**Project:** Land South of Green Lane  
**Project ID:** 773578  
**Location:** Horsford, Norfolk  
**Client:** Barratt Homes (Eastern Counties)  
**Project Engineer:** L. Liness

**Method:** TP  
**Start:** 21/04/2016  
**Finish:** 21/04/2016  
**Level (mOD):** 36.92  
**Co-ordinates:** 618608.65E - 317468.04N  
**Logged by:** W.F.

### INSITU TEST/SAMPLING

<table>
<thead>
<tr>
<th>Depth (m)</th>
<th>Sample Ref.</th>
<th>Strength Shear (kPa)</th>
<th>Level (mOD)</th>
<th>Depth (m)</th>
<th>Legend</th>
<th>Description of Strata</th>
<th>Thickness (m)</th>
<th>Water (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.10</td>
<td>ES1</td>
<td></td>
<td>36.54</td>
<td>0.38</td>
<td></td>
<td>Dark brown silty gravelly fine to medium SAND. Gravel is fine to coarse angular to sub-rounded chert. Occasional recently active rootlets. TOPSOIL</td>
<td>0.38</td>
<td></td>
</tr>
<tr>
<td>0.40</td>
<td>ES2</td>
<td></td>
<td>36.32</td>
<td>0.60</td>
<td></td>
<td>Orange brown silty slightly gravelly fine to medium SAND. Gravel is fine to coarse angular to sub-rounded chert. GLACIOFLUVIAL DEPOSITS</td>
<td>0.22</td>
<td></td>
</tr>
<tr>
<td>1.00</td>
<td>D1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Yellow brown and buff slightly gravelly fine to coarse SAND. Gravel is fine to coarse angular to sub-rounded chert. Occasional very weakly cemented dark brown sand pockets from 2.5m. GLACIOFLUVIAL DEPOSITS</td>
<td>2.30</td>
<td></td>
</tr>
<tr>
<td>2.50</td>
<td>B1</td>
<td></td>
<td>34.02</td>
<td>2.90</td>
<td></td>
<td>End of trial pit at 2.90m</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Notes:**  
Shear strengths recorded using Pilcon Hand Shear Vane  

**Remarks:**  
1. Groundwater not encountered.  
2. Pit terminated at 2.90m due to instability.

**Dimensions:**  
Stability: Unstable from 1.0-2.9m  
Plant Used: Mechanical Excavator
### IN-SITU TEST/SAMPLING

<table>
<thead>
<tr>
<th>Depth (m)</th>
<th>Sample Ref</th>
<th>Strength Shear (kPa)</th>
<th>Level (m AOD)</th>
<th>Depth (m)</th>
<th>Legend</th>
<th>Description of Strata</th>
<th>Thickness (m)</th>
<th>Water (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.20</td>
<td>ES1</td>
<td></td>
<td></td>
<td>0.47</td>
<td></td>
<td>Dark brown silty gravelly fine to medium SAND TOPSOIL. Gravel is fine to coarse angular to sub-rounded chert with gravel sized fragments of brick and charcoal. Frequent rootlets. MADE GROUND.</td>
<td>0.47</td>
<td></td>
</tr>
<tr>
<td>0.20</td>
<td>ES3</td>
<td></td>
<td></td>
<td>0.47</td>
<td></td>
<td>Dark orange brown silty gravelly fine to medium SAND. Gravel is fine to coarse angular to sub-rounded chert. GLACIOFLUVIAL DEPOSITS</td>
<td>0.28</td>
<td></td>
</tr>
<tr>
<td>0.50</td>
<td>ES2</td>
<td></td>
<td>36.35</td>
<td>0.47</td>
<td></td>
<td>Orange brown and yellow brown silty gravelly fine to coarse SAND. Gravel is fine to coarse angular to sub-rounded chert. GLACIOFLUVIAL DEPOSITS</td>
<td>0.65</td>
<td></td>
</tr>
<tr>
<td>1.00</td>
<td>B1</td>
<td></td>
<td>36.07</td>
<td>0.75</td>
<td></td>
<td>Orange brown and yellow brown silty gravelly fine to coarse SAND. Gravel is fine to coarse angular to sub-rounded chert. GLACIOFLUVIAL DEPOSITS</td>
<td>0.85</td>
<td></td>
</tr>
<tr>
<td>1.70</td>
<td>B2</td>
<td></td>
<td>35.22</td>
<td>1.60</td>
<td></td>
<td>Yellow brown, yellow and grey gravelly fine to coarse SAND. Gravel is fine to coarse angular to sub-rounded chert. GLACIOFLUVIAL DEPOSITS</td>
<td>0.40</td>
<td></td>
</tr>
</tbody>
</table>

