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Department of Infrastructure, Local Government and Planning

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Information	

IDAS form 1—Application details

(Sustainable Planning Act 2009 version 4.2 effective 3 August 2015)

This form must be used for **ALL** development applications.

You **MUST** complete **ALL** questions that are stated to be a mandatory requirement unless otherwise identified on this form.

For all development applications, you must:

- complete this form (*IDAS form 1—Application details*)
- complete any other forms relevant to your application
- provide any mandatory supporting information identified on the forms as being required to accompany your application.

Attach extra pages if there is insufficient space on this form.

All terms used on this form have the meaning given in the *Sustainable Planning Act 2009* (SPA) or the Sustainable Planning Regulation 2009.

This form and any other IDAS form relevant to your application must be used for development applications relating to strategic port land and Brisbane core port land under the *Transport Infrastructure Act 1994* and airport land under the *Airport Assets (Restructuring and Disposal) Act 2008*. Whenever a planning scheme is mentioned, take it to mean land use plan for the strategic port land, Brisbane core port land or airport land.

PLEASE NOTE: This form is not required to accompany requests for compliance assessment.

Mandatory requirements

Applicant details (Note: the applicant is the person responsible for making the application and need not be the owner of the land. The applicant is responsible for ensuring the information provided on all IDAS application forms is correct. Any development permit or preliminary approval that may be issued as a consequence of this application will be issued to the applicant.)

Name/s (individual or company name in full)

DAVID CARY VIVIAN

For companies, contact name

Postal address

P.O. BOX 1413

Suburb

MOSSMAN

State

QLD

Postcode

4873

Country

AUST.

Contact phone number

074098 8109

Mobile number (non-mandatory requirement)

0427 107 427

Fax number (non-mandatory requirement)

Email address (non-mandatory requirement)

@

Applicant's reference number (non-mandatory requirement)

1. What is the nature of the development proposed and what type of approval is being sought?**Table A**—Aspect 1 of the application (If there are additional aspects to the application please list in Table B—Aspect 2.)

a) What is the nature of the development? (Please only tick one box.)

☐ Material change of use ☐ Reconfiguring a lot ☐ Building work ☒ Operational work

b) What is the approval type? (Please only tick one box.)

☐ Preliminary approval under s241 of SPA ☐ Preliminary approval under s241 and s242 of SPA ☒ Development permit
c) Provide a brief description of the proposal, including use definition and number of buildings or structures where applicable (e.g. six unit apartment building defined as a *multi-unit dwelling*, 30 lot residential subdivision etc.)

EXCAVATION FOR SEPTIC FIELD

d) What is the level of assessment? (Please only tick one box.)

☐ Impact assessment ☒ Code assessment
Table B—Aspect 2 of the application (If there are additional aspects to the application please list in Table C—Additional aspects of the application.)

a) What is the nature of development? (Please only tick one box.)

☐ Material change of use ☐ Reconfiguring a lot ☐ Building work ☐ Operational work

b) What is the approval type? (Please only tick one box.)

☐ Preliminary approval under s241 of SPA ☐ Preliminary approval under s241 and s242 of SPA ☐ Development permit
c) Provide a brief description of the proposal, including use definition and number of buildings or structures where applicable (e.g. six unit apartment building defined as a *multi-unit dwelling*, 30 lot residential subdivision etc.)

d) What is the level of assessment?

☐ Impact assessment ☐ Code assessment
Table C—Additional aspects of the application (If there are additional aspects to the application please list in a separate table on an extra page and attach to this form.)
☐ Refer attached schedule ☐ Not required

2. Location of the premises (Complete Table D and/or Table E as applicable. Identify each lot in a separate row.)

Table D—Street address and lot on plan for the premises or street address and lot on plan for the land adjoining or adjacent to the premises (Note: this table is to be used for applications involving taking or interfering with water.) (Attach a separate schedule if there is insufficient space in this table.)

- ☒ Street address **and** lot on plan (All lots must be listed.)
☐ Street address **and** lot on plan for the land adjoining or adjacent to the premises (Appropriate for development in water but adjoining or adjacent to land, e.g. jetty, pontoon. All lots must be listed.)

Street address					Lot on plan description		Local government area (e.g. Logan, Cairns)
Lot	Unit no.	Street no.	Street name and official suburb/ locality name	Post-code	Lot no.	Plan type and plan no.	
i)		69R	WHITELEAF RD.	4873	7	SP245712	DOUGLAS
ii)							
iii)							

Planning scheme details (If the premises involves multiple zones, clearly identify the relevant zone/s for each lot in a separate row in the below table. Non-mandatory)

Lot	Applicable zone / precinct	Applicable local plan / precinct	Applicable overlay/s
i)			
ii)			
iii)			

Table E—Premises coordinates (Appropriate for development in remote areas, over part of a lot or in water not adjoining or adjacent to land e.g. channel dredging in Moreton Bay.) (Attach a separate schedule if there is insufficient space in this table.)

Coordinates (Note: place each set of coordinates in a separate row)				Zone reference	Datum	Local government area (if applicable)
Easting	Northing	Latitude	Longitude			
					<input type="checkbox"/> GDA94 <input type="checkbox"/> WGS84 <input type="checkbox"/> other	

3. Total area of the premises on which the development is proposed (indicate square metres)

2 ACRES

4. Current use/s of the premises (e.g. vacant land, house, apartment building, cane farm etc.)

HOUSE.

