Gedney, Oliver

From: Gedney, David
Sent: 17 February 2021 14:35
To: _planningadvice
Subject: FW: H23-0076-21 - Erection of 9 dwellings, Land to rear of Paw House, Whaplode
Attachments: SW 20-142-REP-01 A.pdf

Please scan email and attached

6SUP (Drainage Strategy)

Regards

David Gedney | Senior Planning Officer| **South Holland District Council**
dgedney@sholland.gov.uk
DDI: 01775 764468 |
www.sholland.gov.uk

Please note that any informal officer opinion expressed by this email is without prejudice and is not binding on the Council during the consideration of any formal application.



From: peter@seven22.co.uk <peter@seven22.co.uk>
Sent: 17 February 2021 13:59
To: Gedney, David <DGedney@sholland.gov.uk>
Cc: info@highgrovehomesltd.co.uk
Subject: H23-0076-21 - Erection of 9 dwellings, Land to rear of Paw House, Whaplode

Mimecast Attachment Protection has deemed this file to be safe, but always exercise caution when opening files.

This message originated from outside your organization

Hi David

Please find attached the site investigation carried out for the 9 dwellings at Whaplode. Whilst the Drainage Strategy summarises the findings and determines that infiltration will be successful, we trust the attached illustrates the site has been well investigated and the ground conditions are appreciated.

Kind regards

Peter

seven22
ARCHITECTURE LTD
T. 07799 585277
W. www.seven22.co.uk
Registered company in England: 12264263

SHIELDS WILSON
e: info@shieldswilson.co.uk t: 01775 729252
STRUCTURAL AND CIVIL ENGINEERING

GROUND INVESTIGATION REPORT

UPON

LAND OFF

COBGATE, WHAPLODE,

LINCOLNSHIRE, PE12 6UL

PROJECT No: SW 20-142

DOCUMENT REF: SW 20-142-GI-01 rev A



Mr Adrian Brotherton
Highgrove Homes (Spalding) Ltd.,
Ashgrove Lodge,
Austendyke Road,
Weston Hills,
PE12 6BX

HIGHGROVE HOMES

CONTENTS

1. INTRODUCTION 2
2. LOCATION & DESCRIPTION OF SITE 3
2.1. Site Location 3
2.2. Site History Description 3
2.3. Site Description 3
2.4. Geological Description 4
3. SITE WORK 5
4. GROUND CONDITIONS 6
5. CONCLUSIONS & RECOMMENDATIONS 7
APPENDIX A 8
APPENDIX B 10
APPENDIX C 12
APPENDIX D 14
APPENDIX E 19

© Shields Wilson Limited.

1. INTRODUCTION

Acting upon the instruction of Mr Adrian Brotherton of Highgrove Homes, we attended site on 16th December 2020, the purpose being to observe the underlying ground conditions and determine the basic characteristics of the soil strata.

Mechanically excavated trial pits took place, and our comments are based upon a visual inspection of the disturbed samples obtained and the in-situ strata within the trial pits.

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

The opinions and comments expressed within this report are based upon ground conditions encountered in the trial pits excavated at the time of our visit.

This report has been prepared for the named client above and should not be relied upon by any other parties, with the exception of the client's professional advisors, for any use without the express written permission of Shields Wilson Limited.

© Shields Wilson Limited.

2. LOCATION & DESCRIPTION OF SITE

2.1. Site Location

The site is situated to the south of Cobgate, Whaplode. Appropriate national grid reference TF 320 237.

A Location plan is contained with Appendix A.

2.2. Site History Description

Desktop study of publicly available historical maps has been undertaken and found the site was not developed until around the late 1960's where residential properties were constructed. Prior to this development the land stood as arable farm land much like the existing surrounding area today.

An extract of OS Lincolnshire map, 1968-70, is contained within Appendix B.

2.3. Site Description

The site currently stands as multiple rear gardens off Cobgate.

The North of the site will be bound by existing properties off Cobgate.

The Eastern Boundary is boarded by dense hedgerow and a close boarded fence, which separates the proposed site with an existing haulage yard.

The West of the site is boarded by a well-established hedge line and trees, along with close boarded fencing, separating the proposed site from existing neighbouring gardens and residential properties.