### Notes:

Shear strengths recorded using Pilcon Hand Shear Vane

### Remarks:

1. Groundwater not encountered.
2. Soakaway test undertaken. See separate results sheet.

### Dimensions:

- **0.40m**
- **1.60m**

### Stability:
Stable

### Plant Used:
Mechanical Excavator
**Project:** Land South of Green Lane  
**Project ID:** 773578  
**Location:** Horsford, Norfolk  
**Client:** Barratt Homes (Eastern Counties)  
**Project Engineer:** L. Liness  
**Method:** WLS  
**Level (mOD):** 35.81  
**Start:** 19/04/2016  
**Finish:** 19/04/2016  
**Co-ordinates:** 618982.12E - 317224.72N  
**Logged by:** W.F.

---

### Description of Strata

- **Depth (m):** 0.30  
  - **SPT Results (Type):**  
    - ES1: 0.10 - 0.20m  
    - ES2: 0.40 - 0.50m  
  - **Strength Shear (kPa):** 35.51  
  - **Legend:** Dark brown silty gravelly fine to medium SAND. Gravel is fine to coarse angular to sub-rounded chert. Frequent rootlets.  
  - **Thickness (m):** 0.30  
- **Depth (m):** 0.60  
  - **SPT Results (Type):**  
    - DI: 0.90 - 1.00m  
    - B1: 1.00 - 2.00m  
  - **Legend:** Orange brown silty gravelly fine to medium SAND. Gravel is fine to coarse angular to sub-rounded chert. Occasional rootlets.  
  - **Thickness (m):** 0.30  
- **Depth (m):** 2.00  
  - **SPT Results (Type):**  
    - N=14  
    - (2,3,3,3,3,3,4)  
    - (C)  
  - **Legend:** Orange brown becoming yellow brown with depth gravelly fine to coarse SAND. Gravel is fine to coarse angular to rounded chert. Very gravelly horizon at 2.1m to 2.5m. Colour change to light grey at 3.0m.  
  - **Thickness (m):** 2.90  
- **Depth (m):** 3.50  
  - **SPT Results (Type):**  
    - N=11  
    - (1,3,3,3,3,2)  
    - (C)  
  - **Legend:** Yellow brown fine to coarse SAND. Orange brown silty gravelly lens at 4.95m to 5.0m.  
  - **Thickness (m):** 1.50  
- **Depth (m):** 5.00  
  - **Legend:** End of borehole at 5.00 m

---

### General Notes
1. Shear Strengths determined by hand shear vane.  
2. See key sheet for explanation of symbols

### Remarks
1. Unstable below 3.50m - SPT at 5.00m not possible.
## General Notes
1. Shear Strengths determined by hand shear vane.
2. See key sheet for explanation of symbols

## Remarks
1. Unstable below 3.50m - SPT at 5.00m not possible.
2. Well installed to 3.50m bg

<table>
<thead>
<tr>
<th>Date</th>
<th>Depth Encountered</th>
<th>Casing Depth</th>
<th>Inflow Remarks</th>
<th>Depth to water after 20 mins (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>20-04-2016</td>
<td>3.40</td>
<td></td>
<td></td>
<td>3.19</td>
</tr>
</tbody>
</table>

### Water Strike Details
Recorded in metres below ground level (m bg)
### Project Details
- **Project:** Land South of Green Lane
- **Project ID:** 773578
- **Location:** Horsford, Norfolk
- **Client:** Barratt Homes (Eastern Counties)
- **Project Engineer:** L. Liness

### Method
- **Method:** WLS
- **Start:** 19/04/2016
- **Finish:** 19/04/2016
- **Level (mOD):** 35.75
- **Co-ordinates:** 618899.87E - 317252.06N
- **Logged by:** W.F.

### Water Strike Details
- **Date:** 19-04-2016
- **Depth Encountered:** 3.00
- **Casing Depth:**
- **Inflow Remarks:**
- **Depth to water after 20 mins (m):** 2.90

