

Our Ref: YEX2198

26th May 2021

For the attention of British Garden Centres,

Ref: Pulborough Garden Centre, Stopham Road, Pulborough, RH20 1DS

We thank you for your request to undertake permeability testing at the above mentioned site and take pleasure in enclosing the results of this work. The investigation was undertaken on the 20th May 2021 in accordance with your instruction to proceed. This letter describes the work undertaken, presents the data obtained and discusses the results of the tests.

Geology

An examination of the available British Geological Survey data of the area for the site has been examined and indicates that the site has superficial drift deposits composed of Head (clay, silt, sand and gravel), and bedrock deposits recorded as the Folkestone Formation (sandstone).

Fieldworks

The programme of this investigation included the excavation of three trial pits. The locations of the soakaway tests were selected by the client.

During this work, the soils encountered were logged in general accordance with BS 5930: 1990, as amended in 2007, and full descriptions are given on the borehole records, which are also appended to this letter.

Soakaway Tests

During the soakaway tests the water failed to achieve a fall from 75% to 25% of the effective depth of the storage volume in all three trial pits. The results obtained from the soakaway tests are summarised below:

Table 1: Soakaway Test Results

WS	Soakage Area Dimensions (m)	Depth (m)	Soil Description (Base of TP)	Infiltration Rate (m/sec)	Drainage Characteristics
TP01 test1	1.40 x 0.30	1.50	Orangish brown sandy CLAY. Sand is fine - medium.	N/A	Practically Impermeable
TP02 test1	1.20 x 0.30	1.50	Orangish brown sandy CLAY. Sand is fine - medium.	N/A	Practically Impermeable
TP03 test1	1.10 x 0.30	1.50	Orangish brown sandy CLAY. Sand is fine - medium.	N/A	Practically Impermeable

Discussion

The soils encountered beneath the site were found to be predominantly CLAY. The soakage rates obtained during the investigation were found to be poor to practically impermeable. Given the data from the test, it is considered that soakaways are not suitable for this site.

References

Building Research Establishment (BRE) Digest 365, *Soakaway Design*, September 1991.

British Standards Institution (1999) BS5930: *Code of practice for site investigations*, B.S.I., London.

British Standards Institution (2007), Amendment No 1, BS5930: *Code of practice for site investigations*, B.S.I., London.

We trust that this information is of interest and should you have any other requirements do not hesitate to contact us.

For and on behalf of

YourEnvironment

Yours Faithfully,



Nick Hammond

Geo-Environmental Engineer

Enc.

Appendix A: Site Investigation Plan

Appendix B: Trial Pit Logs

Appendix C: Soakaway Test Results

Appendix D: Photographs

APPENDIX A: Site Investigation Plan



APPENDIX B: Trial Pit Logs





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Log of Boring
 Sheet 1 of

TP1
 1

YE Engineer N. Hammond

Location	Pulborough Garden Centre, Stopham Road, Pulborough, RH20 1DS
Date	May 20, 2021
Project Reference	YEX2198

Water level data	
Completion:	Depth <u>NA</u> m Elevation <u>NA</u> m
24 hour:	Depth <u> </u> m Elevation <u> </u> m

Width 0.3 m
 Length 1.4 m
 Depth 1.5 m

Method (Trial pit, window etc) Trial Pit - Machine Excavation

Stratum depth (m)	Sample Depth		Sample Type	GW	Install Details	LITHOLOGY
	From m	To m				
0.00					NONE	MADE GROUND. Brown gravelly, clayey SAND. Sand is fine - medium. Gravel is medium - coarse, angular of brick fragments and mixed lithology.
0.20						MADE GROUND. Reddish brown gravelly, clayey SAND. Sand is fine - medium. Gravel is medium - coarse, angular of brick fragments and mixed lithology.
0.40						Orangish brown sandy CLAY. Sand is fine - medium.
1.50						

End of TP1

Remarks: .



