DISCRETIONARY APPLICATION

For Public Display

Applicant:
C Ellis

Location:
Tunbridge Tier Road, Interlaken (CT 171405/3 & 4)

Proposal:
Dwelling, Outbuildings (2) & PV Ground Array

DA Number:
DA 2022 / 00022

Date Advertised:
21 March 2022

Date Representation Period Closes:
4 April 2022

Responsible Officer:
Louisa Brown (Planning Officer)

Viewing Documents:
The relevant documents may be viewed at Council's website www.centralhighlands.tas.gov.au or at Council's Offices 19 Alexander Street, Bothwell & 6 Tarleton Street, Hamilton during normal office hours.

Representations to:

General Manager
19 Alexander Street
BOTHWELL TAS 7030

Email:
development@centralhighlands.tas.gov.au

central highlands COUNCIL

Development & Environmental Services
19 Alexander Street
BOTHWELL TAS 7030

Phone: (03) 6259 5503
Fax: (03) 6259 5722

www.centralhighlands.tas.gov.au

OFFICE USE ONLY

Application No.: _____

Property ID No.: _____

Date Received: _____

Application for Planning Approval
Use and Development

Use this form to apply for planning approval in accordance with section 57 and 58 of the *Land Use Planning and Approvals Act 1993*

Applicant / Owner Details:

Applicant Name Charlie Ellis c/o Charlie Ellis Architecture

Postal Address 16 Meredith Cres
Sth Launceston 7249
Phone No: 0407355489
Fax No:

Email address cellisarchitecture@bigpond.com

Owner/s Name (if not Applicant) Highlawn Investments Pty Ltd

Postal Address 76 High Street
East L'ton TAS
Phone No: 0400566654
Fax No:

Email address: richard@smsforproperty.com.au

Description of proposed use and/or development:

Address of new use and development: Tunbridge Tier Rd, Interlaken 7030

Certificate of Title No: Volume No 171405 Lot No: 3/4

Description of proposed use or development: New Dwelling, Shed, & Outbuildings

ie: New Dwelling /Additions/ Demolition / /Shed / Farm Building / Carport / Swimming Pool or detail other etc.

Current use of land and buildings: rural

Eg. Are there any existing buildings on this title? If yes, what is the main building used as?

Proposed Material

What are the proposed external wall colours: timber/stone

What is the proposed roof colour: Grey

What is the proposed new floor area m². 400 m²

What is the estimated value of all the new work proposed: $ 3m

			Tick ✓
Is proposed development to be staged:	*Yes* ☐	*No* ☑	
Is the proposed development located on land previously used as a tip site?	*Yes* ☐	*No* ☑	
Is the place on the Tasmanian Heritage Register?	*Yes* ☐	*No* ☑	
Have you sought advice from Heritage Tasmania?	*Yes* ☐	*No* ☑	
Has a Certificate of Exemption been sought for these works?	*Yes* ☐	*No* ☑	

Signed Declaration

I/we hereby apply for a planning approval to carry out the use or development described in this application and in the accompanying plans and documents, accordingly I declare that:

1. The information given is a true and accurate representation of the proposed development. I understand that the information and materials provided with this development application may be made available to the public. I understand that the Council may make such copies of the information and materials as, in its opinion, are necessary to facilitate a thorough consideration of the Development Application. I have obtained the relevant permission of the copyright owner for the communication and reproduction of the plans accompanying the development application, for the purposes of assessment of that application. I indemnify the Central Highlands Council for any claim or action taken against it in respect of breach of copyright in respect of any of the information or material provided.

2. In relation to this application, I/we agree to allow Council employees or consultants to enter the site in order to assess the application.

3. I am the applicant for the planning permit and I have notified the owner/s of the land in writing of the intention to make this application in accordance with Section 52(1) of the *Land Use Planning Approvals Act 1993* (or the land owner has signed this form in the box below in "Land Owner(s) signature);
Applies where the applicant is not the Owner and the land is not Crown land or owned by a council, and is not land administered by the Crown or a council.

Applicant Signature (if not the Owner)	Applicant Name *(Please print)*	Date
	Charlie Ellis	7/3/22

Land Owner(s) Signature	Land Owners *Name (please print)*	Date
	Richard Sims	22/2/22

Land Owner(s) Signature	Land Owners *Name (please print)*	Date

OWNER P.P. WOODLAND PTY. LTD.

FOLIO REFERENCE 168930 – 3 & 4

GRANTEE
PART OF 1000 ACRES GTD. JOHN FRANKS
PART OF LOT 1503, 640 ACRES GTD. TO GEORGE CARR CLARKE

PLAN OF TITLE

LOCATION J.B. MEDBURY P/L., SURVEYORS OF 159 CILWEN ROAD, CAMBRIDGE

LAND DISTRICT OF SOMERSET
PARISH OF ANSTEY

CONVERTED BY PLAN No. P.168930

COMPILED BY J.B. MEDBURY

NOT TO SCALE LENGTHS IN METRES

REGISTERED NUMBER
P171405

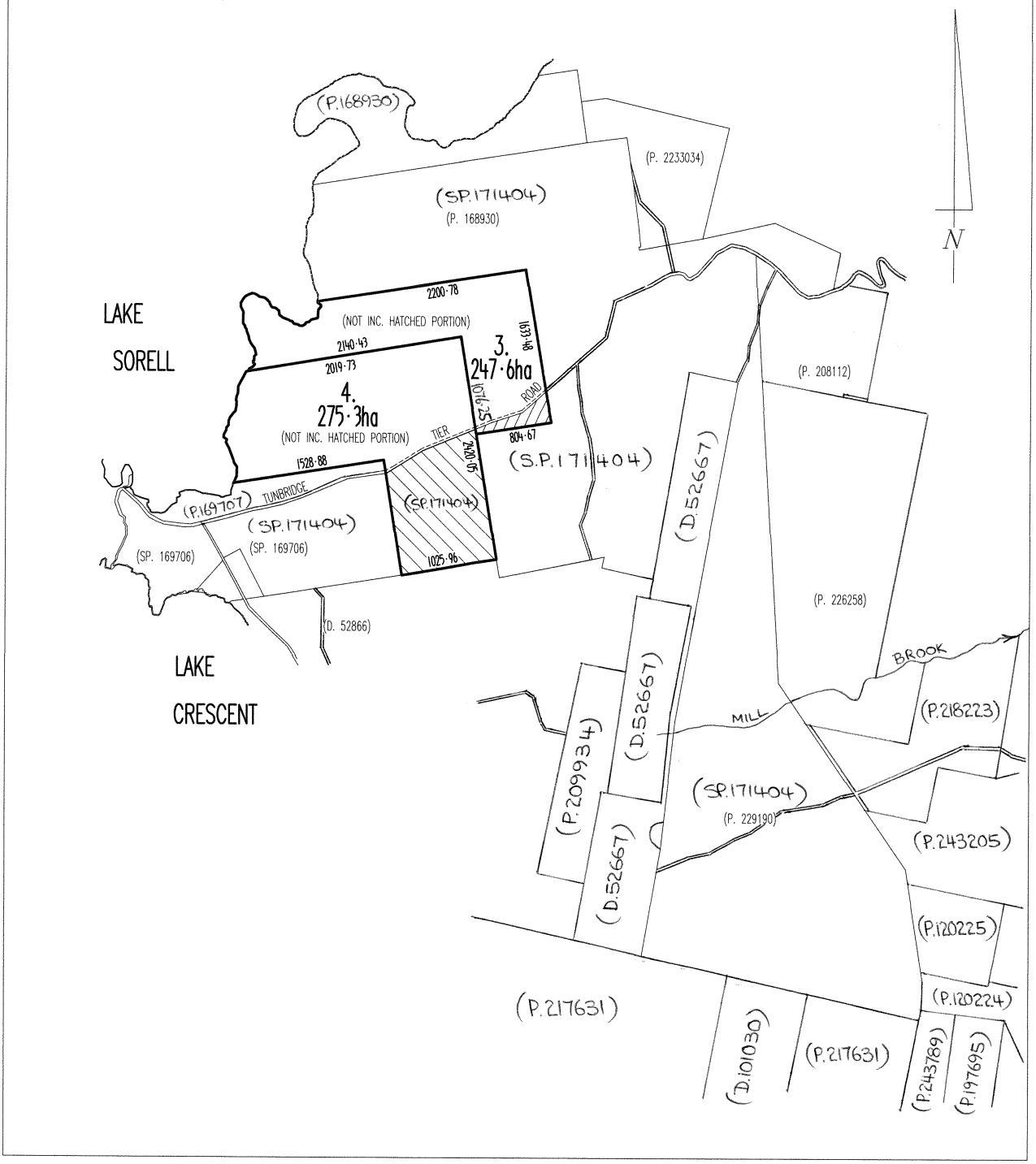
APPROVED 22 JUN 2016
Alice Kawa
Recorder of Titles

MAPSHEET MUNICIPAL CODE No. 105 (5033)	LAST UPI No	LAST PLAN No. P.168930	ALL EXISTING SURVEY NUMBERS TO BE CROSS REFERENCED ON THIS PLAN

SKETCH BY WAY OF ILLUSTRATION ONLY

BALANCE PLAN

"EXCEPTED LANDS"
11·42ha, SP 171404 – (Lot 3)
124·6ha, SP 171404 – (Lot 4)



SCHEDULE OF EASEMENTS	Registered Number
NOTE: THE SCHEDULE MUST BE SIGNED BY THE OWNERS & MORTGAGEES OF THE LAND AFFECTED. SIGNATURES MUST BE ATTESTED.	SP 171404

EASEMENTS AND PROFITS

Each lot on the plan is together with:-
(1) such rights of drainage over the drainage easements shown on the plan (if any) as may be necessary to drain the stormwater and other surplus water from such lot; and
(2) any easements or profits a prendre described hereunder.
Each lot on the plan is subject to:-
(1) such rights of drainage over the drainage easements shown on the plan (if any) as passing through such lot as may be necessary to drain the stormwater and other surplus water from any other lot on the plan; and
(2) any easements or profits a prendre described hereunder.
The direction of the flow of water through the drainage easements shown on the plan is indicated by arrows.

No easements or covenants are created by this plan

Fencing provision
In respect of each lot shown on the plan, P P Woodland Company Pty Ltd ACN 154 177 367 and its legal successors and assigns and Eustace Allan Cameron, will not be required to fence.

Signed by James Robert Ramsay as solicitor for P P Woodland Company Pty Ltd in the presence of:) .....

Witness signature .....

Full name (print) Alexander Jan Bobbi
Solicitor (Commissioner for Declarations)

Witness address dobson mitchell allport
59 Harrington Street Hobart Tasmania

Signed by William Douglas Edwards as solicitor for Eustace Allan Cameron in the presence of:) .....

Witness signature .....

Full name (print) Natalie Anne Cosgrave

Witness address 3/113 Cambridge Street Launceston TAS 7250

(USE ANNEXURE PAGES FOR CONTINUATION)

SUBDIVIDER: PP Woodland Company Pty Ltd and Eustace Allan Cameron FOLIO REF: CTs 168930/3 and 4, 169706/2 and 229190/1 & 168930/2 SOLICITOR & REFERENCE: Dobson Mitchell Allport	PLAN SEALED BY: Central Highlands Council DATE: 11 May 2016 SA 2015/39 REF NO. Council Delegate

NOTE: The Council Delegate must sign the Certificate for the purposes of identification.

