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Ashford Borough Local Plan
Site 81
Land at Scotton Street, Wye
Kent

Agricultural Land Classification
ALC map and report
February 1997

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Resource Planning Team
Guildford Statutory Group
ADAS Reading

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AGRICULTURAL LAND CLASSIFICATION REPORT

ASHFORD BOROUGH LOCAL PLAN
SITE 81, LAND AT SCOTTON STREET, WYE, KENT

INTRODUCTION

1. This report presents the findings of a detailed Agricultural Land Classification (ALC) survey of 9.3 hectares of land on the eastern edge of Wye in Kent. The survey was carried out during February 1997.

2. The survey was commissioned by the Ministry of Agriculture, Fisheries and Food's (MAFF) Land Use Planning Unit, in Reading, in connection with its statutory input to the Ashford Borough Local Plan. This survey supersedes any previous ALC information for this land.

3. The work was conducted by members of the Resource Planning Team in the Guildford Statutory Group in ADAS. The land has been graded in accordance with the published MAFF ALC guidelines and criteria (MAFF, 1988). A description of the ALC grades and subgrades is given in Appendix I.

4. At the time of survey the land was in an arable use and had previously been an orchard.

SUMMARY

5. The findings of the survey are shown on the enclosed ALC map. The map has been drawn at a scale of 1:10,000; it is accurate at this scale but any enlargement would be misleading.

6. The whole site (9.3 ha) is in agricultural use has been classified as Grade 2 (very good quality land).

7. The fieldwork was conducted at an average density of 1 boring per hectare. A total of 8 borings and 1 soil pit was described.

8. There is a minor soil droughtiness limitation affecting the site. The soils are generally deep clay loams which grade into clays at depth; they show little or no signs of soil wetness and are very slightly stony. The combination of textures, structures and stone contents, in this relatively dry location, slightly limits the amount of water available for extraction by crops, and this will slightly affect the yield of the crops grown on such land.

FACTORS INFLUENCING ALC GRADE

Climate

9. Climate affects the grading of land through the assessment of an overall climatic limitation and also through interactions with soil characteristics.

10. The key climatic variables used for grading this site are given in Table 2 and were obtained from the published 5km grid datasets using the standard interpolation procedures (Met. Office, 1989).

Table 2: Climatic and altitude data

Factor	Units	Values
Grid reference	N/A	TR 058 465
Altitude	m, AOD	50
Accumulated Temperature	day°C (Jan-June)	1447
Average Annual Rainfall	mm	773
Field Capacity Days	days	163
Moisture Deficit, Wheat	mm	113
Moisture Deficit, Potatoes	mm	108
Overall climatic grade	N/A	1

11. 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.

12. The main parameters used in the assessment of an overall climatic limitation are average annual rainfall (AAR), as a measure of overall wetness, and accumulated temperature (AT0, January to June), as a measure of the relative warmth of a locality.

13. The combination of rainfall and temperature at this site mean that there is no overall climatic limitation. There are also no significant local factors such as exposure or frost risk affecting the area. The site is climatically Grade 1.

Site

14. The site lies at approximately 50 metres and is either flat of very gently sloping to the south-west. Gradient, microrelief and flooding are not significant at the site.

Geology and soils

15. The most detailed published geological information for the site (BGS, 1982) shows the area to be underlain by Head and Head Brickearth drift deposits.

16. The most detailed published soils information for the site (SSEW, 1983 and 1984) shows the whole area to comprise soils of the Hamble Association. These are generally described as 'deep, stoneless, well drained, silty soils...over gravel locally'. During the fieldwork, deep clay loams were found, overlying clays.

AGRICULTURAL LAND CLASSIFICATION

17. The details of the classification of the site are shown on the attached ALC map.

18. The location of the auger borings and pits is shown on the attached sample location map and the details of the soils data are presented in Appendix II.

Grade 2

19. The whole site has been placed in this grade, with soil droughtiness as the main limiting factor. Pit 1 is typical of these soils, showing a non-calcareous, medium clay loam topsoil and upper subsoil (the latter is occasionally silty) that passes into a clay which extends to depth. The soils show little or no signs of wetness (although occasionally the ped faces in the deeper subsoil horizons have a pale colour) and are placed in Wetness Class I; at depth in some of the borings there may be slight gleying, with the possibility of a very deep slowly permeable layer (but this does not alter the wetness class). The structures are moderate in nature (coarse subangular blocky). The stone contents are approximately 2% (flint) throughout the profile. Occasional borings were impenetrable at 75 and 95 cm, suggesting some stonier layers may be present in parts of the site.

