AGRICULTURAL LAND CLASSIFICATION
SWALE DISTRICT LOCAL PLAN

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1.0 INTRODUCTION

1.1 An Agricultural Land Classification (ALC) survey was carried out on behalf of MAFF on 24 sites around Sittingbourne which are included within the Swale District Local Plan. In addition to these sites a further area of land between sites 1-8 and a proposed new road has also been included within the survey.

1.2 The sites were surveyed at a minimum soil sampling density of 1 observation per hectare and graded in accordance with MAFF's revised guidelines and criteria for grading the quality of agricultural land. A number of soil inspection pits were dug to provide more detailed information as necessary.

1.3 Most of the land was previously surveyed by MAFF in 1988 in connection with the Sittingbourne and Milton Regis Local Plan. The 1988 survey predated the revision of the ALC system (MAFF, 1988). Consequently in order to provide the most up to date information on land quality the recent survey work (October/November 1992) was undertaken.

1.4 The results of the survey are presented at a scale of 1:10,000; any enlargement from this could be misleading.

1.5 The report is structured so that all the land included within sites 1-8 and the additional land up to the proposed new road is included within the main report. Each of the remaining sites is then dealt with separately. General information on the soils and geology has been included in the main report, with only brief reference made in the individual reports.

1.6 The sites are all located around the periphery of Sittingbourne with the exception of sites A1, 22 and 23. Site A1 is located to the north of Kemsley, site 22 on the eastern boundary of Bapchild and site 23 on the western edge of Teynham.

2.0 GEOLOGY AND SOILS

2.1 The generalised geology and soils of the area has been obtained from the 1:63,360 scale Drift Geology Map (Geol Surv 1951) and the 1:250,000 scale soil map (Soil Surv, 1983).

2.2 The area is predominantly shown as Head Brickearth with areas of Upper Chalk on the southern side of Sittingbourne and Thanet Beds to the east. Outcrops of London Clay are shown, to the north and west of Sittingbourne, with small localised areas of Head Gravels and Woolwich Beds. Much of the area has been worked for Brickearth over the years, which in some cases has brought the underlying strata within the depth of the soil profiles.

2.3 The 1:250,000 soil map shows the majority of the area to comprise of the Hamble 1 Association with some Coombe 1 Association on the southern side of Sittingbourne. The soils of the Hamble 1

Association are described as being developed in aeolian silty drift and related Head over Chalk and Tertiary strata, chiefly Thanet Beds and comprise predominantly well drained typical argillic brown earths with some less well drained gleyic argillic brown earths. The Coombe 1 Association comprises calcareous fine silty soils over chalk. The soil variation tends to depend on the depth of drift over the chalk.

3.0 SITES 1-8 AND ASSOCIATED LAND TO THE WEST

3.1 These sites and the associated land are located on the north western side of Sittingbourne in two blocks of land separated by Quentin Lane. The western boundary of the area is the line of the proposed new bypass road whilst the railway line forms the southern and eastern boundaries. Bramblefield Lane forms the northern boundary.

3.2 All the land contained within sites 1-7 together with some land to the west of site 7 has been worked for Brickearth in the past. Site 8 and the land to the north and west up to the proposed new bypass road has not been affected by Brickearth extraction.

3.3 The land is predominantly under arable cropping, mainly winter cereals, with sites 2 and 6 being vacant and under rough grass which is becoming invaded with brambles. The northern part of site 3 is under scrub woodland whilst the southern part is in rough grass. This site has not been surveyed due to uncertainty of ownership. Site 5 is in urban use, being used by an earthmoving firm for storage and garaging purposes. To the north of Quentin Road and to the west of site 1 is an area of orchard on undisturbed brickearth.

3.4 A total of 135 observations were made over the whole of this area using a spade and dutch auger to a depth of 1.2 m unless prevented by impenetrable material. In addition two soil pits were dug to assess subsoil conditions to help classify the land grading.

4.0 PHYSICAL FACTORS AFFECTING LAND QUALITY

Climate

4.1 Climatic information for the site has been interpolated from the 5 km grid dataset produced by the Meteorological Office (Met Office 1989). The average rainfall for the area is approximately 600 mm and the site is likely to be at field capacity for a period of 118 days.

4.2 The accumulated temperature for the site is 1479 degrees Celsius and the soil moisture deficits that are likely to develop for wheat and potatoes are 122 mm and 119 mm respectively. The site is not considered to be particularly frost prone and consequently climatic factors place no limitation on the agricultural land quality of the site.

Relief

4.3 The altitude of the whole area ranges from 30m in the south west corner to approximately 10 m alongside the railway line at the north eastern corner of the site.

4.4 The area occupied by sites 1-7 is relatively level with minor undulations as a result of the brickearth working and subsequent restoration. The land to the north and west of these sites falls towards the south east, and slopes are generally in the range of 3 to 5°. To the west of Site 7 however, where the area of worked brickearth merges into the undisturbed land, slopes of 9° were measured.

