16th January 2024

YEX5666
Warren Edge, 3 Park Avenue, Radlett, Hertfordshire WD7 7EA

Dear Unda Consulting Ltd

Please find below the results of your infiltration testing. The information contained below is a summary of the site works carried out on 15 January 2024.

Geology

An examination of the available British Geological Survey data of the area for the site has been undertaken and indicates that the site is directly underlain by bedrock comprising Cretaceous strata of the Lewes Nodular and Seaford Chalk Formations.

Fieldworks

The scope of this investigation included the excavation of two (2no.) trial pits (TP01 and TP02). The location of the infiltration tests were selected by the client. During this work, the soils encountered were logged in general accordance with BS5930:2015+A1:2020.

Infiltration Testing

During the period of infiltration testing, the water level achieved a fall from 75% to 25% of the effective depth of the storage volume of TP01 and TP02. The results obtained from the infiltration tests are summarised below:

WS	Dimensions (m)	Depth (m)	Soil Description	Infiltration Rate (m/sec)	Drainage Characteristics
TP01	1.5 x 0.3	1.7	Reworked TOPSOIL (GL-0.3m), MADE GROUND: Soft brown clay (0.3-0.9m), soft brown sandy CLAY (0.9-1.7m)	4.1×10^{-6}	Poor
TP02	1.5 x 0.3	1.5	Reworked TOPSOIL (GL-0.3m), MADE GROUND: Soft brown gravelly clay (0.3-0.85m), soft brown sandy CLAY (0.85-1.5m)	5.3×10^{-6}	Poor

Conclusion

The soils encountered beneath the site were found to be predominantly natural CLAY. The soil infiltration rates obtained during the investigation were found to be poor. Given the results of the infiltration testing, it is considered that the use of soakaways is suitable at the site, subject to detailed design.

References

- Building Research Establishment (BRE) Digest 365, *Soakaway Design*, 2016.
- British Standards Institution BS5930:2015+A1:2020 *Code of practice for ground investigations*, B.S.I., London.

Please do contact me on 01243 787150 should you have any questions.

Regards

Jonny Roberts
Principal Geoenvironmental Engineer
Your Environment

Appendix A – Trial Pit Plan

Site Investigation Plan

YOUR ENVIRONMENT

Warren Edge
YEX5666
Jan-24

Appendix B – Trial Pit Photographs

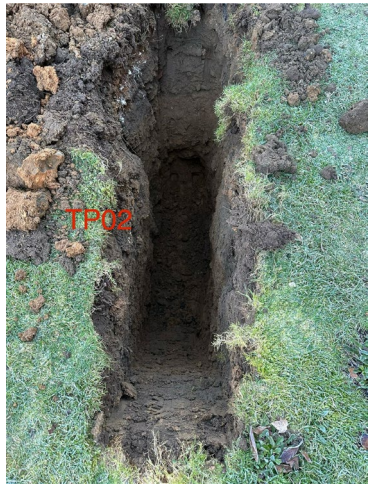
YEX5666

BRE Photographs

TP01 Pit

TP01 Arisings

TP02 Pit



TP02 Arisings

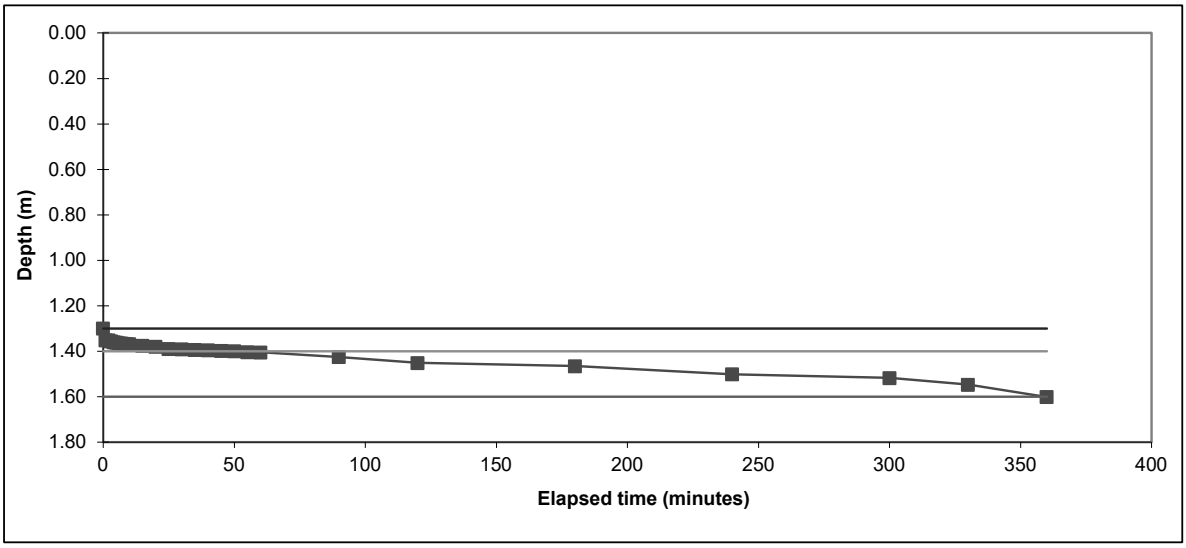
Appendix C –Soil Infiltration Test Results

