



Geo-Environmental

12th September 2023

Our ref: GE22003/WH01/230912

Paul McKeown
Elivia Homes Central,
Apollo House,
Mercury Park,
High Wycombe, HP10 0HH

Dear Paul,

RE: Nine Mile Ride, Finchampstead – Soakage Testing

Further to your instruction, we write to present the results of the soakage testing undertaken at the above site. The soakage tests were undertaken in broad accordance with BRE Digest 365 'Soakaway Design' BRE, 2016 with the testing limited to a two-day period.

A Geo-Environmental engineer attended the site on 7th and 8th September 2023 to undertake the intrusive investigation. Five hand excavated trial pits (HP05 – HP09) were completed to depths of 1.1 - 1.4m bgl (dependent on ground conditions) to assess ground, groundwater conditions and soakage infiltration rates.

The exploratory holes were positioned approximately adjacent to hand pits (HP105 – HP109) undertaken by Omnia Consulting (ref: A12057/1.0, May 2023). The exploratory hole locations are shown on Figure 2.

Site Description

The site comprised woodland south of No.238 & No.240 Nine Mile Ride. Access was via the rear garden of No.238. The site moderately sloped upwards towards the south. The site was covered by mature and semi-mature trees and bushes. Limited fly-tipping was noted, including asbestos roofing near HP08. A fire had been lit near the entrance of the site.

Low rise fencing defined the site boundaries. Residential properties were located to the north, east and west. Further woodland was located to the south of the site.

Ground Conditions

The ground conditions encountered comprised a mantle of Topsoil overlying the Camberley Sand Formation. A generalised summary of the encountered conditions is presented in Table 1.

Top (m bgl)	Base (m bgl)	Geology	Locations
0.00	0.05 – 0.09	TOPSOIL: Dark brown fine to medium sand with abundant organic material. Root bound.	All
0.05 – 0.09	0.27 – 0.50	CAMBERLEY SAND FORMATION: Grey to greyish brown slightly clayey fine to medium SAND with occasional rootlets and flint gravel.	All
0.27 – 0.40	1.10 – 1.20+	CAMBERLEY SAND FORMATION: Yellowish brown to brown slightly clayey fine to medium SAND with rare rootlets and frequent clay nodules.	HP05 – HP07 & HP09
0.50	1.40+	CAMBERLEY SAND FORMATION: Yellowish brown with slight grey mottling very clayey fine to medium SAND with frequent clay nodules and rare flint gravel.	HP08

Table 1 Summary of Ground Conditions

Geo-Environmental Services Ltd
Unit 7 Danworth Farm, Cuckfield Road, Hurstpierpoint, West Sussex BN6 9GL
+44(0)1273 832972 www.gesl.net

Environmental Consultants | Geotechnical Engineers | Site Investigations

Geo-Environmental Services Ltd incorporated in England number 3214980 VAT number 679544479



Roots and rootlets were encountered across the site to the maximum depth of 1.20m bgl. For further details of the ground conditions encountered, reference should be made to the trial pit logs included within Appendix A.

Obstructions

No manmade or were encountered during the investigation. The presence of obstructions elsewhere at the site cannot be discounted.

All intrusive positions refused before target depth due to the density of the ground conditions encountered.

Groundwater

No groundwater was recorded within the trial pits during the investigation. Monitoring to determine any possible variation in groundwater levels over time did not form part of the agreed scope of investigation.

Soakage Testing

Soakage testing was undertaken in broad accordance with BRE Digest 365 Soakaway Design within five hand excavated trial pits. Testing was undertaken in HP05 – HP09 at depths of 1.1 - 1.4m bgl. Due to the limited time on site (two days) three filling and drainage cycles were not possible. Two tests were completed within all positions.

The results of the testing are summarised in Table 2 below.

Location	Depth (m bgl)	Infiltration Rate (m/s)	
		Test 1	Test 2
HP05	1.1	$7.9 \times 10^{-7} *$	$7.1 \times 10^{-7} *$
HP06	1.1	$6.6 \times 10^{-7} *$	$2.6 \times 10^{-7} *$
HP07	1.2	$1.0 \times 10^{-6} *$	$9.3 \times 10^{-7} *$
HP08	1.4	$2.7 \times 10^{-8} *$	$6.9 \times 10^{-8} *$
HP09	1.2	$4.6 \times 10^{-7} *$	$2.8 \times 10^{-7} *$

*data extrapolated

Table 2: Soakage Test Results

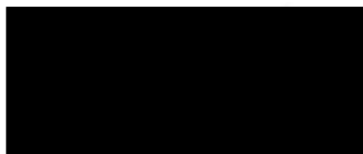
The testing undertaken indicates that the clayey Sands of the Camberley Sand Formation have low infiltration rates and there is potential that attenuation and further consideration to other types of drainage solutions will be required.