LAKE SORELL

P.171404
LOT 2

N

TITLE BOUNDARY 2200.78m

BLACK POINT

DIAMOND BEACH

P.171405
LOT 3

PROPOSED HOUSE LOCATION

PROPOSED SHED LOCATION

TITLE BOUNDARY 2140.43m

TITLE BOUNDARY 633.48m

TITLE BOUNDARY 1076.25m

PROPOSED GRAVEL ACCESS ROAD

EXISTING GRAVEL ACCESS ROAD

EXISTING GRAVEL ACCESS ROAD

P.171405
LOT 4

TUNBRIDGE TIER ROAD

EXISTING STEEL GATED ACCESS

STOCK YARDS OPPOSITE ENTRANCE

TUNBRIDGE TIER ROAD

0 100 200 300 400 500 M

TITLE PLAN

BLACK POINT LODGE - LAKE SORELL - DESIGN DEVELOPMENT

NOT FOR CONSTRUCTION - DO NOT SCALE OFF DRAWINGS

CE2009 - FEB / 2022

CHARLIE ELLIS
ARCHITECTURE
0407355489 - email: cellisarchitecture@bigpond.com
www.cellisarchitecture.com.au

N

GRAVEL PATH

WATER VIEW CORRIDORS AS PER SURVEY

EXISTING TREES

BAL12.5 SETBACK AS PER GES REPORT

EXISTING TREES

EXISTING TREES

TIMBER RESERVE BOUNDARY

PROPOSED 400m2 LODGE

45KLtr CONCRETE FIRE FIGHTING TANK BURRIED IN CENTRE OF TURNING CIRCLE

BATTERY PLANT SHED

POWER CABLE

ON GROUND PV ARRAY

POWER CABLE

EXISTING TREES

TURNING AREA

PROPOSED 15m x 8m SHED

WATER TANK

PROPOSED GRAVEL ACCESS ROAD

0 10 20 30 40 50 M

BLACK POINT LODGE - LAKE SORELL - DESIGN DEVELOPMENT

NOT FOR CONSTRUCTION - DO NOT SCALE OFF DRAWINGS

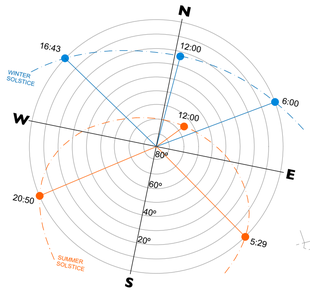
CE2009 - FEB / 2022

CHARLIE ELLIS
ARCHITECTURE
0407355489 - email: cellisarchitecture@bigpond.com
www.cellisarchitecture.com.au

EVAILING WINDS

EXISTING TREES

VIEW CORRIDORS AS PER SURVEY



10040

3850

1940

EXISTING TREE TO BE REMOVED

STEEL FRAMED FIXED TIMBER CLAD SCREENS TO MATCH WALL CLADDING

LOCAL STONE WALL AROUND PLANTER BED

LOCAL STONE PAVING

GRAVEL DRIVEWAY

45,000LT CONCRETE TANK BURIED IN CENTRE OF TURNING CIRCLE

EXISTING TREE TO BE REMOVED

TIMBER SCREEN FENCE AROUND SERVICES ENCLOSURE

FLAGSTONE PAVING

LOW STONE RETAINING WALL

GRAVEL

FL 813.650

FL 813.650

FL 813.650

FL 813.950

813.00

813.50

814.00

cathedral ceiling

cathedral ceiling

cathedral ceiling

cathedral ceiling

2350

4800

6100

24600

LEGEND:

1 ENTRY
2 DINING
3 KITCHEN
4 PANTRY
5 LIVING
6 COVERED OUTDOOR SPACE
7 FIRE PIT
8 FIRE PLACE
9 POWDER ROOM
10 ENSUITE
11 HALL
12 BEDROOM
13 STORAGE
14 WALK IN ROBE
15 SEAT
16 DECK
17 CARPORT
18 BAR
19 BILLIARDS ROOM
20 HOT TUB
21 MULTI-PURPOSE / GUEST ROOM
22 MUD ROOM / LAUNDRY
23 STORE
24 KITCHENETTE
25 SCREENED SERVICES AREA

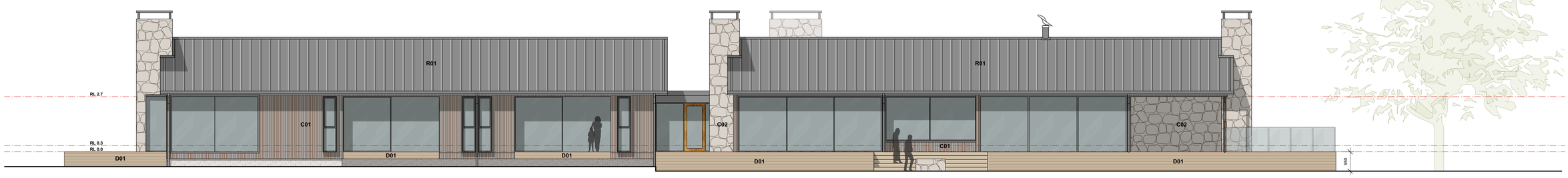
0 2 4 6 8 10 M 1:100 @ A1 - 1.2m x 1.2m grid shown

NOT FOR CONSTRUCTION - DO NOT SCALE OFF DRAWINGS

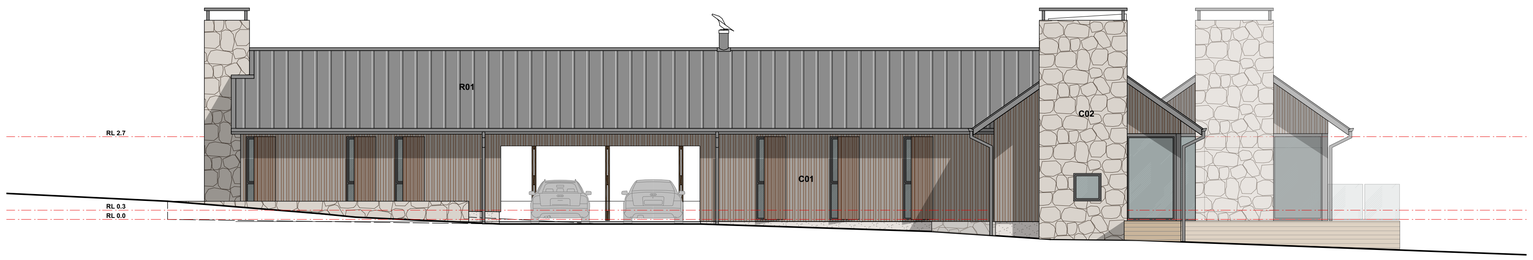
BLACK POINT LODGE - LAKE SORELL - DESIGN DEVELOPMENT

CE2009 - FEB / 2022

CHARLIE ELLIS
ARCHITECTURE
0407355489 - email: cellisarchitecture@bigpond.com
www.cellisarchitecture.com.au

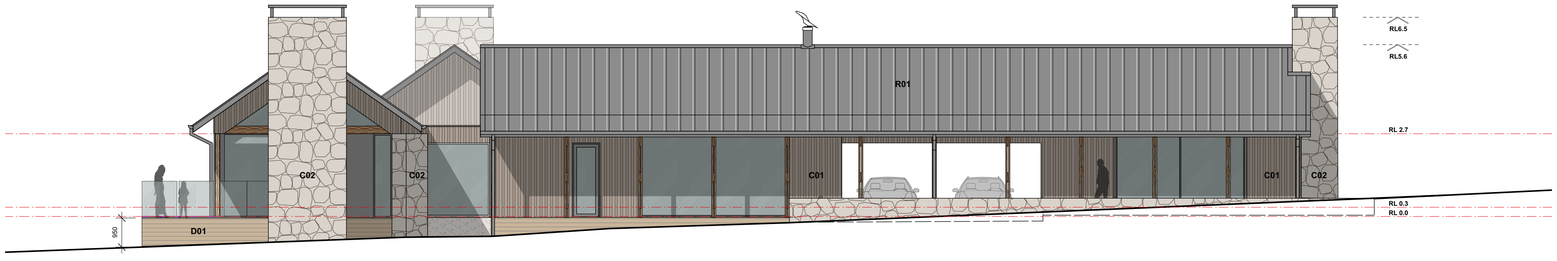


NORTH ELEVATION



EAST ELEVATION

MATERIAL SELECTION



WEST ELEVATION

SOUTH ELEVATION

0 2 3 4 5 6 M 1:100 @ A1

NOT FOR CONSTRUCTION - DO NOT SCALE OFF DRAWINGS

BLACK POINT LODGE - LAKE SORELL - DESIGN DEVELOPMENT

CE2009 - FEB / 2022

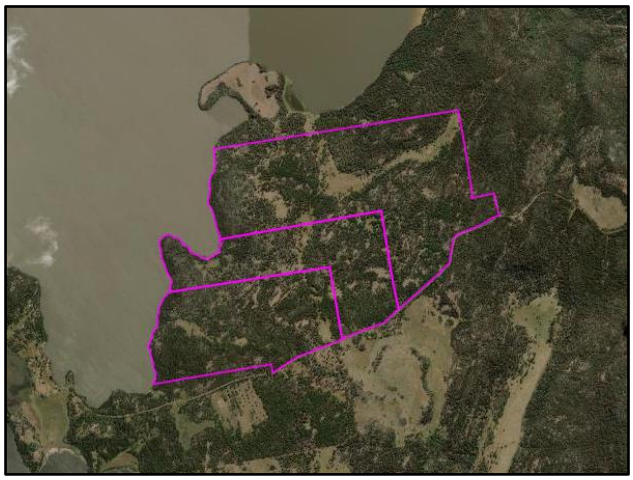
CHARLIE ELLIS
ARCHITECTURE
0407355489 - email: cellisarchitecture@bigpond.com
www.cellisarchitecture.com.au

GEO-ENVIRONMENTAL SOLUTIONS

Proposed Residential Development – Lot 1 Tunbridge Tier Road, Interlaken

Bushfire Hazard Report

Applicant: Highlaurn Investments Pty Ltd



May 2021 J2914v1.0

GEO- ENVIRONMENTAL SOLUTIONS
29 Kirksway Place, Battery Point, Tasmania. 7004. T|62231839 E|office@geosolutions.net.au www.geosolutions.net.au

Contents

Disclaimer

The measures contained in Australian Standard 3959-2018 cannot guarantee that a building will survive a bushfire event on every occasion. This is substantially due to the unpredictable nature and behaviour of fire and extreme weather conditions.

Reasonable steps have been taken to ensure that the information contained within this report is accurate and reflects the conditions on and around the lot at the time of assessment. The assessment has been based on the information provided by you or your designer.

Authorship

This report was prepared by Mark Van den Berg BSc. (Hons.) FPO (planning) of Geo Environmental Solutions. Base data for mapping: TasMap, Digital and aerial photography: Mark Van den Berg, GoogleEarth.

