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LAND AT YAPTON LANE/BINSTED LANE
WALBERTON
WEST SUSSEX
AGRICULTURAL LAND CLASSIFICATION
ALC MAP & REPORT
JUNE 1993

LAND AT YAPTON LANE/BINSTED LANE WALBERTON WEST SUSSEX AGRICULTURAL LAND CLASSIFICATION MAIN REPORT

1 0 Summary

1 1 In June 1993 a detailed Agricultural Land Classification (ALC) was made on approximately 23 hectares of land between Walberton and Binsted in West Sussex

1 2 The work was conducted by members of the Resource Planning Team in the Guildford Statutory Group of ADAS in response to a commission by MAFF's Land Use Planning Unit to provide information on the quality of agricultural land affected by an application for the development of a golf course

1 3 The classification has been made using MAFF's revised guidelines and criteria for grading the quality of agricultural land. These guidelines provide 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

1 4 The table below provides the details of the grades found across the site. The majority of the land is classified as Sub grade 3B with some Grade 4. A number of limitations are active across the site. Steep gradients and microrelief limit the majority of the 3B land with topsoil stoniness acting as the main limitation on the higher flatter land. Soil wetness downgrades the valley bottom to Grade 4. Here there is a limited outfall into the central ditch the adjacent land was waterlogged at the surface at the time of survey and the drainage of the higher margins is complicated by seepage from springs

Table 1 Distribution of Grades and Sub grades

Grade	Area (ha)	%of Site	% of Agricultural Area
3B	17.2	76.1	76.6
4	5.3	23.5	23.4
Non Agric	0.1	0.4	100%(23.1ha)
TOTAL	22.6 ha	100%	

1 5 The distribution of the ALC grades is shown on the attached map. The information is presented at a scale of 1:5,000. It is accurate at this level but any enlargement would be misleading. This map supercedes any previous ALC information for this site.

1 6 At the time of survey the land use on the site was mostly permanent pasture and rough grazing with some land in Set aside and oilseed rape on the higher western fields.

1 7 A general description of the grades and sub grades is provided as an appendix. 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.

2 0 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 5km gridpoint dataset The details are given in the table below and these show that there is no overall climatic limitation affecting the site

2 4 No local climatic factors such as exposure or frost risk affect the site

2 5

Table 2 - Climatic Interpolations

Grid Reference	SU979062	SU980062
Altitude (m)	15	5
Accumulated Temperature (days)	1530	1541
Average Annual Rainfall (mm)	788	7779
Field Capacity (days)	163	161
Moisture Deficit Wheat (mm)	116	118
Moisture Deficit Potatoes (mm)	112	115
Overall Climatic Grade	1	1

3 0 Relief

3 1 The site occupies the valley floor adjacent slopes and flatter crests of a minor valley feature Gradient and microrelief are active limitations on the valley sides often with complicated slope facets

4 0 Geology and Soil

4 1 The relevant geological sheet for the site shows the underlying geology to be a mixture of London Clay Alluvium and Reading Beds

4 2 The main soil types that occur on the site are shallow stony clay loams on the higher flatter land with poorly structured clays in the valley bottom and lower slopes

5 0 Agricultural Land Classification

5 1 Table 1 provides the details of the area measurements for each grade and the distribution of each grade is shown on the attached ALC map

5 2 The location of the soil observation points is shown on the attached sample point map

5 3 Sub grade 3B the majority of the site has been placed in this grade On the higher flatter land topsoil stoniness is the key limitation Three measurements

were made near ASP 14 which revealed stone contents in the range 15 20% Gradient is the other limitation on the steeper sloping land Slopes are mainly in the range 7 11 degrees with more complicated facets of + 11 degrees

5 4 Grade 4 land in the valley bottom has been placed in this grade with soil wetness as the key limitation There is a restricted outfall to the central ditch and it is questionable whether the land can actually be drained At the time of survey the land adjacent to the ditch was waterlogged at the surface suggesting a wetness class of at least VI Wet vegetaion predominates in this area and on the slightly higher fringes and there is some evidence that the wetness status of these soils is further complicated by seepage from springs The profiles are wet for a significant portion of the year and the land is assessed as being no better than Grade 4 Some Grade 4 slopes occur in a minor band along the western field boundary of this valley area

5 5 The area marked as Non agricultural relates to an area of wet scrub

APPENDIX I

DESCRIPTION OF THE GRADES AND SUB GRADES

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 on 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 root 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. When more demanding crops are grown yields are generally lower or more variable than on land in grades 1 and 2.