Your Environment

Soakaway Test

Trial Pit No:	TP01	Test No:	1	Date:	15/01/2024
Length (m):	1.500		Datum Height:	0.00	m agl
Width (m):	0.30		Granular infill:	None	
Depth (m):	1.70		Porosity of infill:	1	(assumed)

Elapsed time (minutes)	Water Depth (m below datum)	Elapsed time (minutes)	Water Depth (m below datum)
0	1.300	30	1.391
1	1.351	35	1.393
2	1.352	40	1.395
3	1.356	45	1.398
4	1.360	50	1.400
5	1.362	55	1.403
6	1.364	60	1.405
7	1.366	90	1.425
8	1.367	120	1.451
9	1.368	180	1.465
10	1.369	240	1.501
15	1.375	300	1.517
20	1.380	330	1.547
25	1.389	360	1.601



Start water depth for analysis (mbgl):	1.30		
75% effective depth (mbgl):	1.40	Elapsed time (mins):	50.0
50% effective depth (mbgl):	1.50		
25% effective depth (mbgl):	1.60	Elapsed time (mins):	359.4
Base of soakage zone (mbgl):	1.70		

Volume outflow between 75% and 25% effective depth (m^3):	0.090
Mean surface area of outflow (m^2):	1.17
(side area at 50% effective depth + base area)	
Time for outflow between 75% and 25% effective depth (mins):	309.4

Soil infiltration rate (m/s):	**4.1E-6**

Remarks Results processed following BRE 365 (2007).

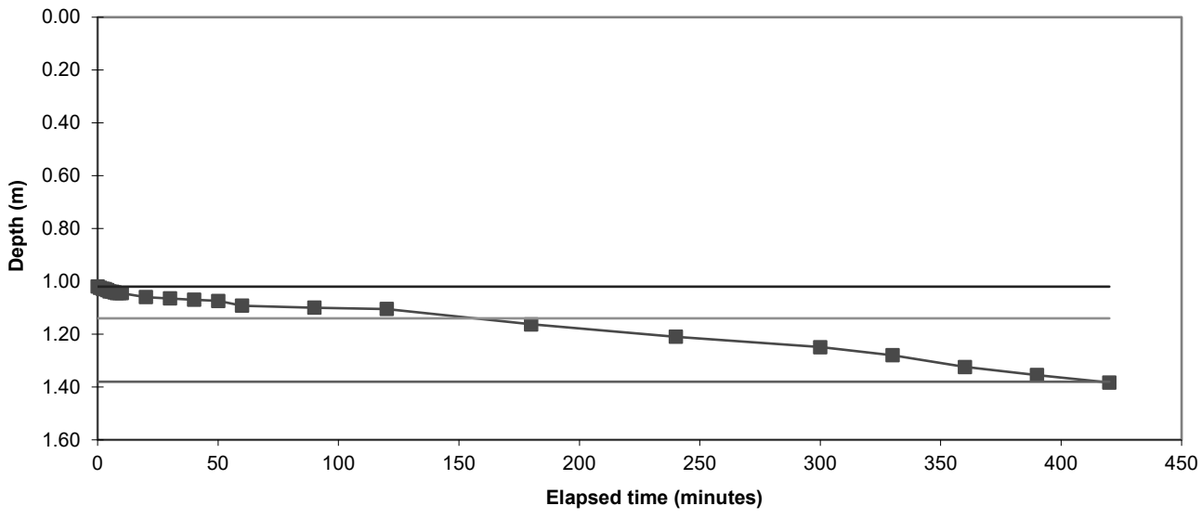
Client:	Unda Consulting Ltd	**TP01**
Site:	Warren Edge, Radlett WD7 7EA	

Your Environment

Soakaway Test

Trial Pit No:	TP02	Test No:	1	Date:	15/01/2024
Length (m):	1.500		Datum Height:	0.00	m agl
Width (m):	0.30		Granular infill:	None	
Depth (m):	1.50		Porosity of infill:	1	(assumed)

Elapsed time (minutes)	Water Depth (m below datum)	Elapsed time (minutes)	Water Depth (m below datum)
0	1.020	50	1.074
1	1.025	60	1.092
2	1.028	90	1.100
3	1.030	120	1.105
4	1.033	180	1.163
5	1.038	240	1.210
6	1.040	300	1.249
7	1.042	330	1.280
8	1.044	360	1.324
9	1.044	390	1.355
10	1.045	420	1.383
20	1.060		
30	1.065		
40	1.070		



Start water depth for analysis (mbgl):	1.02		
75% effective depth (mbgl):	1.14	Elapsed time (mins):	156.2
50% effective depth (mbgl):	1.26		
25% effective depth (mbgl):	1.38	Elapsed time (mins):	416.8
Base of soakage zone (mbgl):	1.50		
Volume outflow between 75% and 25% effective depth (m^3):		0.108	
Mean surface area of outflow (m^2): (side area at 50% effective depth + base area)		1.31	
Time for outflow between 75% and 25% effective depth (mins):		260.6	

Soil infiltration rate (m/s):	**5.3E-6**

Remarks Results processed following BRE 365 (2007).

Client:	Unda Consulting Ltd	**TP02**
Site:	Warren Edge, Radlett WD7 7EA	