

Health Infrastructure
L2, 426 King Street
Level 2, 426 King Street
Newcastle NSW 2300

Project 73224.10
28 June 2017
73224.10.R.001.Rev0
PAV

Attention: Amanda Lardner

Email: Amanda.lardner@app.com.au

Review of Previous Geotechnical Report Hospital Redevelopment Stage 2 Hornsby Ku-ring-gai Hospital

Douglas Partners Pty Ltd (DP) prepared the following reports in 2014 for Stages 1 and 2 of the proposed redevelopment of Hornsby Ku-ring-gai Hospital:

- *Report on Geotechnical Investigation Revision 2, Hornsby Ku-ring-gai Hospital Redevelopment, Palmerston Road Hornsby*, prepared for Health Infrastructure, Project 73224.06 dated 26 August 2014; and
- *Report on Preliminary Contamination Investigation and Preliminary Waste Classification, Hornsby Ku-ring-gai Hospital, Palmerston Road, Hornsby*, prepared for Health Infrastructure c/- Aurecon, Report 73224.07 dated 8 August 2014.

DP has reviewed the abovementioned geotechnical report to assess whether the report conclusions and recommendations with respect to Stage 2 are still valid to the new proposed development layout.

A review of DP's previous contamination report is provided in a separate letter by DP (Project 73224.09.R.001.Rev0, dated June 2017).

DP has read the following reports and drawings prepared by Taylor Thomson Whitting (NSW) Pty Ltd, the civil and structural engineers for this project:

- Structural Engineering Schematic Design Report, Document No. TTW-ST-S2_RP01, dated 9 December 2016; and
- Civil Engineering Schematic Design Report, Document No. TTW-CV-S2-RP01, dated 9 December 2016.

It is understood that the proposed HKHR Stage 2 project currently includes:

- Demolition work of existing structures to facilitate the Stage 2 building works;
- Refurbishment of the existing HOPE Building and a single-storey extension to the north;
- A six-storey building (including plant level), with part of Level 0 below existing ground levels;
- A services tunnel connecting Level 0 of the new building to the future Medical Imaging Building;
- On-grade access roads and car parks; and
- On-site detention (OSD) tanks buried below ground.

The footprint of the proposed development area is similar to the area that was previously proposed, and targeted for a geotechnical investigation including boreholes, in situ tests and laboratory tests.

It is considered that, from a geotechnical perspective, the proposed Stage 2 development depicted within the abovementioned reports and drawings do not require any changes to be made to the comments within DP's geotechnical report (Project 73224.06 dated 26 August 2014) and that the comments remain applicable to the current development.

We trust that these comments are adequate for your present requirements.

Limitations

Douglas Partners (DP) has prepared this report for this project at Hornsby Ku-ring-gai Hospital in accordance with DP's proposal (email dated 12 April 2017) and acceptance received from APP dated 14 June 2017. The work was carried out under a variation to Contract No HI14325 dated 1 July 2014. This report is provided for the exclusive use for this project only and for the purposes as described in the report. It should not be used by or relied upon for other projects or purposes on the same or other site or by a third party. Any party so relying upon this report beyond its exclusive use and purpose as stated above, and without the express written consent of DP, does so entirely at its own risk and without recourse to DP for any loss or damage. In preparing this report DP has necessarily relied upon information provided by the client and/or their agents.

This report must be read in conjunction with all of the attached notes and should be kept in its entirety without separation of individual pages or sections. DP cannot be held responsible for interpretations or conclusions made by others unless they are supported by an expressed statement, interpretation, outcome or conclusion stated in this report.

This report, or sections from this report, should not be used as part of a specification for a project, without review and agreement by DP. This is because this report has been written as advice and opinion rather than instructions for construction.

The contents of this report do not constitute formal design components such as are required, by the Health and Safety Legislation and Regulations, to be included in a Safety Report specifying the hazards likely to be encountered during construction and the controls required to mitigate risk.