### Legend
- **Dark brown silty gravelly fine to medium SAND. Gravel is fine to coarse angular to sub-rounded chert. Frequent rootlets. TOPSOL**
- **Orange brown slightly gravelly fine to coarse SAND. Gravel is fine to coarse angular to sub-rounded chert. GLACIOFLUVIAL DEPOSITS**
- **Yellow brown and buff very gravelly fine to coarse SAND. Gravel is fine to coarse angular to sub-rounded chert and quartzite. GLACIOFLUVIAL DEPOSITS**
- **Orange brown gravelly fine to coarse SAND. Gravel is fine to coarse angular to sub-rounded chert. Grey sand horizon at 2.8m to 3.0m. Gravel content decreasing from 3.1m. Colour change to buff at 3.6m. GLACIOFLUVIAL DEPOSITS**
- **Brown very clayey silty fine to coarse SAND. GLACIOFLUVIAL DEPOSITS**
- **Firm yellow brown and grey silty sandy CLAY with fine to medium sand lenses. GLACIOFLUVIAL DEPOSITS**

### Depth and SPT Results
<table>
<thead>
<tr>
<th>Depth (m)</th>
<th>SPT Results (Type)</th>
<th>Strength Shear (kPa)</th>
<th>Level (mOAD)</th>
<th>Description of Strata</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.10 - 0.20m</td>
<td>ES1: N=12 (2,4/3,3/3) (C)</td>
<td>35.45</td>
<td>0.30</td>
<td>Dark brown silty gravelly fine to medium SAND. Gravel is fine to coarse angular to sub-rounded chert. Frequent rootlets. TOPSOL</td>
</tr>
<tr>
<td>0.30 - 0.40m</td>
<td>ES2: N=13 (2,3/3,4/3) (C)</td>
<td>34.35</td>
<td>1.40</td>
<td>Orange brown slightly gravelly fine to coarse SAND. Gravel is fine to coarse angular to sub-rounded chert.GLACIOFLUVIAL DEPOSITS</td>
</tr>
<tr>
<td>0.90 - 1.00m</td>
<td>D1: N=12 (2,4/3,3/3) (C)</td>
<td>33.75</td>
<td>2.00</td>
<td>Yellow brown and buff very gravelly fine to coarse SAND. Gravel is fine to coarse angular to sub-rounded chert and quartzite. GLACIOFLUVIAL DEPOSITS</td>
</tr>
<tr>
<td>1.00 - 2.00m</td>
<td>B1: N=13 (2,3/3,4/3) (C)</td>
<td>33.05</td>
<td>4.70</td>
<td>Orange brown gravelly fine to coarse SAND. Gravel is fine to coarse angular to sub-rounded chert. Grey sand horizon at 2.8m to 3.0m. Gravel content decreasing from 3.1m. Colour change to buff at 3.6m. GLACIOFLUVIAL DEPOSITS</td>
</tr>
<tr>
<td>2.00</td>
<td></td>
<td>31.55</td>
<td>4.20</td>
<td>Brown very clayey silty fine to coarse SAND. GLACIOFLUVIAL DEPOSITS</td>
</tr>
<tr>
<td>2.50 - 2.60m</td>
<td>D2: N=7 (1,1/2,2,1,2) (C)</td>
<td>31.05</td>
<td>4.00</td>
<td>Firm yellow brown and grey silty sandy CLAY with fine to medium sand lenses. GLACIOFLUVIAL DEPOSITS</td>
</tr>
<tr>
<td>3.00</td>
<td>N=6 (3,1/1,1,2,2) (C)</td>
<td>30.75</td>
<td>5.00</td>
<td>End of borehole at 5.00 m</td>
</tr>
<tr>
<td>4.00</td>
<td>N=9 (1,2/2,2,3,2) (C)</td>
<td>30.00</td>
<td>5.00</td>
<td></td>
</tr>
<tr>
<td>4.20 - 4.30m</td>
<td>D3: N=7 (1,1/2,2,1,2) (C)</td>
<td>31.05</td>
<td>4.70</td>
<td>Firm yellow brown and grey silty sandy CLAY with fine to medium sand lenses. GLACIOFLUVIAL DEPOSITS</td>
</tr>
<tr>
<td>4.80 - 4.90m</td>
<td>D4: N=9 (1,2/2,2,3,2) (C)</td>
<td>30.00</td>
<td>5.00</td>
<td></td>
</tr>
<tr>
<td>5.00</td>
<td></td>
<td>30.00</td>
<td>5.00</td>
<td></td>
</tr>
</tbody>
</table>

### General Notes
1. Shear Strengths determined by hand shear vane.
2. See key sheet for explanation of symbols

### Remarks
1. Well installed to 5.00m bgl.

### Water Strike Details
- **Date:** 19-04-2016
- **Depth Encountered:** 3.00
- **Casting Depth:**
- **Inflow Remarks:**
- **Depth to water after 20 mins (m):** 2.90
# Project Information

**Project:** Land South of Green Lane  
**Project ID:** 773578  
**Location:** Horsford, Norfolk  
**Client:** Barratt Homes (Eastern Counties)  
**Engineer:** L. Liness  

**Method:** WLS  
**Start:** 20/04/2016  
**Finish:** 20/04/2016  
**Level (mOD):** 35.91  
**Co-ordinates:** 618947.98E - 317339.44N  
**Logged by:** W.F.  

