Date: 6 August 2024
Ref: 35736S Let1

Skermanic Pty Ltd
c/- MDP Architecture

Attention: Markam Ralph
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RESPONSE TO DPHI COMMENTS
PROPOSED PATHWAYS RESIDENCES PROJECT
50-88 PARRWEEN STREET AND 59-67 GERRARD STREET, CREMORNE, NSW

Groundwater Take

We have been asked to respond to comments made regarding groundwater in the DPHI response to the soft lodgement of the amended report package SSD-49472213, specifically:

A Groundwater Quality Screening Report has been provided, however a Groundwater Take Assessment is required to quantify the maximum annual volume of water take. This should be quantified for the construction phase and ongoing operation of the project. Please provide this assessment.
If the groundwater take is calculated to be greater than 3 ML per year, a Dewatering Management Plan will need to be prepared, and this will be included as a condition of consent.

JK Geotechnics have prepared a Hydrogeological Assessment report, Reference 35736Srpt Hydro, dated 17 November 2023 and the information requested is discussed in detail in that report. With regard to the comments above we note that the groundwater take assessment is expected to be well below 3Ml/year for the reasons discussed in the report. The initial take during the construction phase cannot be readily quantified as it will primarily involve ephemeral flows during wet weather periods from the unsaturated zone but nevertheless is not expected to exceed the 3Ml/year figure and will be greatly exceeded by the rainfall directly entering the excavation which is likely to be at least twice the seepage volume and probably a lot more.

As the groundwater take is expected to be below 3Ml/year we consider that a Dewatering Management Plan is not warranted in this instance.

Pump Out Facility

A further comment from the DPHI assessment was as follows:
The SES referral states:
The risk of basement flooding and the potential for pumping should be considered for the proposed site, especially as the basement is proposed to be fully tanked for the life of the building. NSW SES would also like

to receive further information regarding the 'pump out facility' as mentioned in the Mitigation Measures report.
This refers to the original mitigations identified in the mitigations report from the Geotech Report:
This is referenced in the Geotech report dated 4 July 2023 prepared by JK Geotechnics, Pg 7, submitted with original EIS. It was carried across to the Mitigation Report.

The Mitigations Report identified it as:
81. The basement should be water tight, ie fully tanked, for the life of the building. 82. Groundwater seepage monitoring should be carried out during bulk excavation prior to finalizing the design of a pump out facility

They are now numbered 87 & 88 in the revised mitigation measures report.

It appears to us that some confusion has arisen across the various disciplines and that the situation can be simplified and explained as follows:

1. There is no requirement to tank the basement as inflows are predicted to be below 3Ml/year and the basement is probably above the groundwater table.
2. A permanent pump-out facility is required and is a standard installation in most Sydney basements. The pump system will need to be a standard fail-safe system with a back-up pump and alarm system to let the building manager know that attention is required in the event of a malfunction.
3. The design of the pump-out system should be confirmed by observation and measurement during construction, but can be based upon a capacity of 3Ml/year which requires only a modest pump size, and then adjusted if considered necessary, which is unlikely based on the studies to date.
4. The design of the pump-out system is undertaken by a hydraulic engineer as part of the detailed design at Construction Certificate stage.
5. The risk of basement flooding is negligible as even if both the installed pumps were to fail the inflows would be gradual and there would be plenty of time for the building manager to bring in temporary pumps before anything more than minor inconvenience occurred.
6. The comments on Page 7 of the geotechnical report are only standard warnings that during excavation temporary inflows may occur locally to ensure that the contractor has appropriate contingency measures.

We trust that this helps to clarify the situation but if you have any further queries, please do not hesitate to contact us.

Yours faithfully
For and on behalf of
JK GEOTECHNICS

Paul Stubbs
Principal Geotechnical Engineer