
1.0 INTRODUCTION

A geotechnical and geo-environmental investigation was undertaken by Geotechnics Limited at the site of a proposed residential development at Pyramid Park, off Market Street, in Bury, Greater Manchester.

The site is to be developed for residential end use with a mix of town houses and 5-6 storey apartment blocks. Advanced works are proposed including remediation, the construction of a new access road and development platforms along with utilities and infrastructure.

The investigation was carried out to the instructions of the Client and Engineer, Campbell Reith Hill LLP, acting on behalf of their Client, Homes England. This report describes the work undertaken and presents the data obtained.

2.0 OBJECT AND SCOPE OF THE INVESTIGATION

The object of the investigation was to obtain information on the ground and groundwater conditions relating to the design of the proposed works within the limitations posed by trial hole numbers, locations, depths, methods adopted and the scope of approved in situ and laboratory testing.

More specifically, the ground investigation works are to inform the design of the advanced works and the aims of the investigation include:

- Confirm the ground conditions in the area of a proposed access road and associated embankment.
- Confirm the ground conditions across the wider site and determine the nature and composition of materials contained with three large pyramid structures.
- Sample the soils and Made Ground for chemical analysis to determine the presence or otherwise of contamination.
- Undertake groundwater and gas monitoring to characterise the hydrogeology and gassing regime.
- Determine the waste classification of materials encountered on site.
- Assess the potential risks to construction.

The investigation comprised machine-dug trial pits, cable percussion boreholes, in situ and laboratory testing and reporting. A Factual Report was also commissioned.

3.0 PRESENTATION

A description of the site and a summary of the procedures followed during the investigation process are presented in Sections 4 to 6. The factual data so obtained are presented in Appendices 2 to 11 of this report. Attention is drawn to the General Notes and Investigation Procedures presented in Appendix 12 to aid an understanding of the procedures followed and the context in which the report should be read.

In addition, data in electronic format in accordance with “The Electronic Transfer of Geotechnical Data from Ground Investigations” published by the AGS (the AGS Format) are presented together with a copy of the report in electronic PDF format.

4.0 THE SITE

4.1 Location

The site is located approximately 100 metres south of Bury Metrolink Station. It flanks the southeast to northwest running B6218 Market Street. The approximate Ordnance Survey National Grid Reference for the site is SD 805 103 and an extract from the relevant 1:50,000 Scale O.S. Map (Sheet No. 109) is included as Appendix I.

4.2 Description

The site is trapezoidal in shape with its northern and southern site boundaries measuring approximately 300m in length, the western and eastern site boundaries being approximately 130m and 70m long, respectively.

Site is bounded by:

- an embankment leading up to the East Lancashire Railway line to the south,
- the tramlines of the Manchester Metrolink to the west,
- residential properties of Town Fields Close to the east, and by
- college buildings (the Woodbury Centre, Bury College Apprenticeships and Bury College Business Solutions) to the north.

The site comprises a low-lying central area of relatively flat land with slopes leading up to surrounding higher ground present along the northern and southern parts of the site. A masonry arch bridge carries the roadway of Market Street over the eastern section of the site. The bridge abutments are formed into the slopes in the northern and southern margins of the site. An access track slopes down along the southern boundary from vehicle access gates off Market Street. Pedestrian access can also be gained from the east, via Town Fields Close.

Three large pyramid features, predominantly grass covered, are present in the western area of the site. A former pond is present in the central and eastern areas of the site. The ground in the former pond area is liable to become boggy/saturated and waterlogged during prolonged periods of heavy rainfall leading to small areas of standing water.

Most of the site is vegetated with rough grass and scrub, with some mature and semi-mature trees present. Footpaths are also present in the west of the site, leading around the pyramid features.

4.3 Site Geology

The British Geological Survey Onshore GeoIndex website, <https://mapapps2.bgs.ac.uk/geoindex/home.html>, accessed on 1st December 2023, shows Artificial Ground to be present at the site, recorded as “Worked Ground (Undivided) – Void”.

Worked Ground is an area where the land surface (natural or artificial) has been lowered as a result of man-made excavations. The purpose of the excavation is unspecified. Composition: void.

Based on information provided by the Client, significant thicknesses of Made Ground are anticipated on site comprising reworked natural materials with variable quantities of demolition waste materials including ash, brick, coal, clay, silt and sand. Former structural foundations are also likely to be present locally.

Underlying the Artificial Ground, Glacial Till (Diamicton) of Devensian age is indicated. Based on information provided by the Client, this Glacial Till comprises firm to very stiff brown sandy gravelly clay with lenses of sand, interbedded with Glaciofluvial Deposits comprising sand and gravel with cobbles and boulders.

Glaciofluvial Deposits (Sand and Gravel) are shown on the higher surrounding ground to the north and southwest of the site.

The underlying bedrock is shown to comprise mudstone, siltstone and sandstone strata within the Pennine Lower Coal Measures Formation, which is Carboniferous in age.

The BGS Lexicon of Named Rock Units,

<https://webapps.bgs.ac.uk/lexicon/lexicon.cfm?pub=PLCM>

accessed on 1st December 2023, records that the Pennine Lower Coal Measures Formation is comprised of

Interbedded grey mudstone, siltstone and pale grey sandstone, commonly with mudstones containing marine fossils in the lower part, and more numerous and thicker coal seams in the upper part.

Based on information provided by the Client, the bedrock comprises mudstone and siltstone interbedded with subordinate medium-grained sandstones, seatearths and coal seams (Its upper weathered profile is reduced to the condition of clay, sand or gravel).

The 1:50,000 scale British Geological Survey Solid Edition geological map (Sheet 85 - Manchester) dated 1997 shows the site as lying between the conjectured traces of two southeast to northwest trending faults. In both cases, the strata on the south-western side of the fault are shown to be downthrown.

The site lies on the north-western limb of a plunging anticline. The curved outcrops of the Arley Coal seam and the older Old Lawrence Rock sandstone unit are shown to the east and south-east of the site and indicate that the anticline as plunging towards the southwest. Locally the rock strata dip towards the west.

Coal has been extensively mined within the region. A Coal Authority Development High Risk Area is present to the south of the site associated with former mine entries located approximately 50m from the southern site boundary. Probable shallow mine workings are also present adjacent to the eastern site boundary, associated with a coal outcrop approximately 70m to the east.

4.4 Hydrogeology

The 1:625,000 scale Hydrogeological Map of England and Wales, published by the British Geological Survey, dated 1977 shows the underlying Coal Measures to be a concealed aquifer of limited or local potential.

The Government's DEFRA Magic Map website, <https://magic.defra.gov.uk/MagicMap.aspx>, accessed on 1st December 2023, shows the underlying rocks of the Pennine Lower Coal Measures Formation to be classed as a Secondary A Aquifer. The Glacial Till is classed as a Secondary (Undifferentiated) Aquifer and the nearby Glaciofluvial Deposits are classed as a Secondary A Aquifer.

5.0 PROCEDURE

5.1 Commissioning

The work was awarded following submission of a tender for work designed by the Client for ground investigation of the site in accordance with their requirements.

5.2 General

The procedures followed in this site investigation are based on BS 5930: 2015+A1:2020 – Code of Practice for Site Investigations and BS 10175:2011+A2:2017 - Investigation of Potentially Contaminated Sites. The soils and rocks encountered have been described in accordance with BS5930:2015+A1:2020 and BS EN ISO 14688-1:2018 and BS EN ISO 14689:2018.

The Exploratory Hole locations were specified by the Campbell Reith Hill LLP and their positions are shown on the Exploratory Hole Location Plan in Appendix I I. The co-ordinates and levels shown on the Exploratory Hole Records were measured using a Leica GPS survey device. The depths quoted on the exploratory hole records are in metres below ground level.

5.3 Buried Services Clearance

Prior to the investigation, available records and plans were consulted to check for the presence of buried services at the proposed exploratory hole locations and an on-site buried services clearance survey of each exploratory hole position was carried out by CMS Surveys Limited on 14th November 2023 using a cable avoidance tool (CAT) and ground penetrating radar (GPR) equipment.

At each cable percussion borehole location, an inspection pit was excavated using hand tools to a depth of 1.20m below ground level to check for the presence of underground services. Prior to and on completion of the excavation, the location was scanned using a cable avoidance tool (CAT).

5.4 Machine-Dug Trial Pits

Nineteen (19 No.) Machine-Dug Trial Pits (numbered SAI01, SAI02, TPI01 to TPI04, TPI06 to TPI10, TPI12, TPI16A and TPI18 to TPI23) were excavated to depths ranging between 0.40m (TPI12) and 4.00m (TPI07 and TPI21) below ground level using a CAT 313GC 13-Tonne tracked excavator between 20th and 28th November 2023. This pitting work was supervised on site by a geotechnical / geo-environmental engineer.

On the instructions of the Client, scheduled Machine-Dug Trial Pit TPI05 was cancelled due to existing trees causing access problems.

Due to substantial near-surface inflow of groundwater inundating Machine-Dug Trial Pit TPI12, on the instructions of the Client, this excavation was terminated at shallow depth.

The profiles of strata or other features were recorded as excavation proceeded and measurements taken from ground level. Representative samples were taken, where appropriate, for laboratory examination and analysis and in addition, Environmental samples (ES) were recovered at the depths indicated on the Machine-Dug Trial Pit Records, presented in Appendix 2. Samples were taken directly from excavated materials deposited at the surface. Groundwater observations and trench stability notes are included on the Trial Pit Records. Available photographs of the Machine-Dug Trial Pits are presented in Appendix 3 (Due to a camera malfunction it is not possible to present photographs of some of the trial pits).

5.5 Soakaway Tests

Soakaway tests were scheduled to be carried out in Trial Pit SAI01 and Trial Pit SAI02 at the locations marked on the Exploratory Hole Location Plan (see Appendix I I) in accordance with the method given in *BRE Digest 365 "Soakaway Design", 2016*. However, due to substantial near-surface inflows of groundwater inundating the trial pits, on the instructions of the Client, the soakaway tests were cancelled.

5.6 Hand-Dug Trial Pits

Six (6. No.) Hand-Dug Trial Pits (numbered HPI11, HPI13 to HPI15, along with HPI17E and HPI17W) were excavated to depths ranging between 0.20m (HPI11 and HPI13) and 1.10m (HPI17E and HPI17W) below ground level using hand tools on 23rd and 28th November 2023. This pitting work was supervised on site by a geotechnical / geo-environmental engineer.

Due to substantial near-surface inflow of groundwater inundating Machine-Dug Trial Pit TPI12, on the instructions of the Client, scheduled Machine-Dug Trial Pits numbered TPI11, TPI13, TPI14 and TPI15 located nearby were replaced by Hand-Dug Trial Pits numbered HPI11, HPI13, HPI14 and HPI15, respectively.

In addition, on the instructions of the Client, scheduled Machine-Dug Trial Pit TPI17 was replaced by Hand-Dug Trial Pits HPI17W and HPI17E.

Due to substantial near-surface inflows of groundwater inundating Hand-Dug Trial Pits HPI11, HPI13, HPI14 and HPI15, HPI17W and HPI17E, on the instructions of the Client, these excavations were terminated at shallow depth.

The profiles of strata or other features were recorded as excavation proceeded and measurements taken from ground level. Representative samples were taken, where appropriate, for laboratory examination and analysis and in addition, Environmental samples (ES) were recovered at the depths indicated on the Hand-Dug Trial Pit Records, presented in Appendix 4. Samples were taken directly from excavated materials deposited at the surface. Groundwater observations and trench stability notes are included on the Trial Pit Records. Available photographs of the Hand-dug Trial Pits are presented in Appendix 5 (Due to a camera malfunction it is not possible to present photographs of some of the trial pits).