## Description of Strata

<table>
<thead>
<tr>
<th>Depth (m)</th>
<th>SPT Results (Type)</th>
<th>Strength (kPa)</th>
<th>Level (mAOd)</th>
<th>Description of Strata</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.10 - 0.20m</td>
<td></td>
<td></td>
<td></td>
<td>Dark brown silty gravelly fine to medium SAND. Gravel is fine to coarse angular to sub-rounded chert. Frequent rootlets. TOPSOIL</td>
</tr>
<tr>
<td>0.40 - 0.50m</td>
<td></td>
<td></td>
<td></td>
<td>Orange brown silty gravelly fine to coarse SAND. Gravel is fine to coarse angular to sub-rounded chert. Light grey medium to coarse sand horizon at 1.2m to 1.4m. GLACIOFLUVIAL DEPOSITS</td>
</tr>
<tr>
<td>0.90 - 1.00m</td>
<td>N=7 (1,2/1,3,1,2)</td>
<td>1.00</td>
<td>35.56</td>
<td></td>
</tr>
<tr>
<td>1.90 - 2.00m</td>
<td>N=14 (3,2/3,4,4)</td>
<td>2.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.00</td>
<td>N=10 (2,2/2,4,4,4)</td>
<td>(C)</td>
<td>32.71</td>
<td>Light grey and buff mottled yellow brown fine to coarse SAND. Brown clayey fine to coarse angular to sub-rounded gravelly lense at 3.8m to 4.0m. GLACIOFLUVIAL DEPOSITS</td>
</tr>
<tr>
<td>3.20</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.80 - 4.00m</td>
<td>N=14 (2,3/3,4,4,4)</td>
<td>(C)</td>
<td>31.51</td>
<td>Soft (low strength) brown and light grey very sandy CLAY. GLACIOFLUVIAL DEPOSITS</td>
</tr>
<tr>
<td>4.40</td>
<td>30</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**General Notes**  
1. Shear Strengths determined by hand shear vane.  
2. See key sheet for explanation of symbols

**Remarks**  
1. Unstable below 3.50m - SPT at 5.00m not possible.  
2. Well installed to 3.60m bgl.

## Water Strike Details

<table>
<thead>
<tr>
<th>Date</th>
<th>Depth Encountered (m)</th>
<th>Casing Depth (m)</th>
<th>Inflow Remarks</th>
<th>Depth to water after 20 mins (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>19-04-2016</td>
<td>3.40</td>
<td></td>
<td></td>
<td>3.20</td>
</tr>
</tbody>
</table>
## Project Details

**Project:** Land South of Green Lane  
**Project ID:** 773578  
**Location:** Horsford, Norfolk  
**Client:** Barratt Homes (Eastern Counties)  
**Project Engineer:** L. Liness  

### Method Details

- **Method:** WLS  
- **Start:** 20/04/2016  
- **Finish:** 20/04/2016  
- **Level (mOD):** 36.55  
- **Co-ordinates:** 618911.84E - 317446.57N  

### Water Strike Details

<table>
<thead>
<tr>
<th>Date</th>
<th>Depth Encountered</th>
<th>Casing Depth</th>
<th>Inflow Remarks</th>
<th>Depth to water after 20 mins (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>20-04-2016</td>
<td>3.40</td>
<td></td>
<td></td>
<td>3.40</td>
</tr>
</tbody>
</table>

### General Notes

1. Shear Strengths determined by hand shear vane.  
2. See key sheet for explanation of symbols

### Remarks

1. Unstable below 3.50m - SPT at 5.00m not possible.  
2. Well installed to 3.70m bgl.

### Description of Strata

- **Depth (m):**
  - ES1: 0.10 - 0.20m  
  - ES2: 0.45 - 0.55m  
  - D1: 0.90 - 1.00m  
  - D2: 1.90 - 2.00m  
  - D3: 2.90 - 3.00m  
  - D4: 3.90 - 4.00m  
  - D5: 4.80 - 5.00m  

- **SPT Results (Type):**
  - N=15  
  - N=18  
  - N=5  
  - N=8  

- **Strength Shear (kPa):**
  - ES1: 0.10 - 0.20m  
  - ES2: 0.45 - 0.55m  
  - D1: 0.90 - 1.00m  
  - D2: 1.90 - 2.00m  
  - D3: 2.90 - 3.00m  
  - D4: 3.90 - 4.00m  
  - D5: 4.80 - 5.00m  