1.0 Purpose

This bushfire hazard report is intended to provide information in relation to the proposal. It will demonstrate compliance with the *Determination, Director of Building Control – Requirements for Building in Bushfire-Prone Areas (transitional), version 2.2 6th February 2020*. Provide a certificate of others (form 55) as specified by the Director of Building Control for bushfire hazard and give guidance by way of a certified bushfire hazard management plan which shows a means of protection from bushfires in a form approved by the Chief Fire Officer of the Tasmania Fire Service.

2.0 Summary

Site details & compliance

Title reference	171405/3
PID	9165650
Address	Lot 1 Tunbridge Tier Road, Interlaken
Applicant	Highlaurn Investments Pty Ltd
Municipality	Central Highlands
Planning Scheme	Central Highlands Interim Planning Scheme 2015
Zoning	Rural Resource
Land size	~257.0Ha
Bushfire Attack Level	BAL-12.5
Certificate of others (form 55)	Complete and attached
Bushfire Hazard Management Plan	Certified & Attached

Development of a new class 1a building at Lot 1 Tunbridge Tier Road, Interlaken requires demonstrated compliance with the *Determination, Director of Building Control – Requirements for Building in Bushfire-Prone Areas (transitional), version 2.2 6th February 2020*, the site is located in a bushfire prone area. The Bushfire attack level has been determined as 'BAL-12.5', provisions for property access and water supplies for firefighting will be required as detailed in this report and the Bushfire Hazard Management Plan (BHMP).

3.0 Introduction

This bushfire hazard report has been completed to form part of supporting documentation for a building permit application for the proposed development. The proposed development site has been identified as being in a bushfire prone area. A site-specific bushfire hazard management plan has been provided for compliance purposes.

4.0 Proposal

It is proposed that a new class 1a building be developed at Lot 1 Tunbridge Tier Road, Interlaken (appendix B). Construction standards for buildings, property access, water supplies for firefighting and hazard management areas will be required (as appropriate) to meet the standards outlined in the *'Director's Determination – Requirements for Building in Bushfire-Prone Areas (transitional), version 2.2 6th February 2020'* and '*Australian Standard 3959-2018 Construction of Buildings in Bushfire-prone Areas.*

5.0 Bushfire Attack Level (BAL) Assessment

5.1 Methods

The Bushfire attack level has been determined through the application of section 2 of AS3959-2018 'Simplified Procedure'. Vegetation has been classified using a combination of onsite observations and remotely sensed data to be consistent with table 2.3 of AS359-2018. Slope and distances have been determined by infield measurement and/or the use of remotely sensed data (aerial/satellite photography, GIS layers from various sources) analysed with proprietary software systems. Where appropriate vegetation has been classified as low threat.

5.2 Site Description

The proposal is located at Lot 1 Tunbridge Tier Road, Interlaken, in the municipality of Central Highlands and is zoned Rural Resource under the Central Highlands Interim Planning Scheme 2015. Access to the lot will be by an existing crossover from Tunbridge Tier Road, a council-maintained road. The lot is ~257.0 Ha, is irregular in shape and is located approximately 6.8km south west of Mount Franklin (Figure 1).
Adjacent lands surrounding the lot are zoned rural resource. At a landscape scale the lot occurs on the south eastern edge of Lake Sorell in a rural setting characterised by predominantly native forest vegetation. The lot has gentle slopes with a northerly aspect and is likely to effect fire behaviour.
Vegetation surrounding the lot was assessed (Table 1) and described as 'forest' (as per AS3959-2018). The classified vegetation potentially having the greatest impact on the site occurs on every azimuth of the site (Figure 2). The vegetation classification system as defined in AS 3959-2018 Table 2.3 and Figure 2.3 (A to H) has been used to determine vegetation types within 100 metres of the site (Table 1).

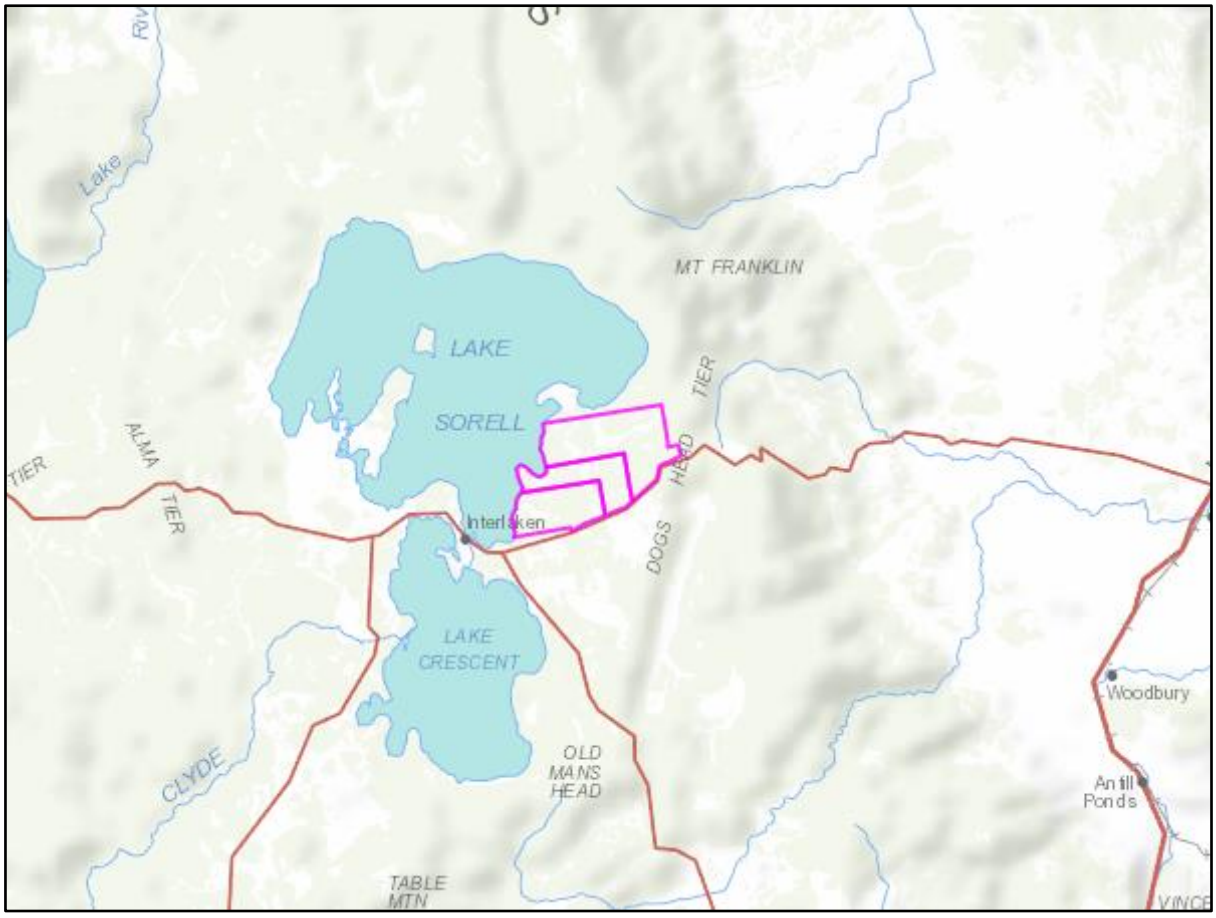


Figure 1. The lot in a topographical context (lot outlined in pink).

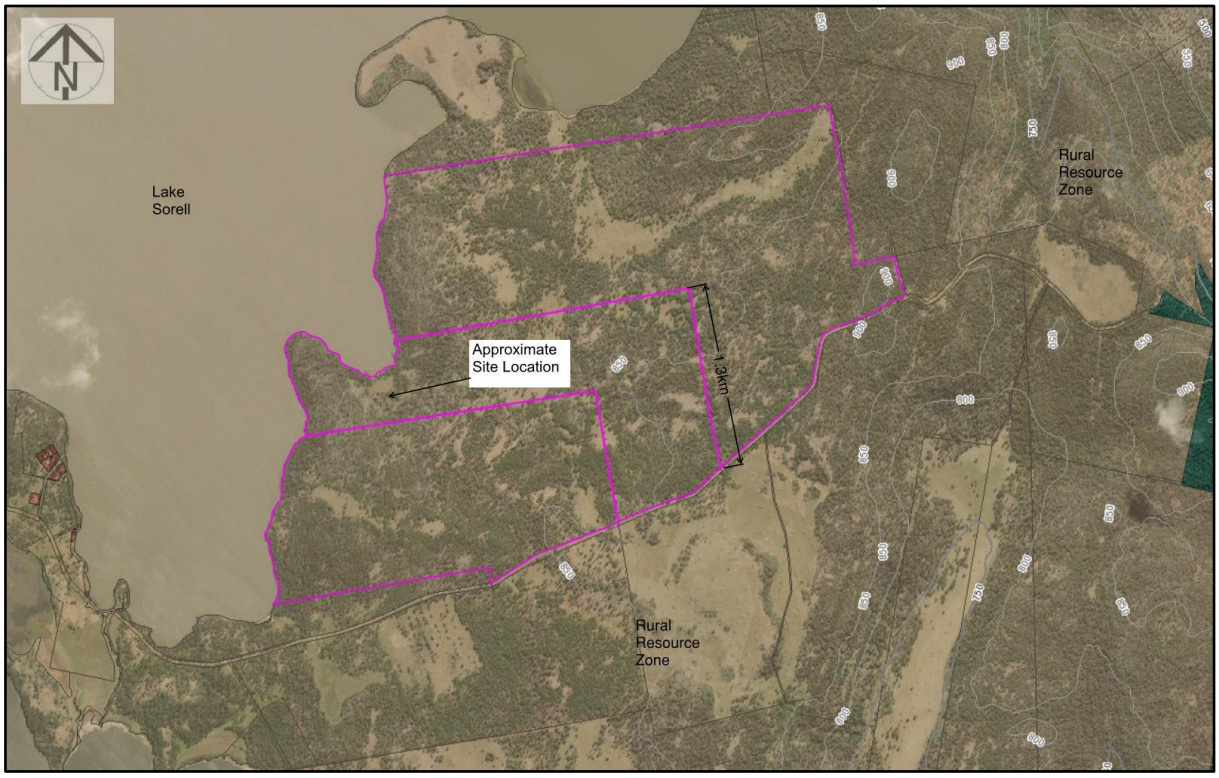


Figure 2. Shows the approximate location of the site (pink line) in the context of the adjacent lands and classified vegetation.

Table 1. Bushfire Attack Level (BAL) Assessment

Azimuth	Vegetation Classification	Effective Slope	Distance to Bushfire-prone vegetation	Hazard management area width	Bushfire Attack Level
North	Forest^	>0 to 5º downslope	0 to >100 metres	38 metres	**BAL-12.5**
	--	--	--		
	--	--	--		
	--	--	--		
East	Forest^	upslope	0 to >100 metres	32 metres	**BAL-12.5**
	--	--	--		
	--	--	--		
	--	--	--		
South	Forest^	upslope	0 to >100 metres	32 metres	**BAL-12.5**
	--	--	--		
	--	--	--		
	--	--	--		
West	Forest^	flat 0º	0 to >100 metres	32 metres	**BAL-12.5**
	--	--	--		
	--	--	--		
	--	--	--		

^ Vegetation classification as per AS3959-2018 and Figures 2.6(A) to 2.6 (H).
* Low threat vegetation as per Bushfire Prone Areas Advisory Note (BHAN) No.1-2014, version 3, 8/11/2017.
^^ Exclusions as per AS3959-2018, section 2.2.3.2, (a) to (f).

