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Test Valley Local Plan
Site 476
Roberts Road Barton Stacey
Hampshire
Agricultural Land Classification
ALC Map and Report
November 1993

TEST VALLEY LOCAL PLAN
SITE 476 ROBERTS ROAD, BARTON STACEY, HAMPSHIRE
AGRICULTURAL LAND CLASSIFICATION REPORT

1 Summary

1 1 In August 1993 a detailed Agricultural Land Classification (ALC) survey was made on approximately 4 hectares of land on three separate sites around the village of Barton Stacey south east of Andover in Hampshire

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 the inclusion of this area in the Test Valley Local Plan

1 3 The classification has been made using MAFF s revised guidelines and criteria for grading the quality of agricultural land 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 A total of 11 borings and 2 pits have been described on the 3 sites

1 4 The areas of each ALC grade are given in the table below The northern site is all classified as Subgrade 3a with soil droughtiness as the main limitation The central site is classified as a mixture of Grade 2 and Subgrade 3a again with soil droughtiness as the main limitation The degree of droughtiness relates to the depth of the soil resource over Chalk deposits and the degree of root penetration to extract available moisture reserves Soils on the northern site are variable and may have been disturbed as a result of military work in the past The southern site is not in current agricultural use It is partly Urban (0 1 ha) and Non Agricultural (0 4 ha)

Table 1 Distribution of Grade and Subgrades

Grade	Area (ha)	% of Site	% of Agricultural Area
2	0 7	17 5	20 0
3a	2 8	70 0	80 0
Non Agricultural	0 4	10 0	100% (3 5 ha)
Urban	0 1	2 5	
TOTAL	4 0 ha	100%	

1 5 The distribution of the ALC grades is shown on the attached map The information is presented at a scale of 1 5 000 it is accurate at this level but any enlargement would be misleading This map supersedes any previous ALC information for this site

1 6 At the time of survey the land use on the northern site was recently harvested peas with a grassland use on the central site

1 7 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 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 affect the site

Table 2 Climatic Interpolations

Grid Reference	SU442416	SU443414
Altitude (m)	65	65
Accumulated Temperature (days)	1469	1470
Average Annual Rainfall (mm)	776	776
Field Capacity (days)	167	167
Moisture Deficit Wheat (mm)	105	105
Moisture Deficit Potatoes (mm)	98	97
Overall Climatic Grade	1	1

3 Relief

3 1 The land on the sites lies between 60 and 75m AOD The lowest land is in the north close to the River Dever The land rises gently to the south, the highest land being in the area of non agricultural land At no point does gradient affect the classification

4 1 The British Geological Survey published map Sheet 299 Winchester shows the site to be underlain by Pleistocene Valley Gravel and Sand in the northern section of the site and Cretaceous Upper Chalk in the two southern sections

4 2 The Soil Survey of England and Wales published map Sheet 6 Soils of South East England shows the site to be underlain by soils of the Andover 1 Association It describes them as shallow well drained calcereous silty soils over chalk and deep calcareous and non calcareous fine silty soils in valley bottoms The soils encountered were generally more clayey and less silty than those described

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

Grade 2

5 3 Land of very good quality is mapped in a single block in the central section of the site Profiles in this area generally consist of a very slightly stony (c 3% flints by volume) calcareous medium silty clay loam or medium clay loam topsoil over a slightly stony (c 10% flints by volume) calcareous heavy silty clay loam or heavy clay loam, subsoil passing to either a slightly chalky (c 12% by volume) calcareous medium silty clay loam or a moderately chalky (c 30% by volume) calcareous silty clay or pure chalk These profiles are all impenetrable to the soil auger between 70 and 100 cm such that droughtiness is the key limitation Land of this quality has only minor limitations such that most crops would be expected to achieve high yields There may however be reduced flexibility due to difficulties with the production of the more demanding crops such as winter vegetables and arable root crops