5. Are there any current approvals (e.g. a preliminary approval) associated with this application? (Non-mandatory requirement)

☐ No ☐ Yes—provide details below

List of approval reference/s	Date approved (dd/mm/yy)	Date approval lapses (dd/mm/yy)
HOUSE APPROVED BY G.M.A ENGINEERING	8-2015	NOV. 2017

6. Is owner's consent required for this application? (Refer to notes at the end of this form for more information.)

☐ No
☒ Yes—complete either Table F, Table G or Table H as applicable

Table F


Name of owner/s of the land	DAVID CARY YIVIAN
I/We, the above-mentioned owner/s of the land, consent to the making of this application.	
Signature of owner/s of the land	
Date	20/9/2016 19/9/2016

Table G

Name of owner/s of the land	
<input type="checkbox"/> The owner's written consent is attached or will be provided separately to the assessment manager.	

Table H

Name of owner/s of the land	
<input type="checkbox"/> By making this application, I, the applicant, declare that the owner has given written consent to the making of the application.	

7. Identify if any of the following apply to the premises (Tick applicable box/es.)

- ☐ Adjacent to a water body, watercourse or aquifer (e.g. creek, river, lake, canal)—complete Table I
- ☐ On strategic port land under the *Transport Infrastructure Act 1994*—complete Table J
- ☐ In a tidal water area—complete Table K
- ☐ On Brisbane core port land under the *Transport Infrastructure Act 1994* (No table requires completion.)
- ☐ On airport land under the *Airport Assets (Restructuring and Disposal) Act 2008* (no table requires completion)
- ☐ Listed on either the Contaminated Land Register (CLR) or the Environmental Management Register (EMR) under the *Environmental Protection Act 1994* (no table requires completion)

Table I

Name of water body, watercourse or aquifer

Table J

Lot on plan description for strategic port land	Port authority for the lot

Table K

Name of local government for the tidal area (if applicable)	Port authority for the tidal area (if applicable)

8. Are there any existing easements on the premises? (e.g. for vehicular access, electricity, overland flow, water etc)

☒ No ☐ Yes—ensure the type, location and dimension of each easement is included in the plans submitted

9. Does the proposal include new building work or operational work on the premises? (Including any services)

☐ No ☒ Yes—ensure the nature, location and dimension of proposed works are included in plans submitted

10. Is the payment of a portable long service leave levy applicable to this application? (Refer to notes at the end of this form for more information.)

☒ No—go to question 12 ☐ Yes

11. Has the portable long service leave levy been paid? (Refer to notes at the end of this form for more information.)

☐ No

☐ Yes—complete Table L and submit with this application the yellow local government/private certifier's copy of the receipted QLeave form

Table L

Amount paid	Date paid (dd/mm/yy)	QLeave project number (6 digit number starting with A, B, E, L or P)

12. Has the local government agreed to apply a superseded planning scheme to this application under section 96 of the *Sustainable Planning Act 2009*?

☒ No

☐ Yes—please provide details below

Name of local government	Date of written notice given by local government (dd/mm/yy)	Reference number of written notice given by local government (if applicable)

- 13. List below all of the forms and supporting information that accompany this application** (Include all IDAS forms, checklists, mandatory supporting information etc. that will be submitted as part of this application)

Description of attachment or title of attachment	Method of lodgement to assessment manager
GEO TECHNICAL ASSESSMENT	COUNTER

14. Applicant's declaration

- ☒ By making this application, I declare that all information in this application is true and correct (Note: it is unlawful to provide false or misleading information)

Notes for completing this form

- Section 261 of the *Sustainable Planning Act 2009* prescribes when an application is a properly-made application. Note, the assessment manager has discretion to accept an application as properly made despite any non-compliance with the requirement to provide mandatory supporting information under section 260(1)(c) of the *Sustainable Planning Act 2009*

Applicant details

- Where the applicant is not a natural person, ensure the applicant entity is a real legal entity.

Question 1

- Schedule 3 of the *Sustainable Planning Regulation 2009* identifies assessable development and the type of assessment. Where schedule 3 identifies assessable development as "various aspects of development" the applicant must identify each aspect of the development on Tables A, B and C respectively and as required.

Question 6

- Section 263 of the *Sustainable Planning Act 2009* sets out when the consent of the owner of the land is required for an application. Section 260(1)(e) of the *Sustainable Planning Act 2009* provides that if the owner's consent is required under section 263, then an application must contain, or be accompanied by, the written consent of the owner, or include a declaration by the applicant that the owner has given written consent to the making of the application. If a development application relates to a state resource, the application is not required to be supported by evidence of an allocation or entitlement to a state resource. However, where the state is the owner of the subject land, the written consent of the state, as landowner, may be required. Allocation or entitlement to the state resource is a separate process and will need to be obtained before development commences.

Question 7

- If the premises is listed on either the Contaminated Land Register (CLR) or the Environmental Management Register (EMR) under the *Environmental Protection Act 1994* it may be necessary to seek compliance assessment. Schedule 18 of the *Sustainable Planning Regulation 2009* identifies where compliance assessment is required.

Question 11

- The *Building and Construction Industry (Portable Long Service Leave) Act 1991* prescribes when the portable long service leave levy is payable.
- The portable long service leave levy amount and other prescribed percentages and rates for calculating the levy are prescribed in the *Building and Construction Industry (Portable Long Service Leave) Regulation 2002*.

