MID-BEDFORDSHIRE
LOCAL PLAN
LAND EAST OF BIGGLESWADE

Agricultural Land Classification
ALC Map and Report

February 1998

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AGRICULTURAL LAND CLASSIFICATION REPORT

MID-BEDFORDSHIRE LOCAL PLAN
LAND EAST OF BIGGLESWADE

INTRODUCTION

1. This report presents the findings of a detailed Agricultural Land Classification (ALC) survey of 97.6 ha of land east of Biggleswade, Bedfordshire. Almost one third of the site, comprising areas in the north and south, was surveyed by ADAS Statutory in 1995 (Job ref: 15/95). The remainder of the site was surveyed by members of the Resource Planning Team in the Eastern Region of the Farming and Rural Conservation Agency (FRCA) in February 1998.

2. This report has been compiled by the FRCA for the Ministry of Agriculture, Fisheries and Food (MAFF). It relates to all of the land covered by the 1995 and 1998 surveys, both of which were commissioned in connection with the Mid-Bedfordshire Local Plan.

3. 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 1995 survey the land on the site was mainly in arable uses including cereals and set-aside, with a small area of permanent pasture. During the 1998 survey most of the agricultural land was growing winter cereals, with additional areas of linseed, grassland and ploughed fallow. The areas mapped as 'Other land' include an area associated with the hospital in the north, stables and an area of scrub covered disturbed land in the east and a road running through the centre of the site.

Irrigation

5. Land south of the most southerly track on the site is irrigated and has an adequate and reliable water supply to enhance the productive capacity and flexibility of the agricultural land.

6. In accordance with Planning Policy Guidance Note 7 (PPG7, 1997) this part of the site has been graded without reference to the availability of irrigation, thus replacing the existing ALC map (Job ref: 15/95).

7. Annexe B, para. B11 of PPG7 gives guidance on comparisons to be made in connection with irrigated and non-irrigated land. Attention is therefore drawn to the importance and increased agricultural significance that should be afforded to this part of the site relative to comparable but non-irrigated land in the locality.

SUMMARY

8. 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.

9. 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
2	19.2	21	20
3a	52.1	55	53
3b	22.8	24	23
Other land	3.5	N/A	4
Total surveyed area	94.1	100	96
Total site area	97.6	N/A	100

10. The fieldwork was conducted at an average density of 1 boring per hectare. A total of 95 borings and 6 soil pits was described.

11. Grade 2 land (very good quality agricultural land) occurs in the extreme north of the site and in the south. It is restricted to this grade due to minor droughtiness limitations. Just over half of the land at the site has been assessed as subgrade 3a (good quality agricultural land). This occurs in the centre of the site and in the north-west and south-east. It is restricted to this subgrade due to moderate droughtiness limitations. Land assessed as subgrade 3b (poor quality agricultural land) occurs in small areas in the east and north of the site, and a larger area in the west. It is restricted to this subgrade due to severe droughtiness limitations.

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

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 impose no overall limitation to land quality at this site and hence it has a climatic grade of 1.

Table 2: Climatic and altitude data

Factor	Units	Values
Grid reference	N/A	TL 204 456
Altitude	m, AOD	35
Accumulated Temperature	day°C (Jan-June)	1440
Average Annual Rainfall	mm	551
Field Capacity Days	days	94
Moisture Deficit, Wheat	mm	120
Moisture Deficit, Potatoes	mm	116
Overall climatic grade	N/A	1

Site

17. The land at the site is virtually flat, lying at an approximate altitude of 35 m AOD. The site is bounded in the north-west by Potton Road and Biggleswade Hospital and in the west by school playing fields and a small cemetery. All other boundaries adjoin open farmland.

Geology and soils

18. The published 1:50 000 scale geology map (Geol. Survey, 1976) shows the northern part of the site to comprise 1st and 2nd terrace river gravels over Cretaceous Lower Greensand whilst the southern part comprises glacial gravel over Cretaceous Lower Greensand.