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Log of Boring
 Sheet 1 of

TP2
 1

YE Engineer N. Hammond

Location	Pulborough Garden Centre, Stopham Road, Pulborough, RH20 1DS
Date	May 20, 2021
Project Reference	YEX2198

Water level data	
Completion:	Depth <u>NA</u> m Elevation <u>NA</u> m
24 hour:	Depth <u> </u> m Elevation <u> </u> m

Width 0.3 m
 Length 1.2 m
 Depth 1.5 m

Method (Trial pit, window etc) Trial Pit - Machine Excavation

Stratum depth (m)	Sample Depth		Sample Type	GW	Install Details	LITHOLOGY
	From m	To m				
0.00					NONE	MADE GROUND. Black sandy GRAVEL. Sand is fine - medium. Gravel is medium - coarse, angular of asphalt fragments.
0.20						MADE GROUND. Brown sandy ,gravelly CLAY. Sand is fine - medium. Gravel is medium - coarse, angular of brick fragments and mixed lithology.
0.30						Orangish brown sandy CLAY. Sand is fine - medium.
1.50						

End of TP2

Remarks: .



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Log of Boring
 Sheet 1 of

TP3
 1

YE Engineer N. Hammond

Location	Pulborough Garden Centre, Stopham Road, Pulborough, RH20 1DS
Date	May 20, 2021
Project Reference	YEX2198

Water level data	
Completion:	Depth <u>NA</u> m Elevation <u>NA</u> m
24 hour:	Depth <u> </u> m Elevation <u> </u> m

Width 0.3 m
 Length 1.1 m
 Depth 1.5 m

Method (Trial pit, window etc) Trial Pit - Machine Excavation

Stratum depth (m)	Sample Depth		Sample Type	GW	Install Details	LITHOLOGY	
	From	To					
From	To	To					
0.00					NONE	MADE GROUND. Light brown gravelly, clayey SAND. Sand is fine - medium. Gravel is medium - coarse, angular of brick and concrete fragments and mixed lithology.	
0.30						Orangish brown sandy CLAY. Sand is fine - medium.	
1.50						End of TP3	

Remarks: .

APPENDIX C: Soakaway Test Results

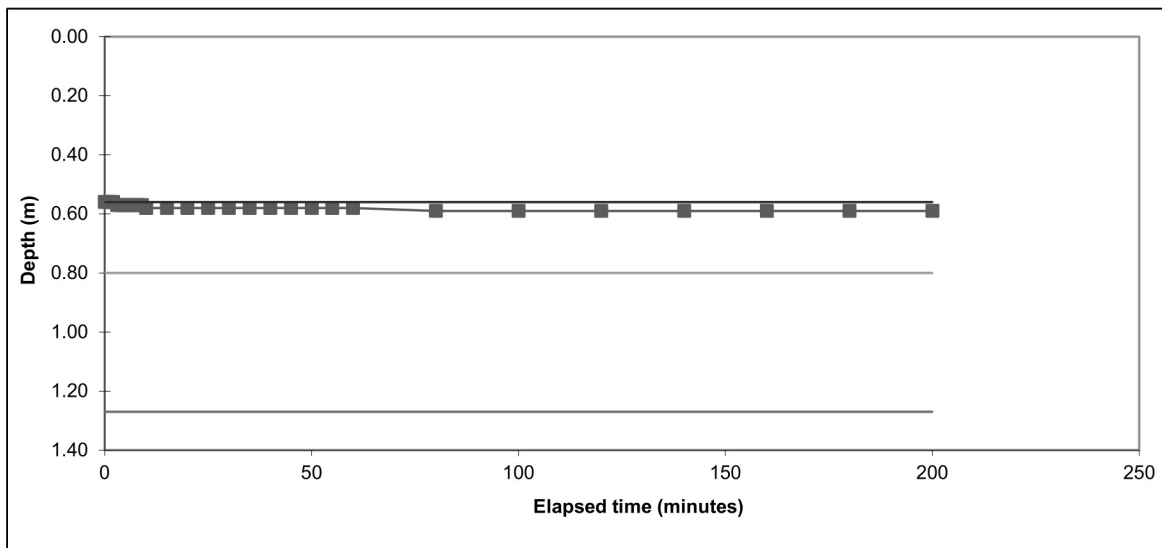


Your Environment

Soakaway Test

Trial Pit No:	TP1	Test No:	1	Date:	20/05/2021
Length (m):	1.400	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	0.560	30	0.580
1	0.560	35	0.580
2	0.560	40	0.580
3	0.570	45	0.580
4	0.570	50	0.580
5	0.570	55	0.580
6	0.570	60	0.580
7	0.570	80	0.590
8	0.570	100	0.590
9	0.570	120	0.590
10	0.580	140	0.590
15	0.580	160	0.590
20	0.580	180	0.590
25	0.580	200	0.590



