UR1977_12

1977/12. Results from test pits on R. French's property at Spreyton.

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Three test pits were dug on this property [DQ440364] to examine the material underlying the area at depth. The land is situated at the toe of a slope that has been affected by landslips in the past. It was not known from surface examination whether the bench towards the rear of the block was formed by a landslip or by erosion of flat lying Permian rocks which occur in the general area. The materials encountered in the test pits are given below.

TEST PIT 1

Depth (m)	
0-1.2	About 0.5 m of brown silty soil passing into dark brown clayey silt.
1.2-2.4	Grey and brown mottled silty clay passing into weathered rock at different levels in the pit. On the west side of the pit it commences one metre above, and on the south side 0.6 m above the bottom of the pit. The rock is a weathered siltstone to fine-grained sandstone with occasional small pebbles and containing some mica. Bedding is very poorly developed but the dip of a surface which may be bedding dips at 5° NW with a strike of 220°.

TEST PIT 2

Depth (m)	
0-1.0	Silty soil passing into silty clay and broken rock.
1.0-2.8	Weathered siltstone to fine sandstone with occasional boulders up to 20 cm across. Fine-grained pebbly sandstone with pebbles up to 3 cm across but normally much smaller with poorly developed bedding was encountered at the bottom of the pit. This rock is a little harder than in Test Pit 1.

TEST PIT 3

Depth (m)	
0-1.5	Silty soil and dark brown silty clay.
1.5-2.7	Grey and brown mottled clay with some zones of weathered rock which may be *in situ*. The weathered rock zones consist of a similar material to that encountered in Test Pits 1 and 2.

CONCLUSIONS

The test pits, particularly 1 and 2, contain what appears to be *in situ* Permian sediments. The bench at the rear of the block was probably formed because of differential weathering of hard and soft layers in the Permian sequence and not as a result of landslip. As the proposed house is to be sited between these two points, there is less possibility of it being affected by landslips in the future than if the house site was underlain by

old landslip debris. There is a fairly deep accumulation of soil and unconsolidated material on top of bedrock and on the steep slope in front of the house site (*e.g.* in the vicinity of test pit 3). The land directly behind the proposed house site has only a gentle slope towards Mr French's land and there is only a slight risk of movements commencing in this area and affecting the land.

The test pits have shown that there is less risk of the house site being affected by landslips than was thought from surface observations. However the area cannot be regarded as being completely free from the risks of landslip. The deep unconsolidated material on the steep slope in front of the house site indicates that if development proceeds then extreme care should be taken with drainage. The conditions suggested by the Devonport Council engineer (letter to Director of Mines, 20/12/1976) for the development of the block should be adhered to. In addition regulations for the development of Landslip B land should be applied.

[24 March 1977]