5.7 Cable Percussion Boreholes

Eight (8 No.) 150mm diameter Cable Percussion Boreholes (numbered BH101 to BH108) were sunk to depths ranging between 4.38m (BH105) and 11.77m (BH107) below ground level. The boring work was carried out between 15th and 30th November 2023.

Samples were taken from the service inspection pit, where appropriate, for laboratory examination and analysis. Representative disturbed (D and B) samples and driven open-tube thin walled (UT) samples of the soils encountered were obtained at regular intervals. In addition, Environmental Soil samples (ES) were recovered at the depths indicated on the Borehole Records, presented in Appendix 6. Soil samples taken specifically for chemical analyses were contained within appropriate receptacles and stored alongside ice packs in a cool box to preclude any sample deterioration prior to delivery to the testing laboratory.

Standard Penetration Tests (SPTs) were undertaken at the depths indicated on the Cable Percussion Borehole Records in accordance with BS EN ISO 22476-3:2005+A1:2011 to obtain a measure of the engineering properties of the proved strata. The full details of the SPT results are presented on the SPT Results Summary Sheets, included in Appendix 6, along with copies of the relevant SPT Hammer Energy Test Report.

Groundwater observations are included on the Cable Percussion Borehole Records where appropriate and any rise in water level was recorded over 20 minutes whilst the boring operations were suspended. It should be noted that the addition of water to the borehole as part of the boring process may have masked the presence of groundwater in the borehole. Where water was added it has been noted on the Cable Percussion Borehole Records.

On completion, 50mm diameter standpipes were installed in the boreholes (See Section 5.8).

5.8 Installations and Monitoring

Long-term monitoring of the groundwater levels was made possible by the installation of 19mm, 33mm and 50mm diameter standpipes as follows:

Exploratory Hole	Diameter (mm)	Standpipe Slotted Pipe (m)	Standpipe Filter Zone (m)
BH101	50	2.00 to 6.00	2.00 to 6.39
BH102	50	0.50 to 1.50	0.50 to 1.50
BH102	33	4.50 to 7.50	4.50 to 7.78
BH103	50	1.00 to 6.80	1.00 to 6.80
BH104	50	2.50 to 5.00	2.00 to 5.00
BH105	50	1.40 to 4.00	1.40 to 4.38
BH106	50	1.00 to 2.50	1.00 to 2.50
BH106	19	4.00 to 7.00	4.00 to 7.38
BH107	50	1.00 to 4.00	1.00 to 4.00
BH107	19	6.50 to 8.50	6.50 to 8.50
BH108	50	1.00 to 3.00	1.00 to 3.00

Monitoring of the gas and groundwater levels at the site commenced on 10th January 2024 with further visits on 24th and 31st January 2024. On the first visit, on 10th January 2024, it was not possible to monitor Borehole BH103 due to the cover being stuck down. On the second visit the cover was opened using hand tools enabling subsequent monitoring to be carried out.

In addition to the groundwater levels, the following parameters were measured and recorded in each standpipe using a GA5000 Gas Analyser:-

- Concentrations (% Vol) of CH₄, O₂, CO₂, along with (% LEL) CH₄ and (ppm) H₂S, CO
- Flow Rate
- Barometric Pressure
- Air Temperature

The results of the monitoring are presented in Appendix 7.

5.9 Purging and Groundwater Sampling

In order to obtain representative groundwater samples, where groundwater was present within the standpipes, purging was carried out by the removal of three times the volume of groundwater within each installation. Once the well had been successfully developed, a groundwater sample was taken to enable subsequent chemical analyses to be carried out.

Groundwater water samples taken specifically for chemical analyses were contained within appropriate receptacles (glass bottles) and stored alongside ice packs in a cool box to preclude any sample deterioration prior to immediate delivery to the testing laboratory.

This groundwater sampling work was carried out on 24th January 2024.

6.0 LABORATORY TESTING

6.1 Geotechnical

The laboratory testing schedule was specified by the Client. Unless otherwise stated, the tests were carried out in Geotechnics Limited's UKAS accredited Laboratory (Testing No. 1365) and were undertaken in accordance with the appropriate Standards as indicated below and on the Laboratory Test Certificate in Appendix 8. Any

descriptions, opinions and interpretations are outside the scope of UKAS accreditation.

The tests undertaken can be summarised as follows:-

Standard	Test Description	Quantity
BS EN ISO 17892-1:2014	Water Content Determination	40
BS EN ISO 17892-12:2018	Determination of Liquid and Plastic Limits	25
BS EN ISO 17892-4:2016	Particle Size Distribution Determination – Sieving Method	13
	Mechanical Analysis - Sedimentation	3
BS EN ISO 17892-8:2018	Unconsolidated Undrained Triaxial Test	1
BS 1377:1990 Part 4: 3.3	Dry Density/Moisture Content relationship determination. Compaction Test - British Standard (2.5 kg Hammer)	18
BS 1377:1990 Part 4: 7	California Bearing Ratio (CBR) Measurement - recompact	5
BS 1377:1990 Part 4: 5.5	Moisture Condition Value Calibration Tests.	11
Tests carried out in accordance with the Manufacturer's Instructions	Shear Strength Estimation using Hand Vane	41

Where geotechnical testing was scheduled on soil samples with the potential for asbestos fibres to be present, this testing was carried out at the laboratories of The Testing Lab PLC (UKAS Laboratory No. 7758), as follows:

Standard	Test Description	Quantity
BS 1377:1990 Part 2: 3.2	Moisture Content Determination	3
BS 1377:1990 Part 2: 4.3 & 5.3	Liquid and Plastic Limit Determination	3
BS 1377:1990 Part 2: 9.2 & 9.3	Mechanical Analysis - Sieving	1
BS 1377:1990 Part 4: 3.3	Dry Density/Moisture Content relationship determination. Compaction Test - British Standard (2.5 kg Hammer)	4
BS 1377:1990 Part 4: 7	California Bearing Ratio (CBR) Measurement - recompact	1
BS 1377:1990 Part 4: 5.5	Moisture Condition Value Calibration Tests.	3
Tests carried out in accordance with the Manufacturer's Instructions	Shear Strength Estimation using Hand Vane	15

The results of these geotechnical tests are presented in Appendix 8.

The following testing was carried out at the laboratories of Derwentside Environmental Testing Services Limited (UKAS Laboratory No. 2139):

Standard	Test Description	Quantity
BS 1377:1990 Part 3: 3	Organic Matter Content	4
BRE SDI Suite D	Suite comprising:- pH Sulphate (2:1 water soluble) Sulphate (acid extractable) Sulphur (total)	20

The results of these geotechnical tests are presented in Appendix 9 (along with the contamination test results).

6.2 Contamination

Selected samples of soil and groundwater were tested at the laboratories of Derwentside Environmental Testing Services Limited (UKAS Accredited Laboratory, Number 2139) for a number of determinands in order to check on potential site contamination. The determinands were specified by the Engineer and are detailed on the results sheets in Appendix 9 (Soils) and Appendix 10 (Groundwater) together with the test result as well as the test method, accreditation and detection limit.

Signed for and on behalf of Geotechnics Limited.

Prepared by:

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APPENDIX I

Site Location Plans

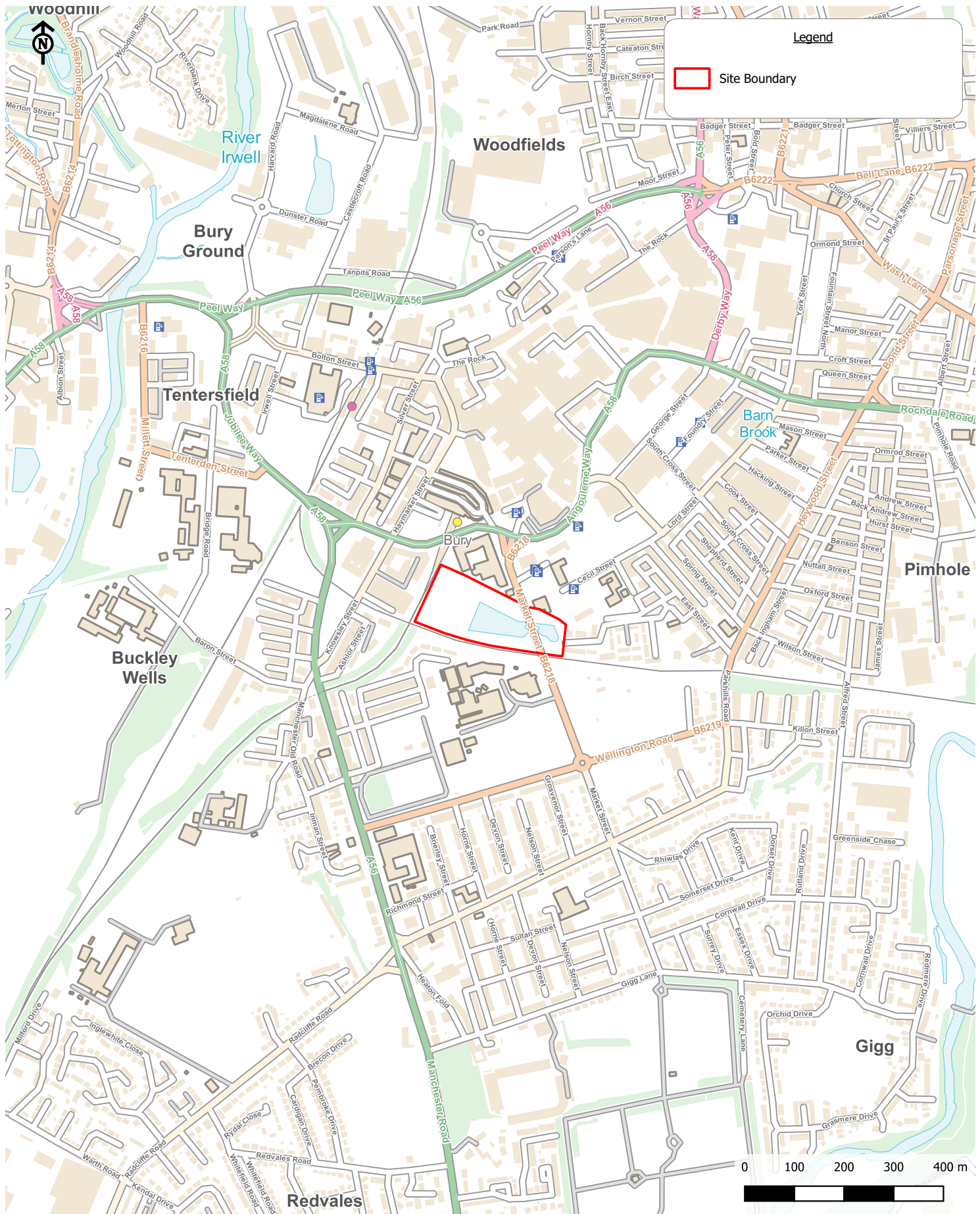
SITE LOCATION PLAN



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PYRAMID PARK, BURY
for
Campbell Reith Hill LLP

GEOTECHNICS
geotechnical and geoenvironmental specialists



Townside Fields, Bury
Client: Bury Council

Figure 1:
Site Location

Scale: 1:10000@A4
CampbellReith OS Copyright: © Crown copyright. All rights reserved. Licence number 100020027
Contains Ordnance Survey data © Crown copyright and database right 2022.
Job Number: 13819
Drawn by - Checked by: RLF - PK
Drg No - Status/Revision: 13819-CRH-XX-XX-FG-G-7000 - P1
File location: N:\13750 - 13999\13819 M- Townside Fields Bury\Project_Workspaces (pdf in Outputs)
Date (Revision History): 06/01/2022 (P1, First Issue, 06/01/22, RLF)

