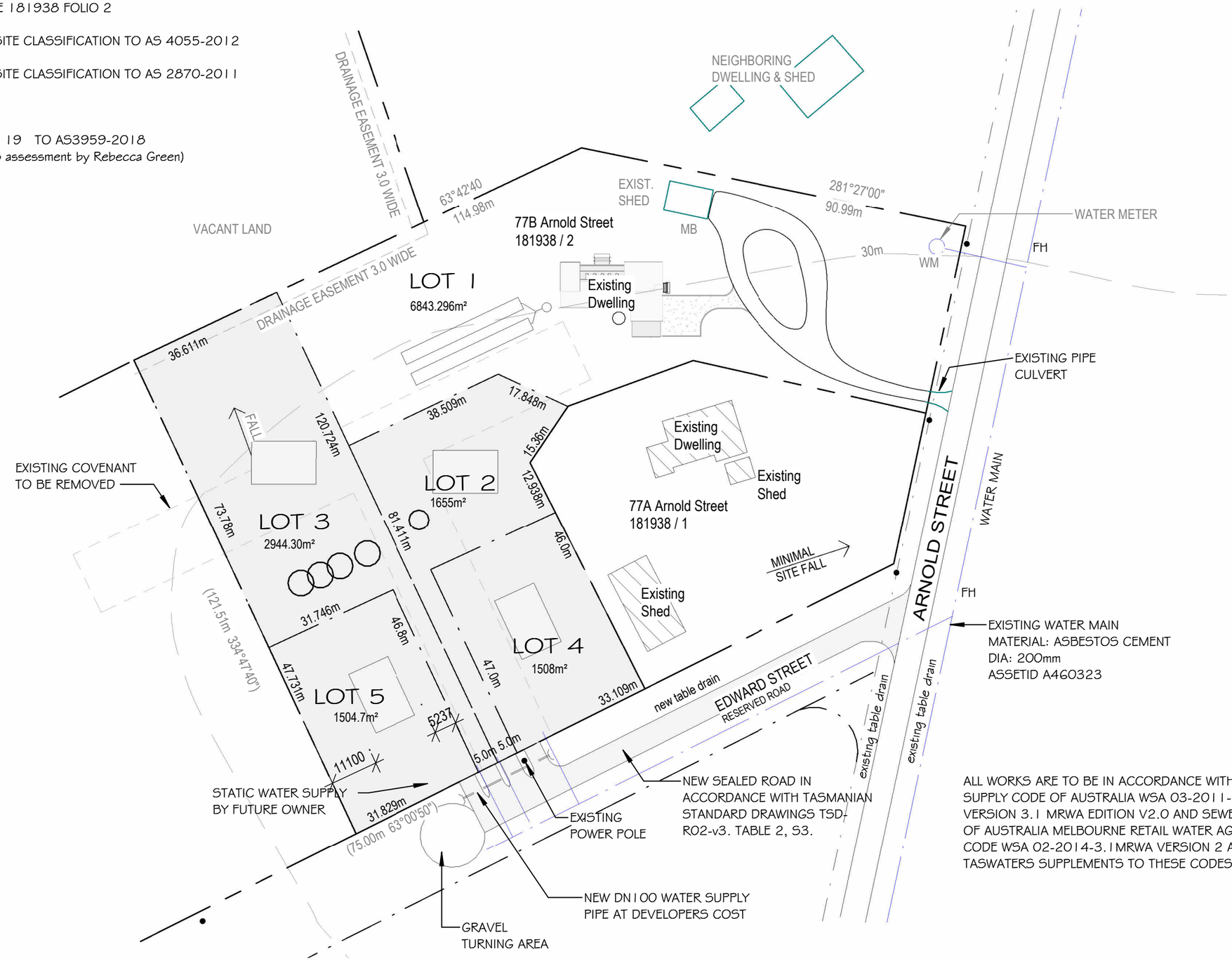
Existing Lots:	1	**Number of total lots proposed:**	5

COMMERCIAL/INDUSTRIAL N/A ☒

Existing business and/or proposed business description:				
Hours of Operation:	Weekdays (Mon – Fri)		To	
	Saturday		To	
	Sunday		To	
Signage:	Yes ☐ No ☐	If 'yes', please provide details with application.		
Existing no. of employees:		**No. of employees (proposed):**		
Parking spaces (existing)		**Parking spaces (proposed)**		

SITE INFORMATION

LAND TITLE REFERENCE:	VOLUME 181938 FOLIO 2
WIND CLACIFICATION:	N/A SITE CLASSIFICATION TO AS 4055-2012
SOIL CLASSIFICATION:	N/A SITE CLASSIFICATION TO AS 2870-2011
CLIMATE ZONE:	7
BAL LEVEL:	12.5 to 19 TO AS3959-2018 (refer to assessment by Rebecca Green)
ALPINE AREA:	N/A
CORROSION ENVIRONMENT:	Medium
OTHER HAZARDS:	N/A



ALL WORKS ARE TO BE IN ACCORDANCE WITH THE WATER SUPPLY CODE OF AUSTRALIA WSA 03-2011-3.1 VERSION 3.1 MRWA EDITION V2.0 AND SEWERAGE CODE OF AUSTRALIA MELBOURNE RETAIL WATER AGENCIES CODE WSA 02-2014-3.1MRWA VERSION 2 AND TASWATERS SUPPLEMENTS TO THESE CODES.

N

Issue	Description	Date	Auth
A	Preliminary	19.09.23	MC
B	DA Approval	16.01.23	MC

PROJECT: SUBDIVISION 1 lot to 5

SITE: 77B ARNOLD STREET, GEORGE TOWN, TAS

FOR: MICHAEL & LORNA CLIFFORD

MDC DESIGN & drafting
LICENCE NUMBER: CC7219
PO BOX 129 GEORGE TOWN TAS 7253
TELEPHONE: 0427655957
mdc.designs@icloud.com

DATE:

DRAWN: MC

CHK: MC

SCALE: 1 : 1000

DRAWING TITLE: SITE PLAN

PROJECT No. 2400 WD A01

01 OF 1

A3 ORIGINAL

ISSUE: B

44 Penquite Road
LAUNCESTON TAS 7250
M: 0431 208 450
E: cameron.oakley@h-dna.com.au
ABN: 169 442 993 50

MEMO **7 April 2024**

Re: Onsite Stormwater Disposal Requirements at 77B Arnold Street, George Town

Introduction:

Hydrodynamica was engaged to provide an onsite stormwater disposal report for the proposed subdivision of 77B Arnold Street.

Figure 1 provides an overview of the site:

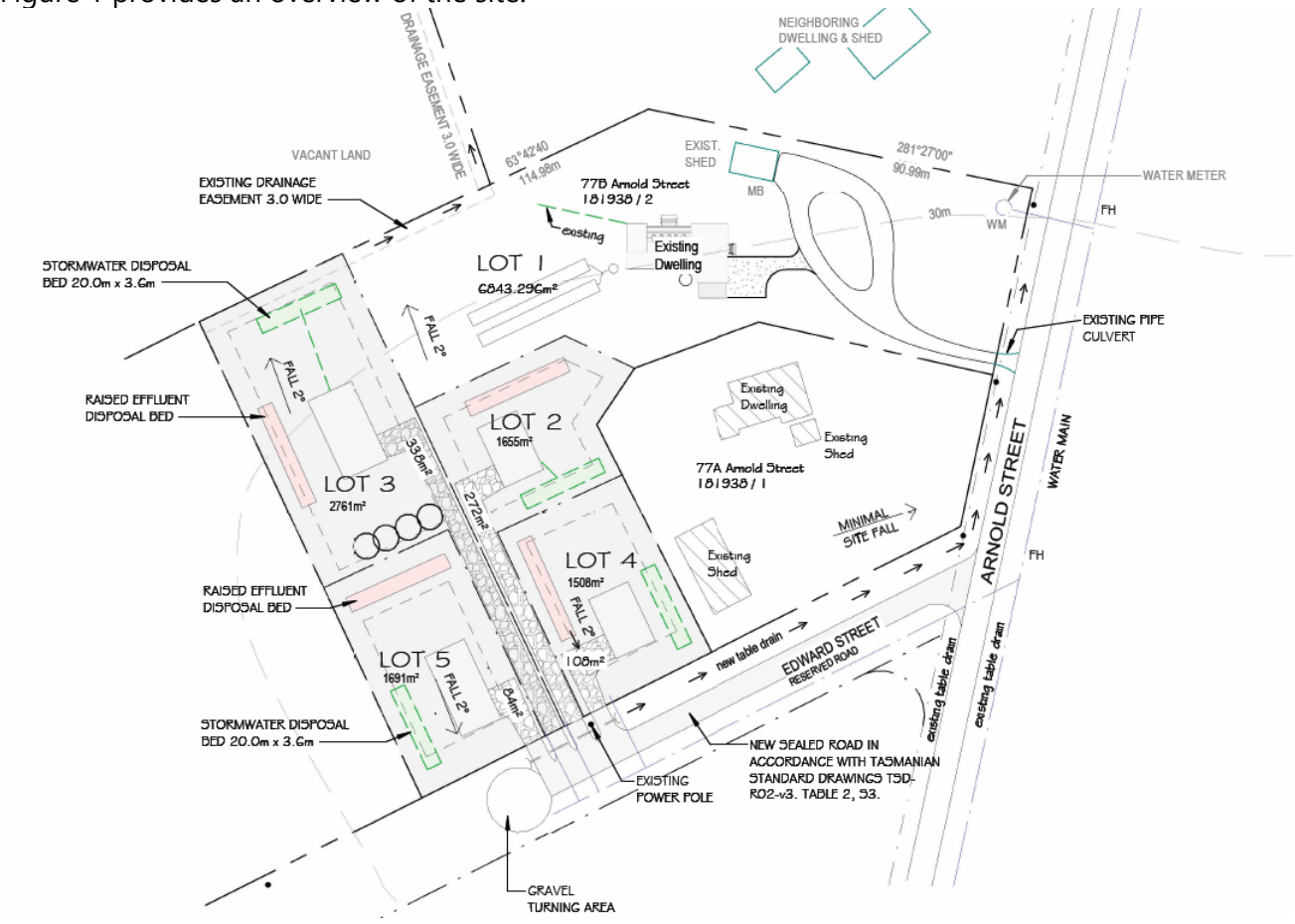


Figure 1. Subdivision Plan (from MDC Design and Drafting drawing 2400WD02)

The land is zoned Low Density Residential in the Tasmanian Planning Scheme and no public stormwater system available to connect to. Therefore, onsite disposal is required and Tasmanian

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Planning Scheme State Planning Provision 10.6.3 P3 applies. Each lot must be capable of accommodating an on-site stormwater management system adequate for the future use and development of the land.

The topography of the land is shown in Figure 2. Except of a small width along the proposed Edward Street the remainder of the site drains north and north-westerly:

Figure 2. Site topography

The proposed lot containing the exiting house (Lot 1) could possibly achieve a gravity connection or at least a charged connection to the Arnold Street open drain. The remaining lots, and any hardstand within lot 1, will require onsite disposal.

<u>This assessment shows that onsite disposal is suitable for all lots, and performance criteria 10.6.3 P3 is met.</u>

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It should be noted that this is a preliminary assessment for subdivision approval, and that site-specific assessments and designs will be required once the actual location and size of the residential developments are known.

Assessment:

This assessment relies on the soil investigation undertaken by Geoton Pty Ltd in report GL23648Ab (04/12/23). The report states that four boreholes found clayey sand depths of 700-1000mm underneath 100mm of topsoil, underlain by sandy clay to depths of 2000mm.

In the absence specific standards for onsite stormwater disposal, the *Water Sensitive Urban Design – Engineering Procedures for Stormwater Management in Tasmania* (Derwent Estuary Program, 2012) Chapter 10 have been used. These procedures detail a robust methodology for sizing of infiltration stormwater disposal areas.

The assumptions used in the calculations contained in this report are as follows:

- A permeability (K_{60}) of 36mm/hr for sandy clay. The Derwent Estuary Program Guidelines S10.3.1.2 suggest a K_{60} of 180mm/hr for sandy soil (i.e. appropriate for depths of 700 to 1000mm) and between 36 and 180mm/hr for sandy clay (i.e. appropriate for additional depths to at least 2000mm). Therefore, a K_{60} of 36mm/hr has been adopted, which is probably conservative.
- Total areas of hardstand to be serviced 588 m^2:
    - Lot 3 has the longest internal driveway of 338 m^2. According to Tasmanian Planning Scheme State Planning Provision 10.6.1 A1 the minimum size dwelling which the subdivision must be able to contain is 10m x 15m in size. To provide a conservative estimate of roof and additional hardstand, e.g. footpaths, an additional 250 m^2 has been allowed. This equates to a fraction impervious for Lot 3 of 39%.
- A runoff coefficient for the 5% AEP (1 in 20 year ARI) of 1 (i.e. lot initial or continuing losses)
- A Moderation Factor, U, of 1 for sandy soil, as per the WSUD Procedures 10.3.1.2 Table 0-1
- A void ratio of 33% for 20mm to 40mm aggregate
- 5% AEP year rainfall intensities are the BOM/AR&R 2016 IFDs (http://www.bom.gov.au/water/designRainfalls/revised-ifd/) for George Town. The intensities are provided at the end of this memo.

Table 1 provides a summary of infiltration bed inflow volumes, outflow volumes, and required storage calculations for the range of 5% AEP storm durations:

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Duration (mins)	I(mm/hr)	D (hrs)	Inflow Vol (m3)	Outflow Vol (m3)	**Required Storage (m3)**	C_{20}	1	
5	108	0.08	5.29	0.26	5.03	A	588	m2
6	101	0.1	5.94	0.31	5.63	Length	20	m
10	80.2	0.17	7.86	0.52	7.34	Width	3.7	m
20	55.9	0.33	10.85	1.02	9.83	Depth	0.5	m
30	44.3	0.5	13.02	1.55	11.48	P	47.4	m2
60	29.2	1	17.17	3.09	14.08	U (sandy clay)	1	
120	19	2	22.34	6.18	16.16			
180	14.7	3	25.93	9.27	16.66	K_{60}	36.00	mm/hr
360	9.49	6	33.48	18.54	14.94	A_{inf}	74	m2
720	6.03	12	42.55	37.09	5.46	V Bed (total) (L x W x H)	37	m3
1440	3.74	24	52.78	74.17	-21.40	V (aggregate void- storage available	9.83	m3
2880	2.23	48	62.94	148.35	-85.41	V (3no. RELN Large Arch) (0.12m3/m)	7.2	m3
4320	1.63	72	69.01	222.52	-153.52	**Total Storage Available:**	17.03	m3

Table 1. Stormwater disposal bed calculation summary

The calculations above are for a disposal bed 20 metres long x 3.7 metres wide x 500mm deep. The indicative bed design contains 3 rows of RELN 'Large Drain'' arches. The storage capacity of these arches is 0.12 m^3 per metre of arch length.

Based on the predicted outflow from the 20m x 3.7m disposal bed (or 2 x 10m x 3.7m beds), a minimum storage volume of 16.7 m^3 is required, which peaks in the 180 minute storm duration. The volume of storage available in the bed aggregate (excluding clear storage in the arches) is 9.8 m^3. The volume of clear storage in the arches is 7.2 m^3. Storage available therefore totals 17 m^3 which exceeds the minimum required detention storage of 16.7 m^3. Figure 3 shows an indicative 3.7 metre wide bed profile (not to scale).