Question 12

- The portable long service leave levy need not be paid when the application is made, but the *Building and Construction Industry (Portable Long Service Leave) Act 1991* requires the levy to be paid before a development permit is issued.
- Building and construction industry notification and payment forms are available from any Queensland post office or agency, on request from QLeave, or can be completed on the QLeave website at www.qleave.qld.gov.au. For further information contact QLeave on 1800 803 481 or visit www.qleave.qld.gov.au.

Privacy—The information collected in this form will be used by the Department of Infrastructure, Local Government and Planning (DILGP), assessment manager, referral agency and/or building certifier in accordance with the processing and assessment of your application. Your personal details should not be disclosed for a purpose outside of the IDAS process or the provisions about public access to planning and development information in the *Sustainable Planning Act 2009*, except where required by legislation (including the *Right to Information Act 2009*) or as required by Parliament. This information may be stored in relevant databases. The information collected will be retained as required by the *Public Records Act 2002*.

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Date received

Reference numbers

NOTIFICATION OF ENGAGEMENT OF A PRIVATE CERTIFIER

To

Council. I have been engaged as the private certifier for the building work referred to in this application

Date of engagement	Name	BSA Certification license number	Building classification/s
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

QLEAVE NOTIFICATION AND PAYMENT (For completion by assessment manager or private certifier if applicable.)

Description of the work	QLeave project number	Amount paid (\$)	Date paid	Date receipted form sighted by assessment manager	Name of officer who sighted the form
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

The *Sustainable Planning Act 2009* is administered by the Department of Infrastructure, Local Government and Planning. This form and all other required application materials should be sent to your assessment manager and any referral agency.

IDAS form 6—Building or operational work assessable against a planning scheme

(Sustainable Planning Act 2009 version 3.1 effective 3 August 2015)

This form must be used for development applications for building work or operational work assessable against a planning scheme.

You **MUST** complete **ALL** questions that are stated to be a mandatory requirement unless otherwise identified on this form.

For all development applications, you must:

- complete *IDAS form 1—Application details*
- complete any other forms relevant to your application
- provide any mandatory supporting information identified on the forms as being required to accompany your application.

Attach extra pages if there is insufficient space on this form.

All terms used on this form have the meaning given in the *Sustainable Planning Act 2009* (SPA) or the *Sustainable Planning Regulation 2009*.

This form must be used for building work or operational work relating on strategic port land and Brisbane core port land under the *Transport Infrastructure Act 1994* and airport land under the *Airport Assets (Restructuring and Disposal) Act 2008* that requires assessment against the land use plan for that land. Whenever a planning scheme is mentioned, take it to mean land use plan for the strategic port land, Brisbane core port land or airport land.

Mandatory requirements

1. What is the nature of the work that requires assessment against a planning scheme? (Tick all applicable boxes.)

☐

Building work—complete Table A

☒

Operational work—complete Table B

Table A

- a) What is the nature of the building work (e.g. building, repairing, altering, underpinning, moving or demolishing a building)?

EXCAVATION FOR SEPTIC FIELD

- b) Are there any current approvals associated with this application? (e.g. material change of use.)

☐

No

☒

Yes—provide details below

List of approval reference/s	Date approved (dd/mm/yy)	Date approval lapses (dd/mm/yy)
HOUSE APPROVED BY	8-2015	NOV. 2017
G.M.A ENGINEERING		

Table B

a) What is the nature of the operational work? (Tick all applicable boxes.)

- ☐ Road works ☐ Stormwater ☐ Water infrastructure
☐ Drainage works ☒ Earthworks ☐ Sewerage infrastructure
☐ Landscaping ☐ Signage ☐ Clearing vegetation under the planning scheme
☐ Other—provide details

b) Is the operational work necessary to facilitate the creation of new lots? (E.g. subdivision.)

- ☒ No ☐ Yes—specify the number of lots being created

c) Are there any current approvals associated with this application? (E.g. material change of use.)

- ☐ No ☒ Yes—provide details below

List of approval reference/s	Date approved (dd/mm/yy)	Date approval lapses (dd/mm/yy)
HOUSE APPROVED BY	8-2015	NOV. 2017
GMA ENGINEERING		

2. What is the dollar value of the proposed building work?
(Inc GST, materials and labour.)

\$ ~~3,000.00~~ 3,000.00

3. What is the dollar value of the proposed operational work?
(Inc GST, materials and labour.)

\$ 3,000.00

Mandatory supporting information

4. Confirm that the following mandatory supporting information accompanies this application

Mandatory supporting information	Confirmation of lodgement	Method of lodgement
All applications involving building work or operational work		
<p>A site plan drawn to an appropriate scale (1:100, 1:200 or 1:500 are recommended scales) which shows the following:</p> <ul style="list-style-type: none"> the location and site area of the land to which the application relates (<i>relevant land</i>) the north point the boundaries of the relevant land the allotment layout showing existing lots, any proposed lots (including the dimensions of those lots), existing or proposed road reserves, building envelopes and existing or proposed open space (note: numbering is required for all lots) any existing or proposed easements on the relevant land and their function any access limitation strips all existing and proposed roads and access points on the relevant land. 	<input checked="" type="checkbox"/> Confirmed	

