2014/28/91

TUNBRIDGE WELLS LOCAL PLAN

Site 1 Land south of Hawkenbury Road
Tunbridge Wells
Kent

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SITE 1 - LAND SOUTH OF HAWKENBURY ROAD, TUNBRIDGE WELLS

1 INTRODUCTION

1 1 In June 1992 an Agricultural Land Classification (ALC) survey was carried out on 13 6 ha of land to the south-east of Tunbridge Wells Kent ADAS was commissioned by MAFF to determine land quality affected by the proposal to include this site for development in the Tunbridge Wells Local Plan

1 2 The survey work was carried out by members of the Resource Planning Team within the Guildford Statutory Group at a detailed level of approximately 1 boring per hectare A total of 13 auger borings were described and the site graded using 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 agricultural use At the time of survey the site was in permanent pasture

1 3 The distribution of grades is shown on the attached ALC map and the area and extent is given in the table below The map has been drawn at a scale of 1 5000 any enlargement of this would be misleading

Distribution of Grades and Sub-grades

Grade	Area (ha)	% total agricultural land
2	4 25	35 4
3a	1 80	15 0
3b	5 95	49 6
Total agricultural area	12 00	100
Non-agricultural	1 60	
Total Area of site	13 60	

1 4 Grades 2 3a and 3b have been mapped at this locality Soils are derived from deposits of Tunbridge Wells Sand and have slight to moderate wetness limitations depending on depth to gleyed and slowly permeable horizons The three northern most fields have been assigned to sub-grade 3b on the basis of soil disturbance and micro relief limitations resulting from the use of these fields for tipping and landfilling approximately 40 years ago

2 PHYSICAL FACTORS AFFECTING LAND QUALITY

Relief

2 1 The site lies at an altitude of 95-130 cm AOD the lowest lying land being found towards the southern boundary rising moderately northwards Nowhere on the site does altitude or gradient affect agricultural land quality slopes of 4-5 were measured across the middle of the site Microrelief may be limiting to agricultural use across the three northern most fields The land here has been disturbed and cultivations may be seriously restricted such that grade 3b is appropriate

Climate

2 2 Estimates of climatic variables relevant to the assessment of agricultural land quality were obtained for representative locations in the survey area by interpolation from a 5km grid point dataset (Met Office 1989)

Climatic Interpolations

Grid References	TQ 600 380	TQ 600 384
Altitude ((m AOD)	100	130
Accumulated Temperature (days Jan June)	1404	1370
Average Annual Rainfall (mm)	806	812
Field Capacity Days	169	169
Moisture Deficit Wheat (mm)	100	96
Moisture Deficit Potatoes (mm)	91	86

2 3 Climatic factors alone place no limitation on agricultural land quality at this locality but do affect the interaction between soil and climatic factors to influence soil wetness and droughtiness limitations

Geology and Soils

2 4 British Geological Survey (1971) Sheet 303 Tunbridge Wells shows the site to be largely underlain by Cretaceous deposits of Tunbridge Wells Sand A small outcrop of Grinstead Clay has been mapped towards the eastern boundary of the site

2 5 Soil Survey of England and Wales (1983) Sheet 6 Soils of South-East England shows the site to comprise two mapping units Most of the site is shown as the Curtisden Association These soils are described as stagnogleyic brown earths (SSEW 1980) They are silt loams or silty clay loams over Tunbridge Wells Sand A small area of the Poundgate Association has been mapped along the southern boundary

2 4 Detailed field examination of the soils indicates the presence of types broadly similar to those described by the Soil Survey of England and Wales

3 AGRICULTURAL LAND CLASSIFICATION

3 1 The ALC grading of the site is determined by a number of factors Most of the land mapped as sub-grade 3b shows signs of disturbance and has been graded accordingly Undisturbed land has been assigned to grades 2 and 3a on the basis of the interaction between soil and climatic factors giving rise to soil wetness and/or droughtiness limitations

3 2 Grade 2

Land of this quality occurs across the southern part of the site Profiles typically comprise non-calcareous very slightly stony (ie 1-5% total volume medium sandstone fragments) silt loam or fine sandy silt loam topsoils These overlie similar textures or medium clay loam/silty clay loam in the subsoil which tends to become heavier with depth Stone contents tend to increase with depth ranging from stone free profiles to those containing 10% sandstone fragments by volume Occasional profiles are impenetrable (to soil auger) over sandstone below about 95 cm Land is principally subject to a slight soil wetness limitation Profiles have slightly imperfect drainage characteristics as evidenced by mottling and gleying from variables depths below the topsoil However the subsoil is not slowly permeable and wetness classes I or II are appropriate depending on depth to gleyed horizons Less significantly land is limited by slight soil droughtiness arising from slight subsoil stoniness and occasionally reduced soil depth over sandstone The slight reduction in available water within the profile may give rise to slight drought stress on plants

