

PRELIMINARY GROUND INVESTIGATION REPORT

UPON

RESIDENTIAL DEVELOPMENT PLOT 2

HIGHSTOCK LANE

GEDNEY HILL PE12 0QG

PROJECT No: 46318

DOCUMENT REF: 46318-GI-01



Mr & Mrs Scorthorne

C/O Brian Gilham, Status Design

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1. INTRODUCTION

Acting upon instruction from Brian Gilham at Status Design acting on behalf of Mr & Mrs Scorthorne, we visited site on 05th March 2019 with a view to determining the basic characteristics of the soils strata.

Hand Auger boreholes and trial pits took place, and our comments are based upon a visual inspection only of the disturbed samples obtained.

We would suggest the groundwater conditions may vary seasonally and that water levels as recorded at the time of exploration should not necessarily be taken as being constant as they may be subject to fluctuations.

The opinions and comments expressed in this report are based upon ground conditions encountered in the borehole sunk at the time of our visit.

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2. LOCATION AND BRIEF DESCRIPTION OF THE SITE

2.1 Site location

Situated on the South side of Highstock Lane, Gedney Hill appropriate National Grid reference TF340110. A site location plan is contained in APPENDIX A.

2.2 Site History description

Desktop study of historical maps has been undertaken and found that the site was historically an agricultural plot and all maps show a drain running along the East side of the plot.

An extract of the 1888 Ordnance survey is contained within APPENDIX B.

2.3 Site description

The site currently stands as an apparently un occupied paddock. The investigation is limited to the area intended for the residential development as shown on the location plan contained within APPENDIX A.

The North of the site is bordered by the highway, Highstock Lane.

The Southern Boundary is to adjacent agricultural land.

The East and West of the plot is bordered by adjacent building plots.

No significant trees or vegetation was present on site at the time of investigation.

At the time of our visit the weather was dry and clear, however some precipitation was experienced in the days running up.

2.4 Geological description

Desktop study of the area has been undertaken using the British Geological Society Maps.

The maps indicate the site to be underlain by superficial tidal flat deposits of sands and silts over the Oxford clay formation (Mudstone).

An existing borehole record to the West of the site indicates Tidal deposits of firm silty clay immediately below the surface underlain by softer clays at depth. This information is based upon publicly available records from the British Geological Society.

3. SITE WORK

Two 100mm diameter Hand Auger boreholes and two number mechanically excavated trial pits took place in the location shown on the location plan contained within APPENDIX A.

A visual inspection of the disturbed samples took place, and in-situ Mackintosh probe tests were performed. A description of the strata and test results are shown on sheets No.d 25118/BH01, BH02, TP01 and TP02. The exploration logs are contained in APPENDIX C.

The trial pits and infiltration tests were undertaken in the adjacent plot 5, however as the borehole explorations have illustrated the strata are consistent across the site then the results for these investigations are valid.

The soil demonstrated no identifying odours or markers for known contamination and with the historical investigation indicating solely agricultural use, no samples were submitted for laboratory chemical analysis testing.

An infiltration rate test was undertaken in accordance with procedures described in BRE digest 365.

A photographic record is contained within APPENDIX D.

4.0 GROUND CONDITIONS

The sequence of the strata encountered during the investigation generally confirms the anticipated geology as interpreted from experience and the geological maps.

The strata encountered in all explorations were very similar, and typical of that to be found in the fenland area.

Once the dry topsoil material was penetrated the strata became a mid-dense slightly silty sand which extended to depths of 3m until a wet grey sandy silt was encountered.

In Borehole 1 a minor amount of isolated black inclusions were observed, from experience likely to be organic in nature, at a depth of 2.9m below ground level.

An infiltration test was undertaken in adjacent plot 5, the water drained well through the granular strata. Although the test was undertaken on an adjacent plot, the results are still valid for the purposes of this site, as the explorations on both plots indicate them to be underlain by the same strata. The test results and calculation are contained within APPENDIX E, the calculated infiltration rate is 2.3×10^{-5} m/s.