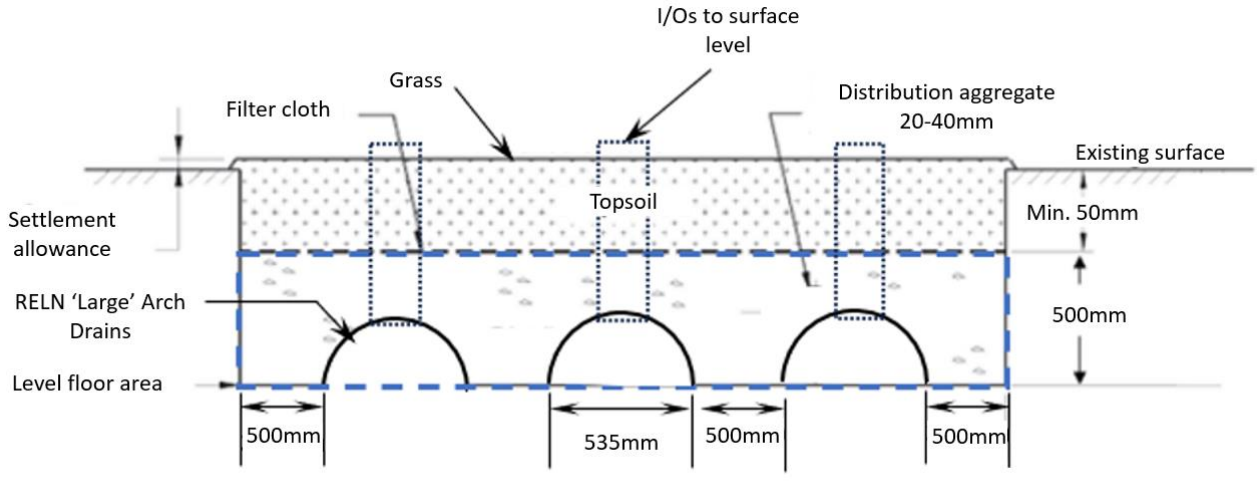

Figure 3. Indicative stormwater infiltration bed detail

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Conclusion and Recommendation:

The total area required for the indicative bed design presented above is only 74 m^2. The smallest proposed lot, Lot 4, is 1508 m^2. The Geoton report indicates a total of 90m^2 is required for wastewater disposal area and an additional 90m^2 is to be set aside as a reserve area. Therefore, the proposed lot sizes, wastewater areas, and existing soil type are obviously sufficient for stormwater to be disposed of onsite. Performance criteria 10.6.3 P3 is met. Figure 1 shows the indicative disposal bed areas.

Again, it should be noted that this is a preliminary assessment for subdivision approval, and that site-specific assessments and designs will be required once the actual location and size of the residential developments are known. However, if such beds are used the following recommendations are made:

- Beds shall be laid outside of trafficable areas, have a flat base and, as far as practicable, be laid along the contour. They shall also have a minimum separation of 2 metres from property boundaries. Inspection openings shall be installed at each end of each of the sets of arches.
- Pre-treatment of stormwater for the removal of debris and sediment is essential, and storm runoff should not be conveyed directly into the infiltration system. Pre-treatment measures should include the provision of leaf and roof litter guards along the roof gutters.
- All plumbing and drainage shall comply with the requirements in AS3500:2021.

Cameron Oakley

CONSULTING ENGINEER

B.Tech, B.Eng (Hons), MBA

Licensed Building Services Provider No. 949718126

HYDRODYNAMICA

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	Annual Exceedance Probability (AEP)						
Duration	**63.2%**	**50%#**	**20%***	**10%**	**5%**	**2%**	**1%**
1 min	80.6	90.3	123	147	172	209	239
2 min	72.0	80.8	108	127	145	168	184
3 min	63.3	71.0	95.6	113	129	151	167
4 min	56.7	63.5	85.8	102	118	139	156
5 min	51.5	57.7	78.3	93.1	108	130	147
6 min	47.5	53.2	72.2	86.2	101	121	138
10 min	37.0	41.5	56.6	68.0	80.2	98.1	113
15 min	30.1	33.6	45.9	55.3	65.3	80.1	92.7
20 min	25.8	28.9	39.4	47.4	55.9	68.3	78.8
25 min	22.9	25.6	34.9	41.9	49.2	59.9	68.9
30 min	20.7	23.2	31.5	37.8	44.3	53.6	61.4
45 min	16.5	18.5	25.1	29.9	34.8	41.6	47.1
1 hour	14.1	15.8	21.3	25.2	29.2	34.5	38.8
1.5 hour	11.2	12.5	16.8	19.8	22.7	26.5	29.5
2 hour	9.44	10.6	14.2	16.6	19.0	22.0	24.4
3 hour	7.41	8.31	11.1	12.9	14.7	17.0	18.7
4.5 hour	5.77	6.47	8.62	10.0	11.4	13.2	14.5
6 hour	4.81	5.39	7.17	8.35	9.49	11.0	12.2
9 hour	3.68	4.12	5.48	6.40	7.30	8.54	9.51
12 hour	3.03	3.38	4.50	5.27	6.03	7.11	7.97
18 hour	2.28	2.54	3.38	3.97	4.58	5.45	6.17
24 hour	1.86	2.06	2.74	3.23	3.74	4.47	5.09
30 hour	1.58	1.75	2.32	2.74	3.18	3.82	4.35
36 hour	1.38	1.53	2.02	2.39	2.78	3.34	3.81
48 hour	1.12	1.23	1.62	1.92	2.23	2.68	3.06
72 hour	0.831	0.914	1.19	1.40	1.63	1.94	2.20
96 hour	0.677	0.743	0.965	1.13	1.29	1.53	1.72
120 hour	0.580	0.637	0.821	0.952	1.08	1.27	1.42
144 hour	0.514	0.565	0.724	0.833	0.940	1.09	1.21
168 hour	0.467	0.513	0.654	0.747	0.834	0.963	1.06

GEOTON Pty Ltd
Geotechnical Consultants

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www.geoton.com.au

04 December 2023

Reference No. GL23648Ab

Mr Michael & Ms Lorna Clifford
PO BOX 129
GEORGE TOWN TAS 7253

Dear Sir and Madam

RE: Preliminary On-site Wastewater Disposal Evaluation
77B Arnold Street, George Town

We have pleasure in submitting herein our report detailing the results of a preliminary on-site wastewater disposal evaluation conducted at the above site.

Should you require clarification of any aspect of this report, please contact Michael Goss on 03 6326 5001.

For and on behalf of

Geoton Pty Ltd

Tony Barriera

Director – Principal Geotechnical Engineer

1 INTRODUCTION

At the request of Mr Michael & Ms Lorna Clifford, Geoton Pty Ltd has carried out a limited scope investigation at the site of a proposed 5-Lot residential subdivision at 77B Arnold Street, George Town.

We understand that the proposed subdivision of the property will allocate the existing dwelling to be contained in proposed Lot 1, with the remainder of the site to be allocated to Lots 2 to 5.

The investigation is to evaluate if the proposed new subdivided Lots can support on-site wastewater disposal systems (in accordance with AS/NZS 1547:2012 “On-site domestic wastewater management”) for the purposes of subdivision approval.

It should be noted that this is a preliminary on-site wastewater site evaluation for subdivision approval and that site-specific assessments for the proposed new Lots will be required by the developer/owner once the actual location and size of the residential developments are known.

A site plan for the proposed subdivision was provided, prepared by MDC Design & Drafting. Project No. 1701, drawing No. A01, dated 19.09.23.

2 FIELD INVESTIGATION

The field investigation was conducted on 26 October 2023 and involved the drilling of 4 boreholes by mounted auger rig to the investigated depths of 2.0m.

The permeability of the site was measured using a constant head permeameter.

The logs of the boreholes are included in Appendix A and their locations are shown on Figure 1 attached.

3 SITE CONDITIONS

The site is approximately 1.45ha, is near level and currently developed with a residence and a shed located within the northern portion of the site. The proposed new Lots 2 to 5 range approximately 1,506m^2 to 1,608m^2 in size and are currently vacant and generally vegetated with a low grass cover and scattered mature trees.

An existing septic tank and two absorption trenches are located west of the existing dwelling, which will be contained within Lot 1.

A photograph of the site is attached as Plate 1.

The MRT Digital Geological Atlas 1:25,000 Series, indicates that the site is mapped as Quaternary period sediments with this being generally confirmed by our field investigation.

Examination of the LIST Landslide Planning Map indicates that the site is not within a mapped landslide hazard band.

The investigation indicated that the soil profile is relatively uniform across the site. The boreholes encountered topsoil comprising sand to depths of 0.1m, overlying sand to

clayey sand to depths of 0.7m to 1.0m, underlain by sandy clay to the investigated depths of 2.0m.

The boreholes did not encounter any signs of groundwater seepage over the investigated depths.

Full details of the soil conditions encountered are presented on the borehole logs.

4 EFFLUENT DISPOSAL

4.1 Permeability of Soil and Soil Classification

The soil has been classified as follows:

- Texture – Light Clays (Table E1 from AS1547-2012);
- Structure – Strongly structured (Table E4 from AS/NZS1547-2012); and
- Category – 5 (Table E1 from AS/NZS1547:2012).

For moderately structured structured Category 5 soils, the indicative permeability from AS1547 Table L1 is 0.12-0.5m/day.

4.2 Disposal and Treatment Method

The soil within the proposed lot is assessed as having sufficient clay content to provide an adequate attenuation period for the breakdown of pathogens within the treated effluent.

As the site contains category 5 soils that have low permeability, traditional primary treated septic and trench/bed systems may not be suitable for disposal within these soils.

Therefore, provided the setback distances are adhered to, this site assessment indicates that the proposed new Lots are suitable for the disposal of effluent.

As such, the proposed new vacant lots are suitable for the disposal of domestic effluent by way of the following methods:

4.2.1 Primary Treated Systems

- Septic Tank and Evapo-Transpiration-Absorption (ETA) beds.

4.2.2 Secondary Treated Systems

- Aerated Wastewater Treatment System (AWTS) and mounded sub-surface Irrigation; or
- Aerated Wastewater Treatment System (AWTS) and conventional bed raised above the natural ground surface.

4.3 Setbacks

The minimum separation distance between the disposal area and downslope features is based on Appendix R from AS/NZS 1547:2012 “Recommended Setback Distances for Land Application Systems” and Section 3.1 from the Building Act 2016: Director’s

Guidelines for On-site Wastewater Management Systems. As per the documents, the following setbacks are required for secondary treated effluent:

- 15.0m from downslope sensitive features such as watercourses;
- 3.0m from buildings (4.0m for primary treated effluent); and
- 1.5m from property boundaries.

4.4 Example Sized Disposal Areas

4.4.1 Septic Tank and ETA Beds

A standard 4-bedroom dwelling on reticulated water within the assessed area of the site will require 450m^2 (225m^2 for the effluent disposal area and 225m^2 as a backup area) for a septic tank and ETA beds.

4.4.2 AWTS/STS and irrigation lines

A standard 4-bedroom dwelling on reticulated water within the assessed area of the site will require 600m^2 (300m^2 for the effluent disposal area and 300m^2 as a backup area) for an AWTS/STS and sub-surface irrigation system.

4.4.3 AWTS/STS and raised conventional bed

About 180m^2 (90m^2 for the effluent disposal area and 90m^2 as a backup area) would be required for an AWTS/STS and a conventional bed raised above the natural ground surface to support a standard 4-bedroom dwelling within the assessed area of the site.

4.5 Wastewater assessment Conclusion

The results of the investigation indicate that the proposed new lots each have sufficient available area suitable for the disposal of domestic effluent by way of primary treated wastewater via a septic tank and ETA beds **or** secondary treated wastewater via an aerated wastewater treatment system, including sufficient reserve area.

Careful consideration will be required in the planning of the development as the location of buildings may significantly decrease the area available for wastewater disposal.

References:

AS/NZS 1547- 2012 On-site domestic-wastewater management

Building Act 2016: Director's Guidelines for On-site Wastewater Management Systems

Attachments:

Limitations of report

Figure 1 – Site Plan

Site Photograph

Appendix A – Borehole Logs & Explanation Sheets

GEOTON Pty Ltd

Geotechnical Consultants - Limitations of report

These notes have been prepared to assist in the interpretation and understanding of the limitations of this report.

Project specific criteria

The report has been developed on the basis of unique project specific requirements as understood by Geoton and applies only to the site investigated. Project criteria are typically identified in the Client brief and the associated proposal prepared by Geoton and may include risk factors arising from limitations on scope imposed by the Client. The report should not be used without further consultation if significant changes to the project occur. No responsibility for problems that might occur due to changed factors will be accepted without consultation.

Subsurface variations with time

Because a report is based on conditions which existed at the time of subsurface exploration, decisions should not be based on a report whose adequacy may have been affected by time. For example, water levels can vary with time, fill may be placed on a site and pollutants may migrate with time. In the event of significant delays in the commencement of a project, further advice should be sought.

Interpretation of factual data

Site assessment identifies actual subsurface conditions only at those points where samples are taken and at the time they are taken. All available data is interpreted by professionals to provide an opinion about overall site conditions, their likely impact on the proposed development and recommended actions. Actual conditions may differ from those inferred to exist, as it is virtually impossible to provide a definitive subsurface profile which includes all the possible variabilities inherent in soil and rock masses.

Report Recommendations

The report is based on the assumption that the site conditions as revealed through selective point sampling are indicative of actual conditions throughout an area. This assumption cannot be substantiated until earthworks and/or foundation construction is almost complete and therefore the report recommendations can only be regarded as preliminary. Where variations in conditions are encountered, further advice should be sought.

Specific purposes

This report should not be applied to any project other than that originally specified at the time the report was issued.