A statement about how the proposed development addresses the local government's planning schemes and any other planning documents relevant to the application.	<input checked="" type="checkbox"/> Confirmed	
A statement addressing the relevant part(s) of the State Development Assessment Provisions (SDAP).	<input checked="" type="checkbox"/> Confirmed <input type="checkbox"/> Not applicable	
Applications for building work (including extensions and demolition that is assessable development)		
Floor plans drawn to an appropriate scale (1:50, 1:100 or 1:200 are recommended scales) which show the following: <ul style="list-style-type: none"> the north point the intended use of each area on the floor plan (for commercial, industrial or mixed use developments only) the room layout (for residential development only) with all rooms clearly labelled the existing and the proposed built form (for extensions only) the gross floor area of each proposed floor area. 	<input type="checkbox"/> Confirmed <input checked="" type="checkbox"/> Not applicable	
Elevations drawn to an appropriate scale (1:100, 1:200 or 1:500 are recommended scales) which show plans of all building elevations and facades, clearly labelled to identify orientation (e.g. north elevation).	<input type="checkbox"/> Confirmed <input checked="" type="checkbox"/> Not applicable	
Plans showing the size, location, proposed site cover, proposed maximum number of storeys, and proposed maximum height above natural ground level of the proposed new building work.	<input type="checkbox"/> Confirmed <input checked="" type="checkbox"/> Not applicable	
Plans showing the extent of any demolition that is assessable development.	<input type="checkbox"/> Confirmed <input checked="" type="checkbox"/> Not applicable	
Applications for operational work involving earthworks (filling and excavating)		
Drawings showing: <ul style="list-style-type: none"> existing and proposed contours areas to be cut and filled the location and level of any permanent survey marks or reference stations used as datum for the works the location of any proposed retaining walls on the relevant land and their height the defined flood level (if applicable) the fill level (if applicable). 	<input checked="" type="checkbox"/> Confirmed <input type="checkbox"/> Not applicable	
Applications for operational work involving roadworks		
Drawings showing: <ul style="list-style-type: none"> existing and proposed contours the centreline or construction line showing chainages, bearings, offsets if the construction line is not the centreline of the road and all intersection points information for each curve including tangent point chainages and offsets, curve radii, arc length, tangent length, superelevation (if applicable) and curve widening (if applicable) kerb lines including kerb radii (where not parallel to centreline) and tangent point changes (where not parallel to centreline) edge of pavement where kerb is not constructed position and extent of channelisation location and details of all traffic signs, guideposts, guardrail and other street furniture pavement markings including details on raised pavement markers 	<input type="checkbox"/> Confirmed <input checked="" type="checkbox"/> Not applicable	

<ul style="list-style-type: none"> • catchpit, manhole and pipeline locations • drainage details (if applicable) • cross road drainage culverts (if applicable) • concrete footpaths and cycle paths • location and details for access points, ramps and invert crossings • changes in surfacing material. 		
Applications for operational work involving stormwater drainage		
Drawings showing: <ul style="list-style-type: none"> • existing and proposed contours • drainage locations, diameters and class of pipe, open drains and easements • manhole location, chainage and offset or coordinates and inlet and outlet invert levels • inlet pit locations, chainage and offset or coordinates and invert and kerb levels. 	<input type="checkbox"/> Confirmed <input checked="" type="checkbox"/> Not applicable	
Applications for operational work involving water reticulation		
Drawings showing: <ul style="list-style-type: none"> • kerb lines or edge of pavement where kerb is not constructed • location and levels of other utility services where affected by water reticulation works • pipe diameter, type of pipe and pipe alignment • water main alignments • water supply pump station details (if applicable) • minor reservoir details (if applicable) • conduits • location of valves and fire hydrants • location of house connections (if applicable) • location of bench marks and reference pegs. 	<input type="checkbox"/> Confirmed <input checked="" type="checkbox"/> Not applicable	
Applications for operational work involving sewerage reticulation		
Drawings showing: <ul style="list-style-type: none"> • location of all existing and proposed services • location of all existing and proposed sewer lines and manhole locations • location of all house connection branches • kerb lines or edge of pavement where kerb is not constructed • chainages • design sewer invert levels • design top of manhole levels • type of manhole and manhole cover • pipe diameter, type of pipe and pipe alignment • location of house connections (if applicable) • sewer pump station details (if applicable). 	<input type="checkbox"/> Confirmed <input checked="" type="checkbox"/> Not applicable	
Applications for operational work involving street lighting		
Drawings showing: <ul style="list-style-type: none"> • location of all light poles and service conduits • location of all other cross road conduits • type of wattage and lighting • any traffic calming devices • additional plans for roundabouts and major roads (if applicable) • details of any variations to normal alignment 	<input type="checkbox"/> Confirmed <input checked="" type="checkbox"/> Not applicable	

<ul style="list-style-type: none"> • details of lighting levels. 		
Applications for operational work involving public utility services		
Drawings showing: <ul style="list-style-type: none"> • any existing light poles and power poles • any existing underground services • details of proposed services • alteration to existing services. 	<input type="checkbox"/> Confirmed <input checked="" type="checkbox"/> Not applicable	
Applications for operational work involving landscaping works		
Drawings showing: <ul style="list-style-type: none"> • the location of proposed plant species • a plant schedule indicating common and botanical names, pot sizes and numbers of plants • planting bed preparation details including topsoil depth, subgrade preparation, mulch type and depth, type of turf, pebble, paving and garden edge • the location and type of any existing trees to be retained • construction details of planter boxes, retaining walls and fences • the proposed maintenance period • irrigation system details. 	<input type="checkbox"/> Confirmed <input checked="" type="checkbox"/> Not applicable	

Privacy—Please refer to your assessment manager, referral agency and/or building certifier for further details on the use of information recorded in this form.