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APPENDIX 2

Machine-Dug Trial Pit Records

DATA SHEET - Symbols and Abbreviations used on Records



Sample Types

B	Bulk disturbed sample
BLK	Block sample
C	Core sample
D	Small disturbed sample (tub/jar)
E	Environmental test sample
ES	Environmental soil sample
EW	Environmental water sample
G	Gas sample
L	Liner sample
LB	Large bulk disturbed sample
P	Piston sample (PF - failed P sample)
TW	Thin walled push in sample
U	Open Tube - 102mm diameter with blows to take sample. (UF - failed U sample)
UT	Thin wall open drive tube sampler - 102mm diameter with blows to take sample. (UTF - failed UT sample)
V	Vial sample
W	Water sample
#	Sample Not Recovered

Insitu Testing / Properties

CBRP	CBR using TRL probe
CHP	Constant Head Permeability Test
COND	Electrical conductivity
TC	Thermal Conductivity
TR	Thermal Resistivity
HV	Strength from Hand Vane
ICBR	CBR Test
IDEN	Density Test
IRES	Resistivity Test
MEX	CBR using Mexecon Probe Test
PKR	Packer Permeability Test
PLT	Plate Load Test
PP	Strength from Pocket Penetrometer
Temp	Temperature
VHP	Variable Head Permeability Test
VN	Strength from Insitu Vane
w%	Water content
(All other strengths from undrained triaxial testing)	
S	Standard Penetration Test (SPT)
C	SPT with cone
N	SPT Result
-/-	Blows/penetration (mm) after seating drive
-*/- (mm)	Total blows/penetration
()	Extrapolated value

Groundwater

Water Strike	
Depth Water Rose To	

Instrumentation

Seal

Filter

Seal

Strata

Made Ground Granular

Made Ground Cohesive

Topsoil

Cobbles and Boulders

Gravel

Sand

Silt

Clay

Peat

Note: Composite soil types shown by combined symbols

Chalk

Limestone

Sandstone

Coal

Strata, Continued

Mudstone

Siltstone

Metamorphic Rock

Fine Grained

Medium Grained

Coarse Grained

Igneous Rock

Fine Grained

Medium Grained

Coarse Grained

Backfill Materials

Arisings

Bentonite

Concrete

Sand

Grout

Gravel

Asphalt/Tarmacadam

Rotary Core

RQD Rock Quality Designation (% of intact core >100mm)

FRACTURE INDEX

Fractures/metre

NI Non-intact core

NR No core recovery

AZCL Assumed zone of core loss

TRIAL PIT RECORD - Trial Pit

Project		Pyramid Park, Bury		Engineer		Campbell Reith Hill LLP		Project No.		PN234595	
Client		Campbell Reith Hill LLP		National Grid Coordinates		380461.9 E 410315.6 N		Location ID		SA101	
								Ground Level		86.11 m OD	

Samples and Tests				Strata		Scale 1:50	
Depth	Sample Type	Stratum No.	Results	Description	Depth	Legend	Level (m OD)
0.00 - 0.70	B			Grass over TOPSOIL: Soft to firm dark grey mottled black slightly sandy slightly gravelly clay with some rootlets. Gravel is angular to subrounded fine of sandstone and brick fragments.	0.10		86.01
0.80 - 1.20	B			MADE GROUND: Soft to firm brown slightly gravelly sandy clay with a low angular to subangular cobble content of sandstone and bricks. Gravel is angular to subangular fine to coarse including clinker and brick fragments.	0.70		85.41
				Stiff grey mottled brownish grey slightly sandy slightly gravelly CLAY. Gravel is subangular to subrounded fine to coarse of mudstone, siltstone, sandstone and coal.	1.20		84.91
				End of Excavation			

Excavation				Groundwater			
Plant	13T Tracked Excavator.	Width (B)	0.60	Depth Observed	Depth of Pit	Rose to	in Mins
Date	24/11/2023	Length (C)	3.00	0.40			
Shoring	None.	Date Backfilled	24/11/2023				
Stability	Spalling below 0.10m depth.						

Remarks	Scheduled soakaway test cancelled on the instructions of the Client due to groundwater inflow.	Logged by	ZL
		Checked by	JK
		Figure	Sheet 1 of 1
			07/03/2024

Symbols and abbreviations are explained on the accompanying key sheets.

All dimensions are in metres.

Logged in accordance with BS5930:2015 + A1:2020

TRIAL PIT RECORD - Trial Pit

Project		Pyramid Park, Bury		Engineer		Campbell Reith Hill LLP		Project No.		PN234595	
Client		Campbell Reith Hill LLP		National Grid Coordinates		380458.1 E 410305.2 N		Location ID		SA102	
								Ground Level		86.09 m OD	

Samples and Tests				Strata		Scale 1:50	
Depth	Sample Type	Stratum No.	Results	Description	Depth	Legend	Level (m OD)
				Grass over TOPSOIL: Soft to firm dark grey mottled black slightly sandy slightly gravelly clay with some rootlets. Gravel is angular to subrounded fine of sandstone and brick fragments.	0.10		85.99
				MADE GROUND: Soft to firm brown slightly gravelly sandy clay with a low angular to subangular cobble content of sandstone and bricks. Gravel is angular to subangular fine to coarse including clinker and brick fragments.	0.50		85.59
				Stiff grey mottled brownish grey slightly sandy slightly gravelly CLAY. Gravel is subangular to subrounded fine to coarse of mudstone, siltstone, sandstone and coal.	0.70		85.39
				End of Excavation			

Excavation				Groundwater			
Plant	13T Tracked Excavator.	Width (B)	0.60	Depth Observed	Depth of Pit	Rose to	in Mins
Date	24/11/2023	Length (C)	3.00	0.15			
Shoring	None.	Date Backfilled	24/11/2023				
Stability	Stable during excavation.						

Remarks	Scheduled soakaway test cancelled on the instructions of the Client due to groundwater inflow. No samples taken.	Logged by ZL Checked by JK Figure Sheet 1 of 1 07/03/2024
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Symbols and abbreviations are explained on the accompanying key sheets.
All dimensions are in metres.

Logged in accordance with BS5930:2015 + A1:2020

TRIAL PIT RECORD - Trial Pit

Project		Pyramid Park, Bury		Engineer		Campbell Reith Hill LLP		Project No.		PN234595	
Client		Campbell Reith Hill LLP		National Grid Coordinates		380406.8 E 410371.0 N		Location ID		TP101	
								Ground Level		85.55 m OD	

Samples and Tests				Strata		Scale 1:50	
Depth	Sample Type	Stratum No.	Results	Description	Depth	Legend	Level (m OD)
0.00 - 0.10	B			MADE GROUND: Concrete slabs.	0.02		85.53
0.00 - 0.10	ES			MADE GROUND: Soft to firm brown slightly sandy gravelly clay with many rootlets.	0.10		85.45
0.10 - 0.30	B			MADE GROUND: Grey sandy angular to subangular cobbles of limestone.	0.30		85.25
0.10 - 0.30	ES			MADE GROUND: Firm dark brown and dark grey slightly sandy slightly gravelly clay.	0.60		84.95
0.30 - 0.50	B		w (%) = 17	Gravel is angular to rounded fine to coarse including various lithologies, clinker, concrete and brick fragments.	0.80		84.75
0.30 - 0.50	D						
0.30 - 0.50	ES			MADE GROUND: Brown very gravelly fine to coarse sand. Gravel is angular to subrounded fine to coarse including various lithologies, clinker, concrete and brick fragments.			
0.60 - 0.80	B						
0.60 - 0.80	D						
0.60 - 0.80	ES						
0.80 - 1.00	D		w (%) = 22	MADE GROUND: Stiff brownish grey slightly sandy slightly gravelly clay. Gravel is subrounded to rounded fine to coarse of various lithologies.			
0.80 - 1.00	ES						
				End of Excavation	2.00		83.55

Excavation				Groundwater				
Plant	13T Tracked Excavator.	Width (B)	0.60	Depth Observed	Depth of Pit	Rose to	in Mins	Remarks
Date	23/11/2023	Length (C)	3.00					None encountered.
Shoring	None.	Date Backfilled	23/11/2023					
Stability	Stable during excavation.							

Remarks

ES sample = 1 x 60ml glass vial, 2 x 258ml amber glass jars and 1 x 1 litre plastic tub.

Trial Pit TP101 terminated at 2.00m depth to avoid potential damage to adjacent access track.

Logged by

ZL

Checked by

JK

Figure

Sheet 1 of 1

07/03/2024

Symbols and abbreviations are explained on the accompanying key sheets.

All dimensions are in metres.

Logged in accordance with BS5930:2015 + A1:2020

GEOTECHNICS

TRIAL PIT RECORD - Trial Pit

Project		Pyramid Park, Bury		Engineer		Campbell Reith Hill LLP		Project No.		PN234595	
Client		Campbell Reith Hill LLP		National Grid Coordinates		380416.6 E 410353.1 N		Location ID		TP102	
								Ground Level		88.42 m OD	

Samples and Tests				Strata		Scale 1:50	
Depth	Sample Type	Stratum No.	Results	Description	Depth	Legend	Level (m OD)
0.00 - 0.30	B			Grass over MADE GROUND: Soft to firm black mottled brown slightly sandy slightly gravelly clay with some rootlets. Gravel is subangular to subrounded fine to medium of various lithologies and brick fragments.	0.60		87.82
0.00 - 0.30	D						
0.00 - 0.30	ES						
0.60 - 0.90	B			MADE GROUND: Soft grey slightly sandy slightly gravelly clay. Gravel is angular to subangular fine to medium of various lithologies, clinker and brick fragments.			
0.60 - 0.90	D						
0.60 - 0.90	ES						
1.50 - 1.80	B			MADE GROUND: Soft to firm dark grey mottled grey slightly sandy slightly gravelly clay with a medium angular to subrounded cobble content of sandstone and bricks. Gravel is angular to subangular fine to coarse of siltstone, sandstone, coal, clinker and brick fragments. Occasional plant remains and a slight hydrocarbon odour.	1.50		86.92
1.50 - 1.80	D						
1.50 - 1.80	ES						
2.50 - 2.70	B			Below 2.70m, gravel is subangular to subrounded fine to medium.			
2.50 - 2.70	D						
2.50 - 2.70	ES						
3.70 - 4.00	B			End of Excavation	4.00		84.42
3.70 - 4.00	D						
3.70 - 4.00	ES						

Excavation				Groundwater				
Plant	13T Tracked Excavator.	Width (B)	0.60	Depth Observed	Depth of Pit	Rose to	in Mins	Remarks
Date	21/11/2023	Length (C)	3.00					None encountered.
Shoring	None.	Date Backfilled	21/11/2023					
Stability	Stable during excavation.							

Remarks	ES sample = 1 x 60ml glass vial, 2 x 258ml amber glass jars and 1 x 1 litre plastic tub.	Logged by	ZL
		Checked by	JK
		Figure	Sheet 1 of 1
			07/03/2024

Symbols and abbreviations are explained on the accompanying key sheets.

