AGRICULTURAL LAND CLASSIFICATION
HINCKLEY AND BOSWORTH LOCAL PLAN
LAND AT NEWBOLD VERDON

1. BACKGROUND

1.1 The proposed site covers an area of approximately 25 ha to the east of the village of Newbold Verdon in Leicestershire centred on grid reference SK 455035.

1.2 ADAS Statutory Resource Planning Team undertook a detailed Agricultural Land Classification (ALC) survey of the site during August and September 1995. Information was collected from auger borings, spaced at 100 m intervals, to a depth of 120 cm wherever possible. Subsoil conditions were assessed from four inspection pits.

1.3 At the time of the survey much of the land within the proposed site had been cultivated following cereals and rape. Small areas in the west and east of the site were permanent grassland used for cattle and horse grazing.

1.4 On the published provisional 1:63 360 scale ALC map, sheet 121 (MAFF, 1971) the northern half of the site is shown as grade 2 and the southern half as grade 3. However, this map is of a reconnaissance nature and the current survey was undertaken to provide site specific ALC information.

2.0 PHYSICAL FACTORS AFFECTING LAND QUALITY

2.1 Climatic criteria are considered when classifying land as these may have an overriding limitation in terms of the agricultural use of the land. The main parameters used in the assessment of the overall climatic limitation are average annual rainfall, as a measure of overall wetness, and accumulated temperature (day °C, Jan-June), as a measure of the relative warmth of an area.

2.2 A detailed assessment of the prevailing climate for the site has been made by interpolation from the 5 km grid dataset produced by the Meteorological Office (Met. Office, 1989 the details of which are given in Table 1. These data show there is no overall climatic limitation affecting the site. Climatic factors do, however, interact with soil properties to influence soil wetness and droughtiness.

Table 1. Climatic Interpolation

Grid Reference	SK 455035
Altitude (m)	130
Accumulated Temperature (day °C, Jan-June)	1324
Average Annual Rainfall (mm)	691
Moisture Deficit, Wheat (mm)	95
Moisture Deficit, Potatoes (mm)	83
Field Capacity Days	159
Overall Climatic Grade	1

Altitude and Relief

2.3 The site is at an altitude of 130 m AOD with a generally level landform. Altitude and relief therefore do not impose any limitation on the agricultural quality of the site.

Geology and Soils

2.4 The published 1:50 000 Solid and Drift Edition geological map (Geol. Survey, 1983) shows the entire site to be underlain by glacial sands and gravel drift overlying Triassic Mercia Mudstone.

2.5 The reconnaissance scale (1:250 000) soil survey map for the area (Soil Survey, 1983) shows virtually the whole site to comprise the Arrow Association (*1). A very small area in the north east corner of the site is shown as Beccles 1 Association (*2).

2.6 The present detailed survey shows the occurrence of two main soil types within the site.

Soil Type 1

2.7 Soil Type 1 comprises a medium sandy loam topsoil which overlays a similar textured upper subsoil, or occasionally loamy medium sand textured material, which in turn overlies a lower subsoil of loamy medium sand. All horizons are slightly to moderately stony comprising small to large sized hard rounded quartzite stones. Such profiles are free draining and are assessed as wetness class I.

Soil Type 2

2.8 Type 2 soils are similar to those of Type 1 in consisting of a slightly stony medium sandy loam textured topsoil overlying a similar textured, but often moderately stony, upper subsoil horizon. Occasionally this upper subsoil may be sandy clay loam or loamy medium sand textured material or may consist of more than one horizon which becomes coarser textured with depth. The upper subsoil overlies a clay textured lower subsoil which is slowly permeable and hence wetness class is assessed as II or III depending on the depth to the clay material.

(*1) Arrow Association: Deep permeable coarse loamy soils affected by groundwater developed from glaciofluvial drift.

(*2) Beccles 1 Association: Slowly permeable seasonally waterlogged fine loamy over clayey soils developed from chalky till.

2.9 At a limited number of locations the upper subsoil of Soil Type 2 was found to be absent with the topsoil directly overlying the clay subsoil. Such soil profiles were assessed as wetness class IV.

3.0 AGRICULTURAL LAND CLASSIFICATION

3.1 The land has been classified using the guidelines contained in the Agricultural Land Classification of England and Wales (MAFF, 1988). A breakdown of individual grades found within the site is given in Table 2. The definition of the ALC grades is given in Appendix 1.

Table 2. Distribution of grades and subgrades

AGRICULTURAL LAND CLASSIFICATION		
Grade	Area (ha)	%
2	16.13	64.5
3a	7.80	31.2
Woodland	0.96	3.8
Urban	0.13	0.5
TOTAL	25.02	100.0

Grade 2

3.2 Land of grade 2 quality is associated with the well drained profiles of Soil Type 1 (paragraph 2.7) which are limited to grade 2 by a slight droughtiness restriction. Profiles of Soil Type 2 (paragraph 2.8) which were assessed as wetness class III are limited to grade 2 by slight wetness and workability restrictions.

3.3 Those profiles of Soil Type 2 (paragraph 2.8) which were assessed as wetness class II are potentially of grade 1 quality. However, across the whole site land quality is restricted to a maximum of grade 2 by topsoil stone content. High

and contribute to increased production costs by causing extra wear and tear to implements and tyres.

Subgrade 3a

3.4 Land of subgrade 3a quality is associated with those profiles of Soil Type 1 (paragraph 2.7) in which loamy medium sand textured material immediately underlies the topsoil or the thickness of medium sandy loam textured upper subsoil is limited. Such soil profiles have a moderate droughtiness limitation restricting land quality to subgrade 3a.

3.5 Profiles of Soil Type 2 (paragraph 2.9) which were assessed as wetness class IV are also restricted to subgrade 3a by wetness and workability constraints.

Woodland

3.6 A small area of non-agricultural land in the centre of the site is mapped as woodland.

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REFERENCES

GEOLOGICAL SURVEY OF GREAT BRITAIN, 1982. Sheet 155, Coalville, 1:50 000 scale.

MAFF, 1971. Agricultural Land Classification Map. Provisional. Scale 1:63 360 Sheet 121.

MAFF, 1988. Agricultural Land Classification of England and Wales (Revised Guidelines and Criteria for grading the quality of agricultural land). Alnwick.

METEOROLOGICAL OFFICE, 1989. Climatalogical Data for Agricultural Land Classification.

SOIL SURVEY OF ENGLAND AND WALES, 1983. Sheet 3, "Soils of Midland and Western England". 1:250 000 scale.

Appendix 1

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 include 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 and horticultural crops can usually be grown but on some land in the grade there may be reduced flexibility due to difficulties with the production of the more demanding crops such as winter harvested vegetables and arable crops. The level of yield is generally high but may be lower or more variable than Grade 1.

Grade 3 - good to moderate quality agricultural land

Land with moderate limitations which affect the choice of crops, timing and type of cultivation, harvesting or the level of yield. Where 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 levels of yields. It is mainly suited to grass with occasional arable crops (e.g. cereals and forage crops) the yield of which are variable. In most 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 very severe limitations which restrict use to permanent pasture or rough grazing, except for occasional pioneer forage crops.