

10.3 External Works

10.3.1 Paved Areas

Based on proposed levels Glacial Till will likely be encountered at subgrade level on the site.

Laboratory CBR tests performed on three samples of the Glacial Till gave CBR values of 4.9% (TP1), 4.6% (TP3) and 2.3% (TP5).

The differing CBR values are a reflection of differing material type with both the samples from TP1 and TP3 being of Class CH/CV and the sample from TP5 being Class CI.

Estimates of equilibrium CBR values may also be obtained from Table 2.1 of Volume 7 of "Design Manual for Roads and Bridges, 1994". The equilibrium CBR values given in this publication are based on plasticity index and based on the range of values obtained from the Glacial Till, an equilibrium CBR value in the range 3% to 4% would be applicable for a thin pavement constructed under average weather conditions.

Given this, it is recommended that a CBR value of 3% to 4% is adopted for the site.

As with structural foundations and floor slabs, heave following tree removal may cause damage to pavements. Such damage cannot be easily avoided.

Once the formation level for the new pavements has been reached, proof rolling should be carried out using a heavy roller, and any soft areas revealed should be excavated and a greater depth of sub-base provided.

Exposed subgrades will likely deteriorate rapidly on exposure to wet weather and should be shaped to shed water. Subbase should be placed as soon as possible to minimise the exposure of the subgrade to adverse weather conditions.

10.3.2 Services

Heave of the ground may also cause problems with below ground drainage. Precautions will be required to prevent damage and these may comprise:-

- Designing drainage with greater gradients.
- Laying pipework on a greater thickness of granular material, to reduce movement potential.

Particular attention will need to be paid where pipes and services pass through substructure walls.

Further reference should be made to Clause D8 of Chapter 4.2 of the NHBC Standards.

10.4 Groundworks

The Glacial Till and Oxford Clay are likely to remain stable in open excavations for short periods during construction. However, the stability of any Made Ground materials should not be relied upon. Zones loosened by the removal of existing construction and trees are likely to be particularly unstable and prone to collapse.

Safe working conditions must be provided at all times where persons are required to work in excavations.

Heavy plant and stockpiles of materials should not be permitted close to the edges of unsupported excavations.

Ground support and a suitable method of work will be required if excavations are required close to the toe of the slope on the north eastern part of the site.

Based on observations made during the fieldwork, seepages of groundwater should be anticipated within the Glacial Till and Oxford Clay. Such inflows may be dealt with by pumping from a temporary sump formed at the base of the excavation.

Further reference should be made to CIRIA Report No. 97 "Trenching Practice" 1992.

10.5 Concrete Grade

As discussed in Section 8.2.1, the Oxford Clay is a principal sulphate and/or sulphide bearing strata.

Concentrations of total potential sulphate determined from the laboratory testing ranged from 0.33% to 2.79%, with the highest concentration obtained from a sample of Oxford Clay from TP6 at a depth of 3m. As outlined in Section 10.1, structural foundations will need to bear within the Oxford Clay.

Therefore, in accordance with Part 1 of BRE Special Digest 1 "Concrete in Aggressive Ground" 2001, a design sulphate class of DS-5 would be applicable for the site. As groundwater is likely to be static and pH values exceed 3.5 (range 7.2 to 8.2), an Aggressive Chemical Environment for Concrete (ACEC) Classification of AC-4 may be assumed.

11. CHEMICAL CONDITIONS & CONTAMINATION

11.1 Reference Criteria

At present there are no comprehensive definitive assessment criteria for contaminated land in the United Kingdom. To assess the results of the chemical analysis the following have been adopted as Tier One Screening Values.

It should be noted that guidelines produced by authorities overseas have no legal or other standing in the UK, and are used for guidance only.

Soil Guideline Values:-

At the time of writing the Department for Environment, Food and Rural Affairs (DEFRA) and the Environment Agency have published Soil Guidelines Values (SGVs) for seven potentially toxic metals, arsenic, cadmium, chromium, lead, selenium, mercury and nickel. The Soil Guideline Values are based on human health risk assessment using the Contaminated Land Exposure Assessment (CLEA) model, and derivation methods for the SGVs for each contaminant are outlined in the Environment Agencies R & D Publications SGV1, 3, 4, 5, 7, 9 and 10, 2002.

The Soil Guideline Values represent "intervention values" which when exceeded in a soil may be indicative of an unacceptable risk to human health and that further investigation and/or remediation may be required.

The documents present SGVs for four land use categories, residential with plant uptake (i.e. consumption), residential without plant uptake, allotments and commercial/industrial. The SGVs are based on an assessment of risk for each land use with lower SGVs applying to residential use and higher values applying to commercial/industrial use, as the exposure level is less.

