



Edward Rees (Domusea Developments)

By Email only: [REDACTED]

Our Ref: 17894/LR

1st November 2019

Dear Edward,

RE: Hook Lane, Aldingbourne, PO20 3TE

We are writing regarding the intrusive investigation undertaken at the above-named site.

Brief

The Soils Limited quotation (reference Q21895, dated 25th September 2019) set the scope of the investigation. The investigation was to comprise infiltration test to BRE DG365:2016 to inform for a surface water soakaway system.

General

The site had an approximate area of 0.48ha and was located at Hook Lane, Aldingbourne, PO20 3TE at O.S Land Ranger Grid Reference of SU 935 045.

A site location plan has been included as Figure 1.

Site Works

Site works were undertaken on the 16th October 2019 and comprised the excavation of four machine excavated trial pits (TPSK1, TPSK1B, TPSK2 and TPSK2B). The trial hole locations were chosen by Soils Limited and confirm by the client Edward Rees prior to the investigation. The depths of the trial holes were to be up to 3.00m bgl as quoted, however due to the discovery of the water table at 1.90m bgl in both TPSK1 and TPSK2 these trial holes were backfilled, and fresh pits were dug 2.00m away from the original holes to 1.39m and 1.40m bgl (TPSK1B and TPSK2B). Following the construction of the trial holes, infiltration tests in accordance of the principles of BRE DG365:2016 were carried out within TPSK1B and TPSK2B.

A trial hole location plan is included as Figure 2.

Upon completion the trial holes were backfilled with arisings and mounded over for future settlement.

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Sun Valley Business Park
Winnall Close
Winchester SO23 6LB

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Ground Conditions

The ground conditions encountered during the site investigation have been summarised in Table 1.

Topsoil (TS) River Terrace Deposits (RTD)

Table 1 – Summary of Ground Conditions

Strata	Depth Encountered (m bgl)		Typical Description
	Top	Base	
TS	0.00	0.30	Grass topped soft brown sandy SILT. Occasional angular fine flint. Fine rootlets present.
RTD	0.30	1.90 ¹	Soft orangish brown slightly sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is sub rounded to sub angular fine flint and chalk. Occasional fine rootlets up to 1.4m.

Notes: ¹ encountered to base of trial hole

Infiltration Testing

Infiltration tests were performed within trial pits TPSK1B and TPSK2B, in order to provide guidance on the suitability of the ground for the adoption of a surface water drainage system. The tests were undertaken within the River Terrace Deposits to depths of 1.39m bgl in TPSK1B and 1.40m bgl in TPSK2B. The tests comprised piping water via a water source supplied by the client into the open trial hole, the drop in water level over time was then recorded to give an indication of soakage potential.

BRE DG365:2016 states that for an accurate infiltration rate to be obtained a soakage pit needs to be filled three times in quick succession. Each test is completed once 75% of the water present has drained away, in order to determine whether or not the underlying ground conditions may be suitable for surface water drainage.

Table 2 presents the infiltration test results performed within TPSK1 and TPSK2.

Table 2 - Infiltration Test Results

Trial Hole (Test No.)	Test Stratum	Test Depth (m bgl)	Infiltration Rate (m/sec)	Test duration (minutes)
TPSK1B(1)	RTD	1.39	N/A	312
TPSK2B(1)	RTD	1.40	N/A	327

One infiltration test was conducted within each of the trial pits TPSK1B and TPSK2B. However, due to the high clay content of the tested strata there was negligible infiltration over the test period meaning that an infiltration rate was unable to be calculated for either trial pit. The maximum head loss observed over the test period was 8% and

therefore it was not possible to calculate an infiltration rate, nor was it possible to extrapolate the data to calculate an infiltration rate.

Full results are included within Appendix A.

Conclusions

Given the observed infiltration over the test period, it is considered that alternative methods of surface water disposal should be sought due to the poor infiltration discovered from the investigation. It should also be noted that the water table was located at 1.90m bgl at the base of the clay, therefore it would not be possible for a soakaway to be located at a greater depth.

The following attachments make up the remainder of this letter report.

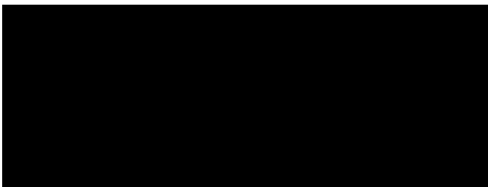
Figure 1. Site Location Plan

Figure 2. Trial Hole Location Plan

Appendix A. Field Data

Should you have any further questions please do not hesitate to contact the undersigned.