5.0 CONCLUSIONS & RECCOMENDATIONS

The nature of the ground conditions on site are suitable for traditional shallow spread foundations, however due care and attention should be taken to ensure that the less dense wet material underlying is not overstressed.

It is understood that the proposed property is to take the form of a domestic bungalow.

The organic inclusions observed in BH01 were isolated and not encountered in any other explorations. Therefore, they are considered to be isolated anomalies and not considered in general foundation recommendations.

The infiltration test drained well, and the site is well suited to the use of soakaway surface water drainage and a drainage field outfall from a treatment plant for foul water. The calculated infiltration rate is contained with the results in APPENDIX E.

The ground conditions encountered at 0.75m BGL are suitable for shallow strip footings a maximum of 1.0m width exerting a maximum bearing pressure of 70kN/m². Under these conditions we would anticipate that settlements should be within a generally acceptable range.

For and on behalf of **SIDEBOTTOM RICHARDSON CHENG LTD**

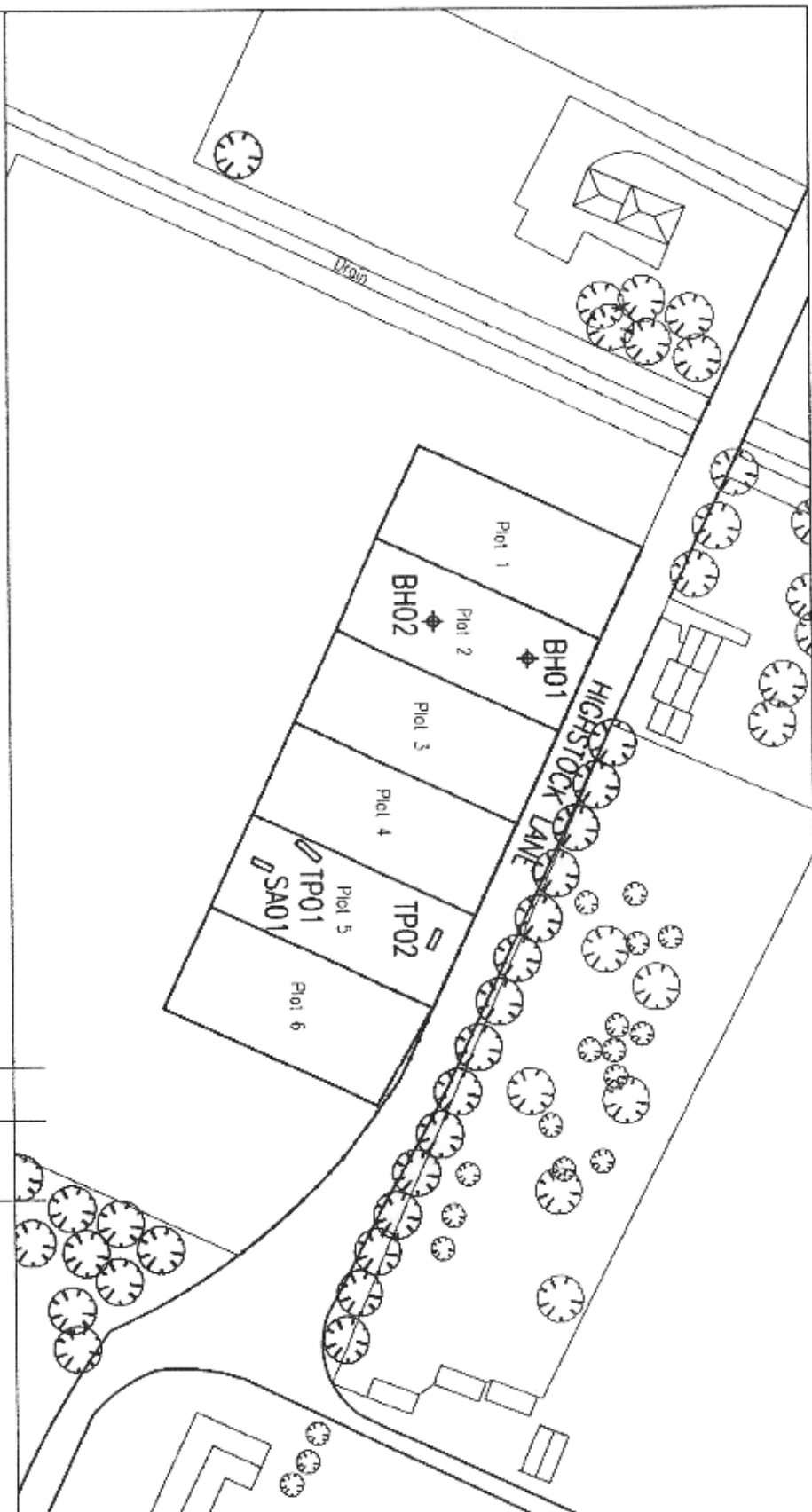
A. Wilson CEng MStructE

26th March 2019

APPENDIX A

Location Plan

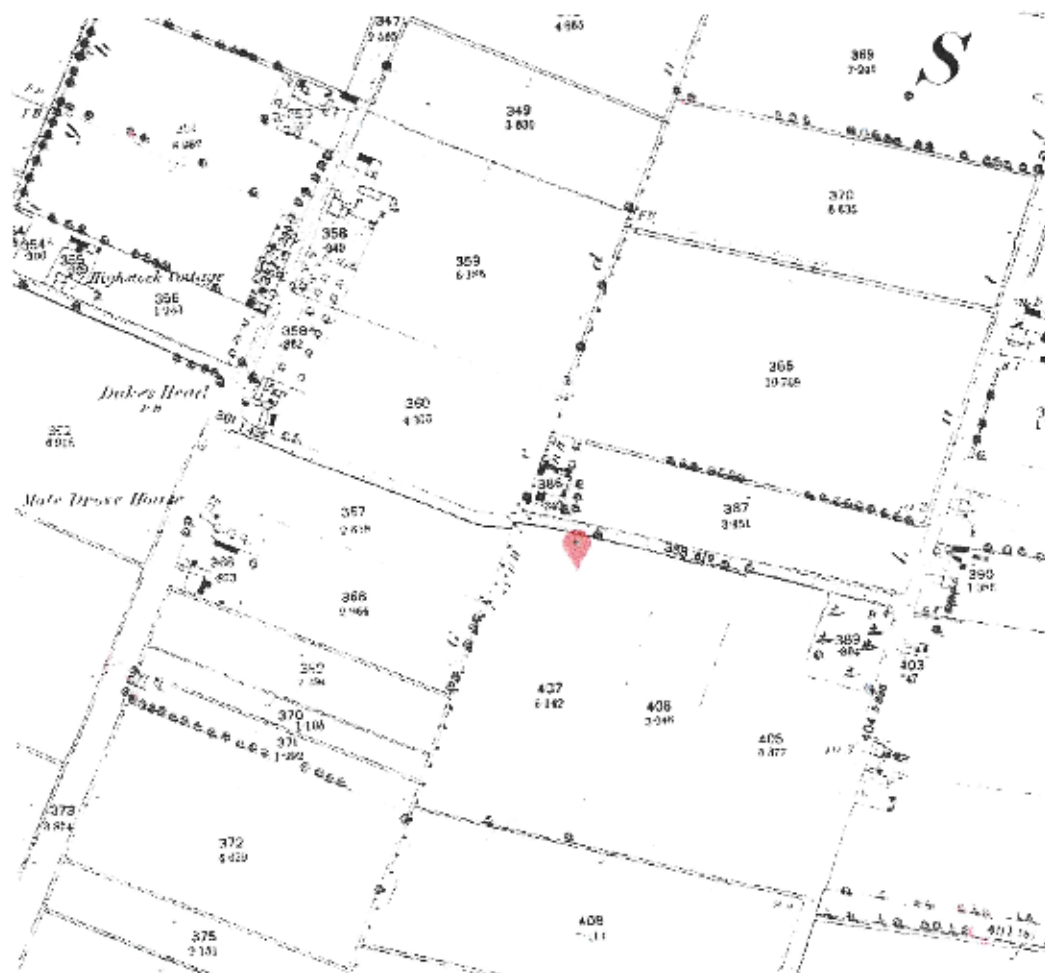
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Date	Mar. '19	Project	Residential Development at Highstock Lane, Gendey Hill	Rev	Date	Remarks
Drawn	SA					
Design	SRG	Title	Site Plan Showing Approximate Borehole, Trial Pits and Soakaway Locations			
Scale	1:1000 @A4					
Checked	APW					
File Name	46318-SK01	Status	FOR INFORMATION	DRG No.	46318/SK01	Rev
						-