OFFICE USE ONLY

Date received

Reference numbers

The *Sustainable Planning Act 2009* is administered by the Department of Infrastructure, Local Government and Planning. This form and all other required application materials should be sent to your assessment manager and any referral agency.

DOUGLAS SHIRE COUNCIL Received	
File Name.....	
Document No.....	
19 SEP 2016	
Attention	
Information	40.2016.1682.01

14 September 2016

GEO Ref: 16075AA-D-R01-v1 – David Vivian
Client Ref: TBA

Mr. David Vivian
PO Box 1413
MOSSMAN QLD 4873

**GEOTECHNICAL ASSESSMENT
69R WHITELEY ROAD, MIALLO**

Dear David,

Introduction

GEO Design has carried out a geotechnical assessment on a recently formed cut batter located at the rear of an existing property at 69R Whiteley Road, Miallo. It is understood that the geotechnical assessment was required by Douglas Shire Council as outlined in their letter dated 3 August, 2016 (Ref: #78142).

Given the above, the aims of the geotechnical assessment were as follows:

- Evaluate the subsurface conditions of the existing cut batter;
- comment on the stability of the existing cut batter;
- comment on slope stabilisation techniques if required;
- comment on slope stability issues at the site and provide comments in regards to the development's adherence to the State Planning Policy 1/03-Mitigating the Adverse Impacts of Flood, Bushfire and Landslide (Landslides only); and
- comment on any geotechnical issues related to the existing residence and cut batter.

This letter report presents the results of the assessment together with the engineering comments outlined above.

Fieldwork

Fieldwork comprised the following:

- A walkover assessment;
- mapping of exposed materials within the existing cut batter; and,
- overall site mapping and assessment of potential debris run out if instability occurs.

All fieldwork was carried out by an experienced Engineering Geologist.

Surface Conditions

The subject cut batter is located to the west of an existing single level residence constructed on a prepared cut and fill platform. The platform has been constructed along a north easterly trending ridgeline and the cut batter separates the building platform to the natural slopes to the west.

The cut batter ranges in maximum height between about 4.5m to 9.1m and has been formed at an overall angle of between 50° to 75°. The area above the existing batter crest is dominated by natural slopes and a small excavated bench with a poly water tank located about 5m to 6m behind the crest. The natural slope above the cut batter is dominated by thick vegetation.

No formed or lined drains are present above the cut batter crest. A natural drainage path is located to the west of the cut batter crest and extends to the north of the building pad. It appears that the surface water runoff from the natural slopes above are predominantly collected by the natural drainage path with little volumes falling over the batter crest.

The toe of the cut batter ranges from about 4 m to 17 m from the existing residence. The portion of the cut batter in closest proximity to the existing residence is about 4.5 m in height with the toe about 4 m from the residence.

It is understood that a sewerage treatment system has been installed within the building platform located to the north of the cut batter.

No evidence of large scale instability was observed during the walkover survey. Some minor areas of erosion and slumping were noted within the cut batter. Some tension cracking along the northern boundary, near the crest, of the building platform.

Photographs of the site are attached. The location of the cut batter in relation to the residence is presented in the attached Figure 1.

Subsurface Conditions

The subsurface conditions observed within the cut batter are dominated by extremely to highly weathered, very low strength to low strength interbedded argillite and greywacke rocks with some quartz veining. A thin (<1 m) soil cover is present over the weathered rock horizons.

The major discontinuities of the observed rocks in the cut batters are generally steeply dipping to the west/north west (62° - 70° / 220° - 320°) with subordinate fractures moderately dipping to the north east (35° - 45° / 052° - 061°).

The surface of the cut batter appears to be in good condition with relatively minor erosion and displacement of individual rock blocks. The intersection of the discontinuities has not resulted in the forming of discrete, loose rock blocks.

Stability

Based on the results of the investigation at this site, and experience with similar sites in this area of Douglas Shire, it is considered the geotechnical model for this site generally comprises a relatively thin layer of clayey colluvium over extremely to highly weathered rocks of the Hodgkinson Formation in the natural slopes.

Based on the above geotechnical model, together with the results of the fieldwork, stability analyses were carried out for the existing profile of the lot. A summary of the results of the stability analyses carried out for the site are presented in the following section.

Stability Analysis

Stability analyses were carried out for a typical profile of the existing cut batter. The profile was based on site measurements during fieldwork. Based on the materials observed at the site, the following strength parameters were adopted for the stability analyses:

Material Type	Strength Parameters	
	c'	ϕ'
Natural Clayey Colluvium	3 kPa	30°
Extremely to Highly Weathered Rock	25 kPa	38°

Analyses were initially performed for what were considered to be dry or "normal" conditions. Analyses were then performed for what were considered to be wet or "extreme" conditions.

A pore water pressure co-efficient ($R_u = 0.1$ - 0.2) was used to simulate seepage/water infiltration for "extreme" conditions.

The analyses were carried out for a potential local (medium scale) or global (large scale) circular failure using the proprietary software SLIDE V5.0. The results of the stability analyses are attached.

Calculated Factor of Safety (FOS)	
Dry Conditions	Wet Conditions
1.500	1.322

For the purposes of assessing stability we provide the following guidelines which are appropriate to the conditions at this site:

- A calculated factor of safety > 1.5 indicates the profile is likely to be stable.
- A calculated factor of safety from 1.0 – 1.5 indicates a marginally stable profile.
- A calculated factor of safety < 1.0 indicates the profile is likely to be unstable.

