



The White House Design

**Land to rear of 14 Bawtree Road
and
Land between 36 and 42 Lancaster Road
Uxbridge**

GROUND INVESTIGATION REPORT

REPORT REFERENCE: TSG 22-003

JUNE 2022

This Ground Investigation Report (GIR) consists of a factual account of field and laboratory work, documentation of methods used and may include derived values. This report does not constitute a Geotechnical Design Report (GDR)

T: [07860-544-600](tel:07860544600)

E: josh@thamesidegroundworks.com

W: www.thamesidegroundworks.com

1.0 SOAKAGE TESTING

1.1 INVESTIGATION WORKS

The exploratory work was carried out on 26 May 2022.

Two trial pits (SP 1 and 2) were mechanically excavated to a depth of 2.60m.

The resultant excavations were then filled with water and the drop in water level was subsequently monitored at regular intervals. The tests were as carried out over periods of 360 minutes.

1.2 GROUND CONDITIONS

A summary of the encountered ground conditions is presented below.

Stratum	From (m)	To (m)
Topsoil / Made Ground	GL	0.75
Very sandy gravelly CLAY - desiccated	0.75	1.60
Clayey sandy fine to coarse GRAVEL of flint	1.60	2.60

Groundwater was not encountered.

1.3 INFILTRATION TEST RESULTS

Excavation of the trial pits was completed at a steady rate and the trial pits were rapidly filled with a tankered water supply. The subsequent fall in water level was observed over the time period specified within the table of results.

One water fill was completed within the trial pits due to the poor infiltration noted, which is indicated within table below

Test Pit	Depth of pit (m)	Derived soil infiltration rate (m/s)	Comments
SP 1	2.60	No rate determined	75% and 25% fill levels not reached after 180 minutes. No rate determined. Test not compliant.
SP 2	2.60	No rate determined	75% and 25% fill levels not reached after 180 minutes. No rate determined. Test not compliant.

1.4 CONCLUSIONS

It is understood that the use of infiltration is to be considered for the disposal of surface water runoff associated with the proposed development. With reference to CIRIA Report C753: SuDS Manual 2015, for a soil to be suitable for infiltrating design runoff events, it should be:

- Permeable, and
- Unsaturated.

In addition, it should be of sufficient thickness and extent to disperse the water effectively.

In this case the underlying soils, essentially comprising very sandy gravelly clay with lenses of sand and gravel have demonstrated poor infiltration rates. Interpolation of the data measured from the testing, infiltration rates of between 2.9×10^{-6} m/s and 6.7×10^{-7} m/s can be assumed as the most favourable. The SuDS manual suggests that infiltration viability cannot be given full consideration where rates of 10^{-6} m/s or worse exist.


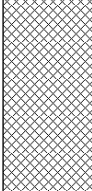
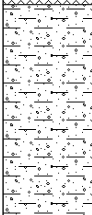
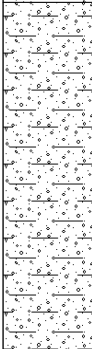
As such shallow soakaway drainage is unlikely to be effective for the new development due to the relatively impermeable soils encountered. An alternative to shallow soakaway drainage should therefore be sought.

It is possible that the Lynch Hill Gravel stratum extends to a greater depth than that proved by the investigation and as such better infiltration rates may be achieved. Borehole records kept by the BGS indicate a borehole approximately 100 m to the west show the gravel extending to approximately 6 m depth. This can be determined by further investigation should alternative drainage solutions prove unfeasible.

The advice of a specialised drainage engineer should be sought in this respect.

Trial Pit Log

Project Name: Land between 36 and 42 Lancaster Road		Client: The White House Design		Date: 26/05/2022	
Location: Uxbridge		Contractor:			
Project No. : TG22003		Crew Name:		Equipment: JCB 8026	
Location Number SP 1	Location Type TP	Level	Logged By dn	Scale 1:25	Page Number Sheet 1 of 1


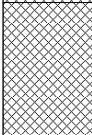
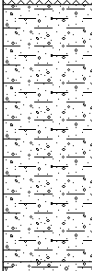
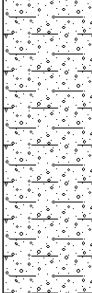
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.10			Concrete	
					0.75			"Stiff" brown friable sandy gravelly CLAY with roots and brick fragments. Gravel is fine to coarse sub-angular to rounded of flint - desiccated MADE GROUND	1
					1.45			"Stiff" brown friable sandy gravelly CLAY with roots. Gravel is fine to coarse sub-angular to rounded of flint - desiccated	
					2.60			Orange brown clay sandy fine to coarse sub-angular to rounded GRAVEL of flint	2
								End of Trial Pit at 2.600m	3
									4
									5

Dimensions		Trench Support and Comment				Pumping Data		
Pit Length	Pit Width	Pit Stability	Shoring Used	Remarks		Date	Rate	Remarks
1.90	0.50	Sides of pit stable						

Remarks Soakage test carried out								
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Trial Pit Log