Subgrade 3a

5 4 Land of good quality is mapped for the remainder of the agricultural land at this site Profiles in this category fall into two groups The most common occurs towards the north of the site and consists of a very slightly stony (c 5% flints by volume) calcareous medium or heavy clay loam topsoil over a moderately to very chalky (c 25% to 50% chalk by volume) calcareous medium or heavy clay loam upper subsoil This overlies a narrow band of very slightly stony (c 5% flints by volume) heavy clay loam before passing to soft chalk Roots in the chalk were visible for approximately 9 cm it was considered that the chalk was a rootable medium for 33 cm before becoming impenetrable The land in this area was in the past part of a military training ground and as such may have been disturbed by explosions and/or trench digging

5 5 The second group of soils occurs in the central section of the site and consists of a slightly stony (c 8% flints by volume) calcareous heavy clay loam topsoil over a similar upper subsoil passing to a slightly stony (c 15% flints by volume) clay lower subsoil overlying chalk, which was considered to be a rootable medium for approximately 20 cm This group of soils experiences a moderate droughtiness limitation

5 6 The land shown as Non Agricultural is a public open space towards the south of the site which is fenced off from the agricultural land bordering the site Within this area are some garages and concrete covered ground shown as Urban

ADAS Reference 1512/107/93

MAFF Reference EL6015

Resource Planning Team
Guildford Statutory Group
ADAS Reading

SOURCES OF REFERENCE

* British Geological Survey (1975) Sheet No 299 Winchester 1 50 000 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) Climatological Data for Agricultural Land Classification

* Soil Survey of England and Wales (1983) Sheet No 6 Soils of South East England 1 25 000

* 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 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

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

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

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 III

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 database This has commonly used notation and abbreviations is set out below

Boring Header Information

1 GRID REF ational grid square and 8 figure grid reference

2 USE Land use with 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 Brassica POT Potatoe SBT Sugar Beet FCD Fodder Crop LIN Linseed
FRT Soft and Top Fru HRT Horticultural Crop PGR Permanent Pasture LEY Ley Grass RGR Rough Grazing
SCR Scrub CFW Coniferous Woodland DCW Decid ous Woodland HTH Heathland BOG Bog or Marsh
FLW Fallow PLO Ploughed SAS Set aside OTH Other

3 GRDNT Gradient measured by hand held optical linometer

4 GLEY/SPL 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 droughtin

8 If any of the following factors are considered significant an entry of Y will be entered in the relevant column

MREL Microrelief limitat 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 Textu DP Soil Depth CH Chemical WE Wetn WK Workability
DR Drought ER Soil Erosion Risk WD Combined Soil Wetness/Drought 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 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 bundance expressed s percentage of the matrix or surface described

F few <2% **C** common 2 20% **M** many 20-40 **VM** ery many 40%+

4 **MOTTLE CONT** Mottle contrast

F f nt ndistinct mottle e ident only on close nspection **D** distinct mottle are readily seen
P promment mottling is conspicuous and o e of th outstanding fe tures of the horizon

5 **PED COL** Ped f ce colour

6 **STONE LITH** One of th followng is sed

HR ll hard rocks and sto s **MSST** soft medium or coarse grained sandston
SI soft weathered igneous or metamorphic **SLST** soft oolitic or dolimitic limestone
FSST soft fin grained sa dston **ZR** soft gillaceous or s lty rocks **CH** ch lk
GH gra l with on poro (hard) sto es **GS** gr l w th porous (soft) stones

Ston contents (>2cm >6cm d total) are g en n percentag s (by volume)

7 **STRUCT** the degree of de el pment size and sh pe of soil peds are described using the followng tation

degree f de elopment **WK** weakly de loped **MD** moderately de eloped **ST** stro gly de l ped

ped size **F** fine **M** medium **C** oarse **VC** ery coarse

ped shape **S** single grain **M** ma s v **GR** gran lar **AB** angular blocky **SAB** sub-ang lar blocky **PR** prismatic **PL** platy

8 **CONSIST** So l consistence is described using the followng otatio

L loose **VF** ery fri bl **FR** friable **FM** firm **VM** ery firm **EM** extremely firm **EH** e trem ly hard

9 **SUBS STR** Subsoil structural cond t on recorded for the purpose of calculating profile droughtin

G good **M** moderate **P** poor

10 **POR** Soil porosity If soil horizo has less than 0 5% biopore >0 5 mm **Y** will ppear n this column

11 **IMP** If the profile is mpenetrable **Y** will ppear n this column t th ppropiate horizon