Interpretation by others

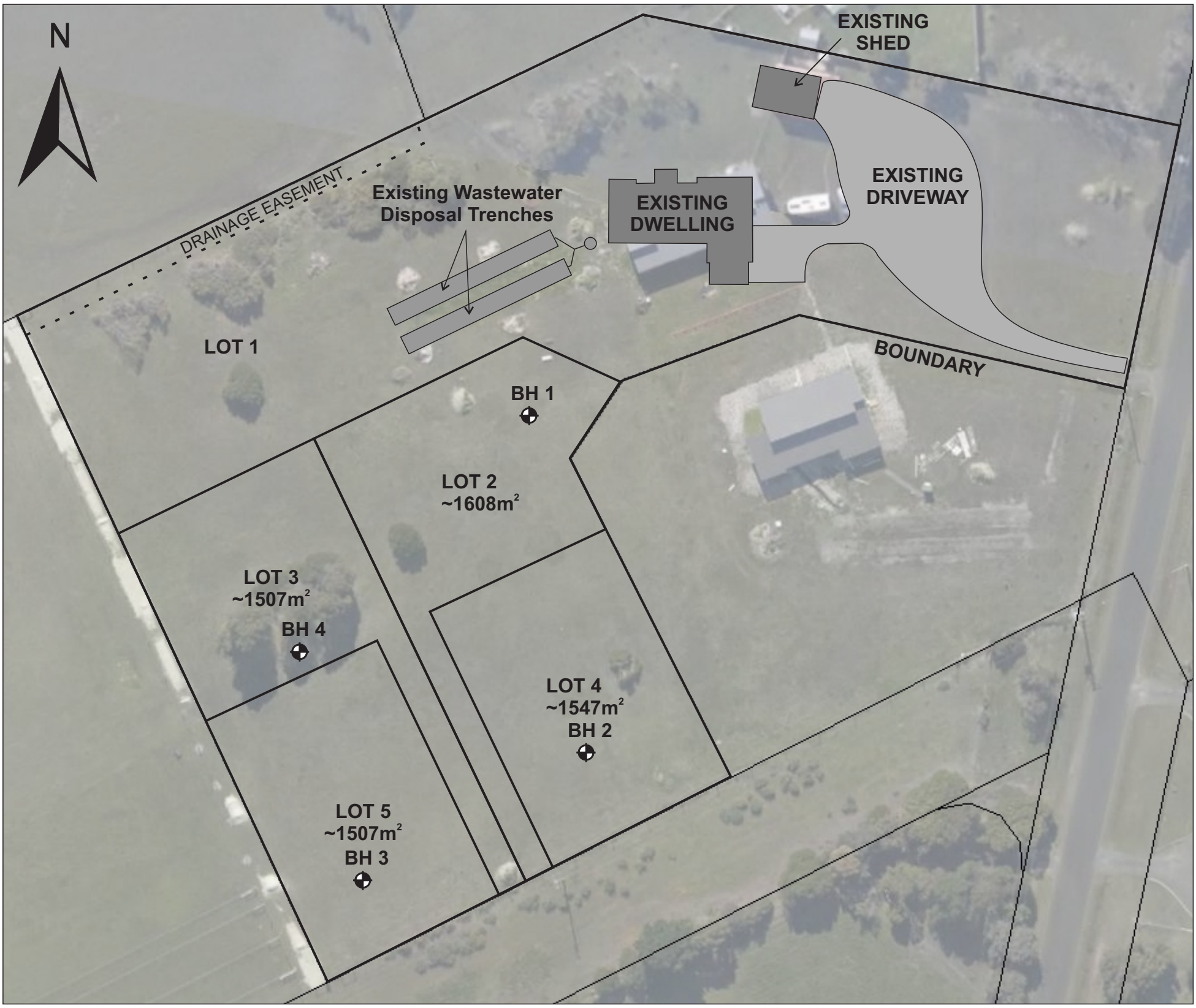
Geoton will not be responsible for interpretations of site data or the report findings by others involved in the design and construction process. Where any confusion exists, clarification should be sought from Geoton.

Report integrity

The report as a whole presents the findings of the site assessment and the report should not be copied in part or altered in any way.

Geoenvironmental issues

This report does not cover issues of site contamination unless specifically required to do so by the client. In the absence of such a request, Geoton take no responsibility for such issues.



Approximate Scale

0 10 20 30 40 50

Legend

BH 1 — Approximate Borehole Location

Cadastral Parcels

GEOTON Pty Ltd

Date	04/12/2023	Drawn	MG
Scale	As Shown	Approved	TB
Original size	A3	Rev	

Client: MR MICHAEL & MS LORNA CLIFFORD

Project: 77B ARNOLD STREET GEORGE TOWN

Title: SITE PLAN

Project no: GL23648A

Figure no. 1

PLATE 1 - View of the site looking to the southwest

GEOTON Pty Ltd				client:	MR MICHAEL & MS LORNA CLIFFORD
title:	PHOTOGRAPH			project:	77B ARNOLD STREET GEORGE TOWN
date:	26/10/2023	original size	A4	project no: GL23648A	figure no. PLATE 1

Appendix A

Borehole Logs

GEOTON Pty Ltd
Geotechnical Consultants
PO Box 522 Prospect TAS 7250
Unit 24, 16-18 Goodman Court, Invermay TAS
Tel (03) 6326 5001

ENGINEERING BOREHOLE LOG

Borehole no. BH1
Sheet no. 1 of 1
Job no. GL23648A

Client :	Mr Michael & Ms Lorna Clifford		Date : 26/10/2023
Project :	Preliminary On-site Wastewater Site Evaluation		Logged By : MG
Location :	77B Arnold Street, George Town		
Drill model :	GDR MK1	Easting: Slope: 90°	RL Surface :
Hole diameter :	95mm	Northing: Bearing: -	Datum :

Method	Support	Penetration	Water	Notes Samples Tests	Depth (m)	Graphic log	Classification Symbol	Material Description	Moisture condition	Consistency density, index	Structure, additional observations
ADV	N				0.00			TOPSOIL - SAND, fine to medium grained, dark brown	M	L	
					0.25		SP	SAND - fine to medium grained, pale grey	M	MD	
					0.50						
					0.75		Cl	Sandy CLAY - medium plasticity, pale brown	M	St/ VSt	
					1.00						
					1.25						
					1.50			Becoming pale grey			
					1.75						
					2.00						
					2.00			Borehole BH1 terminated @2.0m			
					2.25						

GEOTON Pty Ltd
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Unit 24, 16-18 Goodman Court, Invermay TAS
Tel (03) 6326 5001

ENGINEERING BOREHOLE LOG

Borehole no. BH2
Sheet no. 1 of 1
Job no. GL23648A

Client : Mr Michael & Ms Lorna Clifford
Project : Preliminary On-site Wastewater Site Evaluation
Location : 77B Arnold Street, George Town
Date : 26/10/2023
Logged By : MG

Drill model : GDR MK1 Easting: Slope: 90° RL Surface :
Hole diameter : 95mm Northing: Bearing: - Datum :

Method	Support	Penetration	Water	Notes Samples Tests	Depth (m)	Graphic log	Classification Symbol	Material Description	Moisture condition	Consistency density, index	Structure, additional observations
ADV	N							TOPSOIL - SAND, fine to medium grained, dark brown	M	L	
					0.25		SP	SAND - fine to medium grained, pale grey	M	MD	
					0.50		SC	Clayey SAND - fine to medium grained, brown/dark brown	M	MD	
					0.75						
					1.00		CI	Sandy CLAY - medium plasticity, pale grey	M	St/ VSt	W ≈ PL
					1.25						
					1.50						
					1.75						
					2.00			Borehole BH2 terminated @2.0m			
					2.25						

GEOTON Pty Ltd
Geotechnical Consultants
PO Box 522 Prospect TAS 7250
Unit 24, 16-18 Goodman Court, Invermay TAS
Tel (03) 6326 5001

ENGINEERING BOREHOLE LOG

Borehole no. BH3
Sheet no. 1 of 1
Job no. GL23648A

Client : Mr Michael & Ms Lorna Clifford
Project : Preliminary On-site Wastewater Site Evaluation
Location : 77B Arnold Street, George Town
Date : 26/10/2023
Logged By : MG

Drill model : GDR MK1 Easting: Slope: 90° RL Surface :
Hole diameter : 95mm Northing: Bearing: - Datum :

Method	Support	Penetration	Water	Notes Samples Tests	Depth (m)	Graphic log	Classification Symbol	Material Description	Moisture condition	Consistency density, index	Structure, additional observations
ADV	N							TOPSOIL - SAND, fine to medium grained, dark brown	M	L	
					0.25		SP	SAND - fine to medium grained, pale grey	M	MD	
					0.50		SC	Clayey SAND - fine to medium grained, brown/dark brown	M	MD	
					0.75		CH	Sandy CLAY - medium plasticity, pale grey	M	VSt	W ≈ PL
					1.00						
					1.25						
					1.50						
					1.75						
					2.00			Borehole BH3 terminated @2.0m			
					2.25						

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ENGINEERING BOREHOLE LOG

Borehole no. BH4
Sheet no. 1 of 1
Job no. GL23648A

Client : Mr Michael & Ms Lorna Clifford — Date : 26/10/2023
Project : Preliminary On-site Wastewater Site Evaluation — Logged By : MG
Location : 77B Arnold Street, George Town

Drill model : GDR MK1 — Easting: — Slope: 90° — RL Surface :
Hole diameter : 95mm — Northing: — Bearing: - — Datum :

Method	Support	Penetration	Water	Notes Samples Tests	Depth (m)	Graphic log	Classification Symbol	Material Description	Moisture condition	Consistency density, index	Structure, additional observations
ADV	N							TOPSOIL - SAND, fine to medium grained, dark brown	M	L	
					0.25		SP	SAND - fine to medium grained, pale grey	M	MD	
					0.50		SC	Clayey SAND - fine to medium grained, brown/dark brown	M	MD	
					0.75		CH	Sandy CLAY - high plasticity, pale grey	M	VSt	W ≈ PL
					1.00						
					1.25						
					1.50						
					1.75						
					2.00						
					2.25			Borehole BH4 terminated @2.0m			

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Investigation Log Explanation Sheet

METHOD – BOREHOLE

TERM	Description
AS	Auger Screwing*
AD	Auger Drilling*
RR	Roller / Tricone
W	Washbore
CT	Cable Tool
HA	Hand Auger
DT	Diatube
B	Blank Bit
V	V Bit
T	TC Bit

* Bit shown by suffix e.g. ADT

METHOD – EXCAVATION

TERM	Description
N	Natural exposure
X	Existing excavation
H	Backhoe bucket
B	Bulldozer blade
R	Ripper
E	Excavator

SUPPORT

TERM	Description
M	Mud
N	Nil
C	Casing
S	Shoring

PENETRATION

1	2	3	4	
				No resistance ranging to Refusal

WATER

Symbol	Description
	Water inflow
	Water outflow
	17/3/08 water on date shown

NOTES, SAMPLES, TESTS

TERM	Description
U_{50}	Undisturbed sample 50 mm diameter
U_{63}	Undisturbed sample 63 mm diameter
D	Disturbed sample
N	Standard Penetration Test (SPT)
N*	SPT – sample recovered
N_C	SPT with solid cone
V	Vane Shear
PP	Pocket Penetrometer
P	Pressumeter
B_S	Bulk sample
E	Environmental Sample
R	Refusal
DCP	Dynamic Cone Penetrometer (blows/100mm)
PL	Plastic Limit
LL	Liquid Limit
LS	Linear Shrinkage

CLASSIFICATION SYMBOLS AND SOIL DESCRIPTION

Based on AS 1726:2017

MOISTURE

TERM	Description
D	Dry
M	Moist
W	Wet

CONSISTENCY/DENSITY INDEX

TERM	Description
VS	very soft
S	soft
F	firm
St	stiff
VSt	very stiff
H	hard
Fr	friable
VL	very loose
L	loose
MD	medium dense
D	dense
VD	Very dense

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Soil Description Explanation Sheet (1of 2)

DEFINITION

In engineering terms, soil includes every type of uncemented or partially cemented inorganic or organic material found in the ground. In practice, if the material can be remoulded or disintegrated by hand in its field condition or in water it is described as a soil. Other materials are described using rock description terms.

CLASSIFICATION SYMBOL AND SOIL NAME

Soils are described in accordance with the AS 1726: 2017 as shown in the table on Sheet 2.

PARTICLE SIZE DEFINITIONS

NAME	SUBDIVISION	SIZE (mm)
BOULDERS		>200
COBBLES		63 to 200
GRAVEL	Coarse	19 to 63
	Medium	6.7 to 19
	Fine	2.36 to 6.7
SAND	Coarse	0.6 to 2.36
	Medium	0.21 to 0.6
	Fine	0.075 to 0.21
SILT		0.002 to 0.075
CLAY		<0.002

MOISTURE CONDITION

Coarse Grained Soils

Dry Non-cohesive and free running.

Moist Soil feels cool, darkened in colour. Soil tends to stick together.

Wet As for moist but with free water forming when handling.

Fine Grained Soils

Moist, dry of Plastic Limited – w < PL
Hard and friable or powdery.

Moist, near Plastic Limit – w ≈ PL
Soils can be moulded at a moisture content approximately equal to the plastic limit.

Moist, wet of Plastic Limit – w > PL
Soils usually weakened and free water forms on hands when handling.

Wet, near Liquid Limit - w ≈ LL

Wet, wet of Liquid Limit - w > LL

CONSISTENCY TERMS FOR COHESIVE SOILS

TERM	UNDRAINED STRENGTH s_u (kPa)	FIELD GUIDE
Very Soft	≤12	Exudes between the fingers when squeezed in hand
Soft	12 to 25	Can be moulded by light finger pressure
Firm	25 to 50	Can be moulded by strong finger pressure
Stiff	50 to 100	Cannot be moulded by fingers
Very Stiff	100 to 200	Can be indented by thumb nail
Hard	>200	Can be indented with difficulty by thumb nail
Friable	–	Can be easily crumbled or broken into small pieces by hand

RELATIVE DENSITY OF NON-COHESIVE SOILS

TERM	DENSITY INDEX (%)
Very Loose	≤15
Loose	15 to 35
Medium Dense	35 to 65
Dense	65 to 85
Very Dense	> 85

DESCRIPTIVE TERMS FOR ACCESSORY SOIL COMPONENTS

DESIGNATION OF COMPONENT	IN COARSE GRAINED SOILS		IN FINE GRAINED SOILS	TERM
	% Fines	% Accessory coarse fraction	% Sand/ gravel	
Minor	≤5	≤15	≤15	Trace
	>5, ≤12	>15, ≤30	>15, ≤30	With
Secondary	>12	>30	>30	Prefix

SOIL STRUCTURE

ZONING		CEMENTING	
Layer	Continuous across the exposure or sample.	Weakly cemented	Easily disaggregated by hand in air or water.
Lens	Discontinuous layer of different material, with lenticular shape.	Moderately cemented	Effort is required to disaggregate the soil by hand in air or water.
Pocket	An irregular inclusion of different material.		

GEOLOGICAL ORIGIN

WEATHERED IN PLACE SOILS

Extremely Weathered material	Material is weathered to such an extent that it has soil properties. Structure and/or fabric of parent rock material retained and visible.
Residual soil	Structure and/or fabric of parent rock material not retained and visible.

TRANSPORTED SOILS

Aeolian soil	Carried and deposited by wind.
Alluvial soil	Deposited by streams and rivers.
Colluvial soil	Soil and rock debris transported downslope by gravity.
Estuarine soil	Deposited in coastal estuaries, and including sediments carried by inflowing rivers and streams, and tidal currents.
Fill	Man-made deposit. Fill may be significantly more variable between tested locations than naturally occurring soils.
Lacustrine soil	Deposited in freshwater lakes.
Marine soil	Deposited in a marine environment.

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Soil Description Explanation Sheet (2 of 2)

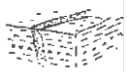
SOIL CLASSIFICATION INCLUDING IDENTIFICATION AND DESCRIPTION

FIELD IDENTIFICATION PROCEDURES (Excluding particles larger than 63 mm and basing fractions on estimated mass)						**GROUP SYMBOL**	**PRIMARY NAME**
COARSE GRAINED SOIL More than 65% of soil excluding oversize fraction is larger than 0.075 mm	(A 0.075 mm particle is about the smallest particle visible to naked eyes)	GRAVEL More than half of coarse fraction is larger than 2.36 mm	CLEAN GRAVEL (Little or no fines)	Wide range in grain size and substantial amounts of all intermediate particle sizes		GW	GRAVEL
				Predominantly one size or a range of sizes with some intermediate sizes missing		GP	GRAVEL
			GRAVEL WITH FINES (Appreciable amount of fines)	Non-plastic fines (for identification procedures see ML and MH below)		GM	Silty GRAVEL
				Plastic fines (for identification procedures see CL, CI and CH below)		GC	Clayey GRAVEL
		SAND More than half of coarse fraction is smaller than 2.36 mm	CLEAN SAND (Little or no fines)	Wide range in grain size and substantial amounts of all intermediate sizes		SW	SAND
				Predominantly one size or a range of sizes with some intermediate sizes missing		SP	SAND
			SAND WITH FINES (Appreciable amount of fines)	Non-plastic fines (for identification procedures see ML and MH below)		SM	Silty SAND
				Plastic fines (for identification procedures see CL, CI and CH below)		SC	Clayey SAND
FINE GRAINED SOIL More than 35% of soil excluding oversize fraction is smaller than 0.075 mm		IDENTIFICATION PROCEDURES ON FRACTIONS <0.075 mm					
			DRY STRENGTH	**DILATANCY**	**TOUGHNESS**		
		SILT & CLAY (low to medium plasticity, LL ≤ 50)	None to Low	Slow to Rapid	Low	ML	SILT
			Medium to High	None to Slow	Medium	CL, CI	CLAY
			Low to Medium	Slow	Low	OL	ORGANIC SILT
		SILT & CLAY (high plasticity, LL > 50)	Low to Medium	None to Slow	Low to Medium	MH	SILT
			High to Very High	None	High	CH	CLAY
			Medium to High	None to Very Slow	Low to Medium	OH	ORGANIC CLAY
		Highly Organic Soil	Readily identified by colour, odour, spongy feel and frequently by fibrous texture.			Pt	PEAT

● LL – Liquid Limit.