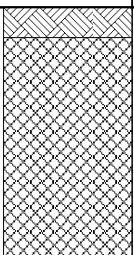
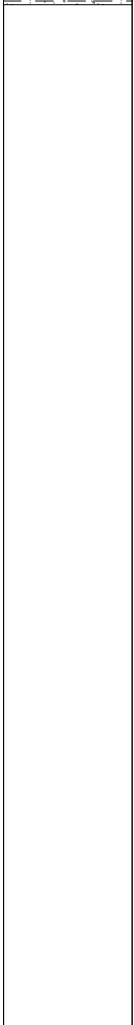
All dimensions are in metres.

Logged in accordance with BS5930:2015 + A1:2020

GEOTECHNICS

TRIAL PIT RECORD - Trial Pit

Project		Pyramid Park, Bury		Engineer		Campbell Reith Hill LLP		Project No.		PN234595	
Client		Campbell Reith Hill LLP		National Grid Coordinates		380431.4 E 410372.9 N		Location ID		TP103	
								Ground Level		86.77 m OD	

Samples and Tests				Strata		Scale 1:50	
Depth	Sample Type	Stratum No.	Results	Description	Depth	Legend	Level (m OD)
0.00 - 0.20	B			Grass over TOPSOIL: Light brown to brown gravelly clayey fine to coarse sand with some rootlets. Gravel is subangular to subrounded fine to coarse of various lithologies.	0.20		86.57
0.00 - 0.20	D						
0.00 - 0.20	ES						
0.30 - 0.50	B			At 0.20m, woven geotextile (Terram).			
0.30 - 0.50	D			MADE GROUND: Dark brownish grey very sandy clayey subangular to rounded fine to coarse gravel of various lithologies, clinker and sandstone. Low angular to subangular cobble content of sandstone. Occasional steel reinforcing bars.			
0.30 - 0.50	ES						
1.00 - 1.20	B						
1.00 - 1.20	D						
1.00 - 1.20	ES						
1.50 - 1.70	B			Between 1.50-1.70m, oily sheen noted on soil and perched groundwater, hydrocarbon odour.	1.70		
1.50 - 1.70	D						
1.50 - 1.70	ES						
2.00 - 2.20	B			Stiff dark bluish grey slightly sandy slightly gravelly CLAY. Gravel is subangular fine of mudstone.			
2.00 - 2.20	D		w (%) = 23				
2.00 - 2.20	ES						
3.00 - 3.30	B						
3.00 - 3.30	D						
3.00 - 3.30	ES		w (%) = 22				
				End of Excavation	3.50		83.27

Excavation				Groundwater				
Plant	13T Tracked Excavator.	Width (B)	0.60	Depth Observed	Depth of Pit	Rose to	in Mins	Remarks
Date	21/11/2023	Length (C)	3.00	1.70				Slow inflow, no rise.
Shoring	None.	Date Backfilled	21/11/2023					
Stability	Sides spalling between 1.50-1.70m depth.							

Remarks

ES sample = 1 x 60ml glass vial, 2 x 258ml amber glass jars and 1 x 1 litre plastic tub.

Logged by ZL

Checked by JK

Figure Sheet 1 of 1

07/03/2024

Symbols and abbreviations are explained on the accompanying key sheets.

All dimensions are in metres.

Logged in accordance with BS5930:2015 + A1:2020



TRIAL PIT RECORD - Trial Pit

Project		Pyramid Park, Bury		Engineer		Campbell Reith Hill LLP		Project No.		PN234595	
Client		Campbell Reith Hill LLP		National Grid Coordinates		380444.3 E 410367.1 N		Location ID		TP104	
								Ground Level		87.34 m OD	

Samples and Tests				Strata		Scale 1:50	
Depth	Sample Type	Stratum No.	Results	Description	Depth	Legend	Level (m OD)
0.00 - 0.10	B			Grass over TOPSOIL: Soft dark brown slightly gravelly sandy clay with occasional rootlets. Gravel is angular to subangular fine to coarse of various lithologies.	0.10		87.24
0.00 - 0.10	D			MADE GROUND: Soft to firm brown mottled grey slightly sandy gravelly clay.			
0.00 - 0.10	ES			Gravel is angular to subrounded fine to coarse of various lithologies, clinker, concrete and brick fragments. Occasional pieces of timber.			
0.50 - 0.80	B			Between 0.80-1.00m, black and dark grey, slightly gravelly.			
0.50 - 0.80	D						
0.50 - 0.80	ES						
0.80 - 1.00	B						
0.80 - 1.00	D						
0.80 - 1.00	ES						
			w (%) = 33				
2.00 - 2.20	B						
2.00 - 2.20	D				2.20		85.14
2.00 - 2.20	ES			MADE GROUND: Dark brown very sandy clayey angular to subangular fine to coarse gravel of brick and concrete with a medium cobble content.	2.40		84.94
2.20 - 2.40	B			At 2.40m, concrete blocks.			
2.20 - 2.40	D						
2.20 - 2.40	ES			End of Excavation			

Excavation				Groundwater				
Plant	13T Tracked Excavator	Width (B)	0.60	Depth Observed	Depth of Pit	Rose to	in Mins	Remarks
Date	22/11/2023	Length (C)	3.00					None encountered.
Shoring	None.	Date Backfilled	22/11/2023					
Stability	Stable during excavation.							

Remarks	ES sample = 1 x 60ml glass vial, 2 x 258ml amber glass jars and 1 x 1 litre plastic tub. Trial Pit TP104 terminated at 2.40m depth on encountering a concrete obstruction.	Logged by	ZL
		Checked by	JK
		Figure	Sheet 1 of 1
			07/03/2024

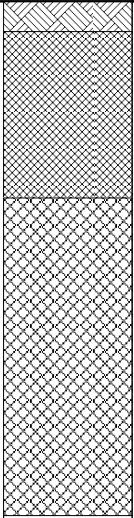
Symbols and abbreviations are explained on the accompanying key sheets.

All dimensions are in metres.

Logged in accordance with BS5930:2015 + A1:2020

TRIAL PIT RECORD - Trial Pit

ProjectPyramid Park, Bury		EngineerCampbell Reith Hill LLP		Project No.PN234595	
ClientCampbell Reith Hill LLP		National Grid Coordinates380423.1 E410299.9 N		Location IDTP106	
				Ground Level87.56 m OD	

Samples and Tests				Strata		Scale 1:50	
Depth	Sample Type	Stratum No.	Results	Description	Depth	Legend	Level (m OD)
0.00 - 0.20	B		w (%) = 24	Grass over TOPSOIL: Soft to firm brown to light brown slightly sandy slightly gravelly clay with occasional rootlets. Gravel is angular to subangular fine to coarse of various lithologies, clinker and brick fragments.	0.20		87.36
0.00 - 0.20	D						
0.00 - 0.20	ES						
0.30 - 0.50	B						
0.30 - 0.50	D						
0.30 - 0.50	ES						
1.30 - 1.50	B			At 1.20m, Medium inflow from possible redundant pipe/duct.	1.30		86.26
1.30 - 1.50	D			MADE GROUND: Dark grey sandy clayey angular to subrounded fine to coarse gravel of various lithologies, clinker, concrete and brick fragments.			
1.30 - 1.50	ES			Below 1.50m, strong hydrocarbon odour.			
2.00 - 2.20	B						
2.00 - 2.20	D						
2.80 - 3.00	B						
2.80 - 3.00	D						
2.80 - 3.00	ES						
3.30 - 3.40	B						
3.30 - 3.40	D						
3.30 - 3.40	ES			End of Excavation	3.40		84.16

Excavation				Groundwater				
Plant	13T Tracked Excavator.	Width (B)	0.60	Depth Observed	Depth of Pit	Rose to	in Mins	Remarks
Date	20/11/2023	Length (C)	3.00	1.20				Medium inflow from possible redundant pipe/duct.
Shoring	None.	Date Backfilled	20/11/2023					
Stability	Sides spalling below 1.50m depth.							

Remarks

 ES sample = 1 x 60ml glass vial, 2 x 258ml amber glass jars and 1 x 1 litre plastic tub.

Trial Pit TP106 terminated at 3.40m depth due to instability of the pits sides.

Logged by

ZL

Checked by

JK

Figure

Sheet 1 of 1

07/03/2024

 GEOTECHNICS

Symbols and abbreviations are explained on the accompanying key sheets.

All dimensions are in metres.

Logged in accordance with BS5930:2015 + A1:2020

TRIAL PIT RECORD - Trial Pit

Project		Pyramid Park, Bury		Engineer		Campbell Reith Hill LLP		Project No.		PN234595	
Client		Campbell Reith Hill LLP		National Grid Coordinates		380426.6 E 410320.7 N		Location ID		TP107	
								Ground Level		90.40 m OD	

Samples and Tests				Strata		Scale 1:50	
Depth	Sample Type	Stratum No.	Results	Description	Depth	Legend	Level (m OD)
0.00 - 0.30	B			Grass over MADE GROUND: Firm dark brown mottled brown slightly sandy slightly gravelly clay with a low angular to subangular cobble content of various lithologies. Occasional rootlets. Gravel is angular to subangular fine to coarse of various lithologies, clinker and brick fragments.	0.50		89.90
0.00 - 0.30	D						
0.00 - 0.30	ES						
0.50 - 0.70	B		w (%) = 28	MADE GROUND: Soft to firm brown slightly gravelly sandy clay with occasional lenses of sand. Gravel is angular to subangular fine to coarse of siltstone, sandstone, clinker and brick fragments.			
0.50 - 0.70	D						
0.50 - 0.70	ES						
1.50 - 1.70	B			MADE GROUND: Soft to firm dark brown mottled grey slightly sandy slightly gravelly clay. Gravel is angular to rounded fine to coarse of siltstone, sandstone, clinker and brick fragments. Slight hydrocarbon odour.	1.50		88.90
1.50 - 1.70	D		w (%) = 19				
1.50 - 1.70	ES						
3.30 - 3.50	B			MADE GROUND: Dark grey mottled black gravelly clayey fine to coarse sand with a medium angular cobble content of bricks. Gravel is angular to subrounded fine to coarse of various lithologies, concrete and brick fragments. Strong hydrocarbon odour.	3.30		87.10
3.30 - 3.50	D						
3.30 - 3.50	ES						
3.80 - 4.00	B				4.00		86.40
3.80 - 4.00	D						
3.80 - 4.00	ES			End of Excavation			

Excavation				Groundwater				
Plant	13T Tracked Excavator.	Width (B)	0.60	Depth Observed	Depth of Pit	Rose to	in Mins	Remarks
Date	22/11/2023	Length (C)	3.00					None encountered.
Shoring	None.	Date Backfilled	22/11/2023					
Stability	Sides spalling below 1.00m depth.							

Remarks

ES sample = 1 x 60ml glass vial, 2 x 258ml amber glass jars and 1 x 1 litre plastic tub.

Trial Pit TP107 terminated at 4.00m depth due to instability of the pits sides.

Logged by

ZL

Checked by

JK

Figure

Sheet 1 of 1

07/03/2024

GEOTECHNICS

Symbols and abbreviations are explained on the accompanying key sheets.

All dimensions are in metres.