4.5 Relief on the site therefore is only limiting to the west of site 7.

Soils

4.6 The soils on sites 1, 4, 6, 7 and also land to the north west of site 7 have all undergone disturbance as a result of the brickearth extraction. On site 4 and the southern part of site 7, the restored soils overlie a very stony subsoil. These soils generally have a silt loam or fine sandy silt loam topsoil over a slightly stony clay loam subsoil which becomes a very stony clay or heavy clay loam. The depth to the very stony material varies across this area from 40-50 cm on site 7 to immediately below the topsoil on parts of site 4. In addition the topsoils at the southern end of site 4 are generally moderately stony.

4.7 On the remainder of site 7 and the worked land to the north west, the soils have a silt loam or fine sandy silt loam topsoil over a pale brown mottled silty loam upper subsoil. The subsoil generally becomes a silty clay loam texture with increasing depth, which also exhibits ochreous mottling. Subsoil structure was found to be very coarse subangular blocky with localised platy areas, becoming massive with depth.

4.8 On the worked land of site 1, the soils have a silt loam topsoil over a similar textured upper subsoil which in turn becomes a medium silty clay loam with depth. At the northern end of this site the subsoils showed distinct ochreous mottling whilst further south the soils have either few very faint mottles or more commonly none.

4.9 At the northern end of the whole area, the soils are influenced by the London Clay which outcrops in this area. These soils have a heavy clay loam topsoil over a strongly mottled, stoneless, clay subsoil. Also included within this area are soils with a heavy clay loam texture throughout which are less mottled, indicating slightly better drainage conditions and on the lower slopes these soils tend to have a sandy silt loam or medium clay loam topsoil.

4.10 To the south of this area and lower down the slope is a narrow band of sandy soils. These soils have a medium sandy loam topsoil over a sandy loam upper subsoil which becomes loamy sand and sand with depth. At the southern end of the area along the line of the proposed bypass road other sandy soils have been mapped which are developed in the Woolwich Beds. These soils have a medium sandy loam topsoil and upper subsoil which passes into an olive brown loamy sand with bands of sandy clay.

4.11 Over the majority of the remainder of the site are soils developed in the undisturbed brickearth. These soils have a silt loam topsoil

over a brown, medium silty clay loam subsoil. The soils are stoneless throughout and free draining.

5.0 AGRICULTURAL LAND CLASSIFICATION

5.1 The site has been classified using the guidelines contained in the Agricultural Land Classification of England and Wales (MAFF 1988). A breakdown of the grades found is given below:

Grade	Area (ha)	% Agricultural Area
1	51.23	39
2	36.50	27
3a	30.31	23
3b	14.67	11
non agricultural	0.40	
not surveyed	1.10	
urban	2.94	
Total	137.15	

Grade 1

5.2 The soils developed on the undisturbed brickearth have been classified as Grade 1. These deep silty soils have adequate soil moisture reserves to prevent crops suffering from drought even in this low rainfall area. In addition the freely drained soils of site 1, which although they have been worked for brickearth have also been included within Grade 1. These restored soils still retain an adequate depth of silty subsoil to provide sufficient reserves of soil water to the crops to prevent drought stress. All these soils have been assessed as Wetness Class I and hence are easily worked at most periods of the year. The only minor limitation associated with these soils is a tendency for the topsoils to slake due to the high silt contents, but this is not sufficient to cause any downgrading of these highly versatile soils.

Grade 2

5.3 Five areas of Grade 2 have been mapped. At the northern end of the area of the lower slopes are soils with a sandy silt loam or medium clay loam topsoil over a clay loam subsoil. These soils have been assessed as Wetness Class II and as such will have a slight workability restriction. Furthermore in this low rainfall area they will also suffer slight droughtiness restrictions.

5.4 At the south western edge of the area along the line of the proposed bypass road, a narrow band of Grade 2 has been mapped where soils developed on the Woolwich Beds have been identified. These soils

have sandy subsoils which will result lower available water capacities than on the undisturbed brickearths nearby. Moisture balance calculations indicate that these soils will have a slight droughtiness restriction limiting them to a Grade 2 potential.

5.5 The remaining Grade 2 land has been identified on the worked brickearth of sites 1, 2 and 7. These soils have pale brown mottled subsoils indicating periodic water logging. Examination of the subsoil indicates that they are not slowly permeable, but are subject to fluctuations in the groundwater table and as such due to the heavy textured subsoil are assessed as Wetness Class II. With a silt loam topsoil these areas are therefore classified as Grade 2.

Grade 3a

5.6 Four areas of Grade 3a have been mapped with the largest area occurring at the southern end of the area in sites 4 and 7. This area has soils which have been worked for brickearth and restored over a gravelly substrate. The major limitation associated with this area is drought. These soils have a silt loam or fine sandy silt loam topsoil over a clay loam subsoil which becomes very stony below 40-50 cm depth. Moisture balance calculations indicate that such soils under these climatic conditions will be moderately droughty and therefore limited to a grade 3a potential.