Closure

We trust that we have interpreted your instructions correctly, and please do not hesitate to contact us should you have any queries.

Yours sincerely

For and on Behalf of Geo-Environmental



William Hughes MGeol (Hons), MSc, FGS

Senior Consultant Engineer

william.hughes@gesl.net

Enc Figure 1 Site Location Plan
 Figure 2 Investigation Plan
 Exploratory Hole Logs





Project Title: Nine Mile Ride
Location : Finchampstead, Reading, RG40 3QD
Project No. : GE22003
Client : Elivia Homes

Title : Figure 2 - Exploratory Hole Location Plan
Scale: 1:1750
Engineer:



Geo-Environmental

- Legend Key
- Locations By Type - Empty
 - Locations By Type - TP
 - Project Bounds - Project Bounds





Client:	Elivia Homes
---------	--------------

Sheet 1 of 1

Status:	PRELIM
---------	--------

Date Printed:	11/09/2023
---------------	------------

1:25

Hole Termination:

Stability: Sides stable

Dimensions:			Photo:
Final Depth:	1.10m		
Final Width:	0.31m		
Final Length:	0.35m		
Remarks			
Refusal due to density Soakage testing			
Water Strikes (mbgl)			
Depth Strike	Rose to	Time Elapsed (mins)	

 Geo-Environmental	Contract Name: Nine Mile Ride, Finchampstead			Client: Elivia Homes		Trial Pit ID: HP06			
	Contract Number: GE22003	Date Started: 07/09/2023	Logged By: WH	Checked By:	Status: PRELIM	Sheet 1 of 1			
	Easting: 480207.1	Northing: 164768.3	Ground Level:	Plant Used: Hand dug	Date Printed: 11/09/2023	Scale: 1:25			
Trial Pit Log		Weather: Sunny		Hole Termination:		Stability: Sides stable			
Samples & In Situ Testing			Strata Details					Water	Backfill
Depths	Sample ID	Test Result	Reduced Level	Depth (m) (Thickness)	Legend	Strata Description			
				0.06		Brown fine to medium sand with abundant organic material. Root bound TOPSOIL			
				0.29		Grey slightly clayey fine to medium SAND with abundant rootlets			
				(0.30)		CAMBERLEY SAND FORMATION			
				0.59		Yellowish brown slightly clayey fine to medium SAND with occasional rootlets and flint gravel. Frequent clay nodules	0.5		
				(0.51)		CAMBERLEY SAND FORMATION			
				1.10		Greyish brown slightly clayey fine to medium SAND with rare flint gravel. Frequent clay nodules	1.0		
						End of Trial Pit at 1.10m	1.5		
							2.0		
							2.5		
							3.0		
							3.5		
Dimensions:						Photo:			
Final Depth:	1.10m								
Final Width:	0.30m								
Final Length:	0.30m								
Remarks									
Refusal due to density Soakage testing									
Water Strikes (mbgl)									
Depth Strike	Rose to		Time Elapsed (mins)						