Logged in accordance with BS5930:2015 + A1:2020

TRIAL PIT RECORD - Trial Pit

Project		Pyramid Park, Bury		Engineer		Campbell Reith Hill LLP		Project No.		PN234595	
Client		Campbell Reith Hill LLP		National Grid Coordinates		380435.3 E 410303.2 N		Location ID		TP108	
								Ground Level		89.14 m OD	

Samples and Tests				Strata		Scale 1:50	
Depth	Sample Type	Stratum No.	Results	Description	Depth	Legend	Level (m OD)
0.00 - 0.20	B			Grass over TOPSOIL: Soft brown slightly gravelly sandy clay with many rootlets.	0.10		89.04
0.00 - 0.20	ES			MADE GROUND: Brown gravelly clayey fine to coarse sand with occasional pockets of clay. Gravel is angular to rounded fine to coarse of various lithologies, clinker and brick fragments.			
0.20 - 0.40	B						
0.20 - 0.40	ES						
0.80 - 1.00	B						
0.80 - 1.00	ES						
2.00 - 2.20	B		w (%) = 22	MADE GROUND: Soft dark greyish brown slightly sandy gravelly clay with occasional pockets of orangish brown sand. Gravel is subrounded fine to medium of various lithologies.	2.00		87.14
2.00 - 2.20	D				2.20		86.94
2.00 - 2.20	ES			MADE GROUND: Soft dark grey mottled black slightly sandy slightly gravelly clay with a high angular cobble content of concrete. Gravel is angular to rounded fine to coarse of various lithologies and concrete.			
				End of Excavation	3.00		86.14

Excavation				Groundwater				
Plant	13T Tracked Excavator.	Width (B)	0.60	Depth Observed	Depth of Pit	Rose to	in Mins	Remarks
Date	24/11/2023	Length (C)	3.00					None encountered.
Shoring	None.	Date Backfilled	24/11/2023					
Stability	Stable during excavation.							

Remarks

ES sample = 1 x 60ml glass vial, 2 x 258ml amber glass jars and 1 x 1 litre plastic tub.

Symbols and abbreviations are explained on the accompanying key sheets. All dimensions are in metres.

Logged in accordance with BS5930:2015 + A1:2020

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Figure Sheet 1 of 1

07/03/2024

TRIAL PIT RECORD - Trial Pit

Project		Pyramid Park, Bury		Engineer		Campbell Reith Hill LLP		Project No.		PN234595	
Client		Campbell Reith Hill LLP		National Grid Coordinates		380446.7 E 410323.9 N		Location ID		TP109	
								Ground Level		87.81 m OD	

Samples and Tests				Strata		Scale 1:50	
Depth	Sample Type	Stratum No.	Results	Description	Depth	Legend	Level (m OD)
0.00 - 0.20	B			Grass over MADE GROUND: Soft to firm dark grey/black slightly sandy gravelly clay with many rootlets. Gravel is subangular to subrounded fine to medium of mudstone, siltstone and sandstone. Below 0.20m, medium angular cobble content of clinker, sandstone setts and brick fragments.	0.80		87.01
0.00 - 0.20	D						
0.00 - 0.20	ES						
0.50 - 0.80	B						
0.50 - 0.80	D						
0.50 - 0.80	ES		MADE GROUND: Firm friable dark grey and black slightly gravelly sandy clay. Gravel is angular to rounded fine to coarse of various lithologies and clinker.	2.20		85.61	
1.00 - 1.20	B						
1.00 - 1.20	D						
1.00 - 1.20	ES		MADE GROUND: Dark brown very sandy clayey angular to subrounded fine to coarse gravel of various lithologies. High cobble content.	2.90		84.91	
2.00 - 2.20	B						
2.00 - 2.20	D						
2.00 - 2.20	ES		MADE GROUND: Black asphalt.	3.00		84.81	
2.90 - 3.00	B						
2.90 - 3.00	D						
2.90 - 3.00	ES		End of Excavation				

Excavation				Groundwater				
Plant	13T Tracked Excavator.	Width (B)	0.60	Depth Observed	Depth of Pit	Rose to	in Mins	Remarks
Date	24/11/2023	Length (C)	3.00					None encountered.
Shoring	None.	Date Backfilled	24/11/2023					
Stability	Stable during excavation.							

Remarks	ES sample = 1 x 60ml glass vial, 2 x 258ml amber glass jars and 1 x 1 litre plastic tub. Trial Pit TP109 terminated at 3.00m depth within asphalt layer.						Logged by	SF
Symbols and abbreviations are explained on the accompanying key sheets. All dimensions are in metres.							Checked by	JK
							Figure	Sheet 1 of 1
								07/03/2024

Logged in accordance with BS5930:2015 + A1:2020

GEOTECHNICS

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TRIAL PIT RECORD - Trial Pit

Project		Pyramid Park, Bury		Engineer		Campbell Reith Hill LLP		Project No.		PN234595	
Client		Campbell Reith Hill LLP		National Grid Coordinates		380554.5 E 410282.1 N		Location ID		TP116A	
								Ground Level		85.99 m OD	

Samples and Tests				Strata		Scale 1:50	
Depth	Sample Type	Stratum No.	Results	Description	Depth	Legend	Level (m OD)
0.00 - 0.10	B			Grass over TOPSOIL: Soft to firm dark grey mottled black slightly sandy slightly gravelly clay with some rootlets. Gravel is angular to subrounded fine of sandstone and brick fragments.	0.40		85.59
0.00 - 0.10	D						
0.00 - 0.10	ES						
0.40 - 0.50	B			MADE GROUND: Black gravelly fine to coarse sand including ash. Gravel is subangular to subrounded fine to coarse of various lithologies.	0.80		85.19
0.40 - 0.50	D						
0.40 - 0.50	ES						
0.80 - 1.00	B			Dark brown very gravelly fine to coarse SAND. Gravel is subrounded to rounded fine to coarse of sandstone.			
0.80 - 1.00	D		w (%) = 15	Below 1.20m, slightly gravelly, clayey.	1.70		84.29
0.80 - 1.00	ES				2.00		83.99
1.20 - 1.40	B				2.30		83.69
1.20 - 1.40	D						
1.70 - 2.00	B			Orange gravelly medium to coarse SAND. Gravel is subrounded to rounded fine to coarse of various lithologies.			
1.70 - 2.00	D						
2.00 - 2.20	B			Firm dark greyish brown slightly sandy slightly gravelly CLAY. Gravel is subangular to subrounded fine to medium of various lithologies.			
2.00 - 2.20	D		w (%) = 20	End of Excavation			

Excavation				Groundwater				
Plant	13T Tracked Excavator	Width (B)	0.60	Depth Observed	Depth of Pit	Rose to	in Mins	Remarks
Date	23/11/2023	Length (C)	3.00	2.30				Medium inflow. Standing at 1.70m depth.
Shoring	None.	Date Backfilled	23/11/2023					
Stability	Sides collapsing.							

Remarks

Location of scheduled Trial Pit TP116 near to area of historic pond was flooded. Hence Trial Pit TP116 was cancelled and Trial Pit TP116A was carried out on banked area to the north of the historic pond instead.

ES sample = 1 x 60ml glass vial, 2 x 258ml amber glass jars and 1 x 1 litre plastic tub.

Trial Pit TP116A terminated at 2.30m depth due to the inflow of groundwater and associated pit instability.

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Figure Sheet 1 of 1

07/03/2024

Symbols and abbreviations are explained on the accompanying key sheets.

All dimensions are in metres.

Logged in accordance with BS5930:2015 + A1:2020

GEOTECHNICS

TRIAL PIT RECORD - Trial Pit

Project		Pyramid Park, Bury		Engineer		Campbell Reith Hill LLP		Project No.		PN234595	
Client		Campbell Reith Hill LLP		National Grid Coordinates		380626.3 E 410287.1 N		Location ID		TP118	
								Ground Level		85.57 m OD	

Samples and Tests				Strata		Scale 1:50	
Depth	Sample Type	Stratum No.	Results	Description	Depth	Legend	Level (m OD)
0.00 - 0.10	B			Grass over TOPSOIL: Brown gravelly clayey fine to medium sand with some rootlets. Gravel is subangular to subrounded fine to medium of various lithologies. Occasional bricks.	0.10		85.47
0.00 - 0.10	D		w (%) = 18				
0.00 - 0.10	ES						
0.50 - 0.80	B			At 0.10m, woven geotextile (Terram).			
0.50 - 0.80	D		w (%) = 7	Dark brown very sandy slightly clayey subangular to rounded fine to coarse GRAVEL of various lithologies.			
0.50 - 0.80	ES						
1.00 - 1.10	B			Light brown mottled orange slightly gravelly fine to medium SAND. Gravel is subangular to rounded fine to coarse of various lithologies.	1.00		84.57
1.00 - 1.10	D			End of Excavation	1.10		84.47

Excavation				Groundwater				
Plant	13T Tracked Excavator.	Width (B)	0.60	Depth Observed	Depth of Pit	Rose to	in Mins	Remarks
Date	27/11/2023	Length (C)	3.00	1.10				Medium inflow. Standing at 0.70m depth.
Shoring	None.	Date Backfilled	27/11/2023					
Stability	Sides collapsing below 1.10m depth.							

Remarks	ES sample = 1 x 60ml glass vial, 2 x 258ml amber glass jars and 1 x 1 litre plastic tub. Trial Pit TP118 terminated at 1.10m depth due to the inflow of groundwater and associated pit instability.	Logged by	SF
		Checked by	JK
		Figure	Sheet 1 of 1
			07/03/2024

Symbols and abbreviations are explained on the accompanying key sheets.

All dimensions are in metres.

Logged in accordance with BS5930:2015 + A1:2020

TRIAL PIT RECORD - Trial Pit

Project		Pyramid Park, Bury		Engineer		Campbell Reith Hill LLP		Project No.		PN234595	
Client		Campbell Reith Hill LLP		National Grid Coordinates		380398.1 E 410350.4 N		Location ID		TP119	
								Ground Level		87.05 m OD	

Samples and Tests				Strata		Scale 1:50	
Depth	Sample Type	Stratum No.	Results	Description	Depth	Legend	Level (m OD)
0.00 - 0.20	B			Grass over TOPSOIL: Soft to firm dark brown slightly sandy slightly gravelly clay with occasional rootlets. Gravel is angular to angular fine to coarse of various lithologies, clinker and brick fragments.	0.20		86.85
0.00 - 0.20	ES			MADE GROUND: Soft to firm dark brown mottled dark grey slightly gravelly sandy clay with a medium cobble content and occasional pockets of organic material. Gravel is angular to subrounded fine to coarse of various lithologies, clinker, concrete and brick fragments.			
1.00 - 1.20	B						
1.00 - 1.20	D						
1.00 - 1.20	ES						
2.00 - 2.20	B			Below 2.00m, slightly sandy.			
2.00 - 2.20	D						
2.00 - 2.20	ES						
3.00 - 3.40	B			MADE GROUND: Dark brown gravelly clayey fine to coarse sand. Gravel is angular to rounded fine to coarse of various lithologies and clinker.	3.00		84.05
3.00 - 3.40	D			At 3.50m, concrete block.			
3.00 - 3.40	ES			Stiff dark brownish grey slightly sandy slightly gravelly CLAY. Gravel is subangular to rounded fine to coarse of various lithologies.	3.70		83.35
4.00 - 4.20	B				4.30		82.75
4.00 - 4.20	D						
4.00 - 4.20	ES						
				End of Excavation			

Excavation				Groundwater				
Plant	13T Tracked Excavator.	Width (B)	0.60	Depth Observed	Depth of Pit	Rose to	in Mins	Remarks
Date	23/11/2023	Length (C)	3.00					None encountered.
Shoring	None.	Date Backfilled	23/11/2023					
Stability	Stable during excavation.							

Remarks	ES sample = 1 x 60ml glass vial, 2 x 258ml amber glass jars and 1 x 1 litre plastic tub.	Logged by	ZL
		Checked by	JK
		Figure	Sheet 1 of 1
			07/03/2024

Symbols and abbreviations are explained on the accompanying key sheets.

All dimensions are in metres.