Please contact the undersigned if you have any questions on this matter.

Yours faithfully
Douglas Partners Pty Ltd



Peter Valenti
Associate / Geotechnical Engineer

Reviewed by



Michael J Thom
Principal

Attachments: [About this Report](#)

About this Report

Douglas Partners



Introduction

These notes have been provided to amplify DP's report in regard to classification methods, field procedures and the comments section. Not all are necessarily relevant to all reports.

DP's reports are based on information gained from limited subsurface excavations and sampling, supplemented by knowledge of local geology and experience. For this reason, they must be regarded as interpretive rather than factual documents, limited to some extent by the scope of information on which they rely.

Copyright

This report is the property of Douglas Partners Pty Ltd. The report may only be used for the purpose for which it was commissioned and in accordance with the Conditions of Engagement for the commission supplied at the time of proposal. Unauthorised use of this report in any form whatsoever is prohibited.

Borehole and Test Pit Logs

The borehole and test pit logs presented in this report are an engineering and/or geological interpretation of the subsurface conditions, and their reliability will depend to some extent on frequency of sampling and the method of drilling or excavation. Ideally, continuous undisturbed sampling or core drilling will provide the most reliable assessment, but this is not always practicable or possible to justify on economic grounds. In any case the boreholes and test pits represent only a very small sample of the total subsurface profile.

Interpretation of the information and its application to design and construction should therefore take into account the spacing of boreholes or pits, the frequency of sampling, and the possibility of other than 'straight line' variations between the test locations.

Groundwater

Where groundwater levels are measured in boreholes there are several potential problems, namely:

- In low permeability soils groundwater may enter the hole very slowly or perhaps not at all during the time the hole is left open;

- A localised, perched water table may lead to an erroneous indication of the true water table;
- Water table levels will vary from time to time with seasons or recent weather changes. They may not be the same at the time of construction as are indicated in the report; and
- The use of water or mud as a drilling fluid will mask any groundwater inflow. Water has to be blown out of the hole and drilling mud must first be washed out of the hole if water measurements are to be made.

More reliable measurements can be made by installing standpipes which are read at intervals over several days, or perhaps weeks for low permeability soils. Piezometers, sealed in a particular stratum, may be advisable in low permeability soils or where there may be interference from a perched water table.

Reports

The report has been prepared by qualified personnel, is based on the information obtained from field and laboratory testing, and has been undertaken to current engineering standards of interpretation and analysis. Where the report has been prepared for a specific design proposal, the information and interpretation may not be relevant if the design proposal is changed. If this happens, DP will be pleased to review the report and the sufficiency of the investigation work.

Every care is taken with the report as it relates to interpretation of subsurface conditions, discussion of geotechnical and environmental aspects, and recommendations or suggestions for design and construction. However, DP cannot always anticipate or assume responsibility for:

- Unexpected variations in ground conditions. The potential for this will depend partly on borehole or pit spacing and sampling frequency;
- Changes in policy or interpretations of policy by statutory authorities; or
- The actions of contractors responding to commercial pressures.

If these occur, DP will be pleased to assist with investigations or advice to resolve the matter.

About this Report

Site Anomalies

In the event that conditions encountered on site during construction appear to vary from those which were expected from the information contained in the report, DP requests that it be immediately notified. Most problems are much more readily resolved when conditions are exposed rather than at some later stage, well after the event.

Information for Contractual Purposes

Where information obtained from this report is provided for tendering purposes, it is recommended that all information, including the written report and discussion, be made available. In circumstances where the discussion or comments section is not relevant to the contractual situation, it may be appropriate to prepare a specially edited document. DP would be pleased to assist in this regard and/or to make additional report copies available for contract purposes at a nominal charge.

Site Inspection

The company will always be pleased to provide engineering inspection services for geotechnical and environmental aspects of work to which this report is related. This could range from a site visit to confirm that conditions exposed are as expected, to full time engineering presence on site.