

4006/167/93

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**Stonehill Road, Chobham, Surrey**  
**Golf Course Proposal**  
**Agricultural Land Classification**  
**ALC Map and Report**  
**October 1993**

**STONEHILL ROAD, CHOBHAM, SURREY**  
**GOLF COURSE PROPOSAL**

**AGRICULTURAL LAND CLASSIFICATION, REPORT**

**1. SUMMARY**

- 1.1 In August 1993, a detailed Agricultural Land Classification (ALC) survey was made on approximately 78 hectares of land close to Ottershaw near Chobham in Surrey.
- 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 proposals for a golf course development.
- 1.3 The classification has been made using MAFF's revised guidelines and criteria for grading the quality of agricultural land (MAFF, 1988). 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 fieldwork was carried out with an observation density of approximately one per hectare on the agricultural land. A total of 20 borings and 2 soil pits were examined.
- 1.5 The table below provides the details of the grades and subgrades found across the site. The agricultural land has been classified good (subgrade 3a) and moderate (subgrade 3b) quality. The land is limited by both wetness and droughtiness. The former limitation is most common and is evidenced by gleying in the upper subsoil and occasionally the topsoil overlying a slowly permeable clay horizon in the subsoil. Droughtiness is less common and is due to variably stony sandy profiles overlying slowly permeable clay which have only moderate reserves of available water.

Table 1 : Distribution of Grades and Subgrades

<u>Grade</u>	<u>Area (ha)</u>	<u>% of Site</u>	<u>% of Agricultural Area</u>
3a	6.2	8.0	39.0
3b	<u>9.7</u>	<u>12.5</u>	<u>61.0</u>
Total Agricultural Area	15.9	20.5	100
Non Agricultural	1.5	1.9	
Open Water	0.8	1.0	
Woodland	50.2	64.7	
Urban	2.4	3.1	
Agricultural Buildings	0.4	0.5	
Not Surveyed (Conifer Tree Nurseries)	6.4	8.3	
Total Site Area	<u>77.6</u>	<u>100</u>	

- 1.6 The distribution of the ALC grades is shown on the attached map. The information is presented at a scale of 1:10,000; it is accurate at this level but any enlargement would be misleading. This map supersedes any previous ALC information for this site.
- 1.7 At the time of survey the agricultural land use on the site was permanent pasture, being grazed by horses and bullocks.
- 1.8 A general description of the grades and subgrades 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. 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 km gridpoint dataset (Met. Office, 1989). 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.

Table 2 : Climatic Interpolations

Grid Reference:	TQ010632	TQ007638
Altitude (m):	35	50
Accumulated Temperature (days):	1481	1463
Average Annual Rainfall (mm):	665	681
Field Capacity (days):	139	141
Moisture Deficit, Wheat (mm):	115	112
Moisture Deficit, Potatoes (mm):	110	106
Overall Climatic Grade:	1	1

**3. RELIEF**

- 3.1 The agricultural land at the site lies between approximately 35 and 50 m AOD, the higher land towards the north of site, sloping towards the south. Small discrete areas towards the south and south west of the site are limited by gradient to moderate quality (subgrade 3b). Altitude or microrelief do not affect land quality.

#### **4. GEOLOGY AND SOIL**

- 4.1 The relevant published geological sheet (BGS, Sheet 269, Windsor, 1981) shows the site to be underlain by Eocene or Tertiary Bagshot and Bracklesham Beds which are described as sands and clays respectively, and the Barton Beds which consist of rounded black flint pebbles in a sand matrix.
- 4.2 The Soil Survey of England and Wales Sheet 6, Soils of South East England (1983), maps the site as having soils of the Bursledon, Holidays Hill and Wickham 3 Associations. The agricultural area is principally underlain by Wickham 3 described as "slowly permeable seasonally waterlogged fine and coarse loamy over clayey soils and similar more permeable soils with slight waterlogging". Soils similar to this description were found at the site.

#### **5. 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 Subgrade 3a

The land of good quality covers just over one-third of the agricultural land at the site. The soils in this area commonly consist of a slightly stony (c. 5% flints by volume) medium or fine sandy loam topsoil commonly gleyed over a similar lighter texture (loamy medium sand) slightly stony (c. 5% total flints) by volume upper subsoil passing to a gleyed and slowly permeable clay horizon (from pit observation), between 40 and 60 cm depth. This leads under the local climatic regime to a moderate droughtiness limitation on account of the light topsoil and upper subsoil textures. Land of this quality would be expected to produce moderate to high yields of a narrow range of arable crops including cereals, grass, oilseed rape, potatoes and less demanding horticultural crops. The drought limitation means that either throughout or at some point during the growing season water availability will not match demand.