- **Level (mAOD):**
  - 36.10  

- **Legend:**
  - Dark brown silty slightly gravelly fine to medium SAND. Gravel is fine to medium angular to sub-rounded chert. Frequent rootlets. TOPSOIL  
  - Orange brown gravelly fine to medium SAND. Gravel is fine to medium angular to sub-rounded chert. Coarse sand and fine to medium chert gravel lens at 1.3m to 1.5m. GLACIOFLUVIAL DEPOSITS  
  - Buff and light grey fine to medium SAND. GLACIOFLUVIAL DEPOSITS  
  - Orange brown clayey fine to coarse SAND. GLACIOFLUVIAL DEPOSITS  
  - Soft (low strength) dark orange brown sandy CLAY. GLACIOFLUVIAL DEPOSITS  

- **Depth to Water:**
  - End of borehole at 5.00 m
### Project Details
- **Project:** Land South of Green Lane
- **Project ID:** 773578
- **Location:** Horsford, Norfolk
- **Client:** Barratt Homes (Eastern Counties)
- **Engineer:** L. Liness

### Method Details
- **Method:** WLS
- **Start:** 19/04/2016
- **Finish:** 19/04/2016
- **Level (mOD):** 36.59
- **Co-ordinates:** 618825.78E - 317350.58N

### Water Strike Details
<table>
<thead>
<tr>
<th>Date</th>
<th>Depth Encountered</th>
<th>Casing Depth</th>
<th>Inflow Remarks</th>
<th>Depth to water after 20 mins (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>19-04-2016</td>
<td>3.40</td>
<td></td>
<td></td>
<td>3.40</td>
</tr>
</tbody>
</table>

### SPT Results
<table>
<thead>
<tr>
<th>Depth (m)</th>
<th>SPT Results (Type)</th>
<th>Strength Shear (kPa)</th>
<th>Level (mOD)</th>
<th>Depth (m)</th>
<th>Description of Strata</th>
</tr>
</thead>
<tbody>
<tr>
<td>ES1: 0.10 - 0.20m</td>
<td>N=23 (3,4/5,6,6,6)</td>
<td>(C)</td>
<td>36.29</td>
<td>0.30</td>
<td>Dark brown silty gravelly fine to medium SAND. Gravel is fine to medium angular to sub-rounded chert. Frequent rootlets.</td>
</tr>
<tr>
<td>ES2: 0.40 - 0.50m</td>
<td>N=18 (3,5/4,5,4,5)</td>
<td>(C)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D1: 0.90 - 1.00m</td>
<td>N=15 (5,4/4,4,3,4)</td>
<td>(C)</td>
<td>3.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>D2: 1.90 - 2.00m</td>
<td>N=14 (2,2/3,3,4,4)</td>
<td>(C)</td>
<td>3.90 - 4.00m</td>
<td>4.00</td>
<td>Buff medium to coarse SAND.</td>
</tr>
<tr>
<td>B1: 2.00 - 3.00m</td>
<td>N=25 (5,5/7,7,6,5)</td>
<td>(C)</td>
<td>4.90 - 5.00m</td>
<td>5.00</td>
<td>GLACIOFLUVIAL DEPOSITS</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>End of borehole at 5.00m</td>
</tr>
</tbody>
</table>

### Remarks
1. Hole collapsed to 3.80m upon completion.
2. Backfilled with arisings.

### General Notes
1. Shear Strengths determined by hand shear vane.
2. See key sheet for explanation of symbols.
null
Project: Land South of Green Lane  
Project ID: 773578  
Location: Horsford, Norfolk  
Client: Barratt Homes (Eastern Counties)  
Project Engineer: L. Liness  
Method: WLS  
Start: 20/04/2016  
Finish: 20/04/2016  
Level (mOD): 37.23  
Co-ordinates: 618662.96E - 317380.03N  
Logged by: T.E.