6.0 Results

The bushfire attack level for the site has been determined as BAL-12.5. While the risk is considered to be low, there is a risk of ember attack and a likelihood of low levels of radiant heat impacting the site. The construction elements are expected to be exposed to a heat flux not greater than 12.5 kW/m^2.

6.1 Property Access

B) Property access length is 30 metres or greater; or access is for a fire appliance to a fire fighting water point.

The following design and construction requirements apply to property access:

(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° (1:20 or 5%);

(g) Dips less than 7° (1:8 or 12.5%) entry and exit angle; (h) Curves with a minimum inner radius of 10 metres;

(i) Maximum gradient of 15° (1:3.5 or 28%) for sealed roads, and 10° (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 outer radius of 10 metres;
- (ii) A property access encircling the building; or
- (iii) A hammerhead “T” or “Y” turning head 4 metres wide and 8 metres long

C) Property access length is 200 metres or greater.

The following design and construction requirements apply to property access:

(a) The Requirements for B above; and

(b) Passing bays of 2 metres additional carriageway width and 20 metres length provided every 200 metres.

6.2 Water supplies for fire fighting

Table 2. Requirements for Static Water Supplies dedicated for Firefighting

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 firefighting water point of a static water supply; and (b) The distance must be measured as a hose lay, between the firefighting water point and the furthest part of the building 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 (firefighting and other uses) but the specified minimum quantity of firefighting water must be available at all times; (c) Must be a minimum of 10,000 litres per building area to be protected. This volume of water must not be used for any other purpose including firefighting sprinkler or spray systems; (d) Must be metal, concrete or lagged by non-combustible materials if above ground; and (e) If a tank can be located so it is shielded in all directions in compliance with Section 3.5 of AS 3959:2018, the tank may be constructed of any material provided that the lowest 400 mm of the tank exterior is protected by: (i) metal; (ii) non-combustible material; or (iii) fibre-cement a minimum of 6 mm thickness.
C.	Fittings, pipework and accessories (including stands and tank supports)	Fittings and pipework associated with a firefighting 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 internal diameter of 50mm; (c) Be metal or lagged by non-combustible materials if above ground; (d) Where buried, have a minimum depth of 300mm; (e) Provide a DIN or NEN standard forged Storz 65 mm coupling fitted with a suction washer for connection to firefighting equipment; (f) Ensure the coupling is accessible and available for connection at all times; (g) Ensure the coupling is fitted with a blank cap and securing chain (minimum 220 mm length); (h) Ensure underground tanks have either an opening at the top of not less than 250 mm diameter or a coupling compliant with this Table; and (i) Where a remote offtake is installed, ensure the offtake is in a position that is: (i) Visible; (ii) Accessible to allow connection by firefighting equipment; (iii) At a working height of 450 – 600mm above ground level; and (iv) Protected from possible damage, including damage by vehicles.
D.	Signage for static water connections	The firefighting water point for a static water supply must be identified by a sign permanently fixed to the exterior of the assembly in a visible location. The sign must: (a) comply with water tank signage requirements within AS 2304:2019; or (b) comply with the Tasmania Fire Service Water Supply Signage Guideline published by the Tasmania Fire Service.
E.	Hardstand A hardstand area for fire appliances must be provided:	(a) No more than three metres from the firefighting water point, measured as a hose lay (including the minimum water level in dams, swimming pools and the like); (b) No closer than six metres from the building area to be protected; (c) With a minimum width of three metres constructed to the same standard as the carriageway; and (d) Connected to the property access by a carriageway equivalent to the standard of the property access.

6.3 Hazard management area.

A hazard management area will need to be established and maintained for the life of the development and is shown on the BHMP. Guidance for the establishment and maintenance of the hazard management area is given below and on the BHMP.

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

- Remove fallen limbs, sticks, leaf and bark litter;
- Maintaining grass at less than a 100mm height;
- Avoid or minimise the use of flammable mulches (especially against buildings);
- Thin out under-story vegetation to provide horizontal separation between fuels;
- Prune low-hanging tree branches (<2m from the ground) to provide vertical separation between fuel layers;
- Remove and or prune larger trees to maintain horizontal separation between canopies;
- Minimise the storage of flammable materials such as firewood;
- Maintaining vegetation clearance around vehicular access;
- Use low-flammability plant species for landscaping purposes where possible;
- Clear out any accumulated leaf and other debris from roof gutters and other debris accumulation points.

7.0 Compliance

Table 3. Compliance with the Directors Determination Requirements for Building in Bushfire-prone Areas, version 2.2, 6th February 2020.

Requirements	Compliance
4.1 Construction Requirements	Clause 4.1 requires buildings to be constructed in accordance with AS3959-2018 or NASH standard – Steel Framed Construction in Bushfire Areas consistent with the BAL determined for the site. The BHMP specifies construction to BAL-12.5 standards of AS3959-2018. If the proposed buildings are designed and constructed in accordance with BAL-12.5 construction standards the development will comply with clause 4.1.
4.2 Property Access	Clause 4.2 requires property access to be designed and constructed to comply with table 4.2 of the determination and is applicable from the public roadway to within (at minimum) 90 metres of the furthest part of the building/s and includes access to a hardstand for the firefighting water point. Design and construction requirements are specified within this report and are required for compliance on the BHMP. If the property access is designed and constructed in accordance with the requirements of section 6.1 of this report, the proposal will comply with clause 4.2.
4.3 Water Supply for Firefighting	Clause 4.3 requires that a new building constructed in a bushfire-prone area is provided with a dedicated firefighting water supply in accordance with tables 4.3A or 4.3B. Static water supplies consistent with table 4.3B have been specified in this report and are required for compliance on the BHMP. If the requirements of section 6.2 of this report are implemented the proposal will comply with clause 4.3.
4.4 Hazard Management Areas	Clause 4.4 requires that new buildings in bushfire-prone areas are provided with an HMA which is compliant with table 4.4. The HMA must have the minimum separation distances required for the BAL determined for the site and, have an HMA established which reduces fuels and other hazards so that fuels and other hazards do not significantly contribute to the bushfire attack. HMA's are shown on the BHMP and are specified to the minimum widths required to achieve BAL-12.5 for the sites. This report and the BHMP specify requirements for hazard management areas. If the HMA's are established in accordance with the BHMP the proposal will comply with clause 4.4.
4.5 Emergency Plan	The proposal is for the construction of a class 1a building and therefore in this circumstance Emergency Plans are not required for compliance.

8.0 Guidance

The defendable space (hazard management area) around a building is critical for providing occupants and/or fire fighters with safe access to the building in order that fire fighting activities may be under taken. The larger the defendable space, the safer it will be for those defending the structure. Some desirable characteristics of a hazard management area are:

- The area directly adjacent to the building has a significant amount of flammable material removed such that there is little to no material available to burn around the building;
- Includes non flammable areas such as paths, driveways, short cropped lawns;
- Establishment of orchards, vegetable gardens, dams or waste water effluent disposal areas on the fire prone side of the building;
- Creating wind breaks and radiation shields such as non combustible fences and low flammability hedges;
- It is not necessary to remove all vegetation from the defendable space, trees can provide protection from wind borne embers and radiant heat in some circumstances.

9.0 Further Information

For further information on preparing yourself and your property for bushfires visit the Tasmania Fire Service website at www.fire.tas.gov.au or phone 1800 000 699 for information on:

- Preparing a bushfire survival plan
- Preparing yourself and your home for a bushfire
- Guidelines for development in bushfire prone areas in Tasmania
- Fire resisting plants for the urban fringe and rural areas
- Using fire outdoors
- Fire permits
- Total fire bans
- Bushfires burning in Tasmania

10.0 References

Australian Building Codes Board, *National Construction Code, Building Code of Australia,* Australian Building Codes Board, Canberra.

Building Amendment (Bushfire-Prone Areas) Regulations 2016

Determination, Director of Building Control – Requirements for Building in Bushfire-Prone Areas (transitional), version 2.2 6th February 2020. Consumer, Building and Occupational Services, Department of Justice, Tasmania.

The Bushfire Planning Group 2005, *Guidelines for development in bushfire prone areas of Tasmania – Living with fire in Tasmania,* Tasmania Fire Service, Hobart.

Tasmania Fire Service 2013, *Building for Bushfire – Planning and Building in Bushfire-Prone Areas for Owners and Builders*.

Central Highlands Interim Planning Scheme 2015, Tasmanian Planning Commission 2015, Tasmanian Planning Commission, Hobart.

Standards Australia, AS3959-2018 Construction of buildings in bushfire-prone areas. Sydney, NSW., Australia.

11.0 Limitations Statement

This Bushfire Hazard Report has been prepared in accordance with the scope of services between Geo-Environmental Solutions Pty. Ltd. (GES) and the applicant named in section 2. To the best of GES's knowledge, the information presented herein represents the Client's requirements at the time of printing of the Report. However, the passage of time, manifestation of latent conditions or impacts of future events may result in findings differing from that described in this Report. In preparing this Report, GES has relied upon data, surveys, analyses, designs, plans and other information provided by the Client and other individuals and organisations referenced herein. Except as otherwise stated in this Report, GES has not verified the accuracy or completeness of such data, surveys, analyses, designs, plans and other information.

The scope of this study does not allow for the review of every possible bushfire hazard condition and does not provide a guarantee that no loss of property or life will occur as a result of bushfire. As stated in AS3959-2018 “It should be borne in mind that the measures contained in this Standard cannot guarantee that a building will survive a bushfire event on every occasion. This is substantially due to the degree of vegetation management, the unpredictable nature and behaviour of fire, and extreme weather conditions”. In addition, no responsibility is taken for any loss which is a result of actions contrary to AS3959-2018 or the Tasmanian Planning Commission Bushfire code.

This report does not purport to provide legal advice. Readers of the report should engage professional legal practitioners for this purpose as required. No responsibility is accepted for use of any part of this report in any other context or for any other purpose by third party.

