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TUNBRIDGE WELLS BOROUGH
LOCAL PLAN
WOODSGATE CORNER PEMBURY
AGRICULTURAL LAND CLASSIFICATION
ALC MAP REPORT
OCTOBER 1993

**TUNBRIDGE WELLS BOROUGH LOCAL PLAN
PROPOSED PARK AND RIDE SITES WOODSGATE CORNER PEMBURY
AGRICULTURAL LAND CLASSIFICATION**

1 0 Summary

1 1 ADAS was commissioned by MAFF s Land Use Planning Unit to provide information on land quality on an area of land adjacent to the A21 south west of Pembury near Tunbridge Wells in Kent The work forms part of MAFF s statutory input to proposed park and ride sites in the Tunbridge Wells Borough Local Plan

1 2 Approximately 2 hectares of land was surveyed in October 1993 The survey was undertaken at a detailed level of approximately one boring per hectare A total of 2 soil auger borings and 1 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 conducted by members of the Resource Planning Team in the Guildford Statutory Group of ADAS

1 4 At the time of the survey the landuse on the site was permanent pasture

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 5 000 It is accurate at this scale but any enlargement would be misleading This map supersedes any previous survey information

Table 1 - Distribution of Grades and Subgrades

<u>Grade</u>	<u>Area (ha)</u>	<u>%of Site</u>	<u>% of Agricultural Area</u>
2	2 1	91 3	100 0 (2 1 ha)
Urban	0 2	8 7	
Total	2 3	<u>100 0</u>	

1 6 Appendix 1 gives a general description of the grades and 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 agricultural land on the site has been classified as Grade 2 good quality land with soil wetness as the key limitation There is evidence of a slight drainage imperfection due to the presence of a poorly structured clay subsoil at depth

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 average annual rainfall as a measure of overall wetness and accumulated temperature (degree days Jan June) 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 affect the site However climatic factors do interact with soil factors to influence soil wetness and soil droughtiness limitations At this locality field capacity days are relatively high whilst soil moisture deficits are correspondingly high

Table 2 . Climatic Interpolations

Grid Reference	TQ 617 407
Altitude (m)	135
Accumulated Temperature (days)	1363
Average Annual Rainfall (mm)	792
Field Capacity (days)	164
Moisture Deficit Wheat (mm)	97
Moisture Deficit Potatoes (mm)	87
Overall Climatic Grade	1

3 0 Relief

3 1 The site is very gently sloping and lies at an altitude ranging between 130 and 135m On no part of the site does relief or gradient pose any limitation to agricultural use

4 0 Geology and Soil

4 1 The relevant geological information for the site (BGS Sheet 303 Tunbridge Wells 1971) shows the underlying geology to be Ardingly Sandstone

4 2 The published soils information for the area (SSEW Sheet 6 Soils of South East England 1983) shows the soils of the site to be of the Curtisden association These are described as well drained coarse loamy soils over sandstone Detailed field examination found that the soils are best described as loamy as opposed to coarse loamy showing some signs of imperfect drainage

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 are shown on the attached sample point map

5 4 Grade 2 The entire agricultural land on the site has been classified as Grade 2 good quality land Pit 1 is typical of the soils found on the site Profiles are typically medium silty clay and clay loam topsoils which become heavier with depth There is evidence of a slight drainage imperfection due to the presence of a poorly structured clay layer from approximately 76cm in the profile with the entire subsoil gleyed within 40 cm As a result these soils can be placed into Wetness Class II which in conjunction with the topsoil texture and Field Capacity level for the site (164 days) gives a resultant classification of Grade 2 There is a small area of heavier topsoil in the north east of the site which technically gives a classification of Subgrade 3a but this is not significant enough to be mapped as a separate unit at this site

5 5 The area marked as Urban is a private house and garden in the west of the site

ADAS REFERENCE 2014/201/93
MAFF REFERENCE EL20/000306

Resource Planning Team
Guildford Statutory Group
ADAS Reading

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 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/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