Sub grade 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.

Sub grade 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 (eg 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 very severe limitations which restrict use to permanent pasture or rough grazing, except for occasional pioneer forage crops.

Urban

Built up or hard uses with relatively little potential for a return to agriculture housing industry commerce education transport religious buildings cemeteries Also hard surfaced sports facilities permanent caravan sites and vacant land all types of derelict land including mineral workings which are only likely to be re claimed using derelict land grants

Non agricultural

Soft uses where most of the land could be returned relatively easily to agriculture including private parkland public open spaces sports fields allotments and soft surfaced areas on airports/airfields Also active mineral workings and refuse tips where restoration conditions to soft after uses may apply

Woodland

Includes commercial and non commercial woodland

Agricultural Buildings

Includes the normal range of agricultural buildings as well as other relatively permanent structures such as glasshouses Temporary structures (eg polythene tunnels erected for lambing) may be ignored

Open Water

Includes lakes ponds and rivers as map scale permits

Land Not Surveyed

Agricultural land which has not been surveyed

Where the land use includes more than one of the above eg buildings in large grounds and where map scale permits the cover types may be shown separately Otherwise the most extensive cover type will be shown

APPENDIX II

REFERENCES

- * MAFF (1988) Agricultural Land Classification of England And Wales revised guidelines and criteria for grading the quality of agricultural land
- * Meteorological Office (1989) Climatological Data for Agricultural Land Classification
- * British Geological Survey (1957) Sheet No 317 Location 1 63 360

APPENDIX III

DEFINITION OF SOIL WETNESS CLASSES

Wetness Class I

The soil profile is not wet within 70cm depth for more than 30 days in most years

Wetness Class II

The soil profile is wet within 70cm depth for 31 90 days in most years or if there is no slowly permeable layer within 80cm depth it is wet within 70cm for more than 90 days but not wet within 40cm depth for more than 30 days in most years

Wetness Class III

The soil profile is wet within 70cm depth for 91 180 days in most years or if there is no slowly permeable layer within 80cm depth it is wet within 70cm for more than 180 days but only wet within 40cm depth for 31 90 days in most years

Wetness Class IV

The soil profile is wet within 70cm depth for more than 180 days but not wet within 40cm depth for more than 210 days in most years or if there is no slowly permeable layer within 80cm depth it is wet within 40cm depth for 91 210 days in most years

Wetness Class V

The soil profile is wet within 40cm depth for 211 335 days in most years

Wetness Class VI

The soil profile is wet within 40cm depth for more than 335 days in most years

(The number of days is not necessarily a continuous period In most years is defined as more than 10 out of 20 years)

APPENDIX IV

SOIL PIT AND SOIL BORING DESCRIPTIONS

Contents	* Soil Abbreviations	Explanatory Note
	* Database Printout	Boring Level Information
	* Database Printout	Horizon Level Information

SOIL PROFILE DESCRIPTIONS EXPLANATORY NOTE

Soil pit and auger boring information collected during ALC fieldwork is held on a database. This has commonly used notations and abbreviations as set out below.