Logged in accordance with BS5930:2015 + A1:2020

TRIAL PIT RECORD - Trial Pit

Project		Pyramid Park, Bury		Engineer		Campbell Reith Hill LLP		Project No.		PN234595	
Client		Campbell Reith Hill LLP		National Grid Coordinates		380379.2 E 410317.9 N		Location ID		TP120	
								Ground Level		86.22 m OD	

Samples and Tests				Strata		Scale 1:50	
Depth	Sample Type	Stratum No.	Results	Description	Depth	Legend	Level (m OD)
0.00 - 0.30	B			Grass over TOPSOIL: Soft to firm brown slightly sandy gravelly clay with occasional rootlets. Gravel is angular to subangular fine to coarse of various lithologies and brick fragments.	0.30		85.92
0.00 - 0.30	ES						
0.60 - 0.90	B			MADE GROUND: Firm dark brown slightly sandy slightly gravelly clay with a low angular to subangular cobble content of sandstone. Gravel is angular to subangular fine to coarse of various lithologies and clinker.	0.60		85.62
0.60 - 0.90	ES						
				Stiff dark brown slightly sandy slightly gravelly CLAY with a low subangular to subrounded cobble content of sandstone. Gravel is subangular to rounded fine to coarse including mudstone, siltstone, sandstone and coal.			
1.50 - 1.80	B						
1.50 - 1.80	ES						
2.00 - 2.20	D		w (%) = 12				
2.20 - 2.50	D				2.20		84.02
2.20 - 2.50	ES			Firm to stiff light brown slightly sandy slightly gravelly CLAY with a low subangular to subrounded cobble content of siltstone and sandstone. Gravel is angular to subrounded fine to coarse including mudstone, siltstone and sandstone.			
2.50 - 2.70	B						
2.50 - 2.70	ES						
2.70 - 3.00	D		w (%) = 10	Below 2.70m, grading to stiff orangish brown mottled grey slightly sandy gravelly clay.	3.00		83.22
				End of Excavation			

Excavation				Groundwater				
Plant	13T Tracked Excavator.	Width (B)	0.60	Depth Observed	Depth of Pit	Rose to	in Mins	Remarks
Date	20/11/2023	Length (C)	3.00					None encountered.
Shoring	None.	Date Backfilled	20/11/2023					
Stability	Minor spalling.							

Remarks	ES sample = 1 x 60ml glass vial, 2 x 258ml amber glass jars and 1 x 1 litre plastic tub.	Logged by	ZL
		Checked by	JK
		Figure	Sheet 1 of 1
			07/03/2024

Symbols and abbreviations are explained on the accompanying key sheets.

All dimensions are in metres.

Logged in accordance with BS5930:2015 + A1:2020



TRIAL PIT RECORD - Trial Pit

Project		Pyramid Park, Bury		Engineer		Campbell Reith Hill LLP		Project No.		PN234595	
Client		Campbell Reith Hill LLP		National Grid Coordinates		380438.4 E 410351.5 N		Location ID		TP121	
								Ground Level		86.57 m OD	

Samples and Tests				Strata		Scale 1:50	
Depth	Sample Type	Stratum No.	Results	Description	Depth	Legend	Level (m OD)
0.00 - 0.20	B		w (%) = 14	Grass over TOPSOIL: Soft to dark brown slightly sandy slightly gravelly clay with occasional rootlets. Gravel is angular to subangular fine to coarse of various lithologies, clinker and brick fragments.	0.20		86.37
0.00 - 0.20	D						
0.00 - 0.20	ES						
0.20 - 0.40	B						
0.20 - 0.40	D						
0.20 - 0.40	ES						
1.00 - 1.30	B						
1.00 - 1.30	D						
1.00 - 1.30	ES						
2.00 - 2.30	B			MADE GROUND: Firm to stiff dark grey mottled light grey slightly sandy slightly gravelly clay. Gravel is angular to subrounded fine to coarse of coal, clinker, concrete and brick fragments.	2.00		84.57
2.00 - 2.30	D						
2.00 - 2.30	ES						
3.20 - 3.40	B			At 3.60m, brick foundation slab on top of timbers. MADE GROUND: Light grey very sandy clayey angular to subrounded fine to coarse gravel of various lithologies and clinker. Medium angular to subangular cobble content of sanstone. Occasional decayed plant remains. End of Excavation	3.70		82.87
3.20 - 3.40	D						
3.20 - 3.40	ES						
3.80 - 4.00	B						
3.80 - 4.00	D						
3.80 - 4.00	ES						

Excavation				Groundwater				
Plant	13T Tracked Excavator.	Width (B)	0.60	Depth Observed	Depth of Pit	Rose to	in Mins	Remarks
Date	21/11/2023	Length (C)	3.00					None encountered.
Shoring	None.	Date Backfilled	21/11/2023					
Stability	Sides collapsed at 4.00m depth.							

Remarks	ES sample = 1 x 60ml glass vial, 2 x 258ml amber glass jars and 1 x 1 litre plastic tub.	Logged by	ZL
		Checked by	JK
		Figure	Sheet 1 of 1
			07/03/2024

Symbols and abbreviations are explained on the accompanying key sheets.

All dimensions are in metres.

Logged in accordance with BS5930:2015 + A1:2020

TRIAL PIT RECORD - Trial Pit

Project Pyramid Park, Bury		Engineer Campbell Reith Hill LLP		Project No. PN234595	
Client Campbell Reith Hill LLP		National Grid Coordinates 380459.9 E 410367.1 N		Location ID TP122	
				Ground Level 86.76 m OD	

Samples and Tests				Strata		Scale 1:50	
Depth	Sample Type	Stratum No.	Results	Description	Depth	Legend	Level (m OD)
0.00 - 0.20	B			Grass over MADE GROUND: Soft to firm brown slightly sandy gravelly clay with some rootlets. Gravel is angular to rounded fine to coarse of siltstone, sandstone, clinker and brick fragments.	0.40		86.36
0.00 - 0.20	D						
0.00 - 0.20	ES						
0.40 - 0.80	B			At 0.20m, woven geotextile (Terram).			
0.40 - 0.80	D			MADE GROUND: Dark grey mottled black very sandy clayey subangular to subrounded fine to coarse gravel of siltstone, sandstone, clinker and brick fragments. Low angular to subangular cobble content of sandstone and bricks.	0.80		85.96
0.40 - 0.80	ES			At 0.80m, asphalt.			
				End of Excavation			

Excavation				Groundwater				
Plant	13T Tracked Excavator.	Width (B)	0.60	Depth Observed	Depth of Pit	Rose to	in Mins	Remarks
Date	28/11/2023	Length (C)	3.00					None encountered.
Shoring	None.	Date Backfilled	28/11/2023					
Stability	Stable during excavation.							

Remarks	ES sample = 1 x 60ml glass vial, 2 x 258ml amber glass jars and 1 x 1 litre plastic tub. Trial Pit TP122 terminated at 0.80m depth on encountering asphalt layer.	Logged by SF Checked by JK Figure Sheet 1 of 1 07/03/2024
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Symbols and abbreviations are explained on the accompanying key sheets.
All dimensions are in metres.

Logged in accordance with BS5930:2015 + A1:2020

Project						Pyramid Park, Bury							Engineer								Campbell Reith Hill LLP									Project No.						PN234595									
																								Location ID						TP123															
Cient						Campbell Reith Hill LLP						National Grid Coordinates						380527.5 E 410339.7 N						Ground Level						86.20 m OD															
Samples and Tests														Strata														Scale 1:50																	
Depth				Sample Type		Stratum No.		Results		Description								Depth		Legend						Level (m OD)																			
0.00 - 0.10				B						Grass over TOPSOIL: Soft to firm dark grey slightly sandy clay with many rootlets.																																			
0.00 - 0.10				D																																									
0.00 - 0.10				ES														0.40								85.80																			
0.40 - 0.50				B																																									
0.40 - 0.50				D						MADE GROUND: Black gravelly fine to coarse sand including ash. Gravel is subangular to subrounded fine to coarse of various lithologies. Hydrocarbon odour.								0.70								85.50																			
0.40 - 0.50				ES																																									
0.70 - 0.90				B						Dark greyish brown gravelly to very gravelly slightly clayey fine to coarse SAND.								1.00								85.20																			
0.70 - 0.90				D						Gravel is subangular to subrounded fine to coarse of various lithologies.																																			
0.70 - 0.90				ES						Soft to firm light greyish brown slightly gravelly sandy CLAY. Gravel is subangular to subrounded fine to medium of various lithologies.																																			
0.90 - 1.00				B						Grading to very clayey fine to coarse sand in places.																																			
0.90 - 1.00				D																																									
2.00 - 2.20				B																																									
2.00 - 2.20				D																																									
2.40 - 2.60				B														2.40								83.80																			
2.40 - 2.60				D						Light grey and dark grey sandy clayey subrounded to rounded fine to coarse GRAVEL of various lithologies. Low cobble content.																																			
																		3.60								82.60																			

APPENDIX 3

Machine-Dug Trial Pit Photographs

PHOTOGRAPHS

Project Number : PN234595

Project : PYRAMID PARK, BURY



Trial Pit SA01 (I)

PHOTOGRAPHS

Project Number : PN234595

Project : PYRAMID PARK, BURY



Trial Pit SA01 (2)

PHOTOGRAPHS

Project Number : PN234595

Project : PYRAMID PARK, BURY



Trial Pit TP101 (I)

PHOTOGRAPHS

Project Number : PN234595

Project : PYRAMID PARK, BURY



Trial Pit TPI02 (I)

PHOTOGRAPHS

Project Number : PN234595

Project : PYRAMID PARK, BURY



Trial Pit TPI02 (2)

PHOTOGRAPHS

Project Number : PN234595

Project : PYRAMID PARK, BURY



Trial Pit TP102 (3)

PHOTOGRAPHS

Project Number : PN234595

Project : PYRAMID PARK, BURY



Trial Pit TP102 (4) Arisings

PHOTOGRAPHS

Project Number : PN234595

Project : PYRAMID PARK, BURY



Trial Pit TP103 (I)

PHOTOGRAPHS

Project Number : PN234595

Project : PYRAMID PARK, BURY



Trial Pit TP103 (2)

PHOTOGRAPHS

Project Number : PN234595

Project : PYRAMID PARK, BURY



Trial Pit TP103 (3)

PHOTOGRAPHS

Project Number : PN234595

Project : PYRAMID PARK, BURY



Trial Pit TPI06 (I)

PHOTOGRAPHS

Project Number : PN234595

Project : PYRAMID PARK, BURY



Trial Pit TPI06 (2)

PHOTOGRAPHS

Project Number : PN234595

Project : PYRAMID PARK, BURY



Trial Pit TP106 (3)

PHOTOGRAPHS

Project Number : PN234595

Project : PYRAMID PARK, BURY



Trial Pit TP106 (4)

PHOTOGRAPHS

Project Number : PN234595

Project : PYRAMID PARK, BURY



Trial Pit TPI06 (5)