The Soil Guideline Values need to be used in conjunction with a site-specific risk assessment, and an exceedance of a Soil Guideline Value, does not necessarily imply that there is a risk to human health.

It is proposed to publish SGVs for other potential contaminants in the future.

Given the nature of the proposed development, it is considered that the SGV's for commercial/industrial use are the most appropriate as Tier One Screening Values.

Polyaromatic Hydrocarbons (PAH's)

Whilst there is no SGV for total PAH's, or a comprehensive list of the individual compounds, a toxicology report (R and D publication TOX2) has been prepared for benzo(a)pyrene. Benzo(a)pyrene is a carcinogen and is recognised as being the most toxic of the PAH compounds. A site specific screening value may be calculated using the CLEA software package (2002 version). Using the models default settings for commercial/industrial use, gives a site specific target value of 36 mg/kg for benzo(a)pyrene, and this has been adopted as a Tier One Screening Value.

A screening value of 100 mg/kg has been adopted for total PAH's, which is a concentration based on professional judgement.

Total Petroleum Hydrocarbons (TPH):-

In the absence of an SGV for TPH a screening value of 500 mg/kg has been adopted, which is based on professional judgement.

Dutch Standards:-

For other contaminants not covered by the SGV's, reference has been made to the Dutch "Target" and "Intervention" values for soils and sediments (Dutch Ministry of Housing, Spatial Planning and the Environment, 1994 – revised February 2000). The Target Value is a suggested value for which a soil may be considered to be uncontaminated and the Intervention Value is a value above which the functional properties of the soil for humans, plant and animal life is seriously impaired or threatened. Intervention values are representative of a level of contamination above which there is a serious case of soil contamination.

11.2 Results of Chemical Analysis & Discussion

No concentrations of contaminants were found to exceed the proposed Tier One Screening Values.

Based on this, no remediation will be required prior to development of the site.

As with any sampling exercise, the sampling process is representative, and it is possible that areas of contamination may be found during the redevelopment of the site, although the risks are considered to be low. Any areas of suspected contamination should be assessed by a competent professional and subjected to further analysis if necessary.

It is recommended an asbestos survey should be undertaken of the existing buildings prior to demolition.

11.3 Approvals

It should be noted that all conclusions made regarding contamination are subject to the approval of the Local Authority and the Environment Agency. If a planning condition exists requiring an assessment of contamination, copies of this report should be submitted to both parties for their comments early in the development of the scheme.

11.4 Waste Disposal

Materials removed from the site must be classified on the basis of the analysis results obtained from the ground investigation, and disposed of off site in a suitable licensed facility.

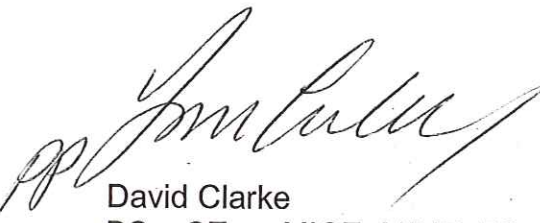
12. RECOMMENDATIONS FOR ADDITIONAL INVESTIGATION

As discussed in Sections 10.1 and 10.2, further investigations are considered necessary to finalise structural foundation and floor slab design for the site. These works should comprise of the following elements:-

- 1) Detailed tree survey, giving locations, species and heights.
- 2) Form 4 No. boreholes to a depth of 6m to determine soil suction profiles. The soil suction profiles will be used to determine depths of significant desiccation, where trees are to be removed. One of these boreholes should be situated remote from any trees to act as a "control" hole. Some vegetation/tree clearance will be required to the south of Straight Drove prior to undertaking the boreholes.
- 3) Further investigations to determine the extent of Made Ground encountered in TP8 and very soft Glacial Till in TP9. These investigations could initially comprise window sampling. However, if it is decided to retain all or a proportion of the very soft clay encountered in TP9, then one or two shallow boreholes (numbers will depend on the extent) should be undertaken to recover samples for oedometer testing to assess likely settlements.
- 4) Undertake an asbestos survey of the existing buildings.