5.7 A small area of Grade 3a has been mapped on the western edge of site 1. This is a small depression in which are some heavy textured colluvial soils with a wetness and workability limitation.

5.8 To the north and upslope of the area referred to in para 5.7 a narrow band of sandy soils has been mapped. These soils have a sandy loam topsoil over a sandy loam upper subsoil which becomes a loamy sand or sand with depth. These light textured soils will be moderately droughty under the climatic conditions that prevail on this site and hence have been classified as Grade 3a.

5.9 At the northern end of the site adjacent to Bramblefield Lane fine loamy soils have been identified which have been assessed as Wetness Class II. These soils have a heavy clay loam topsoil and exhibit slight ochreous mottling in the subsoil, indicating that they are waterlogged for short periods during the year. This area has therefore been classified as Grade 3a on account of a wetness and workability limitation.

Grade 3b

5.10 Three areas of Grade 3b have been identified, each showing a different limitation. The land at the north has been assigned to this grade as a result of wetness and workability limitations. The soils in this area are developed on the London Clay and have slowly permeable clayey subsoils. These soils have been assessed as Wetness Class III and due to the heavy clay loam topsoils are limited to a Grade 3b potential.

5.11 The narrow band of land to the east of Bobbing has been restricted to Grade 3b on account of the gradient. Slopes of 9° have been mapped

in this area where the area of restored brickearth workings have been graded into the surrounding undisturbed land to the west.

5.12 The remaining area of Grade 3b land has been mapped at the south of the area in Site 4. These soils are shallow stony silt loams over very stony clay loams and have been restricted to this grade as a result of a moderately severe droughtiness limitation. In addition some areas also have moderately stony topsoils which will cause problems to the cropping and cultivations. At the time of the survey, after heavy rain, surface pools of water were seen in the hollows that exist in this area. All these limitations combine to make this land the poorest in the area.

Non agricultural

5.13 A small area of non agricultural land has been mapped on the western edge of site 1. This is a small low lying area that is in thick scrub.

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SITE 9

1.1 Site 9 which extends to 3.96 ha is located on the eastern side of the roundabout where the A249 road crosses the A2 and is situated behind an area of housing on the northern side of the A2 road.

1.2 The northern side of the site is steeply sloping and is under woodland. The remainder of the site supports rough grass and weeds and has had soil, concrete and other waste dumped on it.

1.3 According to the owner, the site is an old gravel pit and is not in any form of agricultural use, consequently the area is mapped as Non agricultural.

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SITE 10

1.0 INTRODUCTION

1.1 The site is located on the south eastern side of the roundabout where the A249 road crosses the A2 and bounded to the west by the A249 road and to the north by an area of housing that lines the A2. The eastern boundary is a public footpath whilst to the south is an electricity substation.

1.2 A total of 5 auger borings were made over the site which extends to approximately 2.73 ha.

1.3 The site lies at an altitude ranging from 35 m in the south to approximately 28 m in the north and slopes toward the north west with slopes in the order of 4°.

1.4 The land is under permanent pasture with some fruit trees, which is currently grazed by geese and occasionally sheep. In addition the land is used for driving old cars around. It also appears that the lower lying land at the north of the site has been worked for mineral (gravel or brickearth) in the past.

2.0 CLIMATE

2.1 The climatic parameters for the site have been interpolated from the 5 km grid datasets produced by the Meteorological Office. The average annual rainfall is 630 mm and the site is likely to be at field capacity for 126 days. The accumulated temperature is 1463 degrees Celsius and moisture deficits for wheat and potatoes are 177 mm and 113 mm respectively.

3.0 SOILS

3.1 The soils on the site have a dark brown silt loam topsoil with a few small flints, over a strong brown silty clay loam subsoil. On the lower lying land at the north of the site a stony substrate was encountered at 70-80 cm depth. All the soils are free draining.

4.0 AGRICULTURAL LAND CLASSIFICATION

4.1 The whole site has been classified as Grade 1. Moisture balance figures have been calculated on both the deep soils at the south of the site was well as the shallower variants at the north and in both cases the soils are not limited by droughtiness. The gradient on the site is not sufficient to result in any downgrading.

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SITE 11

1.0 INTRODUCTION

1.1 The 2.83 ha site is located immediately to the east of site 10 on the south western boundary of Sittingbourne. It borders on a housing development on its northern boundary and to the east, across a minor road is another housing development. To the south is open agricultural land.

1.2 At the present time the majority of the site is extremely overgrown with only a small area around the old buildings being used as an allotment for growing vegetables. The vegetation on the site comprises brambles, hawthorn scrub, wild roses and cherry saplings, which over many parts of the site is impenetrable, together with rough grass.

1.3 Four observations were made over the site but due to the nature of the vegetation, the location of these observations was uncertain and it is also not clear whether they are representative.