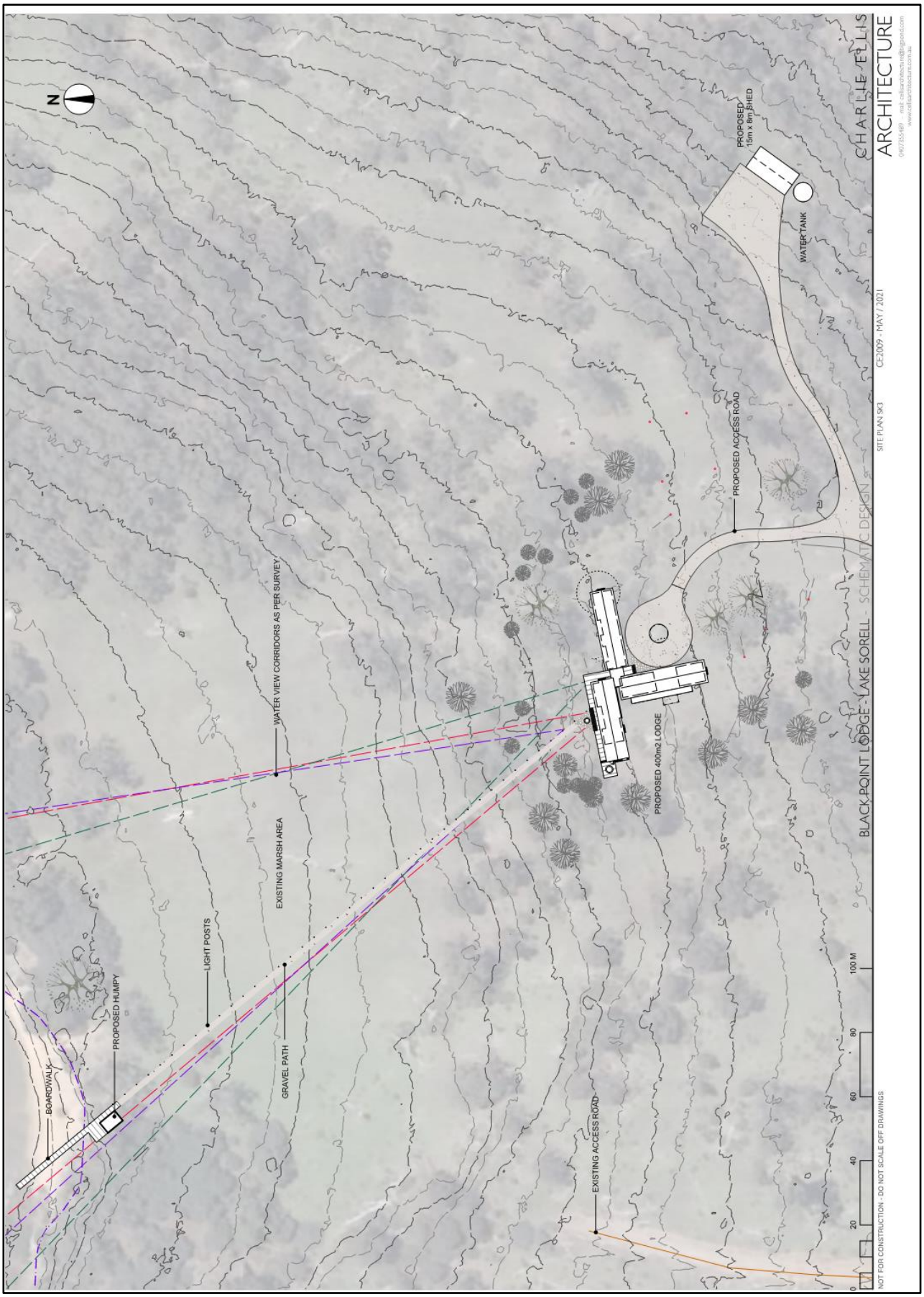
Appendix A – Site Photos

Figure 3. Northern azimuth from the site.

Figure 4. Eastern azimuth from the site.

Figure 5. Western azimuth from the site.

Appendix B - Site Plan



BUSHFIRE HAZARD MANAGEMENT PLAN

Bushfire Hazard Management Plan Lot 1 Tunbridge Tier Road Interlaken. May 2021. J2914v1.0 Central Highlands Interim Planning Scheme 2015

GES
GEO-ENVIRONMENTAL SOLUTIONS
29 Kirksway Place, Battery Point
T| 62231839 E| office@geosolutions.net.au

Design and Specification Requirements
4.2 Standards for Property Access
Property access length is greater than 30 metres; or access is required for a fire appliance to access a water connection point.

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

C) Property access length is 200 metres or greater.
The following design and construction requirements apply to property access:
(a) The requirements for B above; and
(b) Passing bays of 2 metres additional carriageway width and 20 metres length provided every 200 metres

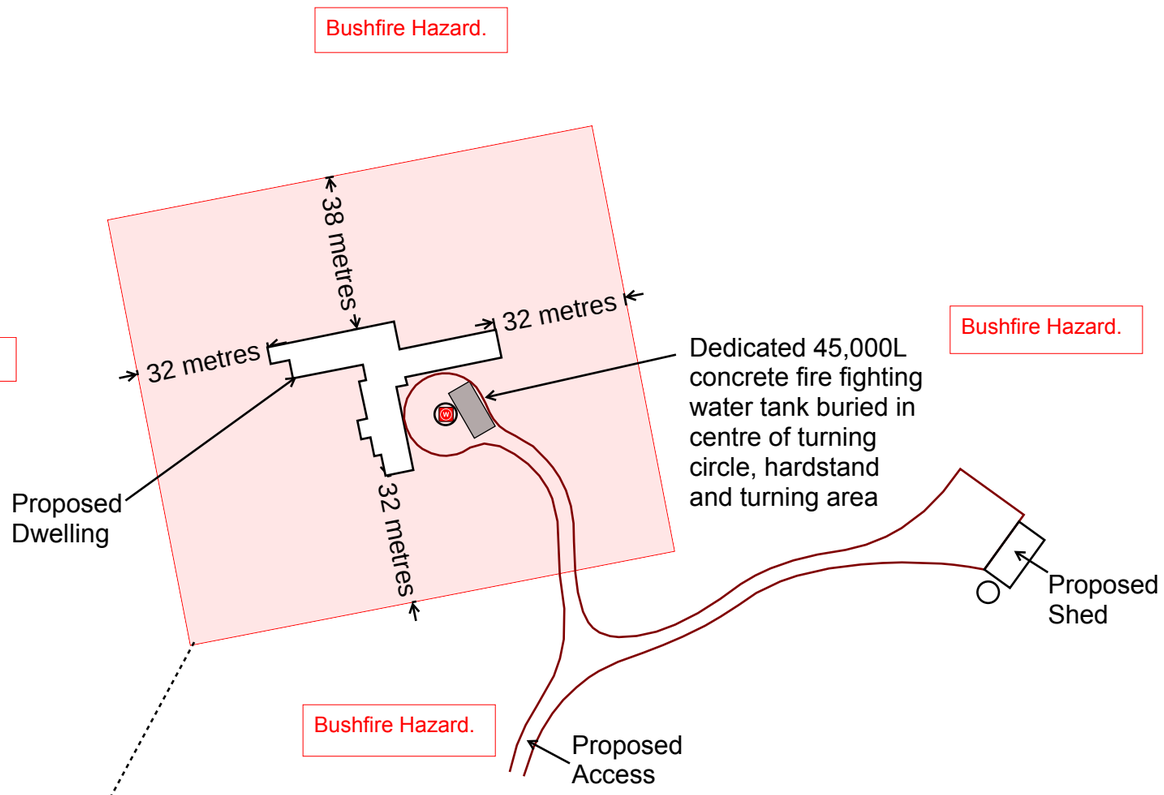
4.3B Static Water Supply for Fire fighting

Static water supplies and associated infrastructure for firefighting purposes will be provided in accordance with table 4.3B of the Determination, Director of Building Control – Requirements for Building in Bushfire-Prone Areas (transitional), version 2.2 6th February 2020

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 3959-2009, the tank may be constructed of any material provided that the lowest 400 mm of the tank exterior is protected by:
(i) metal;
(ii) non-combustible material; or
(iii) fibre-cement a minimum of 6 mm thickness.

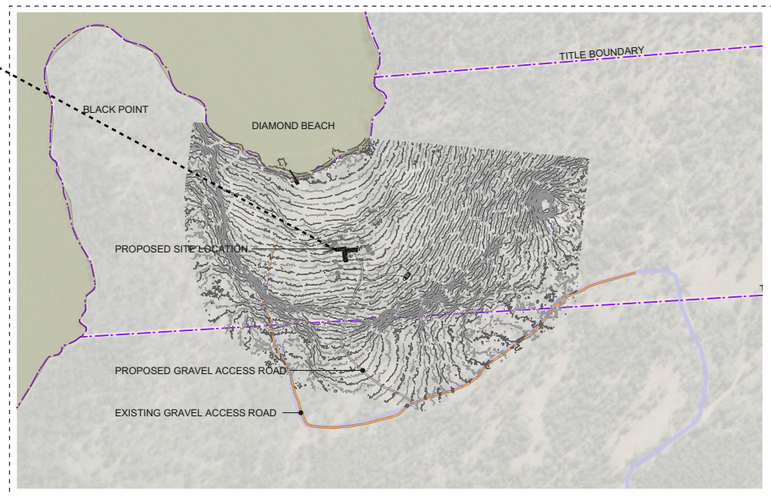
C) Fittings and pipework associated with a fire fighting water point for a static water supply must:
(a) Have a minimum nominal internal diameter of 50mm; (2) Be fitted with a valve with a minimum nominal internal diameter of 50mm;
(b) Be fitted with a valve with a minimum nominal internal diameter of 50mm;
(c) Be metal or lagged by non-combustible materials if above ground;
(d) Where buried, have a minimum depth of 300mm (compliant with AS/NZS 3500.1-2003 Clause 5.23);
(e) Provide a DIN or NEN standard forged Storz 65 mm 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 220 mm length);
(h) Ensure underground tanks have either an opening at the top of not less than 250 mm diameter or a coupling compliant with this Table; and
(i) Where a remote offtake is installed, ensure the offtake is in a position that is:
(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 by 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 the Tasmania Fire Service Water Supply Signage Guideline published by the Tasmania Fire Service
E) Hardstand
A hardstand area for fire appliances must be provided:
(a) No more than three metres from the fire fighting water point, measured as a hose lay (including the minimum
water level in dams, swimming pools and the like);
(b) No closer than six metres from the building area to be protected;
(c) With a minimum width of three metres constructed to the same standard as the carriageway; and
(d) Connected to the property access by a carriageway equivalent to the standard of the property access.

Hazard Management Area Requirements

A hazard management area is required to be established and maintained for the life of the building and is shown on this BHMP. Guidance for the establishment and maintenance of the hazard management area is also provided.



W Approximate location of water point

Property Access

Hazard Management Area

Building Specifications to BAL-12.5 of AS3959-2018

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

- Removing of fallen limbs, sticks, leaf and bark litter;
- Maintaining grass at less than a 100mm height;
- Removing pine bark and other flammable mulch (especially from against buildings);
- Thinning out under-story vegetation to provide horizontal separation between fuels;
- Pruning low-hanging tree branches (<2m from the ground) to provide (vertical separation between fuel layers;
- Pruning larger trees to maintain horizontal separation between canopies;
- Minimise the storage of flammable materials such as firewood;
- Maintaining vegetation clearance around vehicular access and water supply points;
- Use of low-flammability species for landscaping purposes where appropriate;
- Clearing out any accumulated leaf and other debris from roof gutters.

It is not necessary to remove all vegetation from the hazard management area, trees may provide protection from wind borne embers and radiant heat under some circumstances.

Certification No. J2914

Mark Van den Berg
Acc. No. BFP-108
Scope 1, 2, 3A, 3B, 3C.

