

## Earthworks Assessment on Resource Consent Application

24 March 2017

Service Request No:380422

File Reference: 1031616

**Site Address: 114 Adelaide Rd, Mt Cook.**

### **Introduction:**

This proposal is for the development and associated earthworks at 114 Adelaide Rd, Mt Cook. The development involves construction multi-store modern building at the rear of the heritage listed building current located on the site. During the construction around 5m of excavated fill is planned for the basement level of the development.

### **Legislative Requirements (i.e. District Plan / Standards):**

<b>30.1 Permitted Activities</b>	<b>Complies</b>	<b>Exceedance</b>
30.1.2.1 (b) (i) - Height of Earthworks	No	5.2m (>1.5m)
30.1.2.1 (b) (ii) - Building Consent	Yes	N/A
30.1.2.1 (b) (iii) – Area of Earthworks	No	450m <sup>2</sup> (>100m <sup>2</sup> )

<b>30.2 Discretionary Activities</b>	<b>Complies</b>	<b>Exceedance</b>
30.2.1.2 (b) (i) – Volume of Earthworks	No	>2000m <sup>3</sup> (>2000m <sup>3</sup> )

### **Assessment:**

#### Geotechnical Assessment

Two geotechnical assessments have been supplied as part of the application. The reports have both been undertaken by Coffey Ltd (Dated 21 July & 3 October 2011, Ref GENZWELL 15193). The Greater Wellington's Regionals Council's (GWRC) combined earthquake risk for the site is high due to the risk of liquefaction in the area.

The site is flat with around 5m of engineered fill above poorly consolidated sediments. Therefore, the highest risk of instability is predicted to be during the construction phase as the basement level is excavated. That being said the combination of both geotechnical recommendations and the suggested conditions below are considered suitable controlling the geotechnical risk.

#### Earthworks Management Plan (EMP)

No EMP controls have been supplied as part of the application. The area of earthworks does exceed the threshold under rule 30.1.2.1, therefore an EMP will be required.

#### Transport Management Plan (TMP)

The volume of earthworks to be transported from the site does exceed the threshold under rule 30.1.2.1. Therefore, a TMP will be required.

#### Visual Amenity

The proposed cuts do exceed the threshold for rule 30.1.2.1 and are therefore required to be considered for visual amenity.

## **Conclusion:**

Subject to compliance with the suggested conditions below, the proposal is satisfactory from an earthworks point of view.

The following conditions/advice notes should be included on the decision:

## **Suggested Conditions**

### **Chartered Professional Engineer**

- 1) A suitably experienced Chartered Professional Engineer (CPEng) must be engaged for the detailed design and construction phases of the project.
- 2) The name and the contact details of the CPEng must be provided to the Compliance Monitoring Officer, at the time the person is appointed.
- 3) The CPEng will monitor the excavation and the construction of the retaining works. He/she will advise on the best methods to ensure:
  - the stability of the land
  - the work does not cause damage, or have the potential to cause damage, to neighbouring land or buildings
  - the design and construction of the temporary and permanent earthworks, retaining structures and drainage, are consistent with the recommendations in the geotechnical assessment by Coffey Ltd (Dated 21 July & 3 October 2011, Ref GENZWELL 15193).

The Consent Holder must follow all the advice of the CPEng in a timely manner.

### **Construction Management Plan (CMP)**

- 4) A Construction Management Plan (CMP) must be developed with the involvement of a CPEng and is to be submitted to the Compliance Officer for approval, at least 10 working days prior to any work commencing.

In making approvals the Compliance Officer will consult with the Council's Earthworks Engineer. The officer's approvals must be received prior to any work commencing.

The CMP will include, but is not limited to, the following:

- Roles and responsibility of key site personnel
- A contact (mobile) telephone number(s) for the on-site manager, where contact can be made 24 hours a day / 7 days a week
- A communication and complaints procedure for adjoining property owners/occupiers, passer-by's and the like
- Hours of work at the site

- Measures to ensure excavation and retaining structures are constructed incrementally to maintain stability of all the slopes
- The maximum height increment of excavation before the structural support to that excavation is put in place.
- Other measures to ensure excavations and retaining structures remain stable, including measures to limit the exposure of unretained earthworks at any one time
- Details of the staging of work.

