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North Wiltshire Local Plan

AGRICULTURAL LAND CLASSIFICATION
REPORT OF SURVEY

Resource Planning Team
Taunton Statutory Unit

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ADAS

NORTH WILTSHIRE LOCAL PLAN

AGRICULTURAL LAND CLASSIFICATION

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MAPS

NORTH WILTSHIRE LOCAL PLAN

AGRICULTURAL LAND CLASSIFICATION SURVEYS

SUMMARY

The surveys were carried out by ADAS on behalf of MAFF as part of its statutory role in the preparation of the North Wiltshire Local Plan. The fieldwork covered sites at Brinkworth, Calne, Chelworth, Chippenham, Corsham, Cricklade, Latton, Lower Stanton St Quintin, Lyneham, Malmesbury, Purton, Swindon and Wootton Bassett and was completed in May, June and July 1994 at a scale of 1:10,000. Data on climate, soils, geology and previous ALC Surveys was used and is presented in the report. The distribution of grades is detailed below and illustrated on the accompanying ALC map. Information is correct at this scale but could be misleading if enlarged.

Distribution of ALC grades: Brinkworth Priory, Brinkworth

Grade	Area (ha)	% of Survey Area	% of Agricultural Land
3b	2.5	100	100

All the land surveyed at Brinkworth is Subgrade 3b. The soils experience a moderate wetness limitation caused by slowly permeable subsoils.

Distribution of ALC grades: Calne

Grade	Area (ha)	% of Survey Area	% of Agricultural Land	
3b	22.5	94.9	100	
Urban	1.2	5.1	0.0	
TOTAL	23.7	100	100	(22.5 ha)

The soils at Calne are poorly drained and experience a moderate wetness limitation which restricts them to Subgrade 3b.

Distribution of ALC grades: Braydon Lane, Chelworth

Grade	Area (ha)	% of Survey Area	% of Agricultural Land	
3b	1.1	72.1	100	
Urban	0.4	27.1	0.0	
TOTAL	1.5	100	100	(1.1 ha)

All the agricultural land surveyed at Braydon is of moderate quality and experiences a moderate wetness limitation imposed by slowly permeable subsoils.

Distribution of ALC grades: Easton Lane and Rowden Lane, Chippenham

Grade	Area (ha)	% of Survey Area	% of Agricultural Land	
2	15.1	51.4	61.6	
3a	2.8	9.5	11.5	
3b	6.6	22.5	26.9	
Non Agricultural	1.1	3.7	0.0	
Urban	3.0	10.2	0.0	
Farm Buildings	0.8	2.7	0.0	
TOTAL	29.4	100	100	(24.5 ha)

Nearly three-quarters of the agricultural land surveyed is of best and most versatile quality. The Grade 2 land experiences a slight wetness limitation, whilst the Subgrade 3a land is downgraded because of droughtiness. The Subgrade 3b land is poorly drained. Small areas of non-agricultural land are mapped.

Distribution of ALC grades: Hill Corner Road, Chippenham

Grade	Area (ha)	% of Survey Area	% of Agricultural Land	
2	5.1	13.5	14.1	
3a	11.8	31.0	32.5	
3b	19.4	51.2	53.4	
Non Agricultural	1.2	3.2	0.0	
Urban	0.4	1.1	0.0	
TOTAL	37.9	100	100	(36.3 ha)

The soils surveyed experience wetness limitations of varying degrees. The areas of lighter textured soils are more versatile than slightly heavier wetter soils.

Distribution of ALC grades: Pockeredge Farm, Corsham

Grade	Area (ha)	% of Survey Area	% of Agricultural Land	
3b	15.6	98.5	100	
Non Agricultural	0.2	1.5	0.0	
TOTAL	15.8	100	100	(15.6 ha)

All the agricultural land surveyed is well drained and slightly droughty. The versatility of soils is limited by the clay topsoils which restrict the workability of the land in this area.

Distribution of ALC grades: Stones Farm, Cricklade

Grade	Area (ha)	% of Survey Area	% of Agricultural Land
3b	6.8	100	100

The soils surveyed at Stones Farm are poorly drained and have a moderate wetness limitation which restricts them to Subgrade 3b.

Distribution of ALC grades: Spine Road, Latton

Grade	Area (ha)	% of Survey Area	% of Agricultural Land	
2	1.2	14.3	14.3	
3b	7.2	85.7	85.7	
TOTAL	8.4	100	100	(8.4 ha)

The majority of the area surveyed is downgraded to Subgrade 3b partly on the basis of wetness in the east and on the basis of droughtiness in the west. The Grade 2 land has a slight workability limitation.

Distribution of ALC grades: Lower Stanton St Quintin

Grade	Area (ha)	% of Survey Area	% of Agricultural Land
3a	2.1	100	100

All of the land surveyed at Lower Stanton St Quintin is of best and most versatile quality. The soils experience a moderate droughtiness limitation imposed by stony subsoils.

Distribution of ALC grades: Lyneham

Grade	Area (ha)	% of Survey Area	% of Agricultural Land	
3a	2.1	22.1	25.7	
3b	6.1	63.9	74.3	
Urban	0.2	1.7	0.0	
Non Agricultural	1.2	12.3	0.0	
TOTAL	9.6	100	100	(8.3 ha)

One-quarter of the agricultural land is mapped as best and most versatile. This land has a moderate workability limitation with clay topsoils. The poorer quality land has a moderate wetness limitation caused by slowly permeable subsoils.

Distribution of ALC grades: Malmesbury

Grade	Area (ha)	% of Survey Area	% of Agricultural Land	
3a	13.2	40.5	41.4	
3b	1.4	4.3	4.4	
4	17.3	53.1	54.2	
Non Agricultural	0.7	2.1	0.0	
TOTAL	32.6	100	100	(31.9 ha)

The best and most versatile land found at Malmesbury experiences moderate workability limitations, whilst the Grade 4 land is poorly drained. A small area of micro-relief has downgraded part of the area. Heavy soils are found throughout the area.

Distribution of ALC grades: Purton

Grade	Area (ha)	% of Survey Area	% of Agricultural Land
3b	1.3	100	100

All of the land surveyed at Purton is Subgrade 3b with a moderate droughtiness limitation. The soils are well drained but stony.

Distribution of ALC grades: Hay Lane, Lydiard Park, Swindon

Grade	Area (ha)	% of Survey Area	% of Agricultural Land	
3b	30.7	95.0	100	
Non Agricultural	1.6	5.0	0.0	
TOTAL	32.3	100	100	(30.7 ha)

All of the agricultural land at Hay Lane was found to be poorly drained with slowly permeable subsoils. These soils have a moderate wetness limitation.

Distribution of ALC grades: Junction 16, M4, Swindon

Grade	Area (ha)	% of Survey Area	% of Agricultural Land	
3b	38.9	71.8	100	
Non Agricultural	0.2	0.4	0.0	
Not surveyed	15.1	27.8	0.0	
TOTAL	54.2	100	100	(38.9 ha)

All of the agricultural land is poorly drained heavy soils with slowly permeable subsoils. The area north of the M4 was not surveyed because extensive earth movement had occurred in preparation for future development.

Distribution of ALC grades: Brynards Hill, Wootton Bassett

Grade	Area (ha)	% of Survey Area	% of Agricultural Land	
3b	8.1	94.2	100	
Non Agricultural	0.5	5.8	0.0	
TOTAL	8.6	100	100	(8.1 ha)

The agricultural land is poorly drained clayey soils with moderate wetness limitations.

