**Springs Lane, Walton, Wetherby**

**Agricultural Land Classification**
**ALC Map and Report**

**October 1997**

**Resource Planning Team**
**Northern Region**
**FRCA, Leeds**

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RPT 20267

# SPRINGS LANE, WALTON, WETHERBY
# AGRICULTURAL LAND CLASSIFICATION REPORT

## INTRODUCTION

1. *This report presents the findings of a detailed Agricultural Land Classification (ALC)* survey of 55.9 ha of land east of Wetherby. This area had been subject to a semi-detailed survey in 1995 (FRCA Ref. 99/95, Leeds UDP Topic 895, Springswood A and B) which found the area affected by the present application to be made up of Grade 2, Subgrade 3a, and Subgrade 3b agricultural land and small areas of woodland, urban land and non-agricultural land. However, this semi-detailed survey covered a much larger area and, given the complex nature of the soils on site (see paragraph 19) and the smaller area covered by the 1997 application, it was decided to carry out additional auger borings in October 1997. The survey work on which this report is based, therefore, is detailed i.e. one auger boring per hectare.

2. The survey was carried out by the Farming and Rural Conservation Agency (FRCA) for the Ministry of Agriculture, Fisheries and Food (MAFF), in connection with the ad hoc planning application to build a new village on this land.

3. The work was conducted by members of the Resource Planning Team in the Northern Region of FRCA. 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 1997 survey the land on the site was mainly in winter cereals, potatoes and oilseed rape. Smaller areas of ley grass and non-agricultural land also occur. An area of ley grass to the west of Champagne Whin has been subdivided into a number of allotments/paddocks. Redundant farm machinery has been left in this area and some new farm buildings (possibly for housing livestock) constructed. Although not in intensive use at the time of the 1997 survey - cattle were grazing most of the area - relatively little work would be required in terms of removing machinery and wooden constructions to allow the land to be put to more intensive use.

## SUMMARY

5. The findings of the survey are shown on the enclosed ALC map. The map has been drawn at a scale of 1:10,000. 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) | % surveyed area | % site area |
|---|---|---|---|
| 1 | | | |
| 2 | 2.3 | 5.0 | 4.1 |
| 3a | 14.2 | 30.7 | 25.4 |
| 3b | 29.7 | 64.3 | |
| 4 | | | |
| 5 | | | |
| Agricultural land not surveyed | | N/A | 53.1 |
| Other land | 9.7 | N/A | 17.4 |
| Total surveyed area | 46.2 | 100 | - |
| Total site area | 55.9 | - | 100 |

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

8. Grade 2, very good quality agricultural land, occurs in the north-west. The soils are generally well or moderately well drained, with light to medium-textured topsoils overlying very light to medium-textured subsoils. The ALC grade of the land is limited by very slight soil wetness or very slight soil droughtiness, depending on the nature of the subsoil.

9. Subgrade 3a, good quality agricultural land, covers 14.2 ha. Two main soil types occur. The first consists of imperfectly or poorly drained profiles where light to medium-textured topsoils overlie medium to heavy-textured subsoils. The soils become gleyed and slowly permeable within 50 cm depth and soil wetness is the grade-limiting factor. In a few cases the soils are well drained, with light-textured topsoils overlying light to very light-textured subsoils. In this case soil droughtiness is the grade-limiting factor.

10. The remaining agricultural land falls in Subgrade 3b, moderate quality agricultural land. These soils are poorly drained, with medium-textured topsoils overlying gleyed and slowly permeable medium to heavy-textured subsoils. Soil wetness is the factor which limits this land to Subgrade 3b.

11. Other, non-agricultural, land on this site consists of York Road in the north-west, woodland, the warehouses and work units at Champagne Whin, and farm buildings.

## FACTORS INFLUENCING ALC GRADE

### Climate

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

13. 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 | SE 435 491 |
| Altitude | m, AOD | 30 |
| Accumulated Temperature | day°C (Jan-June) | 1374 |
| Average Annual Rainfall | mm | 676 |
| Field Capacity Days | days | 161 |
| Moisture Deficit, Wheat | mm | 101 |
| Moisture Deficit, Potatoes | mm | 91 |
| Overall climatic grade | N/A | Grade 1 |

14. 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.

15. 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 (ATO, January to June), as a measure of the relative warmth of a locality.

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

### Site

17. The land on this site is generally level to gently sloping (0 - 2°) and as such gradient does not limit ALC grade at any point. Equally, neither, microrelief nor flood risk are grade-limiting factors on this site.

## Geology and Soils

18. The site is underlain by Upper Magnesian Limestone over which lies a complex pattern of drift made up of Vale of York silts and clays, till and morainic drift (BGS, Sheet 70).

19. The 1:250,000 scale soils map of the area shows the soils as belonging to the Dunkeswick and Bishampton 1 associations (Soils of England and Wales, Sheet 1). The more detailed "Soils of the Leeds District" (1:63,360 scale) shows the area to be covered by soils belonging to the Wighill series, the Escrick series, the Deighton series and the Fenton complex.

## AGRICULTURAL LAND CLASSIFICATION

20. 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

21. Grade 2, very good quality agricultural land, occurs in the north-west of the site. The soils are well or moderately well drained, falling in Wetness Classes I and II. Typically very slightly stony sandy loam or sandy clay loam topsoils overlie gleyed but permeable sandy loam, sandy clay loam or loamy sand subsoils. The subsoils are stoneless to very slightly stony and the ALC grade of the land is limited by very slight soil wetness or very slight soil droughtiness, depending on the nature of the subsoil.

### Subgrade 3a

22. Subgrade 3a, good quality agricultural land, occurs in a number of areas. The most common soil type on this land consists of imperfectly or poorly drained profiles (Wetness Classes III and IV) consisting of sandy loam or medium clay loam topsoils in most cases overlying medium clay loam, sandy clay loam or heavy clay loam subsoils. These soils typically become gleyed and slowly permeable at between 25 cm and 50 cm depth and soil wetness is the grade-limiting factor. In a few cases the soils are well drained (Wetness Class I) with sandy loam topsoils overlying sandy loam or loamy sand upper subsoils and loamy sand lower subsoils. In these cases soil droughtiness is the factor which limits the land to Subgrade 3a.

### Subgrade 3b

23. Most of the agricultural land on the site falls in Subgrade 3b, moderate quality land. The soils are poorly drained (Wetness Class IV), with medium clay loam or sandy clay loam topsoils overlying gleyed and slowly permeable sandy clay loam, heavy clay loam or clay subsoils in most cases. The subsoils become gleyed and slowly permeable at between 25 cm and 40 cm depth and soil wetness is the factor which limits the ALC grade of the land.

**Other land**

24. Other, non-agricultural, land on this site occurs in the north-west (York Road), in the north (woodland), in the centre (the warehouses and work units at Champagne Whin), in the east (farm buildings), and in the south (Wetherby Road).

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## SOURCES OF REFERENCE

British Geological Survey (1951) *Sheet No. 70, Leeds: 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, 1:250,000 scale.*
SSEW: Harpenden.

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

Soil Survey of England and Wales (1970). *Soils of the Leeds District.*
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.