32-34 Georges Bay Esplanade
St Helens Tasmania 7216
T: 03 6376 7900 | ABN 96 017 131 248

Break O'Day COUNCIL

Development Applications

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

DA Number	DA 2025 / 00155
Applicant	J Binns
Proposal	Residential - Alterations to Existing Dwelling plus Construction of Detached Dwelling Extension and Garage/Workshop
Location	77 St Helens Point Road, Stieglitz

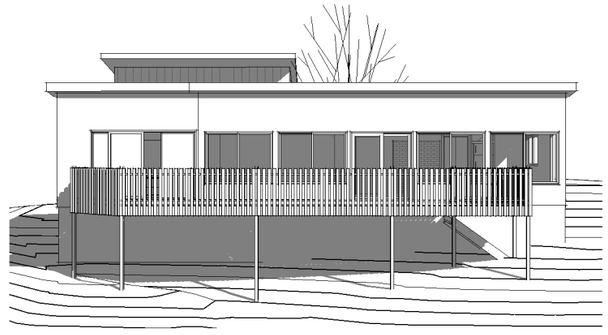
Plans and documents can be inspected at the Council Office by appointment, 32 – 34 Georges Bay Esplanade, St Helens during normal office hours or online at www.bodc.tas.gov.au.

Representations must be submitted in writing to the General Manager, Break O'Day Council, 32 -34 Georges Bay Esplanade, St Helens 7216 or emailed to admin@bodc.tas.gov.au, and referenced with the Application Number in accordance with section 57(5) of the abovementioned Act during the fourteen (14) day advertised period commencing on Saturday 15th November 2025 **until 5pm Friday 28th November 2025.**

John Brown
GENERAL MANAGER

proposed dwelling alterations + outbuilding with unit as detached dwelling extension

p. wilkes
77 st helens point road stiegliz tasmania 7216

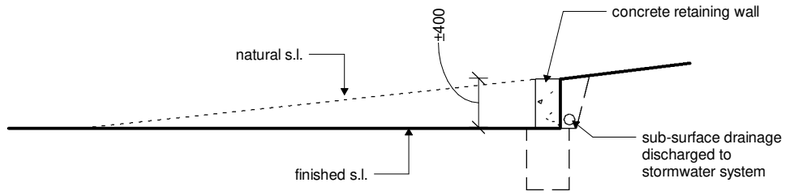


planning application - amended 22.10.25

Building Areas

proposed garage	108.84
proposed unit	59.18
reconstructed carport	36.00
reconstructed bedroom	25.17
proposed deck	12.40
	241.59

jennifer binns
www.jenniferbinnsdesign.com.au
0439 765 452 : mail@jenniferbinnsdesign.com.au
52 cecilia street st helens tasmania 7216



2 retaining wall detail
1 : 50

1 site plan
1 : 300

REV:	DESCRIPTION:	DATE:

PROJECT:

outbuilding + dwelling alts + detached extension

p. wilkes

77 st helens point road
st helens tasmania 7216

DRAWING TITLE:

site plan

DRAWING NO:	DRAWN BY: JB
a03	DATE: 22.10.25
SCALE: As indicated	PROJECT: 0922WI

jennifer binns
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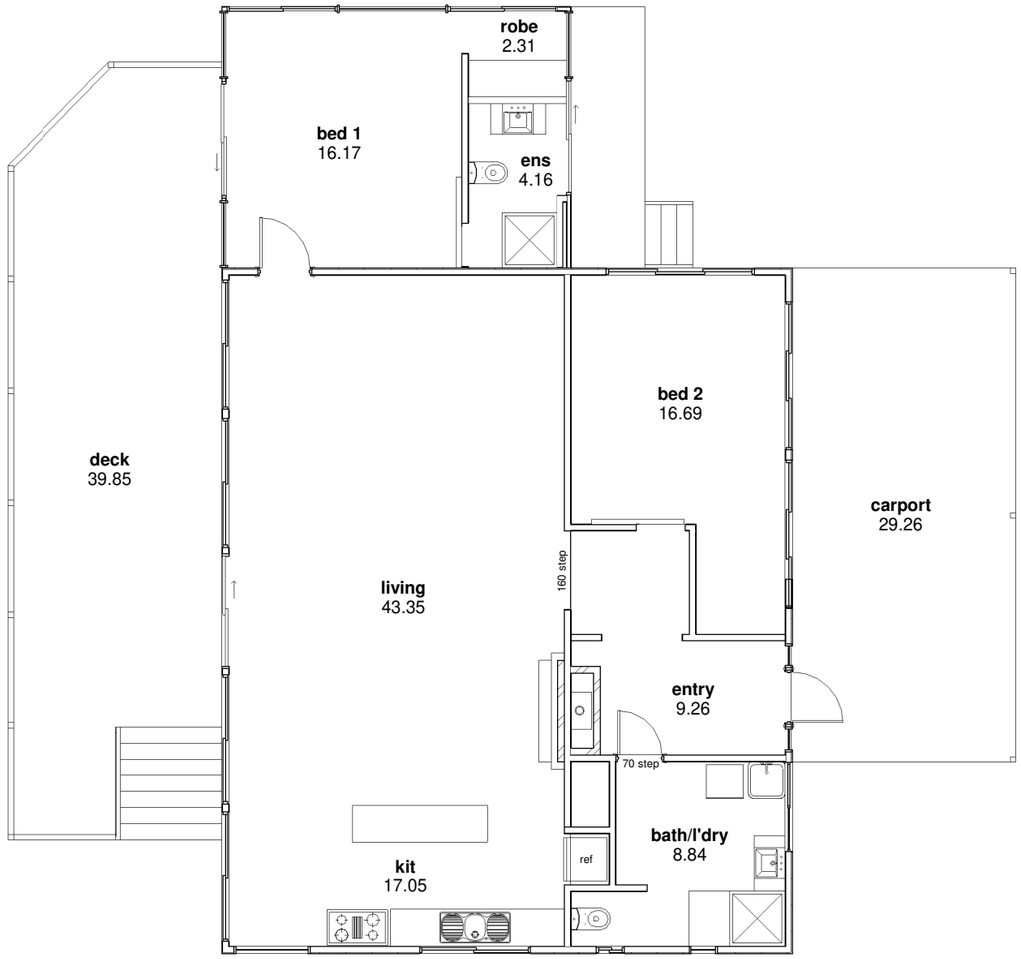
52 cecilia street st helens tasmania 7216
BUILDING DESIGNERS ASSOCIATION OF AUSTRALIA
ACCREDITATION NO: CC 1269L



1 existing dwelling floor plan
1 : 100

n

REV:	DESCRIPTION:	DATE:

PROJECT:
outbuilding + dwelling alts + detached extension
p. wilkes
77 st helens point road
st helens tasmania 7216

DRAWING TITLE:
existing dwelling floor plan

DRAWING NO:	DRAWN BY: JB
a04	DATE: 22.10.25
SCALE: 1 : 100	PROJECT: 0922WI

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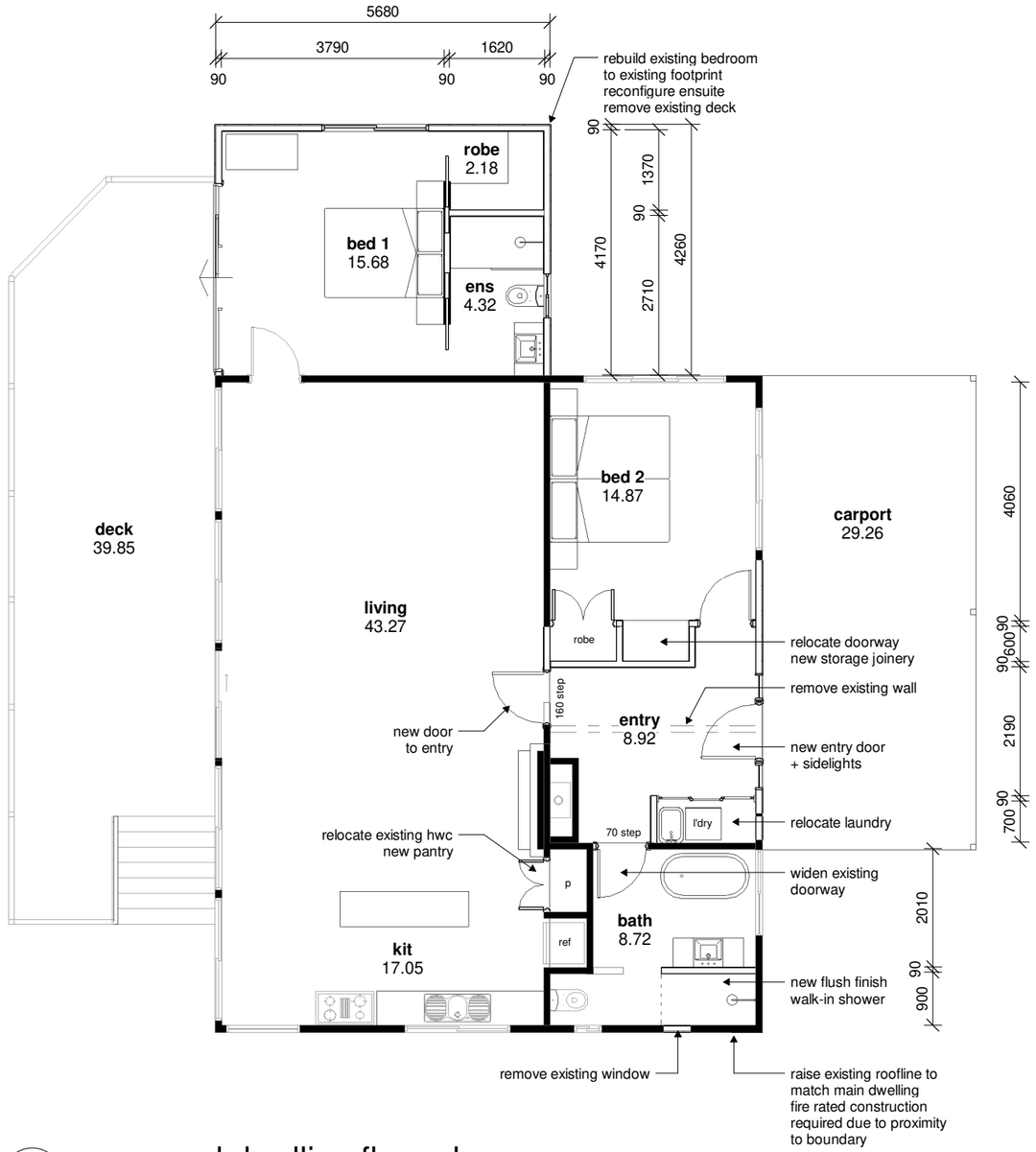
ACCREDITATION NO: CC 1269L



1 proposed dwelling floor plan
1 : 100

n

REV:	DESCRIPTION:	DATE:

PROJECT:

outbuilding + dwelling alts + detached extension

p. wilkes

77 st helens point road
st helens tasmania 7216

DRAWING TITLE:

proposed dwelling floor plan

DRAWING NO:	DRAWN BY: JB
a05	DATE: 22.10.25
SCALE: 1 : 100	PROJECT: 0922WI

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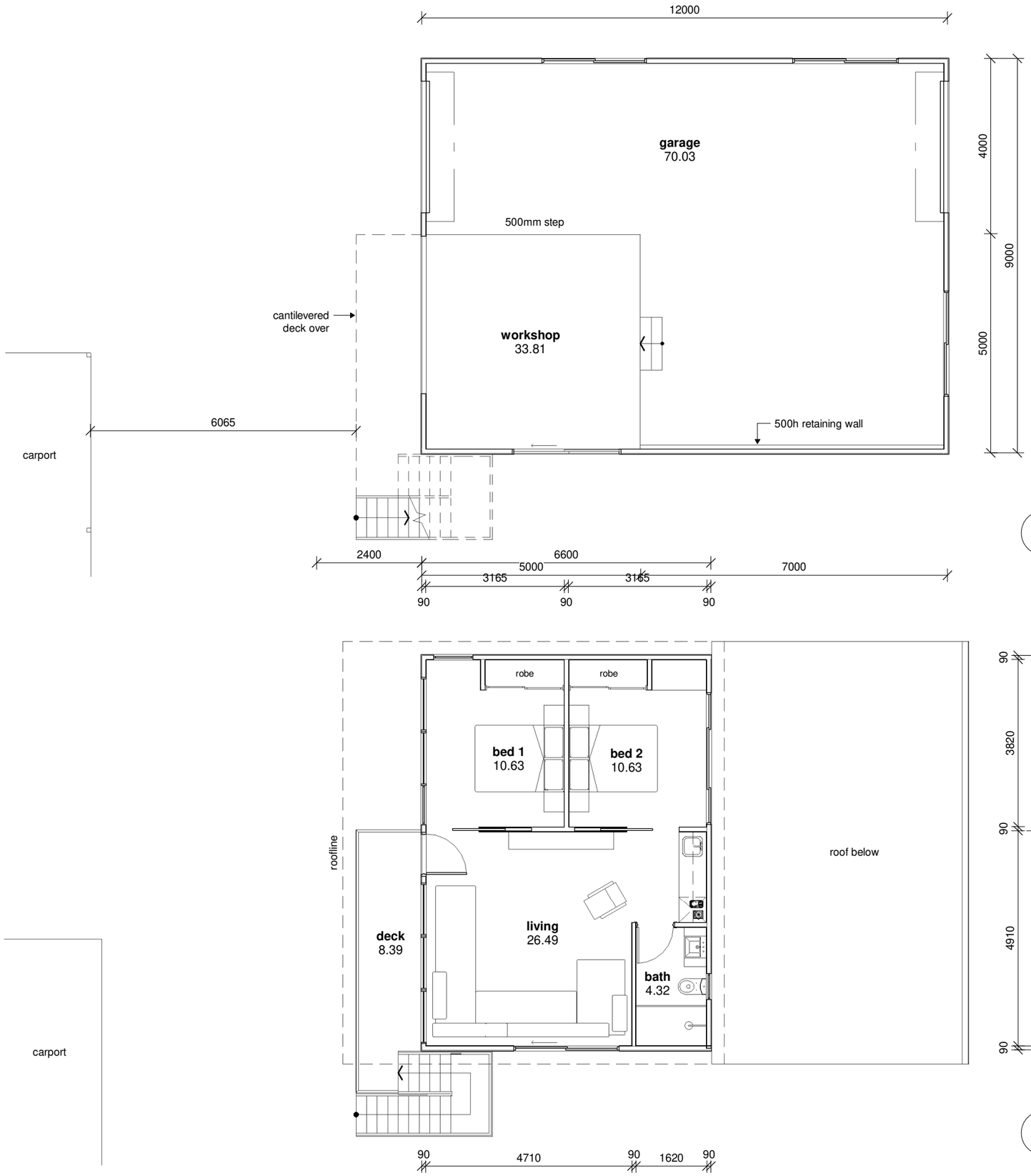
ACCREDITATION NO: CC 1269L