20. The assessment of available water shows that the profile at the pit is very close to the Grade 2/Grade 1 boundary. The presence of slightly stonier subsoils in some of the borings on the site suggests, however, that Grade 2 is the appropriate classification for this land. Slight soil droughtiness may affect potential yields, by placing the crop under drought stress during the drier parts of the growing season.

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SOURCES OF REFERENCE

British Geological Survey (1982) *Sheet No.289, Canterbury.*
BGS: London.

Ministry of Agriculture, Fisheries and Food (1988) *Agricultural Land Classification of England and Wales: Revised guidelines and criteria for grading the quality of agricultural land.* MAFF: London.

Met. Office (1989) *Climatological Data for Agricultural Land Classification.*
Met. Office: Bracknell.

Soil Survey of England and Wales (1983) *Sheet 6 South East England.*
SSEW: Harpenden.

Soil Survey of England and Wales (1984) *Soils and their Use in South East England*
SSEW: Harpenden

APPENDIX I

DESCRIPTIONS OF THE GRADES AND SUBGRADES

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 of this 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 land.

Grade 3: Good to Moderate Quality Land

Land with moderate limitations which affect the choice of crops, the 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.

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 the level of yields. It is mainly suited to grass with occasional arable crops (e.g. 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 severe limitations which restrict use to permanent pasture or rough grazing, except for occasional pioneer forage crops.

APPENDIX II

SOIL DATA

Contents:

SOIL PROFILE DESCRIPTIONS: EXPLANATORY NOTE

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

Boring Header Information

1. **GRID REF**: national 100 km 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	**FLW:**	Fallow
PGR:	Permanent pasture	**LEY:**	Ley grass	**RGR:**	Rough grazing
SCR:	Scrub	**CFW:**	Coniferous woodland	**OTH**	Other
DCW:	Deciduous woodland	**BOG:**	Bog or marsh	**SAS:**	Set-Aside
HTH:	Heathland	**HRT:**	Horticultural crops	**PLO:**	Ploughed

3. **GRDNT**: Gradient as estimated or measured by a hand-held optical clinometer.

4. **GLEY/SPL**: Depth in centimetres (cm) to gleying and/or slowly permeable layers.

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

6. **MB (WHEAT/POTS)**: Moisture Balance. (Crop adjusted AP - crop adjusted MD)

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

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

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

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

OC:	Overall Climate	**AE**:	Aspect	**ST**:	Topsoil Stoniness
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**:	Erosion Risk	**WD**:	Soil Wetness/Droughtiness
EX:	Exposure				

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
ZL:	Silt 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 the following 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 using Munsell notation.

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 using Munsell notation.

6. **GLEY:** If the soil horizon is gleyed a 'Y' will appear in this column. If slightly gleyed, an 'S' will appear.

7. **STONE LITH**: Stone Lithology - one of the following is used:

HR:	all hard rocks and stones	**FSST**:	soft, fine grained sandstone
ZR:	soft, argillaceous, or silty rocks	**CH**:	chalk
MSST:	soft, medium grained sandstone	**GS**:	gravel with porous (soft) stones
SI:	soft weathered igneous/metamorphic rock	**GH**:	gravel with non-porous (hard) stones

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

8. **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		
Ped shape	**S**:	single grain	**M**:	massive
	GR:	granular	**AB**:	angular blocky
	SAB:	sub-angular blocky	**PR**:	prismatic
	PL:	platy		

9. **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

10. **SUBS STR**: Subsoil structural condition recorded for the purpose of calculating profile droughtiness: **G**: good **M**: moderate **P**: poor

11. **POR**: Soil porosity. If a soil horizon has less than 0.5% biopores >0.5 mm, a 'Y' will appear in this column.

12. **IMP**: If the profile is impenetrable to rooting a 'Y' will appear in this column at the appropriate horizon.

13. **SPL**: Slowly permeable layer. If the soil horizon is slowly permeable a 'Y' will appear in this column.

14. **CALC**: If the soil horizon is calcareous, a 'Y' will appear in this column.

15. 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	USE	ASPECT	GRDNT	GLEY	SPL	--WETNESS-- CLASS	GRADE	-WHEAT- AP	MB	-POTS- AP	MB	M.REL DRT	FLOOD	EROSN EXP	FROST DIST	CHEM LIMIT	ALC	COMMENTS
1P	TR05954645	ARA					1	1	145	32	118	10	2				DR	2	
2	TR05804660	ARA					1	1	140	27	116	8	2				DR	2	
3	TR05904660	ARA			080		1	1	118	5	114	6	2				DR	2	IMPSTONY
4	TR06004660	ARA					1	1	109	-4	116	8	3A				DR	3A	IMPSTONY
5	TR05804650	ARA					1	1	145	32	117	9	2				DR	2	
6	TR05904650	ARA					1	1	150	37	120	12	1					1	
7	TR06004650	ARA			090		1	1	000	0	000	0					DR	2	
8	TR05904640	ARA			065		1	1	143	30	116	8	2				DR	2	
9	TR06004640	ARA	SW	01	100	100	1	1	144	31	118	10	2				DR	2	