COMMON DEFECTS IN SOILS

TERM	**DEFINITION**	**DIAGRAM**
PARTING	A surface or crack across which the soil has little or no tensile strength. Parallel or sub parallel to layering (e.g. bedding). May be open or closed.	
FISSURE	A surface or crack across which the soil has little or no tensile strength, but which is not parallel or sub parallel to layering. May be open or closed. May include desiccation cracks.	
SHEARED SEAM	Zone in clayey soil with roughly parallel near planar, curved or undulating boundaries containing closely spaced, smooth or slickensided, curved intersecting fissures which divide the mass into lenticular or wedge-shaped blocks.	
SHEARED SURFACE	A near planar curved or undulating, smooth, polished or slickensided surface in clayey soil. The polished or slickensided surface indicates that movement (in many cases very little) has occurred along the defect.	

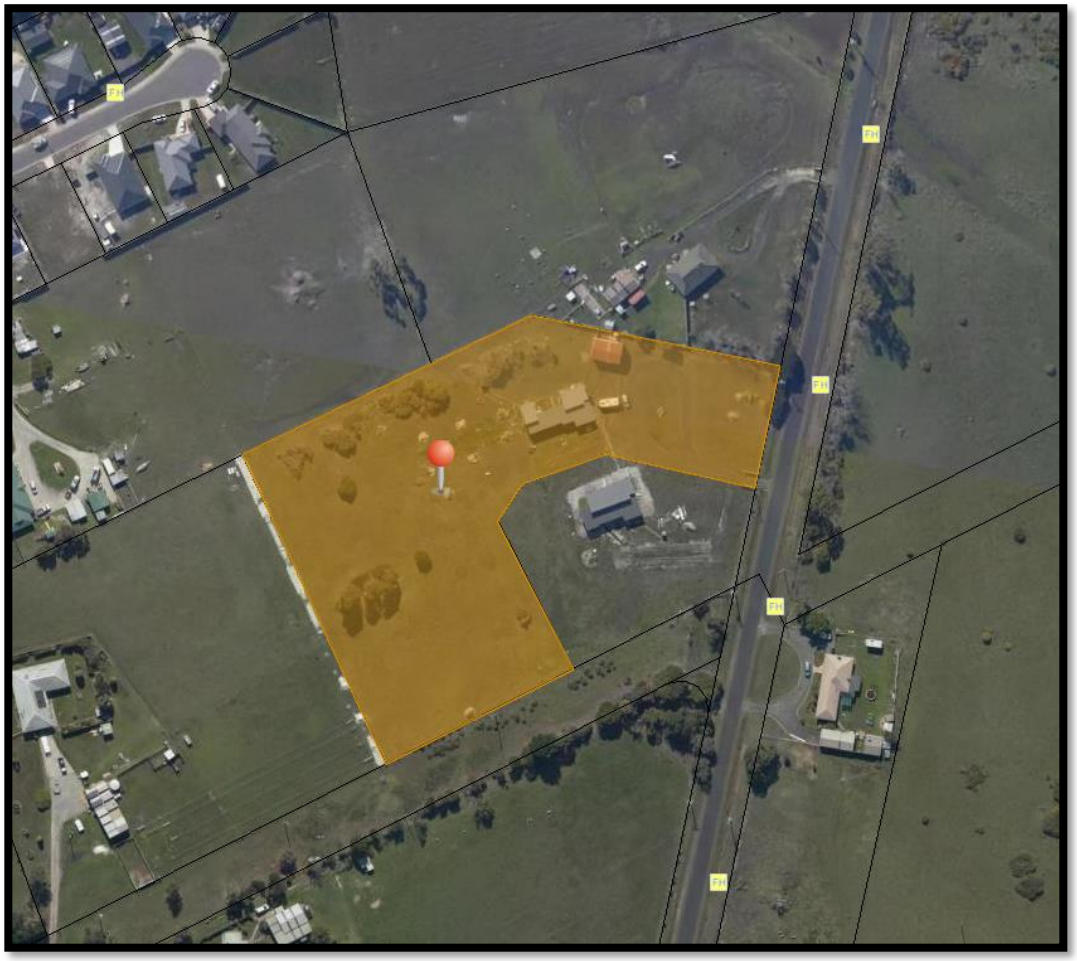
TERM	**DEFINITION**	**DIAGRAM**
SOFTENED ZONE	A zone in clayey soil, usually adjacent to a defect in which the soil has a higher moisture content than elsewhere.	
TUBE	Tubular cavity. May occur singly or as one of a large number of separate or inter-connected tubes. Walls often coated with clay or strengthened by denser packing of grains. May contain organic matter.	
TUBE CAST	An infilled tube. The infill may be uncemented or weakly cemented soil or have rock properties.	
INFILLED SEAM	Sheet or wall like body of soil substance or mass with roughly planar to irregular near parallel boundaries which cuts through a soil mass. Formed by infilling of open defects.	

Rebecca Green & Associates

Bushfire Hazard Assessment Report &

Bushfire Hazard Management Plan

77B Arnold Street, George Town



Prepared for (Client)

Michael and Lorna Clifford

77B Arnold Street

GEORGE TOWN TAS 7253

Assessed & Prepared by

Rebecca Green

Senior Planning Consultant & Accredited Bushfire Hazard Assessor

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PO Box 2108 LAUNCESTON TAS 7250

Mobile: 0409 284 422

Version 1

10 January 2024

Job No: RGA-B2442

Executive Summary

The proposed development at 77B Arnold Street, George Town, is subject to bushfire threat. A bushfire attack under extreme fire weather conditions is likely to subject buildings at this site to considerable radiant heat, ember attack along with wind and smoke.

The site requires bushfire protection measures to protect the buildings and people that may be on site during a bushfire.

These measures include provision of hazard management areas in close proximity to the buildings, implementation of safe egress routes, establishment of a water supply and construction of buildings as described in AS 3959-2018 Construction of Buildings in Bushfire Prone Areas.

Rebecca Green & Associates

Contents

Schedule 1 – Bushfire Report

1.0 Introduction

The Bushfire Attack Level (BAL) Report and Bushfire Hazard Management Plan (BHMP) has been prepared for submission with a Planning Permit Application under the *Land Use Planning and Approvals Act 1993; Bushfire-Prone Areas Code* and/or a Building Permit Application under the *Building Act 2016 & Regulations 2016*.

The Bushfire Attack Level (BAL) is established taking into account the type and density of vegetation within 100 metres of the proposed building site and the slope of the land; using the simplified method in AS 3959-2018 Construction of Buildings in Bushfire Prone Areas; and includes:

- The type and density of vegetation on the site,
- Relationship of that vegetation to the slope and topography of the land,
- Orientation and predominant fire risk,
- Other features attributing to bushfire risk.

On completion of assessment, a Bushfire Attack Level (BAL) is established which has a direct reference to the construction methods and techniques to be undertaken on the buildings and for the preparation of a Bushfire Hazard Management Plan (BHMP).

1.1 Scope

This report was commissioned to identify the Bushfire Attack Level for the existing property. ALL comment, advice and fire suppression measures are in relation to compliance with *Bushfire-Prone Areas Code* of the Tasmanian Planning Scheme – George Town, the Building Code of Australia and Australian Standards, *AS 3959-2018, Construction of buildings in bushfire-prone areas*.

1.2 Limitations

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

1. The report only deals with the potential bushfire risk, all other statutory assessments are outside the scope of this report.
2. The report only identifies the size, volume and status of vegetation at the time the site inspection was undertaken and cannot be relied upon for any future development.
3. Impacts of future development and vegetation growth have not been considered.

No action or reliance is to be placed on this report; other than for which it was commissioned.

1.3 Proposal

The proposal is for the development of a 5 Lot Subdivision. An existing single dwelling and outbuilding are located on proposed Lot 1.

2.0 Site Description for Proposal (Bushfire Context)

2.1 Locality Plan

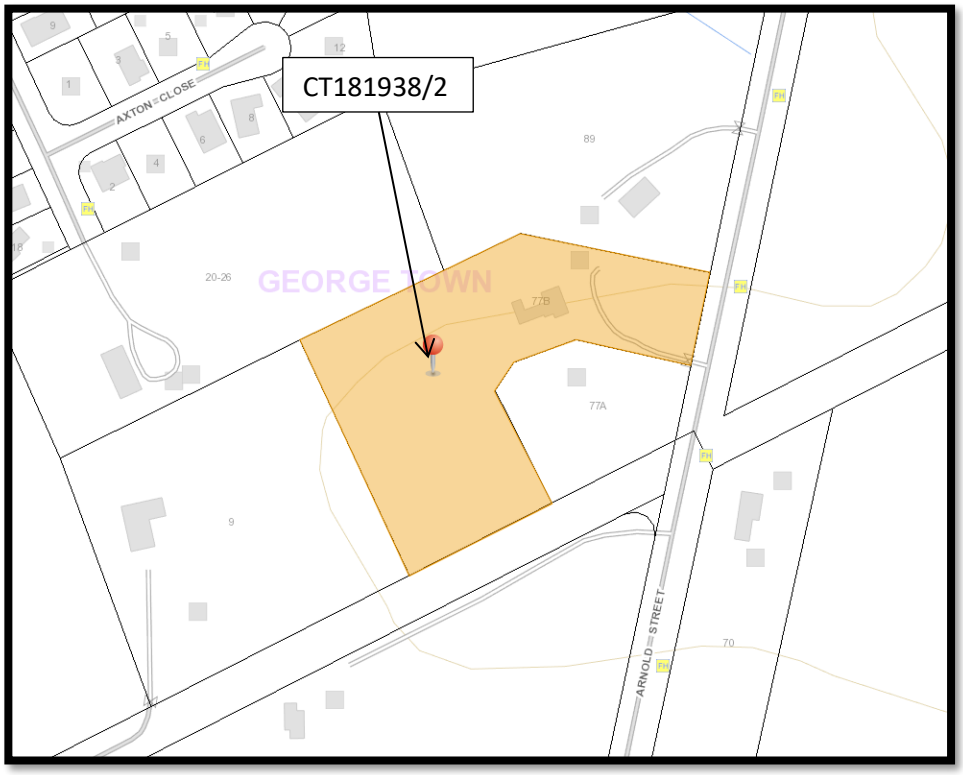


Figure 1: Location Plan of 77B Arnold Street, George Town

2.2 Site Details

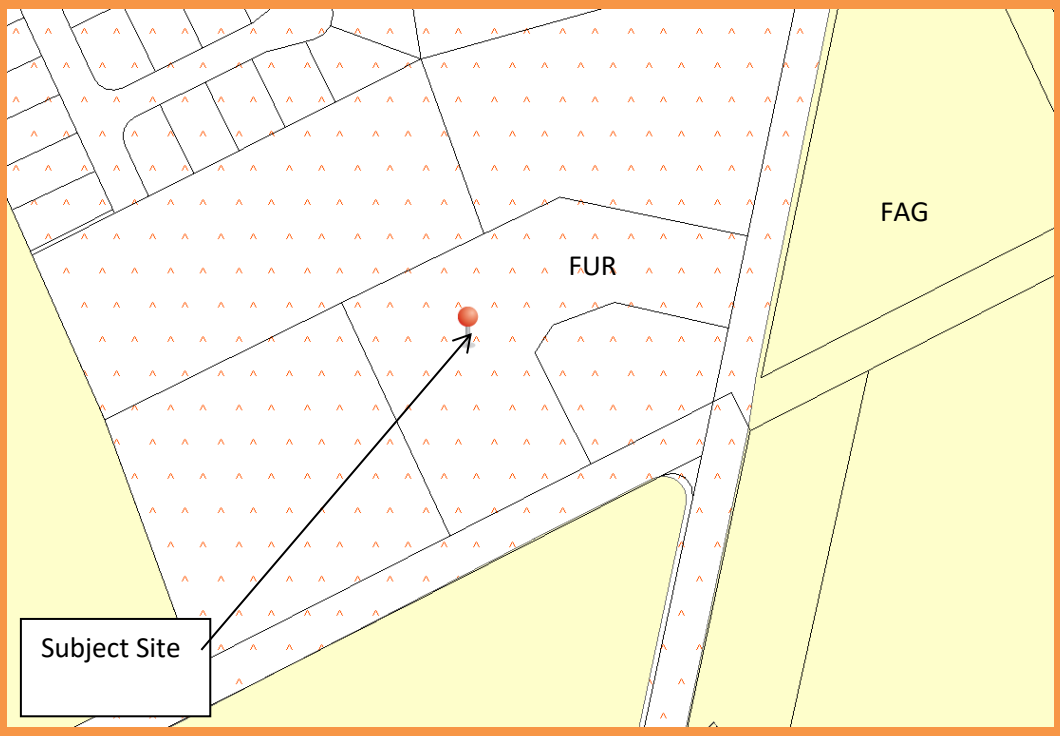
Property Address	77B Arnold Street, George Town
Certificate of Title	Volume 181938 Folio 2
Owner	Michael David Clifford and Lorna Elizabeth Clifford
Existing Use	Dwelling
Type of Proposed Work	5 Lot Subdivision
Water Supply	Reticulated TasWater supply (Lot 1), On-site for fire fighting (Lots 2-5)
Road Access	Arnold Street (Lot 1), Edward Street (Lots 2-5)

3.0 Bushfire Site Assessment

3.1 Vegetation Analysis

3.1.1 TasVeg Classification

Reference to Tasmanian Vegetation Monitoring & Mapping Program (TASVEG) indicates the land in and around the property is generally comprising of varying vegetation types including:



Code	Species	Vegetation Group
FUR	• Urban areas	Modified land
FAG	• Agricultural land	Modified land

3.1.2 Site & Vegetation Photos

Looking east toward 77A Arnold Street

Looking west toward 9 Edward Street from Lots 3 and 5

Looking south toward Edward Street

Looking west toward 9 Edward Street from Lot 1

Looking north toward 20-26 Illusion Way

Looking south from Lot 1 toward Lots 2-5

Looking southwest from Lot 1 toward Lots 2-5

Lot 1 – Looking east toward existing dwelling

Lot 1 looking southwest toward Lots 2-5

Edward Street from Arnold Street

3.2 BAL Assessment – Subdivision

The Acceptable Solution in Clause 13.6.1, C13.0 Bushfire-Prone Areas Code requires all lots within the proposed subdivision to demonstrate that each lot can achieve a Hazard Management Area between the bushfire vegetation and each building on the lot with distances equal to or greater than those specified in Table 2.6 of AS3959-2018 Construction of Buildings in Bushfire Prone Areas for **BAL 19/12.5 (Lots 1, 3 & 5) and BAL 12.5 (Lot 2 & Lot 4).**