1. INTRODUCTION

Agricultural Land Classification (ALC) Surveys were carried out in May, June and July 1994 at Brinkworth, Calne, Chelworth, Chippenham, Corsham, Cricklade, Latton, Lower Stanton St Quintin, Lyneham, Malmesbury, Purton, Swindon and Wootton Bassett on behalf of MAFF as part of its statutory role in the preparation of the North Wiltshire Local Plan. The fieldwork covering 266.7 ha of land was conducted by ADAS at a scale of 1:10,000 (approximately one boring per hectare of agricultural land). A total of 220 auger borings were examined and 16 soil profile pits used to assess subsoil conditions.

The details of the findings of the surveys and the distribution of grades are detailed below for each settlement. The areas have been previously mapped at one inch to the mile. Some areas have also been surveyed at a more detailed level previously but using the Original Guidelines for grading agricultural land.

The recent surveys supersede these maps, having been carried out at a more detailed level and using the 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 agricultural use. The grading takes account of the top 120 cm of the soil profile. A description of the grades used in the ALC system can be found in Appendix 2.

2. CLIMATE

The grade of the land is determined by the most limiting factor present. The overall climate is considered first because it can have an overriding influence on restricting land to a lower grade despite other favourable conditions.

Estimates of climatic variables were interpolated from the published agricultural climate dataset (Meteorological Office 1989). These are shown in the sections referring to each survey. The parameters used for assessing overall climate are accumulated temperature (a measure of the relative warmth of a locality) and average annual rainfall (a measure of overall wetness).

Climatic data on Field Capacity Days (FCD) and Moisture Deficits for wheat and potatoes are also shown. These data are used in assessing the soil wetness and droughtiness limitations referred to in later sections.

3. BRINKWORTH

3.1 Land at Brinkworth Priory, Brinkworth, amounting to 2.5 ha, was surveyed in May 1994. The published provisional one inch to the mile ALC map of this area (MAFF 1973) shows the southern part to be Grade 3 and the northern part urban. The recent survey supersedes this map, having been carried out at a more detailed level and using the Revised Guidelines and Criteria for grading the quality of agricultural land (MAFF 1988). A total of 3 auger borings and one soil profile pit were examined.

3.2 Climate

Climatic data for the site was interpolated as described in Section 2. The results are shown in Table 1 and indicate that there is no overall climatic limitation.

Table 1: Climatic Interpolations: Brinkworth Priory

Grid Reference		SU 033848
Altitude (m)		110
Accumulated Temperature (day °)		1409
Average Annual Rainfall (mm)		730
Overall Climatic Grade		1
Field Capacity Days		163
Moisture deficit (mm):	Wheat	100
	Potatoes	90

3.3 Relief and Landcover

The site is gently sloping from the north to the north-west, with slightly steeper land at the southern end of the site. The altitude range of the site is from 100 m to 110 m AOD. At the time of survey, all the land was in permanent grazing.

3.4 Geology and Soils

The geology of the site is shown on the published 1:63,360 scale Solid and Drift Geology Map, Sheet 252 (Institute of Geological Sciences 1974). The whole site is mapped as being underlain by Oxford clay.

The soils were mapped by the Soil Survey of England and Wales in 1983 at a reconnaissance scale of 1:250,000. The lower end of the site is mapped as the Denchworth Association, while the higher land is mapped as the Wickham 3 Association. The Denchworth Association is described as slowly permeable seasonally waterlogged clayey soils with similar fine loamy over clayey soils. There may be some fine clayey soils with only slight seasonal waterlogging and some slowly permeable calcareous clayey soils. The Wickham 3 Association is described as slowly permeable seasonally waterlogged fine loamy over clayey and coarse loamy over clayey soils and similar more permeable soils with slight

waterlogging. There may be some deep coarse loamy soils affected by groundwater.

The soils found in the recent survey are poorly drained clayey soils with slowly permeable subsoils.

3.5 Agricultural Land Classification

The distribution of ALC grades identified in the survey area is detailed in Table 2 and shown on the accompanying ALC map. The information is correct at this scale but any enlargement would be misleading.

Table 2: Distribution of ALC grades: Brinkworth Priory, Brinkworth

Grade	Area (ha)	% of Survey Area	% of Agricultural Land
3b	2.5	100	100

Subgrade 3b

These soils are poorly drained and have slowly permeable subsoils. The soils are Wetness Class IV (see Appendix 3). The heavy clay loam topsoil overlies clayey subsoils which have prismatic structures. All the horizons show clear evidence of extended waterlogging in the form of mottling and gleying. The versatility of these soils is limited by the extended periods of waterlogging caused by poor drainage.

4. CALNE

4.1 Land to the east of Calne amounting to 23.7 ha was surveyed in June 1994. The published provisional one inch to the mile ALC map of this area (MAFF 1973) shows the majority of the site to be Grade 3, with the western edge predominantly urban and a small block of Grade 4 slightly south of Abberd Lane. The site was surveyed under the Original Guidelines for Agricultural Land Classification in 1986 and was mapped as Subgrade 3a. The recent surveys supersede these maps, having been carried out at a more detailed level and using the Revised Guidelines and Criteria for grading the quality of agricultural land (MAFF 1988). A total of 24 auger borings and one soil profile pit were examined.

4.2 Climate

Climatic data for the site were interpolated as described in Section 2. The results are shown in Table 3 and indicate that there is no overall climatic limitation.

Table 3: Climatic Interpolations: Calne

Grid Reference		SU 407714
Altitude (m)		75
Accumulated Temperature (day °)		1446
Average Annual Rainfall (mm)		708
Overall Climatic Grade		1
Field Capacity Days		159
Moisture deficit (mm):	Wheat	107
	Potatoes	100

4.3 Relief and Landcover

The site occupies a gently sloping section of the Abberd Brook Valley to the east of Calne and lies between 75 m and 90 m AOD. All the fields were in grass at the time of survey.

4.4 Geology and Soils

The geology of the site is shown on the published 1:50,000 scale Drift Geology Map, Sheet 266 (Institute of Geological Sciences 1974). This shows that the site is entirely underlain by Kimmeridge clay of the Jurassic era.

The soils were mapped by the Soil Survey of England and Wales in 1983 at a reconnaissance scale of 1:250,000. The site is mapped entirely as the Wickham 2 Association. These soils are described as slowly permeable seasonally waterlogged fine loamy over clayey and fine silty over clayey soils. Small areas of slowly permeable calcareous soils may occur on steeper slopes.

The soils found in the recent survey were similar over the whole site. Clay loam and clay topsoils overlie clay subsoils which are generally stone-free and poorly developed. In small localised areas subsoils may contain a slight or moderate amount of stones. These soils are poorly drained.

4.5 Agricultural Land Classification

The distribution of ALC grades identified in the survey area is detailed in Table 4 and shown on the accompanying ALC map. The information is correct at the scale shown but any enlargement would be misleading.

Table 4: Distribution of ALC grades: Calne

Grade	Area (ha)	% of Survey Area	% of Agricultural Land	
3b	22.5	94.9	100	
Urban	1.2	5.1	0.0	
TOTAL	23.7	100	100	(22.5 ha)

Subgrade 3b

The whole site has been mapped as Subgrade 3b. The poorly drained clayey profiles experience a moderate wetness limitation imposed by slowly permeable subsoils from immediately below the topsoil. These soils are Wetness Class IV. The combination of clay loam and clay topsoils and the prevailing Field Capacity Days restrict the land to Subgrade 3b with an overall wetness limitation.

Other Land

Small areas of urban land have been mapped.

5. CHELWORTH, CRICKLADE

5.1 Land at Braydon Lane, Chelworth, Cricklade, amounting to 1.5 ha was surveyed in June 1994. The published provisional 1 inch to the mile ALC map of this area (MAFF 1973) shows the whole site to be Grade 3. The recent survey supersedes this map, having been carried out at a more detailed level and using the Revised Guidelines and Criteria for grading the quality of agricultural land (MAFF 1988). A total of 3 auger borings were examined.

