



25 SEP 2020

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Form 4 – Minimal Impact Certification

DA Number: _____

This form may be used where minor construction works which present minimal or no geotechnical impact on the site or related land are proposed to be erected within the "G" line area of the geotechnical maps.

A geotechnical engineer or engineering geologist must inspect the site and/or review the proposed development documentation to determine if the proposed development requires a geotechnical report to be prepared to accompany the development application. Where the geotechnical engineer determines that such a report is not required then they must complete this form and attach design recommendations where required. A copy of Form 4 with design recommendation, if required, must be submitted with the development application.

Please contact the Alpine Resorts Team in Jindabyne for further information - phone 02 6456 1733.

To complete this form, please place a cross in the appropriate boxes ☐ and complete all sections.

1. Declaration made by geotechnical engineer or engineering geologist in relation to a nil or minimal geotechnical impact assessment and site classification

I,

Mr ☒

Ms ☐

Mrs ☐

Dr ☐

Other

First Name

PAUL

Family Name

STUBBS

OF

Company/organisation

JK GEOTECHNICS PTY LIMITED

certify that I am a geotechnical engineer /engineering geologist as defined by the "Policy" and I have inspected the site and reviewed the proposed development known as
reviewed the report prepared by A Hulskamp of JK Geotechnics (Ref 33066SHrpt2, dated 8/04/20)

PROPOSED ALTERATIONS AND ADDITIONS

As a result of my site inspection and review of the following documentation

(List of documentation reviewed)

* Architectural drawings by David Law (Beaton-Garage-S, Sheets 1 to 4, dated 17/2/20)

I have determined that;

- ☒ the current load-bearing capacity of the existing building will not be exceeded or adversely impacted by the proposed development, and
- ☒ the proposed works are of such a minor nature that the requirement for geotechnical advice in the form of a geotechnical report, prepared in accordance with the "Policy", is considered unnecessary for the adequate and safe design of the structural elements to be incorporated into the new works, and
- ☒ in accordance with AS 2870.1 Residential Slabs and Footings, the site is to be classified as a type

(insert classification type)


Class 'P'

- ☒ I have attached design recommendations to be incorporated in the structural design in accordance with this site classification.

I am aware that this declaration shall be used by the Department as an essential component in granting development consent for a structure to be erected within the "G" line area (as identified on the geotechnical maps) of Kosciuszko Alpine Resorts without requiring the submission of a geotechnical report in support of the development application.

2. Signatures

Signature



Name

Paul Stubbs

Chartered professional status

CPEng (130775), MIEAust

Date

8/04/2020

3. Contact details

Alpine Resorts Team

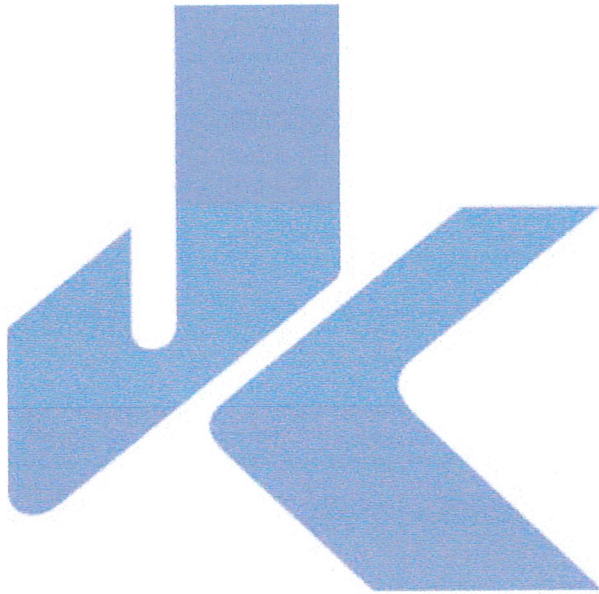
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Planning,
Industry &
Environment

25 SEP 2020

RECEIVED - JINDABYNE

REPORT TO
CHARBELLE PTY LTD

ON
GEOTECHNICAL ASSESSMENT

FOR
PROPOSED ALTERATIONS AND ADDITIONS

AT
20 MOUNTAIN DRIVE, THREDBO, NSW

Date: 8 April 2020

Ref: 33066SHrpt2

JKGeotechnics
www.jkgeotechnics.com.au

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JK Geotechnics Pty Ltd

ABN 17 003 550 801



Report prepared by:



Adrian Hulskamp
Senior Associate | Geotechnical Engineer

Report reviewed by:



Paul Stubbs
Principal | Geotechnical Engineer

For and on behalf of
JK GEOTECHNICS
PO BOX 976
NORTH RYDE BC NSW 1670

DOCUMENT REVISION RECORD

Report Reference	Report Status	Report Date
33066RHrpt2	Final Report	8 April 2020

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ATTACHMENTS

Architectural Drawings by David Law

1 INTRODUCTION

This report presents the results of our geotechnical assessment for the proposed alterations and additions at 20 Mountain Drive, Thredbo, NSW.

