

**SOAKAGE TESTING**

**13 & 15 LANCASTER GARDENS, UXBRIDGE**

FOR THE TRUSTEES OF UURCC

REPORT REF: 1813-GE002

22 APRIL 2025

REVISION 1

## DOCUMENT RECORD

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The interpretation made in this report is based on the information obtained during the course of the desk study and ground investigation. It should be appreciated that any desk study information is not necessarily exhaustive and that further information relevant to the site and its proposed usage may be available. There may be conditions present on the site that have not been revealed by the ground investigation which as a result have not been addressed within this report.

The accuracy of any map extracts cannot be guaranteed and it should be recognised that different conditions on site may have existed between and subsequent to the various map surveys.

The qualitative assessment of risk presented in this report presents an assessment of potential pollutant linkages between sources, pathways and receptors. A level of risk is attributed to these linkages. However, a low or insignificant risk does not imply that elevated concentrations of various determinants are not present on the site when compared to background or 'greenfield' conditions.

The level of risk attributed is based on a number of factors and the interpretation of this risk may be applied in a different manner for a different end use or environmental setting. The presence of contaminants may be assessed in alternative ways by institutional bodies regardless of whether an apparent risk is present based on the identified pollutant linkages in this assessment.

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Comments made on ground conditions are based on the observations made at the time of the investigation works. It should be noted that groundwater levels may vary due to seasonal fluctuation or other factors. Observations made with respect to below ground gas concentrations may also vary due to seasonal factors and atmospheric conditions.

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## 1. INTRODUCTION

### SITE LOCATION

1.1. The site is located to the south-west of Lancaster Road and approximately 0.3km to the north of Uxbridge Town Centre. The site can be located approximately by National Grid Reference 505600, 184480 as shown on Figure 1.

### SITE DESCRIPTION

1.2. The site comprises an approximately rectangular shaped piece of land with the long axis aligned approximately north-east to south-west with maximum dimensions of approximately of 25m by 15m. The site generally slopes gently down to the south-west with a maximum change in elevation of approximately 1m present across the site.

1.3. The site generally comprises two semi-detached, brick built residential properties fronting on to Lancaster Road together with limited areas of hardstanding and areas of soft landscaping for private gardens. Several large mature trees are located in the rear garden.

1.4. The site is bound to the north-east by Lancaster Road with residential dwellings beyond, to the south-east by residential dwellings and to the north-west and south-west by commercial buildings and locally residential properties in the north-west.

1.5. Access to the site is from Lancaster Road to the north-east and via an unnamed roadway to the north-west and south-west.

1.6. The site boundary is generally formed by wooden fencing and locally hedgerows.

1.7. The general site layout is presented on Figure 2.

### PROPOSED DEVELOPMENT

1.8. It is understood that the proposed development comprises residential development that requires the design of a sustainable urban drainage scheme. A proposed development plan is not currently available for the site.

### SCOPE

1.9. It is proposed that sustainable urban drainage systems will be adopted at the site. This report presents the factual results of an assessment of the soakage potential of the shallow ground conditions at the site to allow the design of the sustainable urban drainage system.

## 2. GEOLOGICAL SETTING

- 2.1. Reference to the British Geological Survey (BGS) Sheet No. 255, Beaconsfield (Solid and Drift) and the BGS Geoindex indicate the site to be directly underlain by drift geology comprising the Lynch Hill Gravel Member. The Lynch Hill Gravel Member is generically described as 'Sand and gravel, locally with lenses of silt, clay or peat.' by the BGS. The thickness of the Lynch Hill Gravel Member is not defined by the BGS at the site in the vicinity of the site. However, this stratum is indicated to be approximately 7m thick on average and range between 1m to 12m.
- 2.2. The Lynch Hill Gravel Member is indicated to be directly underlain by solid geology of the London Clay Formation. The London Clay Formation is generally described as 'bioturbated or poorly laminated, blue-grey or grey-brown, slightly calcareous, silty to very silty clay, clayey silt and sometimes silt, with some layers of sandy clay' by the BGS. The BGS indicated the London Clay Formation to be up to 51m thick in the vicinity of the site. However, a borehole record held by the BGS indicates this stratum to be approximately 12m thick approximately 110m to the south-east.
- 2.3. In addition to the published geology, it is anticipated that Topsoil and/or Made Ground will be present at the surface within the investigation area given its current layout.
- 2.4. Structa have previously completed an intrusive investigation within the adjoining land. This investigation in general confirmed the published geology comprising the Lynch Hill Gravel Member. Solid geology of the London Clay Formation was not encountered to the maximum completed depth of the investigation at approximately 4.2m bgl. In addition to the published geology, Made Ground was encountered at the surface and beneath hardstandings across the site. The Lynch Hill Gravel Member materials were found to be predominantly cohesive becoming granular from depths of between approximately 2.5m to 3.0m bgl.