5.2 Climatic data for the site was interpolated as described in Section 2. The results are shown in Table 5 and indicate there is no overall climatic limitation.

Table 5: Climatic Interpolations: Chelworth

Grid Reference	SU 082923
Altitude (m)	87
Accumulated Temperature (day °)	1430
Average Annual Rainfall (mm)	705
Overall Climatic Grade	1
Field Capacity Days	160
Moisture deficit (mm): Wheat	103
Potatoes	94

5.3 Relief and Landcover

The site is level at an altitude of 87 m AOD. At the time of survey the agricultural land was being grazed whilst part of the site formed the yard associated with the farm enterprise.

5.4 Geology and Soils

The geology of the site is shown on the published 1:63,360 scale Solid and Drift Geology map Sheet 252 (Institute of Geological Sciences 1973). The whole site is mapped as being underlain by Oxford clay. The soils were mapped by the Soil Survey of England and Wales in 1983 at a reconnaissance scale of 1:250,000. The whole site is mapped as the Wickham 2 Association. These

soils are described as slowly permeable seasonally waterlogged fine loamy over clayey or fine silty over clayey and clayey soils. The recent survey found poorly drained clayey soils.

5.5 Agricultural Land Classification

The distribution of ALC grades identified in the survey area is detailed in Table 6 and shown on the accompanying ALC map. The information is correct at the scale shown but any enlargement would be misleading.

Table 6: Distribution of ALC grades: Braydon Lane, Chelworth

Grade	Area (ha)	% of Survey Area	% of Agricultural Land	
3b	1.1	72.1	100	
Urban	0.4	27.1	0.0	
TOTAL	1.5	100	100	(1.1 ha)

Subgrade 3b

The agricultural land surveyed at Braydon Lane experiences moderate wetness limitations. The heavy clay loam topsoil overlies clayey subsoils which quickly become slowly permeable layers. There is evidence of waterlogging in the profile in the form of mottling and gleying. The soils are Wetness Class IV. The combination of this wetness class and the heavy clay loam topsoils limits the workability of the soils and they are downgraded to Subgrade 3b.

Other Land

The area marked as urban on the ALC map forms the yard associated with the farm enterprise.

6. CHIPPENHAM SOUTH (EASTON LANE AND ROWDEN LANE)

6.1 Two areas were surveyed to the south of Chippenham amounting to a total of 29.4 ha in May and June 1994. The published provisional one inch to the mile ALC map for this area (MAFF 1973) shows the majority of the 2 sites to be Grade 3. However, the eastern fringe of the site at Rowden Lane is mapped as Grade 2. Both areas were surveyed in 1984 at a scale of 1:25,000. The majority of the site at Rowden Lane was mapped as Subgrade 3a, with a small piece of Grade 2 along the eastern boundary. The site at Easton Lane was mapped as Subgrade 3a on the higher land and Subgrade 3b on the lower land. The level of detail of this survey is considered inadequate for Local Plan purposes and was carried out using the original guidelines for Agricultural Land Classification. The recent survey supersedes these maps, having been carried out at a more detailed level and using the Revised Guidelines and Criteria for

grading the quality of agricultural land (MAFF 1988). A total of 23 auger borings and 2 soil profile pits were examined.

6.2 Climate

The climate data for the site was interpolated as described in Section 3. The results are shown in Table 7 and indicate that there is no overall climatic limitation.

Table 7: Climatic Interpolations: Chippenham South

Grid Reference	ST 902719	ST 908722	ST 915724
Altitude (m)	65	48	55
Accumulated Temperature (day °)	1468	1488	1479
Average Annual Rainfall (mm)	760	743	749
Overall Climatic Grade	1	1	1
Field Capacity Days	171	168	169
Moisture deficit (mm): Wheat	101	105	104
Potatoes	93	97	96

6.3 Relief and Landcover

The site at Rowden Lane gently slopes down to the east and to the south. The altitude range is from 65 m to 50 m AOD. The Easton Lane site also gently slopes to the west, with some slightly steeper areas. The altitude range here is from 60 m to 70 m AOD. At the time of survey all the agricultural land at the Rowden Lane site was in rough grass. The Easton Lane site was also in grass except for the most southerly field which was in maize.

6.4 Geology and Soils

The geology of the site is shown on the published 1:63,360 scale Solid and Drift Geology map, Sheet 265 (British Geological Survey 1965). Both sites are mapped as being mostly underlain by the Kellaway Clays. The western fringes of the sites are composed of cornbrash limestone whilst the eastern fringe of the Rowden Lane site is underlain by recent river terrace gravel.

The Soil Survey of England and Wales mapped the soils at a reconnaissance scale of 1:250,000 in 1983. The majority of the 2 sites are mapped as soils of the Wickham 3 Association, with a small area of Sherborne soils making up the western corner of the Easton Lane site and Badsey 1 Association occurring on the eastern fringe of the Rowden Lane site. Wickham 3 soils are described as slowly permeable seasonally waterlogged fine loamy over clayey and coarse loamy over clayey soils and similar more permeable soils with slight waterlogging. There may be some deep coarse loamy soils affected by groundwater. The Badsey 1 Association is described as well drained calcareous and non-calcareous fine loamy soils over limestone gravel. There may be some deep fine loamy soils and fine loamy soils over gravel and similar but shallower soils affected by groundwater. The Sherborne Association is

described as shallow well drained brashy calcareous clayey soils over limestone associated with slowly permeable calcareous clayey soils.

The soils at the Rowden Lane site were found to experience a slight wetness limitation. These soils were clay loams throughout the profile. The soils at the Easton Lane site were heavier and more poorly drained except in the southern part where the soils were typical of the Sherborne Association.

6.5 Agricultural Land Classification

The distribution of ALC grades identified in the survey area is detailed in Table 8 and shown on the accompanying ALC map. The information is correct at this scale but any enlargement would be misleading.

Table 8: Distribution of ALC grades: Chippenham South

Grade	Area (ha)	% of Survey Area	% of Agricultural Land	
2	15.1	51.4	61.6	
3a	2.8	9.5	11.5	
3b	6.6	22.5	26.9	
Non Agricultural	1.1	3.7	0.0	
Urban	3.0	10.2	0.0	
Farm Buildings	0.8	2.7	0.0	
TOTAL	29.4	100	100	(24.5 ha)

Grade 2

The majority of the agricultural land at the Rowden Lane site has been mapped as Grade 2. These soils experience a slight wetness limitation and are Wetness Class II. The medium clay loam topsoil lies over slightly heavier subsoils. All horizons show evidence of wetness in the form of mottling. The subsoils have moderate structural condition and are not slowly permeable. There are few stones in these soils and droughtiness is not a limitation.

Subgrade 3a

The two small areas mapped as Subgrade 3a are downgraded on the basis of droughtiness. These soils are stony and the amount of water available for crop growth is limited. The heavy clay loam topsoil overlies slightly heavier subsoils.

Subgrade 3b

The majority of the land at the Easton Lane site has been mapped as Subgrade 3b. Here heavy clay loam topsoils overlie heavier subsoils which are slowly permeable. The subsoils show evidence of wetness in the form of

mottling and gleying. These soils are Wetness Class IV. The extent to which these soils are waterlogged limits their versatility.

Other Land

Small areas of non-agricultural land have been identified and land associated with residential areas has been mapped as urban. The buildings at Elmstree Farm are marked as agricultural buildings.