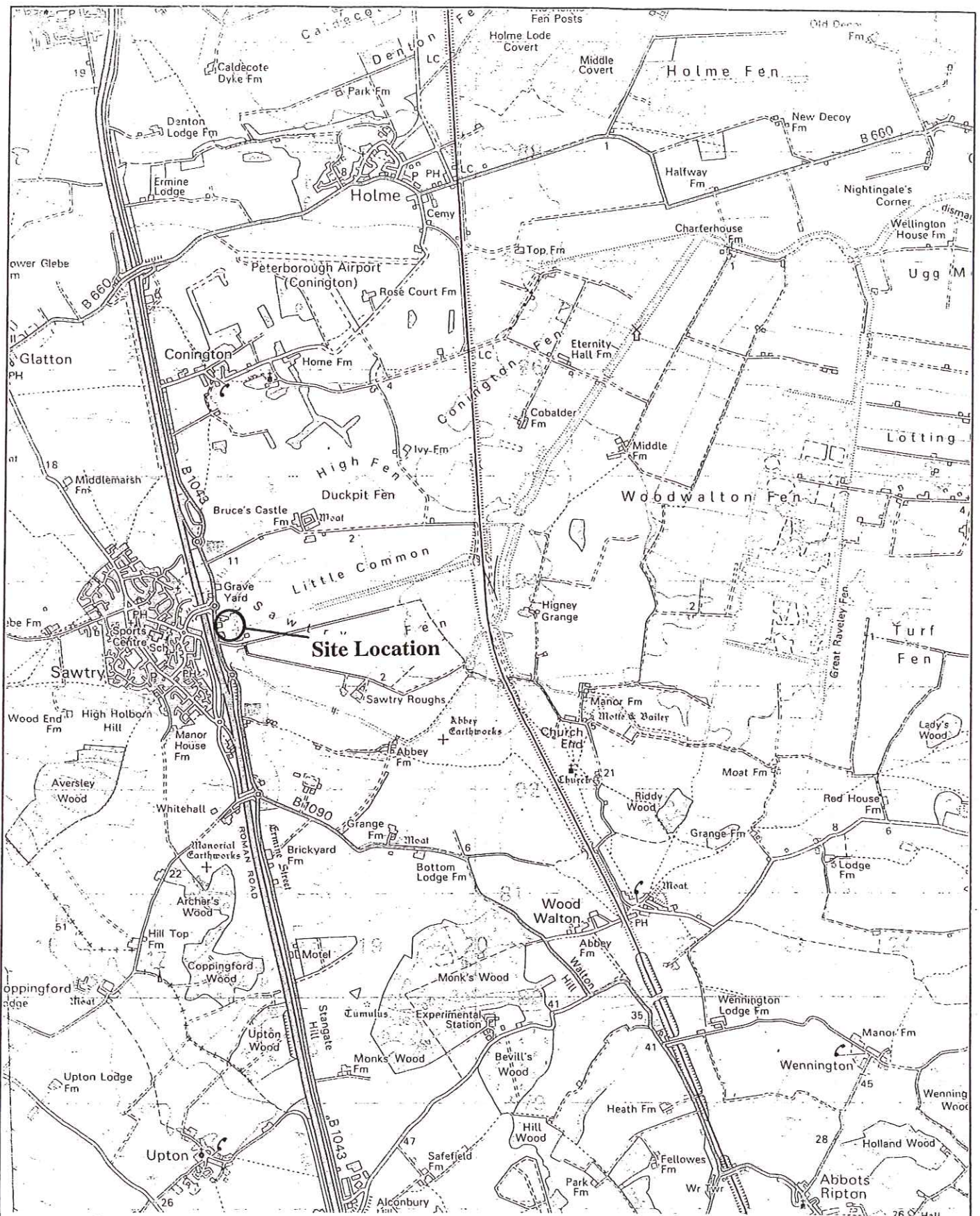
Ceri Copping
BEng (Hons) MEngSC
GEOTECHNICAL ENGINEER



David Clarke
BSc, CEng, MICE, MIHT, FConSE
DIRECTOR

APPENDIX A

SITE & EXPLORATORY HOLE LOCATION PLANS,



Produced from Ordnance Survey mapping with the permission of the Controller of Her Majesty's Stationery Office Crown Copyright Reserve Licence No. AL554996.

richard JACKSON plc
 consulting civil and structural engineers
 26 High Street, Hadleigh, Ipswich, Suffolk, IP7 5AP
 Tel: 01473 825300 Fax: 01473 825350