Start water depth for analysis (mbgl)	0.56	Elapsed time (mins):	#N/A
75% effective depth (mbgl):	0.80		
50% effective depth (mbgl):	1.03		
25% effective depth (mbgl):	1.27	Elapsed time (mins):	#N/A
Base of soakage zone (mbgl):	1.50		
Volume outflow between 75% and 25% effective depth (m ³):			
Mean surface area of outflow (m ²):	2.02		
(side area at 50% effective depth + base area)			
Time for outflow between 75% and 25% effective depth (mins):			

Soil infiltration rate (m/s):	Test incomplete as 25% effective depth not achieved. Unable to reliably determine soil infiltration rate.
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Remarks Results processed following BRE 365 (2007).

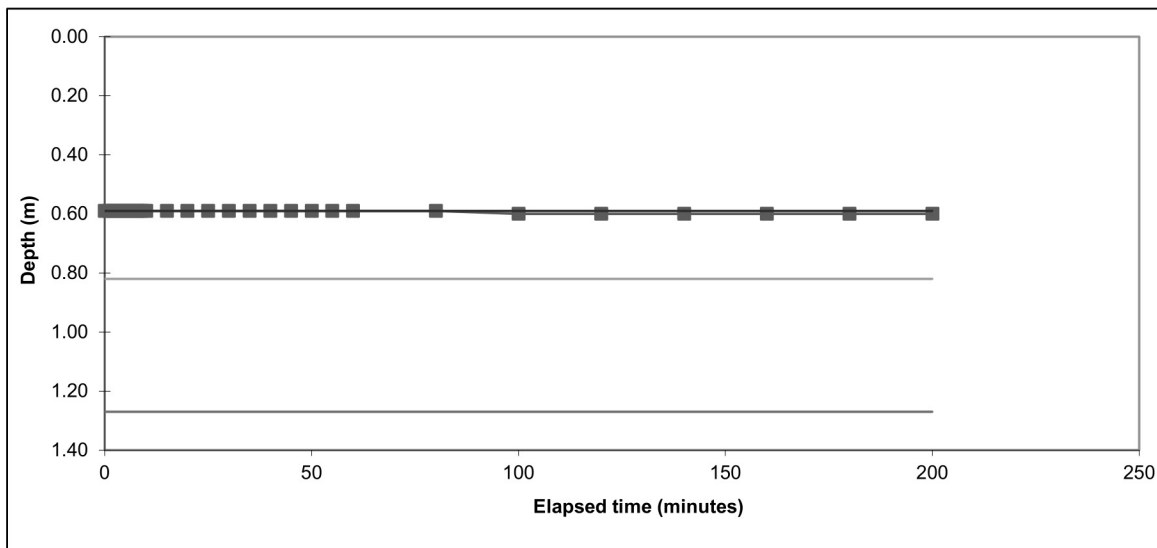
Client:	British Garden Centres Group	TP1
Site:	Pulborough Garden Centre	

Your Environment

Soakaway Test

Trial Pit No:	TP2	Test No:	1	Date:	20/05/2021
Length (m):	1.200	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	0.590	30	0.590
1	0.590	35	0.590
2	0.590	40	0.590
3	0.590	45	0.590
4	0.590	50	0.590
5	0.590	55	0.590
6	0.590	60	0.590
7	0.590	80	0.590
8	0.590	100	0.600
9	0.590	120	0.600
10	0.590	140	0.600
15	0.590	160	0.600
20	0.590	180	0.600
25	0.590	200	0.600



Start water depth for analysis (mbgl)	0.59	Elapsed time (mins):	#N/A
75% effective depth (mbgl):	0.82		
50% effective depth (mbgl):	1.05		
25% effective depth (mbgl):	1.27	Elapsed time (mins):	#N/A
Base of soakage zone (mbgl):	1.50		

Volume outflow between 75% and 25% effective depth (m³):
 Mean surface area of outflow (m²): 1.71
 (side area at 50% effective depth + base area)
 Time for outflow between 75% and 25% effective depth (mins):

Soil infiltration rate (m/s):	Test incomplete as 25% effective depth not achieved. Unable to reliably determine soil infiltration rate.
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Remarks: Results processed following BRE 365 (2007).