7. CHIPPENHAM NORTH (HILL CORNER ROAD)

7.1 37.9 ha of land at Hill Corner Road, Chippenham, was surveyed in July 1994. The published provisional one inch to the mile ALC map of this area (MAFF 1973) shows the entire site as urban. The adjoining land is shown as predominantly Grade 2, with some 3b land to the west. The area was surveyed under the Original Guidelines for Agricultural Land Classification in 1984 and was mapped as a mixture of Subgrades 3b (mainly in the west) and 3a, with a small area of Grade 2 in the east. The recent survey supersedes these maps, having been carried out at a more detailed level and using the Revised Guidelines and Criteria for grading the quality of agricultural land (MAFF 1988). A total of 34 auger borings and 2 soil profile pits were examined.

7.2 Climate

Climatic data for the site were interpolated as described in Section 2. The results are shown in Table 9 and indicate that there is no overall climatic limitation.

Table 9: Climatic Interpolations: Hill Corner Road, Chippenham

Grid Reference	ST 917750	ST 921750
Altitude (m)	85	79
Accumulated Temperature (day °)	1444	1451
Average Annual Rainfall (mm)	796	786
Overall Climatic Grade	1	1
Field Capacity Days	176	174
Moisture deficit (mm): Wheat	98	99
Potatoes	88	90

7.3 Relief and Landcover

The survey area is gently sloping with an altitude range of 80 m to 100 m AOD. A small valley runs north/south from near Barrow Farm. At the time of survey about half the site was under grass, and the rest under spring and autumn rape.

7.4 Geology and Soils

The geology of the site is shown on the published 1:50,000 scale Solid and Drift Geology Map, Sheet 265 (British Geological Survey 1965). Most of the site is underlain by Kellaway clays, with the south-eastern part of the site and an area north-east of the ambulance station composed of Kellaway sands.

The soils were mapped by the Soil Survey of England and Wales in 1983 at a reconnaissance scale of 1:250,000. The northern half and south-eastern corner of the site are overlain by Bursledon soils. These are described as deep fine loamy soils with slowly permeable subsoils and slight seasonal waterlogging associated with deep coarse loamy soils variable affected by groundwater.

The rest of the site is overlain by soils from the Wickham 3 Association. These are described as slowly permeable seasonally waterlogged fine to coarse loamy over clayey soils.

The soils found during the recent survey were similar but with soils of the Bursledon Association being more to the east, and the Wickham 3 soils more to the west of the site.

7.5 Agricultural Land Classification

The distribution of ALC grades is shown in Table 10 and on the accompanying ALC map. The information could be misleading if shown at a larger scale.

Table 10: Distribution of ALC grades: Hill Corner Road, Chippenham

Grade	Area (ha)	% of Survey Area	% of Agricultural Land	
2	5.1	13.5	14.1	
3a	11.8	31.0	32.5	
3b	19.4	51.2	53.4	
Non Agricultural	1.2	3.2	0.0	
Urban	0.4	1.1	0.0	
TOTAL	37.9	100	100	(36.3 ha)

Grade 2

The Grade 2 land consists of fine sandy loam over sandy clay loam soils. There is a moderate wetness limitation with a slowly permeable layer occurring from about 45 cm depth leading to Wetness Class III. This, in conjunction with the light textured topsoil, gives a grade of 2 in the east of the area, where the Field Capacity Days are less than 175.

Subgrade 3a

The 3a land in the east of the area consists of medium clay loam topsoil over a heavy clay loam and clay subsoil. Gleying and a slowly permeable layer occur below 40 cm depth, leading to a Wetness Class of III. This, in conjunction with the medium clay loam topsoil and the Field Capacity Days of less than 175, gives a grade of 3a.

The 3a land in the west of the area is similar to the Grade 2 land, but is downgraded to 3a by virtue of the higher value of Field Capacity Days.

Subgrade 3b

The 3b land consists of medium clay loam topsoil over heavy clay loam and clay subsoil. Gleying and a slowly permeable layer generally occur above 40 cm, leading to Wetness Class IV.

8. CORSHAM

8.1 Land at Pockeredge Farm, Corsham, amounting to 15.8 ha was surveyed in May 1994. The published provisional one inch to the mile ALC map of this area (MAFF 1973) shows the majority of the site to be Grade 3, with an area of non-agricultural land in the west. The site was surveyed under the original Guidelines for Agricultural Land Classification in 1986 and was mapped as Subgrade 3b. The recent survey supersedes these maps, having been carried out at a more detailed level and using the Revised Guidelines and Criteria for grading the quality of agricultural land (MAFF 1988). A total of 15 auger borings and one soil profile pit were examined.

8.2 Climate

Climatic data for the site were interpolated as described in Section 2. The results are shown in Table 11 and indicate that there is no overall climatic limitation.

Table 11: Climatic Interpolations: Corsham

Grid Reference		ST 863698
Altitude (m)		100
Accumulated Temperature (day °)		1431
Average Annual Rainfall (mm)		803
Overall Climatic Grade		1
Field Capacity Days		178
Moisture deficit (mm):	Wheat	96
	Potatoes	85

8.3 Relief and Landcover

The survey area is gently sloping with an altitude range of 90 m to 112 m AOD. At the time of survey all of the land was in rough grassland.

8.4 Geology and Soils

The geology of the site is shown on the published 1:63,360 scale Solid and Drift Geology Map, Sheet 265 (British Geological Survey 1965). This shows the site to be underlain by cornbrash limestone.

The soils were mapped by the Soil Survey of England and Wales in 1983 at a reconnaissance scale of 1:250,000. The site is mapped entirely as Evesham 1 Association. These are described as slowly permeable calcareous clayey soils associated with shallow well drained brashy calcareous soils over limestone.

The soils found in the recent survey were clays with increasing percentages of fragments of limestone down the profile. The soils were well drained.

8.5 Agricultural Land Classification

The distribution of ALC grades identified in the survey area is detailed in Table 12 and shown on the accompanying ALC map. The information is correct at the scale shown but any enlargement would be misleading.

Table 12: Distribution of ALC grades: Pockeredge Farm, Corsham

Grade	Area (ha)	% of Survey Area	% of Agricultural Land	
3b	15.6	98.5	100	
Non Agricultural	0.2	1.5	0.0	
TOTAL	15.8	100	100	(15.6 ha)

Subgrade 3b

All of the survey area except for a very small piece of non-agricultural land in the south-east has been mapped as Subgrade 3b. These soils are well drained and are Wetness Class I. The soils experience a moderate workability limitation imposed by the combination of clay topsoil and the prevailing Field Capacity Days at the site. The soils have an increasing volume of limestone fragments down the profile but this does not impose a greater droughtiness limitation than that imposed by the workability limitation. Occasional poorly drained clayey profiles were found around the periphery of the site. These would be mapped as Grade 4 but the extent of these areas is insufficient to be mapped at this scale.

9. CRICKLADE

9.1 6.8 ha of land at Stones Farm, Cricklade, were surveyed in June 1994. The published provisional one inch to the mile ALC map of this area (MAFF 1973) shows the northern half of the site to be Grade 4 and the southern half to be Grade 3. The area was surveyed in detail in 1986 using the original Guidelines for Agricultural Land Classification and was mapped as mainly Subgrade 3b with a small area of Subgrade 3c in the east. The recent survey supersedes these maps, having been carried out at a more detailed level and using the Revised Guidelines and Criteria for grading the quality of agricultural land (MAFF 1988). A total of 7 auger borings and one soil profile pit were examined.

9.2 Climate

Climatic data for the site were interpolated as described in Section 2. The results are shown in Table 13 and indicate that there is no overall climatic limitation.

Table 13: Climatic Interpolations: Stones Farm, Cricklade

Grid Reference		SU 092941
Altitude (m)		85
Accumulated Temperature (day °)		1432
Average Annual Rainfall (mm)		690
Overall Climatic Grade		1
Field Capacity Days		157
Moisture deficit (mm):	Wheat	103
	Potatoes	95

9.3 Relief and Landcover

The site is gently sloping with an average altitude of 85 m AOD. At the time of survey all of the land was in grass.