Old North Road, Sawtry,
 Cambridgeshire

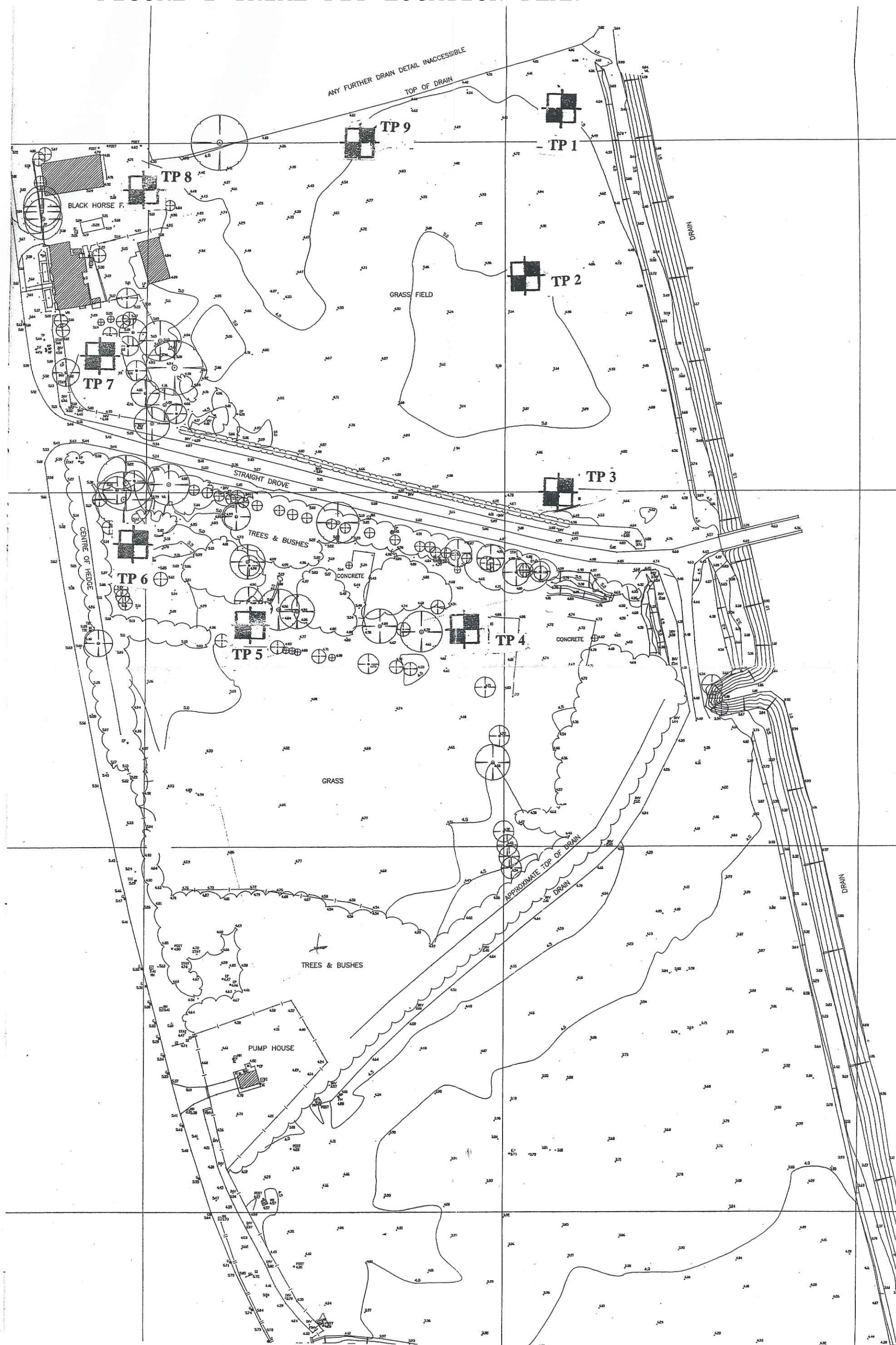
Site Location Plan.

FIGURE 1


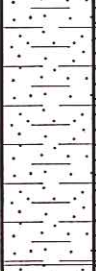
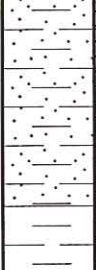
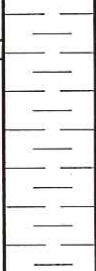
SCALE: 1:50,000