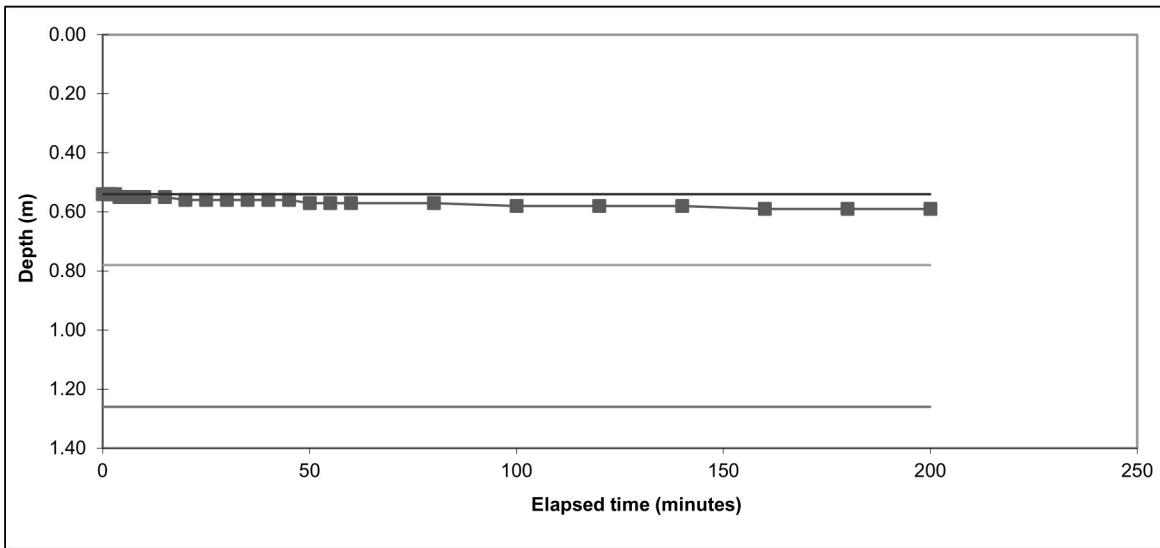
Client:	British Garden Centres Group	TP2
Site:	Pulborough Garden Centre	

Your Environment

Soakaway Test

Trial Pit No:	TP3	Test No:	1	Date:	20/05/2021
Length (m):	1.100	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	0.540	30	0.560
1	0.540	35	0.560
2	0.540	40	0.560
3	0.540	45	0.560
4	0.550	50	0.570
5	0.550	55	0.570
6	0.550	60	0.570
7	0.550	80	0.570
8	0.550	100	0.580
9	0.550	120	0.580
10	0.550	140	0.580
15	0.550	160	0.590
20	0.560	180	0.590
25	0.560	200	0.590



Start water depth for analysis (mbgl)	0.54	Elapsed time (mins):	#N/A
75% effective depth (mbgl):	0.78	Elapsed time (mins):	#N/A
50% effective depth (mbgl):	1.02		
25% effective depth (mbgl):	1.26	Elapsed time (mins):	#N/A
Base of soakage zone (mbgl):	1.50		
Volume outflow between 75% and 25% effective depth (m ³):			
Mean surface area of outflow (m ²):		1.67	
(side area at 50% effective depth + base area)			
Time for outflow between 75% and 25% effective depth (mins):			

Soil infiltration rate (m/s):	Test incomplete as 25% effective depth not achieved. Unable to reliably determine soil infiltration rate.
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Remarks: Results processed following BRE 365 (2007).

Client:	British Garden Centres Group	TP3
Site:	Pulborough Garden Centre	

APPENDIX D: Photographs



A.



B.



C.



D.



Your Environment

A. TP1

B. TP1

C. TP1

D. TP1



Your Environment

E.



F.



G.



H.



Your Environment

E. TP2

F. TP2

G. TP2

H. TP2



Your Environment

I.



J.



K.



L.



Your Environment

I. TP3

J. TP3

K. TP3

L. TP3



Your Environment