1 outbuilding ground floor plan
1 : 100

2 outbuilding first floor plan
1 : 100

REV:	DESCRIPTION:	DATE:

PROJECT:

outbuilding + dwelling alts + detached extension

p. wilkes

77 st helens point road
st helens tasmania 7216

DRAWING TITLE:

proposed outbuilding

DRAWING NO:	DRAWN BY: JB
a06	DATE: 22.10.25
SCALE: 1 : 100	PROJECT: 0922WI

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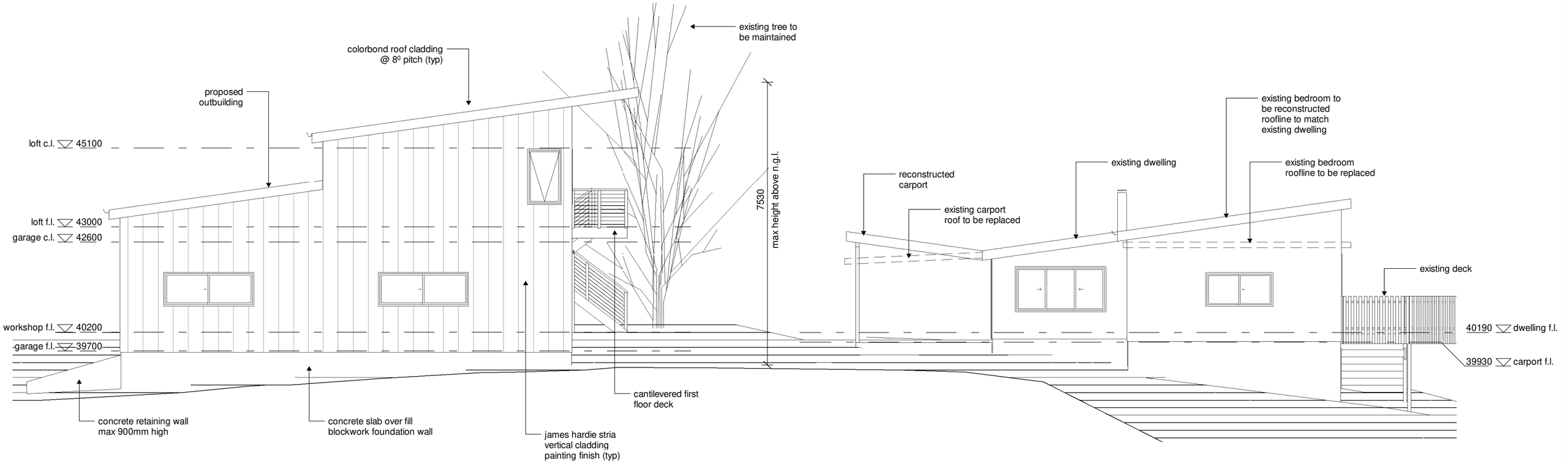
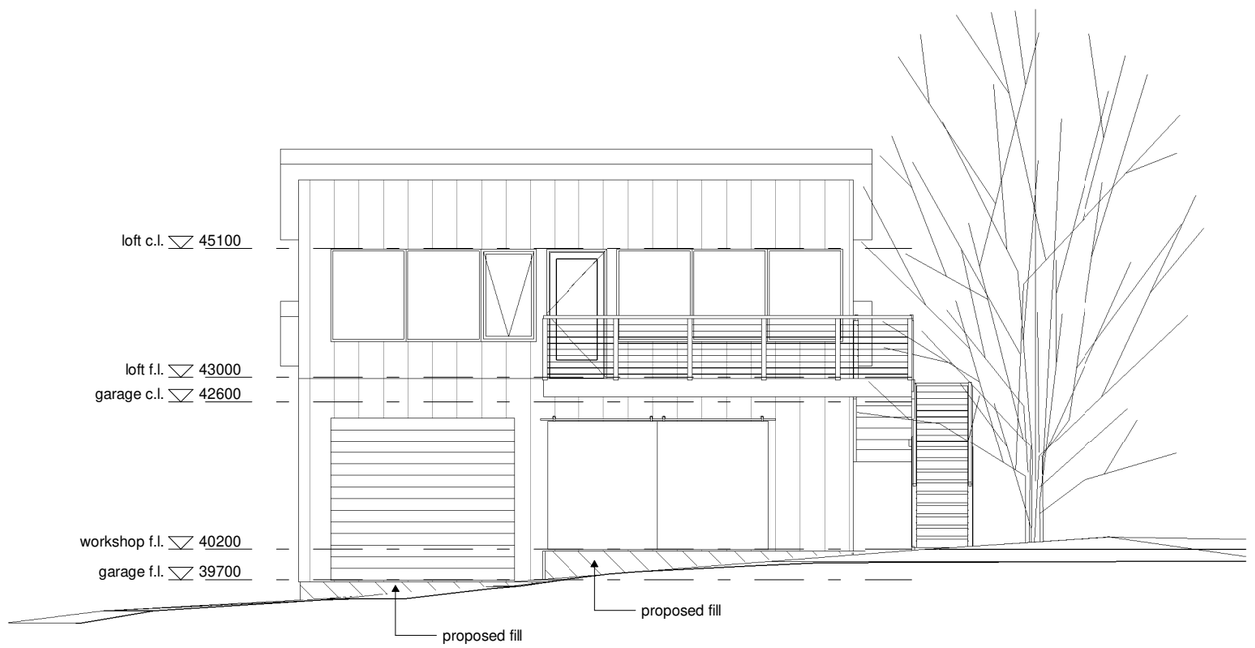
ACCREDITATION NO: CC 1269L



1 north east
1 : 100



2 unit north west
1 : 100

REV:	DESCRIPTION:	DATE:

PROJECT:

outbuilding + dwelling alts + detached extension

p. wilkes

77 st helens point road
st helens tasmania 7216

DRAWING TITLE:

elevations

DRAWING NO:	DRAWN BY: JB
a07	DATE: 22.10.25
SCALE: 1 : 100	PROJECT: 0922WI

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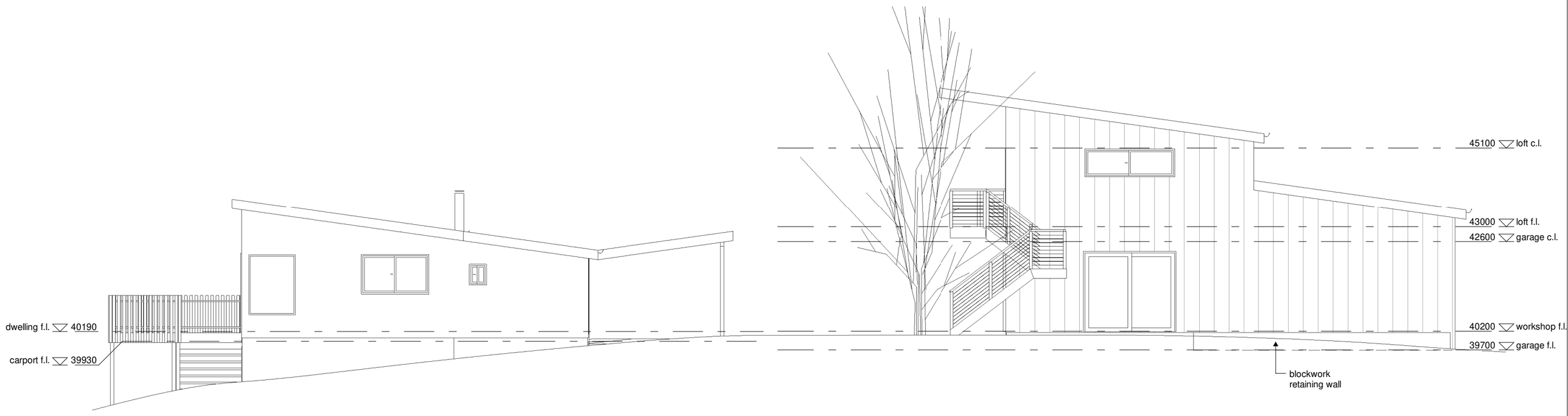
ACCREDITATION NO: CC 1269L



1 south west
1 : 100

2 unit south east
1 : 100

REV:	DESCRIPTION:	DATE:

PROJECT:

outbuilding + dwelling alts + detached extension

p. wilkes

77 st helens point road
st helens tasmania 7216

DRAWING TITLE:

elevations

DRAWING NO:	DRAWN BY: JB
a08	DATE: 22.10.25
SCALE: 1 : 100	PROJECT: 0922WI

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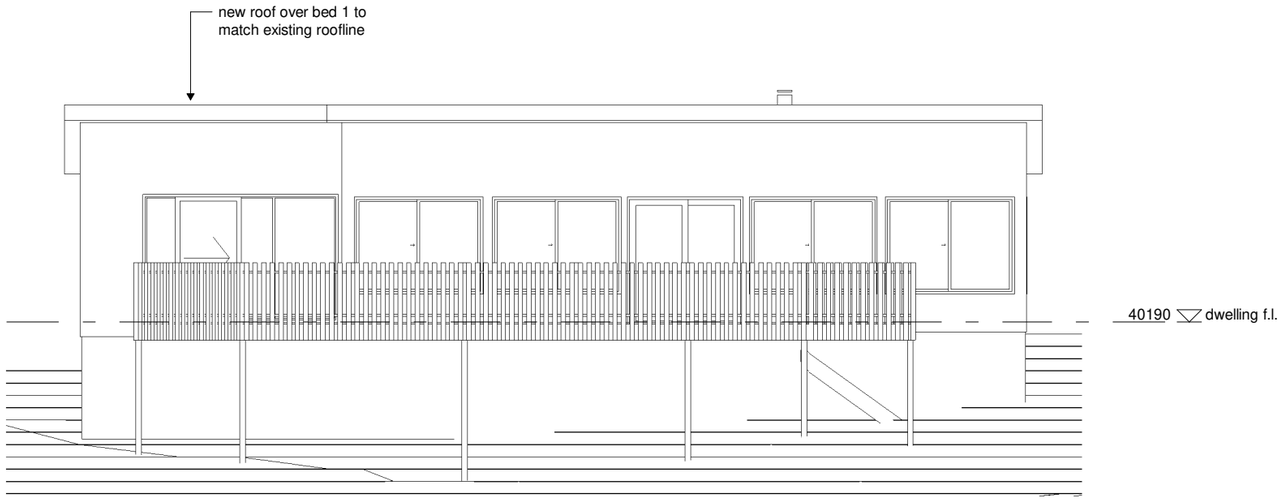
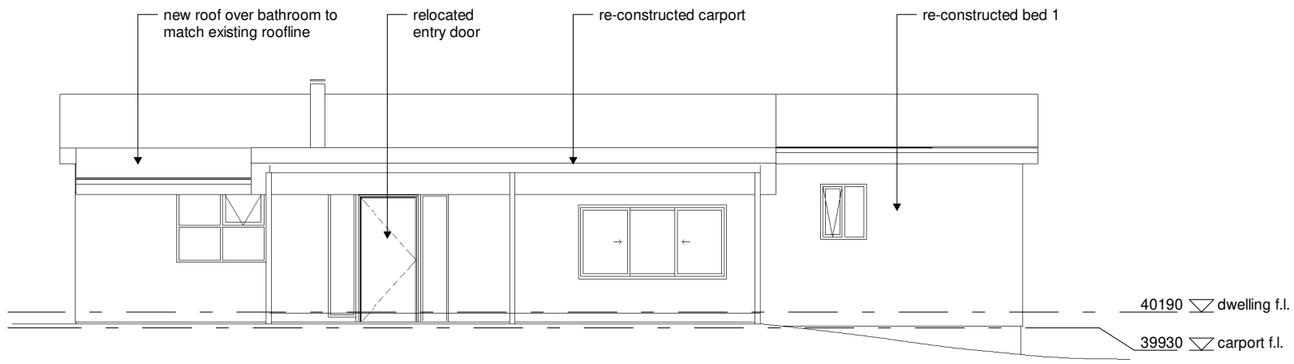
ACCREDITATION NO: CC 1269L



1 dwelling north west
1 : 100



2 dwelling south east
1 : 100

REV:	DESCRIPTION:	DATE:

PROJECT:

outbuilding + dwelling alts + detached extension

p. wilkes

77 st helens point road
st helens tasmania 7216

DRAWING TITLE:

elevations

DRAWING NO:	DRAWN BY: JB
a09	DATE: 22.10.25
SCALE: 1 : 100	PROJECT: 0922WI

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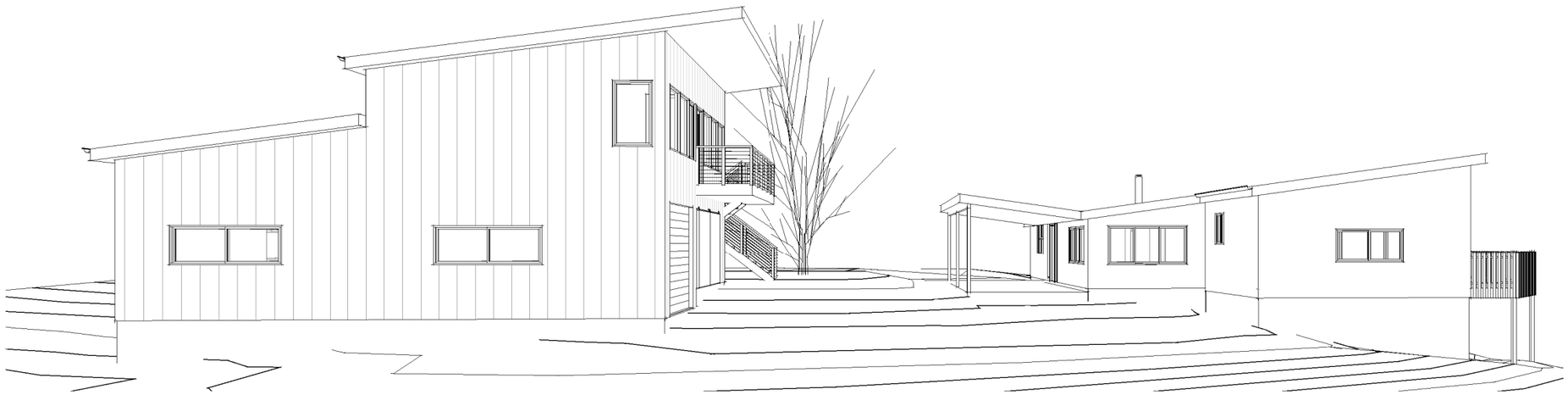
ACCREDITATION NO: CC 1269L



REV:	DESCRIPTION:	DATE:

PROJECT:

outbuilding + dwelling alts + detached extension

p. wilkes

77 st helens point road
st helens tasmania 7216

DRAWING TITLE:

visuals

DRAWING NO:	DRAWN BY: JB
a10	DATE: 22.10.25
SCALE:	PROJECT: 0922WI

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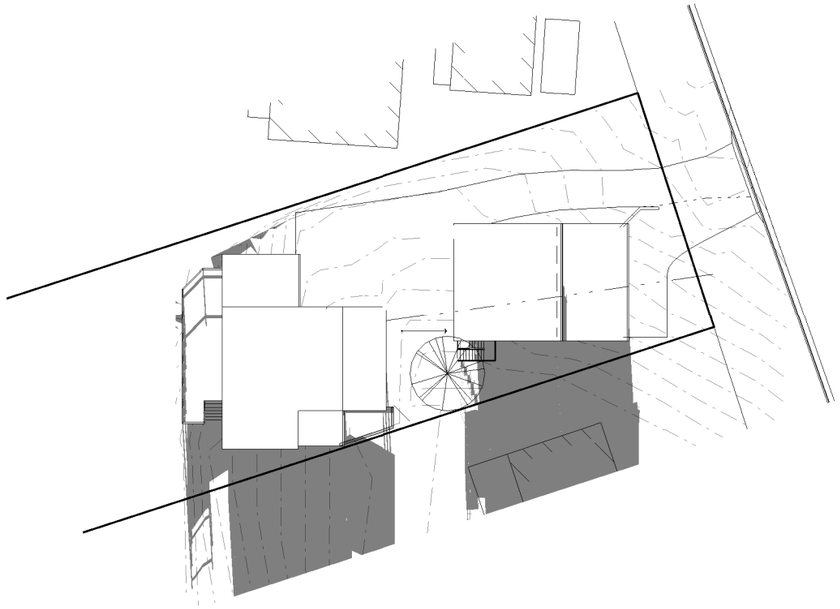
ACCREDITATION NO:
CC 1269L



1 overshadowing 9am june 21
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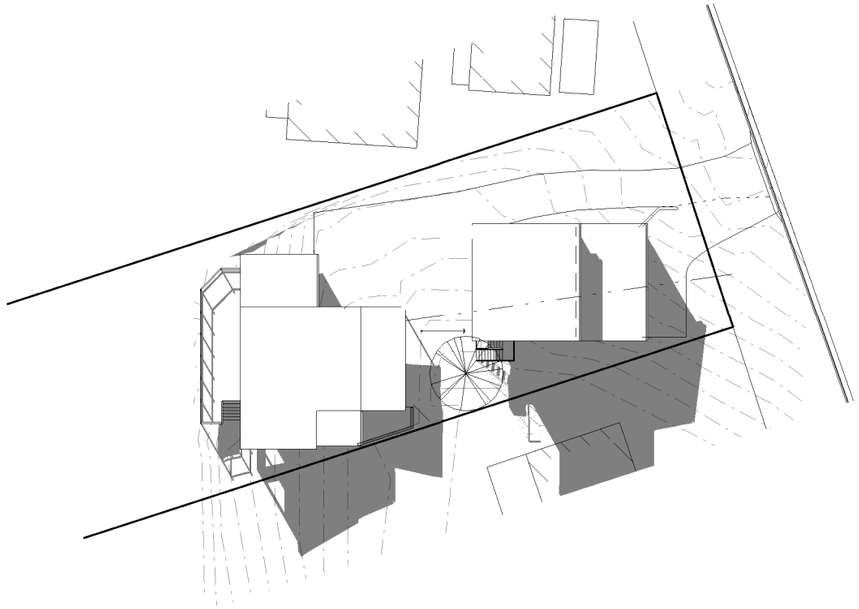

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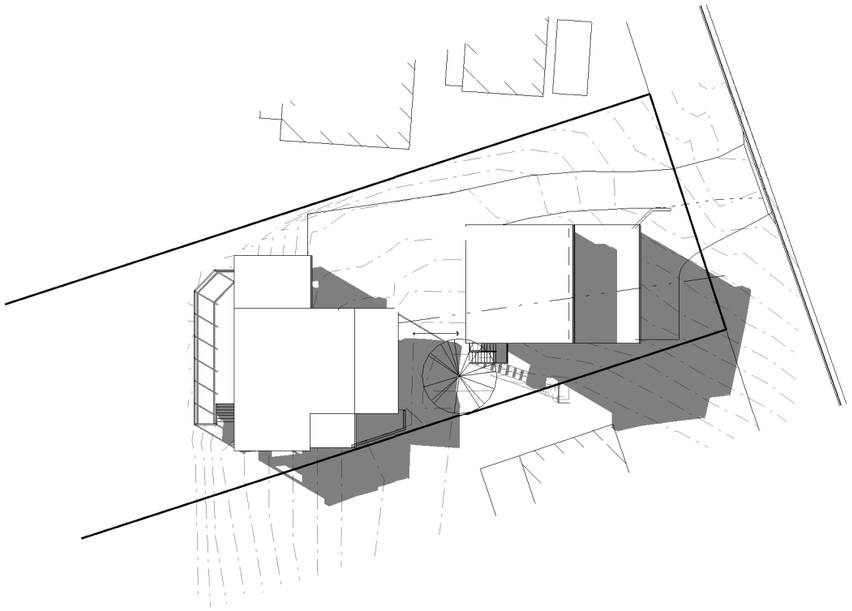

3 overshadowing 1pm june 21
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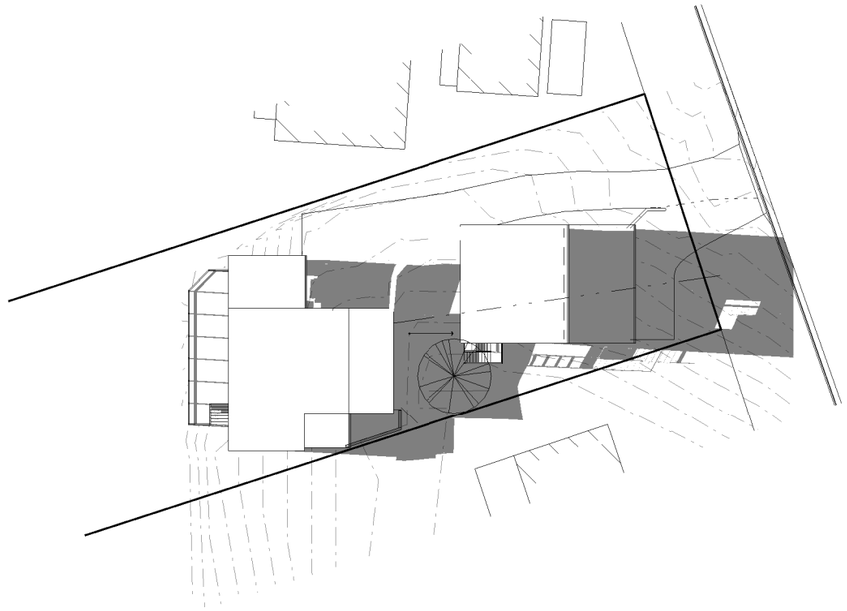

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1 : 500

REV:	DESCRIPTION:	DATE:

PROJECT:

outbuilding + dwelling alts + detached extension

p. wilkes

77 st helens point road
st helens tasmania 7216

DRAWING TITLE:

shadow diagrams

DRAWING NO:	DRAWN BY: JB
a11	DATE: 22.10.25
SCALE: 1 : 500	PROJECT: 0922WI

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BUILDING DESIGNERS ASSOCIATION OF AUSTRALIA
ACCREDITATION NO: CC 1269L

proposed dwelling alterations + outbuilding with unit – detached extension to existing dwelling

peter wilkes
77 st helens point road stieglitz tasmania 7216

planning compliance report

October 22 2025

jennifer binns building design
52 cecilia street st helens tasmania 7216
mail@jenniferbinnsdesign.com.au : 0439 765 452

Introduction

This report aims to demonstrate compliance with relevant planning standards for proposed dwelling alterations and an outbuilding incorporating a unit on the first floor as a detached extension to the existing dwelling at 77 St Helens point Road Stieglitz (c.t.63379/39). The report aims to take into consideration the intent, values and objectives of the Tasmanian Planning Scheme and address all scheme standards applicable to this development.

The proposed development relies on **Performance Criteria** to satisfy relevant planning standards and this application is to be read in conjunction with drawings and reports submitted for the development.

Development Site Details

The development site is an established serviced residential property within the Stieglitz township with an existing dwelling currently used for short term visitor accommodation. The site is subject to a high landslip risk and a risk assessment report is submitted as part of this application. The layout of the proposed development minimises cut and fill on the site while facilitating vehicle access through the proposed outbuilding for boat storage purposes. The property is also considered bushfire prone and the proposed development is sited on a portion of the site which has already had the vegetation cover removed, no vegetation removal is proposed as part of this application. A new stormwater discharge point to the street is proposed and the existing vehicle access crossover is proposed to be widened to service the new outbuilding.

Zone: Low Density Residential

Development Details

The proposed development comprises two parts; alterations to the existing dwelling and a new outbuilding with a first floor unit which forms a detached extension to the existing dwelling.
The existing dwelling is located within the Landslip A zone and the proposed alterations are primarily internal. The existing carport is being reconstructed on the same footprint with a higher roof pitch, an existing bedroom extension is also being reconstructed ion the existing footprint with a new roof to match the existing dwelling roofline.
The proposed outbuilding is located in Landslip Zone B and comprises a ground floor garage and workshop with a first floor unit. The design of the outbuilding facilitates through-access for vehicles for boat storage purposes.

Use Class: Residential

Applicable Planning Codes

The proposed development is in the *Residential* use class which in the *Low Density Residential* Zone is a *Permitted* use.

The following zone standards and codes of the Tasmanian Planning Scheme are applicable to the proposed development:

- **Zone 10.0 LOW DENSITY RESIDENTIAL ZONE**
- **Code 2.0 PARKING AND SUSTAINABLE TRASNPORT CODE**

Table 10.3 LOW DENSITY RESIDENTIAL USE STANDARDS

10.3.1 Discretionary uses

Not Applicable

The proposed development is in the *Residential* use class and is a *Permitted* use.

10.3.2 Visitor accommodation

Not Applicable

The proposed development does not include visitor accommodation use.

Table 10.4 LOW DENSITY RESIDENTIAL DEVELOPMENT STANDARDS

10.4.1. Residential density for multiple dwellings

A1 Not Applicable

The proposed development does not include multiple dwellings.

10.4.2 Building height

A1 Acceptable Solution

The proposed development has a maximum apex height of 7.53m above natural ground level.

10.4.3 Setback

P1 Performance Solution

The proposed outbuilding has a 4.5m setback from St Helens Point Road. The outbuilding has been sited within the Landslip Zone B potion of the site which presents a constraint to increasing the front setback, as does the position of the existing dwelling. The proposed setback is similar to the front setbacks of the properties adjoining the development site and is considered in keeping with the pattern of development in the area. The building has two roof levels with the lower level adjacent to the front setback, reducing the visual bulk of the building in the streetscape.