2.0 SOILS

2.1 Two soil types were found on the site, a deep soil profile developed in brickearth and a moderately shallow soil over impenetrable flints. The former soil is a free draining silt loam to 1.2 m. The second soil type has a slightly stony silt loam topsoil over a stony silty clay loam subsoil, which becomes impenetrable due to flints at approximately 40 cm.

3.0 AGRICULTURAL LAND CLASSIFICATION

3.1 Due to the uncertainties described above the site has been mapped as unsurveyed, although it is evident that the site will contain soils of Grades 1 and 3a quality.

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SITE 12

1.0 **INTRODUCTION**

1.1 The site is located on the south of Sittingbourne and is surrounded to the north and west by housing and to the east by a school and associated playing fields. To the south is an area of open farmland. The land is generally level.

1.2 At the time of the survey the land had been sown to winter cereals.

1.3 A total of 8 observations were made over the 6.89 ha site.

2.0 **CLIMATE**

2.1 The climatic parameters for the site have been interpolated from the 5 km grid datasets produced by the Meteorological Office. The average annual rainfall is 630 mm and the site is likely to be at field capacity for 126 days. The accumulated temperature is 1463 degrees Celsius and moisture deficits for wheat and potatoes are 117 mm and 113 mm respectively.

3.0 **SOILS**

3.1 The soils on the site have a dark brown silt loam topsoil with a few medium flints over a strong brown medium silty clay loam upper subsoil. Below approximately 60 cm depth the subsoil becomes a heavy silty clay loam. Subsoils were generally stoneless and the soils have been assessed as Wetness Class I.

4.0 **AGRICULTURAL LAND CLASSIFICATION**

4.1 The whole site has been classified as Grade 1. These soils have a high available water capacity and moisture balance figures calculated for this site indicate that they are not limited by drought.

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SITE 13

1.0 INTRODUCTION

1.1 Site 13 is an old overgrown cherry orchard, which is no longer managed and would appear to have been in a derelict state for a number of hears. The site comprises areas of dense cherry saplings together with a few older mature trees, together with areas of rough grassland.

1.2 The site is located to the south west of Sittingbourne and is bounded to the east and south by a narrow road across which is a housing development. To the north and west are school playing fields, whilst to the south west is an agricultural field.

1.3 Six soil observations were made on this 3.94 ha site.

2.0 CLIMATE

2.1 The climatic parameters for the site have been interpolated from the 5 km grid datasets produced by the Meteorological Office. The average annual rainfall is 630 mm and the site is likely to be at field capacity for 126 days. The accumulated temperature is 1463 degrees Celsius and moisture deficits for wheat and potatoes are 117 mm and 113 mm respectively.

3.0 SOILS

3.1 The soils on the site have a very dark brown medium silty clay loam topsoil with a few small and medium flints over a brown heavy silty clay loam subsoil which is slightly stony. Below 50-90 cm hard chalk with occasional flints is encountered which is impenetrable to the auger. In some profiles a narrow band of dark brown clay was encountered immediately above the chalk.

4.0 AGRICULTURAL LAND CLASSIFICATION

4.1 The whole site has been classified as Grade 2. The major limitation associated with these soils is droughtiness due to the fine silty textures and underlying chalk strata. Moisture balance figures have been calculated and under the climatic regime described above, the soils are found to be slightly droughty.

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SITE 14

1.0 INTRODUCTION

1.1 Site 14 is located on the southern boundary of Sittingbourne and is surrounded on two sides by housing development. To the south and west the land is in agricultural use. The site is currently under orchard, which is well maintained.

1.2 A total of 10 observations were made on this 10.03 ha site using a spade and dutch auger to a depth of 1.2 m. In addition a soil pit was dug to assess the subsoil conditions.

2.0 PHYSICAL FACTORS AFFECTING LAND QUALITY

Climate

2.1 The climatic parameters for the site have been interpolated from the 5 km grid datasets produced by the Meteorological Office. The average annual rainfall for the site is 653 mm and the site is likely to be at field capacity for 130 days. The accumulated temperature for the site is 1458 degrees Celsius and moisture deficits for wheat and potatoes are 116 mm and 111 mm respectively. Climate itself is therefore not a limiting factor in terms of land quality.

Relief

2.2 The altitude of the site ranges from 40 m AOD in the south and west falling to approximately 34 m in the north. The land is gently sloping and has a north easterly aspect.

Soils

2.3 The soils are developed in Brickearth and are consequently relatively uniform across the site. They have a dark brown stoneless, silt loam topsoil over a strong brown stoneless silt loam upper topsoil. Below approximately 45-60 cm the soil becomes a silty clay loam. Subsoil structure is moderately well developed coarse subangular blocky and the soils are free draining.

3.0 AGRICULTURAL LAND CLASSIFICATION

3.1 The whole site has been classified as Grade 1 on account of the deep free draining silty soils. These soils have a high available water capacity and hence will not suffer from drought even in this low rainfall area.