The Southern boundary is formed with a line of established trees and shared with a neighbouring field that is used for arable farming.

At the time of our visit the weather was dry and clear, however there had been some precipitation in the days leading up to the visit.

© Shields Wilson Limited.

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 Sand and Silt over the Ampthill Clay (Mudstone) formation.

This information is based upon publicly available records. An extract is contained with Appendix C.

© Shields Wilson Limited.

3. SITE WORK

Four Number trial pits were excavated with the use of mechanical excavator. The siting of these explorations is shown on the Location plan shown within Appendix A.

A visual inspection of the disturbed samples was undertaken. A description of the strata and test results are shown on sheets SW20-142/TP01 thru TP04. The Trial pit logs are contained within Appendix D.

The soil demonstrated no identifying odours or markers for known man-made contamination and with the historical investigation indicating no previous development being present, no samples were submitted for laboratory chemical analysis testing.

As granular soils were encountered to depth no samples were submitted to laboratory for moisture testing or Atterberg Limits testing. Furthermore, no contamination testing took place as the existing site was utilised for a residential dwelling with large aviaries, also, as confirmed in the desktop study of the old maps local to the site, the land prior to development stood as arable farm land.

A photographic record of site explorations is contained within Appendix E.

© Shields Wilson Limited.

4. GROUND CONDITIONS

The sequence of the strata encountered during the investigation generally conforms to the geology identified by the desk top studies.

The strata encountered in all 4 explorations were very similar and demonstrated a consistent geological profile across the site.

Once the dry 0.3 – 0.4m of topsoil material was penetrated the strata generally became a light brown medium dense sandy silt. This strata continued for the duration of all 4 trial pits and generally became wetter with depth.

In TP01 the dig was terminated at 2.15m below ground level, due to the sides collapsing with the ingress of groundwater at 1.7m. TP02 was stopped for the same reason of water ingress and the sides of the excavation collapsing at a depth of 2.35m below ground level. Trial pit numbers three and four were terminated at similar depths of 2.5m and 2.4m respectively.

As all strata below foundation level are granular as such no samples were taken for the laboratory to assess volume change potential.

Two samples were taken and sent away to determine CBR results, returning results of 0.7% & 0.6% which are very low, as is typical with fenland tidal flat deposits.

© Shields Wilson Limited.

5. CONCLUSIONS & RECOMMENDATIONS

The proposed development is understood to comprise of nine detached dwellings constructed using traditional load bearing masonry walls.

Dwellings with structures of this nature are likely to develop foundation loads in the region of 35 – 45 kN/m.

Therefore, our recommendation is to utilise a traditional strip footing cast at a formation level 0.75m below existing ground level and onto the competent silty fine sand.

In order to ensure additional stresses onto the weaker wet silty sands at depth, allowable bearing stresses should be limited to 80 kN/m².

We would anticipate a strip footing width being 700mm wide with a layer of A393 fabric mesh reinforcement incorporated to ensure total and differential settlements are kept within acceptable industry standard limits.

Due to the results of CBR testing being below 1.5% a full depth road construction will be required in accordance with the local highways authority design guidance and road specification.

With the strata on this site being of a granular nature and with the relative depth of the water table, the site will be suitable for infiltration drainage for the roofs run off water.

For and on behalf of **SHIELDS WILSON LIMITED**

A.P.Wilson CEng MIStructE **15th January 2020**.

