Scarborough District Wide Local Plan
(Land at Crossgates)
Agricultural Land Classification
July 1996

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SCARBOROUGH DISTRICT WIDE LOCAL PLAN
(LAND AT CROSSGATES)
AGRICULTURAL LAND CLASSIFICATION REPORT

Introduction

1. This report presents the findings of a detailed Agricultural Land Classification (ALC) survey of 12.3 ha of land at Crossgates, near Scarborough. The southern part of the site was surveyed in December 1994 while the north was surveyed in July 1996.

2. The survey was commissioned by the Ministry of Agriculture, Fisheries and Food (MAFF) Land Use Planning Unit, Northallerton in connection with Scarborough District Wide Local Plan. This survey supersedes any previous ALC surveys on this land.

3. The work was conducted by members of the Resource Planning Team in the Leeds Statutory Group in ADAS. The land has been graded in accordance with the published MAFF ALC guidelines and criteria (MAFF, 1988). A description of the ALC grades and subgrades is given in Appendix I.

4. At the time of the 1996 survey the land on the site was in Set-aside (in the east) and under peas (in the west). Other land on the site consists of a track, house, and gardens.

Summary

5. The findings of the survey are shown on the enclosed ALC map. The map has been drawn at a scale of 1:5,000. It is accurate at this scale but any enlargement would be misleading.

6. The area and proportions of the ALC grades and subgrades on the surveyed land are summarised in Table 1.

Table 1: Area of grades and other land

Grade/Other land	Area (hectares)	% Total site area	% Surveyed Area
Grade 2	9.5	77.2	79.8
Subgrade 3a	2.1	17.1	17.7
Subgrade 3b	0.3	2.4	2.5
Other land	0.4	3.3	-
Total surveyed area	11.9	-	100
Total site area	12.3	100	-

7. The fieldwork was conducted at an average density of one boring per hectare. A total of eleven borings and two soil pits were described.

8. Grade 2 land, very good quality agricultural land, is found in the south of the site. The soils are well drained, with very slightly to slightly stony sandy loam topsoils and upper subsoils overlying stoneless to slightly stony sandy loam or loamy sand lower subsoils. Soil droughtiness and, in places, topsoil stoniness limit this land to Grade 2.

Subgrade 3a, good quality agricultural land, occurs in the north. Generally slightly to moderately stony sandy loam topsoils overlie slightly stony sandy loam upper subsoils and slightly stony sandy loam or loamy sand lower subsoils. The soils are well drained but the land is limited to Subgrade 3a by soil droughtiness, topsoil stoniness, and a pattern restriction which prevents Grade 2 profiles being mapped separately.

Subgrade 3b, moderate quality agricultural land, occurs in a small area in the north. Moderately stony medium clay loam topsoils and subsoils overlie weathering limestone at around 40 cm depth. These soils are well drained but droughty, and the ALC grade is limited by both topsoil stoniness and soil droughtiness.

Other land on this site consists of a track, house and gardens.

Factors Influencing ALC Grade

Climate

9. Climate affects the grading of land through the assessment of an overall climatic limitation and also through interactions with soil characteristics.

10. The key climatic variables used for grading this site are given in Table 2 and were obtained from the published 5km grid datasets using the standard interpolation procedures (Met. Office, 1989).

Table 2: Climatic and altitude data

Factor	Units	Values
Grid reference	N/A	TA026835
Altitude	m, AOD	35
Accumulated Temperature	day°C (Jan-June)	1340
Average Annual Rainfall	mm	675
Field Capacity Days	days	163
Moisture Deficit, Wheat	mm	104
Moisture Deficit, Potatoes	mm	95

11. The climatic criteria are considered first when classifying land as climate can be overriding in the sense that severe limitations will restrict land to low grades irrespective of favourable site or soil conditions.

12. The main parameters used in the assessment of an overall climatic limitation are average annual rainfall (AAR), as a measure of overall wetness, and accumulated temperature (AT0, January to June), as a measure of the relative warmth of a locality.

13. The combination of rainfall and temperature at this site mean that there is no overall climatic limitation to ALC grade on this site.

Site

14. The land on the site is level to gently sloping (0 - 2°) with variable aspect and at no point does gradient limit ALC grade. Equally, neither microreflief nor flood risk provide any limitation to ALC grade on this site.

Geology and soils

15. The geology map for the area (Sheet 54, Scarborough) shows the site to be underlain by Corallian Limestone over which lie drift deposits of post-glacial sand and gravel (in the centre and south) and glacial sand and gravel (in the centre and north). There is no drift cover mapped in the far north of the site.

16. The Soils of England and Wales (Sheet 1, Northern England) shows the site as having Wick 1 association soils.

Agricultural Land Classification

17. The details of the classification of the site are shown on the attached ALC map and the area statistics of each grade are given in Table 1, page 1.