19. The 1:250 000 scale reconnaissance soil survey map for the area (SSEW, 1983) shows the site to comprise soils of the Sutton 1 Association. These soils are briefly described as well drained fine and coarse loamy locally calcareous, and in places shallow over limestone gravel. The 1:63 360 scale soil survey map for the area (SSEW, 1968) shows the site to comprise, in the north soils of the Biggleswade Association, and in the south soils of the Cottenham Association. The former are briefly described as gleyed brown earth (river gravels) with moderate to imperfect drainage, and the latter as brown earth (lower greensand) with free to imperfect drainage.

20. During the current survey three main soil types were encountered.

21. The first soil type occurs in the south of the site and in a small area in the north. Soils typically comprise very slightly stony medium sandy loam (occasionally sandy clay loam or medium clay loam) topsoils over slightly stony sandy clay loam upper subsoils. Lower subsoils comprise slightly stony sandy clay loam, sandy clay or medium sandy loam. Profiles are typically non-calcareous throughout and well or moderately well drained.

22. The second soil type occurs in a small area in the west of the site (adjacent to the cemetery) where the land has been reinstated to agricultural use after previous gravel extraction. Profiles are free draining and typically comprise slightly stony, non-calcareous, medium sandy loam topsoils over slightly stony, non-calcareous, medium sandy loam upper subsoils. Lower subsoils comprise strongly calcareous, moderately stony (very small stones - gritty), loamy medium sand or medium sand. There was no evidence of rooting below 70 cm.

23. The third soil type is the most predominant and occurs over the remaining area. Profiles typically comprise slightly stony sandy clay loam or medium sandy loam topsoils over slightly stony sandy clay loam upper subsoils. Lower subsoils comprise slightly to moderately stony loamy medium sand which often becomes medium sand at depth. In some areas moderate stoniness (30% flints) occurred at 65/75 cm while in other areas it occurred at 95/105 cm, with no visible rooting beyond these depths. Profiles are typically non-calcareous throughout and well or moderately well drained.

AGRICULTURAL LAND CLASSIFICATION

24. 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 2.

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

Grade 2

26. Land mapped as grade 2 occurs in the south of the site and a small area in the north and corresponds with the fine and coarse loamy soils described in paragraph 21. The soils are free draining or moderately well drained, being affected by groundwater, and have been assessed as Wetness Class I or II. They hold moderately good reserves of available water for crop growth but slight droughtiness limitations restrict the land to this grade.

Subgrade 3a

27. Just over half of the land at the site has been mapped as subgrade 3a. It occurs in the centre, north-west and south-east, corresponding with the free draining or moderately well drained soils (Wetness Class I or II) described in paragraph 23 where rooting attained depths of at least 95/105 cm. The medium sandy textures of the lower subsoils reduce the available water capacity of these soils and the land is restricted to subgrade 3a by moderate droughtiness limitations.

Subgrade 3b

28. Land mapped as subgrade 3b occurs mainly in the west of the site and in small areas in the east and north. This land corresponds with the coarse loamy over medium sandy soils described in paragraph 22 and the profiles with moderate stoniness (30% flints) occurring at 65/75 cm described in paragraph 23, where rooting only attained depths of 65/75 cm. The reduced rooting depths in both of these soil types (both assessed as Wetness Class I) combined with the sandy textured lower subsoils impose severe droughtiness limitations which exclude the land from a higher grade.

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SOURCES OF REFERENCE

British Geological Survey (1976) *Sheet No. 204, Drift Edition. Scale 1:50 000*
BGS: London.

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HMSO: 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 (1968) *Sheet 147, Bedford and Luton. Scale 1:63 360*
SSEW: Harpenden.

Soil Survey of England and Wales (1983) *Sheet 4, Soils of Eastern England. Scale 1:250 000*
SSEW: Harpenden

Soil Survey of England and Wales (1984) *Soils and their Use in Eastern 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.