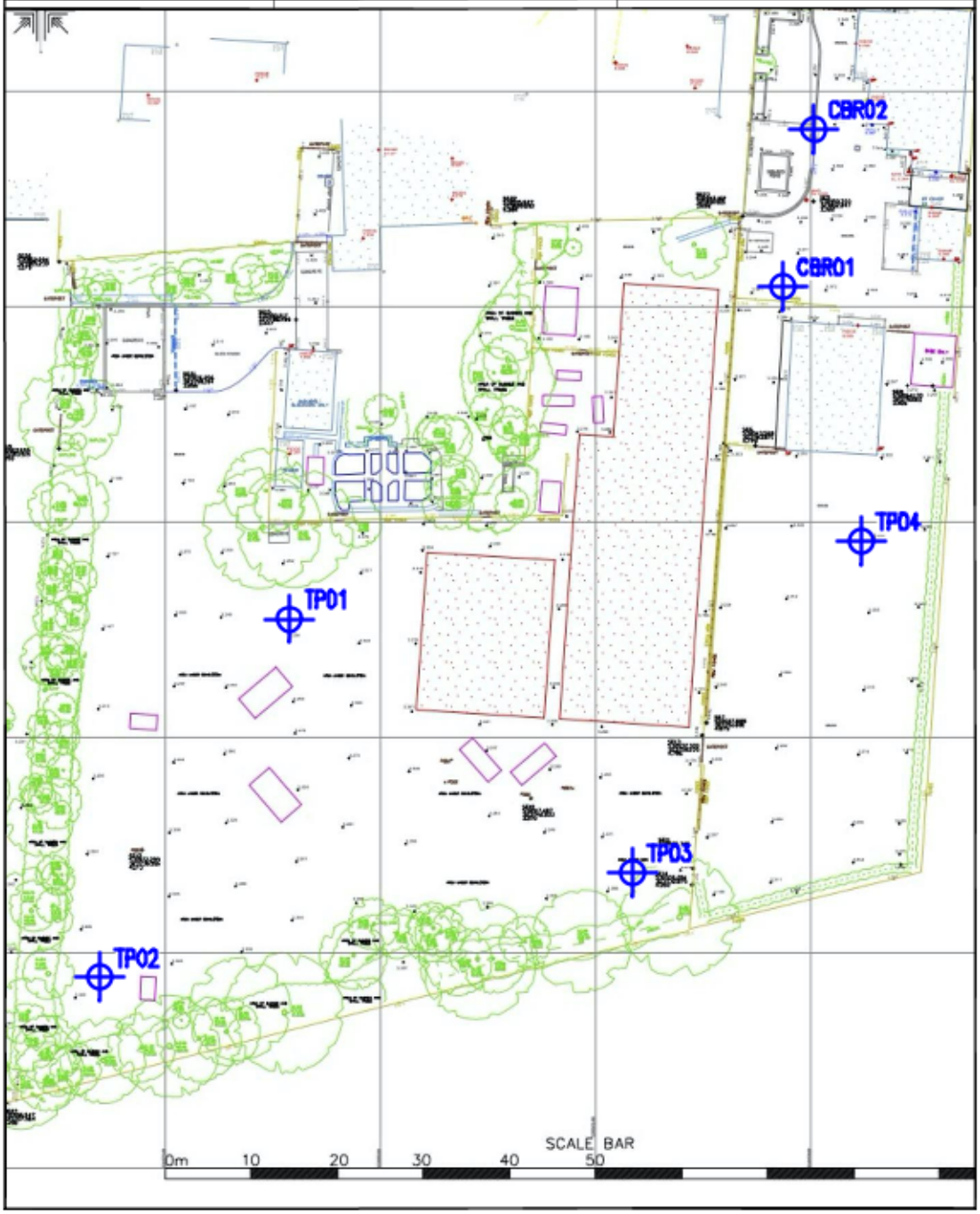
© Shields Wilson Limited.

APPENDIX A

© Shields Wilson Limited.

SHIELDS WILSON
e: info@shieldswilson.co.uk t: 01775 729252
STRUCTURAL AND CIVIL ENGINEERING

