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TUNBRIDGE WELLS BOROUGH
LOCAL PLAN
LAND WEST OF LANGTON GREEN
AGRICULTURAL LAND CLASSIFICATION
ALC MAP & REPORT
OCTOBER 1993

TUNBRIDGE WELLS BOROUGH LOCAL PLAN
PROPOSED PARK AND RIDE SITES LAND WEST OF LANGTON GREEN
AGRICULTURAL LAND CLASSIFICATION REPORT

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 west of Langton Green near Tunbridge Wells 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 1 hectare 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 ALC information is shown on the attached ALC map 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

1 6 Appendix 1 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 All of the site (1 3 ha) has been classified as Grade 2 good quality land with soil droughtiness and workability as the key limitations Soils are typically medium or heavy clay loams which become heavier with depth Where the soils are stoneless and well drained Wetness Class I they are classified as Grade 2 due to a workability limitation which arises through a combination of topsoil texture and the local climatic regime Where the soils become very stony in the lower subsoil there is a slight droughtiness limitation due to the stone restricting the amount of available water available for extraction by crops

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 droughtiness limitations At this locality field capacity days are relatively high whilst soil moisture deficits are correspondingly low

Table 2 _ Climatic Interpolations

Grid Reference	TO 541 389
Altitude (m)	135
Accumulated Temperature (days)	1365
Average Annual Rainfall (mm)	827
Field Capacity (days)	172
Moisture Deficit Wheat (mm)	96
Moisture Deficit Potatoes (mm)	85
Overall Climatic Grade	1

3 0 Relief

3 1 The site is flat and lies at an altitude of 135m (A O D)

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 on the site to be of the Curtisden association These are described as well drained coarse loamy soils over sandstone Detailed field examination broadly confirms this though soils are well drained they tend to be clay loam textures as opposed to coarse loamy textures

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 3 Grade 2 _ The entire site has been classified as grade 2 good quality agricultural land with soil workability and droughtiness as the key limitations Soil profiles are typically heavy clay loams throughout occasionally becoming clay at depth The soils are well drained showing no evidence of wetness imperfection and can therefore be placed into Wetness Class I When considering this with the topsoil texture and local climatic regime the soils are downgraded to Grade 2 on a workability limitation This means that there is a slight restriction on the frequency with which these soils can be cultivated effectively with machinery
A soil inspection pit (Pit 1) showed the existence of a stony subsoil below 50 cm consisting of a heavy clay loam with 62% medium grained sandstone The porous nature of the sandstone in conjunction with the soil textures and structures means that there is only a slight droughtiness limitation on these soils There is a slight restriction on the profile available water and the range of crops that can tolerate such conditions

ADAS REFERENCE 2014/197/93
MAFF REFERENCE EL20/00306

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 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

* 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 Classifica tion

* 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 PROFILE DESCRIPTIONS EXPLANATORY NOTE

Soil pit and ger boring information collected during ALC fieldwork is held on a database This h s commo ly used notations and abbre iations s set out below

Boring Header Information

1 GRID REF tion l grid squ re and 8 f gure grid reference

2 USE Land se t the time of surv y The f llowing bbre iations are used

ARA Arable WHT Wheat BAR Ba ley CER Cereals OAT Oats MZE M ize OSR Oilseed rape
BEN Field Beans BRA Brassicae POT Potatoes SBT Sugar Beet FCD Fodder Crops LIN Linseed
FRT Soft and Top Fru t HRT Horticultural Crops PGR Permanent Pasture LEY Ley Grass RGR Rough Grazing
SCR Scrub CFW Co ferous Woodland DCW Decid ous Woodland HTH Heathla d BOG Bog o Marsh
FLW F llow PLO Ploughed SAS Set ide OTH Other

3 GRDNT Grad ent s measured by a hand-held optic l clinometer

4 GLEY/SPL Depth in cm to gleying or lowly permeable layers

5 AP (WHEAT/POTS) Crop- djusted ilable w ter capacity

6 MB (WHEAT/POTS) Moisture Bala ce

7 DRT Best grade ccording to soil dro ghtiness

8 If any of the following factors re considered s gnif ca t an entry of Y will be entered in the relev t 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 limitat on to land qu lity The f llowing bbre iation are used

OC Overall Climate AE Aspect EX Exposure FR Frost Risk GR Grad ent MR M crorelief
FL Flood Risk TX Topsoil Texture DP Soil Depth CH Chemical WE Wetness WK Workability
DR Drought ER So l Erosio Risk WD C mbined Soil Wetness/Droughtin ss ST Topsoil Stonin s

Soil Pits and Auger Borings

1 TEXTURE soil texture classes are denoted by the following abbre iations

S Sand LS Loamy Sand SL Sandy Loam SZL Sa dy Silt Loam CL Clay Loam ZCL Silty Clay Loam
SCL Sandy Clay Loam C Clay SC Sandy Cl y ZC S lty Clay OL Organ c Loam P Pe t SP Sandy Peat
LP Loamy Peat PL Peaty Loam PS Peaty Sa d MZ Marine L ght Silts

For th sand loamy sand sa dy loam and sandy ilt loam la se th predominant ize of sand fraction will be indicated by the use of prefixes

