UNPUBLISHED REPORT 1964/30

Foundation conditions of proposed extension to Bellerive Yacht Club

by I. B. Jennings

The Bellerive Yacht Club proposes to erect a substantial addition to the existing club house. The additional buildings will be situated on an area of reclaimed land overlying Triassic sandstone. The depth of fill was determined by means of two seismic refraction traverses checked by two 2½ inch percussion holes.

Original and adjusted seismic profiles are shown on the accompanying plan, these indicate the depths to bedrock along the seismic traverses.

Bore No. 1

0 – 7’	Filling, consisting of sandstone blocks, sand, mud and gravel
7’ – 8’	Wood
8’ – 22’	Grey sandstone

Water was encountered in the hole varying in level according to the tide, between 6 ft. and 8 ft.

Bore No. 2

0 – 7’	Filling consisting of gravel, clay and some bricks
7’ – 18’	Grey sandstone

The water was again encountered between 6 ft. and 8 ft and was reported to vary with the tide.

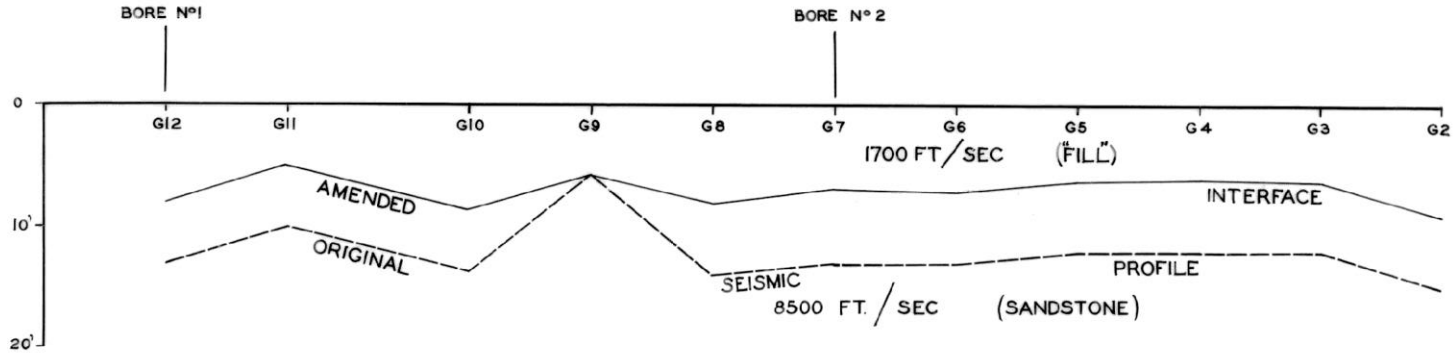
Summary

The investigations have revealed that the rock, Triassic sandstone, is overlain by a thin layer of filling. The disagreement between the two seismic traverses has been adjusted by means of the drilling results and indicates that generally the rock is less than 10 ft. from the surface. As was expected the fill is a heterogeneous collection of sandstone rubble, gravel, clay, bricks and logs. In Bore No. 2 the fill was reported to be poorly consolidated possibly due to the removal of fines by fluctuating ground water.

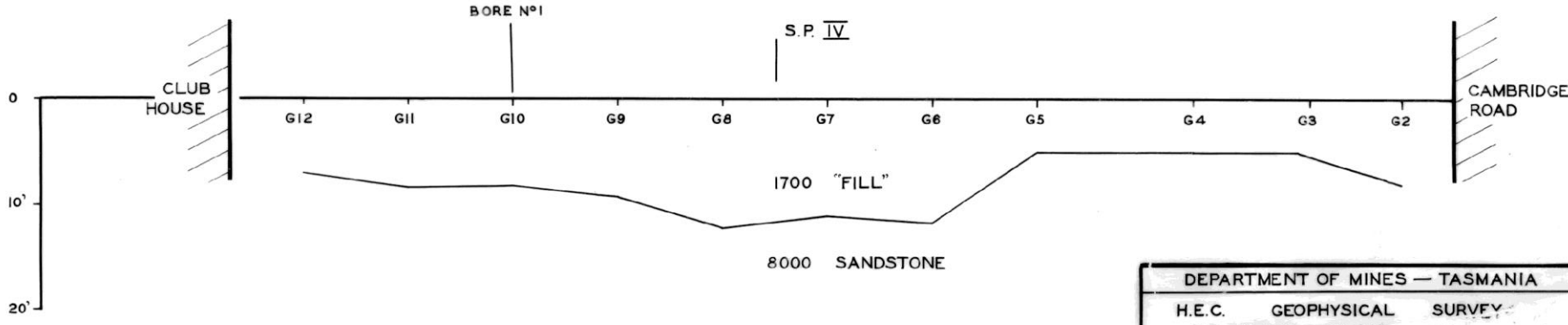
It is understood that the building is to be supported on concrete encased steel columns placed on concrete pads poured onto the bedrock. This appears to be a feasible arrangement as the bedrock is close to the surface and the bedrock is quite capable of carrying the loads envisaged. However, it will be necessary to carry out some of the excavation below the permanent water table. It may also be necessary to excavate buried logs along with the fill. It may be noted that the groundwater in this vicinity is most likely to be corrosive, and high in sulphate due to the occurrence of sea water. Recent investigation at Batman Bridge has indicated that in such an environment the use of sulphate resisting cement is necessary.

Consideration has been given to supporting the entire structure on a beam on top of the fill in order to reduce the cost of the foundations. This may be feasible but would require extra investigation. The indications are that the fill is quite variable in composition and in places poorly consolidated so that some settlement could conceivably occur. In view of the uncertainty involved and the limited time available it seems doubtful if further investigations are warranted.

[18 December 1964]



TRAVERSE A



TRAVERSE B

DEPARTMENT OF MINES — TASMANIA

H.E.C. GEOPHYSICAL SURVEY
BELLERIVE YACHT CLUB

DATE :— DECEMBER 1964	Feet SCALE 0 10 20
G/PHYSICIST :— P.W.M°DOWELL	SURVEYOR :-
DRAUGHTSMAN :- R.J.VOSS	MAP SHEET & N° HBT. 62
REVISIONS :-	FILE N° 2495-82