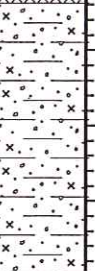


JOB NO: 25864


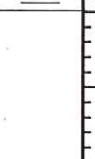
FIGURE 2 TRIAL PIT LOCATION PLAN



APPENDIX B
TRIAL PIT RECORDS

| Method Machine Excavator | | Date 15/04/04 | | Site Old North Road, Sawtry | |
|---|--------------|---------------------------|---|------------------------------------|--|
| Orientation E-W | | Coord | Ground Level m O.D. | Client Davies Street Sawtry Ltd | |
| Soil Samples/Tests | | Field Records/Comments | Legend | Depth m. | Description of Strata (thickness in m.) [reduced level in m.] |
| Type/Test | Depth m. | | | | |
| D1 | 0.00 - 0.39 | |  | 0.39 | Brown to dark brown clayey slightly sandy gravelly TOPSOIL with frequent roots. (0.39) |
| B1 | 0.55 | | | | Firm grey to dark grey brown mottled sandy CLAY with occasional roots. Unit contains coarse gravel sized pockets of orange clayey gravelly sand. (GLACIAL TILL) (0.91) |
| D2 B2 | 1.00 1.00 | HV @ 1.00m = 62kN/m2 |  | 1.30 | Firm dark brown to light brown mottled sandy CLAY with occasional roots. (GLACIAL TILL) (0.70) |
| B3 | 1.50 | | | | |
| D3 B4 | 2.00 2.00 | HV @ 2.00m = 48kN/m2 |  | 2.00 | Firm grey mottled thinly laminated CLAY (OXFORD CLAY FORMATION) (1.20) |
| B5 | 2.50 | STRIKE at 2.40m Very Slow | | | |
| D4 B6 | 3.00 3.00 | |  | 3.20 | |
| | | | | | |
| Remarks Trial pit sides were stable. Groundwater seepage encountered at 2.4m. | | | Logged by C.Cop | | Scale 1:25 |
| | | | Report No. 25864 | | |
| Pit Dimensions - Length: 3.02 Width: 0.60 Depth: 3.20 | | | Sample/Test key: U() U100 Sample (blows) D Disturbed sample B Bulk sample W Water sample Progress & Day Groundwater level | | |
| | | | Penetration Tests S () Standard (N value) C () Cone (N value) * Blows and penetration when 300mm not achieved | | |

| | | | | | |
|---|-------------|------------------------|---|---|--|
| Method Machine Excavator | | Date 15/04/04 | Site Old North Road, Sawtry | | |
| Orientation N-S | | Coord | Ground Level m O.D. | Client Davies Street Sawtry Ltd | |
| Soil Samples/Tests | | Field Records/Comments | Legend | Depth m. | |
| Type/Test | Depth m. | | | | Description of Strata (thickness in m.) [reduced level in m.] |
| D1 | 0.00 - 0.39 | HV @ 1.00m = 52kN/m2 |  | Brown to dark brown mottled clayey sandy slightly gravelly TOPSOIL. (0.39) | |
| D2 | 0.50 | | | Soft becoming firm brown becoming grey sandy gravelly clay with occasional roots (MADE GROUND). Gravel fraction is fine to coarse angular to rounded red brick and flint. Unit becomes slightly fissured with depth. (0.71) | |
| B1 | 0.60 | | | | |
| D3 | 1.00 | | | STRIKE at 2.00m Very slow HV @ 2.00m = 56kN/m2 |  |
| B2 | 1.00 | | | | |
| B3 | 1.50 | | | | |
| D4 | 2.00 | HV @ 2.90m = 52kN/m2 |  | | |
| B4 | 2.00 | | | | |
| D5 | 2.90 | | | | |
| B5 | 2.90 | | | | |
| Remarks Trial pit sides were stable. Groundwater seepage encountered at 2.0m. | | | Logged by C.Cop | Scale 1:25 | Report No. 25864 |
| Pit Dimensions - Length: 2.91 Width: 0.60 Depth: 2.90 | | | Sample/Test key: Penetration Tests U() U100 Sample (blows) S () Standard (N value) D Disturbed sample C () Cone (N value) B Bulk sample * Blows and penetration W Water sample when 300mm not Progress & Day achieved  Groundwater level | | |

| Method Machine Excavator | | Date 15/04/04 | | Site Old North Road, Sawtry | |
|-----------------------------|--------------|------------------------|---|------------------------------------|--|
| Orientation N-S | | Coord | Ground Level m O.D. | Client Davies Street Sawtry Ltd | |
| Soil Samples/Tests | | Field Records/Comments | Legend | Depth m. | Description of Strata (thickness in m.) [reduced level in m.] |
| Type/Test | Depth m. | | | | |
| D1 | 0.00 - 0.50 | HV @ 1.00m = 59kN/m2 |  | 0.50 | Brown to dark brown clayey sandy slightly gravelly TOPSOIL with frequent roots. (0.50) |
| B1 | 0.55 | | | | Firm brown mottled light orange slightly fissured sandy gravelly CLAY with frequent pockets of fine to medium sand and occasional roots. Gravel fraction is fine to medium angular to rounded flint. (GLACIAL TILL) (0.60) |
| D2 B2 | 1.00 1.00 | | | 1.10 | Firm light brown mottled slightly fissured sandy CLAY. (GLACIAL TILL) (0.40) |
| B3 | 1.50 | | | 1.50 | Soft grey to light grey mottled white CLAY (OXFORD CLAY FORMATION) (0.70) |
| D3 B4 | 2.00 2.00 | | | 2.20 | Firm brown to grey mottled dark brown slightly fissured CLAY. (OXFORD CLAY FORMATION) (0.80) |
| B5 | 2.50 | HV @ 3.00m = 48kN/m2 |  | 3.00 | |
| D4 B6 | 3.00 3.00 | | | | |
| | | | | | |

Remarks
Trial pit sides were stable.
No groundwater encountered in trial pit.