### SPT Results (Type)

<table>
<thead>
<tr>
<th>Depth (m)</th>
<th>SPT Results (Type)</th>
<th>Strength Shear (kPa)</th>
<th>Level (mAOd)</th>
<th>Description of Strata</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.00</td>
<td>D1: 1.10 - 1.20m</td>
<td>N=38 (6,10/12,11,9,6) (C)</td>
<td>36.93</td>
<td>Dark brown silty slightly gravelly fine to medium SAND. Gravel is fine to medium angular to sub-rounded chert with rare gravel sized fragments of brick. Occasional recently active rootlets. TOPSOIL.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>0.30</td>
<td>Orange brown silty gravelly fine to coarse SAND. Gravel is fine to coarse angular to sub-rounded chert. Coarse sand and fine to medium chert gravel lense at 0.60m to 1.0m. GLACIOFLUVIAL DEPOSITS</td>
</tr>
<tr>
<td>2.00</td>
<td>D2: 1.90 - 2.00m</td>
<td>N=14 (2,2/4,3,4,3,4) (C)</td>
<td>36.13</td>
<td>Yellow brown gravelly fine to coarse SAND. Gravel is fine to coarse angular to sub-rounded chert. Orange brown sand horizon at 1.5m to 1.7m. GLACIOFLUVIAL DEPOSITS</td>
</tr>
<tr>
<td>3.00</td>
<td>D3: 2.90 - 3.00m</td>
<td>N=21 (3,4,6,6,5,4) (C)</td>
<td>32.53</td>
<td>Grey gravelly coarse SAND. Gravel is fine to coarse angular to sub-rounded chert. GLACIOFLUVIAL DEPOSITS</td>
</tr>
<tr>
<td>4.00</td>
<td>D4: 3.90 - 4.00m</td>
<td>N=14 (2,2/4,3,4,4,4) (C)</td>
<td>32.23</td>
<td>GLACIOFLUVIAL DEPOSITS</td>
</tr>
<tr>
<td>5.00</td>
<td>D5: 4.90 - 5.00m</td>
<td>N=15 (2,2/4,3,4,4,4) (C)</td>
<td>32.23</td>
<td>End of borehole at 5.00m</td>
</tr>
</tbody>
</table>

### General Notes
1. Shear Strengths determined by hand shear vane.
2. See key sheet for explanation of symbols

### Water Strike Details
Recorded in metres below ground level (m bgl)

<table>
<thead>
<tr>
<th>Date</th>
<th>Depth Encountered</th>
<th>Casing Depth</th>
<th>Inflow Remarks</th>
<th>Depth to water after 20 mins (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>20-04-2016</td>
<td>3.00</td>
<td></td>
<td></td>
<td>5.00</td>
</tr>
</tbody>
</table>

### Remarks
1. Slight groundwater seepage at 3.00m
2. Well installed to 5.00m bgl.
### General Notes
1. Shear Strengths determined by hand shear vane.
2. See key sheet for explanation of symbols

### Remarks
1. Hole collapsed to 3.70m upon completion.
2. Backfilled with arisings.

### Water Strike Details
Recorded in metres below ground level (m bgl)

<table>
<thead>
<tr>
<th>Date</th>
<th>Depth Encountered</th>
<th>Casing Depth</th>
<th>Inflow Remarks</th>
<th>Depth to water after 20 mins (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>19-04-2016</td>
<td>3.50</td>
<td></td>
<td></td>
<td>3.00</td>
</tr>
</tbody>
</table>

### Description of Strata
- **Dark brown silty slightly gravelly fine to medium SAND. Gravel is fine to medium angular to sub-rounded chert. Occasional recently active rootlets.**
  - Level: 36.31
  - Depth: 0.30
- **Orange brown silty slightly gravelly coarse SAND. Gravel is fine to coarse angular to sub-rounded chert.**
  - Level: 35.41
  - Depth: 1.20
- **Yellow brown slightly gravelly fine to coarse SAND. Gravel is fine to coarse angular to sub-rounded chert. Buff fine to coarse sand horizon at 3.7m to 4.5m.**
  - Level: 31.61
  - Depth: 5.00
- **GLACIOFLUVIAL DEPOSITS**
- **TOPSOIL**
- **GLACIOFLUVIAL DEPOSITS**

---

### SPT Results

<table>
<thead>
<tr>
<th>Depth (m)</th>
<th>SPT Results (Type)</th>
<th>Strength Shear (kPa)</th>
<th>Level (mAO)</th>
<th>Depth (m)</th>
<th>Legend</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.10 - 0.20</td>
<td>ES1 2/3,3,4,3 (C)</td>
<td>36.31</td>
<td>0.30</td>
<td>0.30</td>
<td>0.30</td>
</tr>
<tr>
<td>0.30 - 0.40</td>
<td>ES2 1,2/3,3,3,2 (C)</td>
<td>35.41</td>
<td>1.20</td>
<td>1.00</td>
<td>0.90</td>
</tr>
<tr>
<td>1.00 - 2.00</td>
<td>D1 1,1/1,1,2,2 (C)</td>
<td>2.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.90 - 3.00</td>
<td>D2 2/2,2,3,3,2 (C)</td>
<td>3.00</td>
<td></td>
<td>3.80</td>
<td></td>
</tr>
<tr>
<td>3.90 - 4.00</td>
<td>D3 2/2,2,3,2,3 (C)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.90 - 5.00</td>
<td>D4 3/3,3,3,4,4,4,5 (C)</td>
<td>5.00</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