PHOTOGRAPHS

Project Number : PN234595

Project : PYRAMID PARK, BURY

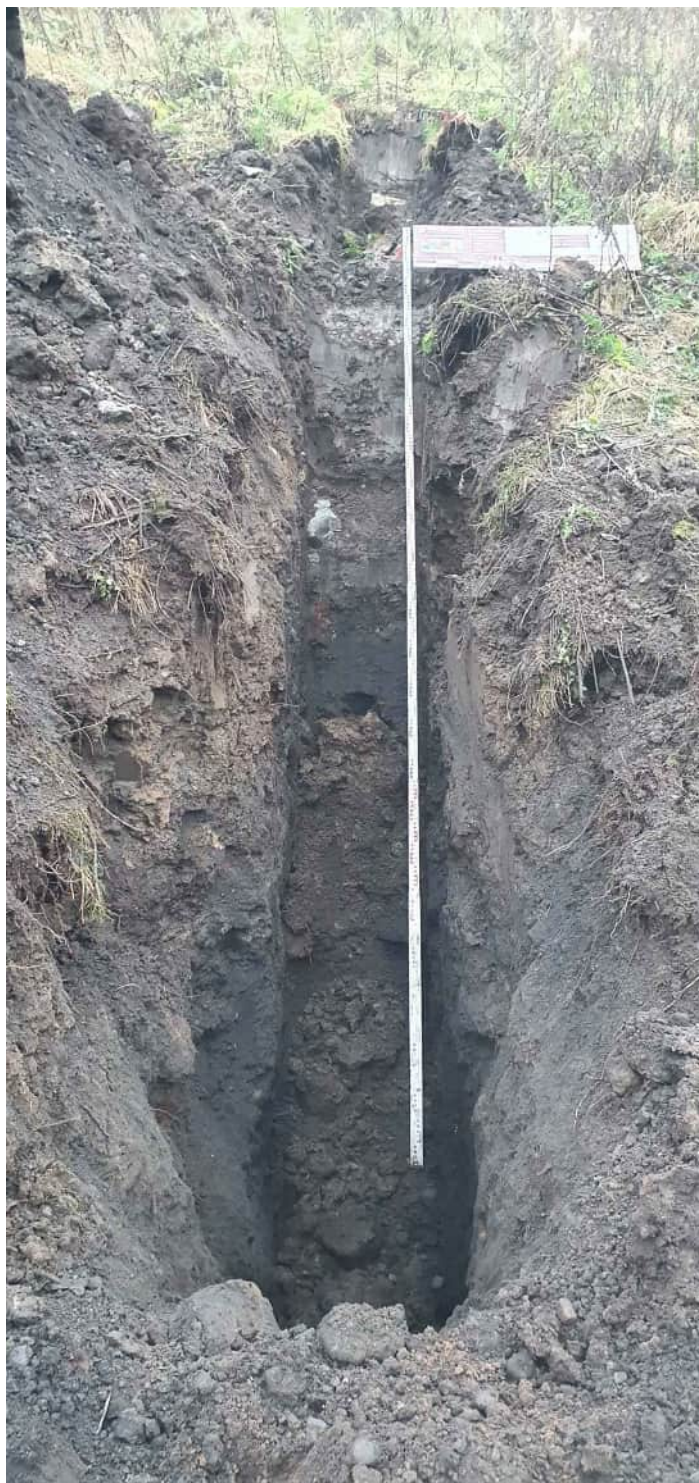


Trial Pit TPI06 (6) Arisings

PHOTOGRAPHS

Project Number : PN234595

Project : PYRAMID PARK, BURY



Trial Pit TP107 (I)

PHOTOGRAPHS

Project Number : PN234595

Project : PYRAMID PARK, BURY



Trial Pit TP107 (2)

PHOTOGRAPHS

Project Number : PN234595

Project : PYRAMID PARK, BURY



Trial Pit TPI08 (I)

PHOTOGRAPHS

Project Number : PN234595

Project : PYRAMID PARK, BURY



Trial Pit TPI09 (I)

PHOTOGRAPHS

Project Number : PN234595

Project : PYRAMID PARK, BURY



Trial Pit TPI09 (2)

PHOTOGRAPHS

Project Number : PN234595

Project : PYRAMID PARK, BURY



Trial Pit TPI 10

PHOTOGRAPHS

Project Number : PN234595

Project : PYRAMID PARK, BURY



Trial Pit TPI 12 (I)

PHOTOGRAPHS

Project Number : PN234595

Project : PYRAMID PARK, BURY



Trial Pit TPI 12 (2)

PHOTOGRAPHS

Project Number : PN234595

Project : PYRAMID PARK, BURY



Trial Pit TPI 12 (3)

PHOTOGRAPHS

Project Number : PN234595

Project : PYRAMID PARK, BURY



Trial Pit TPI16A

PHOTOGRAPHS

Project Number : PN234595

Project : PYRAMID PARK, BURY



Trial Pit TPI 18 (I)

PHOTOGRAPHS

Project Number : PN234595

Project : PYRAMID PARK, BURY



Trial Pit TPI 19 (I)

PHOTOGRAPHS

Project Number : PN234595

Project : PYRAMID PARK, BURY



Trial Pit TPI 19 (2)

PHOTOGRAPHS

Project Number : PN234595

Project : PYRAMID PARK, BURY



Trial Pit TPI20 (I)

PHOTOGRAPHS

Project Number : PN234595

Project : PYRAMID PARK, BURY



Trial Pit TPI20 (2)

PHOTOGRAPHS

Project Number : PN234595

Project : PYRAMID PARK, BURY



Trial Pit TPI22 (I)

PHOTOGRAPHS

Project Number : PN234595

Project : PYRAMID PARK, BURY



Trial Pit TPI22 (2)

PHOTOGRAPHS

Project Number : PN234595

Project : PYRAMID PARK, BURY



Trial Pit TPI22 (3)

PHOTOGRAPHS

Project Number : PN234595

Project : PYRAMID PARK, BURY



Trial Pit TPI22 (4)

PHOTOGRAPHS

Project Number : PN234595

Project : PYRAMID PARK, BURY



Trial Pit TPI23 (I)

PHOTOGRAPHS

Project Number : PN234595

Project : PYRAMID PARK, BURY



Trial Pit TP123 (2)

APPENDIX 4

Hand-Dug Trial Pit Records

DATA SHEET - Symbols and Abbreviations used on Records



Sample Types

B	Bulk disturbed sample
BLK	Block sample
C	Core sample
D	Small disturbed sample (tub/jar)
E	Environmental test sample
ES	Environmental soil sample
EW	Environmental water sample
G	Gas sample
L	Liner sample
LB	Large bulk disturbed sample
P	Piston sample (PF - failed P sample)
TW	Thin walled push in sample
U	Open Tube - 102mm diameter with blows to take sample. (UF - failed U sample)
UT	Thin wall open drive tube sampler - 102mm diameter with blows to take sample. (UTF - failed UT sample)
V	Vial sample
W	Water sample
#	Sample Not Recovered

Insitu Testing / Properties

CBRP	CBR using TRL probe
CHP	Constant Head Permeability Test
COND	Electrical conductivity
TC	Thermal Conductivity
TR	Thermal Resistivity
HV	Strength from Hand Vane
ICBR	CBR Test
IDEN	Density Test
IRES	Resistivity Test
MEX	CBR using Mexecon Probe Test
PKR	Packer Permeability Test
PLT	Plate Load Test
PP	Strength from Pocket Penetrometer
Temp	Temperature
VHP	Variable Head Permeability Test
VN	Strength from Insitu Vane
w%	Water content
(All other strengths from undrained triaxial testing)	
S	Standard Penetration Test (SPT)
C	SPT with cone
N	SPT Result
-/-	Blows/penetration (mm) after seating drive
-*/- (mm)	Total blows/penetration
()	Extrapolated value

Groundwater

Water Strike	
Depth Water Rose To	

Instrumentation

Seal

Filter

Seal

Strata

Made Ground Granular

Made Ground Cohesive

Topsoil

Cobbles and Boulders

Gravel

Sand

Silt

Clay

Peat

Note: Composite soil types shown by combined symbols

Chalk

Limestone

Sandstone

Coal

Strata, Continued

Mudstone

Siltstone

Metamorphic Rock

Fine Grained

Medium Grained

Coarse Grained

Igneous Rock

Fine Grained

Medium Grained

Coarse Grained

Backfill Materials

Arisings

Bentonite

Concrete

Sand

Grout

Gravel

Asphalt/Tarmacadam

Rotary Core

RQD Rock Quality Designation (% of intact core >100mm)

FRACTURE INDEX

Fractures/metre

NI Non-intact core

NR No core recovery

AZCL Assumed zone of core loss

[illegible]

[illegible]

[illegible]

Project	Pyramid Park, Bury	Engineer	Campbell Reith Hill LLP	Project No.	PN234595
Client	Campbell Reith Hill LLP	National Grid Coordinates	380555.1 E 410284.8 N	Location ID	HP115
				Ground Level	85.56 m OD

Samples and Tests				Strata		Scale 1:50	
Depth	Sample Type	Stratum No.	Results	Description	Depth	Legend	Level (m OD)
0.00 - 0.50	D			Grass over TOPSOIL: Soft to firm dark grey mottled black slightly sandy slightly gravelly clay with some rootlets. Gravel is angular to subrounded fine of sandstone and brick fragments.			
0.00 - 0.50	ES			End of Excavation	0.50		85.06

Excavation				Groundwater				
Plant	Hand tools.	Width (B)	0.40	Depth Observed	Depth of Pit	Rose to	in Mins	Remarks
Date	28/11/2023	Length (C)	0.40	0.00				Water standing at ground level.
Shoring	None.	Date Backfilled	28/11/2023					
Stability	Stable during excavation.							

Remarks	Hand-Dug Trial Pit HP115 excavated to 0.20m depth at the location of scheduled Machine-Dug Trial Pit TP115. ES sample = 1 x 60ml glass vial, 2 x 258ml amber glass jars and 1 x 1 litre plastic tub.	Logged by SF Checked by JK Figure Sheet 1 of 1 15/02/2024
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Symbols and abbreviations are explained on the accompanying key sheets.
All dimensions are in metres.

Logged in accordance with BS5930:2015 + A1:2020

GEOTECHNICS

[illegible]

[illegible]

APPENDIX 5

Hand-Dug Trial Pit Photographs

PHOTOGRAPHS

Project Number : PN234595

Project : PYRAMID PARK, BURY



Trial Pit HPI 17E (I)

PHOTOGRAPHS

Project Number : PN234595

Project : PYRAMID PARK, BURY



Trial Pit HPI17W (1)

APPENDIX 6

Cable Percussion Borehole Records, SPT Results Summary Sheets and SPT Hammer Energy Test Reports

DATA SHEET - Symbols and Abbreviations used on Records



Sample Types

B	Bulk disturbed sample
BLK	Block sample
C	Core sample
D	Small disturbed sample (tub/jar)
E	Environmental test sample
ES	Environmental soil sample
EW	Environmental water sample
G	Gas sample
L	Liner sample
LB	Large bulk disturbed sample
P	Piston sample (PF - failed P sample)
TW	Thin walled push in sample
U	Open Tube - 102mm diameter with blows to take sample. (UF - failed U sample)
UT	Thin wall open drive tube sampler - 102mm diameter with blows to take sample. (UTF - failed UT sample)
V	Vial sample
W	Water sample
#	Sample Not Recovered

Insitu Testing / Properties

CBRP	CBR using TRL probe
CHP	Constant Head Permeability Test
COND	Electrical conductivity
TC	Thermal Conductivity
TR	Thermal Resistivity
HV	Strength from Hand Vane
ICBR	CBR Test
IDEN	Density Test
IRES	Resistivity Test
MEX	CBR using Mexecon Probe Test
PKR	Packer Permeability Test
PLT	Plate Load Test
PP	Strength from Pocket Penetrometer
Temp	Temperature
VHP	Variable Head Permeability Test
VN	Strength from Insitu Vane
w%	Water content
(All other strengths from undrained triaxial testing)	
S	Standard Penetration Test (SPT)
C	SPT with cone
N	SPT Result
-/-	Blows/penetration (mm) after seating drive
-*/- (mm)	Total blows/penetration
()	Extrapolated value

