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New Forest District Local Plan
Objector Site 31
Land at Testwood House Farm
Testwood, Totton, Hampshire

Agricultural Land Classification
ALC map and report
February 1997

Ministry of
Agriculture
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Resource Planning Team
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ADAS Reading

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AGRICULTURAL LAND CLASSIFICATION REPORT

NEW FOREST DISTRICT LOCAL PLAN, OBJECTOR SITE 31
LAND AT TESTWOOD HOUSE FARM, TESTWOOD, TOTTON, HAMPSHIRE

INTRODUCTION

1 This report presents the findings of a detailed Agricultural Land Classification (ALC) survey of 7 7 hectares of land on the northern edge of Totton, at Testwood in Hampshire 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 New Forest District Local Plan the site is one of a number of objector sites This survey supersedes 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 use on the site was all rough grassland No area of the site was stockproof and the land use was bordering on public open space The areas of Other relate to the location of previous farm buildings and to farm tracks a strip of woodland and areas of scrub encroachment There is also an area in the extreme south-west which was partly under water during the time of survey as well as being invaded by pockets of bramble scrub

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 area and proportions of the ALC grades and subgrades on the surveyed land are summarised in Table 1

Table 1 Area of grades and other land

Grade/Other land	Area (hectares)	% site area
3a Other land	5 1 2 6	66 34
Total site area	7 7	100

7 The fieldwork was conducted at an average density of 1 boring per hectare A total of 5 borings was described

8 Soils across the site show variable evidence of soil wetness as the main limiting factor There are some better profiles which are relatively free-draining, but other areas had shallow water tables (40-60cm) at the time of survey (mid-February) This degree of wetness limits the site to Subgrade 3a and will act to restrict the flexibility of the land (related to the number of days when the soils can be cultivated or grazed by livestock) and the types of crop that are suitable to such conditions

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	SU 354 144
Altitude	m AOD	5
Accumulated Temperature	day°C (Jan June)	1551
Average Annual Rainfall	mm	825
Field Capacity Days	days	172
Moisture Deficit, Wheat	mm	110
Moisture Deficit, Potatoes	mm	105
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 (ATO 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 is flat and low-lying at approximately 5 m Nowhere on the site do gradient microrelief or flooding affect the classification

Geology and soils

15 The most detailed published geological information for the site (BGS 1987) shows the whole area to be underlain by River Terrace Deposits

16 The most detailed published soils information for the site (SSEW 1983 and 1984) shows the area to comprise soils of the Hurst Association, described as coarse and fine loamy permeable soils mainly over gravel variably affected by groundwater During fieldwork, deep medium clay loams were described which became heavier with depth and were variably affected by groundwater and were sometimes stony in the lower subsoil

AGRICULTURAL LAND CLASSIFICATION

17 The details of the classification of the site are shown on the attached ALC map and the area statistics of each grade are given in Table 1 page 1

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

Subgrade 3a

19 All of the site has been placed in this subgrade and is described as good quality agricultural land There is a mixture of soil wetness and soil droughtiness as the main physical limitations to land quality The wettest soils are in the north and west of the site where the groundwater table was clearly observed during fieldwork at shallow depths with clear evidence of pale and grey matrix colours and gleying within the topsoil These soils will at best qualify for Wetness Class III and can therefore be classified as no better than Subgrade 3a The heavier lower subsoils may also be slowly permeable further reinforcing WC III Parts of the site experienced standing water with hollows along the western edge full of water to a depth of several inches This degree of soil wetness will limit the flexibility of the land by restricting the number of days when the soil is in a suitable condition for trafficking grazing or cultivations and restricting the range of crops that can tolerate such conditions

20 The driest soils occur in the east of the site A soil profile was described in a cutting here to help with the examination of these soils They experience a slight soil droughtiness limitation - deep medium clay loams overly clays the latter show no evidence of soil wetness contain approximately 10% stone and are moderate in their structure (moderately developed coarse subangular blocky and friable) Given the variable evidence of groundwater problems elsewhere on the site these better soils have not been mapped separately The whole site is classified as Subgrade 3a, with a range of conditions within this mapping unit

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SOURCES OF REFERENCE

British Geological Survey (1987) *Sheet No 315 Southampton*
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
1	SU35401450	RGR			000		3	3A	091	-19	100	-5	3A				WE	3A	IMPWET40
2	SU35501450	RGR			000	070	3	3A	118	8	116	11	2				WE	3A	SWATER WT40CM
3	SU35601450	RGR					1	1	120	10	116	11	2				DR	2	IMPQDR
4	SU35401440	RGR			050		2	2	109	-1	112	7	3A				WE	2	IMPWET60
6	SU35651440	RGR					1	1	114	4	113	8	3A				DR	2	IN CUTTING

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
1	0-30	mcl	10YR42 00	000C00	00	C		Y	0	0	HR	10						
	30-60	mcl	10YR52 00	000C00	00	M		Y	0	0	HR	20		M				
	60-72	c	10YR52 00	000C00	00	M		Y	0	0	HR	5		P	Y			
2	0-27	mzcl	10YR41 00	10YR46	00	C		Y	0	0	HR	3						
	27-70	mzcl	10YR52 54	10YR56	00	C		Y	0	0	HR	10		M				
	70-95	hcl	10YR62 00	10YR58	00	M		Y	0	0	HR	20		P			Y	
3	0-30	mcl	10YR43 00						0	0	HR	2						
	30-70	mcl	10YR44 00						0	0	HR	2		M				
	70-75	mcl	10YR54 00						0	0	HR	2		M				
	75-90	c	75YR44 00						0	0	HR	5		M				
4	0-30	mcl	10YR32 00						0	0	HR	2						
	30-50	mcl	10YR42 00						0	0	HR	2		M				
	50-80	hzcl	25Y 63 00	000C00	00	M		Y	0	0	HR	20		M				
6	0-28	mcl	10YR42 00						0	0	HR	5						
	28-60	mcl	10YR44 00						0	0	HR	2	MDCSAB	FR	M			
	60-90	c	75YR54 00						0	0	HR	10	MDCSAB	FM	M			