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SITE 15

1.0 INTRODUCTION

1.1 The site is located on the southern side of Sittingbourne and is bounded to the west by a housing development and to the north by a school. To the east the site is bounded by a public footpath across which is site 16 which is under orchard, whilst to the south is a further area of orchard.

1.2 The southern part of the site comprises an old cherry orchard whilst the northern end is a younger apple orchard. The site has undergone some disturbance as some profiles contain brick fragments, which may indicate that it has been worked for brickearth in the past.

1.3 A total of five observations were made over the 3.83 ha site using a spade and dutch auger.

1.4 The site lies at an altitude of approximately 30 m AOD and is relatively flat.

2.0 CLIMATE

2.1 The climatic parameters for the site have been interpolated from the 5 km grid datasets produced by the Meteorological Office. The average annual rainfall is 647 mm and the site is likely to be at field capacity for 129 days. The accumulated temperature is 1463 degrees Celsius and moisture deficits for wheat and potatoes are 116 mm and 112 mm respectively.

3.0 SOILS

3.1 The soils on the site overlie impenetrable chalk at depths ranging from 65-100 cm. The soils have a brown silt loam topsoil which is slightly stony and in some profiles contains fragments of brick. The subsoil is generally a silty clay loam and in one profile has topsoil mixed in to the upper part indicative of previous disturbance. The soils are free draining and have been assessed as Wetness Class I.

4.0 AGRICULTURAL LAND CLASSIFICATION

4.1 The site has been classified as Grade 2 due to a slight droughtiness limitation as a result of the previous disturbance referred to above. Although moisture balance figures for some profiles reveal a Grade 1 potential, the presence of bricks and the disturbed soil horizons suggest that the land is likely to be variable and therefore unsuited to a Grade 1 potential.

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SITE 16

1.0 INTRODUCTION

1.1 The site is located immediately to the east of Site 15 on the southern side of Sittingbourne. The land is bounded to the east by a road, with school playing fields to the north and to the south by orchard. The site itself is an apple orchard and has been worked for brickearth in the past. There is a sharp drop of approximately 1 m along the southern boundary.

1.2 A total of 5 observations were made using a spade and dutch auger and in addition a soil pit was dug to assess subsoil conditions.

1.3 The site extends to approximately 4.57 ha, is relatively flat, and lies at an altitude of approximately 30 m AOD.

2.0 CLIMATE

2.1 The climatic parameters for the site have been interpolated from the 5 km grid datasets produced by the Meteorological Office. The average annual rainfall is 647 mm and the site is likely to be at field capacity for 129 days. The accumulated temperature is 1463 degrees Celsius and moisture deficits for wheat and potatoes are 116 mm and 112 mm respectively.

3.0 SOILS

3.1 The soils on this site all overlie chalk and flints at depth. They have a dark brown silt loam or fine sandy silt loam topsoil, which is slightly stony and in one profile contains some brick fragments. The subsoil is generally a brown silt loam becoming a silty clay loam over the underlying fractured chalk, which contains a few large nodular flints. In some profiles where the chalk is encountered at a shallow depth the silt loam upper subsoil is absent. The depth to the underlying chalk varied across the site from 35 to 95 cm.

4.0 AGRICULTURAL LAND CLASSIFICATION

4.1 The major limitation associated with this site is drought due to the restricted rooting depth caused by the underlying chalk. Moisture balance figures for the site reveal that some profiles will be moderately droughty whilst others only slightly droughty in this low rainfall area.

4.2 Where the underlying chalk is within 50 cm depth the land has been classified as Grade 3a and where it is deeper it has been assigned to a Grade 2 potential. The site therefore comprises 2.82 ha of Grade 2 and 1.75 ha of Grade 3a.

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SITE 17

1.0 **INTRODUCTION**

1.1 The 17 comprises a small triangular area of land at the north eastern end of a well maintained orchard and is surrounded on two sides by housing development. The land slopes gently toward the north east and is mainly under grass, with some fruit trees on the southern side.

1.2 A total of three observations were made on this 1.85 ha site.

2.0 **CLIMATE**

2.1 The climatic parameters for the site have been interpolated from the 5 km grid datasets produced by the Meteorological Office. The average annual rainfall is 647 mm and the site is likely to be at field capacity for 129 days. The accumulated temperature is 1463 degrees Celsius and moisture deficits for wheat and potatoes are 116 mm and 112 mm respectively.

3.0 **SOILS**

3.1 The soils on the site are developed in Brickearth. They have a dark brown silt loam topsoil over a strong brown silt loam subsoil which becomes a silty clay loam below 50-70 cm depth. The soils are free draining and have been classified as Wetness Class I.

4.0 **AGRICULTURAL LAND CLASSIFICATION**

4.1 The deep free draining silty soils that occur on this site have been classified as Grade 1. Moisture balance calculations indicate that these soils will not suffer from a droughtiness limitation in this low rainfall area.