Logged by
C.Cop

Scale
1:25

Report No.
25864



Sample/Test key:

U() U100 Sample (blows)
D Disturbed sample
B Bulk sample
W Water sample
Progress & Day
Groundwater level

Penetration Tests

S() Standard (N value)
C() Cone (N value)
* Blows and penetration when 300mm not achieved

Pit Dimensions - Length: 2.62 Width: 0.60 Depth: 3.00

| | | | | | |
|-----------------------------|--------------|------------------------|---|------------------------------------|---|
| Method Machine Excavator | | Date 15/04/04 | | Site Old North Road, Sawtry | |
| Orientation E-W | | Coord | Ground Level m O.D. | Client Davies Street Sawtry Ltd | |
| Soil Samples/Tests | | Field Records/Comments | Legend | Depth m. | Description of Strata (thickness in m.) [reduced level in m.] |
| Type/Test | Depth m. | | | | |
| D1 | 0.00 - 0.31 | HV @ 1.00m = 56kN/m2 |  | 0.31 | Brown clayey sandy gravelly TOPSOIL with frequent roots. (0.31) |
| B1 | 0.50 | | | | Soft light brown sandy CLAY with frequent roots (GLACIAL TILL) (1.19) |
| D2 B2 | 1.00 1.00 | | | | |
| B3 | 1.50 | | | 1.50 | Firm grey and brown CLAY with occasional roots. (OXFORD CLAY FORMATION) (0.70) |
| D3 B4 | 2.00 2.00 | | | 2.20 | |
| B5 | 2.50 | HV @ 2.00m = 82kN/m2 |  | | Firm brown and white thinly laminated CLAY with occasional bi-valve shell fragments. (OXFORD CLAY FORMATION) (0.90) |
| D4 B6 | 3.00 3.00 | | | 3.10 | |
| | | | | | |

Remarks
No groundwater was encountered.
Trial pit sides were stable.

Logged by
C. Cop






Scale
1:25


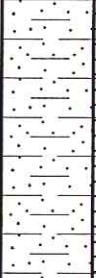

Report No.
25864

Sample/Test key:

U() U100 Sample (blows) S() Standard (N value)
D Disturbed sample C() Cone (N value)
B Bulk sample * Blows and penetration
W Water sample when 300mm not
Progress & Day achieved
Groundwater level

Pit Dimensions - Length: 2.75 Width: 0.60 Depth: 3.10

| Method Machine Excavator | | Date 15/04/04 | | Site Old North Road, Sawtry | | | |
|--|--------------|------------------------|---|------------------------------------|--|------|---|
| Orientation N-S | | Coord | Ground Level m O.D. | Client Davies Street Sawtry Ltd | | | |
| Soil Samples/Tests | | Field Records/Comments | Legend | Depth m. | Description of Strata (thickness in m.) [reduced level in m.] | | |
| Type/Test | Depth m. | | | | | | |
| D1 | 0.00 - 0.30 | HV @ 1.00m = 56kN/m2 |  | 0.30 | Light brown clayey sandy TOPSOIL with frequent roots. (0.30) | | |
| B1 | 0.50 | | | | Soft light brown sandy silty CLAY with frequent roots. (GLACIAL TILL) (0.50) | | |
| D2 B2 | 1.00 1.00 | | | |  | 1.80 | Firm grey and brown mottled slightly fissured CLAY with occasional roots. Unit contains frequent coarse gravel sized pockets of orange clayey sand. (GLACIAL TILL) (1.00) |
| B3 | 1.50 | | | | | | |
| D3 B4 | 2.00 2.00 | | | | | | |
| B5 | 2.50 | HV @ 2.00m = >140kN/m2 |  | 2.40 | Very stiff grey and white CLAY with frequent fragmented and whole bi-valve shell fragments. (OXFORD CLAY FORMATION) (0.60) | | |
| D4 B6 | 3.00 3.00 | | | | | | |
| | | HV @ 3.00m = 58kN/m2 |  | 3.00 | Firm to stiff brown thinly laminated CLAY (OXFORD CLAY FORMATION) (0.60) | | |
| | | | | | | | |
| Remarks Trial pit sides were stable. No groundwater encountered in trial pit. | | | Logged by C.Cop | | Scale 1:25 | | |
| | | | Report No. 25864 | | | | |
| Pit Dimensions - Length: 2.91 Width: 0.60 Depth: 3.00 | | | Sample/Test key: Penetration Tests U() U100 Sample (blows) S() Standard (N value) D Disturbed sample C() Cone (N value) B Bulk sample * Blows and penetration W Water sample when 300mm not Progress & Day achieved  Groundwater level | | | | |

