

AGRICULTURAL LAND CLASSIFICATION

SWANSLEY WOOD

1.0 THE AGRICULTURAL LAND CLASSIFICATION SYSTEM

1.1 Agricultural Land Classification (ALC) assesses land quality based on its long term physical potential. The ALC system grades land on the degree to which its inherent physical characteristics impose long term limitations on agricultural use.

1.2 The main physical factors which are taken into account in assessing ALC grade are climate, site and soil. These may act singly, or in combination to result in varying degrees of constraint on agricultural use. The ALC grade is determined by the most limiting factor present.

1.3 Five main grades of land are recognised ranging from grade 1, land of excellent quality to grade 5, land of very poor quality. Other issues, such as the location of farms, the standard of fixed equipment and the accessibility of land do not affect grading although they may influence land use decisions.

2. BACKGROUND

2.1 An Agricultural Land Classification (ALC) has been carried out by the Ministry of Agriculture, Fisheries and Food (MAFF) on land which forms the proposed site for the Swansley Wood settlement. ALC survey work was carried out in 1988 and 1989.

2.2 The (Provisional) ALC map of the area published by MAFF in 1969 shows the land concerned as grade 2. The re-survey described below was undertaken in order to provide a more detailed ALC of the Swansley Wood site.

2.3 The total Swansley Wood application area amounts to some 437 hectares. At the time of preparing this proof of evidence some 38.6 hectares of land within the application boundary had not been classified by MAFF (see para 9.1).

3. PHYSICAL FACTORS AFFECTING LAND QUALITY

Climate

3.1 The Swansley Wood area is one of low rainfall by national standards, having an estimated rainfall of 560 mm (22.0") (Met.Office, 1989), which is relatively uniformly distributed throughout the year.

3.2 Since the estimated annual rainfall amount is low it is important that the soils retain good reserves of plant available water in order to minimise drought risk. The dry climate is, however, advantageous for heavier land since the opportunities for land work are increased, reflected in the low field capacity day figure for the site (median duration of field capacity 95 days).

3.3 The Swansley Wood area lies within Agroclimatic area 28 (MAFF, 1984) which has an average growing season of 249 days from late March to late November. Mean accumulated temperature for the period January-June is estimated at 1421^o Celsius.

3.4 Neither rainfall nor growing season are limiting factors to the ALC grade.

Altitude and Relief

3.5 The site lies at altitudes within the range 55 to 70m AOD, with the highest ground occurring at the eastern boundary of the site. The site is gently sloping and has an overall north-easterly aspect. Gradient and altitude are not limiting factors in terms of the ALC assessment of the site.

Geology

- 3.6 The published geological map for the Huntingdon area (Geol. Survey G.B. 1975) indicates that glacial boulder clay deposits underlie the whole of the site.

Soils

- 3.7 The Soil Survey have mapped the area at a reconnaissance scale of 1:250,000 ("Soils of Eastern England" 1983). This map shows the occurrence of the Hanslope Association* on the boulder clay plateau.
- 3.8 During the current survey a more detailed inspection of the soils indicated that boulder clay underlies the whole of the site. The majority of soils typically comprise calcareous medium clay or occasionally heavy clay loam topsoils either directly overlying chalky boulder clay, or over an upper subsoil of calcareous clay passing into clay with chalk or chalky boulder clay at varying depths. Where present in the subsoil, chalk fragments promote fissuring and a stable soil structure which aid aeration and root development. In some profiles a non-calcareous topsoil was encountered.

* Hanslope Association: slowly permeable calcareous clayey soils, some slowly permeable non-calcareous clayey soils.

3.9 A few lighter textured more permeable Head deposits occur. These soils comprise calcareous clay loam topsoils over either similar upper subsoils or clay upper subsoils which pass into clay with depth.

3.10 The drainage status varies from moderately well drained soil variants to imperfectly and poorly drained soils on the heavier soil types due to their slow permeability. Consequently wetness and workability restrictions form the main limiting factors in terms of agricultural land quality.

4. LAND CLASSIFICATION

4.1 The definitions of Agricultural Land Classification grades are set out in Appendix 1.

4.2 The table shows a breakdown of the ALC grades for the survey area.

Grade	Agricultural Land Classification		
	ha	% (Area Surveyed)	% (Total Site Area)
2	40.4	10.1	9.2
3a	347.4	87.2	79.5
3b	5.6	1.4	1.3
Other Land Uses	5.0	1.3	1.2
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TOTAL SURVEYED	398.4	100.0	
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Land Not Surveyed	38.6		8.8
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GRAND TOTAL	477.0		100.0
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5. GRADE 2

5.1 Land of this quality is associated with the better drained soils on the site which are located in the south and southwest of the survey area. These soils are moderately well drained and therefore have only minor wetness and workability limitations.

6.2 Two main soil types have been graded 2. Firstly, calcareous clay or clay loam topsoils over clay subsoils which may or may not pass into chalky boulder clay with depth. Secondly, calcareous clay loam topsoils over similar subsoils to depth (head deposits). Occasionally these soils may overlie calcareous clay at depth.

7. SUB-GRADE 3a

7.1 The majority of the site has been designated as 3a. This comprises the typical imperfectly drained boulder clay soils with calcareous heavy clay loam or clay topsoils overlying a clay subsoil. The chalky boulder clay parent material was reached at varying depths over the site. The subsoils are generally distinctly mottled indicating drainage imperfections which restrict this land to sub-grade 3a.

7.2 With careful management, land graded 3a is capable of producing good yields of a range of crops although the slightly greater wetness limitation will reduce the opportunities for land work.

8.0 SUB-GRADE 3b

8.1 Two small areas of land to the north and east of the site have been graded 3b. These soils are poorly drained boulder clay soils and evidence of ponding water in these areas is indicative of this. They typically comprise very slightly calcareous medium clay topsoils overlying an upper subsoil of clay with a lower subsoil of clay with chalk.

8.2 Land graded 3b is capable of achieving moderate yields of cereals and grass - although opportunities for land work will be restricted due to the wetness limitation.

9. OTHER LAND USES

9.1 Two areas of woodland occur in the eastern part of the site. Small areas are also occupied by residential development and by agricultural buildings.

10. LAND NOT SURVEYED

10.1 This consists of land in the south western part of the application area (principally land along the route of the proposed Caxton bypass).

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References

GEOLOGICAL SURVEY OF ENGLAND AND WALES, 1975. Drift edition geology map no. 187, scale 1:50,000.

MAFF 1966, Agricultural Land Classification, Technical Report 11

MAFF 1969, Agricultural Land Classification map No.134. Scale 1:63,360

MAFF 1984, The Agricultural Climate of England and Wales. Reference Book 435 HMSO, London

MAFF 1988, Revised Guidelines and Criteria for Grading the Quality of Agricultural Land

METEOROLOGICAL OFFICE, 1989, Climatological Data For Agricultural Land Classification

SOIL SURVEY OF ENGLAND AND WALES, 1983; Soils of Eastern England - Sheet No.4, 1:250,000