In general terms the factor of safety is calculated by dividing the forces resisting instability (i.e. the strength of the soil/rock or the strength of discontinuities within the soil/rock) by the forces driving instability (i.e. the weight of the soil/rock, plus groundwater/seepage, plus surcharges/loads on the slope). A calculated factor of safety of 1.0 indicates the forces are balanced, whereas a calculated factor of safety <1.0 indicates instability will likely occur.

For this site we consider that a calculated factor of safety >1.3 should be achieved for the wet or “extreme” conditions modelled, and that a calculated factor of safety >1.5 should be achieved for the dry or “normal” conditions modelled.

The results of the stability analyses indicate that the site has a factor of safety for stability of 1.500 under the dry conditions modelled and 1.322 under the extreme conditions modelled. As such, it is considered that the overall site should be stable if the measures outlined in the following sections are adopted.

Analyses for small scale slumping at this site is not possible and is dependent upon slight profile variations and the cover of soil materials, angle and orientation of the discontinuities and the influences of trees and water flow. It is considered that small scale slumping within unsupported batters and in the steep sections of natural slopes should be expected. It is considered that this instability should be in the form of relatively small slumps or erosion failures and occur during or following prolonged rainfall events. This type of instability is common in this area of Douglas Shire.

Landslide Risk

As part of the investigation, a landslide risk assessment was carried out for the area of the proposed development in general accordance with the guidelines of the Landslide Risk Management Concepts and Guidelines published by the Australian Geomechanics Society in March 2000. Risk assessment in accordance with the New South Wales Road Traffic Authority (RTA) Guide to Slope Risk Analysis, Version 3.1, and the Queensland Department of Transport and Main Roads (DTMR) Batter Slope Risk Element procedures were also carried out. These guides are based on the approach suggested in the Landslide Risk Management Concepts and Guidelines and to those outlined in the Australian Geoguide LR7 (Landslide Risk).

The landslide risk assessment generally involves the evaluation of slopes enabling the identification of potential hazards ("a condition with the potential for causing an undesirable consequence", for example, rockfall or slump type failure) and analyses the identified hazards with respect to likelihood and consequences using prescribed risk matrices. The risk matrices use a number of estimated conditional probabilities to calculate an Assessed Risk Level (ARL) rating for individual slopes.

The risk assessment procedure generally uses estimated conditional probabilities designed to characterise a sequence of events which must occur for slope instability to result in a fatality or injury to the community, damage to structures or buildings, and/or economical costs that may be associated with the effects of instability.

The principal conditional probabilities used in the risk assessment include the following:

- Temporal Probability (T)
- Vulnerability (V)
- Likelihood of instability (L)

In general, the risk assessments use T and V to estimate a Consequence rating (C) for loss of life or economic loss as a result of instability. The rating C is combined with L to derive the ARL rating.

The RTA system has five separate ARL categories, namely ARL1 to ARL5, with ARL1 being the highest risk rating and ARL5 being the lowest risk rating. It is generally understood that all slopes with a risk rating of ARL1 or ARL2 are given the highest priority and should have risk reduction measures implemented within the short term (<3 years). ARL3 sites generally undergo regular monitoring with risk reduction measures carried out if the assessed risk levels are considered to increase. Sites assessed as ARL4 and ARL5 are periodically inspected for any significant site changes.

In terms of the Guidelines for Landslide Risk Management outlined in Australian Geomechanics, Volume 42, No. 1 March 2007 (AGS 2007) the risk to property is defined as Very Low to Very High. In general terms risks of very low to low are tolerable for regulatory

bodies in relation to developments while higher risks are generally unacceptable without detailed investigation and implementation of risk reduction strategies to enable the reduction of risk to an acceptable level. The risk system matrix outlined in AGS 2007 is attached.

A full description of the risk analyses procedures are presented in the RTA and AGS 2007 documents. For further information the reader is directed to these documents.

The landslide risk assessment carried out as part of this investigation was based on the results of the stability analyses (outlined in the previous section), the walkover survey, site observations and based on experience in the Douglas Shire area.

The hazards evaluated as part of the risk analysis comprised the following:

1. Instability within the existing cut batter above the allotment resulting in downward migration of $>2\text{m}^3$ of soil debris providing significant impact on the residence.
2. Instability within the existing cut batter resulting in downward migration of $>20\text{m}^3$ of soil debris providing significant impact on the residence or surrounding structures.

Based on the above, the following AGS 2007 and RTA risk classifications have been assessed for the proposed development:

Hazard	AGS 2007 Risk Rating	ARL Risk Rating
1	Low	ARL4
2	Low	ARL4

Low to Very Low risks are generally considered acceptable to regulators for development approval in accordance with the relevant guides. As such, it is considered that the cut batter in its current form does not require further specific stabilisation measures. However, to maintain long term stability of the batter, the measures outlined in the following section should be adopted.

Recommendations

It is considered that some drainage measures should be included to promote long term stability of the cut batter. These include the provision of a lined drain behind the crest of the cut batter and promoting drainage of surface water on the building platform to a designated drainage path. All stormwater should be collected and discharged from the site via pipes into designated drainage paths and not allowed to flow on to the ground or around footings or structures. Where this is not possible, stormwater should be directed into flow spreaders or energy dissipaters to prevent concentrated flows.

It is also recommended that no further development or construction of permanent structures be allowed to the west and north of the cut batter toe in the area currently occupied by the sewerage treatment system.