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APPENDIX B



1888 Ordnance survey county series map

APPENDIX C

Borehole Logs

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				Status FOR INFORMATION				
Date Mar. '19		Drawn SA		Checked APW				
Scale 1:20		Design -		File Name 46318-BH01				
Location Plot 2, Highstock lane, Gedney Hill, PE12 0QG				Carried Out For Status		Date Undertaken 13/03/19		
						Logged By APW/SA		
Equipment & Methods 100mmØ HandAuger				Site Coordinates:		Borehole No. 1		
				Ground Level:				
Description	Reduced Level	Legend	Depth (Thick)	Samples			Test Required	M.P.T. Blow Count (Depth)
				Depth	Sample Reference	Sample Type No.		
Topsoil.			350mm					
Loose Brown Orange Sand.			1200mm (850mm)					
Slightly Dense Grey Orange Sand.			2000mm (800mm)					
Moist Grey Orange Brown Med Dense Sand.			2750mm (800mm)					
Very Moist Dark Brown Slightly Dense Sand With Black Organic Inclusions. No Smell.			2900mm (150mm)					
Wet Grey Silty Sand.			3100mm (200mm)					
Borehole Terminated Due To Suction.								
Remarks								

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Status FOR INFORMATION							
Location Plot 2, Highstock lane, Gedney Hill, PE12 0QG		Carried Out For Status		Date Mar '19 Scale 1:20		Drawn SA Design -	
				Checked File Name		APW 46318-BH02	
				Date Undertaken 13/03/19		Logged By APW/SA	
Equipment & Methods 100mmØ HandAuger			Site Coordinates:			Borehole No. 2	
			Ground Level:				
Description	Reduced Level	Legend	Depth (Thick)	Samples		Test Required	M.P.T. Blow Count (Depth)
				Depth	Sample Reference		
Topsoil.			400mm				
Browney Orange Med Dense Sand.			1900mm (1500mm)				
Greyey Orangey Brown Moist Med Dense Sand Becoming Increasingly Moist With Depth.			3000mm (1100mm)				
Wet Grey Loose-Dense Silty Sand.			3200mm (200mm)				
Borehole Terminated Due To Suction.							
Remarks							

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				Status FOR INFORMATION			
Date		Mar. '19		Drawn	SA	Checked	APW
Scale		1:20		Design	JAR	File Name	46318/TP01
Location Highstock Lane, Gedney Hill, PE12 0QG				Carried Out For		Date Undertaken 05/03/19	
				Status		Logged By JAR	
Equipment & Methods Digger			Site Coordinates:			Trial Pit No.	
			Ground Level:			1	
Description	Reduced Level	Legend	Depth (Thick)	Samples		Test Required	M.P.T. Blow Count (Depth)
				Depth	Sample Reference		
Brick Rubble.			400mm				
Moist Firm Light Brown Silty Sand.			2300mm 1900mm				
Moist/Wet Firm Mid Brown Sand.			3000mm 700mm				
Trial Pit Terminated.							
Remarks							