Do not scale from these drawings. Dimensions to take precedence over scale.	Highlaurn Investments Pty Ltd 41 Arthur Street East Launceston TAS 7250	C.T.: 171405/3 PID: 9165650	Date: 20/05/2021	Bushfire Hazard Management Plan: Lot 1 Tunbridge Tier Road, Interlaken, 20th May 2021. J2914v1.0 Bushfire Hazard Report: Lot 1 Tunbridge Tier Road, Interlaken, 20th May 2021. J2914v1.0	Drawing Number: A01	Sheet 1 of 1 Prepared by: MvdB

TBA

CERTIFICATE OF QUALIFIED PERSON – ASSESSABLE ITEM

Section 321

To: Highlaurn Investments Pty Ltd *Owner /Agent*
41 Arthur Street *Address*
East Launceston TAS 7250 *Suburb/postcode*

Form **55**

Qualified person details:

Qualified person: Mark Van den Berg
Address: 29 Kirksway Place
Battery Point TAS 7004
Phone No: 03 6223 1839
Fax No:
Licence No: BFP - 108
Email address: mvandenberg@geosolutions.net.au

Qualifications and Insurance details: Accredited to report on bushfire hazards under Part IVA of the Fire Service Act.
BFP-108 scope 1, 2, 3a, 3b, 3c.
Sterling Insurance PI policy No. 17080170

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

Speciality area of expertise: Analysis of bushfire 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: Lot 1 Tunbridge Tier Road
Interlaken TAS 7030
Lot No: 3
Certificate of title No: 171405

The assessable item related to this certificate: New building work in a bushfire prone area.

(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: **X**

or

a building, temporary structure or plumbing installation: ☐

In issuing this certificate the following matters are relevant –

Documents:	Bushfire Hazard Report Lot 1 Tunbridge Tier Road. 20th May 2021. J2914v1.0 Bushfire Hazard Management Plan Lot 1 Tunbridge Tier Road. 20th May 2021. J2914v1.0 And Form 55
Relevant calculations:	Not Applicable.
References:	Determination, Director of Building Control Requirements for Building in Bushfire-Prone Areas (transitional), version 2.2 6th February 2020. Consumer, Building and Occupational Services, Department of Justice, Tasmania. Building Amendment (Bushfire-Prone Areas) Regulations 2014 Standards Australia 2018, Construction of buildings in bushfire prone areas, Standards Australia, Sydney.

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

The Bushfire Attack Level for the proposed lot is **BAL-12.5**. All specifications of the Bushfire hazard management plan and report to be implemented for compliance.

Scope and/or Limitations

Scope: This report was commissioned to identify the Bushfire Attack Level for the existing property. 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.

I certify the matters described in this certificate.

	Signed:	*Certificate No:*	*Date:*
Qualified person:		J2914	20/05/2021

GEO-ENVIRONMENTAL ASSESSMENT

Lot 1 Tunbridge Tier Road

Interlaken

April 2021

GEO-ENVIRONMENTAL SOLUTIONS

Geo-Environmental Solutions P/L 29 Kirksway Place, Battery Point 7004. Ph 6223 1839

Introduction

Client: Highlaurn Investments Pty Ltd
Date of inspection: 20/1/2021
Location: Lot 1 Tunbridge Tier Rd, Interlaken (CT:171405/3)
Land description: Approx. 260ha lot
Building type: Proposed dwelling
Investigation: GeoProbe 540UD
Inspected by: G. McDonald

Background information

Map: Mineral Resources Tasmania, 1:250 000
Rock type: Jurassic dolerite
Soil depth: 0.60 – 3m+
Planning overlays: None identified within development area
Local meteorology: Annual rainfall approx. 700mm
Local services: Tank water with onsite wastewater

Site conditions

Slope and aspect: Approx 5% slope to the North West
Site drainage: Moderately well drained
Vegetation: Mixed native species
Weather conditions: Overcast, approx. 10mm rainfall received in preceding 7 days.
Ground surface: Slightly moist surface conditions

Investigation

A number of excavations were completed to identify the distribution of, and variation in soil materials on the site. A representative excavation at the approximate location indicated in the site plan was chosen for testing and classification according to AS2870-2011 and AS1547-2012 (see profile summary).

Profile summary

Hole 1 Depth (m)	Hole 2 Depth (m)	Hole 3 Depth (m)	Horizon	Description
0.0 – 0.20	0.0 – 0.30	0.0 – 0.40	A1	Dark Greyish **Silty SAND (SM)**, single grain, slightly moist medium dense consistency, gradual boundary to
0.20 – 0.70			B21	Pale Brown **CLAY (CH)**, moderate polyhedral structure, slightly moist, firm consistency, high plasticity gravels increasing with depth, gradual boundary to
0.70 – 3.0+			B22	White and Pale Yellow **CLAY (CH)**, moderate polyhedral structure slightly moist stiff consistency, high plasticity, appro 5% gravels, lower boundary undefined
	0.30 – 0.60	0.40 – 1.2+	B21	Brown **CLAY (CL)**, moderate polyhedral structure, slightly moist stiff consistency, medium plasticity, refusal on assumed boulder

Soil profile notes

Soils on the site have developed from Jurassic dolerite sediment and consist of gravelly profiles dominated by clayey subsoils.

Site Classification

According to AS2870-2011 for construction the natural soil is classified as **Class H-1**, and design and construction must be made in accordance with this classification.

Wind Classification

The AS 4055-2012 *Wind load for Housing* classification of the site is:

Region: **A**

Terrain category: **TC2**

Shielding Classification: **NS**

Topographic Classification: **T1**

Wind Classification: **N3**

Design Wind Gust Speed ($V_{h,u}$) **50 m/sec**

Wastewater Classification & Recommendations

According to AS1547-2012 (on-site waste-water management) the natural soil is classified as **LIGHT CLAY (category 5)**. It is proposed to accommodate onsite wastewater using a dual-purpose septic tank with onsite absorption. A Design Loading Rate (DLR) of 7L/m^2/day has therefore been assigned for primary treated effluent.

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).

Using the DLR of 7L/m^2/day, an absorption area of at least 90m^2 will be required. This can be accommodated by three 20m x 1.5m x 0.6m absorption trenches connected to a dual-purpose septic tank (min 3000L) via a three-way splitter box to ensure equal distribution.

A cut-off drain will be required upslope of the application area to divert any surface water flows. A 100% reserve area must also be set aside and kept free from development for any future wastewater requirements. There is sufficient space available onsite to accommodate the required reserve due to the large property size (>250ha). Therefore, a formal reserve area has not been assigned.

The following setback distances are required to comply with the Building Act 2016:

Buildings:	6m
Boundaries:	40m
Downslope surface water:	100m

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

Construction recommendations

The natural soil is classified as **Class H-1**, which is a highly reactive soil. All earthworks on site must comply with AS 3798-2007. Consideration is required to drainage and sediment control on site during and after construction.

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
Certified Professional Soil Scientist

GES P/L

Land suitability and system sizing for on-site wastewater management

Trench 3.0 (Australian Institute of Environmental Health)

Assessment Report

Site assessment for on-site waste water disposal

Assessment for	Highlaun Investments Pty Ltd	Assess. Date	3-May-21
		Ref. No.	
Assessed site(s)	Lot 1 Tunbridge Tier Rd Interlaken	Site(s) inspected	20-Jan-21
Local authority	Central Highlands	Assessed by	John Paul Cumming

This report summarises wastewater volumes, climatic inputs for the site, soil characteristics and sustem 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

'astewater 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 = 5.4

'otal phosphorus (kg/year) generated by wastewater = 2.3

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)	41	37	37	43	35	32	45	47	43	47	44	54
Adopted rainfall (R, mm)	41	37	37	43	35	32	45	47	43	47	44	54
Retained rain (Rr, mm)	37	33	33	39	32	29	41	42	39	42	40	49
Max. daily temp. (deg. C)												
Evapotrans (ET, mm)	130	110	91	63	42	29	32	42	63	84	105	126
Evapotr. less rain (mm)	**93**	**77**	**58**	**24**	**11**	**1**	**-9**	**0**	**24**	**42**	**65**	**77**

Annual evapotranspiration less retained rain (mm) = 463

Soil characterisitics

Texture = Light clay Category = 5 Thick. (m) = 1.2

Adopted permeability (m/day) = 0.24 Adopted LTAR (L/sq m/day) = 7 Min depth (m) to water = 5

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 dual purpose septic tank(s)
The preferred method of on-site secondary treatment:	In-ground
The preferred type of in-ground secondary treatment:	Trench(es)
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) =	60
Width (m) =	1.5
Depth (m) =	0.6
Total disposal area (sq m) required =	90
comprising a Primary Area (sq m) of:	90
and a Secondary (backup) Area (sq m) of:	

Sufficient area is available on site

To enter comments, click on the line below 'Comments'. (This yellow-shaded box and the buttons on this page will not be printed.)

Comments

The calculated DLR for the category 5 soil present is 7L/sq m/day. An absorption area of at least 90sq m will be required. Therefore the system should have the capacity to cope with predicted climatic and loading events.

GES P/L

Land suitability and system sizing for on-site wastewater management

Trench 3.0 (Australian Institute of Environmental Health)

Site Capability Report

Site assessment for on-site waste water disposal

Assessment for	Highlaun Investments Pty Ltd	Assess. Date	3-May-21
		Ref. No.	
Assessed site(s)	Lot 1 Tunbridge Tier Rd Interlaken	Site(s) inspected	20-Jan-21
Local authority	Central Highlands	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 Trench	Limitation Amended	Remarks
	Expected design area	sq m	5,000	V. high	Very low		
	Density of disposal systems	/sq km	1	Mod.	Very low		
	Slope angle	degrees	3	High	Very low		
	Slope form	Straight simple		High	Low		
	Surface drainage	Mod. good		High	Low		
	Flood potential	Site floods <1:100 yrs		High	Very low		
	Heavy rain events	Infrequent		High	Moderate		
	Aspect (Southern hemi.)	Faces NE or NW		V. high	Low		
	Frequency of strong winds	Common		High	Low		
	Wastewater volume	L/day	600	High	Moderate		
	SAR of septic tank effluent		1.4	High	Low		
	SAR of sullage		2.5	High	Moderate		
	Soil thickness	m	1.2	V. high	Very low		
	Depth to bedrock	m	1.2	V. high	Moderate		
	Surface rock outcrop	%	0	V. high	Very low		
	Cobbles in soil	%	0	V. high	Very low		
	Soil pH		5.5	High	Low		
	Soil bulk density	gm/cub. cm	1.5	High	Low		
	Soil dispersion	Emerson No.	8	V. high	Very low		
	Adopted permeability	m/day	0.24	Mod.	Very low		
	Long Term Accept. Rate	L/day/sq m	7	High	Moderate		

To enter comments, click on the line below 'Comments' . (This yellow-shaded box and the buttons on this page will not be printed.)

Comments

The site has the capability to accept onsitre wastewater.