9.4 Geology and Soils

The geology of the site is shown on the published 1:63,360 scale Solid and Drift Geology Map, Sheet 252 (Institute of Geological Sciences 1974). The entire site is shown as underlain by Oxford clay.

The soils were mapped by the Soil Survey of England and Wales in 1983 at a reconnaissance scale of 1:250,000. The whole site was mapped as the Denchworth Association which are described as slowly permeable seasonally waterlogged clayey soils with similar fine loamy over clayey soils. There are some fine loamy over clayey soils with only slight seasonal waterlogging and some slowly permeable calcareous clayey soils.

The soils found in the recent survey were poorly drained clays showing clear evidence of extended waterlogging.

9.5 Agricultural Land Classification

The distribution of ALC grades identified in the survey area is detailed in Table 14 and shown on the accompanying ALC map. The information is correct at the scale shown but any enlargement would be misleading.

Table 14: Distribution of ALC grades: Stones Farm, Cricklade

Grade	Area (ha)	% of Survey Area	% of Agricultural Land
3b	6.8	100	100

Subgrade 3b

The whole of the survey area has been mapped as Subgrade 3b. These clay soils have a moderate wetness limitation caused by slowly permeable subsoils. The entire profile shows evidence of wetness in the form of mottling and gleying. These soils have low porosity and are Wetness Class IV.

10. LATTON

10.1 8.4 ha of land at Latton were covered in surveys in 1991 and 1992. The published provisional one inch to the mile ALC map of this area (MAFF 1973) shows the eastern block to be Grade 3 and the 2 western blocks to be Grade 2. The recent surveys supersede this map, having been carried out at a more detailed level and using the Revised Guidelines and Criteria for grading the quality of agricultural land (MAFF 1988).

10.2 *Climate*

Climatic data for the sites was interpolated as described in Section 2. The results are shown in Table 15 and indicate that there is no overall climatic limitation.

Table 15: Climatic Interpolations: Spine Road, Latton

Grid Reference		SU 075974
Altitude (m)		85
Accumulated Temperature (day °)		1430
Average Annual Rainfall (mm)		721
Overall Climatic Grade		1
Field Capacity Days		166
Moisture deficit (mm):	Wheat	101
	Potatoes	91

10.3 Relief

The sites are virtually flat and at an altitude of approximately 90 m AOD.

10.4 Geology and Soils

The geology of the site is shown on the published 1:63,360 scale Solid and Drift Geology Map, Sheet 252 (Institute of Geological Sciences 1974). This map shows the eastern part of the site to be underlain by Kellaway clay and the western part river terrace gravels

The soils were mapped by the Soil Survey of England and Wales in 1983 at a reconnaissance scale of 1:250,000. The north-eastern part of the site is mapped as soils of the Wickham 3 Association, whilst the south-western area consists of soils from the Kelmscot Association. Wickham 3 soils are described as slowly permeable seasonally waterlogged fine loamy over clayey and coarse loamy over clayey soils with similar more permeable soils with slight waterlogging. There may be some deep coarse loamy soils affected by groundwater. The Kelmscot Association is described as calcareous fine loamy soils over gravel variably affected by groundwater and associated with non-calcareous clayey soils over gravel.

The soils found in the recent surveys are typical of these mapped associations.

10.5 Agricultural Land Classification

The distribution of ALC grades identified in the survey area is detailed in Table 16 and shown on the accompanying ALC map. The information is correct at the scale shown but any enlargement would be misleading.

Table 16: Distribution of ALC grades: Spine Road, Latton

Grade	Area (ha)	% of Survey Area	% of Agricultural Land	
2	1.2	14.3	14.3	
3b	7.2	85.7	85.7	
TOTAL	8.4	100	100	(8.4 ha)

Grade 2

Small areas of Grade 2 have been mapped at the sites. These soils form part of a band extending towards the creamery. These soils experience a workability limitation imposed by heavy clay loam topsoils and the prevailing Field Capacity Days for the site. The soils show evidence of fluctuating groundwater levels, but with coarse textured subsoils these soils are Wetness Class I. The loamy coarse sand lower subsoils are also stony but stone contents were measured at around 30% by volume. Droughtiness is not a greater limitation.

Subgrade 3b

The rest of the sites have been mapped as Subgrade 3b. The small blocks of 3b in the south-west have been downgraded on the basis of droughtiness. These soils had high stone contents in the subsoil, with loamy coarse sand textures. These factors restrict the amount of available water for crop growth and impose a droughtiness limitation. The larger block of Subgrade 3b land has been downgraded on the basis of wetness limitation. These soils are Wetness Class IV, with heavy clay loam topsoils overlying slowly permeable clays. The stone content of these soils is much lower.

11. LOWER STANTON ST QUINTIN

11.1 A small area of land north of Newbourne Gardens, Lower Stanton St Quintin, amounting to 2.1 ha was surveyed in May 1994. The published provisional one inch to the mile ALC map of this area (MAFF 1973) shows the southern half of the site to be predominantly urban, with the northern area as Grade 3. The recent survey supersedes this map, having been carried out at a more detailed level and using the Revised Guidelines and Criteria for grading the quality of agricultural land (MAFF 1988). A total of 3 auger borings and one soil profile pit were examined.

11.2 Climate

Climatic data for the site was interpolated as described in Section 2. The results are shown in Table 17 and indicate that there is no overall climatic limitation.

Table 17: Climatic Interpolation: Stanton St Quintin

Grid Reference	ST 916810
Altitude (m)	90
Accumulated Temperature (day °)	1435
Average Annual Rainfall (mm)	747
Overall Climatic Grade	1
Field Capacity Days	169
Moisture deficit (mm): Wheat	98
Potatoes	88

11.3 Relief and Landcover

The survey area forms a level site at an approximate altitude of 90 m AOD. At the time of survey the area was in grass.

11.4 Geology and Soils

The geology of the site is shown on the published 1:63,360 scale Solid and Drift Geology Map (British Geological Survey 1965). This shows that the whole site is underlain by cornbrash rubbly limestone.

The soils were mapped by the Soil Survey of England and Wales in 1983 at a reconnaissance scale of 1:250,000. A single soil was mapped, being the Sherborne Association which is described as shallow well drained brashy calcareous clayey soils over limestone associated with slowly permeable calcareous clayey soils.

The soils found in the recent survey were uniform across the site and had high stone contents of limestone fragments which increased with depth. Heavy clay loam topsoils overlie clayey subsoils.

11.5 Agricultural Land Classification

The distribution of ALC grades identified in the survey area is detailed in Table 18 and shown on the accompanying ALC map. The information is correct at this scale but any enlargement would be misleading.

Table 18: Distribution of ALC grades: Stanton St Quintin

Grade	Area (ha)	% of Survey Area	% of Agricultural Land
3a	2.1	100	100

Subgrade 3a

The entire survey area has been mapped as Subgrade 3a. The soils are limited by droughtiness to this grade. The heavy clay loam topsoil was found to have a stone content of 35% which increased in the clay subsoils to around 50%. Roots were observed deep into the pit. The majority of the stones were smaller than 2 cm in size and in the topsoil there were only 5% of stones larger than 2 cm. The stone content of the soil reduces the water available for crops in the profile and thus limits the versatility of the soil.

12. LYNEHAM

9.6 ha of land at 2 sites at Lyneham were surveyed in May 1994. The published provisional one inch to the mile ALC map of this area (MAFF 1973) shows the southern site to be Grade 3 and the northern area to be Grade 1 with a small piece of Grade 3 at its northern tip. The recent survey supersedes this map, having been carried out at a more detailed level and using the Revised

Guidelines and Criteria for grading the quality of agricultural land (MAFF 1988). A total of 10 auger borings and one soil profile pit were examined.