Yours Sincerely



Michael Foulkes

Placement Geo-Technical Engineer



Figure 1 – Site location Plan

Figure number
1

Title
Site Location Map

Project
Springfield, Hook Lane, Aldingbourne, PO20 3TE

Date
October 2019

Client
Edward Rees (Domusea Developments)

Reference
17894

Figure 2. Trial Hole Location Plan

Figure number

2

Title

Trail hole location plan

Project

Springfield, Hook Lane, Aldingbourne, PO20 3TE

Date

October 2019

Client

Edward Rees (Domusea Developments)

Reference

17894

Appendix A. Field Data

**Soils Limited**

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Trial Pit Log

Trial Pit No.

TPSK1

Sheet 1 of 1

Project Name: Springfield, Hook Lane

Project No.: 17894

Method:

Plant:

Support:

Hole Type

TP

Scale

1:25

Logged By

MF

Dates: 16/10/2019

Level:

Co-ords:

Water Strike	Samples & In Situ Testing			Depth (m)	Level (mAOD)	Legend	Stratum Description	
	Depth	Type	Results					
	0.20	D		0.30			TOPSOIL. Grass topped soft brown sandy SILT. Occasional fine angular flint. Fine rootless present	
	0.50	D					Soft orangish brown slightly sandy silty CLAY. Sand is fine to coarse. Rare sub angular to sub rounded fine to medium flint and chalk fragments. Occasional fine rootless. RIVER TERRACE DEPOSITS.	
	0.90	D						1
	1.30	D B		1.40				
	1.50	D B					Soft to firm orangish brown gravelly slightly sandy CLAY/SILT. Gravel is sub rounded to sub angular fine to medium flint and chalk. RIVER TERRACE DEPOSITS.	
				1.80				
	1.90	D B		1.90			Orangish brown slightly silty SAND. Sand is fine to medium. Occasional sub rounded fine flint and chalk fragments. RIVER TERRACE DEPOSITS.	2
							End of Pit at 1.900m	
								3
								4
								5

General Remarks:

Groundwater encountered at base of hole. Maximum rootlet depth of 1.40m.

Sample Type

D: Disturbed

B: Bulk

J: Jar

W: Water

Groundwater Remarks:

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Trial Pit Log

Trial Pit No.

TPSK1B

Sheet 1 of 1

Project Name: Springfield, Hook Lane

Project No.: 17894

Method:

Hole Type

Location: Springfield, Hook Lane, Aldingbourne, PO20 3TE

Plant:

TP

Support:

Scale

Client: Edward Rees (Domusea Developments)

Trial Pit Length: 1.60m

Trial Pit Width: 0.60m

1:25

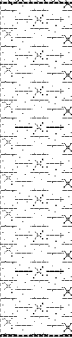
Dates: 16/10/2019

Level:

Co-ords:

Logged By

MF

Water Strike	Samples & In Situ Testing			Depth (m)	Level (mAOD)	Legend	Stratum Description	
	Depth	Type	Results					
				0.30			TOPSOIL. Grass topped soft brown sandy SILT. Occasional fine angular flint. Fine rootless present	
				1.40			Soft orangish brown slightly sandy silty CLAY. Sand is fine to coarse. Rare sub angular to sub rounded fine to medium flint and chalk fragments. Occasional fine rootless. RIVER TERRACE DEPOSITS.	1
							End of Pit at 1.390m	2
								3
								4
								5

General Remarks:

Infiltration test conducted within TPSK1B. Maximum rootlet depth of 1.40m.

Sample Type

D: Disturbed
B: Bulk
J: Jar
W: Water

Groundwater Remarks:

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Trial Pit Log

Trial Pit No.