P2 Performance Solution

The proposed outbuilding has a minimum boundary setback of 1.5m to the south-western boundary. The alignment of the outbuilding follows the alignment of the existing dwelling and as the height of the building increases the boundary setback increases so that at the highest part of the outbuilding the south-western setback increases to 5.5m. Shadow diagrams have been submitted with this application and as the adjacent dwelling will only be impacted by overshadowing throughout the morning hours the extent of overshadowing is not considered unreasonable. There is existing vegetation along the shared boundary and the adjacent habitable areas will not be subject to additional overshadowing by the proposed development. The proposed first floor deck is sited on the north-west side of the dwelling which has a setback greater than 5m and is not considered to unreasonable reduce visual privacy. The proposed outbuilding has a split roof design to reduce visual bulk and the scale of the building is considered in keeping with the residential character of the area.

10.4.4 Site coverage

A1 Acceptable Solution

The level of development on the site does not exceed 30% of the site area.

10.4.5 Frontage fences for all dwellings

A1 Not Applicable

No front fencing is proposed as part of this application.

Table 10.5 LOW DENSITY RESIDENTIAL DEVELOPMENT STANDARDS FOR NON-DWELLINGS

Not applicable

The proposed development is in the Residential use class.

Table 10.6 LOW DENSITY RESIDENTIAL DEVELOPMENT STANDARDS FOR SUBDIVISION

Not applicable

No subdivision of land is proposed.

Table C2.5 CAR PARKING USE STANDARDS

C2.5.1 Car parking numbers

A1 Acceptable Solution

The layout of the development site maintains the existing parking provisions for the dwelling and provides additional parking space in the outbuilding.

C2.5.2 Bicycle parking numbers

Not Applicable

The proposed development does not require the provision of bicycle parking.

C2.5.3 Motorcycle parking numbers

Not Applicable

The proposed development does not require the provision of motorcycle parking.

C2.5.4 Loading bays

Not Applicable

The proposed development does not require provision of a loading bay.

C2.5.5 Number of car parking spaces within the General Residential zone and Inner Residential zone

A1 Not Applicable

The proposed development is in the *Low Density Residential* zone.

Table C2.6 CAR PARKING DEVELOPMENT STANDARDS

C2.6.1 Construction of parking areas

A1 Acceptable Solution

The proposed driveway and parking areas will be sealed and drained to St Helens Point Road.

C2.6.2 Design and layout of parking areas

A1 Acceptable Solution

The layout of the parking spaces meets the prescribed requirements.

A1.2 Not Applicable

No accessible parking is required for the proposed development.

C2.6.3 Number of accesses for vehicles

A1 Acceptable Solution

The development site has one access point only.

A2 Not Applicable

The development site is in the *Low Density Residential* zone.

C2.6.4 Lighting of parking areas within the Gen. Business zone and Central Business zone

A1 Not Applicable

The development site is in the *Low Density Residential* zone.

C2.6.5 Pedestrian Access

A1.1 Not Applicable

The proposed development does not require the provision of pedestrian access paths.

A1.2 Acceptable Solution

The proposed development does not require the provision of accessible parking.

C2.6.6 Loading bays

A1 Not Applicable

The proposed development does not require the provision of a loading bay.

A2 Not Applicable

There are no commercial vehicles associated with the proposed development.

C2.6.7 Bicycle parking and storage facilities within the Gen. Business zone and Central Business zone

A1 Not Applicable

The proposed development does not require the provision of bicycle parking.

A2 Not Applicable

The proposed development does not require the provision of bicycle parking.

C2.6.8 Siting of parking and turning areas

A1 Acceptable Solution

The development site is in the *Low Density Residential* zone.

A2 Not Applicable

The development site is in the *Low Density Residential* zone.

Table C2.7 PARKING PRECINCT PLAN

C2.7.1 Construction of parking areas

A1 Not Applicable

The development site is not within a parking precinct plan.

Roger Fenwick Bush Fire Consultant
PO Box 86B
Kettering Tas 7155

Jennifer Binns
Jennifer Binns Design
52 Cecilia St
St Helens Tas 7216

Dear Jenn,

Proposed development 77 St Helens Point Road, Stieglitz

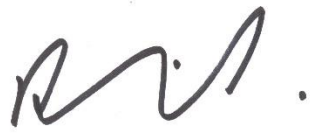
I understand that Council require confirmation that proposed new works on this lot will not rely on or require additional management of vegetation either on the lot or on adjacent land.

I confirm that the HMA required will be entirely within the lot boundary, does not extend past the existing house, and will not necessitate any vegetation removal.

The specified HMA for the new works will occupy the entire lot as far to the NW as the far side of the existing house.

Please do not hesitate to contact me if you would like to clarify any of the contents of this letter.

Yours sincerely,



Roger Fenwick
22 October 2025

roger@bushfire-consultant.com.au 0411 609 906

GEOTON Pty Ltd
Geotechnical Consultants

LANDSLIDE RISK ASSESSMENT

Mr Peter Wilkes

77 St Helens Point Road, Stieglitz

GL22355Ac

11 August 2025

GEOTON Pty Ltd
Geotechnical Consultants

Geoton Pty Ltd ABN 81 129 764 629
PO Box 522 Prospect TAS 7250
Unit 24, 16-18 Goodman Court
Invermay TAS 7248
Tel (+61) (3) 6326 5001
www.geoton.com.au

11 August 2025

Reference No. GL22355Ac

Mr Peter Wilkes
202/800 Chapel Street
South Yarra VIC 3141

Dear Sir

RE: Landslide Risk Assessment
77 St Helens Point Road, Stieglitz

We have pleasure in submitting herein our report detailing the results of our landslide risk assessment conducted at the above site.

Should you require clarification of any aspect of this report, please contact Sean Shahandeh or the undersigned on 03 6326 5001.

For and on behalf of

Geoton Pty Ltd

Tony Barriera

Director – Principal Geotechnical Engineer

Rev No.	Date	Written By	Reviewed By	Description
Ab	12/08/2022	S Shahandeh	T Barriera	Original
Ac	11/08/2025	S Shahandeh	T Barriera	Updated report for proposed new works, site plans and Tasmanian Planning Scheme

CONTENTS

1 INTRODUCTION

1.1 General

At your request, Geoton Pty Ltd has carried out a landslide risk assessment for a proposed development at 77 St Helens Point Road, Stieglitz.

A review of the Land Information System Tasmania (LIST) website shows the uphill south-eastern front portion of the site is located within a medium landside hazard band and a Proclaimed Landslide B Zone, whilst the middle and north-western downhill portion of the site is located within a high landslide hazard band and a Proclaimed Landslide A Zone. As such, a landslide risk assessment is required to satisfy the Landslide Hazard Code of the Tasmanian Planning Scheme – Break O' Day (Section C15.6.1 - Building and works within a landslip hazard area).

The investigation has been conducted to provide the following:

- Assessments of the pre-existing landslide risks that may affect the proposed development, and the potential incremental landslide risks posed by the proposed development that may affect the proposed development and surrounding areas;
- Recommendations of adequate prevention and/or mitigation, or any other relevant landslide risk management measures that may need to be implemented, as applicable and appropriate, to provide acceptable safety and serviceability of the dwellings/ buildings within the proposed development area;
- An assessment of the general subsurface conditions at the site and consequently assigning a Site Classification in accordance with AS 2870 – 2011 "Residential Slabs and Footings"; and
- An assessment of the surrounding topography and provide a Wind Classification in accordance with AS 4055:2021 "Wind Loads for Housing".

1.2 Proposed Development

Plans of the proposed development were provided, prepared by Jennifer Binns Building Design, Project Ref. 0922WI, Drawings a03 to a11, dated 14/07/2025.

We understand that the proposed development comprises a new outbuilding located within the front eastern portion of the site and within the Landslip B area, with alterations to the existing dwelling located further to the west within the Landslip A area (Figure 1).

The proposed new building within the Landslip B area is a lightweight double-storey structure, with a garage and workshop on the lower floor and two bedrooms, a bathroom, a living area, and a deck on the upper floor. Minimal earthworks are proposed.

The alterations to the existing dwelling include rebuilding the existing bedroom to the north of the existing footprint with a reconfigured bathroom and removal of the existing deck. The demolition and reconstruction of a new, slightly wider carport to the east. These alterations require insignificant to no earthworks to be carried out on site and within Landslip A area.

2 BACKGROUND

2.1 Geology and Hydrology

Examination of the MRT Digital Geological Atlas, 1:25,000 scale series – St Helens sheet, indicates that the Parnella area, including the site, is generally mapped as being underlain by Paleogene-Neogene aged dominantly non-marine sequences of gravel, sand, silt, clay and regolith.

3 LANDSLIDE HAZARDS

Examination of the LIST Landslide Planning Map indicates that the middle and north-western portions of the site are within a mapped high landslide hazard band, and the front south-eastern portion of the site, including the proposed new building, is within a mapped medium landslide hazard band.

Examination of the MRT LIST Proclaimed Landslip Areas overlay indicates that the middle and north-western portions of the site are mapped as Landslip A, and the upslope south-eastern portion of the site, including the proposed new building, is mapped as Landslip B.

Examination of the MRT LIST Landslide Polygon overlay indicates that there are no known mapped landslide features within the site. A large discrete soil slide, activity unknown, Landslide ID No. 5080, is located 19m cross-slope from the north-eastern boundary of the site, with its affected area passing through the property Nos. 81 to 89.

Two small recent or active earth slides, Landslide ID Nos. 5063 and 4924 are located directly downslope from the northwest boundary of the site, downslope of Treloggens Track, along the shoreline.

Two other landslide features, Landslide ID Nos. 1092 and 5060, being soil slides of unknown activity located about 50m to the southwest of the site. Figures 2, 3 and 4 show a typical slope profile, a regional landslides map and a site plan showing the locally mapped Landslip A and B zones and mapped landslides.

3.1 MRT Reports

A search of the MRT database was conducted and revealed no site-specific reports of the site, however there are a few reports pertaining to the St Helens Point Road area. The reports provide a good historical background to the area in addition to their technical content.

Data and findings of these reports relevant to this study are summarised in point form below:

- The landslip area between Treloggens Track and the foreshore is approximately 600m long and a few hundred metres wide. Landslides have occurred due to increased rainfall, porous unconsolidated rocks underlain by plastic clays, slopes over-steepened by roadworks, poor drainage systems and active shoreline erosion (Jennings TR15-87-90).
- Very active shoreline erosion is taking place at the foot of the slope, undercutting the Tertiary sediments, uprooting trees and promoting landsliding. The roadworks carried out in the area have resulted in over-steepening of embankments along the main road and disruption of the natural drainage system (Jennings TR15-87-90).

- The hydrology along Aerodrome Hill is such that water passing underground in the porous sandy soils descends vertically until the clay layers are encountered. At those levels it then runs along the bedding planes and issues along the front of the slope as a series of springs. The water-softened and lubricated clay layers form perfect sites for the initiation of landslides when slopes are over-steepened by earthworks or by shoreline erosion (Jennings TR15-87-90).
- Cleared areas should be planted with vegetation having a strong root binding action and maximum transpiration effect (Jennings TR15-87-90).
- At the south-western end of Treloggens Track there is evidence of ground cracks and downslope movement of earth slices, with numerous trees falling onto the beach (Stevenson UR1973-29).
- At the seaward end of numbers 12 to 17 St Helens Point Road there is a slip scar that has caused a 1m to 1.5m drop in the road (Stevenson UR1973-29).
- The shore cliffs below numbers 19 to 24 St Helens Point Road are collapsing with large blocks of soft conglomerate falling onto the beach (Stevenson UR1973-29).
- The landslips along Aerodrome Hill have been aggravated by the removal of natural vegetation, the introduction of water into the slope face and by marine erosion. Improved drainage, re-vegetation of slopes and some foreshore protection is recommended (Sloane UR1979 -53).
- The Treloggens Track landslip has been periodically active and has affected the foundations of one holiday home and necessitated the removal of another; the track has had to be periodically repaired (Sloane UR1979 -53).
- Stormwater and septic tank drainage from houses also permeates into the hillslope (Sloane UR1979 -53).
- Several factors are responsible for slope failures in the Aerodrome Hill area at St Helens. These are steep slopes, underlying clay with adverse physical properties, marine erosion, the removal of natural vegetation and the introduction of water into the slope face by natural aquifers and man-made alterations to the natural drainage (Sloane UR1979 -53).
- The recommendation to improve the stability of Aerodrome Hill include improving drainage, revegetation and foreshore protection (Sloane UR1979 -53).
- A comprehensive review and study of the Parnella Landslide Area by M. D. Stevenson of Mineral Resources Tasmania was produced in 2013, titled “Parnella Landslide Area, St Helens, Geomorphological Mapping and a Review of Past Investigations and Mitigation Works”.

3.2 Topography

The Parnella landslide area is situated on the generally northeast-southwest orientated southern shore of Georges Bay. The ground surface along the shore slopes down to the bay for a distance of slightly over 2.5km from Parkside Lagoon to Chimneys Lagoon and is referred to here as the shoreline scarp. The north-eastern end of the shoreline scarp in the Chimney Heights area, approximately 600m in length, differs in being orientated in an almost east-west direction. The shoreline scarp rises up to an undulating plateau at approximately

48m above sea level in the southwest and approximately 35m in the northeast. At both ends of the shoreline scarp, the slopes turn away from the bay and continue southwards, alongside Parkside and Chimneys lagoons.

