

Lianne Darby

From: MWH Hazards Team <MWHHazardsTeam@stantec.com>
Sent: Thursday, 1 June 2017 12:55 p.m.
To: Lianne Darby
Cc: MWH Hazards Team
Subject: SUB-2017-43, LUC-2017-222 & LUC-2017-223 91 & 99 Formby Street Outram

Hello Lianne,

We have assessed the application in relation to the hazard register, street files and available aerial photography. We have not visited the site.

We have the following comments to make regarding the application.

Proposal

The proposed activity is residential activity on land zoned rural on the new lots created by the subdivision.

Preliminary Site investigation reports have been provided from Environmental Consultants Otago Ltd for the Ground Contamination.

Plans for the proposal are not provided within the application

Hazards

From the Hazard Register the following hazards are identified:

- Intensified Shaking – Earthquake likely amplification
- The site is recorded on the GNS Assessment of Liquefaction hazards in Dunedin City, dated May 2014, as within:
 Liquefaction Domain C. The ground is predominantly underlain by poorly consolidated marine or estuarine sediments with a shallow groundwater table. There is considered to be a moderate to high likelihood of liquefaction-susceptible materials being present in some parts of the areas classified as Domain C.
- HAIL Site –Contaminated Land from Persistent pesticide bulk storage or use.
- Flood Hazard Area 1B

The property lies within an area reported on by ORC report: Flood hazard on the Taieri Plain, Review of Dunedin City District Plan: Natural hazards First revision: August 2015; with the following description:

Area 1B – West Taieri Plain above Sea level

Sources of flooding include the Taieri River to the east, the streams that drain the Maungatua Range to the north, and internal runoff and overland flow (ORC, 2013). The effects of flooding could be significant if Lower Taieri Flood Protection Scheme floodbanks were to fail (breach), or were overtopped by a flood event larger than their intended design. In such a situation, the velocity and depth of flood flows could damage buildings and other assets, move vehicles and make walking difficult or unsafe, and therefore present a possible risk to life. The consequences of a floodbank breach near Outram, in particular, would be significant, due to the potential impacts on this community.

Parts of Area 1B that are elevated relative to the surrounding land may still be isolated for extended periods, and/or be affected by low-level inundation.

Global Setting

Flat rural land on alluvial soils

Earthworks / Excavations / Retaining Structures

No earthworks provided or anticipated. Any earthworks are not likely to be significant, as long as natural overland flow paths are not interrupted

Discussion

There are general potential instabilities of concern associated with potential liquefaction and overland flows. The proposal will not create or exacerbate instabilities on this or adjacent properties

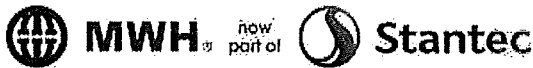
Advice

We recommend that advice be made to the effect:-

Underlying soils have a potential for amplified movement and liquefaction during a significant seismic event. The cases for seismic loading are normally addressed at building control stage.

- The Dunedin City Council Building Control Authority will ask for verification that the site is 'good ground' in accordance with NZS3604, Section 3.1. This verification may require site investigation in accordance with the standard, potentially including dynamic cone testing to 10m depth to quantify the potential for liquefaction for each dwelling.
- Specific foundation design may subsequently be required, or if the assessed potential movement is significant; specifically designed ground improvement works may be more cost effective.
- Confirm a minimum floor level to ensure that any development meets Building Act requirements to avoid potential inundation (including flooding, overland flow, storm surge, tidal effects, and ponding) on the land on which the building work is to be carried out or adjacent landowners property.
- This proposed level must therefore address the potential for egress of water from the property via secondary flow paths, ensure that construction is not proposed in low-lying areas and that the path of storm water is not displaced from ephemeral flow paths into neighbouring properties.
- Normal building requirements exist to ensure that overland stormwater flows are not interrupted and the dwelling should be situated to avoid any adverse effects from local ponding during storm rainfall events.

Kind Regards,
Jon



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Civil Engineer

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From: Lianne Darby [mailto:Lianne.Darby@dcc.govt.nz]

Sent: Tuesday, 23 May 2017 3:01 p.m.

To: Resource Consents WWS-BC Comments <resconsent.wwsbc-comments@dcc.govt.nz>; Grant Fisher <Grant.Fisher@dcc.govt.nz>; 'lee.m.paterson@nz.mwhglobal.com' <lee.m.paterson@nz.mwhglobal.com>; MWH Hazards Team <MWHHazardsTeam@stantec.com>; Heveldt, Paul <Paul.Heveldt@stantec.com>; Michael Bathgate <Michael.Bathgate@dcc.govt.nz>; Nic Jepson <Nic.Jepson@dcc.govt.nz>; Jendi Paterson <Jendi.Paterson@dcc.govt.nz>; Parks, Recreation & Aquatics - Consents <par.consents@dcc.govt.nz>

Subject: 91 and 99 Formby Street

Hello All

This application is being notified this Saturday.

Lianne Darby

From: Heveldt, Paul <Paul.Heveldt@stantec.com>
Sent: Monday, 7 August 2017 04:33 p.m.
To: Lianne Darby
Subject: RE: Memo for Dunedin City Council on Contamination Issues at 91-99 Formby St Outram (1).docx

Hi Lianne

I've taken another look at the information provided regarding the proposed subdivision of the major part of 99 Formby St into 9 separate land parcels for rural residential development.

Even though (as also noted in my previous email) the sampling and analysis carried out is not at the level that a detailed site investigation would require in terms of numbers of samples I think it is quite clear that the distribution of tested contaminants across the 99 Formby St site is both uniform in terms of concentrations found (i.e. there are no apparent hot spots) and the levels are low. The concentrations found are well within the relevant Soil Contaminant Standards and Soil Guideline Values for the proposed land use.

