

Symmetry Park Bicester, Phase 3

Soils and Agricultural Quality

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QA: sMWP/BCo_SCh/SCh_211124

SUMMARY

A soil and agricultural land quality survey has been undertaken of 6.6 hectares (ha) of land north of Symmetry Park, Bicester.

The land has a mixture of fine loamy soils and clayey soils with impeded drainage. Agricultural quality of the land is limited to subgrade 3a and 3b by wetness.

1 INTRODUCTION

- 1.1 This report provides information on the soils and agricultural quality of 7.34ha at Symmetry Park Bicester, Phase 3 (the site). The report is based on a survey of the land in June 2019.
- 1.2 The site is part of a wider area of survey (see Map 1 in **Appendix EDP 1**).
- 1.3 The site was identified for employment development in Cherwell District Council's Local Plan Review Regulation 18 Consultation Draft, and is still proposed to be allocated for employment development in their Regulation 19 Consultation Draft (Site BIC E5).

Site Environment

- 1.4 The site is centred approximately at Ordnance Survey Grid Reference (OSGR) SP60692 20626. The local planning authority (LPA) is Cherwell District Council. The location and extents of the site are illustrated on **Appendix EDP 1**, and described in the material supporting the planning application, particularly the Design and Access Statement.
- 1.5 The site measures 7.34 hectares (ha) and is located at the south-eastern edge of Bicester, Oxfordshire along the A41, adjacent to the completed Symmetry Park Phase 1 and 2 developments. It comprises arable fields, bordered by hedgerows, with a small group of farm buildings in the north-eastern corner. Other features on site include a small block of woodland in the south-east, and an area of tall forbs. The site has been largely used for hay production and cattle grazing land. The site is bounded by the A41 to the south, Symmetry Park Phase 1 and 2 to the west, a scrap metal yard to the east and arable land to the north.
- 1.6 The majority of the existing Symmetry Park site (which the site is immediately adjacent to) is located in an area allocated for development in the adopted Cherwell Local Plan 2011-

2031 as a strategic allocation for employment development: Planning Policy Bicester 12: South East Bicester.

- 1.7 On 04 November 2024, Cherwell District Council published the Cherwell Local Plan Review 2042 (Regulation 19) Proposed Submission Plan, this is due to go out for public consultation in December 2024. The site is identified in the Proposed Submission Plan as an Employment Site Allocation (site area 45.80 hectares developable area of 30). The draft allocation is for employment uses E(g)(i)/(ii)/(iii)/B2/B8 floorspace - Policy reference BIC E1 - Land east of J9, M40, Bicester
- 1.8 The land is level, at an elevation of approximately 65m above Ordnance Datum (aOD).

Agricultural Use

- 1.9 At the time of survey, the land was under grass.

Published Information

- 1.10 British Geological Survey (BGS) 1:50,000 scale information records the geology of the land as Kellaways Clay Member mudstone in the west of the site and Cornbrash Formation limestone in the east.
- 1.11 The National Soil Map (published at 1:250,000 scale) shows all the land as Denchworth Association, comprising mainly slowly permeable seasonally waterlogged clayey soils¹.
- 1.12 Provisional Agricultural Land Classification mapping from the 1970s shows the land as grade 3 in the south and east, and grade 4 in the north and west. No more recent survey (to the current guidelines) has been published.

2 SOILS

- 2.1 A detailed soil resource and agricultural quality survey was carried out in June 2019. It was based on observations at intersects of a 100m grid, giving a sampling density of one observation per hectare. During the survey, soils were examined by a combination of pits and augerings to a maximum depth of 1.2m. A log of the sampling points and a map (Map 1) showing their location is in **Appendix EDP 1**.
- 2.2 Soils at the site were found to vary in texture as described below.

Deep Stoneless Clay Soils

- 2.3 These soils are found in the centre of the site. They comprise stoneless clays and silty clays, with dense, poorly-structured subsoil showing evidence of seasonal waterlogging (grey and rusty mottled *gley* colouration) to shallow depth.

¹ Ragg J.M. et al., (1984). *Soils and their use in Midland and Western England*, Soil Survey of England and Wales. Bulletin No. 12, Harpenden.

- 2.4 An example profile is described in **Table EDP 2.1** from a pit at observation 7 (Map 1, see **Appendix EDP 1**).

Table EDP 2.1: Example Soil Profile: Deep Stoneless Clay Soils

Depth	Observations
0-24cm	Very dark greyish brown (10YR 3/2) clay; stoneless; moderately developed coarse sub-angular blocky structure; very firm; smooth gradual boundary to:
24-120cm	Dark grey (N 4/0) clay with common distinct fine and medium strong brown (7.5YR 5/8) mottles; stoneless; moderately developed very coarse prismatic structure; very firm.

- 2.5 These soils are poorly-draining (Soil Wetness Class IV) with a low capacity to absorb excess winter rainfall.

Loamy Soils

- 2.6 These soils are found to the east and west of the site. They comprise stoneless medium clay loam topsoils with similar, in some cases heavier, upper subsoils. The lower subsoil has been found to be moderately structured medium sandy silt loams to sandy clay loams with evidence of seasonal waterlogging.