The shoreline scarp has variable topography along its length, and is generally steeper at the north-eastern end in the Chimney Heights area. Southwest from Yellow Bluff the shoreline scarp changes orientation and transitions over about 300m to longer and less steep slopes. The sloping segment at the far south-western end of the shoreline scarp, below the western end of the St Helens Aerodrome, is a little steeper.

The plateau above the foreshore scarp is dissected by a number of small watercourses that drain to the southeast and east, with the great majority of runoff flowing into Chimneys Lagoon. This has led to an overall slope on the plateau towards the east, away from the shoreline scarp, and the development of a drainage divide that in most places is within 10m to 100m of the major break in slope at the top of the shoreline scarp.

The site is located within the central zone, which is inferred to have semi-rotational failures with minimal shore erosion.

A typical slope profile with simplified hydrology for the Central Zone sourced from Figure 3, Page 9, Tasmanian Geological Survey Record 2013/09 is provided as Figure 2, with the Regional Context figure provided as Figure 3.

4 FIELD INVESTIGATION

The field investigation was carried out on 28 July 2022 and involved the following:

- A site walkover to review the ground surface features of the site and surrounding landforms;
- The drilling of 4 boreholes by a 4WD mounted auger rig to the auger refusal depths of 1.9m to 2.3m; and
- Conducting Dynamic Cone Penetration (DCP) tests and vane shear strength tests in the encountered soil layers.

The logs of the boreholes are included in Appendix A, with their locations shown on the site plan attached as Figure 1.

5 SITE CONDITIONS

5.1 Surface Conditions

The site is an approximately 2,100m^2 block located on the existing shoreline scarp on the south-eastern shore of Georges Bay. The site has an elevation of approximately 16m on the downhill north-western boundary and approximately 39m on the uphill south-eastern boundary, and is currently developed with a dwelling located within the middle portion within the site and within a Landslip A zone.

The ground surface within the front approximate 19m of the site is within a Landslip B zone and has a very gentle fall of 2° to 3° towards the St Helens Point Road to the southeast (Plate 1). Downslope of the existing dwelling, there is a convex break in slope with the ground

surface falling steeply to the northwest towards the bay with typical slope angles of 22° to 23° (Plate 2).

The ground surface within the affected area of Landslide ID 5080 to the northwest of the site has a more gradual slope angle of 13° to 14° (Plate 3) due to the past downslope movement.

The gentler upslope portion of the site, where the proposed new building is to be located, has a surface cover of grass and scattered trees, with the vegetation across the remainder of the site and downslope of the existing dwelling comprising a dense cover of mature trees and shrubs.

The existing light-clad dwelling is generally in good condition, showing no obvious signs of damage (Plate 4).

Stormwater from the roof of the existing dwelling was observed to be discharged in an uncontrolled fashion over the downslope area towards the bay.

A selection of site photographs is attached as Plates 1 to 4.

5.2 Subsurface Conditions

The investigation within the gentler upslope portion of the site indicated that the subsurface conditions are relatively uniform within this area. The boreholes encountered silty sand topsoil and disturbed ground to depths of 0.3m, underlain by silty sand to the auger refusal depths of 1.9m and 2.3m on inferred cemented layer of ironstone.

The natural silty sand within the site was assessed to be of a loose consistency to a depth of about 1.0m below the ground surface.

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

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

6 GEOLOGICAL MODEL

From a review of available reports, geological maps and information collected during the investigation, a general geological model of the site has been inferred. Generally, the site comprises surficial sand underlain by Cretaceous-Quaternary Period cemented sediments and rocks. Clay is inferred to be encountered below the cemented layer.

Groundwater was not encountered in the investigation.

7 LANDSLIDE SUSCEPTIBILITY

The geological and geomorphological settings of the site, as well as recent and historical landslide mapping and observations, suggest that the evolution of the shoreline scarp in this area is the combined effect of ongoing shoreline erosion and intermittent landslides.

Landslides may be triggered by heavy rainfall events, e.g., the rainfall event in April 2011, with the potential of regression upslope. The landslide displaced mass at the toe can provide some toe support, temporarily stabilising the slopes. However, the ongoing erosion will gradually wash away the displaced mass, creating a favourable condition for the next landslide to occur. Therefore, the shoreline scarp in this area is generally in the process of parallel retreat. The

slope can remain relatively steep, possibly due to the good ground conditions encountered in the subsurface investigation.

Based on the above discussion, two possible landslide scenarios for the site and immediate surrounds are identified and summarised as follows:

- Large Scale/Deep Seated Landslide of similar scale and features as Landslide ID 5080 immediately to the northwest of the site; and
- Shallow/Small Scale Landslide and Debris Flow of similar scale and features as Landslide ID 4924 and ID 5063 immediately downslope of the site.

8 LANDSLIDE HAZARDS

The landslide hazard of the site will be discussed in two parts:

- The pre-existing landslide hazard before the proposed development; and
- The incremental landslide hazard due to the proposed development.

9 LANDSLIDE RISK ASSESSMENT

The qualitative likelihood, consequence and risk terms sourced from AGS (2007c) to be used in this report for risk to property are given in Appendix D. The risk terms are defined by a matrix that brings together different combinations of likelihood and consequence. Risk matrices help to communicate the results of risk assessment, rank risks, set priorities and develop transparent approaches to decision making. The notes attached to the tables, terms and the comments in response to risk in Appendix D are intended to help explain the risk assessment and management process.

Based on the geological and geomorphological settings of the site, the following possible landslide scenarios are identified for the site.

- Deep-seated/large-scale landslide occurs within the Cretaceous-Quaternary Period sediments with similar scale and features as Landslide ID 5080; and
- Shallow/Small Scale Landslide and Debris Flow within the Cretaceous-Quaternary Period sediments with similar scale and features as Landslide ID 4924 and ID 5063.

Accordingly, the likelihoods estimated for the possible landslide scenarios are summarised in Table 1 as follows.

Table 1: Summary of Estimated Pre-existing Landslide Hazard*

Possible Landslide Scenarios	Indicative Annual Probability (pa)	Indicative Recurrence Interval (yrs)	Descriptor (AGS 2007c)
Deep-seated/large-scale landslide occurs within the Cretaceous-Quaternary Period sediments with similar scale and features as Landslide ID 5080*	10^{-3}	1,000	Possible
Shallow/Small Scale Landslide and Debris Flow within the Cretaceous-Quaternary Period sediments with similar scale and features as Landslide ID 4924 and ID 5063	10^{-1} to 10^{-2}	10 to 100	Almost Certain to Likely

* The likelihood of deep-seated/large-scale landslide occurring within the Cretaceous-Quaternary Period sediments with similar scale and features as Landslide ID 5080 occurring on the steep slopes directly below the site is considered POSSIBLE (10^{-3} Annual Probability); however, we consider regression of the landslide to the uphill plateau and affecting the proposed new development within the Proclaimed Landslip B Zone is **RARE**.

Similarly, the likelihood of Shallow/Small Scale Landslide and Debris Flow within the Cretaceous-Quaternary Period sediments with similar scale and features as Landslide ID 4924 and ID 5063 is considered ALMOST CERTAIN to LIKELY (10^{-1} to 10^{-2} Annual Probability); but the likelihood of this pre-existing landslide hazard affecting the proposed new development is considered **RARE**.

9.1 Incremental Landslide Hazards

The alterations to the site as a result of the proposed development can generally be classified into two categories:

- Disturbance to the site due to the proposed development; and
- Introduction of additional water into the ground affecting the groundwater regime.

It is considered that the proposed development would not adversely impact on the site and immediate surroundings nor significantly increase the pre-existing landslide hazard, provided that the developments adhere to the principles of good hillside practice (Appendix G, AGS 2007c), and the recommendations provided in Section 10 below.

Geoton understands that the wastewater and stormwater collected onsite will be properly discharged/disposed of off the site, and thus no additional water will be introduced into the ground on the site. Therefore, should the wastewater and stormwater management systems be designed and constructed as per the recommendations provided in Section 10 below, they would not adversely impact on the site and immediate surroundings nor significantly increase the pre-existing landslide hazard.

9.2 Landslide Consequences

The existing residence and shed development are the elements at risk for this assessment.

The landslide consequences for different scenarios are summarised in Table 2 as follows.

Table 2: Summary of Consequences for Different Landslide Scenarios

Possible Landslide Scenarios	Assessed Landslide Consequences	Descriptor (AGS 2007c)
Deep-seated/large-scale landslide occurs within the Cretaceous-Quaternary Period sediments with similar scale and features as Landslide ID 5080, affecting the proposed new development	The landslide may significantly displace the footing system of the proposed development causing major damage	Major
Shallow/Small Scale Landslide and Debris Flow of similar scale and features as Landslide ID 4924 and ID 5063, affecting the proposed new development	The landslide may displace the footing system of the proposed development causing minor to medium damage	Minor to Medium

9.3 Landslide Risk to Property

The proposed development to be located within the Proclaimed Landslide B Zone on the site is considered the element at risk in this assessment.

Table 3: Summary of Consequences for Different Landslide Scenarios

Possible Landslide Scenarios	Assessed Landslide Hazards	Assessed Landslide Consequences	Qualitative Landslide Risk to Property
Deep-seated/large-scale landslide occurs within the Cretaceous-Quaternary Period sediments with similar scale and features as Landslide ID 5080, affecting the proposed new development	Rare	Major	**Low**
Shallow/Small Scale Landslide and Debris Flow of similar scale and features as Landslide ID 4924 and ID 5063, affecting the proposed new development	Rare	Minor to Medium	**Very Low to Low**

9.4 Landslide Risk to Life

The person considered most at risk is a person living at the site.

The landslide risk to life for the identified person most at risk is calculated in Table 4 as follows.

Table 4: Landslide Risk to Life for Person Most at Risk

Possible Landslide Scenarios	Adopted Annual Landslide Probability, P(H)	Spatial Probability of Landslide Impacting Buildings at Risk, P(S:H)	Temporal Spatial Probability of Person Most at Risk at Buildings at Risk, P(T:S)	Vulnerability of Person Most at Risk, V(D:T)	Risk to Life, R(LoL)
Deep-seated/large-scale landslide occurs within the Cretaceous-Quaternary Period sediments with similar scale and features as Landslide ID 5080, affecting the proposed development	10^{-5}	1	0.67 (16hrs/day)	0.5 (Building suffers major damage but is unlikely to collapse, may cause injury, but death is unlikely)	3.3×10^{-7} to 3.3×10^{-6}
Shallow/Small Scale Landslide and Debris Flow of similar scale and features as Landslide ID 4924 and ID 5063, affecting the proposed development	10^{-5}	0.1 (Landslide scenarios unlikely to affect the development within the Proclaimed Landslide B Zone)		0.005 (Casualty very unlikely)	3.3×10^{-10}
				Total: 3.3×10^{-7} to 3.3×10^{-6}	

The tolerable risk to life criteria for the person most at risk suggested by AGS is 10^{-5}, given that the development is a new development located on a newly constructed slope. Acceptable risks are usually considered to be one order of magnitude lower than the tolerable risks, which in this case is 10^{-6}. However, AGS suggests that, for most developments in existing urban

areas, criteria based on Tolerable Risk Level is applicable. Given that the site is mapped within a Low-Density Residential Zone, the above criteria is also considered applicable.

Therefore, subject to compliance with the recommendations within Section 10 of this report, the landslide risks to life are assessed as **tolerable** for the identified person most at risk.

9.5 Risk Assessment of Works within Landslip A

The existing dwelling is within an area of inherent doubtful slope stability, where landslides are a natural and ongoing geological process. There will always be some level of landslide risk in such areas.

However, we consider that the alterations of the existing dwelling - including the demolition and reconstruction of a carport to the east and a bedroom to the north - will not increase the current landslide risk and do not require any specific hazard reduction or protection measures at the site, due to the following:

- The alterations will not trigger, spread, or intensify the already existing landslide hazard;
- The alterations will change the size of the existing dwelling, and the number of bedrooms will not increase;
- These alterations require insignificant to no earthworks within the Landslip A area;
- The existing dwelling is located on a gentle slope and above the sharp break-in slope down towards the bay;
- The existing drainage condition of the site will be improved when the works are carried out in accordance with our recommendation in Section 10.4 below; and
- The dwelling is connected to town sewage and therefore there is no wastewater load going into the ground.

Based on the findings of this assessment, we consider that the proposed alterations in use would not adversely increase the current assessed landslide risk of the site or its immediate surroundings. It is therefore not likely to cause or contribute to the occurrence of a landslide on the site or on adjacent land.

10 DISCUSSION AND RECOMMENDATIONS

10.1 General

The outcomes of the assessments for landslide risk to property and landslide risk to life, above, only apply if the principles of good hillside practice and the recommendations provided herein are adhered to.

An information sheet entitled “Some Guidelines for Hillside Construction” adapted from the Journal of the Australian Geomechanics Society, volume 42, Number 1, dated March 2007, is presented in Appendix D.

Therefore, provided the development of the site is in accordance with the recommendations within our report, we consider that a tolerable level of risk can be achieved in accordance with Section C15.6.1 (Building and works within a landslip hazard area) of the Landslide Hazard

Code of the Tasmanian Planning Scheme – Break O' Day with the following Performance Criteria:

- **C15.6.1 - P1.1** - Building and works within a landslip hazard area must minimise the likelihood of triggering a landslip event and achieve and maintain a tolerable risk from landslip: **a tolerable level of risk can be achieved for the proposed works, provided the works of the site are in accordance with the general recommendations provided below;**
- **C15.6.1 - P1.2** - A landslip hazard report also demonstrates that the buildings and works do not cause or contribute to landslip on the site, on adjacent land or public infrastructure: **It is considered that the works would not adversely impact on the site and immediate surrounds, including land or public infrastructure, provided that the development adheres to the principles of good hillside practice and the general recommendations provided below;**
- **C15.6.1 - P1.3** - If landslip reduction or protection measures are required beyond the boundary of the site the consent in writing of the owner of that land must be provided for that land to be managed in accordance with the specific hazard reduction or protection measures: **will not be required as part of the development.**

An Engineering Certificate addressing the Landslide Hazard Code is provided in Appendix D.