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SITE 18

1.0 INTRODUCTION

1.1 The site is located on the eastern side of Sittingbourne, bounded on its western side by a housing development and to the north by a railway line. To the south and east the land is in agricultural use.

1.2 The site, which extends to 3.85 ha, has been worked for brickearth in the past and its southern end is surrounded by steep banks. The land slopes very gently towards the north and lies at an altitude of approximately 15 m AOD.

1.3 A total of 6 observations were made over the site using a spade and dutch auger together with a soil pit to help assess subsoil conditions in greater detail.

2.0 CLIMATE

2.1 The climatic parameters for the site have been interpolated from the 5 km grid datasets produced by the Meteorological Office. The average annual rainfall is 615 mm and the site is likely to be at field capacity for 122 days. The accumulated temperature is 1488 degrees Celsius and moisture deficits for wheat and potatoes are 121 mm and 117 mm respectively.

3.0 SOILS

3.1 At the northern end of the site the soils are deep silt loams, having a dark brown silt loam topsoil over a yellowish brown silt loam subsoil. Subsoil structure is coarse subangular blocky becoming angular blocky and coarse platy with depth. The soils are free draining and generally stoneless throughout.

3.2 At the southern end of the site the soils have a slightly stony fine sandy silt loam topsoil over a stony medium silty clay loam upper subsoil. Below 50 cm depth the soil becomes a mottled fine sandy clay loam.

3.3 The middle part of the site comprises soils which are an intergrade between the two soils referred to above, having a silt loam topsoil over a silt loam or silty clay loam subsoil which is faintly mottled.

4.0 AGRICULTURAL LAND CLASSIFICATION

4.1 The site has been classified as predominantly Grade 1 (3.2 ha) with a small area of Grade 2 (0.65 ha) at the southern end of the site. The major limitation associated with the soils occurring at the southern end of the site is droughtiness. Moisture balance calculations indicate that these soils have a minor droughtiness limitation.

4.2 Over the remainder of the site the land has been classified as Grade 1 due to the large available water capacities of these soils, which

in this low rainfall area will prevent crops suffering from drought. Although some of the soils indicate some minor waterlogging in the subsoil, it is insufficient to warrant any downgrading.

4.3 The southern end of the site is surrounded by moderately high banks which may result in cold air draining into the site in this area, but with the land sloping gently to the north and the banks grading out in this area, the cold air should be able to move out of the site and therefore not cause any limitation.

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SITE 19

Site 19 which extended to 3.9 ha is an area of allotments many of which are now derelict. It is located on the eastern side of Sittingbourne in an area that has been worked for brickearth in the past. As the site is entirely under allotments it is no longer considered to be in agricultural use and has therefore been mapped as non agricultural.

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SITE 20

1.0 INTRODUCTION

1.1 Site 20 is located on the eastern side of Sittingbourne and immediately to the north of an area of allotments (Site 19). The western boundary of the site comprises an area of housing, whilst to the north and east is the farm steading of East Hall and open agricultural land. The land has been worked for brickearth in the past.

1.2 The site lies at an altitude of approximately 10 m AOD and slopes gently towards the east. At the time of survey it had been cultivated following a rape crop.

1.3 A total of 5 observations were made using a spade and dutch auger over this 3.66 ha site. In addition a soil pit was dug to help assess subsoil conditions in greater detail.

2.0 CLIMATE

2.1 The climatic parameters for the site have been interpolated from the 5 km grid datasets produced by the Meteorological Office. The average annual rainfall is 615 mm and the site is likely to be at field capacity for 122 days. The accumulated temperature is 1488 degrees Celsius and moisture deficits for wheat and potatoes are 121 mm and 117 mm respectively.

3.0 SOILS

3.1 The soils on this site overlie gravel at varying depths. A typical soil profile has a slightly stony dark brown medium sandy silt loam topsoil over a brown slightly stony fine sandy silt loam or silt loam subsoil, which becomes a very gravelly medium clay loam at depth. The depth to the underlying gravels ranges from below 1 m at the north of the site to 50 cm at the south.

4.0 AGRICULTURAL LAND CLASSIFICATION

4.1 The major limitation associated with this area is droughtiness due to the very gravelly subsoils that occur over the site which reduces the available water capacity of the soil.

4.2 The site has been classified as Grade 2 over the northern half of the site and Grade 3a in the south where the underlying gravels are found at depths of 50-60 cm. The Grade 2 area accounts for 1.85 ha and the Grade 3a for 1.81 ha.

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SITE 21

1.0 INTRODUCTION

1.1 Site 21 is a small (1.4 ha) triangular site located on the north eastern side of Sittingbourne. It is surrounded by development on two sides, housing to the south and a recreation ground to the north west, with open farmland to the north east. The land has been worked for brickearth in the past.

1.2 The site lies at an altitude of approximately 5 m AOD and falls gently toward the north east. The land forms part of a larger field which at the time of survey was in cereal stubble.