Lot 1

Vegetation classification AS3959	**North ☒ North-East ☐**	**South ☒ South-West ☐**	**East ☒ South-East ☐**	**West ☒ North-West ☐**
Group A	☐ Forest	☐ Forest	☐ Forest	☐ Forest
Group B	☐ Woodland	☐ Woodland	☐ Woodland	☐ Woodland
Group C	☐ Shrub-land	☐ Shrub-land	☐ Shrub-land	☐ Shrub-land
Group D	☐ Scrub	☐ Scrub	☐ Scrub	☐ Scrub
Group E	☐ Mallee-Mulga	☐ Mallee-Mulga	☐ Mallee-Mulga	☐ Mallee-Mulga
Group F	☐ Rainforest	☐ Rainforest	☐ Rainforest	☐ Rainforest
Group G	☒ Grassland	☒ Grassland	☒ Grassland	☒ Grassland
	☒ Managed Land	☒ Managed Land	☒ Managed Land	☒ Managed Land
Effective slope (degrees)	☒ Up/0^0	☒ Up/0^0	☒ Up/0^0	☐ Up/0^0
	☐ >0-5^0	☐ >0-5^0	☐ >0-5^0	☒ >0-5^0
	☐ >5-10^0	☐ >5-10^0	☐ >5-10^0	☐ >5-10^0
	☐ >10-15^0	☐ >10-15^0	☐ >10-15^0	☐ >10-15^0
	☐ >15-20^0	☐ >15-20^0	☐ >15-20^0	☐ >15-20^0
Likely direction of bushfire attack	☒	☐	☒	☐
Prevailing winds	☐	☐	☐	☒
Distance to classified vegetation	0-min. 21m managed (subject site) >21m grassland	Min. 75 m managed (subject site and 77A Arnold St) >75m grassland	0-approx. 80m managed >80m grassland	0-approx. 95m managed (subject site) >95m grassland
REQUIRED Distance to classified vegetation for BAL 19	**10-<14m**	**To title boundary**	**To title boundary**	**11-<16m**
REQUIRED Distance to classified vegetation for BAL 12.5	**14-<50m**	**To title boundary**	**To title boundary**	**16-<50m**

Lot 2

Vegetation classification AS3959	**North ☒ North-East ☐**	**South ☒ South-West ☐**	**East ☒ South-East ☐**	**West ☒ North-West ☐**
Group A	☐ Forest	☐ Forest	☐ Forest	☐ Forest
Group B	☐ Woodland	☐ Woodland	☐ Woodland	☐ Woodland
Group C	☐ Shrub-land	☐ Shrub-land	☐ Shrub-land	☐ Shrub-land
Group D	☐ Scrub	☐ Scrub	☐ Scrub	☐ Scrub
Group E	☐ Mallee-Mulga	☐ Mallee-Mulga	☐ Mallee-Mulga	☐ Mallee-Mulga
Group F	☐ Rainforest	☐ Rainforest	☐ Rainforest	☐ Rainforest
Group G	☒ Grassland	☒ Grassland	☒ Grassland	☒ Grassland
	☒ Managed Land	☒ Managed Land	☒ Managed Land	☒ Managed Land
Effective slope (degrees)	☒ Up/0^0	☒ Up/0^0	☒ Up/0^0	☐ Up/0^0
	☐ >0-5^0	☐ >0-5^0	☐ >0-5^0	☒ >0-5^0
	☐ >5-10^0	☐ >5-10^0	☐ >5-10^0	☐ >5-10^0
	☐ >10-15^0	☐ >10-15^0	☐ >10-15^0	☐ >10-15^0
	☐ >15-20^0	☐ >15-20^0	☐ >15-20^0	☐ >15-20^0
Likely direction of bushfire attack	☒	☐	☒	☐
Prevailing winds	☐	☐	☐	☒
Distance to classified vegetation	0-min. 50m managed (subject site – Lot 1) >50m grassland	Min. 46 m managed (subject site and Lot 4) 46-<66m road >66m grassland	0-min. 100m managed >100m grassland	0-approx. 36m managed (Lot 3 and 5) >36m grassland
REQUIRED Distance to classified vegetation for BAL 12.5	**To title boundary**	**To title boundary**	**To title boundary**	**To title boundary**

Lot 3

Vegetation classification AS3959	**North ☒ North-East ☐**	**South ☒ South-West ☐**	**East ☒ South-East ☐**	**West ☒ North-West ☐**
Group A	☐ Forest	☐ Forest	☐ Forest	☐ Forest
Group B	☐ Woodland	☐ Woodland	☐ Woodland	☐ Woodland
Group C	☐ Shrub-land	☐ Shrub-land	☐ Shrub-land	☐ Shrub-land
Group D	☐ Scrub	☐ Scrub	☐ Scrub	☐ Scrub
Group E	☐ Mallee-Mulga	☐ Mallee-Mulga	☐ Mallee-Mulga	☐ Mallee-Mulga
Group F	☐ Rainforest	☐ Rainforest	☐ Rainforest	☐ Rainforest
Group G	☒ Grassland	☒ Grassland	☒ Grassland	☒ Grassland
	☒ Managed Land	☒ Managed Land	☒ Managed Land	☒ Managed Land
Effective slope (degrees)	☒ Up/0^0	☒ Up/0^0	☒ Up/0^0	☐ Up/0^0
	☐ >0-5^0	☐ >0-5^0	☐ >0-5^0	☒ >0-5^0
	☐ >5-10^0	☐ >5-10^0	☐ >5-10^0	☐ >5-10^0
	☐ >10-15^0	☐ >10-15^0	☐ >10-15^0	☐ >10-15^0
	☐ >15-20^0	☐ >15-20^0	☐ >15-20^0	☐ >15-20^0
Likely direction of bushfire attack	☒	☐	☒	☐
Prevailing winds	☐	☐	☐	☒
Distance to classified vegetation	0-min. 50m managed (subject site – Lot 1) >50m grassland	Min. 46 m managed (subject site and Lot 5) 46-<66m road >66m grassland	>100m managed	0m to grassland
REQUIRED Distance to classified vegetation for BAL 19	**To title boundary**	**To title boundary**	**To title boundary**	**11-<16m**
REQUIRED Distance to classified vegetation for BAL 12.5	**To title boundary**	**To title boundary**	**To title boundary**	**16-<50m**

Lot 4

Vegetation classification AS3959	**North ☒ North-East ☐**	**South ☒ South-West ☐**	**East ☒ South-East ☐**	**West ☒ North-West ☐**
Group A	☐ Forest	☐ Forest	☐ Forest	☐ Forest
Group B	☐ Woodland	☐ Woodland	☐ Woodland	☐ Woodland
Group C	☐ Shrub-land	☐ Shrub-land	☐ Shrub-land	☐ Shrub-land
Group D	☐ Scrub	☐ Scrub	☐ Scrub	☐ Scrub
Group E	☐ Mallee-Mulga	☐ Mallee-Mulga	☐ Mallee-Mulga	☐ Mallee-Mulga
Group F	☐ Rainforest	☐ Rainforest	☐ Rainforest	☐ Rainforest
Group G	☒ Grassland	☒ Grassland	☒ Grassland	☒ Grassland
	☒ Managed Land	☒ Managed Land	☒ Managed Land	☒ Managed Land
Effective slope (degrees)	☒ Up/0^0	☒ Up/0^0	☒ Up/0^0	☐ Up/0^0
	☐ >0-5^0	☐ >0-5^0	☐ >0-5^0	☒ >0-5^0
	☐ >5-10^0	☐ >5-10^0	☐ >5-10^0	☐ >5-10^0
	☐ >10-15^0	☐ >10-15^0	☐ >10-15^0	☐ >10-15^0
	☐ >15-20^0	☐ >15-20^0	☐ >15-20^0	☐ >15-20^0
Likely direction of bushfire attack	☒	☐	☒	☐
Prevailing winds	☐	☐	☐	☒
Distance to classified vegetation	0-min. 72m managed (subject site – Lot 1 & Lot 2) >50m grassland	0-<20m road >20m grassland	0-min. 100m managed >100m grassland	0-approx. 36m managed (Lot 3 and 5) >36m grassland
REQUIRED Distance to classified vegetation for BAL 12.5	**To title boundary**	**To title boundary**	**To title boundary**	**To title boundary**

Lot 5

Vegetation classification AS3959	**North ☒ North-East ☐**	**South ☒ South-West ☐**	**East ☒ South-East ☐**	**West ☒ North-West ☐**
Group A	☐ Forest	☐ Forest	☐ Forest	☐ Forest
Group B	☐ Woodland	☐ Woodland	☐ Woodland	☐ Woodland
Group C	☐ Shrub-land	☐ Shrub-land	☐ Shrub-land	☐ Shrub-land
Group D	☐ Scrub	☐ Scrub	☐ Scrub	☐ Scrub
Group E	☐ Mallee-Mulga	☐ Mallee-Mulga	☐ Mallee-Mulga	☐ Mallee-Mulga
Group F	☐ Rainforest	☐ Rainforest	☐ Rainforest	☐ Rainforest
Group G	☒ Grassland	☒ Grassland	☒ Grassland	☒ Grassland
	☒ Managed Land	☒ Managed Land	☒ Managed Land	☒ Managed Land
Effective slope (degrees)	☒ Up/0^0	☒ Up/0^0	☒ Up/0^0	☐ Up/0^0
	☐ >0-5^0	☐ >0-5^0	☐ >0-5^0	☒ >0-5^0
	☐ >5-10^0	☐ >5-10^0	☐ >5-10^0	☐ >5-10^0
	☐ >10-15^0	☐ >10-15^0	☐ >10-15^0	☐ >10-15^0
	☐ >15-20^0	☐ >15-20^0	☐ >15-20^0	☐ >15-20^0
Likely direction of bushfire attack	☒	☐	☒	☐
Prevailing winds	☐	☐	☐	☒
Distance to classified vegetation	0-min. 72m managed (subject site – Lot 1 & Lot 3) >50m grassland	0-<20m road >20m grassland	>100m managed	0m to grassland
REQUIRED Distance to classified vegetation for BAL 19	**To title boundary**	**To title boundary**	**To title boundary**	**11-<16m**
REQUIRED Distance to classified vegetation for BAL 12.5	**To title boundary**	**To title boundary**	**To title boundary**	**16-<50m**

3.3 Outbuildings

Not applicable – existing and greater than 6.0m from habitable building on Lot 1.

3.4 Road Access

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

Private access roads are to be maintained from the entrance to the property cross over with the public road through to the buildings on the site.

Lots 2-5 - (new)	Private access driveways are to be constructed / maintained from the entrance of the property cross over at the public road through to any future habitable building and on-site dedicated firefighting water supply. Private access roads are to be maintained to a standard not less than specified in Table **C13.2B.**
Lot 1 (existing)	Private access driveways are to be maintained from the entrance of the property cross over at the public road through to existing building. Private access roads are to be maintained to a standard not less than specified in Table **C13.2A**.
ROAD	The new access road (Edward Street) providing road frontage to Lots 2-5 is to be constructed to a standard not less than **Table C13.1**, including carriageway width, excepting dead-end road turning area which meets performance criteria.

Table C13.1: Standards for Roads

Unless the development standards in the zone require a higher standard, the following apply:

(a) Two-wheel drive, all-weather construction;
(b) Load capacity of at least 20 tonnes, including for bridges and culverts;
(c) Minimum carriageway width is 7m for a through road, or 5.5m for a dead-end or cul-de-sac road;
(d) Minimum vertical clearance of 4m;
(e) Minimum horizontal clearance of 2m from the edge of the carriageway;
(f) Cross falls of less than 3 degrees (1:20 or 5%);
(g) Maximum gradient of 15 degrees (1:3:5 or 28%) for sealed roads, and 10 degrees (1:5:5 or 18%) for unsealed roads;
(h) Curves have a minimum inner radius of 10m;
(i) Dead-end or cul-de-sac roads are not more than 200m in length unless the carriageway is 7m in width;
(j) Dead-end or cul-de-sac roads have a turning circle with a minimum 12m outer radius; and
(k) Carriageways less than 7m wide have 'No Parking' zones on one side, indicated by a road sign that complies with *Australian Standard, AS 1743-2001 Road signs-Specifications.*

Table C13.2A: Standards for Property Access

There is no specified design and construction requirements for property access length less than 30m; or access is not required for a fire appliance to access a fire fighting water point.

Table C13.2B: Standards for Property Access

The following design and construction requirements apply to property access length is 30 metres or greater or access for a fire appliance to a fire fighting point:

(a) All weather construction;
(b) Load capacity of at least 20 tonnes, including for bridges and culverts;
(c) Minimum carriageway width of 4 metres;
(d) Minimum vertical clearance of 4 metres;
(e) Minimum horizontal clearance of 0.5 metres from the edge of the carriageway;
(f) Cross falls of less than 3 degrees (1:20 or 5%);
(g) Dips less than 7 degrees (1:8 or 12.5%) entry and exit angle;
(h) Curves with a minimum inner radius of 10 metres;
(i) Maximum gradient of 15 degrees (1:3.5 or 28%) for sealed roads, and 10 degrees (1:5.5 or 18%) for unsealed roads; and
(j) Terminate with a turning area for fire appliances provided by one of the following:
    i) A turning circle with a minimum inner radius of 10 metres;
    ii) A property access encircling the building; or
    iii) A hammerhead "T" or "Y" turning head 4 metres wide and 8 metres long.

3.5 Water Supply

A building that is constructed in a designated bushfire prone area must provide access at all times to a sufficient supply of water for firefighting purposes on the building site.

The exterior elements of a habitable building in a designated Bushfire prone area must be within reach of a 120m long hose (reticulated) or 90m long hose (static) (lay) connected to –

(i) A fire hydrant system designed and constructed in accordance with TasWater Supplement to Water Supply Code of Australia WSA 03-2011-3.1 MRWA Edition 2.0; or
(ii) A stored water supply in a water tank, swimming pool, dam or lake available for fire fighting at all times which has the capacity of at least 10,000L for each separate building area to be protected.

Lots 2-5 – Static Water Supply (new)	On-site water supply is required for <u>any new habitable building.</u> A water tank of at least 10,000 litres per building area to be protected and above ground pipes and fittings used for a stored water supply must be of non-rusting, non-combustible, non-heat-

	deforming materials and must be situated more than 6m from a building area to be protected.
Lot 1 – Reticulated Water Supply (existing)	The existing dwelling on Lot 1 is compliant with Table C13.4, being within 120m of a hydrant.

It should be recognised that although water supply as specified above may be in compliance with the requirements of the Building Code of Australia, the supply may not be adequate for all firefighting situations.