Grade 2

18. The south of the site is Grade 2, very good quality agricultural land. The soils are well drained, falling in Wetness Class I (see Appendix II) and consist of medium sandy loam topsoils and upper subsoils overlying medium sandy loam or loamy medium sand lower subsoils. The topsoils and upper subsoils are generally very slight to slightly stony, with between 4% and 8% total hard stones (2% to 5%> 2 cm in the topsoil), whilst the lower subsoils are stoneless to slightly stony, with up to 10% hard stones. Very slight soil droughtiness and, in some places, topsoil stoniness are the factors limiting this land to Grade 2. These limitations mean that, whilst a wide range of agricultural and horticultural crops can be grown on this land, the level of yield may be lower or more variable than that obtained from Grade 1 land. In addition, the topsoil stoniness limitation may lead to a slight loss of quality in some root crops.

Subgrade 3a

19. Most of the north of the site is Subgrade 3a, good quality agricultural land. The soils are well drained (Wetness Class I) and generally consist of medium sandy loam topsoils and upper subsoils overlying medium sandy loam or loamy medium sand lower subsoils, although horizons of sandy clay loam or heavy clay loam occur at depth in places. The topsoils vary between slightly and moderately stony (6% to 20% hard stones and limestone, with 3% to 13% greater than 2 cm in size) whilst the subsoils are typically slightly stony, with around 12% total hard stones. The ALC grade of this land is limited by slight soil droughtiness,

which will lead to a reduction in the range of high-yielding crops which can be grown, and topsoil stoniness, which is likely to increase production costs as a result of it's deleterious effect on machinery and which may lead to a reduction in the quality of some root crops. Although many profiles in this area meet the requirements for Grade 2, their distribution is such that they cannot be accurately mapped as a separate unit.

Subgrade 3b

20. A small area of Subgrade 3b, moderate quality agricultural land, occurs in the north of the site. The soils are well drained, falling in Wetness Class I, but shallow over weathering limestone. Generally moderately stony medium clay loam topsoils and subsoils (containing approximately 30% total very small to large limestones, 22% of which are greater than 2 cm in the size in the topsoil) overlie weathering limestone at around 40 cm depth. In this case soil droughtiness and topsoil stoniness limit the ALC grade of the land. These limitations significantly restrict the range of crops which will give even moderate yields, and yields are likely to be lower and more variable than those obtained from the adjoining Subgrade 3a land as a result of the increased soil droughtiness limitation.

Other land

21. Non-agricultural land on this site consists of track, houses, and gardens

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SOURCES OF REFERENCE

British Geological Survey (1950) *Sheet No.* 54, *Scarborugh, 1:63,360 scale.*
BGS: London.

Ministry of Agriculture, Fisheries and Food (1988) *Agricultural Land Classification of England and Wales: Revised guidelines and criteria for grading the quality of agricultural land.* MAFF: London.

Met. Office (1989) *Climatological Data for Agricultural Land Classification.*
Met. Office: Bracknell.

Soil Survey of England and Wales (1983) *Sheet* 1, *Soils of Northern England, 1:25,000 scale.*
SSEW: Harpenden.

Soil Survey of England and Wales (1984) *Soils and their Use in Northern England*
SSEW: Harpenden

APPENDIX I

DESCRIPTIONS OF THE GRADES AND SUBGRADES

Grade 1: Excellent Quality Agricultural Land

Land with no or very minor limitations to agricultural use. A very wide range of agricultural and horticultural crops can be grown and commonly includes top fruit, soft fruit, salad crops and winter harvested vegetables. Yields are high and less variable than on land of lower quality.

Grade 2: Very Good Quality Agricultural Land

Land with minor limitations which affect crop yield, cultivations or harvesting. A wide range of agricultural or horticultural crops can usually be grown but on some land of this grade there may be reduced flexibility due to difficulties with the production of the more demanding crops such as winter harvested vegetables and arable root crops. The level of yield is generally high but may be lower or more variable than Grade 1 land.

Grade 3: Good to Moderate Quality Land

Land with moderate limitations which affect the choice of crops, the timing and type of cultivation, harvesting or the level of yield. When more demanding crops are grown, yields are generally lower or more variable than on land in Grades 1 and 2.

Subgrade 3a: Good Quality Agricultural Land

Land capable of consistently producing moderate to high yields of a narrow range of arable crops, especially cereals, or moderate yields of a wide range of crops including cereals, grass, oilseed rape, potatoes, sugar beet and the less demanding horticultural crops.

Subgrade 3b: Moderate Quality Agricultural Land

Land capable of producing moderate yields of a narrow range of crops, principally cereals and grass, or lower yields of a wider range of crops or high yields of grass which can be grazed or harvested over most of the year.

Grade 4: Poor Quality Agricultural Land

Land with severe limitations which significantly restrict the range of crops and/or the level of yields. It is mainly suited to grass with occasional arable crops (e.g. cereals and forage crops) the yields of which are variable. In moist climates, yields of grass may be moderate to high but there may be difficulties in utilisation. The grade also includes very droughty arable land.

Grade 5: Very Poor Quality Agricultural Land

Land with severe limitations which restrict use to permanent pasture or rough grazing, except for occasional pioneer forage crops.