F Fine (more than 66% f the sand less than 0 2mm)
M Medium (less than 66% fine sand and less than 33% coarse sand)
C Coarse (more than 33% f the sa d larger th 0 6mm)

The clay loam and silty clay loam lasses w ll be sub-d ided according to the clay co tent

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

2 MOTTLE COL Mottle colour

3 MOTTLE ABUN Mottle bu dance expressed as percentage of the matrix or surface described

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

4 MOTTLE CONT Mottle contrast

F f int indistinct mottles e ide t only l se inspection D distinct mottle are readily seen
P prominent mottling nsp cuous nd one of the tstanding features of the horizo

5 PED COL Ped face lour

6 STONE LITH On of the followmg is used

HR ll hard rocks and stones MSST soft medium o coarse grained sandstone
SI soft weathered gneous o metamorphic SLST soft oolitic or dolimitic limesto e
FSST soft fine grained sandsto ZR soft a gillaceous or silty rocks CH chalk
GH gra el w th o po o s (h d) sto es GS gra el w th porous (soft) stones

Sto e co te ts (>2cm >6cm a d total) a e g e in perce tag (by olume)

7 STRUCT the d gree of d lopme t size and sh pe f so l peds are described usmg the f llowing otat n

d gree of d l pm t WK we kly d eloped MD moderately d l ped ST tro gly de loped

ped size F fine M medium C coarse VC ery coa se

ped h pe S single grain M mass v GR gra lar AB angular blocky SAB sub-angular blocky PR prismati
PL platy

8 CONSIST Soil con istence is d scribed usmg the followmg notatio

L loose VF ery friable FR friable FM firm VM ery firm EM extremely firm EH extremely h d

9 SUBS STR Subsoil structural cond tion recorded for the purpose of calculating prof le dro ghtiness

G good M moderate P poor

10 POR So l porosity If a so l horizon has less th n 0 5% b pores >0 5 mm a Y will appear in this column

11 IMP If th profile is impen trable Y will ppea in this column at the ppropiate horizon

12 SPL Slowly permeable layer If the so l horizo is slowly permeable a Y will appea in this column

13 CALC If the soil horizon s c lcareous Y will appear in this column

14 Other notatio s

APW ilable w ter c pa ty (in mm) dj ted f wh t
APP a ailable water cap ty (in mm) adjusted f potatoes
MBW moisture b lance whe t
MBP m sture b lance potatoes

SOIL PIT DESCRIPTION

Site Name LANGTON GREEN TUNBRIDGE P t N mbe 1P

Grid Reference TQ54303990 A erage A n l R i f ll 827 mm
Acc mulated Tempe ature 1365 degree days
Field Capacity Level 172 days
Land Use Permanent Grass
Slope and Aspect degrees

HORIZON	TEXTURE	COLOUR	STONES 2	TOT STONE	MOTTLES	STRUCTURE
0 29	HCL	10YR42 00	0	1		
29 50	HCL	10YR53 00	0	10		MDCSAB
50 92	HCL	10YR54 00	0	62		WKCSAB

Wetness Grade 1 Wetness Class I
Gley ng 000 cm
SPL No SPL

Drought Grade 2 APW 104mm MBW 8 mm
APP 99 mm MBP 14 mm

FINAL ALC GRADE 2
MAIN LIMITATION Dro ght ne

SAMPLE NO	GRID REF	ASPECT USE	GRDNT	GLEY	SPL	WETNESS CLASS	WHEAT GRADE	POTS AP	POTS MB	AP	MB	M REL DRT	EROSN FLOOD	FROST EXP	CHEM DIST	ALC LIMIT		COMMENTS
1	TQ54103898	PGR	075		1	2	139	43	118	33	1					WK	2	
1P	TQ54303990	PGR	000		1	1	104	8	99	14	2					DR	2	WET68WC1
2	TQ54353992	PGR	000		1	1	109	13	116	31	2					WK	2	POSS HCL

SAMPLE	DEPTH	TEXTURE	COLOUR	MOTTLES COL	MOTTLES ABUN	MOTTLES CONT	PED COL	PED GLEY	STONES 2	STONES 6	STONES LITH	STONES TOT	STRUCT/ CONSIST	SUBS STR	SUBS POR	SUBS IMP	SUBS SPL	SUBS CALC
1	0 30	hcl	10YR43 00						0	0		0						
	30 45	hcl	10YR53 00						0	0		0		M				
	45-75	hcl	10YR64 00						0	0		0		M				
	75 110	c	10YR63 00	10YR58 00	C			Y	0	0		0		M				
1P	0 29	hcl	10YR42 00						0	0	MSST	1						
	29 50	hcl	10YR53 00				10YR52 00		0	0	MSST	10	MDCSAB	FR M			Y	
	50 92	hcl	10YR54 00				10YR53 00		0	0	MSST	62	WKCSAB	FR M			Y	
2	0 28	hcl	10YR42 00						0	0	MSST	1						
	28 40	hcl	10YR42 00						0	0	MSST	2		M				
	40 70	hcl	10YR53 00						0	0	MSST	2		M				
	70 75	hcl	10YR53 00						0	0	MSST	2		M				