

AGRICULTURAL LAND CLASSIFICATION SURVEY – NORTHSTOWE, CAMBRIDGESHIRE

1.0 INTRODUCTION

- 1.1 Edafos were instructed by WSP Ltd to carry out an Agricultural Land Classification survey of three areas of land associated with the proposed development at Northstowe, Cambridgeshire. The survey work was undertaken by Nick Duncan during May 2005.
- 1.2 The largest of the three sites (Site A) is located to the south west of Oakington and extends to approximately 40 ha. The other two sites are located alongside the Longstanton to Bar Hill road (B1050) with the northern site (Site B) extending to approximately 10 ha and Site C approximately 5 ha.

Site A

- 1.3 Site A is predominantly under winter cereals, with two small grass fields at the northern end and a small area of rape at the southern end. In the central part of the site is an area of old farm buildings, which are currently being converted into office accommodation and associated car parking areas. A total of 39 auger borings were made across this area on a 100 m grid basis.

Site B

- 1.4 Site B is entirely under oilseed rape, making access onto the site difficult. A total of 6 auger bores were made across this area.

Site C

- 1.5 Site C, which extends to approximately 5 ha is all under oilseed rape, making access onto the area very difficult. Three auger bores were made in this area.

2.0 SOILS

Site A

- 2.1 Three distinct soil series have been identified on this site, namely Denchworth series, Saint Lawrence series and Milton series and their distribution is shown on Plan 1.
- 2.2 The Denchworth soils have a dark greyish brown (10YR4/2) heavy clay loam topsoil approximately 30 cm deep, with few small flint stones overlying a light olive brown (2.5Y5/3) clay or occasionally heavy clay loam upper subsoil with distinct ochreous mottling and very few stones (< 1%). Below approximately 50 cm depth the lower subsoil is typically olive grey (5Y5/2) stoneless clay with common distinct olive mottles and is slowly permeable. The soils are non calcareous occasionally becoming slightly calcareous at depth and have been assessed as Wetness Class III.
- 2.3 The St Lawrence series soils are slightly better drained typically Wetness Class II and these soils have a dark greyish brown (10YR4/2) heavy clay loam or very occasionally medium clay loam topsoil approximately 30 cm deep, with few (2-5%) small flint stones. The upper subsoil is typically yellowish brown or light olive brown (10YR5/4 and 2.5Y5/3) heavy clay loam with few small stones and common distinct ochreous mottles. Below approximately 55-65 cm depth the lower subsoil is typically olive

grey (5Y5/2) clay with common distinct olive mottles and is generally slowly permeable. The soils are generally non calcareous throughout.

- 2.4 The Milton series soils are typically deep loamy soils, although some of the profiles identified had sandy layers at depth. A typical profile has a dark greyish brown (10YR4/2) medium sandy loam or sandy clay loam topsoil with few small flint stones (2-3%) overlying a yellowish brown medium sandy loam or sandy clay loam subsoil with few small stones. In some profiles yellowish brown (10YR5/6) loamy medium sand or medium sand layers were encountered below 70 cm depth, but these were typically stoneless and as such have been included in the Milton series. Mottling was evident in the lower layers in some profiles, but the soils are typically assessed as Wetness Class I.

Site B

- 2.5 Two soil types were identified on Site B, the St Lawrence series and the Aldreth series and their distribution is shown on Plan 2.
- 2.6 The St Lawrence soils are broadly similar to those described above although they tend to be calcareous in the subsoil layer and typically slightly more stony. They have been assessed as Wetness Class II
- 2.7 The Aldreth series soils, which are located at the southern end of the area, have a dark greyish brown (2.5Y4/2) heavy clay loam topsoil with 2-3% small flint stones. Below 30 cm depth the upper subsoil is a slightly stony, light olive brown clay with distinct ochreous mottles and is typically calcareous. This overlies strongly calcareous gravelly material below 65-70 cm depth, which is generally impenetrable to the auger. These soils have been assessed as Wetness Class II.

Site C

- 2.8 Site C comprises a single soil type which has been classified as Wicken series. These soils have a dark greyish brown (10YR4/2) clay topsoil overlying light olive brown (2.5Y5/3) slightly mottled clay. Below 40-45 cm depth the lower subsoil is typically light olive grey (5Y6/2) clay with common distinct ochreous mottles and common calcium carbonate concretions and considered to be slowly permeable. These soils are assessed as Wetness Class III.

3.0 AGRICULTURAL LAND CLASSIFICATION

- 3.1 The areas have been classified in accordance with MAFF ALC Guidelines (1988).

Site A

- 3.2 Plan 3 shows the ALC grading for Site A. The soils of the Denchworth series have been classified as Grade 3b. These soils have non calcareous heavy clay loam topsoil textures and have been assessed as Wetness Class III and as such according to the ALC Guidelines are restricted to Subgrade 3b due to a moderately severe wetness and workability limitation.
- 3.3 The soils mapped as St Lawrence series have been classified as Grade 3a. These soils also have non calcareous heavy clay loam topsoil textures, but are typically better drained than the Denchworth series having been assessed as Wetness Class II.

Consequently the wetness and workability limitation associated with these soils is less severe and they are therefore classified as Grade 3a.

- 3.4 The Milton series soils, which are typically deep loamy soils, have been mapped as mainly Grade 2, but with some profiles classified as Grade 3a. The major limitation associated with these soils in this low rainfall area is droughiness. Moisture balance calculations indicate that these soils are typically slightly droughty for both reference crops (wheat and potatoes) and hence classified as Grade 2. However in some profiles, the lower subsoil horizons were loamy sand or sand and consequently the moisture holding capacity of these soils is reduced making the soils more susceptible to drought stress and therefore limiting the classification to Grade 3a.

Site B

- 3.5 Plan 4 shows the ALC grading for this site, with the whole area mapped as Grade 3a. Both soils types mapped on this site have heavy clay loam topsoils and evidence of impeded drainage. Both soil types have been assessed as Wetness Class II and as such under the prevailing climatic conditions have moderate wetness and workability limitations restricting the land quality to Grade 3a.

Site C

- 3.6 Plan 4 shows that Site C has been mapped as Grade 3b. The soils on this site correlate with the Wicken series, which comprise poorly drained (Wetness Class III) clayey soils with non calcareous topsoils. These soils therefore are similar to the Denchworth series having a moderately severe wetness and workability limitation restricting them to Grade 3b.

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Nick Duncan

