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**Maidstone Borough Local Plan  
Site 28 Land at Court Lodge Farm,  
Lenham  
Agricultural Land Classification  
ALC Map and Report  
October 1994**

# AGRICULTURAL LAND CLASSIFICATION REPORT

## MAIDSTONE BOROUGH LOCAL PLAN SITE 28 LAND AT COURT LODGE FARM, LENHAM

### 1 Summary

- 1.1 ADAS was commissioned by MAFF's Land Use Planning Unit to provide information on land quality for a number of sites in the Maidstone Borough of Kent. The work forms part of MAFF's statutory input to the Maidstone Borough Local Plan.
- 1.2 Site 28 comprises approximately 7 hectares of land to the east of Lenham in Kent. An Agricultural Land Classification (ALC) survey was undertaken during October 1994. The survey was undertaken at a detailed level. A total of 8 borings and one soil inspection pit were assessed in accordance with 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.
- 1.3 The work was carried out by members of the Resource Planning Team in the Guildford Statutory Group of ADAS.
- 1.4 At the time of survey the agricultural land at the site was under stubble from the 1994 harvest. The area of urban land shown towards the north west of the site comprises a dwelling, its garden and outbuildings including a barn. In addition a pond is shown as open water.
- 1.5 The distribution of grades and subgrades is shown on the attached ALC map and the areas are given in the table below. The map has been drawn at a scale of 1:10,000. It is accurate at this scale but any enlargement would be misleading. This map supersedes any previous ALC survey information for this site.

**Table 1 Distribution of Grades and Subgrades**

Grade	Area (ha)	% of Site	% of Agricultural Land
3b	6.2	87.3	<u>100%</u> (6.2 ha)
Urban	0.9	12.7	
Open Water	<0.1	<0.1	
Total area of site	<u>7.1</u>	<u>100%</u>	

- 1.6 Appendix I gives a general description of the grades, subgrades and land use categories identified in the survey. 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 site has been graded as Subgrade 3b moderate quality land Poorly drained clayey soils derived from drift deposits overlying Lower Chalk cause the land to experience significant soil wetness and workability restrictions

## 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 an overall climatic limitation are average annual 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 (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 are believed to affect the site However climatic and soil factors interact to influence soil wetness and droughtiness limitations

**Table 2 Climatic Interpolation**

Grid Reference	TQ898519
Altitude (m AOD)	120
Accumulated Temperature (°days Jan June)	1369
Average Annual Rainfall (mm)	748
Field Capacity Days	155
Moisture deficit wheat (mm)	106
Moisture deficit potatoes (mm)	97
Overall Climatic Grade	1

## 3 Relief

3 1 The site lies between approximately 115 and 120m AOD It rises from the south east towards the north west Nowhere on the site does relief or gradient affect agricultural land quality

## 4 Geology and Soils

4 1 The published geological information (BGS 1976) shows the majority of the site to be underlain by Cretaceous Lower Chalk Towards the west of the site a small area is shown as being underlain by head drift deposits

- 4 2 The published soils information (SSEW 1983) shows the majority of the site to be underlain by Coombe 2 Association soils. These are briefly described as well drained calcareous fine silty soils deep in valley bottoms and shallow to chalk on valley sides in places (SSEW 1983). Towards the south east of the site a small area is mapped as comprising Denchworth Association soils these are described as slowly permeable seasonally waterlogged clayey soils with similar fine loamy over clayey soils. Some fine loamy over clayey soils with only slight seasonal waterlogging and slowly permeable calcareous soils (SSEW 1983). Soils over the site were commonly found to be similar to the description for soils of the Denchworth Association being clayey calcareous and slowly permeable in the subsoil.

## 5 Agricultural Land Classification

- 5 1 Paragraph 1 5 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 are shown on the attached sample point map.

### Subgrade 3b

- 5 3 Land of moderate quality is shown for the whole of the agricultural land at this site. The principal limitation is soil wetness and workability due to poor soil drainage. Soil profiles typically comprise a stoneless or very slightly stony or chalky (up to 3% v/v flints or chalk fragments) calcareous heavy clay loam or clay topsoil which was occasionally slightly mottled. This passes to a similarly or slightly more stony / chalky (up to 8% v/v flints 5% v/v chalk fragments) commonly gleyed or slightly gleyed calcareous clay which has characteristics of a slowly permeable layer as observed in the pit 1p (see Appendix III). This overlies in virtually all the observations a highly calcareous gleyed and slowly permeable clay lower subsoil horizon to depth. Soil profiles with these drainage characteristics within the local climatic parameters lead to Wetness Class IV (see Appendix II) being assigned and subsequently Subgrade 3b given the topsoil workability class. These factors lead to severe restrictions on the versatility of the land in terms of the timing of cropping and stocking if structural damage to the soil is to be avoided. Excessive soil wetness will also adversely affect crop growth and development. Occasional observations were of a slightly better quality but were of insufficient distribution to justify separate mapping.

