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SECOND GEOTECHNICAL LETTER IN RESPONSE
PROPOSED NEW HOUSE
266 WHALE BEACH ROAD, WHALE BEACH, NSW

Following our 'letter in response' dated 14 June 2021, GHD submitted a letter dated 16 July 2021 with comments on our 'response'. Many of the GHD comments cover the same issues, nevertheless our response to their comments follows:

1. GHD state that *"no specific analysis or consideration has been reported on the impact of the proposed development on the adjoining properties"*. We repeat that we analysed and gave due consideration to those aspects of the proposed development which could impact on the adjoining properties, namely excavation and retaining wall stability as well as ground vibrations.
2. GHD do not agree with our assessment of the consequences of instability of the bulk excavation. We point out that our assessed consequences are based on the proviso that the recommendations presented in our geotechnical report are adopted. This point was highlighted in bold at the end of Section 6 of our geotechnical report dated 7 July 2020. Our recommendation was that the bulk excavation be supported by an engineer designed retention system, that an excavation/retention methodology be prepared, the methodology be approved by the geotechnical engineer, that any deviations from the above methodology be first approved by the geotechnical engineer and that the excavation itself be inspected by the geotechnical engineer at 1.5m depth intervals. With all of the above precautions in place, in the unlikely event that there is a problem with the excavation, it will likely be minor and localised and will be identified well before it becomes a major issue. Our assessed consequences are thus fully justified, in our opinion.
3. GHD further disagree with our assessment of the likelihood of failure of engineer designed retaining walls on the basis that there could be *"errors in design and construction"*. We don't share GHD's poor opinion of the design competencies of the structural engineering profession (some of whom are employed by GHD), nor on our or the structural engineers' ability to carry out appropriate and effective inspections of the works during construction. We thus reject GHD's opinion in this respect.
4. Taking GHD's logic, as outlined in Items 2 and 3 above, one step further, they appear to imply that risk of instability cannot be reduced, no matter what, and how many, precautions are taken. This is contrary to any risk management methodology and to the Pittwater Risk Management Policy in particular.



5. GHD have repeated that our general recommendation for a 1V:1H maximum batter for temporary excavations is not suitable. We do not understand why this issue has been brought up again. As clearly stated in our response dated 14 June 2021, the above recommendation was conditional, and the scenario described by GHD was specifically excluded in our report dated 7 July 2020.
6. The issue raised by GHD with respect to an anchored soldier pile wall was dealt with in detail in our response dated 14 June 2021.
7. GHD have stated that the *"installation of any anchors (temporary or permanent) within the boundary of our client's property should not proceed without obtaining the permission of our client"*. Again, we are not sure why this issue has been brought up as this recommendation was presented in Section 7.1.3 of our report dated 7 July 2020 and repeated in our response dated 14 June 2021.
8. We agree with GHD that a geotechnical investigation should be carried out, followed by the design of the retention system as well as a hydraulic design. These have been our recommendations from the start and included in our report dated 7 July 2020.
9. We note that our report dated 7 July 2020 has been carried out in accordance with the Pittwater Risk Management Policy. Our understanding of the Policy, is that the structural and hydraulic design are only required at Construction Certificate stage, hence the requirement (at Construction Certificate stage) for the structural engineer to fill in and sign off Form 2-Part A (essentially confirming that their designs have followed the recommendations of the geotechnical report) and the geotechnical engineer filling in and signing off Form 2-Part B (essentially confirming that they have reviewed the structural drawings and are happy that the recommendations of the geotechnical report have been adopted).
10. Finally, GHD have raised the issue that a site specific vibration assessment be undertaken, due to the age and sensitive nature of the building at No 264. Based on the Douglas Partners report dated 18 October 2001 (which was prepared for the proposed alterations and additions to No 264) the allowable bearing pressure of the extremely to highly weathered sandstone bedrock which was exposed below the strip footings in the underfloor area was assessed to be in excess of the anticipated loading which would be imposed by a three storey masonry residence with timber floor at Level 2 and Level 3. The building, therefore does not appear to be particularly old or sensitive.
11. Nevertheless, in Section 7.2.5 of our report dated 7 July 2020, we recommended that dilapidation surveys be undertaken of the neighbouring buildings. In Section 7.3.1 of the same report, we recommended that an excavation/retention methodology be prepared and approved by the geotechnical engineer. As part of the approval process, we would review the dilapidation survey reports and, on that basis, confirm or revise the vibration limits which would apply.

Should you require any further information regarding the above, please do not hesitate to contact the undersigned.

Yours faithfully
On behalf of
JK Geotechnics



Agi Zenon
Principal Consultant | Geotechnical Engineer