
From: [REDACTED]
Sent: 4/04/2022 5:38:38 PM
To: Council Northernbeaches Mailbox
Subject: Mod2022/0091 part submission Crowley - Attn: Adam Croft
Attachments: JKGeotechnics 34994PNlet1 Freshwater.pdf;

Adam,

We have some concerns about the proposed 48 Johnson St Freshwater development, and given its complexity we have engaged a geotechnical engineer to review the documents and provide advice.

See attached report for your consideration and for inclusion as part of our submission.

Regards

Steve Crowley & Sue Crowley

50 Johnson St Freshwater

[REDACTED]

Date: 3 April 2022

Ref: 34994PNlet1

Mr and Mrs Steve and Sue Crowley

Email: [REDACTED]

GEOTECHNICAL OPINION
PROPOSED NEIGHBOURING DEVELOPMENT
50 JOHNSON STREET, FRESHWATER, NSW

1 INTRODUCTION

As requested, we have reviewed the documentation for the proposed development on the neighbouring property (48 Johnson Street Freshwater), including the following:

- Geotechnical Report prepared by Green Geotechnics (Report No. GG10127.001B dated 8 November 2021)
- Architectural Drawings prepared by MCK Architecture+Interiors (Project No. 20041, Dwg Nos DA00^B, 05^A, 10^B, 11^A, 13^B, 20^B, 21^B, 22^B, 30^B, and 31^A).
- Hydraulic Drawings prepared by ITM Design Pty Ltd (Job No. 20/89, Dwg Nos H-02^A and H-03^A).

2 PROPOSED NEIGHBOURING DEVELOPMENT DETAILS

From the provided architectural drawings, the proposed neighbouring development is to comprise a two-storey house with a single basement level, along with an in-ground pool in the south-eastern corner of the property. The proposed basement will be set back about 0.9m from the common boundary with No. 50, and will require excavation to a depth of about 3.5m below existing surface levels within No. 50.

From the provided hydraulic drawings, a stormwater infiltration trench is proposed to the south of the proposed house.

3 SUBSURFACE CONDITIONS

The geotechnical investigation completed by Green Geotechnics included two boreholes, drilled using a hand auger, to refusal at depths of 0.5m or 0.75m below existing surface levels. The boreholes encountered a subsurface profile comprising natural sandy and clayey soils over inferred sandstone bedrock, with groundwater at shallow depth, within the sandy soils, in one of the boreholes. Due to the limitations of hand augering equipment, the presence of sandstone bedrock and its strength/quality if present, have not been confirmed.





4 GEOTECHNICAL COMMENTS

4.1 Groundwater

Groundwater is present at shallow depth, and as such we expect dewatering will be required to permit excavation and construction for the proposed basement to be completed in the 'dry'. If not appropriately managed and controlled, dewatering can result in drawdown of groundwater in surrounding areas, which can damage structures and services.

In accordance with the NSW Aquifer Interference Policy, we consider the neighbouring development should be referred to WaterNSW by Council under the integrated development process. In the permanent case, we expect WaterNSW will require the proposed basement to be tanked, that is 'waterproof', to preclude the need for ongoing dewatering. Further, WaterNSW will likely also require measures be taken so that the proposed basement will not adversely affect existing regional groundwater flows, i.e. that groundwater flows are transferred 'around' the basement. We consider a tanked basement to be geotechnically appropriate for the proposed development.

Due to the presence of groundwater and bedrock at shallow depth, we also expect an absorption trench, such as that detailed on the hydraulic drawings, will not be appropriate for the proposed development.

4.2 Geotechnical and Hydrogeological Investigation

The current Green Geotechnics investigation was completed using hand equipment only, and both boreholes refused above the depth of anticipated excavation. We recommend a comprehensive geotechnical investigation be completed, to gain a greater understanding of the geotechnical and hydrogeological conditions on the site. At a minimum, we consider such an investigation should include the following:

- 3 boreholes drilled to at least 3m below excavation level for the proposed house. Preferably, the bedrock profile in these boreholes would be drilled using rotary diamond coring techniques to confirm the strength and quality of the bedrock.
- Groundwater monitoring wells in both the soil and bedrock to confirm groundwater levels and flow direction.
- Groundwater level monitoring, permeability testing, groundwater quality testing, and seepage modelling. We consider the requirements detailed in 'Minimum Requirements for Building Site Groundwater Investigations and Reporting' (NSW Department of Planning, Industry and Environment, January 2021) would be an appropriate guide for an investigation scope of works.



5 SUMMARY

Summarising our recommendations in Section 4 above, we recommend Council be asked to Condition the following should the proposed development be approved:

- The development be refereed to WaterNSW under the Aquifer Interference Policy.
- A geotechnical and hydrogeological investigation be completed with boreholes to at least 3m below bulk excavation level.

Should you require any further information regarding the above, please do not hesitate to contact the undersigned.

Yours faithfully
For and on behalf of
JK GEOTECHNICS

A handwritten signature in black ink, appearing to read 'N. Smith'.

Nicholas Smith
Senior Associate | Geotechnical Engineer
MIEAust, CPEng, NER