

## Examination of a planned subdivision, E.G. Clarke, Burnie.

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Messrs McGrath, McGrath and Lillas, solicitors of Burnie, have requested an examination of land owned by E.G. Clarke. A plan has been devised for the subdivision of the land which is situated between Brickport Road and the Bass Highway. Part of the proposed subdivision was mapped as being potentially unstable in a survey of the Burnie area in 1963.

## TOPOGRAPHY AND GEOLOGY

The proposed subdivision is on elevated land that forms part of a basalt plateau behind the shoreline. The land surface rises sharply for approximately 150 feet to this plateau from a marine platform of variable width. Slopes are steep and probably reach 30° in some parts of the scarp. The land on top of the scarp in the area of the proposed subdivision is undulating, and an east-west trending valley extends into part of it in the vicinity of Brickport Road. A further part of the area proposed for subdivision forms an east-west extending ridge.

Precambrian quartzite and slate intruded by dolerite occurs at depth under the area, and the dolerite is weathered to a varying extent. Overlying the Precambrian rocks is Tertiary basalt which is normally deeply weathered although some small outcrops of unweathered basalt are present. No exposures of Tertiary sediments are visible in the area, but they may occur between the basalt and Precambrian rocks. Beds of these sediments are present both to the east and the west of the proposed subdivision and could occur in this area also, but are obscured by talus (generally basalt) on the steep slopes.

## DISCUSSION OF STABILITY

A number of slips, some old and some of recent origin can be seen on the steep slope. Occasional seepages are also present but are not very extensive except on the eastern end of the slope. The absence of a large number of seepages is probably due to a ridge which forms part of the area and the small valley near Brickport Road collecting some of the sub-basalt drainage before it reaches the steep slopes behind the marine terrace. Only where the valley ends near Brickport Road are seepages a prominent feature. However, the occurrence of talus and weathered rock on a steep scarp has ensured that slips have continued. Although some small basalt outcrops do occur, basalt is a very variable rock with respect to weathering and these bodies of solid rock might only extend short distances laterally before weathered rock is encountered.

The map produced after the 1963 survey marked part of the area included by the proposed subdivision as being potentially unstable and recommended that development be restricted. Because of the steepness and height of the scarp, slumps of material on the scarp would remove support for material uphill and further slumping could involve part of the plateau. That part of the plateau near the scarp likely to be involved in such a process was included in the potentially unstable category. Landslips have continued on the scarp since the 1963 survey and it remains possible that part of the plateau area could be affected by future movement.

The western end of the subdivision slopes downhill and hence the Tertiary cover is thin. The one block planned for this area is unlikely to be affected by slips of Tertiary material. A quarry with a vertical face of deeply weathered Precambrian dolerite approximately 30 feet in height is situated on the southern side, and there exists a slight risk of some collapse associated with this face.

It is planned to subdivide a line of blocks between Brickport Road and the scarp to the east of Mr Clarke's house. It is in this area that small outcrops of basalt occur locally on the scarp. Seepages are also fairly common and extensive, occasional old slips have taken place and the scarp is very steep. The blocks, as proposed, appear to be too close to the scarp to be entirely safe from the effects of landslips that may occur.

From a re-examination of the area, it can only be concluded that there is some risk that parts of the proposed subdivision could be affected by land movements in the future and it is therefore recommended that development be confined to the undulating area indicated on the plan produced after the 1963 survey. Particular attention should be given to drainage and cuts should be kept to a minimum.

#### REFERENCES

- MATTHEWS, W.L. 1964. The geology of the Burnie area. *Tech.Rep.Dep.Mines Tasm.* 8:103-107.
- JENNINGS, I.B. 1964. Landslides in the Burnie district. *Tech.Rep.Dep.Mines Tasm.* 8:107-112.