12.2 Climate

Climatic data for the sites was interpolated as described in Section 3. The results are shown in Table 19 and indicate that there is no overall climatic limitation.

Table 19: Climatic Interpolations: Lyneham

Grid Reference	SU 030784
Altitude (m)	115
Accumulated Temperature (day °)	1406
Average Annual Rainfall (mm)	751
Overall Climatic Grade	1
Field Capacity Days	167
Moisture deficit (mm): Wheat	99
Potatoes	89

12.3 Relief and Landcover

The sites are gently sloping at an altitude of approximately 120 m AOD. At the time of survey the southern site was in grass, whilst the northern site was partly in grass and partly in cereals.

12.4 Geology and Soils

The majority of the site is shown on the published 1:50,000 scale Drift Geology Map, Sheet 266 (Institute of Geological Sciences 1974). This map shows the southern site as being underlain by coral rag from the Corallian Period. The northern site is mainly calcareous grit, although there is also some coral rag at its northern tip.

The soils were mapped by the Soil Survey of England and Wales in 1983 at a reconnaissance scale of 1:250,000. This showed that the southern site mainly consists of soils from the Sherborne Association which are shallow well drained brashy calcareous soils over limestone which can be associated with slowly permeable calcareous clayey soils. There is also a small area of Oxpasture Association soils in the southern end of the site. The northern site contains soils from the Oxpasture Association and from the Banbury Association, with the Banbury soils being found in the middle of the site. The Oxpasture Association tends to be fine loamy over clayey and clayey soils with slowly permeable subsoils and slightly seasonal waterlogging. There are also some slowly permeable seasonally waterlogged clayey soils. The Banbury Association are described as well drained brashy and fine coarse loamy ferruginous soils over ironstone. Some deep fine loamy over clayey soils

with slowly permeable subsoils and slightly seasonal waterlogging may also be found.

The soils found in the recent survey were variable.

12.5 Agricultural Land Classification

The distribution of ALC grades identified in the survey area is detailed in Table 20 and shown on the accompanying ALC map. The information is correct at this scale but any enlargement would be misleading.

Table 20: Distribution of ALC grades: Lyneham

Grade	Area (ha)	% of Survey Area	% of Agricultural Land	
3a	2.1	22.1	25.7	
3b	6.1	63.9	74.3	
Urban	0.2	1.7	0.0	
Non Agricultural	1.2	12.3	0.0	
TOTAL	9.6	100	100	(8.3 ha)

Subgrade 3a

The areas mapped as Subgrade 3a have a workability limitation imposed by the combination of clay topsoils and prevailing Field Capacity Days for the site. These soils are well drained and are Wetness Class I. They have variable stone contents but droughtiness but not impose a limitation.

Subgrade 3b

This land experiences a moderate wetness limitation. The soils are assessed as Wetness Class III and have clayey topsoils. They show evidence of wetness in the form of gleying and mottling and have slowly permeable subsoils at depth. The land at the southern site may have been disturbed and is very stony in places.

Other Land

At the southern site land associated with the new houses and the recreational area has been mapped as non-agricultural. The new road is mapped as urban.

13. MALMESBURY

13.1 Two sites to the north of Malmesbury amounting to 32.6 ha were surveyed in June 1994. The published provisional one inch to the mile ALC map of this area

(MAFF 1973) shows the smaller site in the east to be all Grade 3 land. The larger site is predominantly Grade 3 with a small area of non-agricultural land near Back Bridge Farm. Running along the southern edge of the site is an area of Grade 4 land. The majority of the area was surveyed in detail in 1986 using the Original Guidelines for Agricultural Land Classification and was mapped as mainly Subgrade 3b in the west and the small site as Subgrade 3c. The recent survey supersedes these maps, having been carried out at a more detailed level and using the Revised Guidelines and Criteria for grading the quality of agricultural land (MAFF 1988). A total of 30 auger borings and 2 soil profile pits were examined.

13.2 Climate

Climatic data for the site were interpolated as described in Section 2. The results are shown in Table 21 and indicate that there is no overall climatic limitation. However, there is an important Field Capacity Day boundary at 80 m. Below 80 m the Field Capacity Days are less than 175 days. This means that a similar soil above 80 m may be at a lower grade because of the increased number of days that the soil is at field capacity, reducing its versatility.

Table 21: Climatic Interpolations: Malmesbury

Grid Reference		ST 927878
Altitude (m)		93
Accumulated Temperature (day °)		1429
Average Annual Rainfall (mm)		792
Overall Climatic Grade		1
Field Capacity Days		177
Moisture deficit (mm):	Wheat	94
	Potatoes	83

13.3 Relief and Landcover

The eastern site is gently sloping to the east, whilst the larger site in the west is gently sloping to the south. The altitude range of the larger site is from 75 m in the south to 90 m in the north. The eastern site is at approximately 90 m AOD. At the time of survey all the agricultural land was in grass.

13.4 Geology and Soils

The geology of the site is shown on the published 1:63,360 Solid and Drift Geology Map, Sheet 251 (Geological Survey of Great Britain 1970). The site is mapped as being underlain by sandstone and gravel, Kellaway clays, cornbrash and forest marble running roughly north-west to south-east in bands.

The soils were mapped by the Soil Survey of England and Wales in 1983 at a reconnaissance scale of 1:250,000. This map shows the site to consist of soils from the Sherborne Association in the southern half of the larger site and soils from the Wickham 3 Association in the northern part and the smaller site. Soils

of the Sherborne Association are described as shallow well drained brashy calcareous clayey soils over limestone associated with slowly permeable calcareous clayey soils. The Wickham 3 Association is described as slowly permeable soils which are seasonally waterlogged and are fine loamy over clayey and coarse loamy over clayey soils. There may also be slowly permeable soils with slight waterlogging or deep coarse loamy soils affected by groundwater.

The soils found in the recent survey were generally poorly drained with slowly permeable subsoils. Better drained soils were found in the north and the south of the larger site. Heavy textures of clay and heavy clay loam were found throughout the site. The better drained soils were also more stony.

13.5 Agricultural Land Classification

The distribution of ALC grades identified in the survey area is detailed in Table 22 and shown on the accompanying ALC map. The information is correct at the scale shown but any enlargement would be misleading.

Table 22: Distribution of ALC grades: Malmesbury

Grade	Area (ha)	% of Survey Area	% of Agricultural Land	
3a	13.2	40.5	41.4	
3b	1.4	4.3	4.4	
4	17.3	53.1	54.2	
Non Agricultural	0.7	2.1	0.0	
TOTAL	32.6	100	100	(31.9 ha)

Subgrade 3a

The soils mapped as Subgrade 3a are generally well drained and Wetness Class I. The heavy clay loam topsoil imposes a moderate workability limitation. The soils become increasingly stony with depth but they do not experience a significant droughtiness limitation.

Subgrade 3b

A small area of this grade has been mapped in the west of the larger site. This area has complex micro-relief which would limit the versatility of the land because the range of agricultural machinery that could be used is limited.

Grade 4

The small site and much of the larger site have been mapped as Grade 4. These soils experience a severe wetness limitation and are generally Wetness Class IV. Clay and heavy clay loam topsoils overlie slowly permeable clayey

subsoils. The evidence of poor drainage is seen by mottling and gleying within the profile. The versatility of these soils is severely limited because of the heavy texture of the topsoil and the extended periods for which the profile is at field capacity.

Other Land

Two small areas of non-agricultural land have been identified within the survey area.