GES P/L

Land suitability and system sizing for on-site wastewater management

Trench 3.0 (Australian Institute of Environmental Health)

Environmental Sensitivity Report

Site assessment for on-site waste water disposal

Assessment for	Highlaun Investments Pty Ltd	Assess. Date	3-May-21
		Ref. No.	
Assessed site(s)	Lot 1 Tunbridge Tier Rd Interlaken	Site(s) inspected	20-Jan-21
Local authority	Central Highlands	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 Trench	Limitation Amended	Remarks
	Cation exchange capacity	mmol/100g	75	High	Moderate		
	Phos. adsorp. capacity	kg/cub m	0.6	High	Moderate		
	Annual rainfall excess	mm	-463	High	Very low		
	Min. depth to water table	m	5	High	Very low		
	Annual nutrient load	kg	7.7	High	Low		
	G'water environ. value	Agric non-sensit		V. high	Low		
	Min. separation dist. required	m	2	High	Very low		
	Risk to adjacent bores	Very low		V. high	Very low		
	Surf. water env. value	Agric non-sensit		V. high	Low		
	Dist. to nearest surface water	m	200	V. high	Moderate		
	Dist. to nearest other feature	m	200	V. high	Very low		
	Risk of slope instability	Very low		V. high	Very low		
	Distance to landslip	m	200	V. high	Low		

To enter comments, click on the line below 'Comments'. (This yellow-shaded box and the buttons on this page will not be printed.)

Comments

Demonstration of wastewater system compliance to *Building Act 2016 Guidelines for On-site Wastewater Disposal*

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	Complies with A1 (a) Land application area will be located with minimum separation distance to proposed building of 6m.
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.	Complies with A2 (a) Land application area located > 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.	Complies with A3 (a) Land application area located no less than 40m from downslope 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	Complies 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	Complies with A5 (a) 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.	Complies with P6 Vertical separation distance of 0.6m is consistent with AS1547 Appendix R
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	Complies

GES
GEO-ENVIRONMENTAL
SOLUTIONS

AS1547:2012 – Loading Certificate – Septic System Design

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

Site Address: Lot 1 Tunbridge Tier Rd, Interlaken

System Capacity: 5 people @ 100L/person/day

Summary of Design Criteria

DLR: 7L/m^2/day.

Absorption area: 90m^2

Reserve area location /use: Not assigned – more than 100% available

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 capacity of system and site area (provided loading changes within 25% of design)

Overloading consequences: Continued overloading may cause hydraulic failure of the absorption area and require upgrading/extension of the area. Risk considered acceptable due to visible signs of overloading and owner monitoring.

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. Risk considered acceptable.

Lack of maintenance / monitoring consequences: Issues of underloading/overloading and condition of the absorption area require monitoring and maintenance, if not completed system failure may result in unacceptable health and environmental risks. Septic tank de-sludging must also be monitored to prevent excessive sludge and scum accumulation. Monitoring and regulation by the property owner required to ensure compliance.

Other operational considerations: Owners/occupiers must be aware of the operational requirements and limitations of the system, including the following; the absorption area must not be subject to traffic by vehicles or heavy stock and should be fenced if required. The absorption area must be kept with adequate grass cover to assist in evapotranspiration of treated effluent in the absorption trenches. The septic tank must be desludged at least every 3 years, and any other infrastructure such as septic tank outlet filters must also be cleaned regularly (approx. every 6 months depending upon usage). Foreign materials such as rubbish and solid waste must be kept out of the system.

CERTIFICATE OF QUALIFIED PERSON – ASSESSABLE ITEM

Section 321

Form **55**

To: Highlaurn Investments Pty Ltd *Owner /Agent*
41 Arthur Street *Address*
East Launceston 7250 *Suburb/postcode*

Qualified person details:

Qualified person: John-Paul Cumming
Address: 29 Kirksway Place
Battery Point 7004
Phone No: 03 6223 1839
Fax No:
Licence No: AO999
Email address: jcumming@geosolutions.net.au

Qualifications and Insurance details: Certified Professional Soil Scientist (CPSS stage 2)
(description from Column 3 of the Director's Determination - Certificates by Qualified Persons for Assessable Items

Speciality area of expertise: AS2870-2011 Foundation Classification
(description from Column 4 of the Director's Determination - Certificates by Qualified Persons for Assessable Items)

Details of work:

Address: Lot 1 Tunbridge Tier Road
Interlaken 7030
Lot No:
Certificate of title No: 171405/3

The assessable item related to this certificate: Classification of foundation Conditions according to AS2870-2011

(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: Foundation Classification
(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.

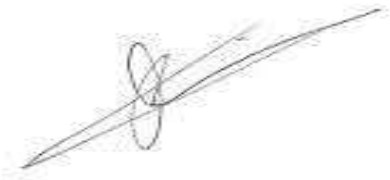
Scope and/or Limitations

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: J2914

Date: 03/05/2021

CERTIFICATE OF THE RESPONSIBLE DESIGNER

Section 94
Section 106
Section 129
Section 155

Form **35**

To: Highlaurn Investments Pty Ltd *Owner name*
41 Arthur Street *Address*
East Launceston 7250 *Suburb/postcode*

Designer details:

Name: John-Paul Cumming
Category: Bld. Srvcs. Dsgnr. - Hydraulic
Business name: Geo-Environmental Solutions
Phone No: 03 6223 1839
Business address: 29 Kirksway Place
Battery Point 7004
Fax No: N/A
Licence No: CC774A
Email address: office@geosolutions.net.au

Details of the proposed work:

Owner/Applicant Highlaurn Investments Pty Ltd
Designer's project reference No. J2914
Address: Lot 1 Tunbridge Tier Road
Lot No: 171405/3
Interlaken 7030

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:

Dual-purpose septic tank with onsite absorption

Design documents provided:

The following documents are provided with this Certificate –

Document description:

Drawing numbers:	Prepared by: Geo-Environmental Solutions	Date: May-21
Schedules:	Prepared by:	Date:
Specifications:	Prepared by: Geo-Environmental Solutions	Date: May-21
Computations:	Prepared by:	Date:
Performance solution proposals:	Prepared by:	Date:
Test reports:	Prepared by: Geo-Environmental Solutions	Date: May-21

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:

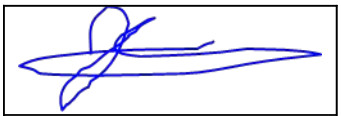
Geo-Environmental Assessment - Lot 1 Tunbridge Tier Rd, Interlaken (Dogs Head) - May-21
Geo-Environmental Assessment - Lot 1 Tunbridge Tier Rd, Interlaken (Dogs Head) - May-21

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 *Building Act 2016* and sufficient detail for the builder or plumber to carry out the work in accordance with the documents and the Act;

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

	Name: (print)	*Signed*	*Date*
Designer:	John-Paul Cumming		03/05/2021
Licence No:	CC774A		

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:

- [x] The works will not increase the demand for water supplied by TasWater
- [x] 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
- [x] The works will not require a new connection, or a modification to an existing connection, to be made to TasWater's infrastructure
- [x] The works will not damage or interfere with TasWater's works
- [x] The works will not adversely affect TasWater's operations
- [x] The work are not within 2m of TasWater's infrastructure and are outside any TasWater easement
- [x] I have checked the LISTMap to confirm the location of TasWater infrastructure
- [x] 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

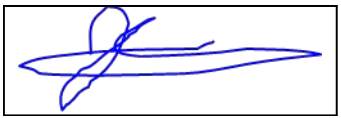
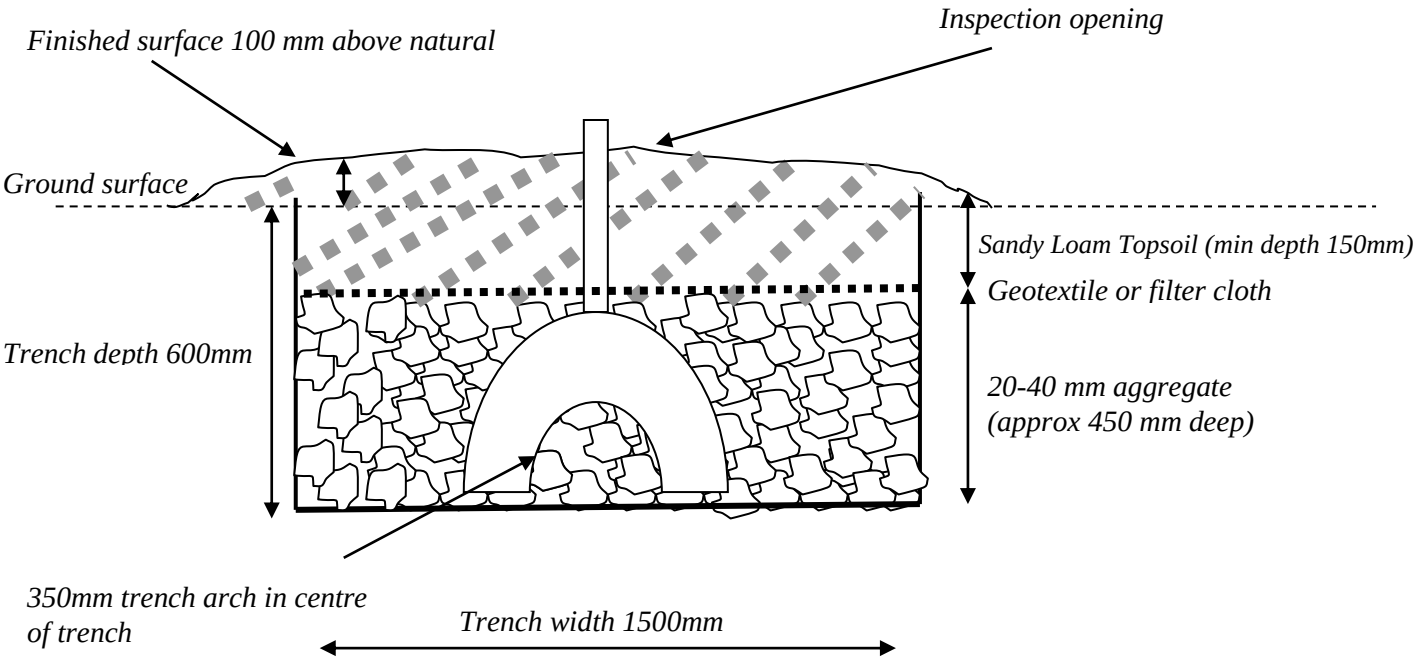
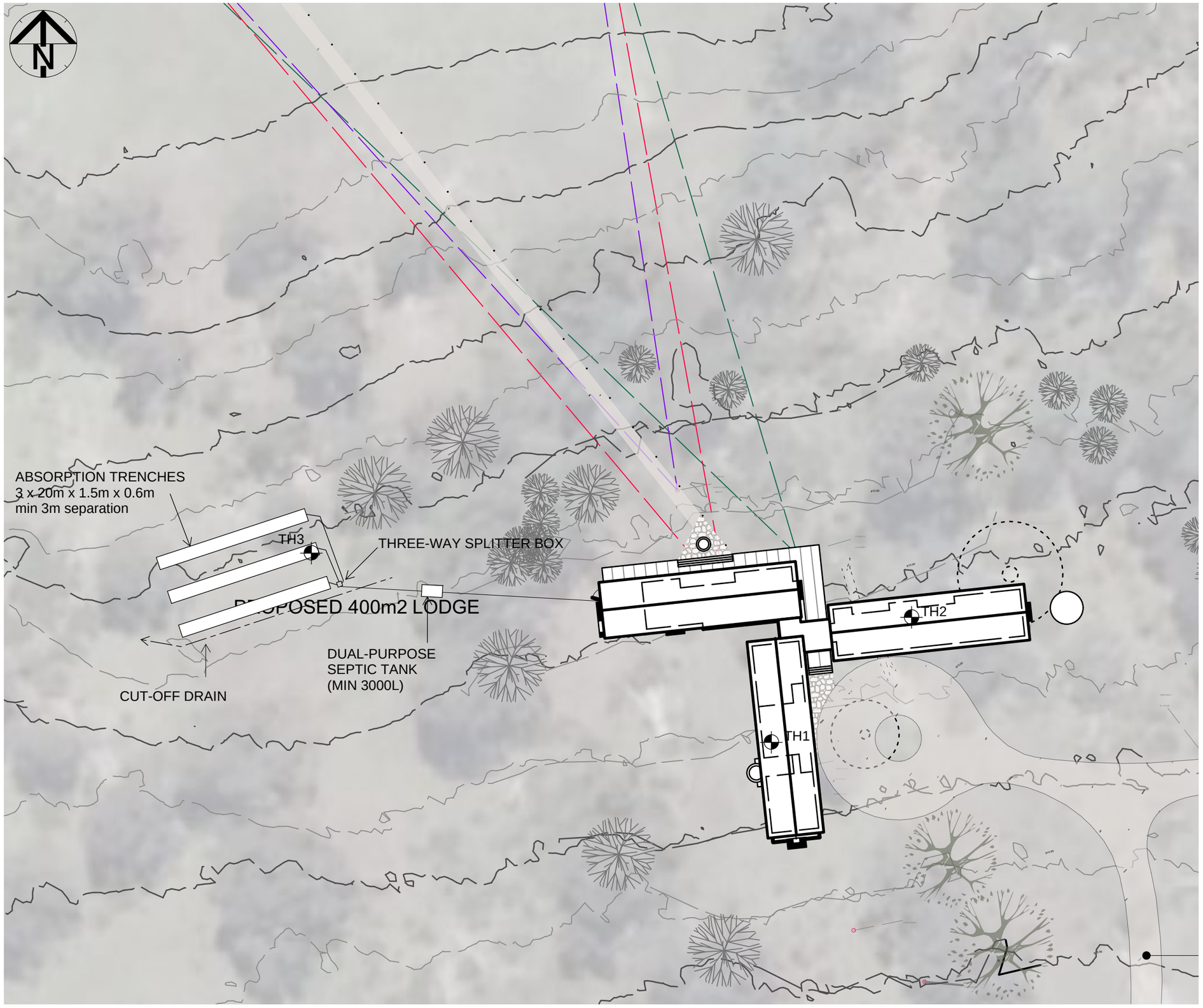
	Name: (print)	*Signed*	*Date*
Designer:	John-Paul Cumming		03/05/2021