The provided architectural drawings by David Law (Ref No. Beaton-Garage-S, Sheets 1 to 4, dated 17 February 2020) show that the proposed works will essentially comprise a two storey addition off the south-eastern portion of the lodge, with some minor internal alterations. The proposed garage on the ground floor level will be constructed with a finished floor level at RL1378.35. To achieve this level, we estimate that minor cut and fill earthworks to a maximum depth/height of about 0.7m will be required. The proposed patio will be at, or close to, existing surface levels. We have assumed typical structural loads for this type of development apply. The provided architectural drawings are attached to this report.

The purpose of the geotechnical assessment was to carry out a walkover inspection of the site and review the provided architectural drawings, and to assess whether the proposed works present 'minimal or no geotechnical impact' on the site, and if so, to prepare a signed Form 4 – Minimal Impact Certification. Based on our assessment, we would determine whether a further geotechnical report, which includes a risk assessment, would be required.

2 ASSESSMENT PROCEDURE

The assessment included a walkover inspection of the topographic, surface drainage and geological conditions of the site and its immediate environs by our Senior Associate level geotechnical engineer (Adrian Hulskamp) on 17 March 2020, and a review of the provided architectural drawings.

A subsurface investigation, geotechnical laboratory testing of site soils and testing of the soils and groundwater for possible contamination were outside the agreed scope of this assessment.

3 SITE OBSERVATIONS

The area of the proposed alterations and additions is located on a gently sloping east facing hillside, which grades at about 5° down to the east, but with some locally flatter areas. Mountain Drive bounds the site along its southern side.

At the time of our inspection, the site contained a two-storey timber clad and mortared granite block lodge that was occupied by Nos. 20 & 22 Mountain Drive, with No. 20 occupying the eastern portion. The lodge appeared to be in good external condition, based on a cursory inspection from within the site and Mountain Drive. The area of the proposed alterations and additions is located off the south-eastern corner of the lodge and was relatively flat. Some fill appeared to have been placed to a shallow depth over the eastern side of the area, where the ground surface was slightly uneven. The ground surface within, and immediately

adjacent to, the development footprint was covered by grass, scattered granite boulders, and several tall trees. Refer to Plate 1 below.



Plate 1: View looking north-west from Mountain Drive showing the area of the proposed alterations and additions.

We did not observe any obvious signs of hillside slope instability, such as slumping, tension cracks, etc. The site appeared to be well drained. No 'soft' or 'boggy' ground in the vicinity of the proposed works was observed.

4 COMMENTS AND RECOMMENDATIONS

We consider that the proposed development will have 'minimal or no geotechnical impact' on the site. This is based on the following:

- The gently sloping hillside and ground surface where the development is proposed;
- The relatively shallow depths of excavation and filling required;
- The expected low structural loads for the proposed addition; and
- The proposed works are not expected to exceed the current load-bearing capacity of the existing building.

On the basis of the above, we consider that a geotechnical report prepared in accordance with the Geotechnical Policy for Kosciuszko Alpine Resorts (2003) is not required. This report is preceded by a completed Form 4 – Minimal Impact Certification.

Based on our site observations, there appears to have been some fill placed, with the depth being possibly about 0.5m and which may comprise clay. As no details have been provided as to how this fill was placed, we assume the fill is 'uncontrolled', so the site is Class 'P' in accordance with the AS2870-2011 'Residential Slabs and Footings – Construction'. The subsurface profile below the fill, or where there is no fill present, is expected to comprise residual clayey sand and/or sandy clay with granite bedrock at relatively shallow depth. Design of the footings must therefore be carried out by using engineering principles.

We recommend the following advice be taken into consideration for the proposed development:

- All grass, trees (including the stumps), topsoil, root affected soils, deleterious fill (if present) and any detached boulders should be stripped/removed from the proposed development footprint.
- Excavation can be carried out using a bucket fitted to a small excavator, assuming only soil or extremely weathered granite is encountered. Though unlikely, if bedrock of very low or higher strength is encountered, then further geotechnical advice should be sought on suitable rock excavation equipment and controlling of vibrations to reduce the risk of damage to the adjoining lodge.
- Excavation for new footings must be carried out with care so as to not undermine existing footings. In this regard, consideration should be given to excavating test pits to expose the existing lodge footings adjacent to the works to determine the foundation materials. If there are any concerns then further geotechnical advice should be sought.
- The proposed addition may be supported by pad and/or strip footings. The footings must penetrate any existing fill and be founded in residual soils (at least stiff clay or loose sand) or onto weathered granite bedrock and may be designed for maximum allowable end bearing pressures of 100kPa and 400kPa, respectively. If granite is exposed in the base of some footing excavations, then for uniformity of support, all footings should be founded in the bedrock. Should there be any concern as to the type and/or quality of the foundation materials, then further geotechnical advice should be sought.
- To reduce the potential for differential movements, the ground floor slab should be designed as suspended. On completion of the earthworks, if residual clays are exposed then these could have some reactive potential, so we recommend that ground beams between footings to rock and the suspended floor slab be poured over compressible void formers, which can accommodate heave movements of at least 20mm to isolate the structural members from the underlying clays. The void formers would not be required where the ground beams are in contact with rock, or where the underlying soils are granular.
- We expect some low height retaining walls will be required. Assuming the walls are restrained by the proposed addition, a triangular lateral earth pressure distribution should be adopted using an 'at rest' earth pressure coefficient of 0.5. A bulk unit weight of 20kN/m³ should be adopted for the retained profile. Any surcharge affecting the walls should be allowed for in the design using the earth pressure coefficient above. The retaining wall should be designed as drained and the design should incorporate drainage measures to reduce the build up of pore water pressures. Lateral toe restraint may be achieved by the resistance of the ground in front of the walls. For embedment depth design, a triangular lateral earth pressure distribution should be adopted using a 'passive' lateral earth pressure coefficient of 3, assuming near horizontal ground in front of the walls and the walls are founded in

competent residual soils or weathered bedrock. All localised excavations in front of the wall, such as for buried services, footings, etc, must be taken into account in the embedment depth design.

- Control joints should be installed at the interface between the existing and proposed structure to permit relative movement, unless it can be shown (such as by excavation of test pits) that the existing lodge footings and proposed footings are both founded in/on rock.
- Any existing subsoil drainage or surface drainage measures disturbed as part of the proposed works should be reconstructed so that the current site drainage is maintained.
- Any excavated material which is not reused must be appropriately disposed of off-site.

5 GENERAL COMMENTS

The recommendations presented in this report include specific issues to be addressed during the construction phase of the project. In the event that any of the construction phase recommendations presented in this report are not implemented, the general recommendations may become inapplicable and JK Geotechnics accept no responsibility whatsoever for the performance of the structure where recommendations are not implemented in full and properly tested, inspected and documented.

It is possible that the subsurface soil, rock or groundwater conditions encountered during construction may be found to be different (or may be interpreted to be different) from those expected. Also, we have not had the opportunity to observe surface run-off patterns during heavy rainfall and cannot comment directly on this aspect. If conditions appear to be at variance or cause concern for any reason, then we recommend that you immediately contact this office.