TPSK2

Sheet 1 of 1

Project Name: Springfield, Hook Lane

Project No.: 17894

Method:

Hole Type

Location: Springfield, Hook Lane, Aldingbourne, PO20 3TE

Plant:

TP

Support:

Scale

Client: Edward Rees (Domusea Developments)

Trial Pit Length: 1.80m

Trial Pit Width: 0.60m

1:25

Dates: 16/10/2019

Level:

Co-ords:

Logged By
MF

Water Strike	Samples & In Situ Testing			Depth (m)	Level (mAOD)	Legend	Stratum Description	
	Depth	Type	Results					
	0.20	D		0.30			TOPSOIL. Grass topped soft brown sandy SILT. Occasional angular fine flint. Fine rootless present	
	0.50	D					Soft orangish brown slightly sandy silty CLAY. Sand is fine to coarse. Rare sub angular to sub rounded fine to medium flint and chalk fragments. Occasional fine rootless. RIVER TERRACE DEPOSITS.	
	0.90	D B		1.40			Soft to firm orangish brown gravelly slightly sandy CLAY/SILT. Gravel is sub rounded to sub angular fine to medium flint and chalk. RIVER TERRACE DEPOSITS.	1
	1.50	D B		1.80			Orangish brown slightly silty SAND. Sand is fine to medium. Occasional sub rounded fine flint and chalk fragments. RIVER TERRACE DEPOSITS.	
	1.90	D B		1.90			End of Pit at 1.900m	2
								3
								4
								5

General Remarks:

Groundwater encountered at base of hole. Maximum rootlet depth of 1.30m.

Sample Type

D: Disturbed
B: Bulk
J: Jar
W: Water

Groundwater Remarks:

**Soils Limited**

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Trial Pit Log

Trial Pit No.

TPSK2B

Sheet 1 of 1

Project Name: Springfield, Hook Lane

Project No.: 17894

Method:

Plant:

Support:

Hole Type

TP

Scale

1:25

Logged By

MF

Location: Springfield, Hook Lane, Aldingbourne, PO20 3TE

Client: Edward Rees (Domusea Developments)

Trial Pit Length: 1.80m

Trial Pit Width: 0.60m

Dates: 16/10/2019

Level:

Co-ords:

Water Strike	Samples & In Situ Testing			Depth (m)	Level (mAOD)	Legend	Stratum Description	
	Depth	Type	Results					
				0.30			TOPSOIL. Grass topped soft brown sandy SILT. Occasional angular fine flint. Fine rootless present	
				1.40			Soft orangish brown slightly sandy silty CLAY. Sand is fine to coarse. Rare sub angular to sub rounded fine to medium flint and chalk fragments. Occasional fine rootless. RIVER TERRACE DEPOSITS.	1
							End of Pit at 1.400m	2
								3
								4
								5

General Remarks:

Infiltration test conducted within TPSK2B. Maximum rootlet depth of 1.30m.

Sample Type

D: Disturbed
B: Bulk
J: Jar
W: Water

Groundwater Remarks:

Soakaway Calculations

Soakaway Test No.	TPSK1B (test 1)
Contract:	Hook Lane
Contract No.	17894

Field Test

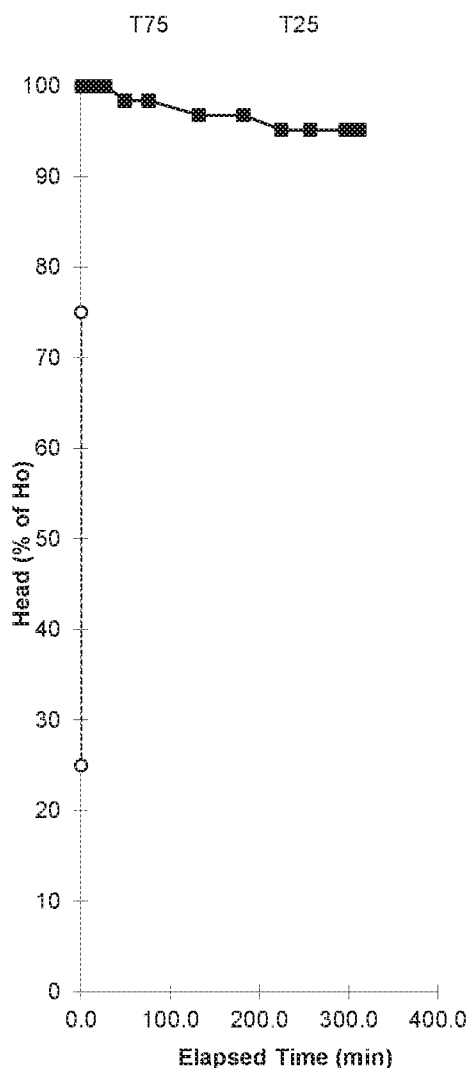
Trial Pit Log (include details of groundwater):

See trial Pit record

Depth of Pit	1.39 m
Width of Pit	0.60 m
Length of Pit	0.90 m
Depth of Pit Sealed	0.62 m
ap50	1.47 m ²
V _p 75-25	0.1674 m ³
t75-25	0.0 min
water used	0.3348 m ³
i	N/A m/sec.