3 3 Grade 3A

Land of this quality comprises soils similar to those described in section 3 2 above but the limitations to agricultural use are slightly more pronounced than for land graded 2 Across the mid-slopes non-calcareous silt loam topsoils overlie medium silty clay loam in the subsoil Stonefree topsoils pass to slightly stony (ie up to 10% soft sandstone fragments by volume) subsoils which then become impenetrable (to soil auger) over sandstone at about 60 cm The reduced available water for plant growth which this relatively shallow soil depth gives rise to causes a slight risk of soil droughtiness

Towards the southern site boundary where the land is lower lying soil wetness is the main limitation to agricultural land quality Silt loam topsoils which are mottled overlie a very slightly stony (2-5% sandstone fragments by volume) gleyed medium silty clay loam subsoil which is slowly permeable below about 45 cm Given these drainage characteristics wetness class III is appropriate and the land is assigned to subgrade 3a

3 4 Grade 3b

Land of this quality relates to areas of disturbed land associated with tipping and landfilling operations approximately 40 years ago Profiles were found to be very disturbed and contain much brashy rubble such as brick and glass fragments ash charcoal etc There was evidence of the presence of landfill gas and the drainage status of profiles was extremely variable The land surface was very uneven such

that normal agricultural cultivations would prove difficult Given these characteristics grade 3b was considered to be appropriate and was assigned on the basis of extreme soil variability landfill gas induced soil anaerobism and microrelief limitations

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Resource Planning Team
ADAS Reading

SOURCES OF REFERENCE

- BRITISH GEOLOGICAL SURVEY (1971) SHEET 303 Tunbridge Wells

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

- METEOROLOGICAL OFFICE (1989) Climatological datasets for Agricultural Land Classification

- SOIL SURVEY OF ENGLAND AND WALES (1980) Soils of Kent Bulletin 9

- SOIL SURVEY OF ENGLAND AND WALES (1983) Sheet 6 Soils of South-East England

SAMPLE	DEPTH	TEXTURE	COLOUR	MOTTLES COL	ABUN	CONT	PED COL	GLEY	STONES 2	6	LITH	TOT	STRUCT/ CONSIST	SUBS STR	POR	IMP	SPL	CALC	
3	0 15	mszl	10YR52 00						10	0	HR	30							Brick fragments
	15 27	mzcl	10YR53 00						0	0	HR	30		M					Brick fragments
	27 80	mzcl	10YR53 00						0	0		0		M					Void
	80 100	mzcl	10YR63 00						0	0	HR	60		P					B ick ash glass
	100 120	mcl	10YR63 00	75YR56 00	C		25Y 70 00	Y	0	0		10		P					Gr tty & wet
4	0 15	mzcl	10YR43 53						2	0	HR	10							
	15 35	mzcl	10YR53 00	10YR66 00	C		10YR82 00	Y	0	0	MSST	15		M					
	35 55	mzcl	10YR53 63	10YR66 00	F			Y	0	0	MSST	15		M					
	55 60	h cl	10YR53 63	10YR66 00	F			Y	0	0	MSST	15		M					
	60 65	hzcl	10YR42 00	10YR66 00	C		25Y 70 80	Y	0	0	MSST	50		P					Imp 65+ msst
5	0 22	mzcl	10YR53 00	10YR68 00	C		10YR81 00		0	0	MSST	20							
	22 32	mcl	10YR32 00						0	0		0		M					Topso l/ash mi
6	0 17	mszl	10YR53 00						0	0		0							Gritty
	17 85	mcl	75YR32 00						0	0		0		P					Brick ash glass
	85 100	hzcl	10YR63 00	10YR66 00	M		25Y 70 80	Y	0	0		0		P					Imp 100+
7	0 29	omzcl	10YR22 00						0	0		0							
	29 55	mzcl	10YR63 73	10YR68 00	C			Y	0	0		0		M					
	55 80	hzcl	25Y 70 80	10YR68 00	M			Y	0	0		0		M					
	80 120	zc	25Y 70 80	10YR68 00	M		25YR48 00	Y	0	0		0		P			Y		
8	0 22	l	10YR43 53						0	0		0							
	22 50	mzcl	05YR58 00						0	0	MSST	10		M					
	50 60	mz l	75YR68 00	10YR66 00	M		10YR73 00	Y	0	0	MSST	10		M					Imp 60 msst
9	0 10	fszl	10YR42 00						0	0	MSST	2							
	10 25	fs l	10YR64 00	10YR58 00	C		10YR72 00	Y	0	0	MSST	15		P					G tty rm so l!
	25 30	f l	10YR62 00						0	0		0		P					A rob & melly!
10	0 20	f l	10YR42 00						0	0	MSST	10							
	20 30	fszl	10YR52 62	10YR56 00	C			Y	0	0	MSST	10		M					Gr tty
	30 55	mcl	10YR63 00	10YR56 00	C		10YR71 00	Y	0	0	MSST	5		M					So l warm & smelly
	55 75	c	10YR54 00						0	0		0		P			Y		Poss bly clay cap?
11	0 34	fs l	10YR21 00						0	0		0							
	34 120	mcl	75YR46 00						0	0		0		M					
12	0 32	l	10YR52 00						0	0	MSST	5							
	32 40	zl	10YR54 00						0	0	MSST	5		M					
	40 55	fszl	10YR74 00	75YR58 00	F		10YR72 00		0	0	MSST	10		M					
	55 120	zl	10YR74 00	75YR58 00	C		10YR72 00	Y	0	0	MSST	5		M					
13	0 32	fszl	10YR52 00		F		10YR61 00		0	0	MSST	3							
	32 50	mcl	10YR63 00	10YR58 00	C		10YR82 00	Y	0	0		0		M					Common M concs
	50 75	mcl	10YR63 00	10YR58 00	C		10YR82 00	Y	0	0		0		M					Ma y M co cs
	75 95	mzcl	10YR63 00	10YR56 00	M			Y	0	0		0		M					Imp 95+ msst