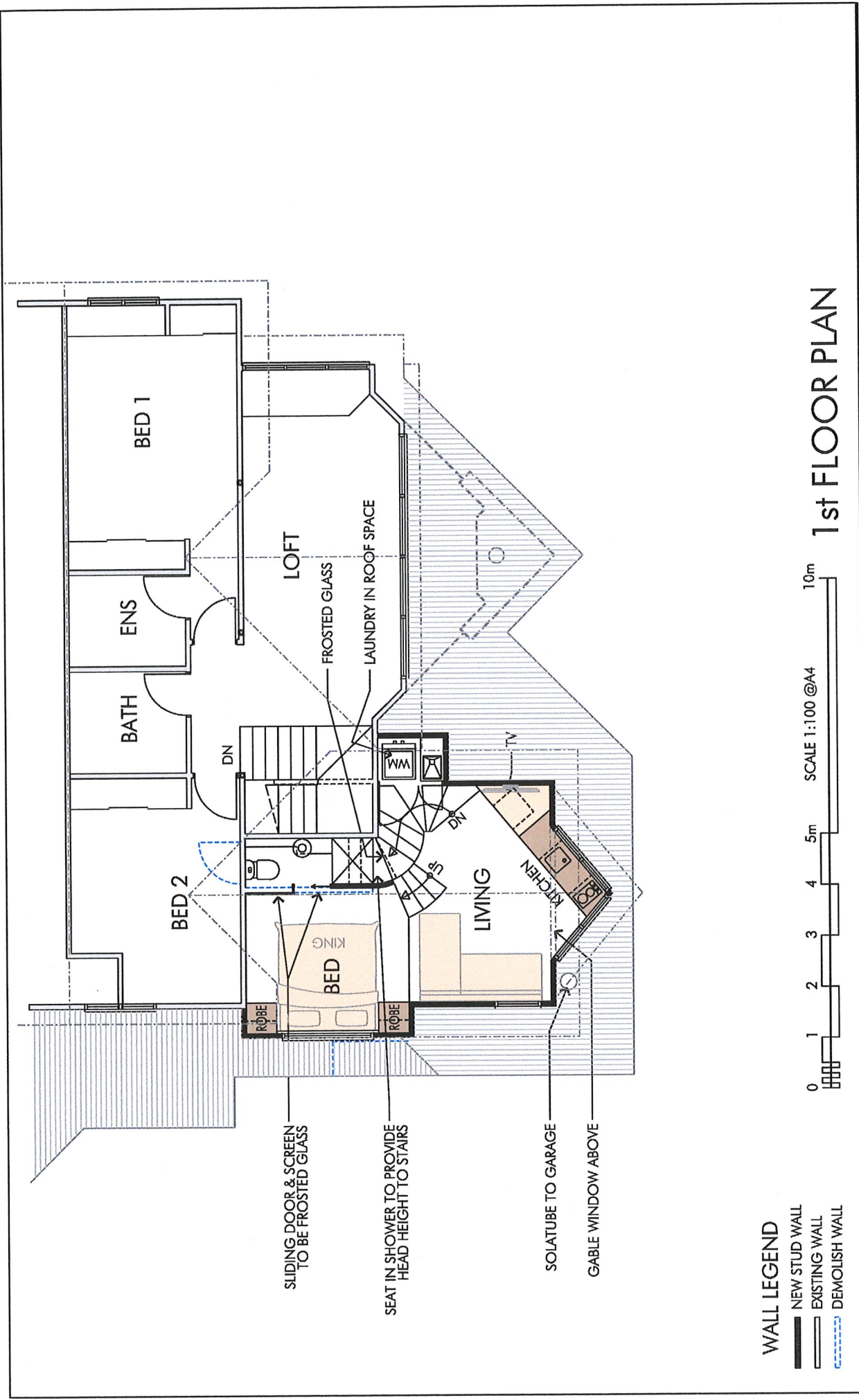
This report provides advice on geotechnical aspects for the proposed structural design. As part of the documentation stage of this project, Contract Documents and Specifications may be prepared based on our report. However, there may be design features we are not aware of or have not commented on for a variety of reasons. The designers should satisfy themselves that all the necessary advice has been obtained. If required, we could be commissioned to review the geotechnical aspects of contract documents to confirm the intent of our recommendations has been correctly implemented.

A waste classification is required for any soil and/or bedrock excavated from the site prior to offsite disposal. Subject to the appropriate testing, material can be classified as Virgin Excavated Natural Material (VENM), Excavated Natural Material (ENM), General Solid, Restricted Solid or Hazardous Waste. Analysis can take up to seven to ten working days to complete, therefore, an adequate allowance should be included in the construction program unless testing is completed prior to construction. If contamination is encountered, then substantial further testing (and associated delays) could be expected. We strongly recommend that this requirement is addressed prior to the commencement of excavation on site.

This report has been prepared for the particular project described and no responsibility is accepted for the use of any part of this report in any other context or for any other purpose. If there is any change in the proposed development described in this report then all recommendations should be reviewed. Copyright in this report is the property of JK Geotechnics. We have used a degree of care, skill and diligence normally



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Scale 1:100 (A4)

17/2/20

BEATON-GARAGE-S

Ref No. Sheet Issue

2 2 C

Sketch Plan

Proposed Alteration & Addition to Dwelling at
20 Mountain Dr, Woodridge, Thredbo
For M & B Beaton

HIGHLIGHT WINDOWS IN GABLE

RAKED CEILINGS TO APARTMENT

CL BEDROOM

PP APT BEDROOM

PP APARTMENT

FL BEDROOM / APT BEDROOM

FL APARTMENT

CL GARAGE

SOLATUBE TO GARAGE

FL FOYER

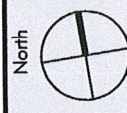
FL GARAGE

FL LIVING



EAST ELEVATION

Proposed Alteration & Addition to Dwelling at
20 Mountain Dr, Woodridge, Thredbo
For M & B Beaton



PAYD
LAW

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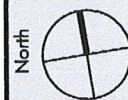
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Scale 1:100 (A4)		17/2/20	BEATON-GARAGES		Sheet	3	Issue	C
				Sketch Plan				



Proposed Alteration & Addition to Dwelling at
20 Mountain Dr, Woodridge, Thredbo
For M & B Beaton



North

PAVID
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Sketch Plan

Ref No.	Sheet	Issue
BEATON-GARAGE-S	4	C

Scale 1:100 (A4)

17/2/20