### 3. GROUND INVESTIGATION AND TESTING

#### GROUND INVESTIGATION

- 3.1. The scope of works comprised one mechanically excavated trial pit to allow soakage tests to be completed to determine the infiltration potential of the underlying ground conditions. The positions of the exploratory hole have been surveyed by GPS and plotted approximately on Figure 2 of this report.
- 3.2. The ground investigation was carried out in general accordance with BS5930+A1 (2020) "Code of Practice for Site Investigations" and BS10175+A2:2017 "Code of Practice for the Investigation of Potentially Contaminated Sites" and in accordance with current best practice.
- 3.3. The scope of works for the current ground investigation was as follows:
  - 1 No. mechanically excavated trial pit (TP1) to a depth of approximately 3.4m bgl together with soakage testing.
- 3.4. The ground investigation was undertaken on 27 March 2025. The intrusive investigation was supervised by a suitably trained and experienced geo-environmental engineer from Structa LLP. The exploratory hole was logged by the supervising engineer and the log is presented in Appendix A.

#### SOAKAWAY TESTING

- 3.5. A soakaway permeability test was completed within TP1 on 27 March 2025 in general accordance with BRE Digest 365. The soakaway test was completed by filling the trial pit with clean water and monitoring the rate at which the water fell. Due to the rate of infiltration, the soakage test did not run to completion. However, the test was completed over an extended period of time. The results of the soakaway testing are presented in Appendix A.

## 4. GROUND, GROUNDWATER AND GAS CONDITIONS

### MATERIALS ENCOUNTERED

- 4.1. The published geology provided by the BGS indicates the site to be directly underlain by drift geology deposits comprising Lynch Hill Gravel Member which is in turn underlain by solid geology of the London Clay Formation.
- 4.2. The intrusive investigation generally proved the published geology of the Lynch Hill Gravel Member. However, materials interpreted as the London Clay Formation were not encountered to the completed depth of the investigation at approximately 3.4m bgl. In addition to the published geology, the ground investigation encountered a limited thickness of Made Ground Topsoil at the surface.
- 4.3. Table 1 presents a summary of the ground conditions encountered during the investigation of the site. Full details of the conditions encountered are presented on the exploratory hole log in Appendix A.

*TABLE 1: SUMMARY OF STRATA ENCOUNTERED*

| Description  | Top of Unit<br>(m bgl) | Thickness of<br>Unit (m bgl) |       |       |
|--|------------------------|------------------------------|-------|-------|
| <b>Made Ground (Topsoil)</b><br>Dark brown slightly gravelly very clayey SAND with frequent rootlets. Gravel is angular to rounded fine to coarse quartzite, ceramic, roadstone, brick and granite.  | 0.00                   | 0.00                         | 0.30  | 0.30  |
| <b>Lynch Hill Gravel Member</b><br>Firm to stiff brown, orange brown and grey, brown slightly sandy to sandy slightly gravelly to gravelly CLAY. Gravel is subrounded to rounded fine to coarse quartzite and flint;<br><br>Orange brown slightly sandy clayey subangular to rounded fine to coarse GRAVEL of quartzite with frequent (<10cm) pockets of clay. | 0.30                   | 0.30                         | 3.10* | 3.10* |

\*Base not proven

### GROUNDWATER

- 4.4. Groundwater was not encountered within the exploratory hole during its formation.
- 4.5. Full details are presented in Appendix A.

## 5. SOAKAGE POTENTIAL

### INTRODUCTION

5.1. It is understood that is proposed that a sustainable urban drainage scheme will be adopted at the site. A drainage design is not currently available for the site.

### DRAINAGE DESIGN AND SURFACE WATER MANAGEMENT

5.2. A soakaway permeability test was completed at TP1 on 27 March 2025 at the proposed location of a soakaway. The soakage test was completed by filling the trial pit with clean water and monitoring the rate at which the water fell in general accordance with BRE Digest 365. The results of the soakaway test are presented in Appendix A.

5.3. The soakage test was completed within the predominantly cohesive and locally granular materials of the Lynch Hill Gravel Member. The soakaway test did not record positive infiltration.

5.4. Based on the results of the soakage testing it is considered that the use of shallow soakaways or other infiltration drainage systems within the shallow Lynch Hill Gravel Member materials is not feasible for the site.