| | | | | | |
|-----------------------------|--------------|------------------------|--|------------------------------------|--|
| Method Machine Excavator | | Date 15/04/04 | | Site Old North Road, Sawtry | |
| Orientation N-S | | Coord | Ground Level m O.D. | Client Davies Street Sawtry Ltd | |
| Soil Samples/Tests | | Field Records/Comments | Legend | Depth m. | Description of Strata (thickness in m.) [reduced level in m.] |
| Type/Test | Depth m. | | | | |
| D1 | 0.00 - 0.26 | HV @ 1.00m = 48kN/m2 |  | 0.26 | Brown clayey sandy gravelly TOPSOIL with frequent roots. (0.26) |
| B1 | 0.50 | |  | | Soft light brown sandy CLAY with frequent roots and 5-50mm tree roots. (GLACIAL TILL) (0.94) |
| D2 B2 | 1.00 1.00 | |  | 1.20 | Stiff becoming hard grey brown mottled CLAY with frequent roots and fragmented bi-valve shells. (OXFORD CLAY FORMATION) (1.40) |
| B3 | 1.50 | | | | |
| D3 B4 | 2.00 2.00 | | HV @ 2.00m = >140kN/m2 | | |
| B5 | 2.50 | | | | |
| D4 B6 | 3.00 3.00 | | | 2.60 | Hard brown weathered CLAY. (OXFORD CLAY FORMATION) (0.50) |
| | | | | | |
| | | | | 3.10 | |

Remarks
Trial pit sides were stable.
No groundwater encountered in trial pit.

Logged by
C.Cop


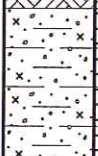
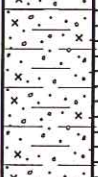
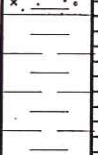
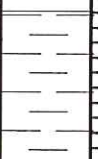
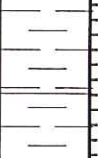
Scale
1:25

Report No.
25864

Sample/Test key:

U() U100 Sample (blows) S () Standard (N value)
D Disturbed sample C () Cone (N value)
B Bulk sample * Blows and penetration when 300mm not achieved
W Water sample
Progress & Day
Groundwater level

Pit Dimensions - Length: 2.92 Width: 0.60 Depth: 3.10

| | | | | | |
|-----------------------------|--------------|---|---|--|---|
| Method Machine Excavator | | Date 15/04/04 | | Site Old North Road, Sawtry | |
| Orientation E-W | | Coord | Ground Level m O.D. | Client Davies Street Sawtry Ltd | |
| Soil Samples/Tests | | Field Records/Comments | Legend | Depth m. | Description of Strata (thickness in m.) [reduced level in m.] |
| Type/Test | Depth m. | | | | |
| D1 | 0.00 - 0.29 | HV @ 1.00m = 64kN/m2 |  | 0.29 | Brown clayey sandy gravelly TOPSOIL with occasional wood fragments and frequent roots. (0.29) |
| B1 | 0.50 | |  | 0.80 | Soft light brown mottled sandy silty gravelly CLAY with frequent roots. Gravel fraction is fine to coarse angular to sub rounded flint. (GLACIAL TILL) (0.51) |
| D2 B2 | 1.00 1.00 | |  | 1.40 | Firm grey and brown sandy silty gravelly CLAY with occasional roots. Gravel fraction is fine to medium angular to rounded flint. Unit contains frequent coarse gravel sized pockets of orange clayey gravelly sand. (GLACIAL TILL) (0.60) |
| B3 | 1.50 | |  | 1.90 | Firm grey to dark brown CLAY with occasional roots. (OXFORD CLAY FORMATION) (0.50) |
| D3 B4 | 2.00 2.00 | | HV @ 2.00m = 52kN/m2 |  | 2.70 |
| B5 | 2.50 |  | | 3.10 | Firm to stiff grey and brown thinly laminated CLAY (OXFORD CLAY FORMATION) (0.40) |
| D4 B6 | 3.00 3.00 | | | | |

Remarks
Trial pit sides were stable.
No groundwater encountered in trial pit.