## **SOURCES OF REFERENCE**

British Geological Survey (1976) Sheet 288 Maidstone 1 50 000 Solid & Drift Edition

MAFF (1988) Agricultural Land Classification of England and Wales Revised guidelines and criteria for grading the quality of agricultural land

Meteorological Office (1989) Climatic datasets for Agricultural Land Classification

Soil Survey of England and Wales (1980) Soils of Kent Bulletin No 15 Map scale 1 250 000

Soil Survey of England and Wales (1983) Sheet No 6 Soils of South East England 1 250 000 and Accompanying Legend

Soil Survey of England and Wales (1984) Soils and their use in South-East England Bulletin No 15

## APPENDIX I

### DESCRIPTION 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.

**Urban**

Built up or 'hard' uses with relatively little potential for a return to agriculture including 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 reclaimed 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 Also active mineral workings and refuse tips where restoration conditions to 'soft' after uses may apply

**Woodland**

Includes commercial and non commercial woodland A distinction may be made as necessary between farm and non farm woodland

**Agricultural Buildings**

Includes the normal range of agricultural buildings as well as other relatively permanent structures such as glasshouses Temporary structures (e.g. 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 e.g. 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

### DEFINITION OF SOIL WETNESS CLASS

#### **Wetness Class I**

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

#### **Wetness Class II**

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

#### **Wetness Class III**

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

#### **Wetness Class IV**

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

#### **Wetness Class V**

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

#### **Wetness Class VI**

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

## **APPENDIX III**

### **SOIL PIT AND SOIL BORING DESCRIPTIONS**

#### **Contents**

**Sample Point Map**

**Soil Abbreviations - explanatory note**

**Database Printout - soil pit information**

**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:

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

<b>MREL</b> Microrelief limitation	<b>FLOOD</b> Flood risk	<b>EROSN</b> Soil erosion risk
<b>EXP</b> Exposure limitation	<b>FROST</b> Frost	<b>DIST</b> Disturbed land
<b>CHEM</b> Chemical limitation		
- 9 **LIMIT** The main limitation to land quality. The following abbreviations are used:

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

## Soil Pits and Auger Borings

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

<b>S</b> Sand	<b>LS</b> Loamy Sand	<b>SL</b> Sandy Loam
<b>SZL</b> Sandy Silt Loam	<b>CL</b> Clay Loam	
<b>ZCL</b> Silty Clay Loam	<b>SCL</b> Sandy Clay Loam	
<b>C</b> Clay	<b>SC</b> Sandy Clay	<b>ZC</b> Silty Clay
<b>OL</b> Organic Loam	<b>P</b> Peat	<b>SP</b> Sandy Peat
<b>LP</b> Loamy Peat	<b>PL</b> Peaty Loam	<b>PS</b> Peaty Sand
<b>MZ</b> 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

<b>HR</b> all hard rocks and stones	<b>SLST</b> soft oolitic or dolomitic limestone
<b>CH</b> chalk	<b>FSST</b> soft fine grained sandstone
<b>ZR</b> soft argillaceous or silty rocks	<b>GH</b> gravel with non porous (hard) stones
<b>MSST</b> soft medium grained sandstone	<b>GH</b> gravel with non porous (hard) stones
<b>SI</b> soft weathered igneous/metamorphic rock	

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

SOIL PIT DESCRIPTION

Site Name MAIDSTONE LP SITE 28 Pit Number 1P

Grid Reference TQ89805180 Average Annual Rainfall 748 mm  
 Accumulated Temperature 1369 degree days  
 Field Capacity Level 155 days  
 Land Use  
 Slope and Aspect degrees

HORIZON	TEXTURE	COLOUR	STONES >2	TOT STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 26	HCL	10YR32 00	0	3	CH					Y
26- 53	C	25Y 53 00	0	5	CH	M	MDCAB	FM	P	Y
53- 70	C	25Y 72 00	0	0		C	WKCSAB	FR	M	Y

