

**BEDFORD BOROUGH COUNCIL,
LAND TO THE NORTH OF
STEWARTBY, BEDS.**

**Agricultural Land Classification
ALC Map and Report**

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**Resource Planning Team
Eastern Region
FRCA Cambridge**

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AGRICULTURAL LAND CLASSIFICATION REPORT

BEDFORD BOROUGH COUNCIL. LAND TO THE NORTH OF STEWARTBY, BEDS.

INTRODUCTION

1. This report presents the findings of a detailed Agricultural Land Classification (ALC) survey of 31 ha of land to the north of the village of Stewartby, Bedfordshire centred on grid reference TL 023 427. The survey was carried out during January 1999.
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 Bedford Borough Local Plan process. This survey supersedes previous ALC information for this land.
3. The work was conducted by members of the Resource Planning Team in the Eastern 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 survey the land use on the site was predominantly cereal production with a small field of oil seed rape in the south-west of the site. The areas mapped as 'Other land' consist of a small pond in the north, scrub and tree planting in the north-east and south alongside the playing field, allotment gardens in the west and tree planting in the south-east alongside the railway line.

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
3b	25.2	100	81
Other land	5.8	N/A	19
Total surveyed area	25.2	100	81
Total site area	31.0	-	100

7. The fieldwork was conducted at an average density of one boring per hectare. A total of twenty eight borings and one soil pit was described.

8. The whole of the agricultural land within the site has been assessed as Subgrade 3b (moderate quality agricultural land) due to a significant wetness and workability limitation.

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 5 km grid datasets using the standard interpolation procedures (Met. Office, 1989).

Table 2: Climatic and altitude data

Factor	Units	Values
Grid reference	N/A	TL 023 427
Altitude	m, AOD	40
Accumulated Temperature	day°C (Jan-June)	1440
Average Annual Rainfall	mm	578
Field Capacity Days	days	104
Moisture Deficit, Wheat	mm	118
Moisture Deficit, Potatoes	mm	113
Overall climatic grade	N/A	Grade 1

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

13. The combination of rainfall and temperature at this site impose no overall limitation to land quality and hence the site has a climatic grade of 1.

Site

14. The site occupies generally flat land with only the field in the south east of the site having up to moderate slopes. The land has a maximum altitude of approximately 50 m AOD in the south east falling to a minimum of approximately 35 m AOD in the north. Therefore there are no relief or gradient limitations to the quality of the agricultural land.

Geology and soils

15. The published 1:250 000 scale geology map of the area, sheet 52°N - 02°W, East Midlands, (Inst. Geol. Sci., 1983) shows the whole site to comprise Callovian Oxford Clay.

16. The 1:250 000 reconnaissance scale soil survey map for the area (Soil Survey, 1983) shows the site as consisting of soils of the Evesham 3 Association which are briefly described as slowly permeable calcareous clayey and fine loamy over clayey soils. The more detailed 1:63 360 scale soil map (Soil Survey, 1968), maps the site as the Rowsham Association of non calcareous gley soils briefly described as clay loam or sandy clay loam over clay loam or clay with distinct ochreous mottling.

17. During the current, more detailed survey, a single soil type was identified which corresponds to the Rowsham Association but was found to have a clay textured topsoil.

18. The soils within the site were found to comprise stoneless to very slightly stony clay topsoil which overlies a similar textured mottled clay subsoil. Occasionally small chalk fragments were evident deep in the soil profile. However, generally these profiles are non-calcareous or very slightly calcareous throughout. The clay textured subsoil was found to constitute a slowly permeable layer, hence, the profiles were assessed as poorly drained.

AGRICULTURAL LAND CLASSIFICATION

19. 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.

20. The location of the auger borings and pits is shown on the attached sample location map.

Subgrade 3b

21. The whole of the site has been assessed as Subgrade 3b quality land. The soils are imperfectly drained and assessed as Wetness Class III which together with a non calcareous or only very slightly calcareous clay textured topsoil and the prevailing climatic conditions result in a significant wetness and workability limitation restricting the land to Subgrade 3b.

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SOURCES OF REFERENCE

Institute of Geological Sciences (1983) *Sheet 52° N - 02° W, East Midlands. Solid Edition, scale 1:250 000.*

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 (1968) *Sheet 147, Bedford and Luton (outline edition) scale 1:63 360.*
SSEW: Harpenden.

Soil Survey of England and Wales (1983) *Sheet 3, Midland and Western 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.