- 5.4 Subgrade 3b

Land of this quality covers the remaining two thirds of the agricultural land at this site and was found to be both wetness, drought or slope limited. In the areas of drought limitation the soils were similar to those described in para 5.3 above except that the stone content in the topsoil and upper subsoil was higher, (c. 14% flints by volume in the topsoil and c. 48% flints by volume in the upper subsoil). The land classified as subgrade 3b due to a wetness limitation was found to have either a heavy clay loam or sandy clay loam gleyed topsoil containing few flints (c. 5% flints by volume), either over a shallow upper subsoil of similar texture and passing to gleyed and slowly permeable (from pit observation) clay, or passing directly to the clay from the topsoil. Within the local climate Wetness Class III or IV is applied (see Appendix

II) which in combination with the topsoil textures leads to subgrade 3b being appropriate. A wetness limitation exists where soil water affects plant growth or imposes time restrictions on cultivations or growing by livestock.

Some discrete areas mapped as subgrade 3b towards the west of the site are limited by locally steep gradients. This serves to restrict the safe and efficient use of farm machinery such that certain crops may not be cultivated. Land of this quality would be expected to be capable of producing moderate yields of a narrow range of crops, principally cereals or grass.

- 5.5 Large areas of the site are mapped as Non-agricultural or Woodland. The land described as Non-agricultural includes scrub land and unmetalled tracks within the site. There are also areas mapped as unsurveyed, these were conifer tree nurseries, many of which were currently unmanaged.
- 5.6 The areas mapped as Urban include metalled tracks within the site to agricultural buildings, and a deserted residence.

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MAFF Ref: EL 40/464

Resource Planning Team  
Guildford Statutory Group  
ADAS Reading

## **SOURCES OF REFERENCE**

- \* British Geological Survey (1981), Sheet No. 269, Windsor 1:50000
- \* 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.
- \* Soil Survey of England and Wales (1983), Sheet No. 6, Soils of South East England, 1:250000.
- \* Soil Survey of England and Wales (1984), Soils and their use in South East England, Bulletin No. 15.

SOIL PIT DESCRIPTION

Site Name : STONEHILL RD CHOBHAM GC Pit Number : 2P

Grid Reference: TQ01006350 Average Annual Rainfall : 681 mm  
 Accumulated Temperature : 1463 degree days  
 Field Capacity Level : 141 days  
 Land Use : Permanent Grass  
 Slope and Aspect : 02 degrees S

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	MOTTLES	STRUCTURE
0- 26	MSL	25Y 42 00	7	14		
26- 52	LMS	25Y 53 00	0	48		
52- 75	C	05G 42 00	0	0	M	MDCAB
75-120	C	05Y 53 00	0	0	C	

Wetness Grade : 1 Wetness Class : II  
 Gleying : 052 cm  
 SPL : 052 cm

Drought Grade : 3B APW : 101mm MBW : -11 mm  
 APP : 073mm MBP : -33 mm

FINAL ALC GRADE : 3B  
 MAIN LIMITATION : Droughtiness

SOIL PIT DESCRIPTION

Site Name : STONEHILL RD CHOBHAM GC Pit Number : 1P

Grid Reference: TQ00786368 Average Annual Rainfall : 681 mm  
 Accumulated Temperature : 1463 degree days  
 Field Capacity Level : 141 days  
 Land Use : Permanent Grass  
 Slope and Aspect : 01 degrees E

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	MOTTLES	STRUCTURE
0- 34	MSL	25Y 62 00	0	2	F	
34- 55	LMS	05Y 62 71	0	4	C	MDCSAB
55- 80	C	05G 42 00	0	0	C	STCAB
80-120	C	05Y 44 00	0	0	C	