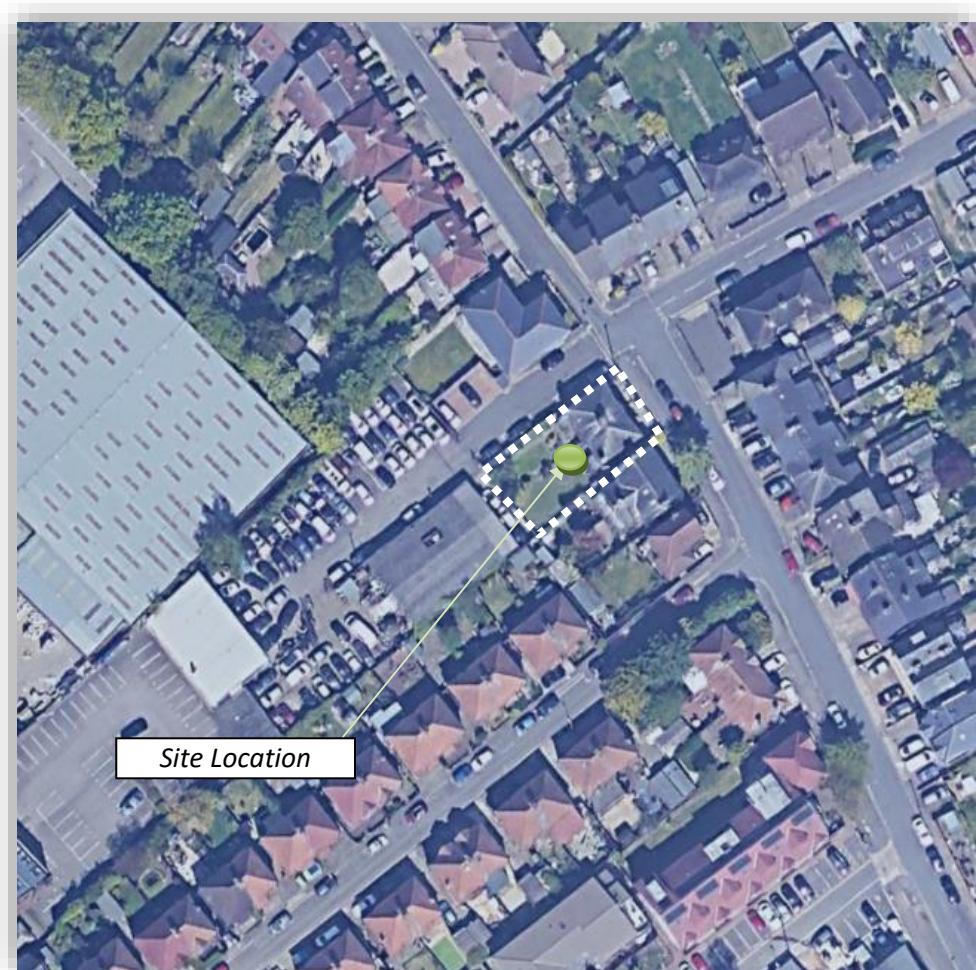
## 6. REFERENCES

1. Structa, Site Investigation, report reference 1813-GE001, dated 30 September 2020;
2. BGS Map Sheet No. 255, Beaconsfield (Drift). 1:50 000 scale
3. BGS Geoindex
4. BRE Digest 365 “Soakaway Design” 2016
5. BS5930+A1:2020 “Code of Practice for Site Investigation”
6. BS10175+A2:2017 “Code of Practice for the Investigation of Potentially Contaminated Sites”

## FIGURES

FIGURE 1

SITE LOCATION PLAN



**FIGURE 2**

***SITE LAYOUT PLAN***

**Key** Trial Pit Location Site Boundary

Notes: Not to scale. All dimensions to be checked on site and not scaled on this drawing. This drawing should be reviewed in conjunction with associated report.