Logged by
C.Cop

Scale
1:25

Report No.
25864

Sample/Test key:

U() U100 Sample (blows) S() Standard (N value)
D Disturbed sample C() Cone (N value)
B Bulk sample * Blows and penetration
W Water sample when 300mm not
Progress & Day achieved
Groundwater level

Pit Dimensions - Length: 2.72 Width: 0.60 Depth: 3.10

| | | | | | |
|-----------------------------|-------------|------------------------|------------------------|------------------------------------|---|
| Method Machine Excavator | | Date 15/04/04 | | Site Old North Road, Sawtry | |
| Orientation E-W | | Coord | Ground Level m O.D. | Client Davies Street Sawtry Ltd | |
| Soil Samples/Tests | | Field Records/Comments | Legend | Depth m. | Description of Strata (thickness in m.) [reduced level in m.] |
| Type/Test | Depth m. | | | | |
| D1 | 0.00 - 0.90 | | | | Grey brown black and red gravelly silty medium to coarse sand (MADE GROUND). Gravel fraction is fine to coarse angular to sub rounded brick and flint. Unit contains angular to sub angular hardcore cobbles and whole and half grey and red bricks. (0.90) |
| D2 | 1.00 | HV @ 1.00m = 24kN/m2 | | 0.90 | Soft black mottled silty sandy gravelly clay (MADE GROUND). Unit exhibits a strong organic odour. (1.20) |
| D3 | 2.00 | HV @ 2.00m = 28kN/m2 | | 2.10 | Soft black and grey sandy CLAY. (GLACIAL TILL) (0.30) |
| | | | | 2.40 | Firm brown and grey thinly laminated CLAY (OXFORD CLAY FORMATION) (0.60) |
| D4 | 3.00 | HV @ 3.00m = 58kN/m2 | | 3.00 | |

Remarks
Trial pit sides were stable.
No groundwater encountered in trial pit.

Logged by
C.Cop

Scale
1:25

Report No.
25864

Sample/Test key:

U() U100 Sample (blows)

D Disturbed sample

B Bulk sample

W Water sample

Progress & Day

Groundwater level

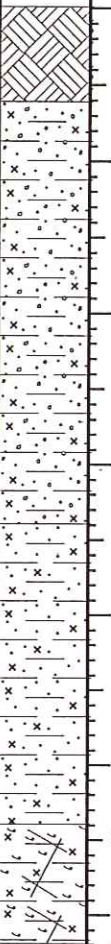
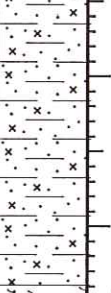
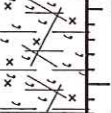

Penetration Tests

S () Standard (N value)

C () Cone (N value)

* Blows and penetration when 300mm not achieved

Pit Dimensions - Length: 2.86 Width: 0.60 Depth: 3.00

| | | | | | |
|--|-------------|------------------------|---|------------------------------------|--|
| Method Machine Excavator | | Date 15/04/04 | | Site Old North Road, Sawtry | |
| Orientation E-W | | Coord | Ground Level m O.D. | Client Davies Street Sawtry Ltd | |
| Soil Samples/Tests | | Field Records/Comments | Legend | Depth m. | Description of Strata (thickness in m.) [reduced level in m.] |
| Type/Test | Depth m. | | | | |
| D 1 | 0.00 - 0.31 | HV @ 1.0m = 42kN/m2 |  | 0.31 | Brown clayey sandy TOPSOIL with frequent 1-2mm roots. (0.31) |
| D2 | 1.00 | | | | Firm brown to grey sandy gravelly CLAY. Gravel fraction is fine to coarse angular to rounded flint. (GLACIAL TILL) (1.39) Unit contains occasional 1-2mm roots and frequent coarse gravel sized pockets of orange clayey gravelly sand. |
| D3 | 2.00 | HV @ 2.0m = 10kN/m2 |  | 1.70 | Very soft brown to light brown mottled very sandy CLAY. (GLACIAL TILL) (1.00) |
| | | | | | |
| D4 | 3.00 | HV @ 3.0m = 82kN/m2 |  | 2.70 | Stiff dark grey mottled slightly fissured CLAY. (OXFORD CLAY FORMATION) (0.40) |
| | | | | | |
| | | | | 3.10 | |
| Remarks Trial pit sides were stable No groundwater was encountered | | | Logged by C.Cop | | Scale 1:25 |
| | | | Report No. 25864 | | |
| Pit Dimensions - Length: 2.96 Width: 0.60 Depth: 3.10 | | | Sample/Test key: Penetration Tests U() U100 Sample (blows) S () Standard (N value) D Disturbed sample C () Cone (N value) B Bulk sample * Blows and penetration W Water sample when 300mm not Progress & Day achieved  Groundwater level | | |