

**A1
Basingstoke & Deane Local Plan,
Site 3
The Knowlings
and
Land South of London Road,
Whitchurch, Hampshire,
ALC Map and Report
February, 1994**

AGRICULTURAL LAND CLASSIFICATION REPORT

BASINGSTOKE AND DEANE BOROUGH LOCAL PLAN SITE3, THE KNOWLINGS AND LAND SOUTH OF LONDON ROAD, WHITCHURCH, HAMPSHIRE

Introduction

- 1.1 ADAS was commissioned by MAFF's Land Use Planning Unit to provide information on land quality on 22 sites around Basingstoke in Hampshire. The work forms part of MAFF's input to the preparation of the Basingstoke and Deane Borough Local Plan.
- 1.2 Site 3 comprises approximately 27 hectares in two blocks on the south eastern edge of Whitchurch in Hampshire; a northern block of approximately 3 hectares, south of London Road and a southern block of approximately 24 hectares on land adjacent to and south of the River Test and east of Whitchurch C of E Primary School.
- 1.3 The survey was undertaken at a detailed level of approximately one boring per hectare. A total of 24 borings and 2 soil inspection pits were described in accordance with MAFF's revised guidelines and criteria for grading the quality of agricultural land (MAFF, 1988). This system provides a framework for classifying land according to the extent to which its physical or chemical characteristics impose long-term limitations on its use for agriculture. The work was conducted by members of the Resource Planning Team in the Guildford Statutory Group of ADAS.
- 1.5 The ALC information is shown on the attached map at a scale of 1:5,000. It is accurate at this level but any enlargement may be misleading. This map supercedes any previous ALC information for this site. The areas of each grade are given in Table 1 below.

Table 1 : Distribution of Grades and Subgrades

Grade	Area (ha)	% of Site	% of Agricultural Area
2	17.6	65.7	68.7
3b	8.0	29.8	31.3
Non Agricultural	1.1	4.1	100% (25.6 ha)
Agricultural Bldgs	0.1	0.4	
Total	26.8 ha	100%	

- 1.6 A general description of the grades, subgrades and land use categories is provided in Appendix I. The main classes are described in terms of the type of limitation

that can occur, the typical cropping range and the expected level and consistency of yield.

- 1.7 The map shows that the agricultural land in the northern block has all been classified as poor quality, Sub-grade 3b. Most of the land here is limited to this grade due to locally steep gradients. The rest of this area is classified as Non-agricultural, being the remnants of previous allotments.

In the southern block, the majority of the agricultural area has been classified as Grade 2. Soil droughtiness is the most limiting factor for these soils which exhibit variable depths over Chalk. One large area of Sub-grade 3b identifies areas of locally steep gradients associated with very stony topsoils. A southern area of Sub-grade 3b identifies shallow soils over Chalk which have a significant droughtiness limitation.

Climate

- 2.1 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.
- 2.2 The main parameters used in the assessment of the overall climatic limitation are annual average rainfall, as a measure of overall wetness, and accumulated temperature, as a measure of the relative warmth of a locality.
- 2.3 A detailed assessment of the prevailing climate was made by interpolation from a 5 kilometre gridpoint dataset (Met. Office, 1989). The details are given in Table 2 below and these show that there is no overall climatic limitation affecting the site. However, climatic factors do interact with soil factors to influence soil wetness and soil droughtiness limitations.
- 2.4 No local climatic factors such as exposure or frost risk affect the site.

Table 2 : Climatic Interpolations

Grid reference	SU471472	SU467482	SU470475
Altitude (m)	95	70	85
Accumulated Temperature (°days, Jan - June)	1432	1460	1443
Average Annual Rainfall (mm)	798	782	792
Field Capacity (days)	173	171	172
Moisture Deficit, Wheat (mm)	101	105	103
Moisture Deficit, Potatoes (mm)	93	98	95
Overall Climatic Grade	1	1	1

Relief

- 3.1 The northern block occupies south-west facing slopes with steep gradients above the River Test floodplain. The southern block occupies a small strip of the opposite floodplain together with its steep, north-east facing slopes and the upper crest slopes of the valley. Altitudes range from approximately 70 metres on the floodplain to 95 metres in the extreme south.

Geology and Soils

- 4.1 The relevant geological sheet for the site (British Geological Survey, 1978) shows a progression from Upper Chalk on the higher crest slopes, through River and Valley Gravel on the steep, stony valley sides to a thin strip of Alluvium on the floodplain. This picture is mirrored on both sides of the River Test.
- 4.2 The published soils information for the site (Soil Survey of England and Wales, 1983 and 1984) shows a soil progression that relates to the change in geology and topography. Soils of the Andover 1 Association (shallow silty clay loams) occur on the Chalk, with Sonning 1 Association soils (stony sandy loam or sandy silt loams) over the River and Terrace Gravel, with Frome Association soils (mottled clay loams) on the Alluvium..

Agricultural Land Classification

- 5.1 The ALC information is provided on the attached ALC map and the location of the soil observation points is shown on the attached sample point map.

Grade 2

- 5.2 Soil droughtiness is the key limitation across this map unit and Pits 1 and 2 represent the range of soils present; Pit 1 is typical of those soils in the south of the map unit with Chalk present in the lower profile, and Pit 2 is typical of those stonier soils in the north of the map unit which have stony clay subsoils.
- 5.3 Soils which are developed over Chalk typically comprise topsoils and upper and lower subsoils of medium clay loam texture. The sieving of the topsoils revealed stone contents less than 10 % (for stones greater than 2 cm), with similar stone contents below. The soils are free-draining and root approximately 30 cm into the Chalk. The available water in the profile that results is slightly limited for the more demanding crops, but these soils are still very flexible in terms of the type of cropping and the timing of cultivations that they can support.

- 5.4 The stonier northern soils are characterised by medium clay loam topsoils overlying an upper subsoil of heavy clay loam and a clay lower subsoil. These soils are also free-draining with the clay subsoil exhibiting a moderately developed coarse subangular blocky structure. The soils were impenetrable to the auger at varying depths due to the presence of approximately 10% flint stones in the subsoils. Pit 2 became impenetrable at 80 cm due to an increase in stone content. It has been assumed that roots will be able to penetrate further below 80 cm to extract the available water below, allowing the soils to be placed in Grade 2 on the basis of a slight droughtiness limitation.

Subgrade 3b

- 5.5 In the northern block, the majority of this land is downgraded due to locally steep gradients in excess of 7 degrees, adjacent to an area of stony shallow soils on the flatter floodplain.
- 5.6 In the southern block, the larger area of this grade pinpoints a stony section of the valley side where topsoil stone contents were visually assessed as greater than 15% (>2cm) together with local gradients greater than 7 degrees. The smaller area of this grade represents an area of shallow soils over Chalk, where the Chalk is encountered at approximately 45 cm, limiting the available water and causes a significant droughtiness limitation. This area ties in with an adjacent survey to the south where a nearby soil pit shows the soils to be very thin over the Chalk with limited root penetration.

Non-Agricultural

- 5.7 An area of derelict allotment gardens and some public open space has been placed in this grade.

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