Wetness Grade : 2 Wetness Class : III  
 Gleying : 034 cm  
 SPL : 055 cm

Drought Grade : 3A APW : 120mm MBW : 8 mm  
 APP : 091mm MBP : -15 mm

FINAL ALC GRADE : 3A  
 MAIN LIMITATION : Droughtiness

SAMPLE NO.	GRID REF	ASPECT USE	--WETNESS--				-WHEAT-		-POTS-		M.REL		EROSN	FROST	CHEM	ALC	COMMENTS
			GRDNT	GLEY	SPL	CLASS	GRADE	AP	MB	AP	MB	DRT	FLOOD	EXP	DIST	LIMIT	
1P	TQ00786368	PGR E	01	034	055	3	2	120	8	091	-15	3A			DR	3A	PIT 70 AUG120
2P	TQ01006350	PGR S	02	052	052	2	1	101	-11	073	-33	3B			DR	3B	PIT 70 AUG120
40	TQ00806380	PGR N	01	023	060	3	2	141	29	117	11	2			WD	2	SPL 60 SEE 1P
42	TQ01006375	PGR SE	01			1	1		0		0				DR	3B	IMP 20 SEE 2P
48	TQ00706370	PGR N	04	035	045	3	3B		0		0				WE	3B	SPL 45 SEE 1P
49	TQ00786368	PGR SE	02	035	055	3	2	115	3	090	-16	3A			DR	3A	SPL 55 SEE 1P
50	TQ00906370	PGR SE	01			1	1		0		0				DR	3B	IMP 20 SEE 2P
52	TQ00626362	PGR NW	02	0	030	4	3B		0		0				WE	3B	SPL 30 SEE 1P
53	TQ00706360	PGR S	04	065		1	2	152	40	108	2	2			DR	2	GLEY 65
56	TQ01006360	PGR W	01	042	060	2	2	154	42	112	6	2			DR	2	SPL 60 SEE 1P
58	TQ00706350	PGR S	02			1	2		0		0				DR	3B	IMP 35 SEE 2P
59	TQ00806350	PGR SE	03	0	035	4	3B		0		0				WE	3B	SPL 35 SEE 1P
60	TQ00906350	PGR NW	03	0		1	1	125	13	086	-20	3A			DR	3A	SPL 90 SEE 1P
61	TQ01006350	PGR S	02	030		2	2		0		0				DR	3B	IMP 40 SEE 2P
62	TQ01106350	PGR SW	02	028	070	2	2	121	9	084	-22	3A			DR	3A	SPL 70 SEE 1P
63	TQ00606345	PGR S	02	0	035	4	3B		0		0				WE	3B	SPL 35 SEE 1P
64	TQ00706340	PGR SE	02	0	040	3	2	148	36	108	2	2			WD	2	WATER TABL 65
66	TQ00906340	PGR SE	01	035		1	1		0		0				DR	3B	IMP 45 SEE 2P
67	TQ01006340	PGR SW	04	0	040	3	2	126	14	103	-3	2			WD	2	SPL 40 SEE 1P
68	TQ01106340	PGR W	02	035		2	2	116	4	072	-34	3B			DR	3B	GLEY 35
71	TQ01006330	PGR S	03	0	035	4	3B		0		0				WE	3B	SPL 35 SEE 1P
73	TQ01006320	PGR S	02	0	037	4	3B		0		0				WE	3B	SPL 37 SEE 1P

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES-----			PED		----STONES----			STRUCT/ CONSIST	SUBS			SPL	CALC
				COL	ABUN	CONT	COL.	GLEYS	>2	>6	LITH		TOT	STR	POR		
1P	0-34	ms1	25Y 62 00	10YR46	00	F			0	0	HR	2					
	34-55	lms	05Y 62 71	10YR46	00	C		Y	0	0	HR	4	MDCSAB	FM	M		
	55-80	c	05G 42 00	75YR46	00	C		Y	0	0		0	STCAB	VM	P	Y	Y
	80-120	c	05Y 44 00	75YR46	00	C		Y	0	0		0			M		Y
2P	0-26	ms1	25Y 42 00						7	0	HR	14					
	26-52	lms	25Y 53 00						0	0	HR	48			M		
	52-75	c	05G 42 00	75YR56	58	M		Y	0	0		0	MDCAB	EM	P	Y	Y
	75-120	c	05Y 53 00	75YR56	00	C		Y	0	0		0			M		Y
40	0-23	fs1	25Y 42 00						0	0		0					
	23-45	fs1	25Y 52 61	75YR46	00	C		Y	0	0		0			M		
	45-60	sc1	05Y 62 00	10YR68	00	M		Y	0	0		0			M		
	60-120	c	05G 42 00	75YR58	00	M		Y	0	0		0			P		Y
42	0-20	mc1	10YR42	00					0	0	HR	10					
48	0-35	hc1	05Y 42 00						0	0	HR	5					
	35-45	sc1	05Y 42 00	75YR56	00	C		Y	0	0	HR	5			M		
	45-70	c	05Y 53 00	75YR56	00	C		Y	0	0		0			P		Y
49	0-35	ms1	10YR42	00					0	0	HR	5					
	35-40	lms	05Y 42 00	75YR56	00	C		Y	0	0	HR	5			M		
	40-55	lms	05Y 42 00	75YR56	00	C		Y	0	0		0			M		
	55-120	c	05Y 53 00	75YR56	00	M		Y	0	0		0			P		Y
50	0-20	ms1	10YR42	00					0	0	HR	10					
52	0-30	sc1	05Y 42 00	75YR56	00	C		Y	0	0	HR	5					
	30-60	c	05Y 53 00	75YR56	00	C		Y	0	0		0			P		Y
53	0-35	lfs	10YR42	00					0	0	HR	5					
	35-65	fs	25Y 63 64						0	0	HR	5			M		
	65-120	sc1	05Y 63 64	75YR56	58	M		Y	0	0		0			M		
56	0-25	lfs	25Y 52 00	25Y 62 00	F				0	0	HR	2					
	25-42	lfs	25Y 52 00	10YR56	00	F			0	0		0			M		
	42-60	sc1	05Y 52 00	75YR58	00	M		Y	0	0		0			M		
	60-100	sc	05Y 62 00	75YR58	00	M	05YR56	00	Y	0	0	0			M		Y
	100-120	ms1	05Y 62 00	75YR68	00	M		Y	0	0		0			M		
58	0-35	hc1	05Y 42 00						0	0	HR	10					
59	0-35	mc1	05Y 52 00	75YR56	00	C		Y	0	0		0					
	35-60	c	05Y 42 00	75YR56	00	M		Y	0	0		0			P		Y
60	0-26	ms1	25Y 42 00	10YR56	00	C		Y	0	0	HR	1					
	26-40	ms1	05Y 42 00	10YR56	00	C		Y	0	0		0			M		
	40-70	lms	05Y 63 00	10YR56	00	C		Y	0	0		0			M		
	70-90	ms1	05Y 63 00	75YR56	00	C		Y	0	0		0			M		
	90-120	c	05Y 42 00	75YR56	00	M		Y	0	0		0			P		Y