10.2 Buildings

- Flexible lightweight construction shall be used for the proposed development;
- Due to the potential landslide risk, the site has been classified as **CLASS P (AS 2870)**;
- If it was not for the potential landslide risk, the site would have been a CLASS S (AS 2870), based on potential seasonal surface movements;
- However, stiffened footings should be provided and therefore the proposed new development may be proportioned to at least **CLASS H2**;
- The proposed building should be founded as follows:
- **Silty SAND (SM) – fine to medium grained, grey, etc. medium dense or better, encountered <u>below 1.0m</u> from the existing ground surface;**
- **An allowable bearing pressure of 100kPa** is available for footings founded as above;
- The footing system shall be designed by a suitably qualified engineer; and
- Surface water cut-off drains shall be provided uphill of any building.

10.3 Cuts and Fills (Within Landslip B)

- Cuts and fills should be minimised, where less than 1.0m in height, maybe battered at slope angles no steeper than 1 vertical to 3 horizontal (1V:3H), or alternatively these should be retained;
- Proposed cuts and fills greater than 1.0m in height should be reviewed by a qualified geotechnical engineer;
- All retaining walls greater than 1m in height shall be designed by a suitably qualified structural engineer;

- Adequate subsurface and surface drainage should be provided behind all retaining walls; and
- Excavations for the construction of retaining walls may result in a temporary reduction in the stability of the adjacent area, particularly during wet weather, until the wall is complete. This increased risk can be managed or reduced by appropriate construction planning, using temporary support, staged excavation and control of drainage.

10.4 Drainage

- The stormwater from the existing dwelling must be appropriately discharged to Georges Bay by extending the existing stormwater discharges with fully welded HDPE pipelines aligned up and down the slope, or alternatively designed to be pumped to the Council drainage system;
- Collected surface water from the new development shall be piped to the Council drainage system, or alternatively discharged downslope into Georges Bay within fully welded HDPE pipelines aligned up and down the slope;
- The wastewater from the proposed new development shall be collected and pumped to the sewer line on St Helens Point Road; and
- Uncontrolled discharge of water onto the site ground surface or through absorption trenches is strictly NOT permitted;

10.5 Vegetation and Erosion Control

- Vegetation should be maintained on the surrounding slopes to minimise erosion.

10.6 Works Within the Landslip A

- Demolition **works:** Works to adhere to AS 2601:2001 - The demolition of structures, and Safe Work Australia Demolition Work Code of Practice; and
- Only minimal additional earthworks shall be carried out as part of the reconstruction of the carport and bedroom within Landslip A area (as proposed).

11 WIND CLASSIFICATION

After allowing due consideration of the region, terrain, shielding and topography, the site has been classified as follows:

WIND CLASSIFICATION N3 (AS 4055:2021)

REGION	TERRAIN CATEGORY	SHIELDING	TOPOGRAPHY
A	TC1.0	PS	T3

12 REFERENCES

Australian Geomechanics Society (2007) – Practice Note Guidelines for Landslide Risk Management 2007, Australian Geomechanics Journal, Vol 42, No. 1

AS 1726 – 2017 Geotechnical site investigation

AS 2870 – 2011 Residential Slabs and Footings

AS 4055 – 2021 Wind Loads for Housing

Land Information System Tasmania (LIST). https://maps.thelist.tas.gov.au/listmap/app/list/map

Mineral Resources Tasmania (2013) – Tasmanian Information on Geoscience and Exploration Resources (TIGER) System. http://www.mrt.tas.gov.au/portal/database-searches

Mineral Resources Tasmania (2013) – Tasmanian Geological Survey Record 2013/09, Parnella Landslide Area, St Helens, Geomorphological Mapping and a Review of Past Investigations and Mitigation Works, by M. D. Stevenson. http://www.mrt.tas.gov.au/mrtdoc/dominfo/download/UR2013_09/UR2013_09.pdf

ELVIS - Elevation and Depth - Foundation Spatial Data http://elevation.fsdf.org.au/

Jennings (Department of Mines, 1972, Technical Reports 15:87–90)

Stevenson (Department of Mines, Unpublished Report 1973/29)

Sloane (Department of Mines, Unpublished Report 1979/53)

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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.

Legend

BH 1 — Approximate Borehole Location

5° — Approximate Slope angle in Degrees

Contour in Metres (LiDAR Derived)

Approximate Scale

5 0 5 10 15 m

GEOTON Pty Ltd

Date	11/08/2025	Drawn	SS
Scale	As Shown	Approved	TB
Original size	A3	Rev	

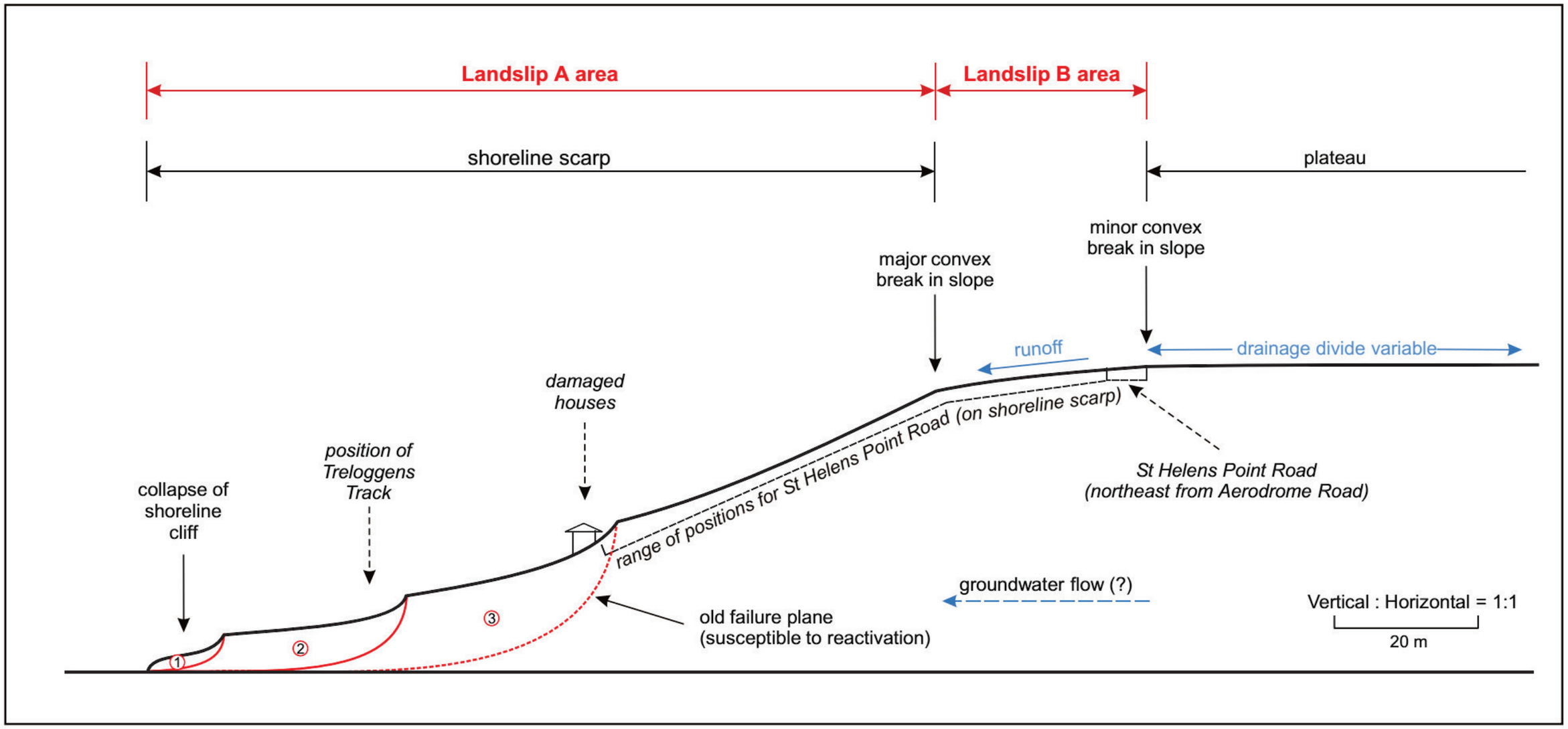
Client: MR PETER WILKES

Project: 77 ST HELENS POINT ROAD STIEGLITZ

Title: SITE PLAN

Project no: GL25355Ac

Drawing no. 1



Typical slope profile with simplified hydrology for southwestern and central zones, southwest of Yellow Bluff. Landslides on the shoreline scarp within this area are typically semi-rotational slides. Typically there are failures observed in three slope positions of increasing size:
1 — *common landslides at the shoreline cliff are driven by shore erosion;*
2 — subsequent progressive failure advancing inland (southwestern zone), or long-lived active failures (central zone) with little shore erosion; and ´
3 — preexisting old landslides that are susceptible to reactivation. The geological sequence here is not well understood as most outcrop is covered in slope deposits, but Tertiary clay does outcrop at the shoreline.

CENTRAL ZONE (SOURCE: FIGURE 3, PAGE 9, TASMANIAN GEOLOGICAL SURVEY RECORD 2013/09)

GEOTON Pty Ltd				client:	MR PETER WILKES
				project:	77 ST HELENS POINT ROAD STIEGLITZ
date	11/08/2025	drawn	SS		
scale	As Shown	approved	TB	title:	TYPICAL SLOPE PROFILE
original size	A3	rev		project no: GL22355Ac	figure no. 2

Tasmania
Explore the possibilities
Department of Infrastructure Energy and Resources
Mineral Resources Tasmania

PARNELLA LANDSLIDE AREA - ST HELENS REGIONAL CONTEXT

Figure 1

M.D. Stevenson, 2013

0 100 200 300 400 500 Metres
GDA94 - MGA Zone 55

Geomorphic Lines
- Major convex break in slope
- Minor convex break in slope

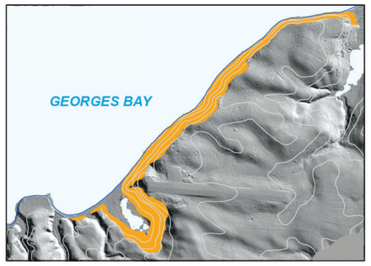
Landslide Groups
- Active landslide (2011-12)
- Active landslide (pre-1990s)
- Other landslide (activity unknown)
- Possible landslide (evidence unclear)

Simplified geology
- Mapped granodiorite
- Tertiary sediments - gravel, sand and clay
- Probable granitic unit beneath sediments (within approx. 50m of surface; interpretation based on MRT gravity data)

Proclaimed Landslip Areas
- Landslip A
- Landslip B
- Spring or seep
- 10m contour
- Drainage divide
- Direction of runoff

Digital terrain model derived from Climate Futures for Tasmania LiDAR dataset (2008), available from the LIST.
(Note: includes some anomalies in areas of dense vegetation.)

Area described as shoreline scarp



PARNELLA LANDSLIDE AREA - ST HELENS REGIONAL CONTEXT
(SOURCE: FIGURE 1, PAGE 6,
TASMANIAN GEOLOGICAL SURVEY RECORD 2013/09)

GeoTon Pty Ltd				client:	MR PETER WILKES
				project:	77 ST HELENS POINT ROAD STIEGLITZ
date	11/08/2025	drawn	SS		
scale	As Shown	approved	TB	title:	REGIONAL LANDSLIDES
original size	A3	rev		project no: GL22355Ac	figure no. 3

Legend

- Proclaimed Landslip A Zone
- Proclaimed Landslip B Zone
- Mapped Landslides

GeoTon Pty Ltd			
date	11/08/2025	drawn	SS
scale	As Shown	approved	TB
original size	A3	rev	

client:	MR PETER WILKES		
project:	77 ST HELENS POINT ROAD STIEGLITZ		
title:	SITE PLAN		
project no:	GL22355Ac	figure no.	4

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. GL22355A

Client : Mr Peter Wilkes
Project : Landslide Risk Assessment
Location : 77 St Helens Point Road, Stieglitz
Date : 28/07/2022
Logged By : SS

Drill model : DrillTech
Hole diameter : 150mm
Easting:
Northing:
Slope: 90°
Bearing: -
RL Surface :
Datum :

Method	Support	Penetration	Water	DCP (Blows/ 100mm)	Depth (m)	Graphic log	Classification Symbol	Material Description	Moisture condition	Consistency density, index	Structure, additional observations
ADV	N			0				TOPSOIL - Silty SAND, fine to medium grained, dark grey	M	L	Disturbed ground
				1							
				1	0.25						
				1			SM	Silty SAND - fine to medium grained, pale grey	M	L	
				1	0.50						
				2							
				4							
				5	0.75				M	MD	
				4							
				4	1.00			Becoming pale grey/pale brown, trace coarse grained sand			
				4							
				4							
				5	1.25						
				5							
				6	1.50						
				15+							
								Beoming pale orange	M	D	
					1.75						
					2.00						
					2.25			Borehole BH1 auger refusal @ 2.3m on inferred layer of ironstone			

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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. GL22355A