				MOTTLES			PED			STONES			STRUCT/	SUBS			
SAMPLE	DEPTH	TEXTURE	COLOUR	COL	ABUN	CONT	COL	GLEY	2	6	LITH	TOT	CONSIST	STR	POR	IMP	SPL	CALC
14	0 30	1	10YR62 00	75YR56 00	C		10YR61 00	Y	0	0		0						
	30 45	mzcl	05 Y71 00	75YR56 46	C			Y	0	0	MSST	2		M				
	45 70	m 1	05 Y71 00	75YR56 46	M			Y	0	0	MSST	2		M			Y	
	70 92	zl	05 Y71 00	75YR56 46	M			Y	0	0	MSST	5		M				
15	0 30	1	10YR62 00	75YR56 00	C		10YR61 00	Y	0	0	MSST	1						
	30 70	zl	25 Y80 00	75YR56 00	M			Y	0	0		0		M				
	70 120	zl	25 Y80 00	75YR56 00	M			Y	0	0	MSST	5		M				

SAMPLE NO	GRID REF	ASPECT USE		GRDNT	GLEY	SPL	WETNESS CLASS	WHEAT GRADE	WHEAT AP	WHEAT MB	POTS AP	POTS MB	M REL DRT	FLOOD	EROSN EXP	FROST DIST	CHEM LIMIT	ALC	COMMENTS
3	TQ59803830	PAS	S	04			1	1	000	0	000	0					DS	3B	Disturbed
4	TQ59903830	PAS	S	02	015		2	2	089	11	097	6	3A				DR	3A	
5	TQ60003830	PAS	S	04			1	1	000	0	000	0					DS	3B	D st rbed
6	TQ60103828	PAS	S	04			1	1	000	0	000	0					DS	3B	D st rbed
7	TQ59803820	PAS	S	02	029		2	2	175	75	151	60	1				WE	3B	Very et
8	TQ59903820	PAS	SW	06	050		1	1	103	3	110	19	3A				DR	3A	
9	TQ60003820	PAS	S	04			1	1	000	0	000	0					DS	3B	Dist rbed
10	TQ60083820	PAS	S	04			1	1	000	0	000	0					DS	3B	D st rbed
11	TQ59903810	PAS	S	04			1	1	170	70	132	41	1					1	
12	TQ60003810	PAS	S	05	055		1	1	200	100	148	57	1					1	
13	TQ60103810	PAS	S	06	032		2	2	122	22	129	38	2				WD	2	
14	TQ60003800	PAS	S		0	045	3	3A	152	52	136	45	1				WE	3A	
15	TQ60103800	PAS	S	04	0		2	2	207	107	156	65	1				WE	2	