Table C13.5: Static Water Supply for Fire Fighting

Column 1		**Column 2**
Element		**Requirement**
A.	Distance between building area to be protected and water supply	The following requirements apply: (a) The building area to be protected must be located within 90 metres of the fire fighting water point of a static water supply; and (b) The distance must be measured as a hose lay, between the fire fighting water point and the furthest part of the building area.
B.	Static Water Supplies	A static water supply: (a) May have a remotely located offtake connected to the static water supply; (b) May be a supply for combined use (fire fighting and other uses) but the specified minimum quantity of fire fighting water must be available at all times; (c) Must be a minimum of 10,000 litres per building area to be protected. This volume of water must not be used for any other purpose including fire fighting sprinkler or spray systems; (d) Must be metal, concrete or lagged by non-combustible materials if above ground; and (e) If a tank can be located so it is shielded in all directions in compliance with Section 3.5 of AS 3959-2018 the tank may be constructed of any material provided that the lowest 400mm of the tank exterior is protected by: (i) Metal; (ii) Non-combustible material; or (iii) Fibre-cement a minimum 6mm thickness.
C.	Fittings, pipework and accessories (including stands and tank supports)	Fittings and pipework associated with a fire fighting water point for a static water supply must: (a) Have a minimum nominal internal diameter of 50mm; (b) Be fitted with a valve with a minimum nominal diameter of 50mm; (c) Be metal or lagged by non-combustible materials if above ground; (d) if buried, have a minimum depth of 300mm; (e) Provide a DIN or NEN standard forged Storz 65mm coupling fitted with a suction washer for

		connection to fire fighting equipment; (f) Ensure the coupling is accessible and available for connection at all times; (g) Ensure the coupling is fitted with a blank cap and securing chain (minimum 220mm length); (h) Ensure underground tanks have either an opening at the top of not less than 250mm diameter or a coupling compliant with this Table; and (i) If a remote offtake is installed, ensure the offtake is in a position that is: (i) Visible; (ii) Accessible to allow connection by fire fighting equipment; (iii) At a working height of 450-600mm above ground level; and (iv) Protected from possible damage, including damage from vehicles.
D.	Signage for static water connections	The fire fighting water point for a static water supply must be identified by a sign permanently fixed to the exterior of the assembly in a visible location. The sign must comply with: (a) water tank signage requirements within AS 2304-2011 Water storage tanks for fire protection systems; or (b) *Water Supply Signage Guideline*, version 1.0, Tasmanian Fire Service, February 2017.
E.	Hardstand	A hardstand area for fire appliances must be provided: (1) No more than 3m from the fire fighting water point, measured as a hose lay (including the minimum water level in dams, swimming pools and the like); (2) No closer than 6m from the building area to be protected; (3) a minimum width of 3m constructed to the same standard as the carriageway; and (4) Connected to the property access by a carriageway equivalent to the standard of the property access.

4.0 Bushfire-Prone Areas Code Assessment Criteria

Assessment has been completed below to demonstrate the BAL and BHMP have been developed in compliance with the Acceptable Solutions and/or the Performance Criteria as specified in the Bushfire-Prone Areas Code.

C13.4 – Exemptions – Not applicable.

C13.6 Development Standards for Subdivision

C13.6.1 Provision of hazard management areas		
		Comments
☒ **A1**	(a) & (b)	Specified distances for Hazard Management Areas for BAL 19/12.5 (Lot 1,

		Lot 3 and Lot 5), and BAL 12.5 (Lot 2 and Lot 4) as specified on the plan are in accordance with AS3959. The proposal complies.
☐ **P1**		
C13.6.2 Public and fire fighting access		
		Comments
☐ **A1**	(a)	Not applicable.
☒ **A1**	(b)	The private driveway to Lot 1 will be maintained in accordance with Table C13.2A prior to the final plan of survey being sealed by Council. The private driveway to Lots 2, 3, 4 and 5 will be constructed/maintained in accordance with Table C13.2B at the time of future habitable building. Access is required to on-site dedicated firefighting water supply and where greater than 30m.
☒ **P1**		Performance criteria is relied upon due to the outer radius of the proposed dead-end road turning area. A response to the criteria and justification has been provided in Section 6 of this report.
C13.6.3 Provision of water supply for fire fighting purposes		
		Comments
☒ **A1**	(a) (b)	Not applicable Lot 1 existing dwelling is located within 120m hose lay of existing fire plugs in Arnold Street. The acceptable solution is achieved.
☐ **P1**	No PC	
☒ **A2**	(a) (b)	Not applicable. Any new habitable building on Lot 2, Lot 3, Lot 4 and Lot 5, at building application stage consideration with a stored water supply in a water supply tank at least 10,000 litres per building area to be protected, with a fitting suitable for TFS access in accordance with Table C13.5 shall be considered.
☐ **A2**	(c)	Not applicable.
☐ **P2**	No PC	

5.0 Layout Options

Not relevant to this proposal.

6.0 Other Planning Provisions

Justification of Dead-End Road Turning Area

As noted in section 4 of this report, the application relies on performance criteria due to the turning area at the end of a dead-end road (Edward Street) not proposing a 12m outer radius turning head.

In providing justification on a reduced standard, it is noted that all parts of the access standards can be achieved as compliant with Table C13.1, except for the dead-end road turning radius.

The dead-end road is currently 5.5m in width and less than 200m in length (as shown on Plan of Subdivision). The current turning area is proposed to be gravel and proposed with an 8m outer

radius. It is recommended that this be increased to a 9m outer radius consistent with LGAT Standards.

In demonstrating that a turning area constructed to LGAT standards is appropriate, the following is noted:

- Lot 2-5 (four lots in total) are to be accessed via this road only. The predominant wind direction is from the north-west with the road located to the south of these lot.
- It is possible that in the future Edward Street will be constructed as a through-road.
- The surrounding area of this subdivision is not bushland, but is predominantly urban in character, with grassland areas only.
- All lots can all provide compliant accesses.

It is subsequently argued that an outer radius of 9m is appropriate for the location of Lots 2-5. Edward Street road reservation is restricted in width in which a 12m outer radius cannot be achieved. The turning area is temporary, although for how long is unknown, and dependent on further development west along Edward Street.

The safety of fire fighters has been considered when making this assessment. The short length of the dead-end road and urban environment created by the subdivision ensures there will be no unmanaged fuels within the road reserve. The adjoining lots provide a suitable buffer from radiant heat and direct flame for fire fighters. A large tanker with a turning radius of 19.8m would require a three point turn at the end of the turning area, however, as they are not considered to be in imminent danger (based on the above factors), the risk of burn is assessed as low.

A detailed response to the performance criteria of clause C13.6.2 Subdivision: Public and firefighting access is provided below.

P1) Performance criteria is relied upon as:

a) The turning area at the western end of the dead-end section of Edward Street will be constructed in accordance with LGAT Standard drawings (TSD-R02-v3), having a radius of 9m, proposed to be constructed of gravel and not with kerb and channel (Rural type – sealed road). Noting Council may require the turning area to be asphalted in accordance with TSD-R08-v3.

   The acceptable solution requires a radius of 12m for cul-de-sacs/dead-end roads within a bushfire prone area.

   i. The road provides for two way traffic, including access for fire appliances in a bushfire event, with minimal traffic movements (4 low density residential lots only).

   ii. The road will be sealed as per LGAT standards with the turning area constructed of gravel in a temporary state and nature. The road will be suitable for use in all weather conditions.

   iii. There is no vegetation above the road, and will be cleared as part of the road construction works.

   iv. The road has an appropriate load capacity to facilitate fire appliances in a bushfire event.

v. Passing is achievable given the width of the road (min. 5.5m) and road reserve (min. 20m).
vi. The road (Edward Street) to service Lots 2-5 only and shall be less than 200m in length.
vii. Due to the carriageway being less than 7m wide, 'No Parking' zones on one side, indicated by a road sign that complies with *Australian Standard, AS 1743-2001 Road signs-Specifications* is required.
viii. The road is relatively level, the bushfire threat is on generally flat land or upslope. The turning area is generally straight with minimal bends or deviations proposed in the road.
ix. The road is a dead-end road, joining Arnold Street to the east.
x. The dead-end road is limited in length which reduces risk and provides ample opportunity for vehicles to exit in a bushfire event.
xi. Turning area is provided. There are numerous access strips near the conclusion of the turning area allowing for three-point turn if required.
xii. Parking areas at the end of the cul-de-sac will be limited due to the number of access strips in this part. It would be expected vehicles would park onsite.
xiii. Perimeter access is provided via Council maintained roads and residential lots.
xiv. There are no proposed fire trails.

b) The TFS can access the bushfire prone vegetation on the surrounding land should a bushfire event occur. The size of the lots around the perimeter of the subdivision also ensures a fire vehicle can park on the proposed road, and fight the fire to the south and west.
c) The TFS have not provided comment on this application at the time of writing this report.

The bushfire threat in the areas of turning area is considered low. The lots will be cleared in their entirety to provide for residential development. The entire lot will be treated as a bushfire hazard management area. The development is within an established and growing urban environment. The requirements to provide a cul-de-sac with 12m radius would be out of character with the George Town area and not warranted for this subdivision given the level of threat and the nature of Edward Street intent to be one day a through road. The risk is considered low based on the site characteristics and the nature of the area.

The performance criteria is achieved.

7.0 Conclusions and Recommendations

Mitigation from bushfire is dependent on the careful management of the site by maintaining reduced fuel loads within the hazard management areas and within the site generally and to provide sources of water supply dedicated for firefighting purposes and the construction and maintenance of a safe egress route.

The site has been assessed as demonstrating a building area that have the dimensions equal to or greater than the separation distance required for BAL 19/12.5 (Lot 1, Lot 3 and Lot 5) and BAL 12.5 (Lot 2 and Lot 4) in Table 2.6 of AS 3959 – 2018 Construction of Buildings in Bushfire Prone Areas.

Access

The private driveway to Lot 2, Lot 3, Lot 4 and Lot 5 will be constructed in accordance with Table C13.2B at the time of future habitable building.

The private driveway to Lot 1 shall be maintained into perpetuity in accordance with Table C13.2A from Arnold Street.

Access road (Edward Street) shall comply with Table C13.1, with the exception of the turning circle which shall have a 9m outer radius (gravel turning area).

Edward Street shall have 'No Parking' zones on one side, indicated by a road sign that complies with *Australian Standard, AS 1743-2001 Road signs-Specifications.*

Water Supplies

Any new habitable building on Lot 2, Lot 3, Lot 4 and Lot 5 at building application stage consideration with a stored water supply in a water supply tank at least 10,000 litres per building area to be protected, with a fitting suitable for TFS access in accordance with Table C13.5 shall be considered.

Fuel Managed Areas

Hazard Management Areas as detailed within the plan shall be constructed and maintained as detailed in Schedule 2. For ALL LOTS, Hazard Management Area is to be managed prior to the final plan of survey being sealed by Council and must be managed into perpetuity (the entirety of Lots 1-5).

Future buildings must Maintain Hazard Management Areas and follow recommendations as outlined in Bushfire Hazard Management Plan and as detailed in Schedule 2.

A copy of this report shall be made available to all prospective lot purchasers.

Schedule 2 – Bushfire Hazard Management Plan

N

EXISTING SHED

EXISTING DRIVEWAY

ARNOLD STREET

LOT 1

10.0 m
14.0 m

LOT 2
1655m²

EXISTING ACCESS

LOT 3
1503m²

LOT 4
1508m²

11.0 m

16.0 m

LOT 5
1502m²

EDWARD STREET

INDICATIVE DRIVEWAY

PROPOSED ACCESS

ROAD REQUIREMENTS TO BE IN ACCORDANCE WITH TABLE C13.1 - REFER TO SECTION 3.4 OF BUSHFIRE HAZARD ASSESSMENT REPORT, EXCEPT FOR THE TURNING CIRCLE WHICH SHALL HAVE A MINIMUM 9 METRE OUTER RADIUS

0 5 25m

LEGEND

- INDICATIVE 15m X 10m DWELLING
- EXISTING DWELLING
- INDICATIVE BAL - 19 BUILDABLE AREA
- INDICATIVE BAL - 12.5 BUILDABLE AREA
- PROPOSED STATIC WATER SUPPLY (SUGGESTED LOCATION)
- HAZARD MANAGEMENT AREA
- EXISTING FIRE HYDRANT

NOTES

- PROPERTY ACCESS REQUIREMENTS TO BE IN ACCORDANCE WITH TABLE C13.2A/C13.2B - REFER TO SECTION 3.4 OF BUSHFIRE HAZARD ASSESSMENT REPORT

- FIREFIGHTING WATER SUPPLY TO BE IN ACCORDANCE WITH TABLE C13.4/C13.5 - REFER TO SECTION 3.5 OF BUSHFIRE HAZARD ASSESSMENT REPORT

- HAZARD MANAGEMENT AREA TO BE MAINTAINED IN A MINIMUM FUEL CONDITION - REFER TO SECTION 3.2 OF BUSHFIRE HAZARD ASSESSMENT REPORT

- THIS BHMP MUST BE READ IN CONJUNCTION WITH BUSHFIRE HAZARD ASSESSMENT REPORT REF: RGA-B2442, R.GREEN, 10 JANUARY 2024

- THIS BHMP HAS BEEN PREPARED TO SATISFY THE REQUIREMENTS OF C13.0 BUSHFIRE - PRONE AREAS CODE OF TASMANIAN PLANNING SCHEME - GEORGE TOWN (EFFECTIVE 4 OCTOBER 2023)

BUSHFIRE HAZARD MANAGEMENT PLAN
BUSHFIRE ATTACK LEVEL (BAL) - 12.5/19
5 LOT SUBDIVISION

77B ARNOLD STREET, GEORGE TOWN
VOLUME 181938 FOLIO 2
PROPERTY ID 9820464

DATE: 10 JANUARY 2023
VERSION: 1
DRAWN: REBECCA GREEN
PHONE: 0409 284 422
EMAIL: ADMIN@RGASSOCIATES.COM.AU
BFP - 116, SCOPE - 1, 2, 3A, 3B, 3C

Rebecca Green & Associates

Form 55

CERTIFICATE OF QUALIFIED PERSON – ASSESSABLE ITEM

Section 321

Form **55**

To: Michael and Lorna Clifford *Owner /Agent*

77B Arnold Street *Address*

GEORGE TOWN TAS 7253 *Suburb/postcode*

Qualified person details:

Qualified person: Rebecca Green

Address: PO Box 2108

Launceston 7250

Phone No: 0409 284 422

Fax No:

Licence No: BFP-116

Email address: admin@rgassociates.com.au

Qualifications and Insurance details: Accredited to report on bushfire hazards under Part IVA of the *Fire Services Act 1979*

(description from Column 3 of the Director's Determination - Certificates by Qualified Persons for Assessable Items

Speciality area of expertise: Analysis of hazards in bushfire prone areas

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

Details of work:

Address: 77B Arnold Street

GEORGE TOWN 7253

Lot No: 2

Certificate of title No: 181938

The assessable item related to this certificate: 5 Lot Subdivision

(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: Bushfire Hazard

(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:	Bushfire Hazard Assessment Report & Bushfire Hazard Management Plan (Rebecca Green & Associates, 10 January 2024, Version 1, Job No. RGA-B2442)
Relevant	N/A
References:	*Tasmanian Planning Scheme – George Town, Bushfire-Prone Areas Code* *Australian Standard 3959-2018*

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

1. Assessment of the site Bushfire Attack Level (to Australian Standard 3959-2018)
2. Bushfire Hazard Management Plan showing BAL-19/12.5 for Lot 1, Lot 3 and Lot 5 and BAL-12.5 solutions for Lot 2 and Lot 4.

Scope and/or Limitations

Scope

This report and certification was commissioned to identify the Bushfire Attack Level for the existing property. All comment, advice and fire suppression measures are in relation to compliance with *Tasmanian Planning Scheme – George Town, Bushfire-Prone Areas Code C13.0*, the *Building Act 2016* & *Regulations 2016*, *National Construction Code* and *Australian Standard 3959-2018, Construction of buildings in bushfire-prone areas*.