It is further recommended that garden areas be constructed at the toe of the cut batter on the building platform. These garden areas would assist in providing capture zones for small debris from the batter surface. The batter slope surface should be kept clean of trees or other vegetation. Trees and shrubs on the batter surface may destabilise the batter surface through root jacking.

Routine maintenance and inspection of the cut batter, installed drains and structures should be undertaken on regular intervals. Inspections by experience geotechnical engineers should be carried out if significant changes in the site conditions are observed.

Closure

We thank you for the opportunity to provide our geotechnical services and look forward to working with you again. If you have any further queries, please contact the undersigned.

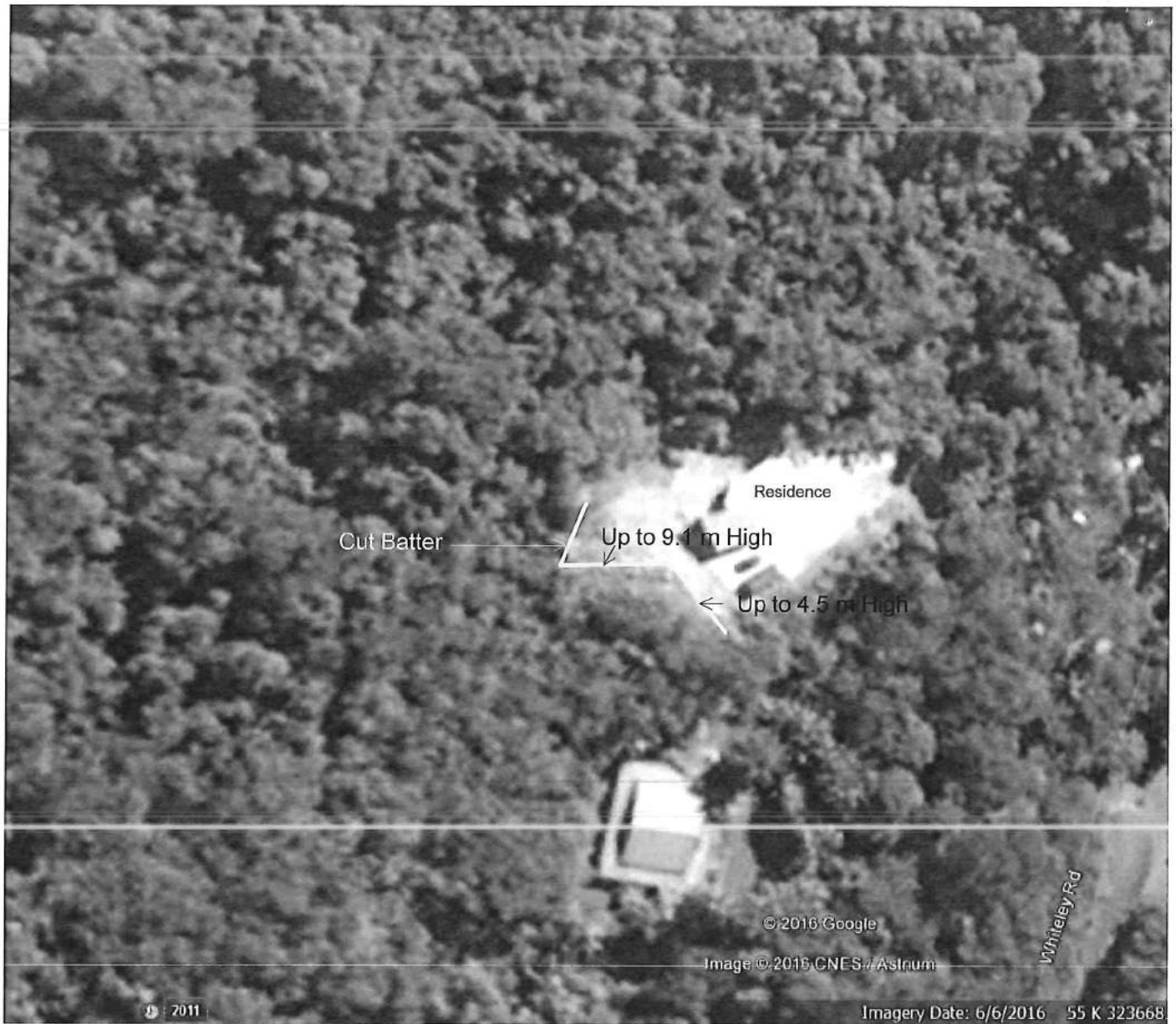
Yours sincerely,

A handwritten signature in black ink, appearing to read 'S Ford', is written over a light blue horizontal line.

