White geotechnical group

Sydney, Northern Beaches & beyond. Geotechnical Consultants

Letter Addressing Impact of Proposed Works on St. Michael's Cave:
73 Marine Parade, Avalon

1. Scope

The aim of this assessment is to address the impact of the proposed works on St. Michael's Cave (Photo 1).

The cave was inspected on the 3rd August, 2022.

2. Proposed Development

It is proposed to construct a new house on the subject property at number 73 Marine Parade, Avalon. The construction works will require extensive excavation through Medium Strength Rock.

3. Observations and Comments

St. Michael's Cave is a cave within the sea cliff adjacent to Marine Parade, Avalon. The cave is located approximately adjacent to the boundary between numbers 77 and 79 Marine Parade, Avalon. The cave follows a dyke through the rock (Photo 2) and runs W-N-W (~288°) for approximately 100m. As such, it runs directly under numbers 79 and 81 Marine Parade and is set back no less than 50m from the proposed excavation works on the subject property. As the excavation works are not expected to directly impact on the cave, the only risk to the cave from the excavation works will be from vibrations caused during the works.

4. Recommendations

Following the recommendations in **Section 12** of our geotech report numbered J3808 and dated 14/10/22, vibrations will be limited to 5mm/s at the property boundaries and at the sea cliff adjacent to the subject property. Given the relatively large distance to the cave from the excavation works, we expect the vibrations impacting on the cave to be well below a peak particle velocity of 3mm/s (which is an industry acceptable vibration limit for sensitive structures).

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Photo 1

Photo 2