

1977/30. Investigation of a proposed Marina site, Prince of Wales Bay.

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At the request of Central Marine Sales and Service, a seismic survey was undertaken in Prince of Wales Bay [EN244578], to establish the condition of the bay floor. Basalt crops out around the bay in the region of Gepp Parade and weathered slabs can be seen near the company's jetty. It was hoped that the seismic survey would indicate the quality of the rock and provide some estimate of silt cover. As the marina development is to include some reclamation and jetty construction a sizeable area of the bay was inspected (fig. 1). Reclamation is to extend as far offshore as the present jetty.

#### GEOPHYSICS

A hydrophone cable survey using a hydrophone spacing of 15 m and with shots fired at each end was undertaken. Shot depths and extensions varied from 1.5-3 m and 10-30 m respectively. Cable positions were established by survey.

The time distance graphs obtained during the survey were irregular and stepped, indicating irregular water-bedrock or silt-bedrock interfaces. Since detailed bathymetry was not available and was not possible during the survey, only an approximate idea of the water-silt interface could be included in the interpretation.

The velocities determined for the materials present were 1500 m/s for water and 3000-3500 m/s for basalt. The silt velocity was not measured during the survey due to thinness and low velocity ( $\sim 1000$  m/s) but it has been deduced from interpretation exaggerations and Dowsings Point data. No intermediate velocities were observed. Figure 1 presents an interpretation of silt thickness over the area inspected. The depth of water must be added. This varies from an average of 1.5 m in the west to more than 3.25 m in the east. The water is shallow off Pauline Point. The thicknesses presented in Figure 1 should be considered as approximate only, as detailed water depth corrections could not be included. Pockets with thicker deposits are indicated.

#### CONCLUSION

The basalt velocity recorded indicates that the rock is quite massive although somewhat weathered. It will not accept driven piles unless these are tipped and the rock shattered before driving. The thickness of silt is not very great and would nowhere support piles. It would seem that a rigid structure including solid piles resting on rock and with a well distributed load factor is required.

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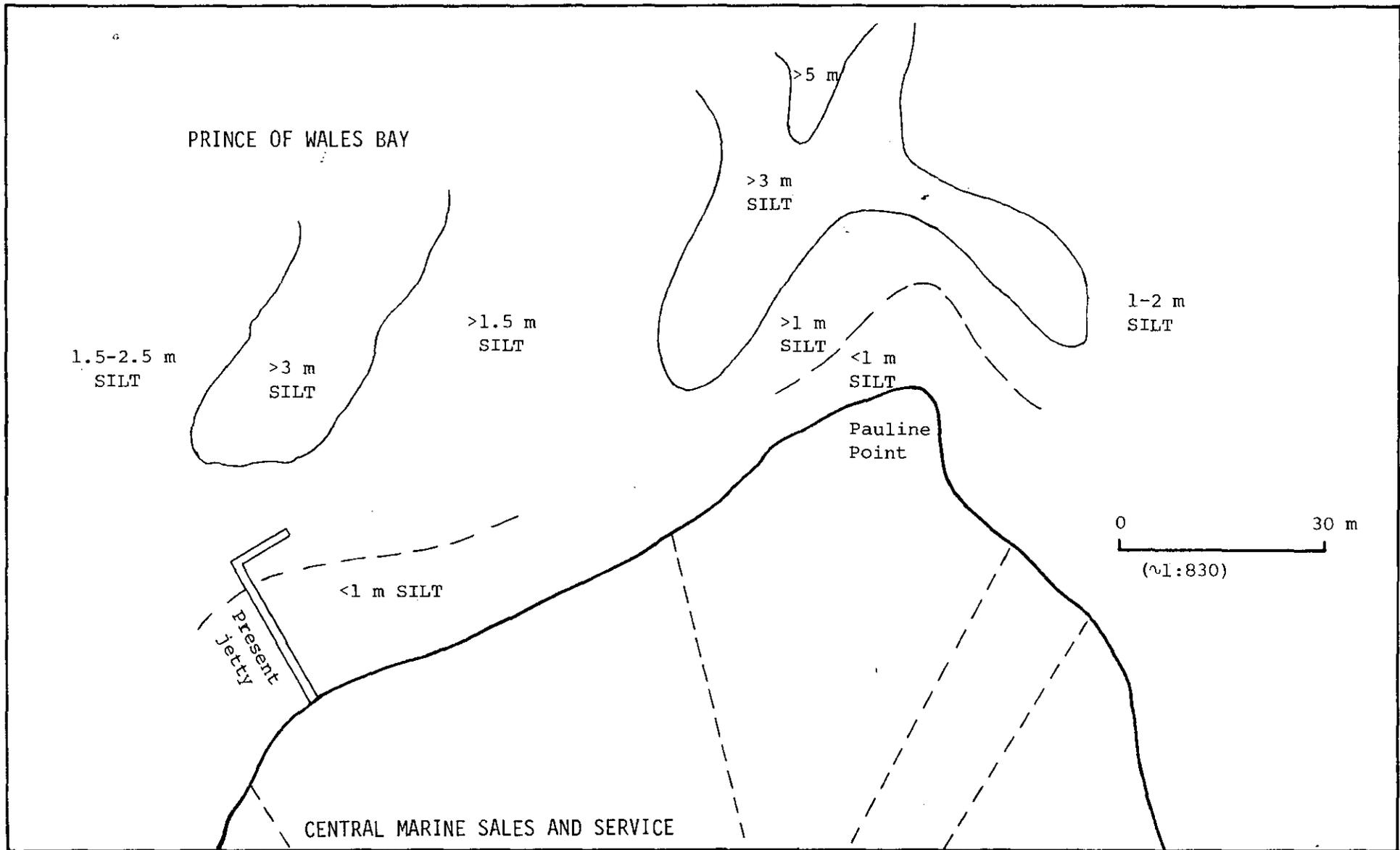


Figure 1. Provisional results, seismic survey, Prince of Wales Bay.

5 cm

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