**Douglas Partners**
*Geotechnics / Environment / Groundwater*

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Project 24750.02
19 July 2013
RKL:pc

Attention: Mrs E Cox

Dear Elaine

**Unit 16, 20 Narabang Way, Belrose**
**Development Application DA2013/0714**
**Preliminary Geotechnical Assessment and Report**

As requested the site was inspected to assess the requirement for a full geotechnical report, as required by the Warringah Local Environment Plan 2011 and the Warringah DCP for areas identified on the Landslip Risk Map – sheet LSR 001_012 and indicated in the letter from Warringah Council dated 28 June 2013. The above site is located in an area identified as Area B – Flanking Slopes 5° to 25°.

It is understood that, and inspection of the site confirms, the relevant works have already been carried out and comprised the construction of a hardstand car parking area at the south-eastern corner of Unit 16 on the above site.

The construction comprises an on-grade concrete pavement (refer to Figure 1 below) which is supported at the western side by a concrete block retaining wall of up to about 1.4 m height (refer to Figure 2).

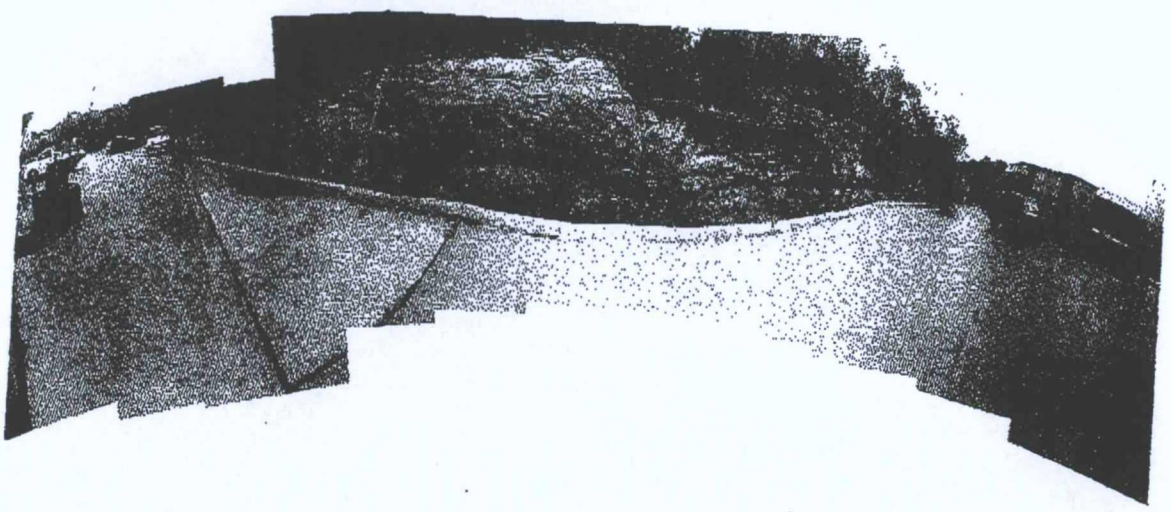

Figure 1. 270° panorama of the hardstand area (distortion due to photo merging).

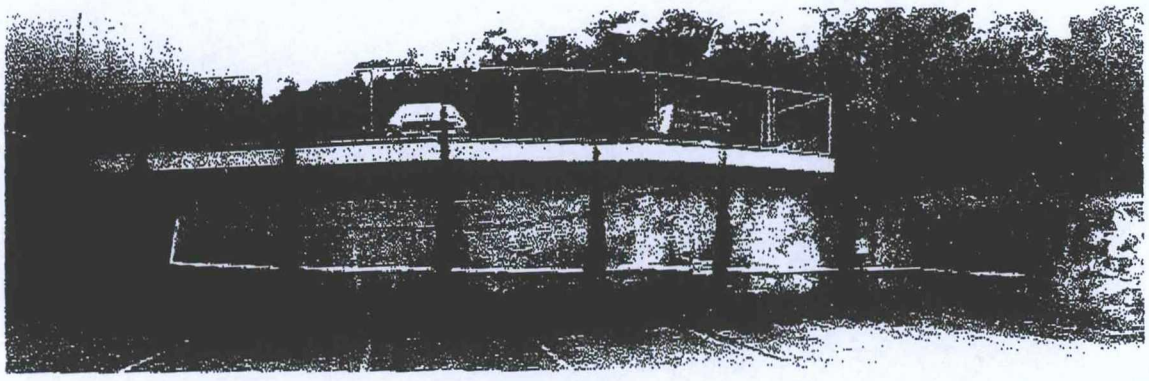

Figure 2. Panorama of the low, western side of the hardstand area.

In accordance with the "Checklist For Council's Assessment of Site Conditions ..." within Clause E10 the following information and observations are provided :

- based upon inspection of the site and the area of the construction, there is no observed evidence or known history of significant slope instability;
- the completed works required less than 2 m of excavation or filling. Minor excavation/trimming of less than 2 m height may have been undertaken opposite the south-eastern corner of the building. Filling of average depth of about 1 m was placed against the new retaining wall at the western end of the area.
- the site is currently developed and there appears to be filling of up to about 1.8 m depth present at the northern end of the western retaining wall (refer to Figure 2). It is noted that the filling is retained by a well-constructed concrete block retaining wall, with no evidence of distress or cracking of the wall. The wall is founded on sandstone of at least medium to high strength which is more than adequate to support the wall.
- the western retaining wall is founded at the top of an excavation in sandstone bedrock which ranges from about 1.2 m to 2.6 m in height. The excavated rock face comprises medium and high strength sandstone with no adversely oriented defects observed. The excavation is considered to be stable and adequate to support the overlying wall.
- it is noted that the eastern side of the hardstand area comprises a natural cliff (refer to Figure 1), however the height is less than 3 m and, although some weathering of the lower part is likely, the exposed rock is considered to be of adequate stability.

On the basis of the above information it is considered that additional geotechnical assessment, with respect to Landslip Risk, is not required. It is also considered that the development has been completed in a geotechnically stable condition.

This assessment does not and is not intended to provide detailed geotechnical information for future design or construction purposes and specific investigation should be carried out as appropriate for the structural requirements for any future work.

Douglas Partners Pty Ltd (DP) has prepared this report for this project at 20 Narabang Way Belrose, under DP's Conditions of Engagement. It is provided for the exclusive use of Business Securities Pty Ltd for the specific project and purpose as described in the report. It should not be used by or relied upon for other projects or purposes on the same or other sites or by a third party. DP has necessarily relied upon information provided by the client and/or their agents.

This report must be read in conjunction with all 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.

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. This design process requires risk assessment to be undertaken, with such assessment being dependent upon factors relating to likelihood of occurrence and consequences of damage to property and to life. This, in turn, requires project data and analysis presently beyond the knowledge and project role respectively of DP. DP may be able, however, to assist the client in carrying out a risk assessment of potential hazards contained in the Comments section of this report, as an extension to the current scope of works, if so requested, and provided that suitable additional information is made available to DP. Any such risk assessment would, however, be necessarily restricted to the geotechnical components set out in this report and to their application by the project designers to project design, construction, maintenance and demolition.

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

Yours faithfully
**Douglas Partners Pty Ltd**

Reviewed by

**Richard Lloyd**
Senior Associate/Senior Engineering Geologist

**R W Lumsdaine**
Principal

Attach: Notes About the Report