- 2.7 An example profile is described in **Table EDP 2.2** from a pit at observation 2 (Map 1, see **Appendix EDP 1**).

Table EDP 2.2: Example Soil Profile: Loamy Soils

Depth	Observations
0-23cm	Very dark greyish brown (10YR 3/2) medium clay loam; stoneless; moderately developed medium and coarse sub-angular blocky structure; friable; smooth gradual boundary to:
23-38cm	Pale brown (10YR 6/3) medium clay loam with common fine distinct yellowish brown (10YR 5/8) mottles; stoneless; moderately developed coarse subangular blocky structure; friable; porous; smooth gradual boundary to:
38-74cm	Greyish brown (10YR 5/2) heavy clay loam with many distinct fine and medium strong brown (7.5YR 5/8) mottles; weakly developed very coarse sub-angular blocky structure; very firm; smooth diffuse boundary to:
74-120cm	Grey (10YR 5/1) Medium sandy silt loam to sandy clay loam with common distinct reddish yellow (7.5YR 6/8) mottles; stoneless; moderately developed coarse sub-angular blocky structure; friable to firm.

- 2.8 The soils are judged imperfectly-draining (Soil Wetness Class III).

3 AGRICULTURAL LAND QUALITY

- 3.1 To assist in assessing land quality, the Ministry of Agriculture, Fisheries and Food (MAFF) developed a method for classifying agricultural land by grade according to the extent to which physical or chemical characteristics impose long-term limitations on agricultural use for food production. The MAFF Agricultural Land Classification (ALC) system classifies land into five grades numbered 1 to 5, with grade 3 divided into two subgrades (3a and 3b). The system was devised and introduced in the 1960s and revised in 1988.
- 3.2 The agricultural climate is an important factor in assessing the agricultural quality of land and has been calculated using the Climatological Data for Agricultural Land Classification². The relevant site data for an average elevation of 65m is given in **Table EDP 3.1**.

Table EDP 3.1: Climatological Data for Agricultural Land Classification

Climatological Data	Findings
Average annual rainfall	649mm
January-June accumulated temperature >0°C	1431 day
Field capacity period (when the soils are fully replete with water)	139 days mid Oct-early May
Summer moisture deficits for:	Wheat: 106mm Potatoes: 99mm

- 3.3 The survey described in the previous section was used in conjunction with the agro-climatic data above to classify the site using the revised guidelines for ALC issued in 1988 by MAFF³. There are no climatic limitations at this locality.

Survey Results

- 3.4 The agricultural quality of the land is determined by wetness. Land of grade 3 has been identified.

Subgrade 3a

- 3.5 The land has topsoils with a moderate clay content and imperfect-drainage (Soil Wetness Class III). Given the moderate number of field capacity days and texture of the topsoils, land access with agricultural machinery and vehicles will be restricted in winter through to mid-spring meaning a spring sow may be possible in drier years. Soils of this wetness can support moderate to high yields of arable and cereal crops.

Subgrade 3b

- 3.6 The land has a high topsoil clay content and poor drainage (Soil Wetness Class IV). This combination means that under the local climate opportunities for spring land access is rare and arable cropping is mainly limited to autumn-sown cereal-based rotations.

² Meteorological Office, (1989). *Climatological Data for Agricultural Land Classification*.

³ MAFF, (1988). *Agricultural Land Classification for England and Wales: Guidelines and Criteria for Grading the Quality of Agricultural Land*.

Other Land

3.7 This land comprises farm buildings and surrounding scrub areas.

Grade Areas

3.8 The boundaries between the different grades of land are shown on Map 2, see **Appendix EDP 1)** and the areas occupied by each are shown in **Table EDP 3.2**.

Table EDP 3.2: Areas Occupied by the Different Land Grades

Grade/Subgrade	Area (ha)	% of the Land
Subgrade 3a	4.3	58
Subgrade 3b	2.0	27
Other Land	1.04	15
Total	7.34	100

4 CONCLUSIONS

- 4.1 Agricultural land is a finite resource, with higher quality land (best and most versatile) of greater value than lower quality. The site contains approximately 4.3ha of best and most versatile land, mainly of Grade 3a quality. Soils are also a valuable finite resource, and they should be protected where possible for reuse in landscaping.
- 4.2 Agricultural land would be lost during construction and during operation of the Proposed Development and the loss of best and most versatile land within part of the site is a permanent major adverse effect for which mitigation is not available. Loss of soil resources can be fully mitigated by a detailed site-specific Soil Management Plan, with the residual effects negligible.

Appendix EDP 1

Soil Sampling Observations and Agricultural Land Classification Plans



- Site Boundary
- Auger Observations
- Pits
- 1** Observation Number

client
Tritax Big Box Developments

project title
Symmetry Park Bicester, Phase 3

drawing title
Soil Sampling Observations

date	16 OCTOBER 2024	drawn by	JFr
drawing number	edp7480_d023a	checked	BCo
scale	1:2,500 @ A3	QA	DJo



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- Site Boundary
- Subgrade 3a
- Subgrade 3b
- Other Land

client
Tritax Big Box Developments

project title
Symmetry Park Bicester, Phase 3

drawing title
Agricultural Land Classification

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