Project Name: Land between 36 and 42 Lancaster Road		Client: The White House Design		Date: 26/05/2022	
Location: Uxbridge		Contractor:			
Project No. : TG22003		Crew Name:		Equipment: JCB 8026	
Location Number SP 2	Location Type TP	Level	Logged By dn	Scale 1:25	Page Number Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.30			Brown friable humic sandy gravelly clay with roots and brick and concrete fragments. MADE GROUND	
					0.75			"Stiff" brown friable sandy gravelly CLAY with roots and brick fragments. Gravel is fine to coarse sub-angular to rounded of flint - desiccated MADE GROUND	
					1.60			"Stiff" brown friable sandy gravelly CLAY with roots. Gravel is fine to coarse sub-angular to rounded of flint - desiccated	1
					2.60			Orange brown clay sandy fine to coarse sub-angular to rounded GRAVEL of flint	2
								End of Trial Pit at 2.600m	3
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Dimensions		Trench Support and Comment				Pumping Data		
Pit Length	Pit Width	Pit Stability	Shoring Used	Remarks		Date	Rate	Remarks
1.90	0.50	Sides of pit stable						

Remarks Soakage test carried out								
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Site: Land between 36 and 42 Lancaster Road, Uxbridge

Job Number

TG22003

Client: The White House Design

Sheet:

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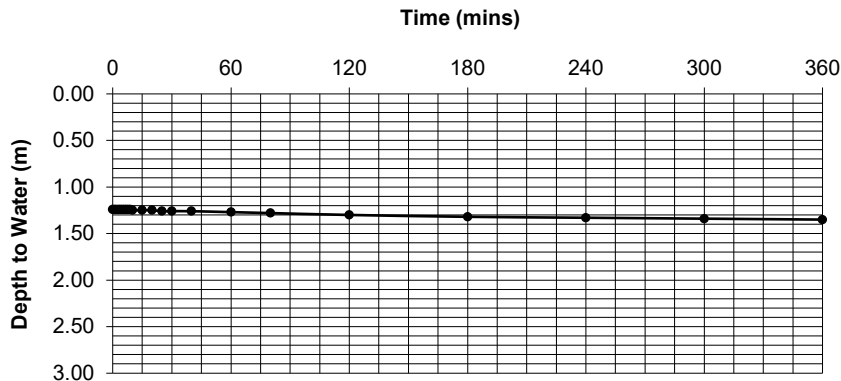
Engineer:

Soakaway Test

Hole No: **SP 1**

TEST NO: 1

DATE: 26/05/22

[illegible]

Length of pit: $L = 1.90 \text{ m}$

Width of pit: $W = 0.50$ m

Depth of pit $D = 2.60$ m

Base area of pit: $A = 0.95 \text{ m}^2$

100% effective depth D100 = 1.24 m

75% effective depth D75 = 1.58 m

50% effective depth D50 = 1.92 m

25% effective depth D25 = 2.26 m

time to D75 T75 = sec

time to D25 T25 = sec

time from D75 to D25 $t_{p75-25} =$ 0 sec

(T25 - T75)

volume between D75 & D25 $V_{p75-25} = 0.65 \text{ m}^3$

$$(A \times (D25 - D75))$$

surface area to D50 inc. base $a_{p50} = 4.21 \text{ m}^2$

$$((2x(D-D50)x(W+L)) + A)$$

SOIL INFILTRATION RATE

$$f = \frac{V_{p75-25}}{a_{p50} \times t_{p75-25}}$$

Interpolated from available data

$$f = 6.7 \times 10^{-7} \text{ m/sec}$$

Test Strata:
(see Trial Pit)

Remarks: Test abandoned at 360 minutes

Site: Land between 36 and 42 Lancaster Road, Uxbridge

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1 / 1

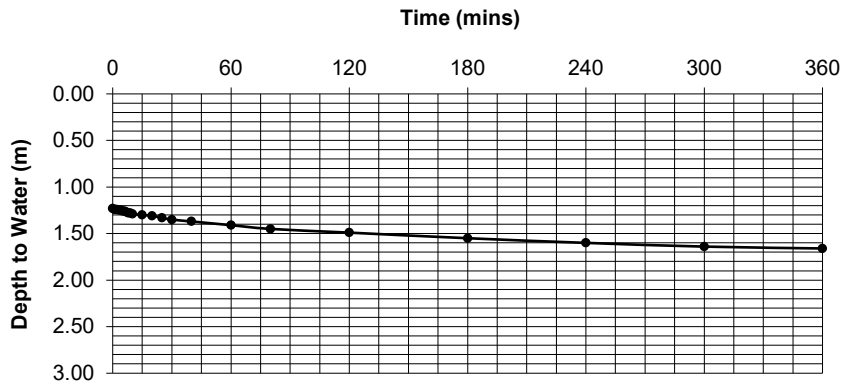
Engineer:

Soakaway Test

Hole No: **SP 2**

TEST NO: 1

DATE: 26/05/22

[illegible]

Length of pit: $L = 1.90$ m

Width of pit: $W = 0.50$ m

Depth of pit $D = 2.60$ m

Base area of pit: $A = 0.95 \text{ m}^2$

100% effective depth D100 = 1.23 m

75% effective depth D75 = 1.57 m

50% effective depth D50 = 1.92 m

25% effective depth D25 = 2.26 m

time to D75 T75 = sec

time to D25 T25 = sec

time from D75 to D25 $t_{p75-25} =$ 0 sec

(T25 - T75)

volume between D75 & D25 $V_{p75-25} = 0.65 \text{ m}^3$

$$(A \times (D25 - D75))$$

surface area to D50 inc. base $a_{p50} = 4.24 \text{ m}^2$

$$((2x(D-D50)x(W+L)) + A)$$

SOIL INFILTRATION RATE

$$f = \frac{V_{p75-25}}{a_{p50} \times t_{p75-25}}$$

Interpolated from available data

$$f = 2.9 \times 10^{-6} \text{ m/sec}$$

Test Strata:
(see Trial Pit)

Remarks: Test abandoned at 360 minutes