SAMPLE	DEPTH	TEXTURE	COLOUR	-----MOTTLES-----			PED COL.	-----STONES-----			STRUCT/ CONSIST	SUBS						
				COL	ABUN	CONT		GLE	>2	>6		LITH	TOT	STR	POR	IMP	SPL	CALC
61	0-30	1fs	25Y 42 51	10YR56	00	F			0	0	HR	5						
	30-40	1fs	05Y 52 00	10YR56	00	C		Y	0	0	HR	10	M					
62	0-28	1ms	25Y 42 52	10YR66	00	F			0	0		0						
	28-50	1fs	05Y 62 00	10YR68	00	M		Y	0	0		0	M					
	50-70	1ms	05Y 62 00	10YR68	00	M		Y	0	0		0	M					
	70-110	sc	05G 52 00	75YR58	00	M		Y	0	0		0	P				Y	
110-120	sc1	05G 52 00	75YR58	00	M		Y	0	0		0	M						
63	0-25	sc1	05Y 53 00	75YR56	00	C		Y	0	0	HR	5						
	25-35	sc1	05Y 52 00	75YR56	00	C		Y	0	0		0	M					
	35-60	c	05Y 52 00	75YR56	58	M		Y	0	0		0	P				Y	
64	0-28	ms1	25Y 42 00	10YR46	00	C		Y	0	0		0						
	28-40	sc1	05G 52 00	75YR46	00	C		Y	0	0		0	M					
	40-55	sc	05G 42 00	75YR46	00	M		Y	0	0		0	P				Y	
	55-120	sc1	05G 42 00	75YR46	00	M		Y	0	0		0	M					
66	0-35	ms1	25Y 42 00	10YR56	00	F			0	0		0						
	35-45	ms1	25Y 63 00	75YR56	00	C		Y	0	0	HR	3	M					
67	0-26	ms1	25Y 42 00	75YR46	00	C		Y	0	0	HR	3						
	26-40	sc1	05Y 52 00	10YR46	66	C		Y	0	0		0	M					
	40-120	c	05G 42 00	75YR58	00	M		Y	0	0		0	P				Y	
68	0-35	1ms	25Y 42 00						0	0	HR	3						
	35-65	1ms	05Y 62 00	10YR46	00	C		Y	0	0	HR	5	M					
	65-120	sc1	05G 42 00	75YR46	00	M		Y	0	0		0	M					
71	0-35	mc1	25Y 63 00	10YR56	00	C		Y	0	0		0						
	35-60	c	25Y 62 63	75YR58	00	M		Y	0	0		0	P				Y	
73	0-37	mc1	25Y 64 00	10YR56	00	C		Y	0	0		0						
	37-60	c	25Y 62 63	75YR56	58	M		Y	0	0		0	P				Y	