- * British Geological Survey (1971) Sheet No 303 Tunbridge Wells 1 50 000
- * 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 1 250 000 And accompanying legend

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
	* Soil Pit Descriptions	
	* 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 Positional 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 Mize OSR Oilseed rape
BEN Field Beans BRA Brassica POT Potatoes SBT Sugar Beet FCD Fodder Crops LIN Linseed
FRF Soft and T p Fruit HRT Horticultural Crop 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 GLEY/SPL Depth in cm to gleying or lowly 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 subdivided 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 gneous or metamorphic SLST soft oolitic or dolomitic limestone
FSST soft fine grained sandstone ZR soft argillaceous or silty rocks CH chalk
GH gravel with no pores (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 pedons 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 soil horizon has less than 0.5% big pores >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) determined for wheat

APP available water capacity (in mm) determined for potatoes

MBW moisture balance wheat

MBP moisture balance potatoes

SOIL PIT DESCRIPTION

Site Name WOODSGATE CORNER PEMBURY Pit Number 1P
 Grid Reference TQ61804060 Average Annual Rainfall 792 mm
 Accumulated Temperature 1368 degree days
 Field Capacity Level 164 days
 Land Use Permanent Grass
 Slope and Aspect degrees

HORIZON	TEXTURE	COLOUR	STONES	TOT STONE	MOTTLES	STRUCTURE
0 22	MCL	10YR5/2 0/0	0	0		
22 35	MCL	10YR5/2 0/0	0	0	C	
35 56	MCL	2.5Y 6.3 0/0	0	0	C	
56 76	HCL	2.5Y 6.3 0/0	0	0	C	MDCSAB
76 95	C	2.5Y 7.1 0/0	0	0	M	MVCPL

Wetness Grade 2 Wetness Class II
 Gleying 022 cm
 SPL 076 cm

Drought Grade 2 APW 124mm MBW 27 mm
 APP 116mm MBP 29 mm

FINAL ALC GRADE 2
 MAIN LIMITATION Wetness

SAMPLE NO	GRID REF	ASPECT USE	WETNESS		WHEAT		POTS		M REL		EROSN EXP	FROST DIST	CHEM LIMIT	ALC	COMMENTS	
			GRDNT	GLEYSPL	CLASS	GRADE	AP	MB	AP	MB						DRT
1	TQ61704070	PGR		030	2	2	107	10	118	31	2			WE	2	IMPEN 70
1P	TQ61804060	PGR		022 076	2	2	124	27	116	29	2			WE	2	
2	TQ61854055	PGR		022	2	3A	116	19	116	29	2			WE	3A	

SAMPLE	DEPTH	TEXTURE	COLOUR	MOTTLES		PED		STONES			STRUCT/ CONSIST	SUBS						
				COL	ABUN	CONT	COL	GLE	2	6		LITH	TOT	STR	POR	IMP	SPL	CALC
1	0 30	mzc1	10YR42 00					0	0	HR	2							
	30 45	hzc1	10YR52 00	10YR58	61 C			Y	0	0	0				M			
	45 70	hc1	10YR42 00	10YR58	61 C			Y	0	0	HR	8			M			
1P	0 22	mc1	10YR52 00						0	0	0							
	22 35	mc1	10YR52 00	10YR58	61 C			Y	0	0	0				M			
	35 56	mc1	25Y 63 00	75YR46	00 C			Y	0	0	0				M			
	56 76	hc1	25Y 63 00	75YR46	00 C			Y	0	0	0	MDCSAB	FR	M				
	76 95	c	25Y 71 00	10YR58	00 M			Y	0	0	0	MVCPL	FR	P	Y		Y	
2	0 22	hc1	10YR53 00						0	0	0							
	22 45	hc1	10YR53 00	000C00	00 C			Y	0	0	0				M			
	45 65	c	25Y 73 00	000C00	00 C			Y	0	0	0				M			
	65 90	c	25Y 72 00	000C00	00 C			Y	0	0	0				M			