### Co-ordinates
- 1:50
- 618666.88E - 317480.95N

---

### Legend
- **ES1**: 0.10 - 0.20m
- **ES2**: 0.30 - 0.40m
- **D1**: 0.90 - 1.00m
- **B1**: 1.00 - 2.00m
- **D2**: 2.90 - 3.00m
- **D3**: 3.90 - 4.00m
- **D4**: 4.90 - 5.00m

---

### Method
- WLS

---

### Project Details
- **Project**: Land South of Green Lane
- **Project ID**: 773578
- **Location**: Horsford, Norfolk
- **Client**: Barratt Homes (Eastern Counties)
- **Project Engineer**: L. Liness

---

### Water Strike
- **Date**: 19-04-2016
- **Depth**: 3.50
- **Casing Depth**: 3.00
- **Inflow Remarks**: 3.00
- **Depth to water after 20 mins**: 3.00

---

### Co-ordinates
- **Level (mOD)**: 36.61
- **Co-ordinates**: 618666.88E - 317480.95N

---

### Logged by
- W.F.
## Details of Project
- **Project:** Land South of Green Lane
- **Project ID:** 773578
- **Location:** Horsford, Norfolk
- **Client:** Barratt Homes (Eastern Counties)
- **Engineer:** L. Liness
- **Method:** WLS
- **Start:** 20/04/2016
- **Finish:** 20/04/2016
- **Co-ordinates:** 618567.71E - 317519.83N
- **Logged by:** T.E.

## Water Strike Details
<table>
<thead>
<tr>
<th>Date</th>
<th>Depth</th>
<th>Casing Depth</th>
<th>Inflow Remarks</th>
<th>Depth to Water after 20 mins (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>20-04-2016</td>
<td>3.00</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## General Notes
1. Shear Strengths determined by hand shear vane.
2. See key sheet for explanation of symbols

## Remarks
1. Unstable below 3.50m - SPT at 5.00m not possible.
2. Well installed to 4.00m bgl.

### Legend and Description of Strata
- **Dark brown silty gravelly fine to medium SAND.** Gravel is fine to medium angular to sub-rounded chert. Frequent rootlets. TOPSOIL
- **Orange brown silty gravelly fine to medium SAND.** Gravel is fine to medium angular to sub-rounded chert. GLACIOFLUVIAL DEPOSITS
- **Yellow brown gravelly fine to coarse SAND.** Gravel is fine to medium angular to sub-rounded chert. Becoming medium to coarse sand from 2.5m. GLACIOFLUVIAL DEPOSITS
- **Orange brown gravelly coarse SAND.** Gravel is fine to medium angular to sub-rounded chert. GLACIOFLUVIAL DEPOSITS

### Table
<table>
<thead>
<tr>
<th>Depth (m)</th>
<th>SPT Results (Type)</th>
<th>Strength Shear (kPa)</th>
<th>Level (m AOD)</th>
<th>Description of Strata</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.10 - 0.20m</td>
<td>ES1</td>
<td>36.45</td>
<td>0.40</td>
<td>Dark brown silty gravelly fine to medium SAND. Gravel is fine to medium angular to sub-rounded chert. Frequent rootlets. TOPSOIL</td>
</tr>
<tr>
<td>0.40 - 0.50m</td>
<td>ES2</td>
<td>35.35</td>
<td>1.50</td>
<td>Orange brown silty gravelly fine to medium SAND. Gravel is fine to medium angular to sub-rounded chert. GLACIOFLUVIAL DEPOSITS</td>
</tr>
</tbody>
</table>

### Shear Strengths
- N=13 (3,3/3,4,3,3) (C)
- N=16 (2,4/4,3,4,3) (C)
- N=15 (2,2/4,4,4,3) (C)
- N=14 (3,3/4,3,4,3) (C)
- N=13 (3,3/4,3,3,3) (C)

### Water Strike Details
- Recorded in metres below ground level (m bgl)
- Date: 20-04-2016
- Depth Encountered: 3.00

### Water Strike Details
- **Date:** 20-04-2016
- **Depth to Water after 20 mins (m):** 3.00
SOAKAWAY TEST RESULTS
Based on BRE Digest 365: Soakaway Design (2007)