Figure 1 –Absorption Trench Design



Design notes:

1. Absorption trench dimensions of up to 20m long by 0.60m deep by 1.50 wide.
2. Base of trenches to be excavated level and smearing and compaction avoided.
3. 410mm arch should be placed in centre of trench **or** two rows slotted 100mm PVC pipe @ 700mm centres and covered with aggregate (PVC in top 100mm of aggregate).
4. Geotextile or filter cloth to be placed over the distribution arch/PVC pipes to prevent clogging of the pipes and aggregate – in sand (category 1 soils) the sides of the trench over the aggregate should also be covered.
5. Construction on slopes up to 20% to allow trench depth range 650mm upslope edge to 450mm on down slope edge.
6. On slopes over 10% the sandy loam cover should be 150mm above natural with a downslope batter no less than 500mm in length to avoid surface water accumulation (up slope ag drain also recommended to divert surface water flows).
7. All works on site to comply with AS3500 and Tasmanian Plumbing code.



GES
GEO-ENVIRONMENTAL
SOLUTIONS
29 Kirksway Place, Battery Point
T| 62231839 E| office@geosolutions.net.au

Wastewater system:

Dual-purpose septic tank (min 3000L)

Cut-off drain
Three-way splitter box

Absorption Trenches
3 x 20m x 1.5m x 0.6m

Min 3m separation

Min 6m from buildings
Min 40m from boundaries
Min 100m from downslope surface water

Refer to GES report

Dr. John Paul Cumming
Building Services Designer-
Hydraulic
CCC774A

3/5/2021

Do not scale from these drawings. Dimensions to take precedence over scale.	Highlaurn Investments Pty Ltd Lot 1 Tunbridge Tier Rd INTERLAKEN 7030	C.T.: 141405/3	Date: 3/5/2021	On-Site Wastewater Management Plan	1:500 @ A3	Sheet 1 of 1 Drawn By: SR

BOARDWALK

PROPOSED HUMPY

LIGHT POSTS

WATER VIEW CORRIDORS AS PER SURVEY

GRAVEL PATH

DOWNSLOPE SURFACE
WATER APPROX 200m

EXISTING ACCESS ROAD

PROPOSED 400m2 LODGE

PROPOSED 15m x 7m SHED

PROPOSED ACCESS ROAD

N

Wastewater system:

Dual-purpose septic tank (min 3000L)

Cut-off drain
Three-way splitter box

Absorption Trenches
3 x 20m x 1.5m x 0.6m

Min 3m separation

Min 6m from buildings
Min 40m from boundaries
Min 100m from downslope surface water

Refer to GES report

Dr. John Paul Cumming
Building Services Designer-
Hydraulic
CCC774A

3/5/2021

GES
GEO-ENVIRONMENTAL
SOLUTIONS
29 Kirksway Place Battery Point
T| 62231839 E| office@geosolutions.net.au

0 20 40 60 80 100 M

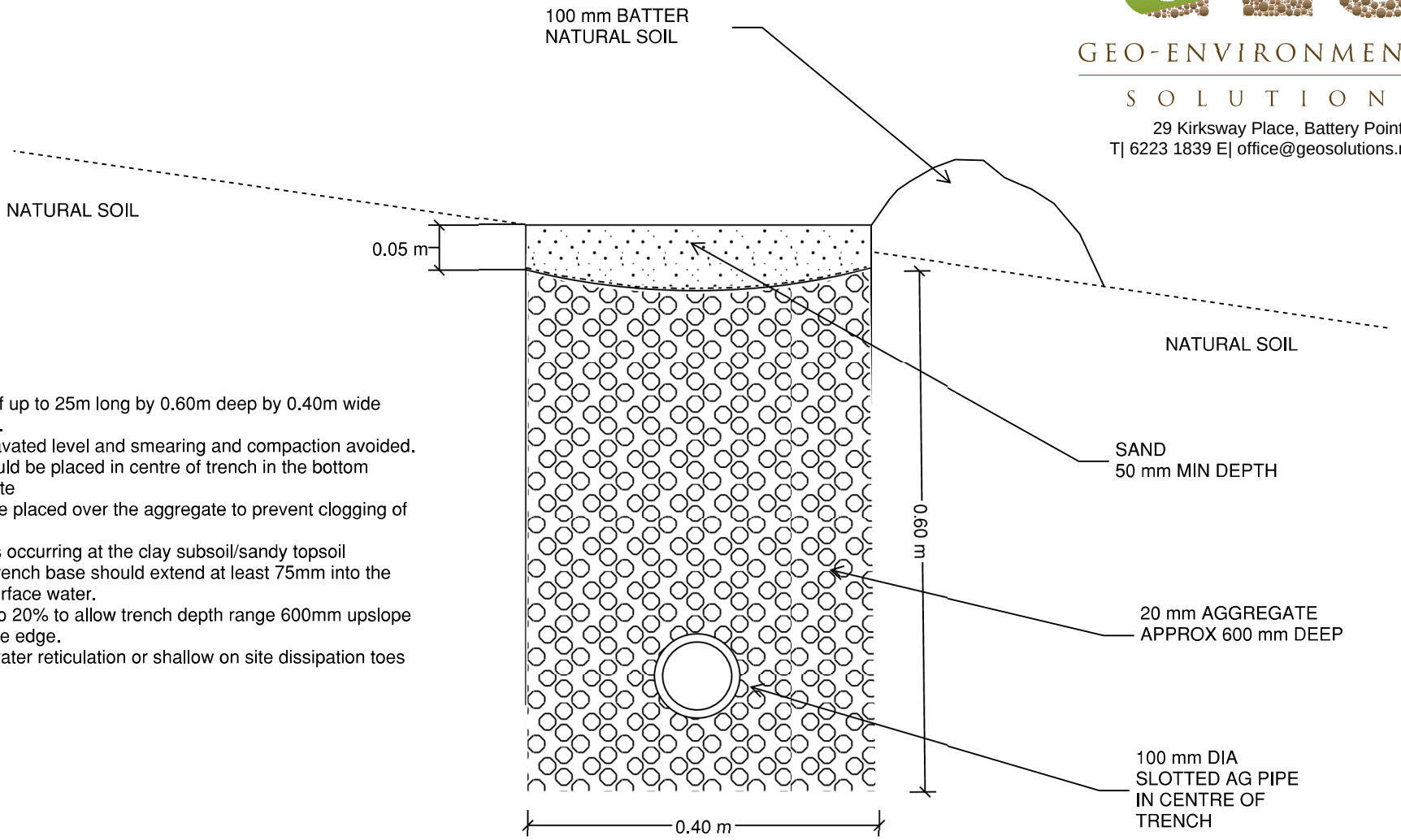
NOT FOR CONSTRUCTION - DO NOT SCALE OFF DRAWINGS

BLACK POINT LODGE - LAKE SORELL - SCHEMATIC DESIGN

SITE PLAN SK1 CE2009 - APRIL / 2021

CHARLIE ELLIS
ARCHITECTURE
0407355489 - mail: cellisarchitecture@bigpond.com
www.cellisarchitecture.com.au

GEO-ENVIRONMENTAL
SOLUTIONS
29 Kirksway Place, Battery Point
T| 6223 1839 E| office@geosolutions.net.au



Design notes:

1.Cut-off trench dimensions of up to 25m long by 0.60m deep by 0.40m wide (depths and widths minimum).
2.Base of trenches to be excavated level and smearing and compaction avoided.
3.100mm slotted ag-pipe should be placed in centre of trench in the bottom 100mm of the 20mm aggregate
4.Geotextile or filter cloth to be placed over the aggregate to prevent clogging of the pipes and aggregate
5.If shallow subsurface flow is occurring at the clay subsoil/sandy topsoil boundary (duplex soils), the trench base should extend at least 75mm into the subsoil clay to capture sub-surface water.
6.Construction on slopes up to 20% to allow trench depth range 600mm upslope edge to 400mm on down slope edge.
7.Trench discharge to stormwater reticulation or shallow on site dissipation toes across the contour.

Do not scale from these drawings. Dimensions to take precedence over scale.	Geo-Environmental Solutions		Date: May 2019	Cut-Off Drain Detail	Sheet 1 of 1