12 **SPL** Slowly permeable layer If the soil horizo s slowly permeable a **Y** will ppear n this column

13 **CALC** If the soil horizo is calcareous a **Y** will appear n this column

14 Other otations

APW a a lable water capacity (n mm) adjusted for wheat
APP labl w ter p ity (n mm) dj ted for potatoes
MBW moisture bala ce wheat
MBP mo sture balan potatoe

SOIL PIT DESCRIPTION

Site Name S476 ROBERTS RD TVLP P t N mbe 1P

G id R fe ence SU44304137 A e ge A n l R fall 782 mm
A c mul ted Tempe at e 1458 d g ee days
F ld C p city Le el 168 d y
La d Use Permane t G s
Slope a d A pect 01 deg ee N

HORIZON		TEXTURE	COLOUR	STONES 2	TOT STONE	MOTTLES	STRUCTURE
0	16	HCL	10YR42 00	3	8		
16	44	HCL	10YR43 00	0	5		WDCSAB
44	75	C	75YR53 00	0	15		MDCSAB
75	95	CH	00CH00 00	0	0		

W tnes G ade 2 Wet ess Clas I
Gleying cm
SPL No SPL

Drought Grade 3A APW 109mm MBW 4 mm
APP 105mm MBP 7 mm

FINAL ALC GRADE 3A
MAIN LIMITATION D o ghti ess

SOIL PIT DESCRIPTION

Site Name S476 ROBERTS RD TVLP Pit N mbe 2P

G id Reference SU44204166 A erage A l R i fall 782 mm
Acc m lated Tempe t e 1458 deg ee days
Fi ld C pa ity Le el 168 day
La d Use Ba e Soil
Slope a d Aspect 02 deg ees N

HORIZON		TEXTURE	COLOUR	STONES 2	TOT STONE	MOTTLES	STRUCTURE
0	32	HCL	10YR43 00	1	5		
32	43	CH	00CH00 00	0	0		
43	63	HCL	10YR44 00	0	5		WKCSAB
63	72	CH	00CH00 00	0	0		
72	95	CH	00CH00 00	0	0		
95	120	CH	00CH00 00	0	0		

Wetness Gr de 2 Wet ss Clas I
Gleying cm
SPL No SPL

Dro ght Grade 3A APW 095mm MBW 10 mm
APP 103mm MBP 6 mm

FINAL ALC GRADE 3A
MAIN LIMITATION D oughti ess

SAMPLE NO	GRID REF	USE	ASPECT	GRDNT	GLEY	SPL	WETNESS CLASS	WHEAT GRADE	WHEAT AP	WHEAT MB	POTS AP	POTS MB	M REL DRT	EROSN FLOOD	FROST EXP	CHEM DIST	ALC LIMIT		COMMENTS
1	SU44264123	PGR	N	02			1	1	085	20	089	9	3A				DR	3A	IMPST 55 1P
1P	SU44304137	PGR	N	01			1	2	109	4	105	7	3A				DR	3A	PIT 95 ROOT 95
2	SU44304145	PGR	N	02			1	1	120	15	112	14	2				DR	2	IMPST 100 1P
2P	SU44204166	PLO	N	02			1	2	095	10	103	6	3A				DR	3A	PIT 75 AUG 95
3	SU44144173	PEA	N	03			1	2	096	9	091	6	3A				DR	3A	IMPCH 60 2P
4	SU44204160	PEA	NE	01			1	2	097	8	096	1	3A				DR	3A	IMPCH 50 2P
5	SU44154168	PEA	N	01			1	2	093	12	100	3	3A				DR	3A	IMPCH 62 2P
6	SU44254135	PGR	N	02			1	1	103	2	116	18	3A				DR	3A	IMPEN 70 1P
7	SU44274142	PGR	N	01			1	1	119	14	118	20	2				DR	2	IMPCH 70 1P
8	SU44324134	PGR	N	01			1	1	077	28	077	20	3B				DR	3B	IMPST 45 1P
9	SU44334142	PGR	N	01			1	2	079	26	079	18	3B				DR	3B	IMPST 47 1P
10	SU44214166	PLO	E	02			1	1	077	28	079	19	3B				DR	3B	IMPCH 35 2P
11	SU44134162	PLO	N	01			1	2	123	18	094	3	2				DR	2	SOFTCH AUG 120