 Geo-Environmental	Contract Name: Nine Mile Ride, Finchampstead			Client: Elivia Homes			Trial Pit ID: HP07			
	Contract Number: GE22003	Date Started: 07/09/2023	Logged By: WH	Checked By:	Status: PRELIM	Sheet 1 of 1				
	Easting: 480170.6	Northing: 164774.2	Ground Level:	Plant Used: Hand dug	Date Printed: 11/09/2023	Scale: 1:25				
Trial Pit Log										
Weather: Sunny			Hole Termination:			Stability: Sides stable				
Samples & In Situ Testing			Strata Details						Water	Backfill
Depths	Sample ID	Test Result	Reduced Level	Depth (m) (Thickness)	Legend	Strata Description				
				0.06		Brown fine to medium sand with abundant organic material. Root bound TOPSOIL				
				(0.34)		Grey and brown mottled slightly clayey fine to medium SAND with frequent rootlets CAMBERLEY SAND FORMATION				
				0.40		Brown slightly clayey fine to medium SAND with rare clay nodules CAMBERLEY SAND FORMATION			0.5	
				(0.50)						
				0.90		Dark brown clayey fine to medium SAND with rare rootlets. Frequent clay nodules CAMBERLEY SAND FORMATION			1.0	
				(0.30)						
				1.20		End of Trial Pit at 1.20m				
									1.5	
									2.0	
									2.5	
									3.0	
									3.5	
Dimensions:						Photo:				
Final Depth:	1.20m									
Final Width:	0.33m									
Final Length:	0.30m									
Remarks										
Refusal due to density Soakage testing										
Water Strikes (mbgl)										
Depth Strike		Rose to		Time Elapsed (mins)						

 Geo-Environmental	Contract Name: Nine Mile Ride, Finchampstead			Client: Elivia Homes			Trial Pit ID: HP08			
	Contract Number: GE22003	Date Started: 07/09/2023	Logged By: WH	Checked By:	Status: PRELIM	Sheet 1 of 1				
	Easting: 480145.0	Northing: 164784.9	Ground Level:	Plant Used: Hand dug	Date Printed: 11/09/2023	Scale: 1:25				
Trial Pit Log		Weather: Sunny		Hole Termination:		Stability: Sides stable				
Samples & In Situ Testing				Strata Details					Water	Backfill
Depths	Sample ID	Test Result	Reduced Level	Depth (m) (Thickness)	Legend	Strata Description				
				0.04		Moss over brown fine to medium sand with abundant organic material. Root bound TOPSOIL				
				0.28		Brown slightly clayey fine to medium SAND with abundant rootlets				
				0.50		CAMBERLEY SAND FORMATION Greyish brown slightly clayey fine to medium SAND with occasional rootlets and clay nodules				
				(0.90)		CAMBERLEY SAND FORMATION Yellowish brown with slight grey mottling very clayey fine to medium SAND with rare flint gravel. Frequent clay nodules				
				1.40	End of Trial Pit at 1.40m					
Dimensions:						Photo:				
Final Depth:	1.40m									
Final Width:	0.35m									
Final Length:	0.30m									
Remarks										
Refusal due to density Soakage testing										
Water Strikes (mbgl)										
Depth Strike	Rose to		Time Elapsed (mins)							

 Geo-Environmental	Contract Name: Nine Mile Ride, Finchampstead			Client: Elivia Homes			Trial Pit ID: HP09		
	Contract Number: GE22003	Date Started: 07/09/2023	Logged By: WH	Checked By:	Status: PRELIM	Sheet 1 of 1			
	Easting: 480200.5	Northing: 164799.9	Ground Level:	Plant Used: Hand dug	Date Printed: 11/09/2023	Scale: 1:25			
Trial Pit Log		Weather: Sunny		Hole Termination:		Stability: Sides stable			
Samples & In Situ Testing			Strata Details					Water	Backfill
Depths	Sample ID	Test Result	Reduced Level	Depth (m) (Thickness)	Legend	Strata Description			
				0.05		Dark brown fine to medium sand with abundant organic material. Root bound TOPSOIL			
				0.13		Grey slightly clayey fine to medium SAND with abundant rootlets			
				0.27		CAMBERLEY SAND FORMATION			
				(0.83)		Greyish brown slightly clayey fine to medium SAND with occasional rootlets and rare flint gravel. Frequent clay nodules CAMBERLEY SAND FORMATION		0.5	
						Brownish yellow slightly clayey fine to medium SAND with occasional rootlets and rare flint gravel. Frequent clay nodules CAMBERLEY SAND FORMATION			
				1.10		Yellowish brown and orange mottled clayey fine to medium SAND		1.0	
				1.20		CAMBERLEY SAND FORMATION End of Trial Pit at 1.20m			
								1.5	
								2.0	
								2.5	
								3.0	
								3.5	
Dimensions:						Photo:			
Final Depth:	1.20m								
Final Width:	0.35m								
Final Length:	0.30m								
Remarks									
Refusal due to density Soakage testing									
Water Strikes (mbgl)									
Depth Strike		Rose to		Time Elapsed (mins)					