Nothing in what has been reported in the Environmental Consultants Otago PSI document suggests that there are any contamination risks involved in this 9-Lot subdivision proposal. There would be no particular consent conditions required regarding contamination - because the risks are negligible.

Regards

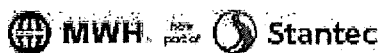
Paul

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From: Lianne Darby [mailto:Lianne.Darby@dcc.govt.nz]
Sent: Friday, 4 August 2017 4:51 p.m.
To: Heveldt, Paul <Paul.Heveldt@stantec.com>
Subject: RE: Memo for Dunedin City Council on Contamination Issues at 91-99 Formby St Outram (1).docx

Hi Paul

I'm in the process of typing up the report for the nine lot subdivision of 99 Formby Street (SUB-2017-43) and the development of 91 Formby Street (LUC-2017-222). It involves the same land and the same PSI, but off course will be creating new residential development (ten houses).

I'm not sure that your comments below quite cover off the subdivision and new development. Do you have anything specific to say about the additional development of the land?

Will send you the application again shortly.

Regards

Lianne

From: Heveldt, Paul [<mailto:Paul.Heveldt@stantec.com>]

Sent: Thursday, 25 May 2017 12:42 p.m.

To: Lianne Darby

Cc: John Sule; MWH Hazards Team; Paterson, Lee

Subject: RE: Memo for Dunedin City Council on Contamination Issues at 91-99 Formby St Outram (1).docx

Hi Lianne

There is certainly a lot going in Outram in terms of subdivision at the moment! It is a little bit confusing with the two separate addresses on Formby Rd in play and then the 498 Allanton Rd block. However I think I have it all straight in my head now. It is a pity that the EC Otago PSI, although headed up as being for the 99 Formby St land, also includes a lot of material about the 498 Allanton Rd land parcel in the same document; however, it is what it is!

Regarding 99 Formby St and the proposed consent to create the two-Lot subdivision – and specifically regarding Lot 1 issues – I note the following.

The PSI prepared by EC Otago gives quite a bit of detail about Lot 1, given that it is the location of the existing house on the land parcel. The various sheds are discussed although it is clear that only the smaller 3m x 3m shed has any likely associated contamination issues. The underground storage tank is another matter – which I return to below.

The storage shed (confirmed by Mrs Choie to be where agrichemicals were stored) certainly has the potential to contribute contaminants to the nearby soil. Also, there was no apparent sampling done by EC Otago in the immediate vicinity of this shed (see comments below). The good thing about this shed is that it is small in area and any potential contamination associated with its use for agrichemicals storage / mixing will be similarly limited spatially. The fact (as per the PSI) that there is (now) a heavy duty tarpaulin placed on the floor is neither here nor there in determining the likelihood of any historic contamination. In other words – it is good practice but how long has been in place? We have no idea.

There is limited sampling and analysis of soil reported in the PSI (not a criticism, per se). There is written discussion of the areas sampled, the number of samples taken, extent of compositing, etc and then Figure 16 of the PSI shows the sampling locations, both for individual samples (4 of these) and composite samples (15 samples, composited by groups of 3 into 5 samples for analysis). Even though the PSI text talks of sampling in the general vicinity of the agrichemicals shed this does not seem to have been the case when you look closely at Fig 16. An individual sample was taken adjacent to the UST location (that's good) but the nearest composite sample (5A) is a considerable distance from the agrichemicals shed location.

Regarding the various subdivision proposals – the agrichemicals shed (and the lack of any apparent analysis of soils in its immediate vicinity) is a concern but only if the subdivision being proposed is more than just a simple reassignment of property boundaries to split off Lot 1 from Lot 2, without there being any proposal to disturb soil. I think that is indeed the case – but please let me know if it is not.

I think I said in a recent email that we could put an Advice Note on the subdivision consent - to the effect that any subsequent intention to disturb soil on Lot 1 following the reassignment of the property boundaries as per the SUB-

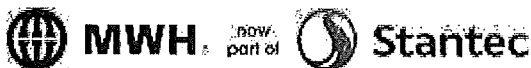
2017-33 proposal would require a DSI to be conducted, at least around the area of the agrichemicals shed but also around the site of the old UST (after its removal).

So, to sum up – if simple reassignment of boundaries is all that is to be covered by SUB-2017-33 then no detailed investigation of the agrichemicals shed environs is required, and the only further consideration regarding the consent itself would be the addition of an Advice Note as suggested above. Subsequent redevelopment of Lot 1 is a different matter and would require reassessment if an application to (say) disturb the soils of Lot 1 or otherwise further develop it was received by DCC.

Get back to me to discuss further if you need to.

Regards

Paul



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National Environmental Science Specialist

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From: Lianne Darby [<mailto:Lianne.Darby@dcc.govt.nz>]

Sent: Wednesday, 24 May 2017 4:33 p.m.

To: Heveldt, Paul <Paul.Heveldt@stantec.com>

Subject: Memo for Dunedin City Council on Contamination Issues at 91-99 Formby St Outram (1).docx

Hi Paul

Me again, sorry.

I've written the consent for the two-lot subdivision of 99 Formby Street (SUB-2017-33), but John has concerns about the shed containing the chemicals on Lot 1.

I'm issuing consent for the subdivision of a HAIL site, but does something need to be done about the shed on Lot 1?

Can you please advise. Consent is due out tomorrow.

Regards

Lianne

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