1.3 A total of 3 observations were made over the site using a spade and dutch auger.

2.0 CLIMATE

2.1 The climatic parameters for the site have been interpolated from the 5 km grid datasets produced by the Meteorological Office. The average annual rainfall is 615 mm and the site is likely to be at field capacity for 122 days. The accumulated temperature is 1488 degrees Celsius and moisture deficits for wheat and potatoes are 121 mm and 117 mm respectively.

3.0 SOILS

3.1 The soils on the site have a silt loam or fine sandy silt loam topsoil over a fine sandy silt loam subsoil, becoming a silty clay loam with depth. The soils are generally stoneless throughout and free draining although on the lower slopes slight evidence of waterlogging from groundwater was evident.

4.0 AGRICULTURAL LAND CLASSIFICATION

4.1 The site has been classified as Grade 1 due to the high available water capacities of these soils. Although signs of slight waterlogging were evident on the lower slopes the majority of the site was free draining and hence of Grade 1 potential.

SWALE DISTRICT LOCAL PLAN

SITE 22

1.0 INTRODUCTION

1.1 Site 22 is located on the eastern side of Bapchild with housing down the western side with industrial development on the northern side between the site and the A2 road. The other two sides of the site are bounded by Panteny Lane.

1.2 The site extends to approximately 5.2 ha and lies at an altitude ranging from 25 m AOD in the south to approximately 10 m AOD in the north. The land is gently undulating but has a general north easterly aspect. Slopes of approximately 3-6° occur over the site, but relief is not a limiting factor in terms of land quality.

1.3 The northern end of the site appears to have been worked for brickearth as does the land to the east of Panteny Lane.

1.4 A total of 8 observations were made using a spade and dutch auger.

1.5 At the time of survey the field was under a crop of calabrese.

2.0 CLIMATE

2.1 The climatic parameters for the site have been interpolated from the 5 km grid datasets produced by the Meteorological Office. The average annual rainfall is 615 mm and the site is likely to be at field capacity for 122 days. The accumulated temperature is 1488 degrees Celsius and moisture deficits for wheat and potatoes are 121 mm and 117 mm respectively.

3.0 SOILS

3.1 Three distinct soil types were mapped over the site, At the southern end of the site the soils have a medium silty clay loam topsoil over a mottled clay upper subsoil, which becomes a sandy clay or sandy clay loam with depth. The soils have been assessed as Wetness Class III.

3.2 At the northern end of the site which has been worked for brickearth, the soils have a dark brown silt loam topsoil over a brown silt loam upper subsoil. Below 75 to 80 cm depth the texture becomes a silty clay loam. The soils are stoneless and free draining throughout.

3.3 The middle of the site comprises fine silty soils which have a medium silty clay loam topsoil over a yellowish brown medium or heavy silty clay loam subsoil, which has faint ochreous mottling.

4.0 AGRICULTURAL LAND CLASSIFICATION

4.1 The southern end of the site has been classified as Grade 3a due to a wetness and workability limitation. The soils in this area have been assessed as Wetness Class III and with a medium silty clay loam topsoil are therefore limited to a Grade 3a potential.

4.2 The middle part of the site has been classified as Grade 2 as a result of a droughtiness limitation. Moisture balance calculations indicate that the soils in this area will be slightly droughty in this low rainfall area.

4.3 The northern part of the site has been classified as Grade 1 as moisture balance calculations indicate that these deep silty soils will not suffer from a droughtiness restriction.

4.4 The following Table shows the areas of the individual Grades:

Grade	Area (ha)	% Agricultural Area
1	1.1	21
2	3.4	65
3a	0.7	14
Total	5.2	100

SWALE DISTRICT LOCAL PLAN

SITE 23

1.0 INTRODUCTION

1.1 The site is located on the western side of the village of Teynham on an area of land that has been worked for brickearth. The site is bounded on all sides by housing and a playing field.

1.2 The site extends to 17.93 ha and a total of 18 observations were made using a spade and dutch auger. In addition a soil pit was dug to help assess subsoil conditions.

1.3 At the time of survey the southern end of the site was supporting a crop of cabbages whilst to the north the land had been cultivated and was sown to winter cereals.

2.0 PHYSICAL FACTORS AFFECTING LAND QUALITY

Climate

2.1 The climatic parameters for the site have been interpolated from the 5 km grid datasets produced by the Meteorological Office. The average annual rainfall is 615 mm and the site is likely to be at field capacity for 121 days. The accumulated temperature is 1488 degrees Celsius and moisture deficits for wheat and potatoes are 121 mm and 117 mm respectively.

Relief

2.2 The site lies at an altitude of approximately 10 m AOD. It is generally flat with gently slopes up to the unworked perimeter of the site. Relief therefore is not a limiting factor.

Soils and Geology

2.3 The site has been worked for brickearth and has been restored over the underlying Thanet Beds. On the undisturbed land at either end of the deep brickearth still remains.