2 STOREY  
4No. 1 BED FLATS

1 2 3 4

LANCASTER ROAD

X X

4

TP1

Works



Figure 2  
Site Layout Plan  
Site Name: 13&15 Lancaster Road, Uxbridge

## APPENDICES

## APPENDIX A

### FIELD RECORDS

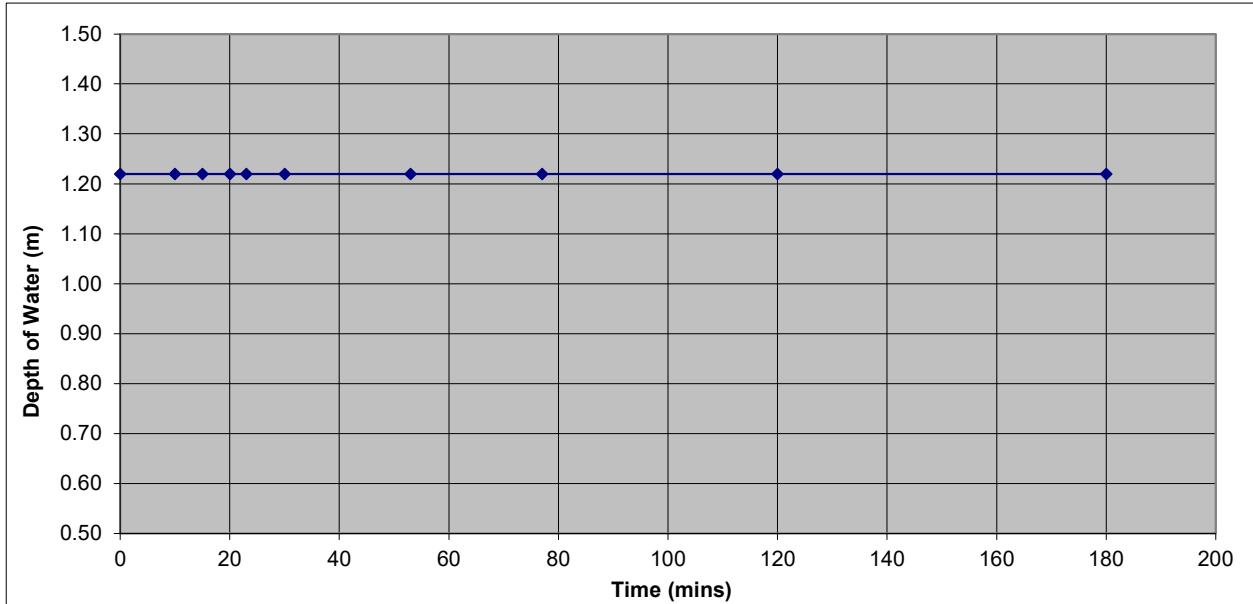
|  |  |                                |
|--|--|--------------------------------|
| Project Name:<br><b>13&amp;15 Lancaster Road, Uxbridge</b> | Project No.:<br><b>1813</b>            | Hole Type<br><b>TP</b>         |
| Location:<br><b>13&amp;15 Lancaster Road, Uxbridge</b>     | Co-ords:<br>505586.99 E<br>184465.44 N | Level:<br>45.66m AOD           |
| Client:<br><b>THE TRUSTEES OF UURCC</b>                    | Start<br>27/03/2025                    | Dates:<br>Finish<br>27/03/2025 |

| Remarks  | Key   |
|--|---|
| Mechanically excavated from ground level to completed depth. Groundwater not encountered. Trial pit terminated at limit of depth of excavation. Pit utilised for soakaway testing. Backfilled with arisings on completion. | <p>D - Disturbed Sample<br/>     ES - Environmental Sample<br/>     B - Bulk Sample<br/>     U - Undisturbed Sample<br/>     SS - Surface Sample<br/>     VS - Validation Sample<br/>     W - Water Sample</p> <p>N/R - No Recovery<br/>     HVP - Hand Vane Shear Test<br/>     W/S - Water Strike</p>  |

### Trial Pit Field Soakaway Test

Project : 13&15 Lancaster Road, Uxbridge  
 Project No. : 1813  
 Date : 27/03/25  
 Test Number : TP1

| Time     | Cumulative Elapse Time (min) | Depth to Water (m) | Depth of Water (m) | Results  |
|----------|------------------------------|--------------------|--------------------|--|
| 09:05:00 | 0                            | 2.180              | 1.220              | Trial Pit Dimensions (m)<br><br>Length: 2.1<br>Width: 0.5<br>Depth before test: 3.4  |
| 09:15:00 | 10                           | 2.180              | 1.220              |  |
| 09:20:00 | 15                           | 2.180              | 1.220              |  |
| 09:25:00 | 20                           | 2.180              | 1.220              |  |
| 09:28:00 | 23                           | 2.180              | 1.220              |  |
| 09:35:00 | 30                           | 2.180              | 1.220              |  |
| 09:58:00 | 53                           | 2.180              | 1.220              |  |
| 10:22:00 | 77                           | 2.180              | 1.220              |  |
| 11:05:00 | 120                          | 2.180              | 1.220              |  |
| 12:05:00 | 180                          | 2.180              | 1.220              |  |
|          |                              |                    |                    | Effective Depth of Water (m)<br><br>75% -<br>50% -<br>25% -  |
|          |                              |                    |                    | Calculations<br><br>Vp(75-25) in m <sup>3</sup> : -<br>Ap50 in m <sup>2</sup> : -<br>Tp(75) in seconds: -<br>Tp(25) in seconds: -<br>Tp(75-25) in seconds: - |
|          |                              |                    |                    |  |
|          |                              |                    |                    |  |
|          |                              |                    |                    |  |
|          |                              |                    |                    |  |
|          |                              |                    |                    | Soil infiltration rate (f) in m/s<br><br>No Infiltration   |
|          |                              |                    |                    |  |



#### Notes:

Trial pit soakaway test completed in general accordance with BRE 365. Where full effective depth soakage is not achieved, infiltration rates are calculated based on 75% and 25% of effective depth achieved during test.

#### Comments:

Mechanically excavated from ground level to completed depth. Groundwater not encountered. All sides stable during soakage test.