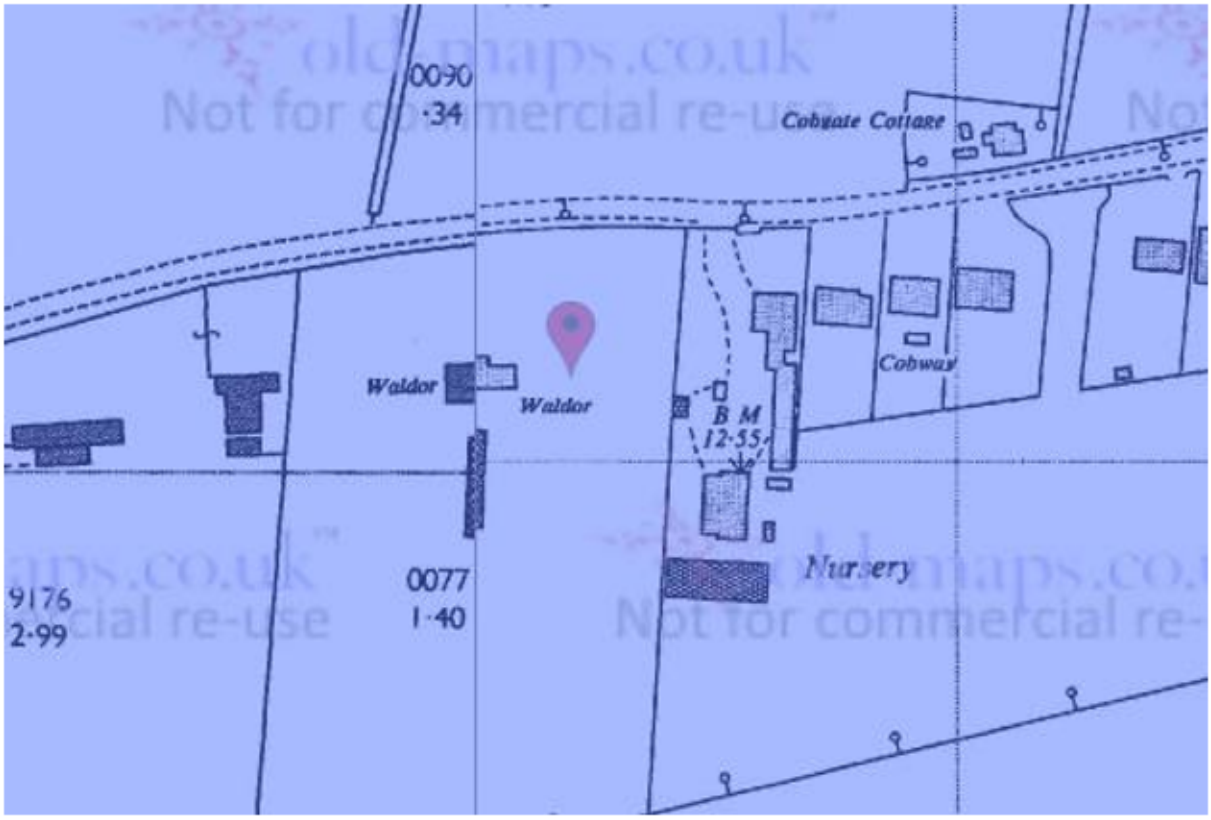
Site Investigations	Project: Land off Cobgate, Whaplode	Date: 16/12/2020	Designer: APW
Project No: SW 20-142	Subject: Borehole Location Plan	Sheet No: 1	Rev: -



Copyright Shields Wilson Limited.

APPENDIX B

© Shields Wilson Limited.