Project Name: Land south of Green Lane, Horsford
Location: Horsford
Project Ref: 773578
Test Location: TP1 (Test 1)

Readings:

<table>
<thead>
<tr>
<th>Time (seconds)</th>
<th>Water Level (m bgl)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1.20</td>
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<tr>
<td>30</td>
<td>1.40</td>
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<tr>
<td>60</td>
<td>1.50</td>
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<tr>
<td>90</td>
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<tr>
<td>180</td>
<td>1.70</td>
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<tr>
<td>210</td>
<td>1.72</td>
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<tr>
<td>240</td>
<td>1.77</td>
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<tr>
<td>270</td>
<td>1.80</td>
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<tr>
<td>300</td>
<td>1.83</td>
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<tr>
<td>330</td>
<td>1.87</td>
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<td>360</td>
<td>1.90</td>
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<td>390</td>
<td>1.93</td>
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<tr>
<td>420</td>
<td>1.95</td>
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<tr>
<td>450</td>
<td>1.98</td>
</tr>
<tr>
<td>480</td>
<td>2.00</td>
</tr>
</tbody>
</table>

Trial Pit Dimensions (m)

| Length  | 1.70 |
| Width   | 0.40 |
| Depth   | 2.00 |

Assumed Invert Level (m bgl) 1.20

Was trial pit filled with gravel (Yes/No): Yes

Assumed fill porosity (CIRIA 156) 35%

Ground Conditions:
Refer to engineers logs

Soil Infiltration Rate (m/sec) \( f = \frac{V_{p75} - 25}{a_{p50} \times t_{p75} - 25} \)

Soil Infiltration Rate (m/sec) \( f = 1.70E-04 \)

Remarks
1. The soil infiltration rate has been calculated using the BRESOAK Program version 1.0.4
SOAKAWAY TEST RESULTS
Based on BRE Digest 365: Soakaway Design (2007)

Project Name: Land south of Green Lane, Horsford
Location: Horsford
Project Ref: 773578
Test Location: TP1 (Test 2)

Readings:

<table>
<thead>
<tr>
<th>Time (seconds)</th>
<th>Water Level (m bgl)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1.20</td>
</tr>
<tr>
<td>30</td>
<td>1.39</td>
</tr>
<tr>
<td>60</td>
<td>1.47</td>
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<tr>
<td>90</td>
<td>1.52</td>
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<tr>
<td>540</td>
<td>1.99</td>
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<tr>
<td>570</td>
<td>2.00</td>
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</tbody>
</table>

Trial Pit Dimensions (m):
- Length: 1.70
- Width: 0.40
- Depth: 2.00

Assumed Invert Level (m bgl): 1.20

Was trial pit filled with gravel (Yes/No): Yes

Assumed fill porosity (CIRIA 156): 35%

Ground Conditions:
- Refer to engineers logs

Graph: Fall in Water over Time

Soil Infiltration Rate (m/sec) $f = \frac{V_{75} - 25}{a_{50} \times t_{75} - 25}$

Remarks
1. The soil infiltration rate has been calculated using the BRESOAK Program version 1.0.4
SOAKAWAY TEST RESULTS
Based on BRE Digest 365: Soakaway Design (2007)

Project Name: Land south of Green Lane, Horsford
Location: Horsford
Project Ref: 773578
Test Location: TP1 (Test 3)

Readings:

<table>
<thead>
<tr>
<th>Time</th>
<th>Water Level (m bgl)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1.20</td>
</tr>
<tr>
<td>30</td>
<td>1.39</td>
</tr>
<tr>
<td>60</td>
<td>1.47</td>
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<tr>
<td>90</td>
<td>1.52</td>
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<td>600</td>
<td>2.00</td>
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</table>

Trial Pit Dimensions (m)

<table>
<thead>
<tr>
<th>Length</th>
<th>Width</th>
<th>Depth</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.70</td>
<td>0.40</td>
<td>2.00</td>
</tr>
</tbody>
</table>

Assumed Invert Level (m bgl): 1.20
Was trial pit filled with gravel (Yes/No): Yes
Assumed fill porosity (CIRIA 156): 35%

Ground Conditions:
Refer to engineers logs

Soil Infiltration Rate (m/sec): \( f = \frac{V_{p75} - 25}{a_{p50} \times t_{p75} - 25} \)

Remarks
1. The soil infiltration rate has been calculated using the BRESOAK Program version 1.0.4

[Graph showing fall in water over time]

[Graph showing soil infiltration rate calculation]

[Diagram showing soil infiltration rate calculation]