Client : Mr Peter Wilkes
Project : Landslide Risk Assessment
Location : 77 St Helens Point Road, Stieglitz
Date : 28/07/2022
Logged By : SS

Drill model : DrillTech
Hole diameter : 150mm
Easting:
Northing:
Slope: 90°
Bearing: -
RL Surface :
Datum :

Method	Support	Penetration	Water	DCP (Blows/ 100mm)	Depth (m)	Graphic log	Classification Symbol	Material Description	Moisture condition	Consistency density, index	Structure, additional observations
ADV	N			1 1 1	0.25			TOPSOIL - Silty SAND, fine to medium grained, dark grey	M	L	Disturbed ground
				1 1 1 1 1 2 2	0.50 0.75 1.00		SM	Silty SAND - fine to medium grained, grey	M	L	
				4 4 4 4 5 4 7 15+	1.25 1.50 1.75			Becoming pale grey/pale brown, trace coarse grained sand	M	MD	
					2.00			Becoming orange/brown - fine to medium grained	M	D	
					2.25			Borehole BH2 auger refusal @ 2.0m on inferred layer of ironstone			

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ENGINEERING BOREHOLE LOG

Borehole no. BH3
Sheet no. 1 of 1
Job no. GL22355A

Client : Mr Peter Wilkes
Project : Landslide Risk Assessment
Location : 77 St Helens Point Road, Stieglitz
Date : 28/07/2022
Logged By : SS

Drill model : DrillTech
Hole diameter : 150mm
Easting:
Northing:
Slope: 90°
Bearing: -
RL Surface :
Datum :

Method	Support	Penetration	Water	DCP (Blows/ 100mm)	Depth (m)	Graphic log	Classification Symbol	Material Description	Moisture condition	Consistency density, index	Structure, additional observations
				1 1 1	0.25			TOPSOIL - Silty SAND, fine to medium grained, dark grey	M	L	Disturbed ground
ADV	N			1 1 1 1 2 6 7 15+	0.50 0.75 1.00 1.25 1.50 1.75		SM	Silty SAND - fine to medium grained, pale grey Becoming pale grey/pale brown, trace coarse grained sand, trace clay Beoming orange	M M M	L MD D	
					2.00 2.25			Borehole BH3 auger refusal @ 1.9m on inferred layer of ironstone			

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ENGINEERING BOREHOLE LOG

Borehole no. BH4
Sheet no. 1 of 1
Job no. GL22355A

Client : Mr Peter Wilkes
Project : Landslide Risk Assessment
Location : 77 St Helens Point Road, Stieglitz
Date : 28/07/2022
Logged By : SS

Drill model : DrillTech
Hole diameter : 150mm
Easting:
Northing:
Slope: 90°
Bearing: -
RL Surface :
Datum :

Method	Support	Penetration	Water	DCP (Blows/ 100mm)	Depth (m)	Graphic log	Classification Symbol	Material Description	Moisture condition	Consistency density, index	Structure, additional observations
ADV	N			2 2 2	0.25			TOPSOIL - Silty SAND, fine to medium grained, dark grey	M	L	Disturbed ground
				2 2 2 2 6	0.50 0.75		SM	Silty SAND - fine to medium grained, pale grey	M	L	
				12 14 15+	1.00 1.25 1.50			Becoming brown, trace coarse grained sand, trace clay Fine to coarse grained	M M	MD D	
					1.75 2.00			Beoming orange, fine to medium grained	M	D	
					2.25			Borehole BH4 auger refusal @ 2.0m on inferred layer of ironstone			

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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	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)

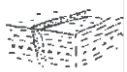
SOIL CLASSIFICATION INCLUDING IDENTIFICATION AND DESCRIPTION

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.	

Appendix B

Photographs

Plate 1 - View of the site looking to the south

Plate 2 - View of the slope and vegetation downslope of the existing dwelling, looking to the northwest

GEOTON Pty Ltd				client:	MR PETER WILKES	
				project:	77 ST HELENS POINT ROAD STIEGLITZ	
title:	PHOTOGRAPH					
date:	28/07/2022	original size	A4	project no:	GL22355A	figure no. PLATES 1 & 2

Plate 3 - Shallower slopes within affected area of the landslide ID 5080, immediately to the northwest of the site

Plate 4 - View of the existing dwelling looking to the east

GEOTON Pty Ltd				client:	MR PETER WILKES	
				project:	77 ST HELENS POINT ROAD STIEGLITZ	
title:	PHOTOGRAPH					
date:	28/07/2022	original size	A4	project no:	GL22355A	figure no. PLATES 3 & 4

Appendix C

Qualitative Terminology for Use in Assessing Risk to Property

QUALITATIVE TERMINOLOGY FOR USE IN ASSESSING RISK TO PROPERTY

QUALITATIVE MEASURES OF LIKELIHOOD

Approximate Annual Probability		Implied Indicative Landslide Recurrence Interval		Description	Descriptor	Level
Indicative Value	Notional Boundary					
10^{-1}	5x10-2	10 years	20 years	The event is expected to occur over the design life.	ALMOST CERTAIN	A
10-2	5x10-3	100 years	200 years	The event will probably occur under adverse conditions over the design life.	LIKELY	B
10-3	5x10-4	1000 years	2000 years	The event could occur under adverse conditions over the design life.	POSSIBLE	C
10-4	5x10-5	10,000 years	20,000 years	The event might occur under very adverse circumstances over the design life.	UNLIKELY	D
10-5	5x10-6	100,000 years	200,000 years	The event is conceivable but only under exceptional circumstances over the design life.	RARE	E
10-6		1,000,000 years		The event is inconceivable or fanciful over the design life.	BARELY CREDIBLE	F

Note: (1) The table should be used from left to right; use Approximate Annual Probability or Description to assign Descriptor, not *vice versa*.

QUALITATIVE MEASURES OF CONSEQUENCES TO PROPERTY

Approximate Cost of Damage		Description	Descriptor	Level
Indicative Value	Notional Boundary			
200%	100%	Structure(s) completely destroyed and/or large scale damage requiring major engineering works for stabilisation. Could cause at least one adjacent property major consequence damage.	CATASTROPHIC	1
60%	40%	Extensive damage to most of structure, and/or extending beyond site boundaries requiring significant stabilisation works. Could cause at least one adjacent property medium consequence damage.	MAJOR	2
20%	10%	Moderate damage to some of structure, and/or significant part of site requiring large stabilisation works. Could cause at least one adjacent property minor consequence damage.	MEDIUM	3
5%	1%	Limited damage to part of structure, and/or part of site requiring some reinstatement stabilisation works.	MINOR	4
0.5%		Little damage. (Note for high probability event (Almost Certain), this category may be subdivided at a notional boundary of 0.1%. See Risk Matrix.)	INSIGNIFICANT	5

Notes: (2) The Approximate Cost of Damage is expressed as a percentage of market value, being the cost of the improved value of the unaffected property which includes the land plus the unaffected structures.

(3) The Approximate Cost is to be an estimate of the direct cost of the damage, such as the cost of reinstatement of the damaged portion of the property (land plus structures), stabilization works required to render the site to tolerable risk level for the landslide which has occurred and professional design fees, and consequential costs such as legal fees, temporary accommodation. It does not include additional stabilisation works to address other landslides which may affect the property.

(4) The table should be used from left to right; use Approximate Cost of Damage or Description to assign Descriptor, not vice versa

QUALITATIVE TERMINOLOGY FOR USE IN ASSESSING RISK TO PROPERTY (CONTINUED)

QUALITATIVE RISK ANALYSIS MATRIX – LEVEL OF RISK TO PROPERTY

LIKELIHOOD		CONSEQUENCES TO PROPERTY (With Indicative Approximate Cost of Damage)				
	Indicative Value of Approximate Annual Probability	1: CATASTROPHIC 200%	2: MAJOR 60%	3: MEDIUM 20%	4: MINOR 5%	5: INSIGNIFICANT 0.5%
A – ALMOST CERTAIN	10^{-1}	VH	VH	VH	H	M or L (5)
B - LIKELY	10^{-2}	VH	VH	H	M	L
C - POSSIBLE	10^{-3}	VH	H	M	M	VL
D - UNLIKELY	10^{-4}	H	M	L	L	VL
E - RARE	10^{-5}	M	L	L	VL	VL
F - BARELY CREDIBLE	10^{-6}	L	VL	VL	VL	VL

Notes: (5) For Cell A5, may be subdivided such that a consequence of less than 0.1% is Low Risk.
(6) When considering a risk assessment it must be clearly stated whether it is for existing conditions or with risk control measures which may not be implemented at the current time.

RISK LEVEL IMPLICATIONS

Risk Level		Example Implications (7)
VH	VERY HIGH RISK	Unacceptable without treatment. Extensive detailed investigation and research, planning and implementation of treatment options essential to reduce risk to Low; may be too expensive and not practical. Work likely to cost more than value of the property.
H	HIGH RISK	Unacceptable without treatment. Detailed investigation, planning and implementation of treatment options required to reduce risk to Low. Work would cost a substantial sum in relation to the value of the property.
M	MODERATE RISK	May be tolerated in certain circumstances (subject to regulator's approval) but requires investigation, planning and implementation of treatment options to reduce the risk to Low. Treatment options to reduce to Low risk should be implemented as soon as practicable.
L	LOW RISK	Usually acceptable to regulators. Where treatment has been required to reduce the risk to this level, ongoing maintenance is required.
VL	VERY LOW RISK	Acceptable. Manage by normal slope maintenance procedures.

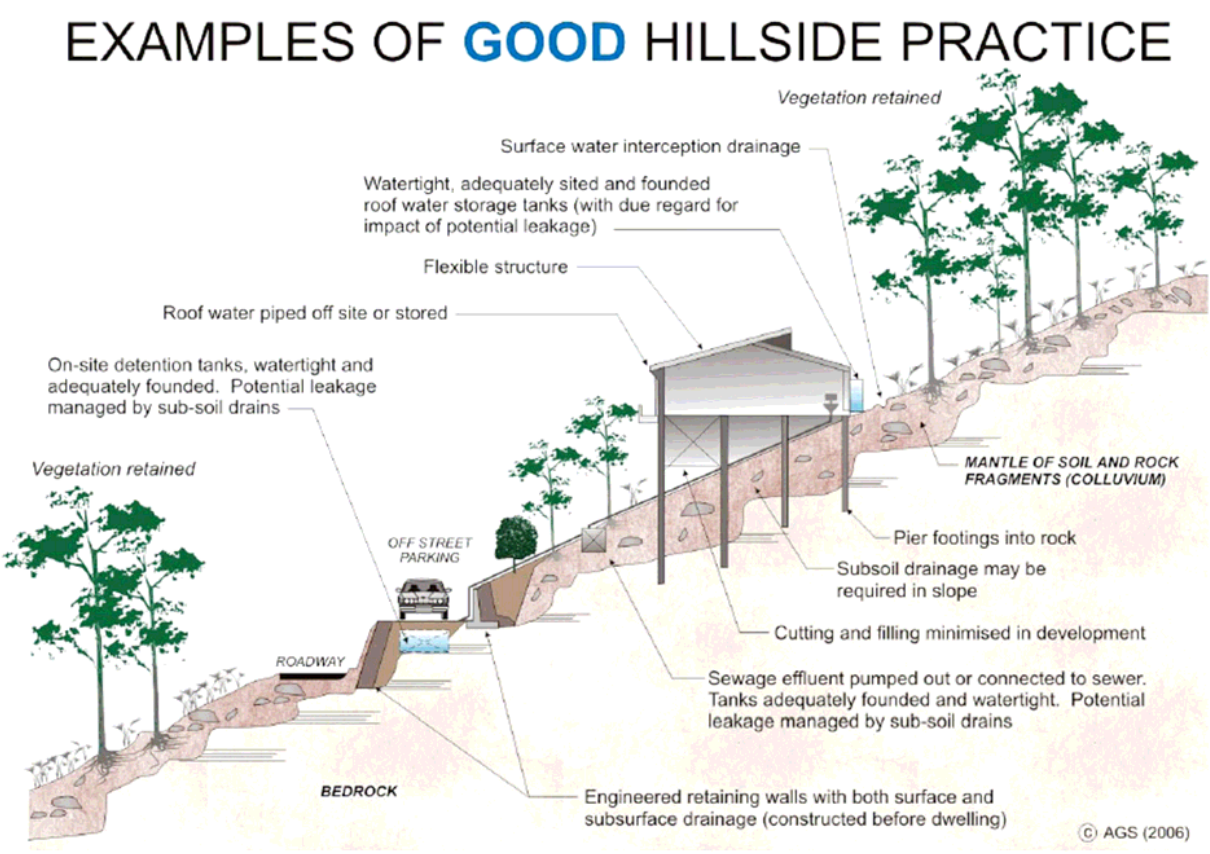
Note: (7) The implications for a particular situation are to be determined by all parties to the risk assessment and may depend on the nature of the property at risk; these are only given as a general guide