SOIL PIT DESCRIPTION

Site Name : ASHFORD LP, WYE, SCOTTON Pit Number : 1P

Grid Reference: TR

Average Annual Rainfall : 773 mm
Accumulated Temperature : 1447 degree days
Field Capacity Level : 163 days
Land Use : Arable
Slope and Aspect : degrees

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 30	MCL	10YR42 00	0	2	HR					
30- 50	MZCL	10YR44 00	0	2	HR		MCSAB	FR	M	
50- 70	MCL	10YR44 00	0	2	HR		MCSAB	FR	M	
70- 90	C	75YR54 00	0	2	HR		MCSAB	FM	M	
90-120	C	75YR54 00	0	2	HR	C	MCSAB	VM	M	

Wetness Grade : 1

Wetness Class : I
Gleying :000 cm
SPL : No SPL

Drought Grade : 2

APW : 145mm MBW : 32 mm
APP : 118mm MBP : 10 mm

FINAL ALC GRADE : 2
MAIN LIMITATION : Droughtiness

program: ALC011 COMPLETE LIST OF PROFILES 03/03/97 ASHFORD LP, WYE, SCOTTON

SAMPLE	DEPTH	TEXTURE	COLOUR	MOTTLES COL	MOTTLES ABUN	MOTTLES CONT	PED COL.	GLEY	STONES >2	STONES >6	LITH	TOT	STRUCT/ CONSIST	SUBS STR	POR	IMP	SPL	CALC
1P	0-30	mcl	10YR42 00						0	0	HR	2						
	30-50	mzcl	10YR44 00						0	0	HR	2	MCSAB	FR	M			
	50-70	mcl	10YR44 00						0	0	HR	2	MCSAB	FR	M			
	70-90	c	75YR54 00				10YR42 00		0	0	HR	2	MCSAB	FM	M		Y	
	90-120	c	75YR54 00	00MN00	00	C	10YR42 00		0	0	HR	2	MCSAB	VM	M		Y	
2	0-32	mcl	10YR42 00						0	0	HR	2						
	32-60	hcl	10YR43 00						0	0	HR	2			M			
	60-95	c	10YR43 00						0	0	HR	2			M			
	95-120	c	10YR54 00						0	0	HR	10			M			
3	0-30	mcl	10YR42 00						0	0	HR	5						
	30-50	hcl	10YR54 00						0	0	HR	2			M			
	50-80	c	10YR54 00						0	0	HR	2			M			
	80-95	c	10YR53 00	000C00	00	C		Y	0	0	HR	2			M			
4	0-35	mcl	10YR42 00						0	0	HR	2						
	35-50	mcl	10YR54 00						0	0	HR	2			M			
	50-75	hcl	10YR54 00						0	0	HR	5			M			
5	0-35	mcl	10YR42 00						0	0	HR	2						
	35-50	mcl	10YR53 00						0	0	HR	2			M			
	50-70	hcl	10YR54 00						0	0	HR	1			M			
	70-120	c	10YR54 00	000C00	00	C			0	0	HR	1			M			
6	0-30	mcl	10YR42 00						0	0	HR	2						
	30-70	mzcl	10YR43 00						0	0	HR	2			M			
	70-90	hcl	10YR54 00						0	0	HR	1			M			

	90-120	c	10YR54 00									0	0	HR	1		M			
7	0-35	mcl	10YR42 00	000C00	00	F						0	0	HR	2					
	35-60	mcl	10YR43 00									0	0	HR	2		M			
	60-90	hcl	10YR54 00									0	0	HR	1		M			
	90-120	c	10YR54 00	000C00	00	C				Y		0	0		0		M			
8	0-30	mcl	10YR42 00									0	0	HR	2					
	30-45	mcl	10YR53 00	000C00	00	F	00MN00	00				0	0	HR	2		M			
	45-65	hcl	10YR54 00									0	0	HR	1		M			
	65-75	c	10YR53 00	000C00	00	C				Y		0	0	HR	1		M			
	75-120	c	10YR53 00	000C00	00	C	00MN00	00	Y			0	0	HR	1		M			
9	0-30	mcl	10YR42 00	000C00	00	F						0	0	HR	2					
	30-50	hcl	10YR43 00									0	0	HR	2		M			
	50-80	mzcl	10YR43 00	00MN00	00	F						0	0	HR	2		M			
	80-100	c	10YR43 00	00MN00	00	F						0	0	HR	1		M			
	100-120	c	10YR53 00	000C00	00	C				Y		0	0		0		P	Y		Y