CROZIER
GEOTECHNICAL CONSULTANTS

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Date: 1st May, 2018

Initial Geotechnical Inspection Report

To: **Daryl Johnston**

Email: **No. of Pages:** 2

Re: 4 Phyllis Lane, North Curl Curl **Project No:** 2018-062

Comments: Site inspection 12th April, 2018

Daryl,

As requested, Crozier Geotechnical Consultants attended the above site to provide preliminary geotechnical advice regarding the suitability for the construction of a swimming pool within the rear garden (east) of the property.

The site contains a residential dwelling which has apparently been constructed on a series of sandstone terraces which were visible outcropping adjacent to the existing dwelling. A rear garden lies to the east of the site residence and measures approximately 20.0m x 7.50m (east-west, north-south respectively). The rear garden contains a rock shelf at approximately RL34.50-RL35.00m beyond which to the east lies a lawn at approximately RL33.0.m which is bounded by the eastern site boundary. Beyond the eastern site boundary is the unformed Handoub Parade. A set of steps connects the lawn area and the upper rock shelf.

An area adjacent to the northern site boundary is a slightly lower elevation than the lawn (approximately RL32.00m). A dry stone retaining wall has been constructed near the eastern boundary and is up to approximately 2.00m in height and runs broadly north-south.

The exposed sandstone exposed within the rock ledge between the site dwelling and lawn area comprised medium to high strength sandstone.

It is understood that the lower level lawn area overlies up to approximately 2.00m of fill and that the fill comprises cobble size intact fragments of locally won sandstone and was placed on sandstone bedrock to provide a useable area several years ago. It also appears that a sewer main lies within the rear of the garden approximately 1.00 - 2.00m from the proposed pool location.

It is proposed to construct an above ground pool towards the rear of the property within the lawn area and bordering the edge of the rock shelf. The proposed pool is approximately 4.00 - 6.00m from the existing dry stone retaining wall constructed at the east end of the garden and overlying
the area which has previously been filled. Bulk excavation is not proposed as part of the works. The filled pool is understood to weigh approximately 30 tonnes and be constructed using a preformed fiberglass shell.

The underlying fill is understood to be 'uncontrolled' therefore the potential for variation in compaction levels and settlement characteristics is considered likely. To prevent differential settlement of the proposed pool it will be required to transfer the pool loads to the underlying bedrock, understood to be a maximum of approximately 2.00m below the lawn level. Proving the depth to competent bedrock in the rear of the garden underlying the footprint of the proposed pool is likely to present considerable difficulties due to the limited access for machinery as well as the anticipated nature of the fill understood to be underlying the proposed pool location.

The site is located within an 'Area B' defined as being situated in an area with flanking slopes of between 5° and 25° according to Warringah Councils Landslip Risk Map. In addition, according to Warringah Council Development Control Plan it is considered that a geotechnical report on the site will be required as part of the DA process, however Council make the assessment based on a case by case basis.

It is considered that the construction of the pool is feasible in the current location however it is envisaged that the pool footings will need to extend to competent bedrock. If the pool development it to proceed it is recommended advice be sought from Council as to whether they will require a geotechnical report as the cost to prove bedrock is likely to be significant and that appropriate founding depth i.e. depth to competent bedrock, could be determined during construction.

It will also be necessary to discuss the proposed pool development with Sydney Water to determine the level of investigation required to ensure adverse impacts to their assets does not occur as a result of the construction of the pool.

We hope the above information is sufficient for your current requirements however please do not hesitate to contact us should you require further clarification.

Regards
Kieron Nicholson
Senior Engineering Geologist