TASMANIA DEPARTMENT OF MINES
UNPUBLISHED REPORT 1985/78

Inspection of Lot 6, Ambrose's Subdivision, Windermere

by W. R. Moore

Lot 6 of Ambrose's subdivision at Windermere was inspected on 21 February, with a house site being selected in the Class III potential landslide risk area on the block (fig. 1).

The site is situated in a shallow depression with a flatter area than the overall slope of 7° that occurs over most of the Class III area. The site is located approximately 50 m east of the fence post where the western boundary changes direction northwards upslope. The location is close to, but at a higher level to where two septic tank inspection pits had been dug. From the position of these pits and the survey pegs scattered on the ground it appears close to where a previous house site had been selected.

The remainder of the block upslope is a Class IV landslide risk area because it is part of a very large old landslide that covers much of the Ambrose subdivision. In the Class IV area there is only one topographical area which may be a possible house site. This is a small flatter area, with a slope of 4°, in the northeastern corner of the block. This feature is thought to be formed by a smaller secondary landslide that has occurred on the eastern flank of the old landslide. A similar feature is known to occur at a higher level on the neighbouring lot 4, which was investigated by trenching for slope stability. On the field evidence and soil testing results the site was not recommended to the council for building. If this higher alternative site is chosen a similar subsurface investigation and soil testing program would be required. Unfortunately, after this work the site would probably still be rejected because of its inherent high instability. Therefore unless a strong personal preference for the higher site exists, as did occur on the lot 4 block, this site is not recommended.

If the lower house site, as shown on Figure 1, is accepted no further investigation work is required, even though a sample of the clay from the inspection pit was collected. This sample will be tested in the soil laboratory but it is unlikely, on field evidence, to be different from samples recently collected and tested from the adjoining lots 1 and 2 of Ambrose's subdivision, where one house site was recommended for each block. The same recommendation is made for Lot 6, that one house site is recommended for the lot and no further subdivision be planned or contemplated for the block. The house should be sited on the flatter area shown Figure 1 and the septic tank should be installed in the area where the inspection pits were dug.

Because the slope of 7° covers most of the Class III area and because of the properties of the clay, this site remains a potential landslide area. This risk cannot be eliminated for any of this section of land above Windermere Road as well as for much of the area below the road. All of this Class III area is considered at a potential risk from landslides. This site, as with other houses in this area, is situated on sensitive slopes prone to landslide even with slopes of less than 7°.

The risk of slope failure can be reduced by adequate drainage removing any excess water accumulating on the proposed site. These drains must be well maintained and function at all times. Deep cuts into the slope at the rear of the house site or on the access road to the site should be avoided. Large areas of fill built out on the slope, thus loading the slope, should also be avoided. Swimming pools should preferably be above the ground type so that leakage may be observed, and any pool should be located away from the edge of the slope. The planting of

trees and shrubs on slopes should be encouraged and the excess watering of gardens and lawns avoided.

Even though these precautions may sound simplistic and are considered by many of the existing residents of this area of Windermere as nonsense, it is considered that even this Class III area of Windermere is considered to be a sensitive slope and prone to failure. It has failed in the past, destroying one house at a nearby locality, even though local tradition puts the cause of this house destruction as poor foundations and building practices. Even a well built and designed conventional house or larger structure could not withstand the forces of this small landslide which destroyed and is still continuing to affect this ruined structure. This is why it is considered so important that these precautions are maintained, thus reducing the risk of slope failure in this area of Windermere to acceptable limits.

Even though the area is only a Class III area, within the discretion of your local building inspector, it would be prudent to follow the Special Building Code 1978 (Part II Division 5) for building in this potential risk area.

In addition as the clay beneath the surface soil is very expansive, as seen from the shrinkage cracks in the pits, seasonal foundation movement can be anticipated. The house foundations should be designed to withstand or accommodate these movements and be preferably designed by a professional foundation engineer.

[12 March 1985]