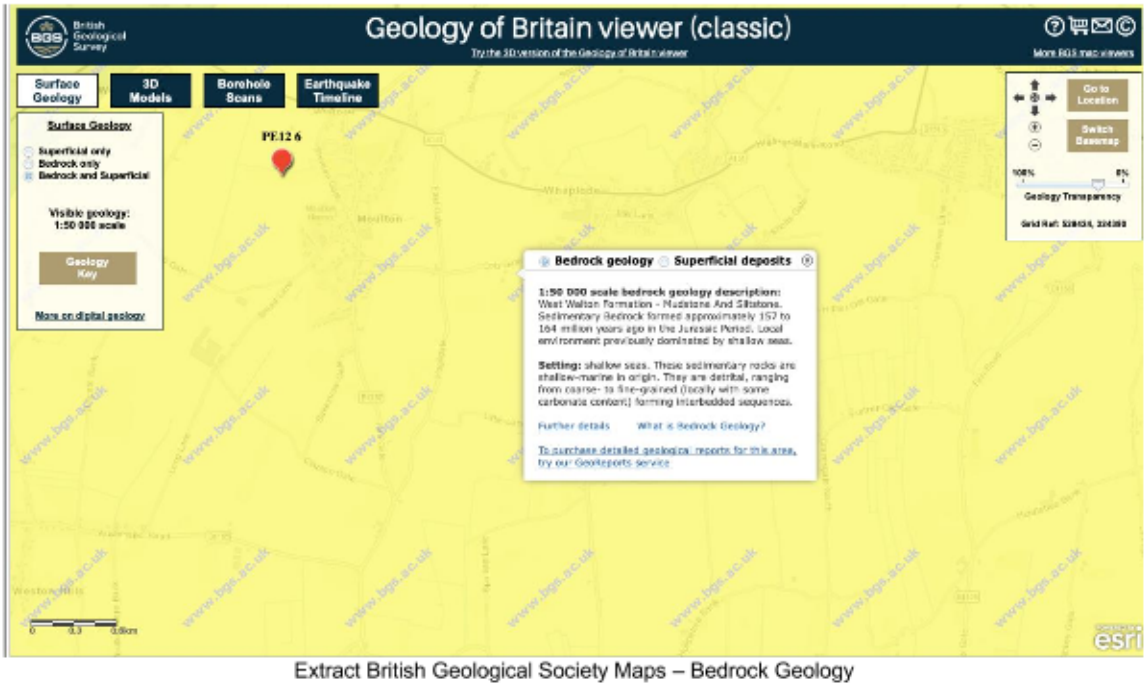


Extract of OS County Series 1968-1970

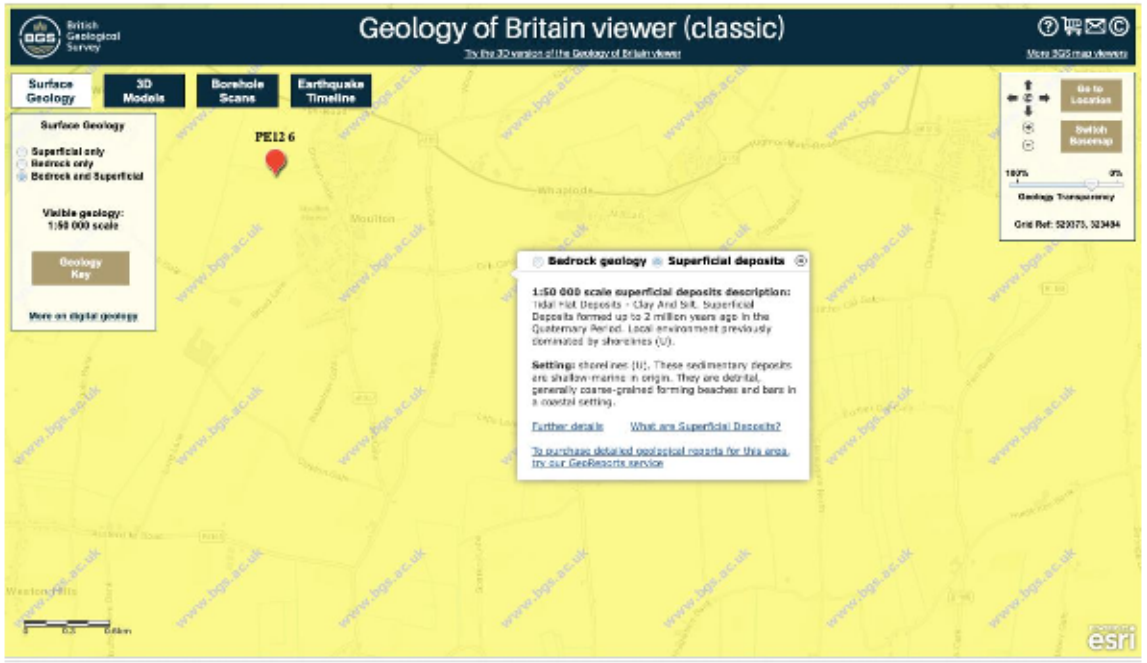
© Shields Wilson Limited.

APPENDIX C

© Shields Wilson Limited.



Extract British Geological Society Maps – Bedrock Geology



Extract British Geological Society Maps – Superficial Deposits

© Shields Wilson Limited.

APPENDIX D

© Shields Wilson Limited.