2.4 Two soil types have been mapped. On the .undisturbed brickearth the soils have a dark brown silt loam topsoil over a strong medium silty clay loam subsoil which becomes heavy silty clay loam with depth. The soils are stoneless and free draining throughout. At the north west corner of the site the topsoils are medium silty clay loam as opposed to silt loam.

2.5 Over the majority of the site which has been worked for brickearth, the soils have been restored directly over the Thanet sands. These soils have a dark brown silt loam topsoil over a very pale grey brown silt loam, fine sandy silt loam or medium silty clay loam subsoil, which in cases has distinct ochreous mottling below 40 cm. Subsoil structure is weak, coarse subangular blocky becoming coarse platy with depth. Despite the mottling the soils are porous and have been assessed as Wetness Class 1.

3.0 AGRICULTURAL LAND CLASSIFICATION

3.1 The majority of the site has been classified as Grade 1, with a small area of Grade 2 in the north west corner where the soils have a silty clay loam topsoil and an area of Grade 3a beside an old building where the soil surface is covered with large lints.

3.2 The restored soils over the Thanet Beds have been classified as Grade 1 due to their large available water capacity which will prevent them suffering from drought. Despite the presence of some ochreous mottling in the subsoil the soils are permeable and have been classified as Wetness Class I and are therefore not considered to have a wetness and workability limitation.

3.3 The brickearth soils at the north west of the site have been mapped as Grade 2. Soil moisture balance calculations reveal that these soils will have a minor droughtiness limitation in this low rainfall area.

3.4 The area of soils with large flints in the topsoil have been classified as Grade 3b due to the problems that these stones will cause for cultivations.

3.5 The following Table shows the areas of the individual Grades:

Grade	Area (ha)	% Agricultural Area
1	15.32	87
2	2.02	12
3b	0.21	1
Non-Ag	0.38	
Total	17.93	100

SWALE DISTRICT LOCAL PLAN

SITE A1

1.0 INTRODUCTION

1.1 The site is located on the northern side of the village of Kemsley adjacent to the railway line from Sittingbourne to the Isle of Sheepey which forms its eastern boundary. The other boundaries of the site are agricultural land.

1.2 The altitude of the site ranges from approximately 11 m AOD in the south falling to approximately 3 m where the track goes under the railway before rising again to the north to approximately 5 m AOD. Slopes are gentle and nowhere exceed 7°.

1.3 The site extends to 11.12 ha and a total of 13 observations were made using a spade and dutch auger. In addition a soil pit was dug to help assess subsoil conditions.

1.4 At the time of the survey the site had been cultivated and sown to winter cereals.

2.0 CLIMATE

2.1 The climatic parameters for the site have been interpolated from the 5 km grid datasets produced by the Meteorological Office. The average annual rainfall is approximately 581 mm and the site is likely to be at field capacity for 114 days. The accumulated temperature is 1491 degrees Celsius and moisture deficits for wheat and potatoes are 125 mm and 123 mm respectively.

3.0 SOILS

3.1 Two distinct soil types have been identified on the site. At the southern end the soils are developed on brickearth whilst over the remainder of the site they are developed over London Clay.

3.2 The soils developed on the brickearth have a dark brown silt loam topsoil over a yellowish brown silt loam or silty clay loam subsoil which has faint ochreous mottling. The soils are stoneless throughout.

3.3 The soils developed on the London Clay have a medium silty clay loam topsoil over a pale greyish brown heavy silty clay loam upper subsoil which has distinct ochreous mottling. Below 40-50 cm depth the soil becomes a pale greyish brown clay with distinct ochreous and grey mottling. The subsoil has a medium and coarse angular blocky structure and the soils are generally stoneless. These soils have been assessed as Wetness Class III. At the northern end of the site the soils have a clay texture throughout.

4.0 AGRICULTURAL LAND CLASSIFICATION

4.1 The land at the southern end of the site has been classified as Grade 1. This area comprises soils developed on the brickearth which

have large available water capacities and are therefore not susceptible to drought in this low rainfall area.

4.2 The majority of the site has been mapped as Grade 3 where the soils are developed on the London Clay. These soils have been assessed as Wetness Class III and therefore suffer from a wetness and workability limitation. Where the soils have a medium clay loam topsoil they have been classified as Grade 3a. At the northern end of the site where the topsoil texture is clay the area has been downgraded to Grade 3b.

4.3 A narrow band of land has been identified as Grade 2 where an intergrade soil between the brickearths and London Clay soils have been mapped. This area has soils identified as Wetness Class II which will suffer a minor wetness and workability limitation restricting them to a Grade 2 potential.

4.4 The following Table shows the areas of each grade that occur on the site:

Grade	Area (ha)	% Agricultural Area
1	3.08	28
2	1.63	15
3a	5.27	47
3b	1.14	10
Total	11.12	100

REFERENCES

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