Field Data

Depth to Water	Elapsed Time	Head of Water	Head of Water
(m)	(min)	(% of Ho)	(m)
0.77	0	100	0.62
0.77	1.1	100	0.62
0.77	2.6	100	0.62
0.77	9.9	100	0.62
0.77	21.3	100	0.62
0.77	27.1	100	0.62
0.78	49.3	98	0.61
0.78	76.0	98	0.61
0.79	132.2	97	0.60
0.79	181.8	97	0.60
0.8	224.6	95	0.59
0.80	256.7	95	0.59
0.8	296.7	95	0.59
0.80	311.9	95	0.59
T75	0.000	75	
T25	0.000	25	
T75-25	0.000	Derived from Best Fit	



Comments

Negligible infiltration over the test period of 312 minutes.

SOILS LIMITED

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Soakaway Calculations

Seakaway Test No.	TPSK2B (test 1)
Contract:	Hook Lane
Contract No.	17894

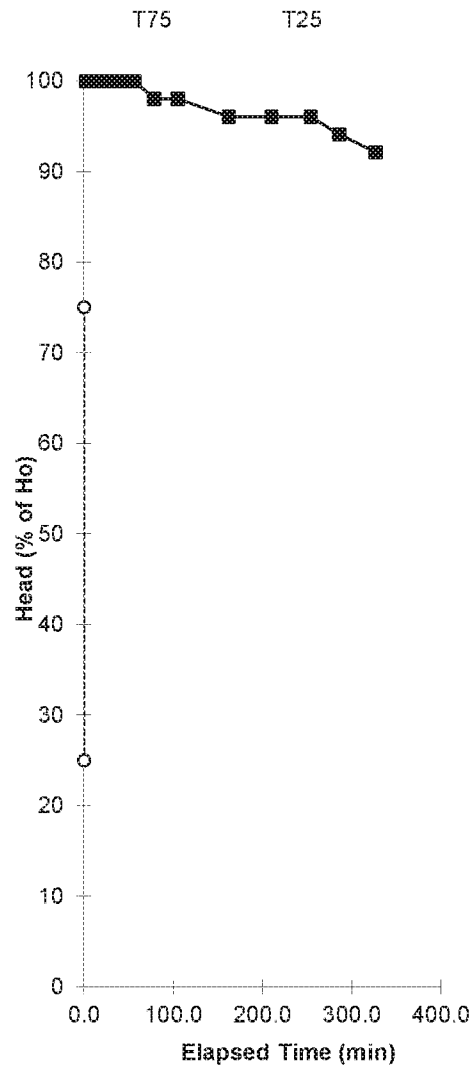
Field Test

Trial Pit Log (include details of groundwater):
See trial Pit record

Depth of Pit	1.40 m
Width of Pit	0.60 m
Length of Pit	1.20 m
Depth of Pit Soaked	0.51 m
ap50	1.638 m ²
V _p YS-2S	0.1836 m ³
t _{YS-2S}	0.0 min
water used	0.3672 m ³
i	N/A m/sec.

Field Data

Depth to Water	Elapsed Time	Head of Water	Head of Water
(m)	(min)	(% of Ho)	(m)
0.89	0	100	0.51
0.89	2.4	100	0.51
0.89	6.3	100	0.51
0.89	13.5	100	0.51
0.89	25.4	100	0.51
0.89	30.9	100	0.51
0.89	39.4	100	0.51
0.89	50.8	100	0.51
0.89	56.7	100	0.51
0.90	78.8	98	0.50
0.9	105.2	98	0.50
0.91	162.0	96	0.49
0.91	210.4	96	0.49
0.91	253.9	96	0.49
0.92	286.2	94	0.48
0.93	326.9	92	0.47
T75	0.000	75	
T25	0.000	25	
T75-25	0.000	Derived from Best Fit	



Comments

Negligible infiltration over the test period of 327 minutes.

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