14. PURTON

14.1 Land adjacent to the former North View Hospital at Purton amounting to 1.3 ha was surveyed in June 1994. The published provisional one inch to the mile ALC map of this area (MAFF 1973) shows the site as predominantly urban. However, there is Grade 3 land to the south. The area was surveyed in detail in 1986 using the Original Guidelines for Agricultural Land Classification and was mapped as Subgrade 3b. The recent survey supersedes these maps, having been carried out a more detailed level and using the Revised Guidelines and Criteria for grading the quality of agricultural land (MAFF 1988). A total of 2 auger borings and one soil profile pit were examined.

14.2 Climate

Climatic data for the site were interpolated as described in Section 2. The results are shown in Table 23 and indicate that there is no overall climatic limitation.

Table 23: Climatic Interpolations: Purton

Grid Reference	SU 085873
Altitude (m)	30
Accumulated Temperature (day °)	1497
Average Annual Rainfall (mm)	675
Overall Climatic Grade	1
Field Capacity Days	154
Moisture deficit (mm): Wheat	111
Potatoes	104

14.3 Relief and Landcover

The site is level at an approximately height of 30 m AOD. At the time of survey the area was in rough grass.

14.4 Geology and Soils

The geology of the site is shown on the published 1:63,360 scale Solid and Drift Geology Map, Sheet 252 (Institute of Geological Sciences 1974), as being coral rag from the Upper Corallian Period.

The soils were mapped by the Soil Survey of England and Wales in 1983 at a reconnaissance scale of 1:250,000. The whole site is mapped as being soils of the Sherborne Association. These are described as shallow well drained brashy calcareous clayey soils over limestone. They are associated with slowly permeable calcareous clayey soils. The soils found in the recent survey were typical of the Sherborne Association.

14.5 Agricultural Land Classification

The distribution of ALC grades identified in the survey area is detailed in Table 24 and shown on the accompanying ALC map. The information is correct at the scale shown but any enlargement would be misleading.

Table 24: Distribution of ALC grades: Purton

Grade	Area (ha)	% of Survey Area	% of Agricultural Land
3b	1.3	100	100

Subgrade 3b

The soils surveyed at Purton experience a moderate droughtiness limitation and are mapped as Subgrade 3b. The heavy clay loam topsoils overlie clayey subsoils. The stone content of the soil increases with depth and was found to be 28% in the topsoil, of which 5% were over 2 cm in size. The soils are well drained and are Wetness Class I. The high stone content of the soil limits the available water for crops and the versatility of the soil is reduced.

15. HAY LANE, LYDIARD PARK, SWINDON

15.1 Land to the west of Hay Lane, Lydiard, amounting to 32.3 ha was surveyed in May 1994. The published provisional one inch to the mile ALC map of this area (MAFF 1973) shows to the majority of the site to be Grade 3, with a small area of non-agricultural land running adjacent to Hay Lane. The recent survey supersedes this map, having been carried out at a more detailed level and using the Revised Guidelines and Criteria for grading the quality of agricultural land (MAFF 1988). A total of 30 auger borings and one soil profile pit were examined.

15.2 Climate

Climatic data for the sites were interpolated as described in Section 2. The results are shown in Table 25 and indicate that there is no overall climatic limitation.

Table 25: Climatic Interpolations: Hay Lane, Lydiard

Grid Reference		SU 103851
Altitude (m)		100
Accumulated Temperature (day °)		1418
Average Annual Rainfall (mm)		685
Overall Climatic Grade		1
Field Capacity Days		155
Moisture deficit (mm):	Wheat	103
	Potatoes	93

15.3 Relief and Landcover

The land surveyed is gently sloping towards the junction of Hay Lane with Tewkesbury Way. The altitude range of the site is from 97 m to 110 m AOD. At the time of survey the whole site was in grass.

15.4 Geology and Soils

The geology of the site is shown on the published 1:63,360 scale Solid and Drift Geology Map, Sheet 252 (Institute of Geological Sciences 1974). The map shows the site is underlain mostly by sedimentary rocks of the Jurassic age except for the area of recent river alluvium in the middle and down the eastern edge of the site. North of the fault running east-west across the site the Kimmeridge clays are present, while to the south lie the rocks of the Upper Corallian formation. A small outcrop of chert exists at Crow Brake.

Soils were mapped by the Soil Survey of England and Wales in 1983 at a reconnaissance scale of 1:250,000. This shows the northern half of the site as the Denchworth Association except for the extreme northern fringe which has soils of the Evesham 1 Association present. The southern half of the site comprises the Sherborne Association except for a very small area of Denchworth soils in the extreme south-eastern corner. Denchworth soils are described as slowly permeable seasonally waterlogged clayey soils with similar fine loamy over clayey soils. There may be some fine loamy over clayey soils with only slight seasonal waterlogging and some slowly permeable calcareous clayey soils. The Sherborne Association is described as shallow well drained brashy calcareous clayey soils over limestone which are associated with slowly permeable calcareous clayey soils. The Evesham 1 Association is described as slowly permeable calcareous clayey soils associated with shallow well drained brashy calcareous soils over limestone.

The soils found in the recent survey were poorly drained clayey soils which showed evidence of extended periods of waterlogging in the form of gleying and mottling.

15.5 Agricultural Land Classification

The distribution of ALC grades identified in the survey area is detailed in Table 26 and shown on the accompanying ALC map. The information is correct at the scale shown but any enlargement would be misleading.

Table 26: Distribution of ALC grades: Hay Lane, Lydiard Park, Swindon

Grade	Area (ha)	% of Survey Area	% of Agricultural Land	
3b	30.7	95.0	100	
Non Agricultural	1.6	5.0	0.0	
TOTAL	32.3	100	100	(30.7 ha)

Subgrade 3b

The soils found in the survey area are poorly drained clay profiles which show clear evidence of extended periods of waterlogging in the form of mottling and gleying, often from the surface. The subsoils are slowly permeable and the soils are Wetness Class IV, with occasional Wetness Class III profiles. Both of these profiles are limited to Subgrade 3b by wetness. Occasional slightly better drained soils were found but these do not form a unit large enough to be mapped separately and have been included in the Subgrade 3b area.

16. JUNCTION 16, M4, SWINDON

16.1 54.2 ha of land around Junction 16 of the M4 at Swindon was surveyed in June 1994. The land formed 6 blocks around the junction. The published provisional one inch to the mile ALC map of this area (MAFF 1973) shows all the blocks to be Grade 3. The recent survey supersedes this map, having been carried out at a more detailed level and using the Revised Guidelines and Criteria for grading the quality of agricultural land (MAFF 1988). A total of 28 auger borings and one soil profile pit were examined.

16.2 Climate

Climatic data for the site were interpolated as described in Section 2. The results are shown in Table 27 and indicate that there is no overall climatic limitation.

Table 27: Climatic Interpolations: Junction 16, M4, Swindon

Grid Reference	SU 101827
Altitude (m)	110
Accumulated Temperature (day °)	1407
Average Annual Rainfall (mm)	720
Overall Climatic Grade	1
Field Capacity Days	160
Moisture deficit (mm): Wheat	99
Potatoes	89

16.3 Relief and Landcover

All the sites surveyed are relatively flat at an approximate altitude of 110 m AOD. At the time of survey the block to the north of the M4 was no longer in agricultural use and had been extensively disturbed in preparation for development. The remaining land was all in grass, of which all but the land at Spittleborough Farm had been cut for silage.

16.4 Geology and Soils

The geology of the site is shown on the published 1:63.360 scale Solid and Drift Geology Map, Sheet 252 (Institute of Geological Sciences 1974). This map shows the site is entirely underlain by rocks of the Upper Jurassic Kimmeridge clay formation.