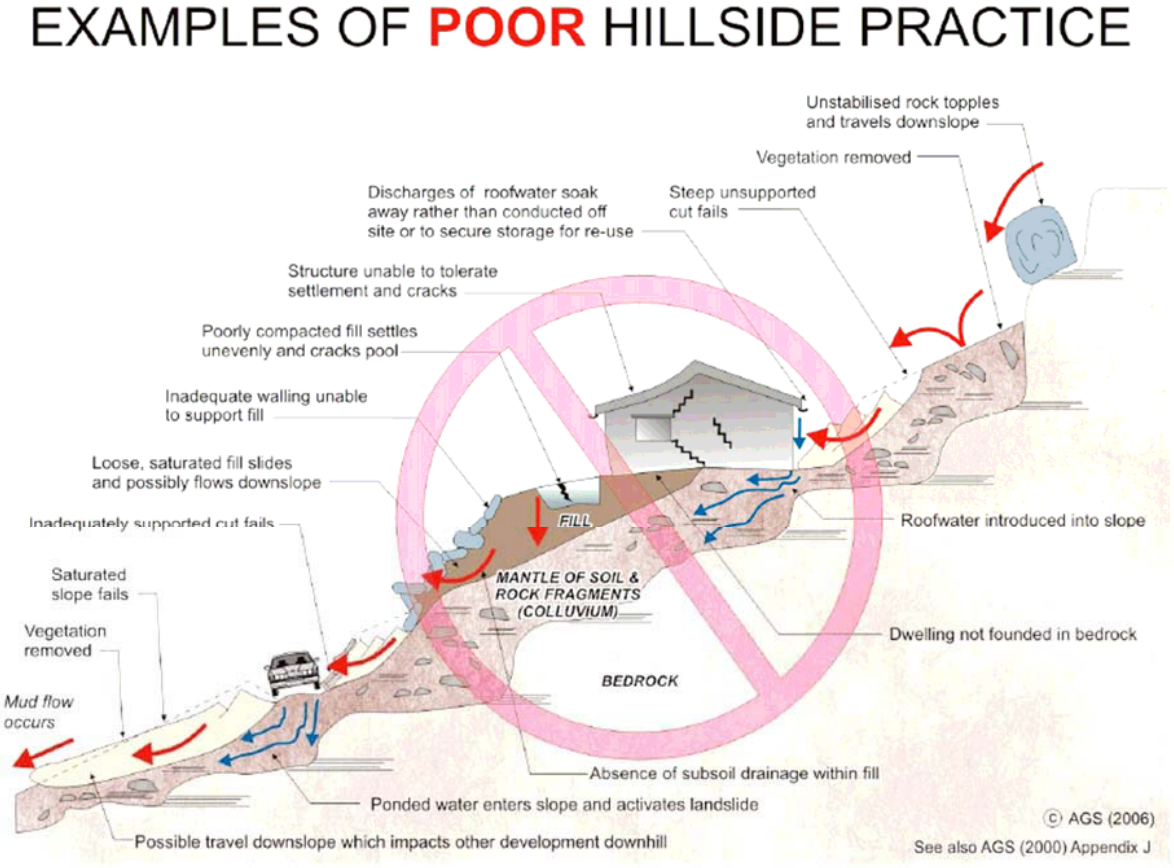
Appendix D

Some Guidelines for Hillside Construction

APPENDIX - SOME GUIDELINES FOR HILLSIDE CONSTRUCTION

	GOOD ENGINEERING PRACTICE	*POOR ENGINEERING PRACTICE*
ADVICE		
GEOTECHNICAL ASSESSMENT	Obtain advice from a qualified, experienced geotechnical practitioner at early stage of planning and before site works.	Prepare detailed plan and start site works before geotechnical advice.
PLANNING		
SITE PLANNING	Having obtained geotechnical advice, plan the development with the risk arising from the identified hazards and consequences in mind.	Plan development without regard for the Risk.
DESIGN AND CONSTRUCTION		
HOUSE DESIGN	Use flexible structures which incorporate properly designed brickwork, timber or steel frames, timber or panel cladding. Consider use of split levels. Use decks for recreational areas where appropriate.	Floor plans which require extensive cutting and filling. Movement intolerant structures.
SITE CLEARING	Retain natural vegetation wherever practicable.	Indiscriminately clear the site.
EARTHWORKS	Retain natural contours wherever possible.	Indiscriminatory bulk earthworks.
CUTS	Minimise depth. Support with engineered retaining walls or batter to appropriate slope. Provide drainage measures and erosion control.	Large scale cuts and benching. Unsupported cuts. Ignore drainage requirements
FILLS	Minimise height. Strip vegetation and topsoil and key into natural slopes prior to filling. Use clean fill materials and compact to engineering standards. Batter to appropriate slope or support with engineered retaining wall. Provide surface drainage and appropriate subsurface drainage.	Loose or poorly compacted fill, which if it fails, may flow a considerable distance including onto property below. Block natural drainage lines. Fill over existing vegetation and topsoil. Include stumps, trees, vegetation, topsoil, boulders, building rubble etc in fill.
ROCK OUTCROPS & BOULDERS	Remove or stabilise boulders which may have unacceptable risk. Support rock faces where necessary.	Disturb or undercut detached blocks or boulders.
RETAINING WALLS	Found on rock where practicable. Provide subsurface drainage within wall backfill and surface drainage on slope above. Construct wall as soon as possible after cut/fill operation.	Construct a structurally inadequate wall such as sandstone flagging, brick or unreinforced blockwork. Lack of subsurface drains and weepholes.
FOOTINGS	Found within rock where practicable. Use rows of piers or strip footings oriented up and down slope. Design for lateral creep pressures if necessary. Backfill footing excavations to exclude ingress of surface water.	Found on topsoil, loose fill, detached boulders or undercut cliffs.
SWIMMING POOLS	Engineer designed. Support on piers to rock where practicable. Provide with under-drainage and gravity drain outlet where practicable. Design for high soil pressures which may develop on uphill side whilst there may be little or no lateral support on downhill side.	
DRAINAGE		
SURFACE	Provide at tops of cut and fill slopes. Discharge to street drainage or natural water courses. Provide general falls to prevent blockage by siltation and incorporate silt traps. Line to minimise infiltration and make flexible where possible. Special structures to dissipate energy at changes of slope and/or direction.	Discharge at top of fills and cuts. Allow water to pond on bench areas.
SUBSURFACE	Provide filter around subsurface drain. Provide drain behind retaining walls. Use flexible pipelines with access for maintenance. Prevent inflow of surface water.	Discharge roof runoff into absorption trenches.
SEPTIC & SULLAGE	Usually requires pump-out or mains sewer systems; absorption trenches may be possible in some areas if risk is acceptable. Storage tanks should be water-tight and adequately founded.	Discharge sullage directly onto and into slopes. Use absorption trenches without consideration of landslide risk.
EROSION CONTROL & LANDSCAPING	Control erosion as this may lead to instability. Revegetate cleared area.	Failure to observe earthworks and drainage recommendations when landscaping.
DRAWINGS AND SITE VISITS DURING CONSTRUCTION		
DRAWINGS	Building Application drawings should be viewed by geotechnical consultant	
SITE VISITS	Site Visits by consultant may be appropriate during construction/	
INSPECTION AND MAINTENANCE BY OWNER		
OWNER'S RESPONSIBILITY	Clean drainage systems; repair broken joints in drains and leaks in supply pipes. Where structural distress is evident see advice. If seepage observed, determine causes or seek advice on consequences.	


EXAMPLES OF GOOD HILLSIDE PRACTICE
Vegetation retained
Surface water interception drainage
Watertight, adequately sited and founded roof water storage tanks (with due regard for impact of potential leakage)
Flexible structure
Roof water piped off site or stored
On-site detention tanks, watertight and adequately founded. Potential leakage managed by sub-soil drains
Vegetation retained
OFF STREET PARKING
ROADWAY
BEDROCK
MANTLE OF SOIL AND ROCK FRAGMENTS (COLLUVIUM)
Pier footings into rock
Subsoil drainage may be required in slope
Cutting and filling minimised in development
Sewage effluent pumped out or connected to sewer. Tanks adequately founded and watertight. Potential leakage managed by sub-soil drains
Engineered retaining walls with both surface and subsurface drainage (constructed before dwelling)
© AGS (2006)


EXAMPLES OF POOR HILLSIDE PRACTICE
Unstabilised rock topples and travels downslope
Vegetation removed
Discharges of roofwater soak away rather than conducted off site or to secure storage for re-use
Steep unsupported cut fails
Structure unable to tolerate settlement and cracks
Poorly compacted fill settles unevenly and cracks pool
Inadequate walling unable to support fill
Loose, saturated fill slides and possibly flows downslope
Inadequately supported cut fails
FILL
Roofwater introduced into slope
Saturated slope fails
MANTLE OF SOIL & ROCK FRAGMENTS (COLLUVIUM)
Vegetation removed
Dwelling not founded in bedrock
BEDROCK
Mud flow occurs
Absence of subsoil drainage within fill
Ponded water enters slope and activates landslide
Possible travel downslope which impacts other development downhill
© AGS (2006)
See also AGS (2000) Appendix J

Appendix E

Certificate Forms

CERTIFICATE OF QUALIFIED PERSON – ASSESSABLE ITEM

Section 321

Form **55**

To: Mr Peter Wilkes *Owner /Agent*

202/800 Chapel Street *Address*

South Yarra VIC 3141 *Suburb/postcode*

Qualified person details:

Qualified person: Tony Barriera - Geoton Pty. Ltd.

Address: PO Box 522 Phone No: 03 6326 5001

Prospect Tas 7250 Fax No:

Licence No: CC6220 P Email address: tbarriera@geoton.com.au

Qualifications and Insurance details: Tony Barriera – BEng, MSc CPEng, NER – IEAust 471929 Civil, Geotechnical Certain Underwriters at Lloyd's- About Underwriting

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

Speciality area of expertise: Geotechnical Engineering

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

Details of work:

Address: 77 St Helens Point Road Lot No: 39

STIEGLITZ Tas 7216 Certificate of title No: 63379/39

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 Site Classification – AS2870

(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:	Geoton Pty Ltd, Report Reference No. GL22355Ac, dated 11/08/2025
Relevant calculations:	Refer to report
References:	AS 2870 – 2011 Residential Slabs and Footings Construction AS 4055 – 2021 Wind Loads for Housing CSIRO Building Technical File 18

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

Site Classification in accordance to AS2870 - 2011
Wind Loading in accordance to AS 4055 - 2021
Findings and recommendations of report

Scope and/or Limitations

The classification applies to the site as investigated at the time and does not account for any future alteration to foundation conditions resulting from earthworks, drainage condition changes or site maintenance variations.

I certify the matters described in this certificate.

	Signed:	*Certificate No:*	*Date:*
Qualified person:		GL22355Ac	11/08/2025

GEOTON Pty Ltd
Geotechnical Consultants

Engineering Certificate

To:	Mr Peter Wilkes		*Owner /Agent*
	202/800 Chapel Street		*Address*
	South Yarra VIC	3141	*Suburb/postcode*

Certifier details:

From:	Geoton Pty Ltd		
Address:	PO Box 522	Phone No:	(03) 6326 5001
	Prospect TAS 7250	Fax No:	
Accreditation No: *(if applicable)*		Email address:	tbarriera@geoton.com.au
Or qualifications and Insurance details:	Tony Barriera – BENg, MSc, CPEng, NER – IEAust 471929 Civil, Geotechnical Certain Underwriters at Lloyd's- About Underwriting		*(description from Column 4 of the Director of Building Control's determination)*
Speciality area of expertise:	Geotechnical Engineering Landslide Risk Assessments		*(description from Column 5 of the Director of Building Control's determination)*

Details of work:

Address:	77 St Helens Point Road	Lot No:	39
	Stieglitz Tas 7216	Certificate of title No:	63379/39
The work related to this certificate:	Landslide Risk Assessment		*(description of the work or part work being certified)*

Certificate details:

Certificate type:	Geotechnical	*(description from Column 2 of the Director of Building Control's determination)*

In issuing this certificate the following matters are relevant –

Documents:	Geoton Pty Ltd, Report Reference No. GL22355Ac, dated 11/08/2025.
Relevant calculations:	Refer to report
References:	Australian Geomechanics Society – Practice Note Guidelines for Landslide Risk Management, 2007

Substance of Certificate:

GEOTON Pty Ltd
Geotechnical Consultants

Findings and recommendations of report (Report Reference No. GL22355Ac).

From the Tasmanian Planning Scheme (TPS) the site is mapped within a Medium and High Landslide Hazard Band. As such, a landslide risk assessment is required to determine if a tolerable risk can be achieved and maintained for the type, scale and intended life of use of the development.

The landslide risk assessment was conducted in accordance with Australian Geomechanics Society (AGS) – Practice Note Guidelines For Landslide Risk Management, 2007. Our report concluded that the qualitative landslide risk for the site is at **worst a LOW** risk provided the proposed development of the site is in accordance with the recommendations within our report. In our experience, regulating authorities allow developments to proceed with VERY LOW to LOW risk.

Therefore, provided the development of the site is in accordance with the recommendations within our report, then we consider that a tolerable level of risk can be achieved for the development of the site in accordance with section C15.6.1 (Building and works within a landslip hazard area) of the Landslide Hazard Code of the TPS – Break O' Day. That is, the level of likely risk from exposure to the natural hazard (landslide) is considered to be tolerable for the proposed residential development.

Scope or Limitations

The report provides a qualitative landslide risk assessment which identifies the landslide risks at the site and provides recommendations to maintain, improve and possibly reduce the risk of landslides so as not cause or contribute to the risk of landslides on the site and lands in the locality.

The site is within an area of inherent doubtful slope stability and landslides are a natural ongoing geological process. There will be always some level of landslide risk within an area of inherent doubtful slope stability. The recommendations of the report are provided to maintain, improve and possibly reduce the risk of landslides on the site and lands in the locality.

The recommendations for the design of the proposed works are in accordance with prevailing geological conditions described in the report for the site, assessed landslide risks and recommended good hillside practices.

I certify the matters described in this certificate.

	Signed:	*Date:*	*Certificate No.*
Certifier:		**11/08/2025**	**GL22335Ac**