Limitations

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

1. The report only deals with the potential bushfire risk all other statutory assessments are outside the scope of this certificate.
2. The report only identifies the size, volume and status of vegetation at the time the inspection was undertaken and cannot be relied upon for any future development.
3. Impacts of future development and vegetation growth have not been considered.
4. No assurance is given or inferred for the health, safety or amenity of the general public, individuals or occupants in the event of a Bushfire.
5. No warranty is offered or inferred for any buildings constructed on the property in the event of a Bushfire.

No action or reliance is to be placed on this certificate or report; other than for which it was commissioned.

I certify the matters described in this certificate.

	Signed:	*Certificate No:*	*Date:*
Qualified person:		RG-005/2024	10 January 2024

Attachment 1 – Certificate of Compliance to the Bushfire-prone Area Code

BUSHFIRE-PRONE AREAS CODE

CERTIFICATE[1] UNDER S51(2)(d) *LAND USE PLANNING AND APPROVALS ACT 1993*

1. Land to which certificate applies

The subject site includes property that is proposed for use and development and includes all properties upon which works are proposed for bushfire protection purposes.

Street address:	77B Arnold Street, George Town
Certificate of Title / PID:	**CT181938/2, PID9820464**

2. Proposed Use or Development

Description of proposed Use and Development:	5 Lot Subdivision
Applicable Planning Scheme:	Tasmanian Planning Scheme – George Town

3. Documents relied upon

This certificate relates to the following documents:

Title	Author	Date	Version
Subdivision. 1 Lot to 5 Site Plan. Ref: 1701	MDC Design & Drafting	19.09.23	A
Bushfire Hazard Assessment Report	Rebecca Green	10 January 2024	1
Bushfire Hazard Management Plan	Rebecca Green	10 January 2024	1

[1] This document is the approved form of certification for this purpose and must not be altered from its original form.

4. Nature of Certificate

The following requirements are applicable to the proposed use and development:

☐	**E1.4 / C13.4 – Use or development exempt from this Code**	
	Compliance test	**Compliance Requirement**
☐	E1.4(a) / C13.4.1(a)	Insufficient increase in risk

☐	**E1.5.1 / C13.5.1 – Vulnerable Uses**	
	Acceptable Solution	**Compliance Requirement**
☐	E1.5.1 P1 / C13.5.1 P1	***Planning authority discretion required. A proposal cannot be certified as compliant with P1.***
☐	E1.5.1 A2 / C13.5.1 A2	Emergency management strategy
☐	E1.5.1 A3 / C13.5.1 A2	Bushfire hazard management plan

☐	**E1.5.2 / C13.5.2 – Hazardous Uses**	
	Acceptable Solution	**Compliance Requirement**
☐	E1.5.2 P1 / C13.5.2 P1	***Planning authority discretion required. A proposal cannot be certified as compliant with P1.***
☐	E1.5.2 A2 / C13.5.2 A2	Emergency management strategy
☐	E1.5.2 A3 / C13.5.2 A3	Bushfire hazard management plan

☒	**E1.6.1 / C13.6.1 Subdivision: Provision of hazard management areas**	
	Acceptable Solution	**Compliance Requirement**
☐	E1.6.1 P1 / C13.6.1 P1	***Planning authority discretion required. A proposal cannot be certified as compliant with P1.***
☐	E1.6.1 A1 (a) / C13.6.1 A1(a)	Insufficient increase in risk
☒	E1.6.1 A1 (b) / C13.6.1 A1(b)	Provides BAL-19 for all lots (including any lot designated as 'balance') *Refer to Bushfire Hazard Assessment Report & Bushfire Hazard Management Plan, prepared by Rebecca Green & Associates, 10 January 2024*

		demonstrating BAL 19 / BAL 12.5 for Lot 1, Lot 3 and Lot 5 and BAL 12.5 for Lot 2 and Lot 4.
☐	E1.6.1 A1(c) / C13.6.1 A1(c)	Consent for Part 5 Agreement

☒	**E1.6.2 / C13.6.2 Subdivision: Public and fire fighting access**	
	Acceptable Solution	**Compliance Requirement**
☒	E1.6.2 P1 / C13.6.2 P1	***Planning authority discretion required. A proposal cannot be certified as compliant with P1.*** *Performance criteria is relied upon due to the outer radius of the proposed turning circle at the conclusion of dead-end road (Edward Street). A response to the criteria and justification has been provided, refer to Bushfire Hazard Assessment Report, prepared by Rebecca Green & Associates, 10 January 2024.*
☐	E1.6.2 A1 (a) / C13.6.2 A1 (a)	Insufficient increase in risk
☒	E1.6.2 A1 (b) / C13.6.2 A1 (b)	Access complies with relevant Tables *Refer to Bushfire Hazard Assessment Report & Bushfire Hazard Management Plan, prepared by Rebecca Green & Associates, 10 January 2024, all lots will have direct access to a Council maintained road. Proposed private accesses will comply with Table C13.2. The proposed road (dead-end road) will comply with Table C13.1, except for outer radius of the proposed turning circle).*

☒	**E1.6.3 / C13.1.6.3 Subdivision: Provision of water supply for fire fighting purposes**	
	Acceptable Solution	**Compliance Requirement**
☐	E1.6.3 A1 (a) / C13.6.3 A1 (a)	Insufficient increase in risk
☒	E1.6.3 A1 (b) / C13.6.3 A1 (b)	Reticulated water supply complies with relevant Table *Refer to Bushfire Hazard Assessment Report & Bushfire Hazard Management Plan, prepared by Rebecca Green & Associates, 10 January 2024 (Lot 1).*
☐	E1.6.3 A1 (c) / C13.6.3 A1 (c)	Water supply consistent with the objective
☐	E1.6.3 A2 (a) / C13.6.3 A2 (a)	Insufficient increase in risk

☒	E1.6.3 A2 (b) / C13.6.3 A2 (b)	Static water supply complies with relevant Table *Refer to Bushfire Hazard Assessment Report & Bushfire Hazard Management Plan, prepared by Rebecca Green & Associates, 10 January 2024 (Lots 2-5).*
☐	E1.6.3 A2 (c) / C13.6.3 A2 (c)	Static water supply consistent with the objective

5. Bushfire Hazard Practitioner

Name:	Rebecca Green	**Phone No:**	0409 284 422
Postal Address:	PO Box 2108 Launceston, Tas 7250	**Email Address:**	admin@rgassociates.com.au
Accreditation No:	BFP – 116	**Scope:**	1, 2, 3A, 3B, 3C

6. Certification

I certify that in accordance with the authority given under Part 4A of the *Fire Service Act 1979* that the proposed use and development:

☐ Is exempt from the requirement Bushfire-Prone Areas Code because, having regard to the objective of all applicable standards in the Code, there is considered to be an insufficient increase in risk to the use or development from bushfire to warrant any specific bushfire protection measures, or

☒ The Bushfire Hazard Management Plan/s identified in Section 3 of this certificate is/are in accordance with the Chief Officer's requirements and compliant with the relevant **Acceptable Solutions** identified in Section 4 of this Certificate.

Signed:
certifier

Name: Rebecca Green **Date:** 10 January 2024

Certificate Number: RGA-001/2024

(for Practitioner Use only)

Attachment 2 – AS3959-2018 Construction Requirements

Rebecca Green & Associates

BAL Assessments

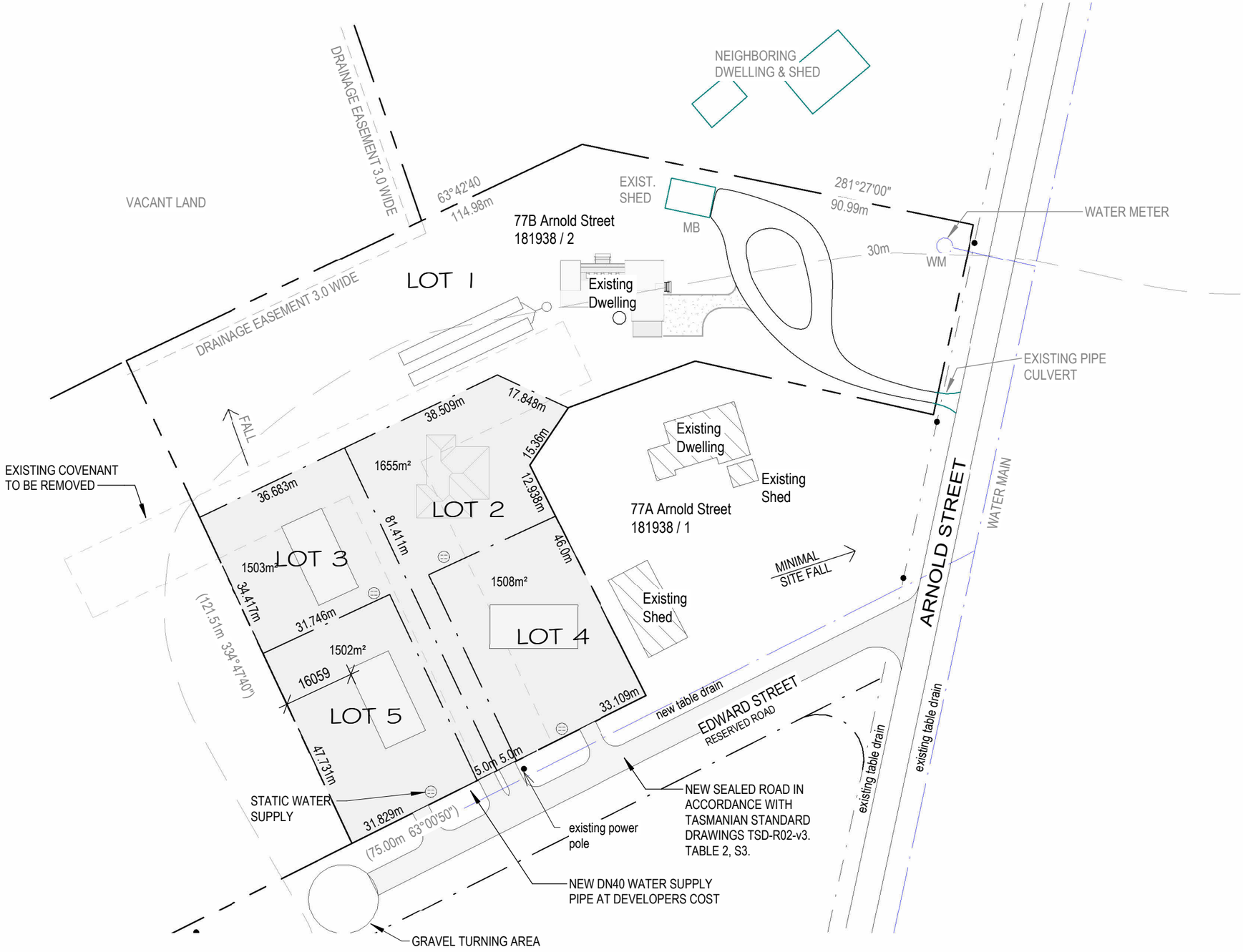
Revised for 2018 edition

	BAL—LOW	BAL-12.5	BAL-19	BAL-29	BAL-40	BAL –FZ (FLAMEZONE)
SUBFLOOR SUPPORTS	No special construction requirements	No special construction requirements	Enclosure by external wall or by steel, bronze or aluminium mesh	Enclosure by external wall or by steel, bronze of aluminium mesh. Non-combustible or naturally fire resistant timber supports where the subfloor is unenclosed	If enclosed by external wall refer below "External Walls" section in table or non-combustible sub-floor supports, or tested for bushfire resistance to AS1530.8.1	Enclosure by external wall or non-combustible with an FRL of 30/-/- or to be tested for bushfire resistance to AS1530.8.2
FLOORS	No special construction requirements	No special construction requirements	Concrete slab on ground or enclosure by external wall, metal mesh as above or flooring less than 400mm above ground level to be non-combustible, naturally fire resistant timber or protected on the underside with sarking or mineral wool insulation	Concrete slab on ground or enclosure by external wall, metal mesh as above or flooring less than 400mm above ground level to be non-combustible, naturally fire resistant timber or protected on the underside with sarking or mineral wool insulation	Concrete slab on ground or enclosure by external wall or protection of underside with a non-combustible material such as fibre cement sheet or be non-combustible or to be tested for bushfire resistance to AS1530.8.1	Concrete slab on ground or enclosure by external wall or an FRL of 30/30/30 or protection of under-side 30 minute incipient spread of fire system or to be tested for bushfire resistance to AS1530.8.2
EXTERNAL WALLS	No special construction requirements	As for BAL-19	Parts less than 400mm above ground or decks etc to be of non-combustible material, 6mm fibre cement clad or bushfire resistant/ naturally fire resistant timber	Non-combustible material (masonry, brick veneer, mud brick, aerated concrete, concrete) or timber framed, or steel framed walls sarked on the outside and clad with 6mm fibre cement sheeting or steel sheeting or bushfire resistant timber	Non-combustible material (masonry, brick veneer, mud brick, aerated concrete, concrete) or timber framed, or steel framed walls sarked on the outside and clad with 9mm fibre cement sheeting or steel or to be tested for bushfire resistance to AS1530.8.1	Non-combustible material (masonry, brick veneer, mud brick, aerated concrete, concrete) with a minimum thickness of 90mm or a FRL of -/30/30 when tested from outside or to be tested for bushfire resistance to AS1530.8.2
EXTERNAL WINDOWS	No special construction requirements	4mm grade A Safety Glass of glass blocks within 400m of ground, deck etc with Openable portion metal screened with frame of metal or metal reinforced PVC-U or bushfire resisting timber	5mm toughened glass or glass bricks within 400mm of the ground, deck etc with openable portion metal screened with frame of metal or metal reinforced PVC-U or bushfire resisting timber. Above 400mm annealed glass can be used with all glass screened	5mm toughened glass with openable portion screened and frame of metal or metal reinforced PVC-U, or bushfire resistant timber and portion within 400mm of ground, deck, screen etc screened	6mm toughened glass. Fixed and openable portion screened with steel or bronze mesh	Protected by bushfire shutter or FRL of -/30/- and openable portion screened with steel or bronze mesh or be tested for bushfire resistance to AS1530.8.2
EXTERNAL DOORS	No special construction requirements	As for BAL-19 except that door framing can be naturally fire resistant (high density) timber	Screened with steel, bronze or aluminium mesh or glazed with 5mm toughened glass, non-combustible or 35mm solid timber for 400mm above threshold, metal or bushfire resistant timber framed for 400mm above ground, decking etc. tight-fitting with weather strips at base	Screened with steel, bronze or aluminium mesh or non-combustible, or 35mm solid timber for 400mm above threshold. Metal or bushfire resistant timber framed tight-fitting with weather strips at base	Non-combustible or 35mm solid timber, screened with steel or bronze mesh, metal framed, tight-fitting with weather strips at base	Protected by bushfire shutter or tight-fitting with weather strips at base and a FRL of -/30/-
ROOFS	No special construction requirements	As for BAL-19 (including roof to be fully sarked)	Non-combustible covering, roof/wall junctions sealed. Openings fitted with non-combustible ember guards. Roof to be fully sarked.	Non-combustible covering. Roof/wall junction sealed. Openings fitted with non-combustible ember guards. Roof to be fully sarked	Non-combustible covering. Roof/wall junction sealed. Openings fitted with non-combustible ember guards. Roof to be fully sarked and no roof mounted evaporative coolers	Roof with FRL of 30/30/30 or tested for bushfire resistance to AS1530.8.2. Roof/wall junction sealed. Openings fitted with non-combustible ember guards. No roof mounted evaporative coolers
VERANDAS DECKS ETC.	No special construction requirements	As for BAL-19	Enclosed sub floor space—no special requirements for materials except within 400mm of ground. No special requirements for supports or framing. Decking to be non-combustible or bushfire resistant within 300mm horizontally and 400mm vertically from a glazed element	Enclosed sub floor space or non-combustible or bushfire resistant timber supports. Decking to be non-combustible or bushfire resistant timbers	Enclosed sub-floor space or non-combustible supports. Decking to be non-combustible	Enclosed sub floor space or non-combustible supports. Decking to have no gaps and be non-combustible

Please note: The information in the table is a summary of the construction require-ments in the AS3959-2018 standard and is not intended as a design or construction guide. You should consult the standard for the full technical details.