Wetness Grade 3B Wetness Class IV  
 Gleying 26 cm  
 SPL 26 cm

Drought Grade APW mm MBW 0 mm  
 APP mm MBP 0 mm

FINAL ALC GRADE 3B  
 MAIN LIMITATION Wetness

SAMPLE NO	GRID REF	ASPECT USE	- WETNESS		-WHEAT		POTS		M REL		EROSN	FROST		CHEM	ALC	COMMENTS
			GRDNT	GLEYSPL	CLASS	GRADE	AP	MB	AP	MB	DRT	FLOOD	EXP	DIST	LIMIT	
1	TQ90005210	STB	70	70	2	2		0	0					WE	2	SPL 70 IMP 100
1P	TQ89805180	STB	26	26	4	3B		0	0					WE	3B	SPL 26 PIT 70
3	TQ89905200	STB	45	45	3	3B		0	0					WE	3B	SPL45 SLGLEYS30
4	TQ89615190	STB	38	38	4	3B		0	0					WE	3B	SPL 38
5	TQ89705190	STB	50	50	3	3B		0	0					WE	3B	SPL 50
6	TQ89805190	STB	35	35	4	3B		0	0					WE	3B	SPL 35
7	TQ89905190	STB	30	30	4	3B		0	0					WE	3B	SPL 30
8	TQ89705180	STB	45	45	3	3B		0	0					WE	3B	SPL 45
9	TQ89805180	STB	26	26	3	3B		0	0					WE	3B	SPL 26

SAMPLE	DEPTH	TEXTURE	COLOUR	MOTTLES			- PED			STONES			STRUCT/		SUBS			CALC	
				COL	ABUN	CONT	COL	GLE	2	>6	LITH	TOT	CONSIST	STR	POR	IMP	SPL		
1	0-28	mzc1	10YR42 00						0	0	CH	2						Y	
	28-35	hzc1	10YR63 64						0	0	CH	20		M				Y	
	35-70	mzc1	10YR63 00						0	0	CH	5		M				Y	
	70-100	c	25Y 63 72	10YR66 00 C					Y	0	0	CH	5		M		Y	Y	IMP CH RUBBLE 100
1P	0-26	hc1	10YR32 00						0	0	CH	3						Y	
	26-53	c	25Y 53 00	10YR68 00 M			10YR53 00	Y	0	0	CH	5	MDCAB	FM	P	Y	Y	Y	
	53-70	c	25Y 72 00	10YR66 00 C				Y	0	0		0	WKCSAB	FR	M	Y	Y	Y	
3	0 30	c	10YR32 00						0	0		0						Y	
	30 45	c	10YR54 00	10YR56 00 M				S	0	0		0		M				Y	SLIGHTLY GLEYED 30
	45-100	c	10YR53 00	10YR56 00 M			00MN00 00	Y	0	0		0		P			Y	Y	
	100 120	c	05Y 51 62	10YR56 00 C				Y	0	0		0		M			Y	Y	
4	0 20	c	10YR54 00						0	0	HR	2						Y	
	20 38	c	10YR54 00	10YR56 00 F					0	0	HR	5		M				Y	
	38 50	c	25Y 53 00	10YR56 58 M				Y	0	0	HR	5		P			Y	Y	
	50 70	c	25Y 53 63	10YR58 00 M			00MN00 00	Y	0	0		0		P			Y	Y	
5	0 30	c	10YR42 00						0	0	HR	2						Y	
	30-36	c	10YR42 00						0	0	HR	5		M				Y	
	36-50	c	10YR54 00	10YR68 00 F					0	0		0		M				Y	
	50 60	c	10YR62 00	10YR68 00 M				Y	0	0		0		P			Y	Y	
	60 100	c	25Y 72 63	10YR56 00 M				Y	0	0		0		M			Y	Y	
6	0-25	c	10YR42 00	10YR56 00 F					0	0	HR	3						Y	
	25-35	c	10YR42 00	10YR56 00 F					0	0	HR	8		M				Y	
	35-50	c	10YR53 00	10YR56 00 C			00MN00 00	Y	0	0	HR	8		P			Y	Y	
	50 100	c	10YR53 00	10YR56 00 C			00MN00 00	Y	0	0	HR	1		P			Y	Y	
7	0-30	hc1	10YR32 42						0	0		0						Y	
	30 40	c	10YR63 72	10YR56 00 C				Y	0	0		0		M			Y	Y	
	40 90	c	25Y 72 73	10YR56 00 C				Y	0	0		0		M			Y	Y	
8	0 30	hc1	10YR42 00						0	0		0						Y	
	30 45	c	10YR62 72						0	0		0		M			Y	Y	
	45-120	c	10YR72 81	10YR58 00 C				Y	0	0		0		M			Y	Y	
9	0-26	hc1	10YR42 00						0	0	HR	2						Y	
	26 55	c	10YR53 00	10YR68 00 C			00MN00 00	Y	0	0		0		P			Y	Y	
	55 75	c	10YR62 72	10YR56 72 C				Y	0	0		0		M			Y	Y	
	75-100	hc1	10YR82 00	10YR58 00 C				Y	0	0		0		M			Y	Y	