SHIELDS WILSON
e: info@shieldswilson.co.uk t: 01775 729252
STRUCTURAL AND CIVIL ENGINEERING

Project No.	Log Ref
SW20-142	TP01
Exploration Method: Excavator	
Site Coordinates: TF 320237	

Location	Carried Out For	Date Undertaken	Logged By
Proposed Development, Cobgate, Whaplode, Spalding, Lincolnshire	Highgrove Homes	16/12/20	APW

Description	Reduced Level	Legend	Depth (Thick)	Samples: Depth	Samples: Sample Reference	Samples: Sample Type	Samples: Sample No.	Test Required	Mackintosh Probe
Silty Top Soil.			0.300m						
Light Brown Medium Dense Sandy Silt			(0.700m) 1.000m						
Light Brown Slightly Grey Moist Silty Sand.			(0.700m) 1.700m						
Light Brown Slightly Grey Moist Silty Sand – Now Wet			(1.050m) 2.250m						

Remarks

Borehole Terminated @ 2.25m Below Ground Level. Water Strike @ 1.7m BGL. Sides Collapsing From 1.4m BGL.

Copyright Shields Wilson Limited.

© Shields Wilson Limited.

SHIELDS WILSON
e: info@shieldswilson.co.uk t: 01775 729252
STRUCTURAL AND CIVIL ENGINEERING

Project No.	SW20-142
Log Ref	TP02
Exploration Method	Excavator
Site Coordinates	TF 320237
Location	Proposed Development, Cobgate, Whaplode, Spalding, Lincolnshire
Carried Out For	Highgrove Homes
Date Undertaken	16/12/20
Logged By	APW

Description	Reduced Level	Legend	Depth (Thick)	Samples: Depth	Samples: Sample Reference	Samples: Sample Type	Samples: Sample No.	Test Required	Mackintosh Probe
Top Soil.			0.400m						
Light Brown Yellowy Silty Dense Sand.			(0.900m) 1.300m						
Light Brown Greyey Moist Medium Dense Sand			(0.700m) 2.000m						
Light Brown Greyey Moist Medium Dense Sand. – Water Strike.			(0.350m) 2.350m						

Remarks

Borehole Terminated @ 2.35m Below Ground Level Due To Sides of Excavation Collapsing. Water Strike @ 2.0m BGL.

Copyright Shields Wilson Limited.

SHIELDS WILSON
e: info@shieldswilson.co.uk t: 01775 729252
STRUCTURAL AND CIVIL ENGINEERING

Project No.	Log Ref
SW20-142	TP03
Exploration Method: Excavator	
Site Coordinates: TF 320237	

Location	Carried Out For	Date Undertaken	Logged By
Proposed Development, Cobgate, Whaplode, Spalding, Lincolnshire	Highgrove Homes	16/12/20	APW

Description	Reduced Level	Legend	Depth (Thick)	Samples: Depth	Samples: Sample Reference	Samples: Sample Type	Samples: Sample No.	Test Required	Mackintosh Probe
Top Soil.			0.400m						
Light Brown Silty Dense Sand.			(0.700m) 2.000m						0.75m BGL 73 Blows For 300mm Of Movement. 1.05m BGL 110 Blows For 300mm Of Movement
Light Brown Grey Moist Sand.			(0.350m) 2.500m						

Remarks
Borehole Terminated @ 2.50m Below Ground Level Due To Water Entering The Excavation.

Copyright Shields Wilson Limited.

SHIELDS WILSON
e: info@shieldswilson.co.uk t: 01775 729252
STRUCTURAL AND CIVIL ENGINEERING

Project No.	SW20-142
Log Ref	TP04
Exploration Method	Excavator
Site Coordinates	TF 320237
Location	Proposed Development, Cobgate, Whaplode, Spalding, Lincolnshire
Carried Out For	Highgrove Homes
Date Undertaken	16/12/20
Logged By	APW

Description	Reduced Level	Legend	Depth (Thick)	Samples Depth	Samples Sample Reference	Samples Sample Type	Samples Sample No.	Test Required	Mackintosh Probe
Top Soil.			0.400m						
Light Brown Silty Sand Medium Dense.			(1.200m) 1.600m						
Moist Brown Slightly Grey Silty Sand.			(0.800m) 2.400m						

Remarks

Borehole Terminated @ 2.40m Below Ground Level Due To Water Entering The Excavation Causing The Sides of the Excavation To Bulge.

Copyright Shields Wilson Limited.

APPENDIX E

© Shields Wilson Limited.





© Shields Wilson Limited.





© Shields Wilson Limited.