Attachment 3 – Proposal Plan

MDC Design & Drafting



North

Issue	Description	Date	Auth
A	Preliminary	19.09.23	MC

PROJECT: SUBDIVISION. 1 lot to 5

SITE: 77B ARNOLD STREET, GEORGE TOWN, TAS

FOR: MICHAEL & LORNA CLIFFORD

MDC DESIGN & drafting
LICENCE NUMBER: CC7219
PO BOX 129 GEORGE TOWN TAS 7253
TELEPHONE: 0427655957
mdc.designs@icloud.com

DATE:

DRAWN: MC

CHK: MC

SCALE: 1 : 1000

DRAWING TITLE: SITE PLAN

PROJECT No. 1701 WD A01

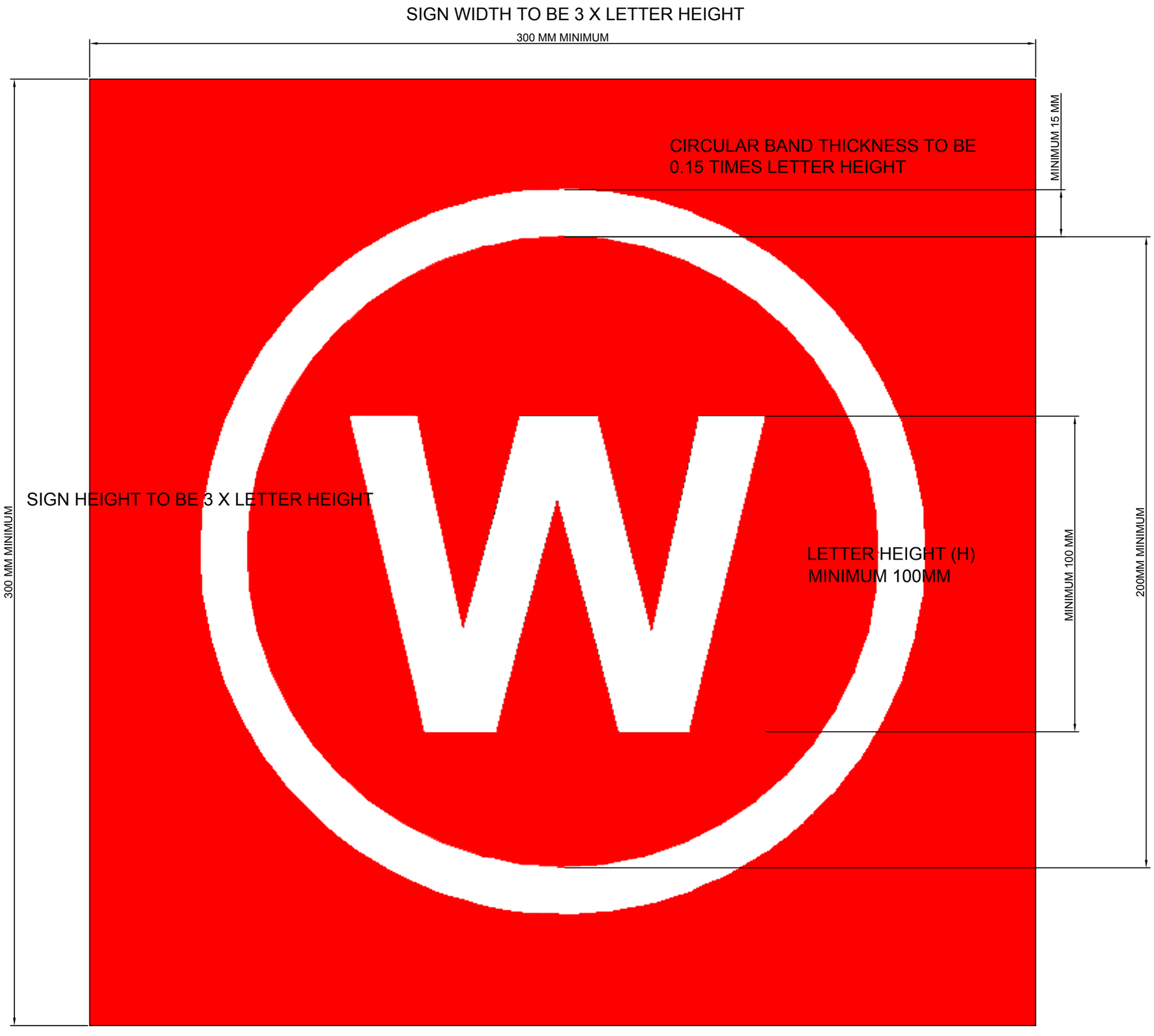
01 OF A3 ORIGINAL

ISSUE: A

Attachment 4 – Tasmania Fire Service Water Supply Signage Guideline

V1.0

10,000 LITRE DOMESTIC FIREFIGHTING STATIC WATER INDICATOR SIGN



LETTERING TO BE UPPERCASE AND NOT LESS THAN 100MM IN HEIGHT

INSIDE DIAMETER OF CIRCULAR BAND TO BE 2 TIMES LETTER HEIGHT

SIGN SIZE DIMENSIONS
3 X LETTER HEIGHT HIGH AND 3 X LETTER HEIGHT WIDE.

THICKNESS OF CIRCULAR BAND TO BE 0.15 TIMES LETTER HEIGHT

TEXT STYLE TO BE IN ACCORDANCE WTH AS1744.2015, SERIES F

SIGN TO BE IN FADE RESISTING MATERIAL WITH WHITE REFLECTIVE LETTERING AND CIRCLE ON A RED BACKGROUND

RED TO BE R-13 SIGNAL RED
COLOUR CODE 1795U

WHITE SUBSTRATE COLOUR TO BE PMS 186C

SIGN TO BE CONSTRUCTED FROM UV STABILIZED, NON FLAMMABLE AND NON HEAT DEFORMING MATERIAL

SIGN TO BE PERMANENTLY FIXED

Tasmania Fire Service

References

(a) Tasmanian Planning Commission 2021, *Tasmanian Planning Scheme – George Town (Effective 4 October 2023), C13.0 Bushfire-Prone Areas Code*, Tasmania.

(b) Australian Standards, AS 3959-2018, *Construction of buildings in bushfire-prone areas*, Standards Australia, Sydney NSW.

(c) Resource Management & Conservation Division of the Department Primary Industry & Water September 2006, TASVEG, *Tasmanian Vegetation Map*, Tasmania.

(d) Tasmanian Government, Land Information System Tasmania, www.thelist.tas.gov.au

Tasmanian Government

Department of Natural Resources,
and Environment Tasmania

GPO Box 44, Hobart, TAS 7001 Australia
Ph 1300 TAS PARKS / 1300 827 727 Fax 03) 6223 8308
www.parks.tas.gov.au

Enquiries: Rhys Johnson
Phone: 03 6165 4677
Email: rhys.johnson@parks.tas.gov.au
Our ref: 24/638

14 February 2024

Mr Michael Clifford
PO Box 129
George Town TAS 7253

Dear Mr Clifford,

LODGEMENT OF PLANNING APPLICATION
MICHAEL & LORNA CLIFFORD
5 LOT SUBDIVISION
77B ARNOLD STREET, GEORGE TOWN

This letter, issued pursuant to section 52(1B) of the *Land Use Planning and Approvals Act 1993* (LUPAA), is to confirm that the Crown consents to the making of the enclosed Planning Permit Application, insofar as the proposed development relates to Crown land managed by the Department of Natural Resources and Environment Tasmania.

Crown consent is only given to the lodgement of this application. Any variation will require further consent from the Crown.

Please note, it is Departmental policy that all fire buffer areas (Hazard Management Areas and Fuel Modified Areas) are maintained wholly within freehold title boundaries and not on neighbouring Crown or Reserved land. Additionally, it is not Parks and Wildlife Service's (PWS) practice for the Crown to enter into agreements under Part 5 of LUPAA in support of developments on private property.

Further, it is PWS practice that it will not approve any permanent private drainage infrastructure (stormwater or treated effluent) on Crown land unless connected to publically maintained infrastructure.

This letter does not constitute, nor imply, any approval to undertake works, or that any other approvals required under the *Crown Lands Act 1976* have been granted. If planning approval is given for the proposed development, the applicant will be required to obtain separate and distinct consent from the Crown before commencing any works on Crown land.

If you need more information regarding the above, please contact the officer nominated at the head of this correspondence.

Yours sincerely,

Jesse Walker
Team Leader (Assessments)

RESULT OF SEARCH

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980

SEARCH OF TORRENS TITLE

VOLUME	FOLIO
181938	2
EDITION	DATE OF ISSUE
3	04-Mar-2022

SEARCH DATE : 25-Jan-2024
SEARCH TIME : 10.00 AM

DESCRIPTION OF LAND

Town of GEORGE TOWN
Lot 2 on Sealed Plan 181938
Derivation : Part of Lot 36870, 31.94ha Gtd. to The Director of Housing
Prior CT 100891/8

SCHEDULE 1

M572659 & M931451 TRANSFER to MICHAEL DAVID CLIFFORD and LORNA ELIZABETH CLIFFORD Registered 11-Jan-2022 at noon

SCHEDULE 2

Reservations and conditions in the Crown Grant if any
SP181938 EASEMENTS in Schedule of Easements
SP181938 COVENANTS in Schedule of Easements
SP181938 FENCING PROVISION in Schedule of Easements
SP100891 COVENANTS in Schedule of Easements
SP100891 FENCING COVENANT in Schedule of Easements
E296873 MORTGAGE to Commonwealth Bank of Australia Registered 04-Mar-2022 at noon

UNREGISTERED DEALINGS AND NOTATIONS

NOTICE: This folio is affected as to amended covenants pursuant to Request to Amend No. E252715 made under Section 103 of the Local Government (Building and Miscellaneous Provisions) Act 1993. Search Sealed Plan No. 100891 Lodged by DOUGLAS & COLLINS on 15-Feb-2022 BP: E252715

OWNER: TREVOR JOHN TAYLOR
WILNA MARGARET TAYLOR
MICHAEL DAVID CLIFFORD
LORNA ELIZABETH CLIFFORD

FOLIO REFERENCE: 100891/8

GRANTEE: PART OF LOT 36870 31.94ha GRANTED TO THE DIRECTOR OF HOUSING

PLAN OF SURVEY

BY SURVEYOR: M.B.REID of PDA Surveyors Surveying, Engineering & Planning
3/23 BRISBANE STREET, LAUNCESTON

LOCATION: TOWN OF GEORGETOWN

SCALE 1:1000 LENGTHS IN METRES

REGISTERED NUMBER
SP181938

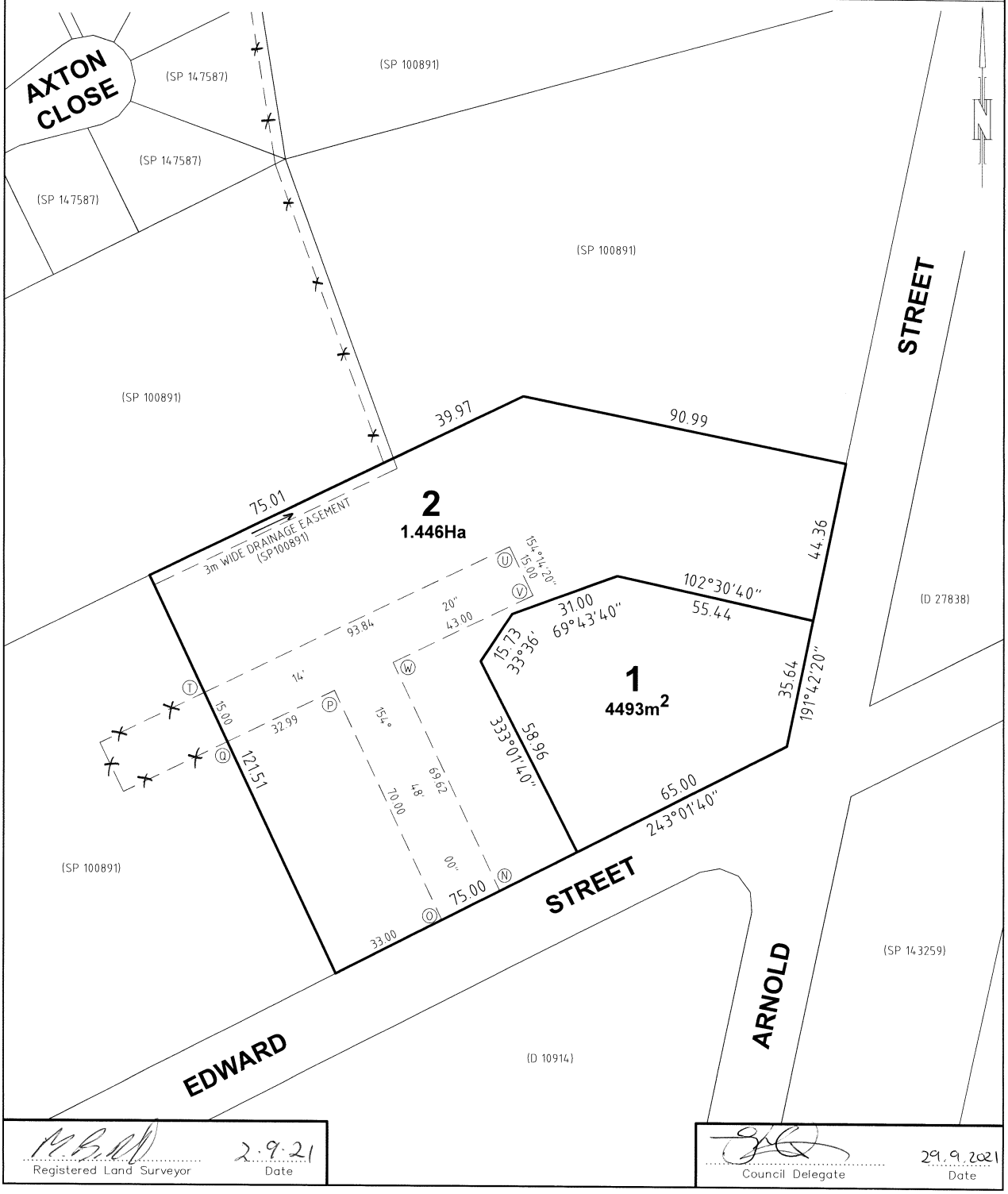
APPROVED
EFFECTIVE FROM 29 OCT 2021

Recorder of Titles

LOT 2 COMPILED FROM SP 100891 AND THIS SURVEY

SURVEYORS REF: 47171

ALL EXISTING SURVEY NUMBERS TO BE CROSS REFERENCED ON THIS PLAN



Registered Land Surveyor — 2.9.21 Date

Council Delegate — 29.9.2021 Date