



30 JUNE 2022

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Rotokauri North Holdings Limited

c/- Renee Fraser-Smith & Dominic Rose

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HD1009 – Rotokauri North Development Stage 1 – Fast-Track Application - RFI response

Dear Renee,

This letter presents our response to a recent Request for Further Information (RFI) received from Hamilton City Council (HCC) for the Rotokauri North Development. Below is a summary of the points/questions raised and our response (our response is in **bold**, following the RFI text).

RFI comments¹ / Our response

11.0 Geotechnical

11.1 Tonkin & Taylor Consultants, on behalf of HCC have reviewed the HD Geo *Rotokauri North Development Stage 1 – Preliminary Geotechnical Report, Project NO: HD1009, Ref: PGR-4, 26 April 2022*. The review found five key geotechnical issues were identified:

- a) Liquefaction issues associated with the existing land as well as exacerbation of lateral spreading in the vicinity of the proposed ponds. **Correct.**
- b) Peat soils are present at shallow depth (up to 1m). **Correct.**
- c) Soft soils are present at depth, resulting in significant settlement. **Correct.**
- d) Existing groundwater is relatively shallow in some areas (less than 1m). **Correct.**
- e) Expansive soils/low bearing capacity soils. **Correct.**

11.2 Items A, B and E above can be addressed as part of Building Consent applications and any further subdivision. Item D is addressed by way of fill placement across the entire site to create greater separation from ground water. HCC considers this is sufficient. **Agreed.**

11.3 The primary concern is item C and the potential for ongoing settlement. HD Geo have indicated that they have undertaken a settlement assessment (though the assessment has not been included in the Geotechnical report) that indicates variable levels of settlement within the deeper soils based on CPT testing. **A summary of the settlement screening assessment is included in our report – no action needed.**

¹ Grant Kettle, Comments on Rotokauri North Stage 1 Fast-Track Application (Hamilton City Council), dated 23 June 2022.

This form of testing is generally supported by boreholes to confirm the actual material that is being tested. HD Geo have not undertaken deep boreholes as part of the investigation. As such the outputs could be potentially under or overestimating the settlement potential of the land. **Agreed – no action needed.**

- 11.4 HD Geo has indicated that during/following placement of the proposed fill, settlement monitoring and further assessment at detailed design stage will be undertaken. This is the typical approach that would be expected. However, the targeted residual settlements are not clearly stated. **Agreed – no action needed.**
- 11.5 For future Council infrastructure, the residual settlements are not so large in that they will not affect the functionality of the service (e.g. gravity wastewater/stormwater) and result in back flow/standing water/blockages. Residential dwellings have work arounds (e.g. foundation design). Again, this would be expected to be further assessed as part of detailed design with detailed back analysis prior to completion/final sign off to confirm the residual settlement expected over the design life of the infrastructure. Given this would appear to be an area wide issue, this may not result in notable effects, but would need to be verified through a Geotechnical Completion Report. **Agreed – as below, the settlement analysis will be presented in the Geotechnical Completion Report.**
- 11.6 Tonkin and Taylor have reviewed the proffered conditions and recommended some minor amendments including:
- a) Retaining walls being designed to take into consideration surcharge, slopes at the base of walls and compliance with the NZ Building Code. **Agreed.**
 - b) Earthworks to be undertaken in accordance with both the geotechnical investigation and earthworks design report. **Agreed.**
 - c) Future lots confirming detailed geotechnical design requirements, as-builts records of earthworks, groundwater levels, drainage and retaining structures. **Agreed.**
 - d) Inclusion of the settlement analysis/monitoring during and post earthworks as well as projected residual settlements taking into consideration the design life of assets to be vested to Council and typical dwelling surcharges. **Agreed.**
 - e) Reference has been made to NZS 3604:1990. This is outdated and has been superseded by NZS 3640:2011. **In our report we referred to NZS3604:2011 – “The ground conditions within the Hills Terrain will generally meet the strength requirements of ‘good ground’ in accordance with NZS3604:2011.”**
- 11.7 Please refer to **Attachment A** for amendment dealing with the matters identified above.
- Recommendations within the ‘General Conditions – Applications to all resourced consents’ under Attachment A are appropriate and can be incorporated into the design, construction and completion reporting as appropriate.**

Please contact us if you have further queries.

Kind regards,



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