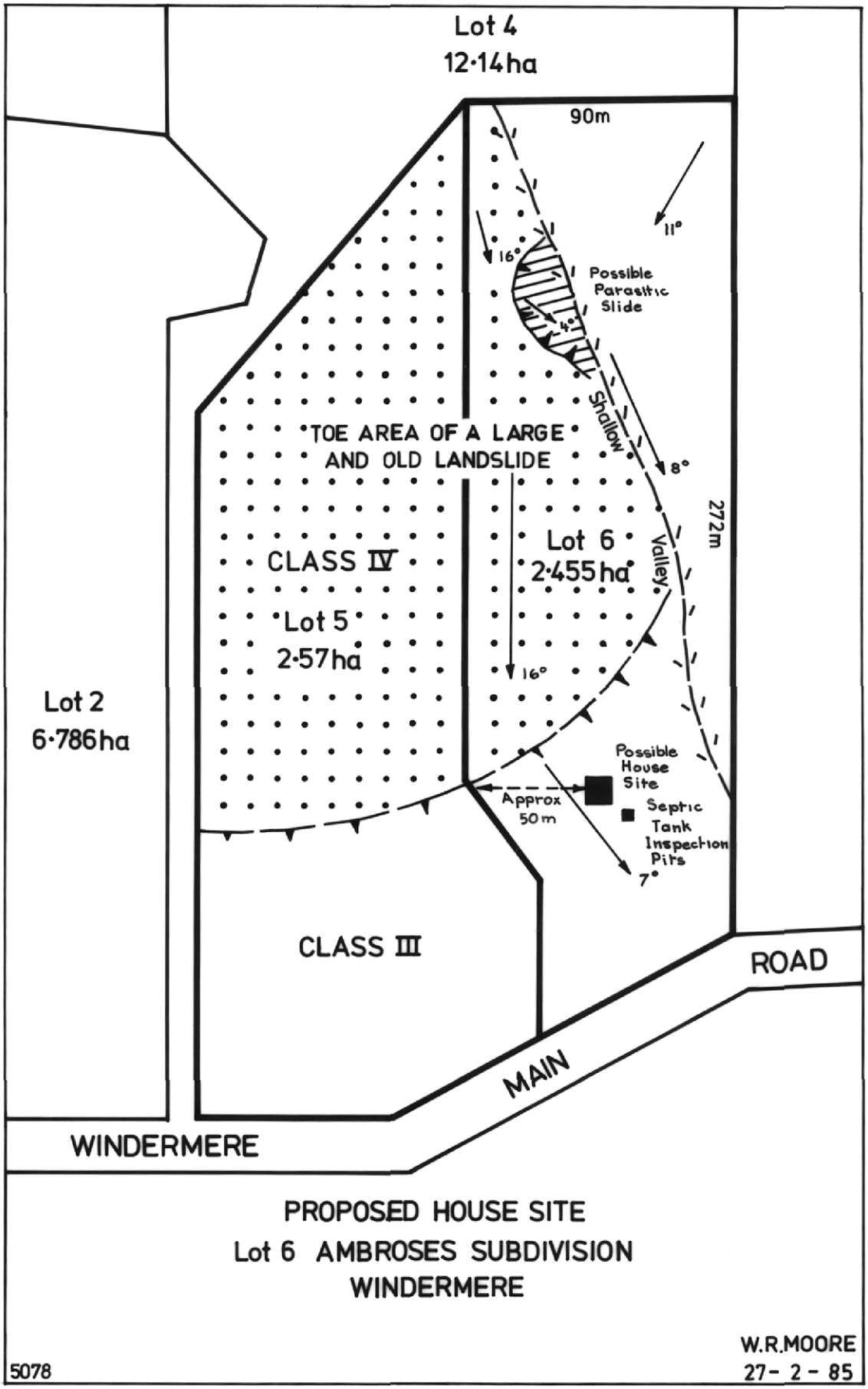
Lot 4
12·14ha
90m
11°
16°
Possible
Parasitic
Slide
4°
Shallow
8°
272m
TOE AREA OF A LARGE
AND OLD LANDSLIDE
CLASS IV
Lot 5
2·57ha
Lot 6
2·455ha
Valley
16°
Lot 2
6·786ha
Possible
House
Site
Approx
50m
Septic
Tank
Inspection
Pits
7°
CLASS III
ROAD
MAIN
WINDERMERE
PROPOSED HOUSE SITE
Lot 6 AMBROSES SUBDIVISION
WINDERMERE
W.R.MOORE
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Figure 1

APPENDIX 1
Soil laboratory results

The results of soil laboratory testing undertaken on the clay sample collected on 21 February from the septic tank inspection pit near the recommended house site are shown in Table 1.

These laboratory results confirm that the clay is very highly plastic, with a plastic index of 113, and very expansive with a linear shrinkage of 26%. These results are similar to all the clay samples collected and tested to date on the other lots of Ambrose's subdivision at Windermere.

The results confirm the field evidence on which the opinion of the general instability of this area of Windermere is based, and also that sub-soil movement causing foundation problems and house cracking is a real danger in this area.

Table 1

Soil tests of clay samples, Lot 6, Windermere

Sample No.	*Depth (m)*	*Plastic Limit*	*Liquid Limit*	*Plastic* Index	Liquid Limit
1	0.5	30	143	113	26%