SAMPLE	DEPTH	TEXTURE	COLOUR	MOTTLES COL	MOTTLES ABUN	MOTTLES CONT	PED COL	GLEY	STONES 2	STONES 6	STONES LITH	STONES TOT	STRUCT/ CONSIST	SUBS STR	SUBS POR	SUBS IMP	SUBS SPL	CALC	
1	0 25	mzcl	10YR42 00						0	0	HR	5						Y	
	25 55	c	10YR54 00						0	0	HR	10		M				Y	
1P	0 16	hcl	10YR42 00						3	0	HR	8						Y	
	16 44	hcl	10YR43 00						0	0	HR	5	WDCSAB FR	M				Y	
	44 75	c	75YR53 00						0	0	HR	15	MDCSAB FM	M				Y	
	75 95	ch	00CH00 00						0	0		0		P				Y	
2	0 25	mzcl	10YR42 00						0	0	HR	2						Y	
	25-80	c	10YR44 00						0	0	HR	10		M				Y	
	80 95	c	75YR46 00						0	0	HR	5		M				Y	
	95-100	zc	10YR46 64						0	0	CH	30		M				Y	
2P	0 32	hcl	10YR43 00						1	0	HR	5						Y	
	32 43	ch	00CH00 00						0	0		0		P				Y	
	43 63	hcl	10YR44 00						0	0	HR	5	WKCSAB FR	M				Y	
	63 72	ch	00CH00 00						0	0		0		P				Y	ROOT VIS TO 72
	72 95	ch	00CH00 00						0	0		0		P				Y	IMP TO AUG 95
	95 120	ch	00CH00 00						0	0		0		P		Y		Y	? TO ROOT
3	0 25	hcl	10YR44 00						0	0	HR	5						Y	
	25 35	hcl	10YR54 00						0	0	CH	45		M				Y	
	35-85	ch	10YR81 00						0	0		0		M				Y	
4	0 25	hcl	10YR33 00						0	0	HR	4						Y	
	25 40	hcl	75YR44 00						0	0	CH	20		M				Y	
	40 80	ch	10YR82 00						0	0		0		M				Y	
5	0 25	hcl	10YR33 00						0	0	HR	4						Y	
	25 45	hcl	75YR44 00						0	0	HR	2		M				Y	
	45 62	hcl	75YR44 00						0	0	CH	20		M				Y	
6	0 25	mcl	10YR43 00						0	0	HR	3						Y	
	25 43	hcl	75YR43 00						0	0	CH	4		M				Y	
	43 58	h cl	75YR44 00						0	0	CH	10		M				Y	
	58 70	mzcl	10YR54 00						0	0	CH	12		M				Y	
7	0 29	mcl	10YR33 00						0	0	CH	3						Y	
	29 70	h cl	10YR54 00						0	0	CH	10		M				Y	
	70 90	ch	00ZZ00 00						0	0		0		M				Y	
8	0 30	mzcl	10YR43 00						0	0	CH	5						Y	
	30 45	h cl	10YR63 81						0	0	CH	40		M				Y	
9	0 30	hcl	10YR43 00						0	0	HR	3						Y	
	30 45	hcl	10YR44 00						0	0	CH	5		M				Y	
	45 47	hcl	10YR44 00						0	0	CH	10		M				Y	

SAMPLE	DEPTH	TEXTURE	COLOUR	MOTTLES COL	MOTTLES ABUN	MOTTLES CONT	PED COL	GLEY	STONES 2	STONES 6	STONES LITH	STONES TOT	STRUCT/ CONSIST	SUBS STR	SUBS POR	SUBS IMP	SUBS SPL	SUBS CALC
10	0 30	mcl	10YR54 00						0	0	HR	5						Y
	30 35	mcl	10YR53 00						0	0	CH	25		M				Y
	35 55	ch	10YR82 00						0	0		0		M				Y
11	0 30	hcl	10YR43 00						0	0	HR	5						Y
	30 37	hzcl	10YR44 00						0	0	CH	50		M				Y
	37 120	ch	00CH00 00						0	0		0		P				Y