Any amendments to the CMP once work starts must be approved by the following:

- CPEng
  - Compliance Officer.
- 5) The earthworks and retaining work must be carried out in accordance with the CMP to the satisfaction of the Compliance Officer.
  - 6) The Construction Management Plan (CMP) must be peer reviewed by the CPEng to ensure that the methodology is in accordance with the geotechnical assessment, by Coffey Ltd (Dated 21 July & 3 October 2011, Ref GENZWELL 15193).

The review must be provided to the Compliance Officer at least 10 working days prior to any work commencing.

#### Earthwork Management Plan (EMP)

- 7) An Earthwork Management Plan (EMP) must be developed with the involvement of a CPEng and is to be submitted to the Compliance Officer for approval, at least 10 working days prior to any work commencing.

In making the assessments the Compliance Officer will consult with the Council's Earthworks Engineer. The officer's approvals must be received prior to any work commencing.

The EMP and will include, but is not limited to, the following:

- An illustrated plan that records the key features of the EMP
- Erosion, dust and sediment control measures
- Measures to ensure temporary and permanent excavations remain stable, including measures to limit the exposure of unretained earthworks at any one time
- Measures to ensure that the discharge of dust created by earthworks, construction and transport activities are suitably controlled to minimise dust hazard or nuisance
- Use of diversion bunds/cut off drains as required to minimise stormwater entering the site

- The type and location of silt fences and/or catch fences
- The methods for the protection of sumps from sediment infiltration
- Covering of soil or other material that is stockpiled on the site
- Covering of soil or other materials transported to, or from, the site
- Stabilisation of entrance to minimise sediment runoff
- The methods for managing and monitoring the EMP controls
- Nomination of a site person responsible for the implementation of the EMP.

Any amendments to the EMP once work starts must be approved by the following:

- CPEng
- Compliance Officer.

- 8) The earthworks and other work must be carried out in accordance with the EMP to the satisfaction of the Compliance Officer. The erosion and sediment control measures must not be removed until the site is remediated to the satisfaction of the Compliance Officer.

Note:

If necessary, the Compliance Officer may require changes to the implementation of the EMP, to address any problem that occurs during the work or before the ground surface is stabilised.

- 9) The Earthworks Management Plan (EMP) must be reviewed by the CPEng to ensure that the methodology is in accordance with the geotechnical assessment, by Coffey Ltd (Dated 21 July & 3 October 2011, Ref GENZWELL 15193).

The review must be provided to the Compliance Officer at least 10 working days prior to any work commencing.

#### Producer Statements

- 10) A copy of the producer statement 'PS4 – Construction Review' and its accompanying documents for structures/buildings, prepared for the associated Building Consent process, must be provided to the Compliance Officer within one month of the structures/buildings being completed.

#### General Earthworks Conditions

- 11) Run-off must be controlled to prevent muddy water flowing, or earth slipping, onto neighbouring properties or the legal road. Sediment, earth or debris must not collect on land beyond the site or enter the Council's storm water system.
- 12) Dust created by earthworks, transport and construction activities must be controlled to minimise nuisance and hazard. The controls must be implemented for the duration of the site works and continue until the site stops producing dust.

- 13) Any earth, rock, vegetation or demolition material that falls on the road, footpath, berm or neighbouring property during work or transport must be cleaned up immediately. The material must not be swept or washed into street channels or storm water inlets, or dumped on the side of the road.

#### Hours of Work

- 14) Earthworks and associated works, including the transport of excavated material from (or to) the site, must only occur within the following hours:
- Monday to Saturday 7:30 am to 6 pm.
  - Quiet setting up of site (not including running of plant or machinery) may start at 6.30 am.
  - No work is to be carried out on Sundays or public holidays

#### Note:

These hours have been selected from Table 2, NZS 6803: 1999 “Acoustics – Construction Noise”. The Standard applies in all other respects, including the permitted noise levels in Table 2, and all persons undertaking earthworks and management of the site must adopt the best practical option to control noise to a reasonable level.

John Davies  
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