The soils were mapped by the Soil Survey of England and Wales in 1983 at a reconnaissance scale of 1:250,000. This shows the sites to be of the Denchworth Association. These are described as slowly permeable seasonally waterlogged clayey soils with similar fine loamy over clayey soils. There may be some fine loamy over clayey soils with only slight seasonal waterlogging and some slowly permeable calcareous clayey soils.

The soils found in the recent survey were typical of the Denchworth Association.

16.5 Agricultural Land Classification

The distribution of ALC grades identified in the survey area is detailed in Table 28 and shown on the accompanying ALC map. The information is correct at the scale shown but any enlargement would be misleading.

Table 28: Distribution of ALC grades: Junction 16, M4, Swindon

Grade	Area (ha)	% of Survey Area	% of Agricultural Land	
3b	38.9	71.8	100	
Non Agricultural	0.2	0.4	0.0	
Not surveyed	15.1	27.8	0.0	
TOTAL	54.2	100	100	(38.9 ha)

Subgrade 3b

All of the agricultural land surveyed has a moderate wetness limitation. The heavy clay loam topsoils overlie clayey subsoils which are slowly permeable. The extended periods of waterlogging are shown by mottling and gleying from the surface. The soils are Wetness Class IV. The extent of wetness and the heavy textured topsoils limit the versatility of the land to Subgrade 3b.

Other Land

The block of land to the north of the M4 was not surveyed because it had been extensively disturbed. Large amounts of soil had been moved around the site in preparation for future development and the land was no longer in agricultural use.

17. BRYNARDS HILL, WOOTTON BASSETT

17.1 Land at 3 sites at Brynards Hill, Wootton Bassett, amounting to 8.6 ha, was surveyed in June 1994. The published provisional one inch to the mile ALC map of this (MAFF 1973) shows the northern 2 blocks of the site to be predominantly urban, while the third area is shown to be half Grade 3 and half Grade 4. The area was surveyed in detail in 1986 using the Original Guidelines for Agricultural Land Classification and was mapped as Subgrade 3c except for the northernmost block which was mapped as urban. The recent survey supersedes these maps, having been carried out at a more detailed level and using the Revised Guidelines and Criteria for grading the quality of agricultural land (MAFF 1988). A total of 8 auger borings and one soil profile pit were examined.

17.2 **Climate**

Climatic data for the site were interpolated as described in Section 2. The results are shown in Table 29 and indicate that there is no overall climatic limitation.

Table 29: Climatic Interpolations: Brynards Hill

Grid Reference		SU 077821
Altitude (m)		125
Accumulated Temperature (day °)		1391
Average Annual Rainfall (mm)		741
Overall Climatic Grade		1
Field Capacity Days		164
Moisture deficit (mm):	Wheat	97
	Potatoes	87

17.3 Relief and Landcover

The 2 northern sites are flat, whilst the southern site is sloping towards the south. The average height of the sites is 122 m AOD. At the time of survey the northernmost site was not in agricultural use, whilst the other 2 sites were in grass.

17.4 Geology and Soils

The geology of the site is shown on the published 1:63,360 scale Solid and Drift Geology Map, Sheet 252 (Institute of Geological Sciences 1974). This map shows all 3 sites to be underlain by Kimmeridge clay. The soils were mapped by the Soil Survey of England and Wales in 1983 at a reconnaissance scale of 1:250,000. This shows the soils of all 3 sites to be of the Wickham 3 Association which is described as slowly permeable seasonally waterlogged fine loamy over clayey and coarse loamy over clayey soils with similar more permeable soils with slight waterlogging. There may be some deep coarse loamy soils which are affected by groundwater.

The soils found in the recent survey are typical of the Wickham Association.

17.5 Agricultural Land Classification

The distribution of ALC grades identified in the survey area is detailed in Table 30 and is shown on the accompanying ALC map. The information is correct at this scale but enlargement would be misleading.

Table 30: Distribution of ALC grades: Brynards Hill, Wootton Bassett

Grade	Area (ha)	% of Survey Area	% of Agricultural Land	
3b	8.1	94.2	100	
Non Agricultural	0.5	5.8	0.0	
TOTAL	8.6	100	100	(8.1 ha)

Subgrade 3b

Both of the southern sites have been mapped as Subgrade 3b. These soils are poorly drained clays which show clear evidence of extended waterlogging in the form of mottling and gleying from the surface. The subsoils are slowly permeable. These soils are Wetness Class IV and with the clayey topsoil the versatility of the soils is limited to Subgrade 3b.

Other Land

The northernmost site is not in agricultural use and has been mapped as non-agricultural land.

Resource Planning Team
Taunton Statutory Unit
1 August 1994

APPENDIX 1

REFERENCES

BRITISH GEOLOGICAL SURVEY (1965) Solid and Drift Edition, Sheet 265, Bath, 1:63,360 scale.

GEOLOGICAL SURVEY OF GREAT BRITAIN (1970) Solid and Drift Edition, Sheet 251, Malmesbury, 1:63,360 scale.

INSTITUTE OF GEOLOGICAL SCIENCES (1974) Solid and Drift Edition, Sheet 252, Swindon, 1:63,360 scale.

INSTITUTE OF GEOLOGICAL SCIENCES (1974) Drift Edition, Sheet 266, Marlborough, 1:50,000 scale.

MAFF (1973) Agricultural Land Classification Map, Sheet 157, Provisional 1:63,360 scale.

MAFF (1988) Agricultural Land Classification of England and Wales (Revised Guidelines and Criteria for grading the quality of agricultural land), Alnwick.

METEOROLOGICAL OFFICE (1989) Climatological Data for Agricultural Land Classification.

SOIL SURVEY OF ENGLAND AND WALES (1983) Sheet 5, Soils of South West England, 1:250,000 scale.

APPENDIX 2

DESCRIPTION OF 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 include 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 and horticultural crops can usually be grown but on some land in 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. Where 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 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 most 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.

Descriptions of other land categories used on ALC maps

Urban

Built-up or 'hard' uses with relatively little potential for a return to agriculture including: 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 reclaimed using derelict land grants.

Non-agricultural

'Soft' uses where most of the land could be returned relatively easily to agriculture, including: private park land, 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.

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 landcover types, eg buildings in large grounds, and where may be shown separately. Otherwise, the most extensive cover type will usually be shown.

Source: MAFF (1988) Agricultural Land Classification of England and Wales (Revised Guidelines and Criteria for Grading the Quality of Agricultural Land), Alnwick.

APPENDIX 3

DEFINITION OF SOIL WETNESS CLASSES

Wetness Class I

The soil profile is not wet within 70 cm depth for more than 30 days in most years.

Wetness Class II

The soil profile is wet within 70 cm depth for 31-90 days in most years or, if there is no slowly permeable layer within 80 cm depth, it is wet within 70 cm for more than 90 days, but not wet within 40 cm depth for more than 30 days in most years.

Wetness Class III

The soil profile is wet within 70 cm depth for 91-180 days in most years or, if there is no slowly permeable layer within 80 cm depth, it is wet within 70 cm for more than 180 days, but only wet within 40 cm depth for between 31 and 90 days in most years.

Wetness Class IV

The soil profile is wet within 70 cm depth for more than 180 days but not within 40 cm depth for more than 210 days in most years or, if there is no slowly permeable layer within 80 cm depth, it is wet within 40 cm depth for 91-210 days in most years.

Wetness Class V

The soil profile is wet within 40 cm depth for 211-335 days in most years.

Wetness Class VI

The soil profile is wet within 40 cm depth for more than 335 days in most years.

Notes: The number of days specified is not necessarily a continuous period. 'In most years' is defined as more than 10 out of 20 years.

Source: Hodgson, J M (in preparation), Soil Survey Field Handbook (revised edition).

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