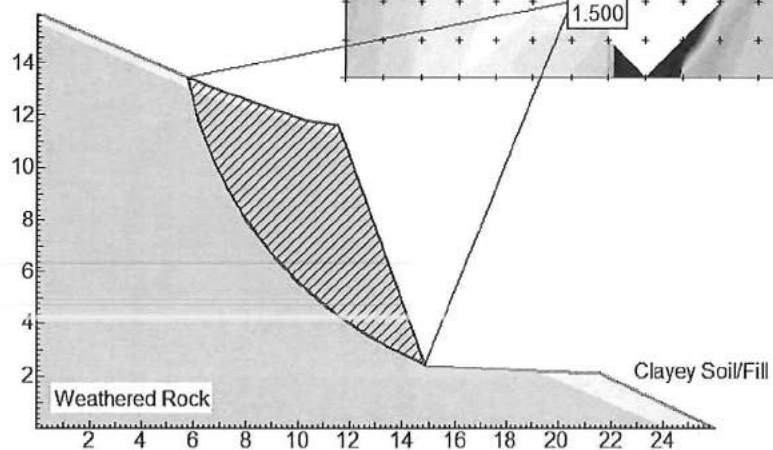
Steve Ford
Geotechnical Engineer

Attachments

1. Site Plan
2. Site Photographs
3. Stability Analyses
4. 2007 AGS Risk Matrix

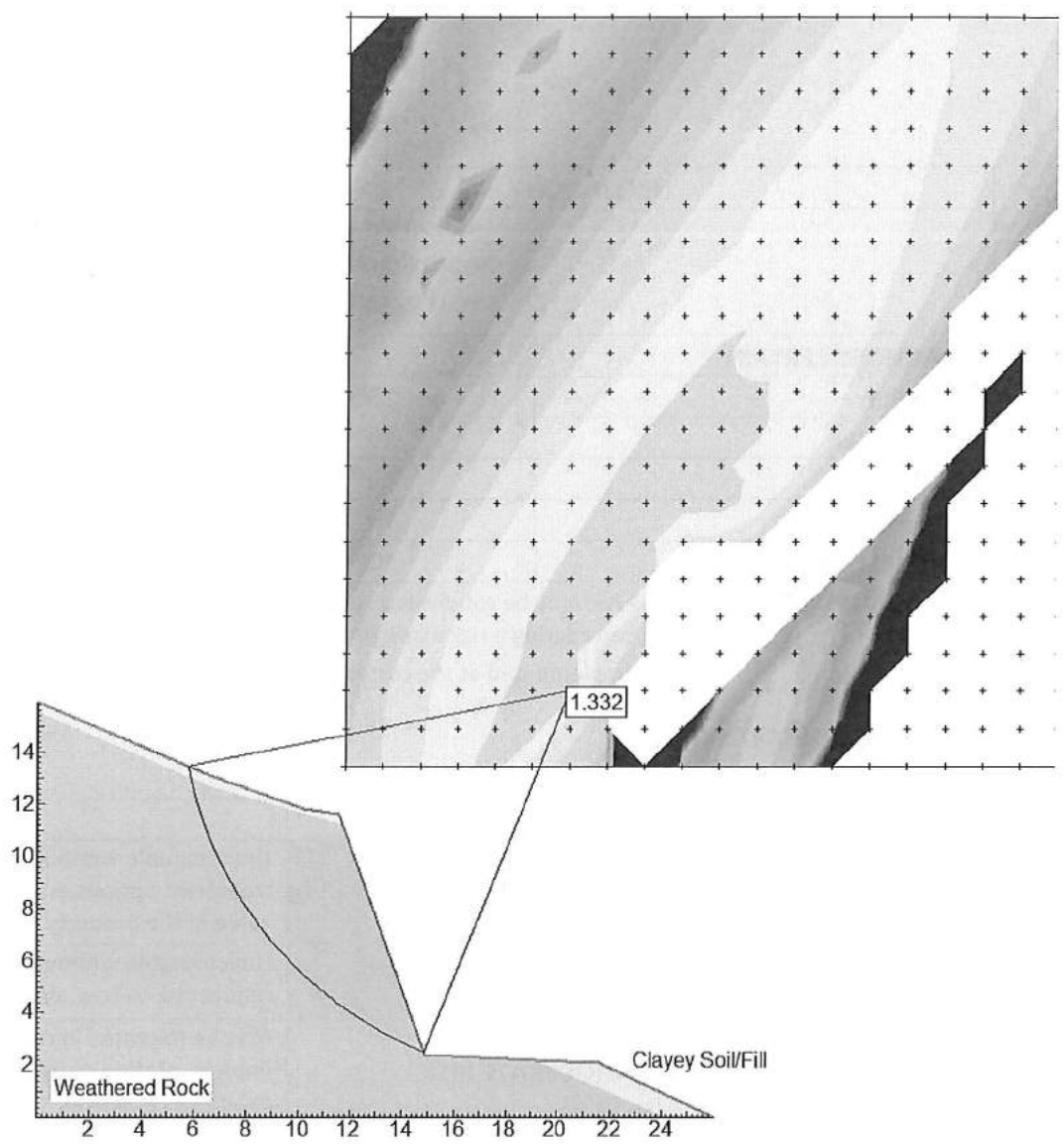






GEO | design

Client:	David Vivian	
Drawn:	SRF	
Scale:	NTS	RE
Project No:	16075AA-D	



GEO | design

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QUALITATIVE RISK ANALYSIS MATRIX – LEVEL OF RISK TO PROPERTY

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

- Notes:** (5) For cell A5, may be subdivided such as 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 not be implemented at the current time

RISK LEVEL IMPLICATIONS

Risk Level		Example Implications
VH	VERY HIGH RISK	Unacceptable without treatment. Extensive detailed investigation and treatment options essential to reduce risk to low; may be too expensive value of the property.
H	HIGH RISK	Unacceptable without treatment. Detailed investigation, planning and treatment required to reduce risk to Low. Work would cost a substantial sum in relation to value of the property.
M	MODERATE RISK	May be tolerated in certain circumstances (subject to regulator's approval) implementation of treatment options to reduce risk to Low. Treatment as soon as practical.
L	LOW RISK	Usually acceptable to regulators. Where treatment has been required, 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 vary; these are only given as a general guide.