

Memorandum

To	Allen Jack + Cottier P/L	Stephen O'Hora	Stephen.o'hora@architectsajc.com
cc			
From	Peter Valenti	Date	22 Oct 2019
Subject	90 – 102 Regent Street, Redfern Proposed Student Housing Development Geotechnical and Contamination Overview	Project No.	86852.00

This memorandum includes an overview from a geotechnical and contamination perspective in regards to the geological conditions, investigation methodology and proposed development more generally.

General

The local geology is mapped as sandstone, siltstone and shale from the Wianamatta Group. Investigation works by DP on properties in the area have indicated a typical subsurface profile of filling overlying a sequence of stiff residual clays, shale and laminite, then sandstone.

The geological profile is anticipated to generally follow the local topography which slopes gently towards the south.

Contamination at the site is most likely to be primarily associated with existing site fill (from unknown origins). There is the potential for impacts on the site from off-site sources, most notably from the adjacent council depot to the north-west and the 7 Eleven service station to the south (although it is noted that the service station is anticipated to be hydraulically down-gradient of the site and hence this risk is therefore reduced).

Investigation and Methodology

Geotechnical and contamination investigations would involve the drilling of 100 mm diameter boreholes, including two to depths of 13 – 15 m, one to 20 m within the bedrock, two the top of rock (about 3 m) and two to about 1.5 m to confirm the subsurface profile at the site. It is noted that these boreholes are located close to/within to the metro rail tunnel easement. Approval from Sydney Metro will be sought prior to commencement of drilling. The three deeper boreholes would be supplemented by groundwater monitoring wells to allow assessment of groundwater at the site.

As the boreholes will be located within the site boundary, any impacts on the local community from the investigation/drilling works are expected to be minimal. Some noise will be generated from the drilling works during the 5 day drilling period (7 am -5 pm) although this is not considered to be excessive and generally less than reflective background traffic noise and most construction sites.

On completion of each borehole, the borehole will be reinstated and finished with a concrete or bentonite plug thereby mitigating any exposure of site users to the subsurface from the investigation works.

Investigation works will have negligible disturbance on any contamination at the site (if present). Use of drilling water during rock coring will also minimise dust generation (although dust generation is considered to be minimal in any event).

Development More Generally

From a geotechnical perspective the development is not expected to impact adversely on the local community. In this regard, whilst to be confirmed by the intrusive investigation, it is currently anticipated that the project development would still allow for development of community infrastructure (e.g. metro rail line). The basement would likely require an anchored shoring pile wall for excavation support and hence there is likely to be some impact on adjacent properties and road reserves. In this regard, such impacts are consistent with the vast majority of basement excavations and are regularly addressed by developments through geotechnical investigations, computer modelling and design (pre-construction), together with inspections and monitoring (during construction). This would be undertaken in conjunction with the design team, namely the structural engineer.

Assessment of potential contamination risks would be undertaken through a soil and groundwater testing regime, with results primarily assessed against the National Environment Protection Council (NEPC) National Environment Protection (Assessment of Site Contamination) Measure 1999 (Amended 2013). This would allow the site's land use to be assessed against current standards and guidelines.

Moreover, excavation and removal of filling from the site as part of the development would be an improvement to the existing potential contaminant risk profile of the site. Other contamination mitigation measures such as vapour barriers for the basement, if identified as being required from the investigation/assessment process, would be incorporated in the building design and constructed within the site boundary, and hence would not impact on the nearby community. If any remediation measures are required this would be addressed through the SEPP 55 process (i.e. investigation, remediation action plan, validation report on the remedial works).

We trust this satisfies your present requirements.

Yours faithfully

Douglas Partners Pty Ltd



Peter Valenti

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