Boring Header Information

1 **GRID REF** national grid square and 8 figure grid reference

2 **USE** Land use at the time of survey. The following abbreviations are used:

ARA Arable WHT Wheat BAR Barley CER Cereals OAT Oats MZE Maize OSR Oilseed rape
BEN Field Beans BRA Brassicae POT Potatoes SBT Sugar Beet FCD Fodder Crops LIN Linseed
FRT Soft and Top Fruit HRT Horticultural Crops PGR Permanent Pasture LEY Ley Grass RGR Rough Grazing
SCR Scrub CFW Coniferous Woodland DCW Deciduous Woodland HTH Heathland BOG Bog or Marsh
FLW Fallow PLO Ploughed SAS Set aside OTH Other

3 **GRDNT** Gradient as measured by a hand held optical clinometer

4 **GLEYSPL** Depth in cm to gleying or slowly permeable layers

5 **AP (WHEAT/POTS)** Crop adjusted available water capacity

6 **MB (WHEAT/POTS)** Moisture Balance

7 **DRT** Best grade according to soil droughtiness

8 If any of the following factors are considered significant, an entry of 'Y' will be entered in the relevant column:

MREL Microrelief limitation FLOOD Flood risk EROSN Soil erosion risk EXP Exposure limitation FROST Frost
DIST Disturbed land CHEM Chemical limitation

9 **LIMIT** The main limitation to land quality. The following abbreviations are used:

OC Overall Climate AE Aspect EX Exposure FR Frost Risk GR Gradient MR Microrelief
FL Flood Risk TX Topsoil Texture DP Soil Depth CH Chemical WE Wetness WK Workability
DR Drought ER Soil Erosion Risk WD Combined Soil Wetness/Droughtiness ST Topsoil Stoniness

Soil Pits and Auger Borings

1 **TEXTURE** soil texture classes are denoted by the following abbreviations:

S Sand LS Loamy Sand SL Sandy Loam SZL Sandy Silt Loam CL Clay Loam ZCL Silty Clay Loam
SCL Sandy Clay Loam C Clay SC Sandy Clay ZC Silty Clay OL Organic Loam P Peat SP Sandy Peat
LP Loamy Peat PL Peaty Loam PS Peaty Sand MZ Marine Light Silts

For the sand, loamy sand, sandy loam and sandy silt loam classes, the predominant size of sand fraction will be indicated by the use of prefixes:

F Fine (more than 66% of the sand less than 0.2mm)

M Medium (less than 66% fine sand and less than 33% coarse sand)

C Coarse (more than 33% of the sand larger than 0.6mm)

The clay loam and silty clay loam classes will be sub-divided according to the clay content:

M Medium (< 27% clay) H Heavy (27-35% clay)

2 MOTTLE COL Mottle colour

3 MOTTLE ABUN Mottle abundance expressed as a percentage of the matrix or surface described

F few <2% C common 2-20% M many 20-40% VM very many 40%+

4 MOTTLE CONT Mottle contrast

F faint indistinct mottles evident only on close inspection D distinct mottles are readily seen

P prominent mottling is conspicuous and one of the outstanding features of the horizon

5 PED COL Ped face colour

6 STONE LITH One of the following is used

HR all hard rocks and stones MSST soft medium or coarse grained sandstone

SI soft weathered igneous or metamorphic SLST soft oolitic or dolimitic limestone

FSST soft fine grained sandstone ZR soft argillaceous or silty rocks CH chalk

GH gravel with non porous (hard) stones GS gravel with porous (soft) stones

Stone contents (> 2cm > 6cm and total) are given in percentages (by volume)

7 STRUCT the degree of development size and shape of soil peds are described using the following notation

degree of development WK weakly developed MD moderately developed ST strongly developed

ped size F fine M medium C coarse VC very coarse

ped shape S single grain M massive GR granular AB angular blocky SAB sub angular blocky PR prismatic
PL platy

8 CONSIST Soil consistence is described using the following notation

L loose VF very friable FR friable FM firm VM very firm EM extremely firm EH extremely hard