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				Status FOR INFORMATION			
Location Highstock Lane, Gedney Hill, PE12 0QG				Date Mar. '19		Drawn SA	
Carried Out For Status				Scale 1:20		Checked JAR	
Equipment & Methods Digger				Date Undertaken 05/03/19		File Name 46318/TP02	
Site Coordinates:				Trial Pit No. 2			
Ground Level:							
Description	Reduced Level	Legend	Depth (Thick)	Samples		Test Required	M.P.T. Blow Count (Depth)
				Depth	Sample Reference		
Brick Rubble.			400mm				
Moist Firm Light Brown Silty Sand.			2300mm (1900mm)				
Moist/Wet Firm Mid Brown Sand.			3000mm (700mm)				
Trial Pit Terminated.							
Remarks							

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APPENDIX D
Photographic Record



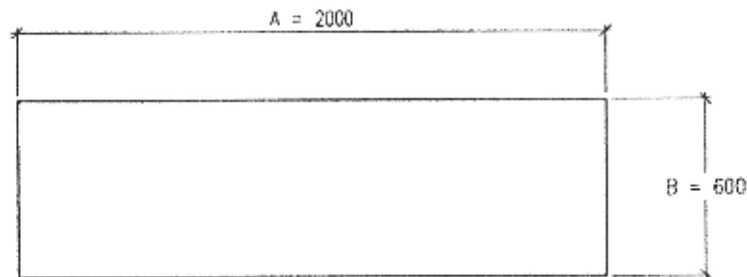


APPENDIX E

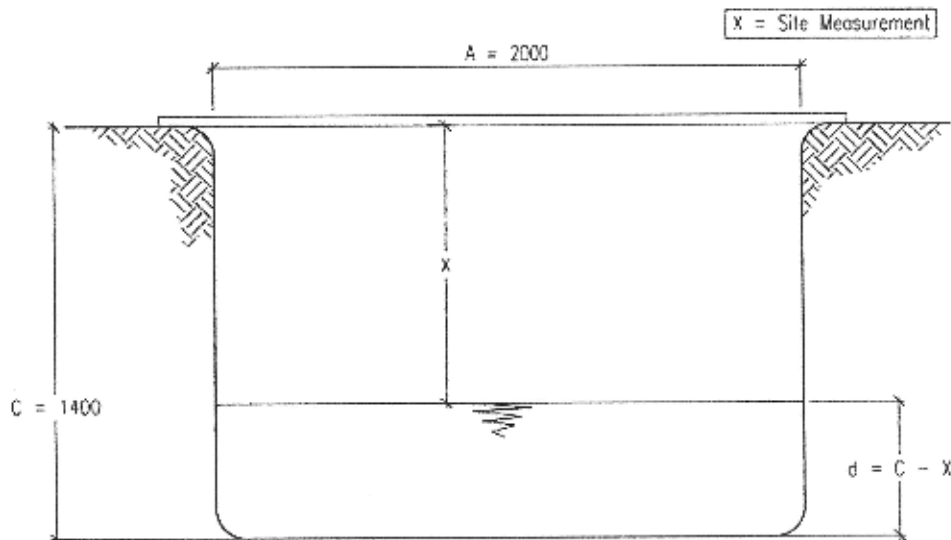
Infiltration Test Results

Project **Residential Development at
Highstock Lane, Gedney Hill, PE12 0QG**

Title **Infiltration Soak Away Sketch**



Plan On SA01



Section Through SA01

Soak-Away Test SA 01

Job Reference Residential Development at
Highstock Lane, Gedney Hill

TIME (Mins)	DEPTH mm (d)
0	945
10	880
20	825
30	780
45	740
60	660
90	590
120	510
150	460
180	390
210	350

Job No. 46318

Date 05/03/2019

Trial Dimensions

A = 2 m
B = 0.6 m
C = 1.4 m

C.S.Area of
SA01 = 1.2 m²

Total Volume = 0.714 m³
75% Volume = 0.536 m³
25% Volume = 0.179 m³

Time Taken From 75% Volume to 25% Volume

94 Mins

Effective Depth From 75% Volume to 25% Volume

0.2975 m

50% Effective Internal Surface Area Including Base area

2.747 m²

Soil Infiltration rate, f

2.30425E-05 m/s

2.30 x 10⁻² mm/s

Highstock Lane, Gedney Hill
 Job No. 46318
 Plot showing water level against time for SA01