9 SUBS STR Subsoil structural condition recorded for the purpose of calculating profile droughtiness

G good M moderate P poor

10 POR Soil porosity If a soil horizon has less than 0.5% biopores > 0.5 mm a Y will appear in this column

11 IMP If the profile is impenetrable a Y will appear in this column at the appropriate horizon

12 SPL Slowly permeable layer If the soil horizon is slowly permeable a Y will appear in this column

13 CALC If the soil horizon is calcareous a Y will appear in this column

14 Other notations

APW available water capacity (in mm) adjusted for wheat

APP available water capacity (in mm) adjusted for potatoes

MBW moisture balance wheat

MBP moisture balance potatoes

SAMPLE NO	GRID REF	ASPECT USE	--WETNESS--		WHEAT-		-POTS		M REL		EROSN	FROST		CHEM LIMIT	ALC	COMMENTS
			GRDNT	GLEYSPL	CLASS	GRADE	AP	MB	AP	MB		DRT	FLOOD			
1	SU978 065	PGR E	05	040 040	3	3B	103	15 115	0	3A				WE	3B	IMPEN 70
2	SU979 065	PGR S	09	000	1	2	067	-51 067	-48	4					3A	SLOPE
3	SU978 064	PGR E	07	000	1	2	086	-32 086	-29	3B				DR	3B	IMPEN 45
4	SU979 064	PGR S	10	000	1	1	057	-61 057	-58	4	Y			SL	3B	IMP 30
5	SU980 064	PGR S	02	000	1	1	067	-51 067	-48	4				DR	4	IMPEN 35
8	SU980 063	PGR W	05	000	1	1	076	-42 076	-39	3B				DR	3B	IMPEN 40
9	SU978 062	OSR E		000	1	1	043	-75 043	-72	4				DR	3B	IMPX2QDR
11	SU980 062	PGR SW	05	015 015	4	3B	086	-32 097	-18	3B				WE	3B	IMP 70
13	SU980 061	PGR NE	02	000	1	1	032	86 032	-83	4				ST	3B	IMP 20
15	SU980 060	PGR SW		010 010	4	3B	084	-34 096	-19	3B				WE	3B	SPL 35
17	SU9805059	SAS NE	03	000	1	1	038	-80 038	-77	4				ST	3B	IMPX2
19	SU9807058	SAS SE	04	000	1	1	040	-78 040	-75	4				ST	3B	IMPX2
19	SU98150583	RGR E	04	030 035	4	3B	000	0 000	0					WE	3B	Q DRAIN
20	SU981 057	SAS E	04	000	1	1	051	-67 051	-64	4				ST	3B	IMP

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES----			PED COL	----STONES----			STRUCT/ CONSIST	SUBS			CALC
				COL	ABUN	CONT		GLEYS	>2	>6		LITH	TOT	STR	
1	0-40	hzc1	10YR42 00					0	0	0					
	40-70	c	10YR52 00	10YR58	61	C		Y	0	0		P			Y
2	0-35	mzc1	10YR54 00	10YR51	00	F		0	0	0					
3	0-45	hzc1	10YR43 00	10YR58	00	F		0	0	0					
4	0-30	mzc1	10YR54 00					0	0	0					
5	0-35	mzc1	10YR53 00					0	0	0					
8	0-40	mzc1	10YR53 00					0	0	0					
9	0-25	mzc1	10YR54 00					8	0	HR	10				
11	0 15	hc1	10YR31 00	000C00	00	F		0	0	HR	1				
	15 60	c	25Y 52 00	10YR56	00	M		Y	0	0	0	P			Y
	60 70	c	10YR61 62	000C00	00	C		Y	0	0	HR	8	P		Y
13	0 20	mc1	10YR42 00					0	0	HR	12				
16	0 10	mc1	10YR42 00					0	0	HR	1				
	10 70	c	10YR41 00	10YR56	00	M		Y	0	0	0	P			Y
17	0 25	mc1	10YR43 00					17	0	HR	17				
18	0 25	mzc1	10YR43 00					17	0	HR	17				
19	0 30	mzc1	10YR33 00					0	0	HR	2				
	30 35	c	25Y 63 00	000C00	00	M		Y	0	0	HR	2	M		
	35 60	c	25Y 63 00	000C00	00	M		Y	0	0	0	P	Y		Y
20	0 32	mzc1	10YR43 00					17	0	HR	17				