Groundwater

Water Strike	
Depth Water Rose To	

Instrumentation

Seal

Filter

Seal

Strata

Made Ground Granular
Made Ground Cohesive
Topsoil
Cobbles and Boulders
Gravel
Sand
Silt
Clay
Peat

Note: Composite soil types shown by combined symbols

Chalk
Limestone
Sandstone
Coal

Strata, Continued

Mudstone

Siltstone

Metamorphic Rock

Fine Grained

Medium Grained

Coarse Grained

Igneous Rock

Fine Grained

Medium Grained

Coarse Grained

Backfill Materials

Arisings

Bentonite

Concrete

Sand

Grout

Gravel

Asphalt/Tarmacadam

Rotary Core

RQD Rock Quality Designation (% of intact core >100mm)

FRACTURE INDEX

NI	Non-intact core
NR	No core recovery
AZCL	Assumed zone of core loss

BOREHOLE RECORD - Cable Percussion

Project	Pyramid Park, Bury	Engineer	Campbell Reith Hill LLP	Project No.	PN234595
Client	Campbell Reith Hill LLP	National Grid Coordinates	380393.4 E 410333.1 N	Borehole	BH101
				Ground Level	86.35 m OD

Sampling			Properties			Strata	Scale 1:50					
Depth	Sample Type	Depth Cased & (to Water)	Strength kPa	w(%)	SPT N	Description	Depth	Legend	Level (m OD)			
0.00 - 0.80	B	(DRY)	HV = 51	11	S19	Grass over TOPSOIL: Soft to firm dark brown slightly sandy slightly gravelly clay with some rootlets. Gravel is angular to subrounded fine to coarse of various lithologies and brick fragments.	0.10		86.25			
0.20	ES					MADE GROUND: Reddish brown sandy angular fine to coarse gravel of brick fragments.	0.30		86.05			
0.50	ES											
0.80 - 1.20	B					Dark brown clayey fine to coarse SAND and subangular to subrounded fine to coarse GRAVEL of various lithologies. Medium subangular to subrounded cobble content of siltstone and sandstone.	1.20		85.15			
1.00	ES											
1.20 - 1.65	D					Firm to stiff dark greyish brown slightly sandy slightly gravelly CLAY. Gravel is subangular to subrounded fine to medium of including mudstone, siltstone and sandstone and coal fragments.						
2.00 - 2.45	UT50	1.50 (DRY)	18	9	S50/240mm	Between 2.00-2.45m, HV, Cu = 51kPa, medium strength.	2.45		83.90			
2.50	D	3.00 (DRY)										
3.00 - 3.39	B					Firm to stiff light brown slightly sandy slightly gravelly CLAY with a low subangular to subrounded cobble content of siltstone and sandstone. Gravel is subangular to subrounded fine to coarse including mudstone, siltstone and sandstone.						
3.00	D					At 3.00m, band of light brown gravelly sand.						
3.00 - 3.45	D	4.00 (DRY)										
4.00 - 4.45	B					Below 4.00m, very stiff.						
4.00	D											
5.00 - 5.44	B	4.50 (DRY)	16	S47	S50/290mm							
5.00	D	6.00 (DRY)										
5.00 - 5.45	D											
6.00 - 6.39	B					Very weak to weak thinly laminated grey MUDSTONE (Recovered as gravel).	5.80		80.55			
6.00	D											
6.00 - 6.45	D					End of Borehole	6.39		79.96			

Boring				Progress				Groundwater					
Depth	Hole Dia.	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed
1.20	0.40	Inspection Pit	DF/SF	0.00			15/11/23	08:00					
6.39	0.15	Cable Percussion	DF/SF	6.39	6.00	DRY	15/11/23	16:00					

Remarks	Inspection pit hand excavated to 1.20m depth and no services were found. ES sample = 1 x 60ml glass vial, 2 x 258ml amber glass jars and 1 x 1 litre plastic tub. A 50mm standpipe was installed to 6.00m with a geowrapped slotted section from 2.00m to 6.00m with a flush cover installed. Backfill details from base of hole: bentonite seal up to 6.00m, gravel filter up to 2.00m, bentonite seal up to 0.20m, concrete up to ground level.	Logged by ZL Checked by JK Figure Sheet 1 of 2 04/03/2024
Logged in accordance with BS5930:2015 + A1:2020		



BOREHOLE RECORD - Cable Percussion

Project		Pyramid Park, Bury		Engineer		Campbell Reith Hill LLP		Project No.		PN234595	
Client		Campbell Reith Hill LLP		National Grid Coordinates		380393.4 E 410333.1 N		Borehole		BH101	
								Ground Level		86.35 m OD	

Sampling			Properties			Strata			Scale 1:50		
Depth	Sample Type	Depth Cased & (to Water)	Strength kPa	w(%)	SPT N	Description			Depth	Legend	Level (m OD)

Boring				Progress					Groundwater					
Depth	Hole Dia.	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks



Symbols and abbreviations are explained on the accompanying key sheets.
All dimensions are in metres.

Logged by

Checked by

Figure

ZL

JK

Sheet 2 of 2

04/03/2024



Logged in accordance with BS5930:2015 + A1:2020

BOREHOLE RECORD - Cable Percussion

Project	Pyramid Park, Bury	Engineer	Campbell Reith Hill LLP	Project No.	PN234595
Client	Campbell Reith Hill LLP	National Grid Coordinates	380426.8 E 410360.3 N	Borehole	BH102
				Ground Level	86.74 m OD

Sampling			Properties			Strata	Scale 1:50		
Depth	Sample Type	Depth Cased & (to Water)	Strength kPa	w(%)	SPT N	Description	Depth	Legend	Level (m OD)
0.00 - 0.50	B					Grass over TOPSOIL: Soft brown slightly sandy slightly gravelly clay with some rootlets. Gravel is subangular to subrounded fine to coarse including sandstone and brick fragments.	0.10		86.64
0.20	ES						0.20		86.54
0.50	ES					MADE GROUND: Reddish brown and black sandy angular fine to coarse gravel of ash and brick fragments.	0.50		86.24
0.50 - 1.20	B					MADE GROUND: Soft to firm dark grey slightly sandy slightly gravelly clay with a low angular to subangular cobble cobble content of sandstone and bricks. Gravel is angular to rounded fine to coarse including siltstone, sandstone, coal and brick fragments. Some ash and wood fragments.			
1.00	ES					Firm to stiff dark greyish brown slightly sandy gravelly CLAY with occasional roots. Gravel is subangular to rounded fine to medium including mudstone, siltstone and sandstone.	1.50		85.24
1.20 - 1.65	B	1.20 (DRY)	HV = 92,33,>140,>140		S16				
1.20 - 1.65	B					Stiff light greyish brown and yellowish brown slightly sandy slightly gravelly CLAY with a low angular to subangular cobble content of siltstone and sandstone. Gravel is angular to subrounded fine to coarse including mudstone, siltstone and sandstone.			
1.20 - 1.65	D			17					
1.50 - 2.00	B								
2.00 - 2.45	B	2.00 (DRY)			S29				
2.00 - 2.45	B								
2.00 - 2.45	D			12					
3.00 - 3.45		3.00 (DRY)			C35		3.00		83.74
3.00 - 3.45	B					Extremely weak to very weak bluish grey MUDSTONE (Recovered as dense to very dense gravel).			
4.00 - 4.26		4.00 (DRY)			S50/115mm				
4.00 - 4.27	D			13					
4.00 - 4.45	B								
5.00 - 5.18		5.00 (DRY)			S50/75mm				
5.00 - 5.18	D								
5.00 - 5.45	B								
6.00 - 6.12		6.00 (DRY)			S50/60mm	Below 6.00m, laminated, orangish brown.			
6.00 - 6.45	B								
6.00 - 6.45	D								
7.50 - 7.78		7.50 (DRY)			S50/125mm				
7.50 - 7.78	D			11			7.78		78.96
						End of Borehole			

Boring				Progress				Groundwater					
Depth	Hole Dia.	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed
1.20	0.40	Inspection Pit	JG/GB	0.00			16/11/23	08:00					
7.78	0.15	Cable Percussion	JG/GB	7.78	7.50	DRY	16/11/23	16:00					

Remarks	Inspection pit hand excavated to 1.20m depth and no services were found. ES sample = 1 x 60ml glass vial, 2 x 258ml amber glass jars and 1 x 1 litre plastic tub. A 33mm standpipe was installed to 7.50m with a geowrapped slotted section from 4.50m to 7.50m and a 50mm standpipe was installed to 1.50m with a geowrapped slotted section from 0.50m to 1.50m with a flush cover installed. Backfill details from base of hole: gravel filter up to 4.50m, bentonite seal up to 1.50m, gravel filter up to 0.50m, bentonite seal up to 0.20m, concrete up to ground level.	Logged by SF Checked by JK Figure Sheet 1 of 1 04/03/2024
Symbols and abbreviations are explained on the accompanying key sheets. All dimensions are in metres.	Logged in accordance with BS5930:2015 + A1:2020	GEOTECHNICS

BOREHOLE RECORD - Cable Percussion

Project	Pyramid Park, Bury	Engineer	Campbell Reith Hill LLP	Project No.	PN234595
Client	Campbell Reith Hill LLP	National Grid Coordinates	380481.7 E 410348.7 N	Borehole	BH103
				Ground Level	86.05 m OD

Sampling			Properties			Strata		Scale 1:50		
Depth	Sample Type	Depth Cased & (to Water)	Strength kPa	w(%)	SPT N	Description	Depth	Legend	Level (m OD)	
0.00 - 0.90	B					MADE GROUND: Reddish brown and black sandy angular fine to coarse gravel of ash and brick fragments.			85.15	
0.20	ES									
0.50	ES									
1.00	ES					Firm to stiff greyish brown slightly sandy slightly gravelly CLAY. Gravel is subangular to subrounded fine to medium including mudstone, siltstone and sandstone.	0.90		82.45	
1.20 - 1.65		1.20 (DRY)			S13					
1.20 - 1.65	B			20						
1.20 - 1.65	D								82.45	
2.00 - 2.45		1.50 (DRY)			S12					
2.00	ES									
2.00 - 2.45	B								82.45	
2.00 - 2.45	D									
3.00 - 3.45		1.50 (DRY)			S20					
3.00 - 3.45	B								82.45	
3.00 - 3.45	D									
3.50	B									
4.00 - 4.45		1.50 (DRY)			S34	Stiff to very stiff orangish brown slightly sandy slightly gravelly CLAY. Gravel is subangular to rounded fine to medium including mudstone, siltstone and sandstone.	3.60		82.45	
4.00 - 4.45	B			16						
4.00 - 4.45	D									
5.00 - 5.45		1.50 (DRY)			S42				82.45	
5.00 - 5.45	B									
5.00 - 5.45	D									
6.00 - 6.42		1.50 (DRY)			S50/275mm	Below 6.00m, mottled dark bluish grey.			82.45	
6.00 - 6.43	D			21						
6.00 - 6.45	B									
6.80	B					Extremely weak to very weak laminated bluish grey MUDSTONE (Recovered as gravel).	6.80		79.25	
7.50 - 7.92		1.50 (DRY)			S50/265mm					
7.50 - 7.92	D									
						End of Borehole	7.92		78.13	

Boring				Progress					Groundwater					
Depth	Hole Dia.	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
1.20	0.40	Inspection Pit	DF/SF	0.00	1.50	DRY	17/11/23	08:00	0.00				1.20	Surface inflow.
7.92	0.15	Cable Percussion	DF/SF	7.92			17/11/23	16:00						

Remarks	AGS	Inspection pit hand excavated to 1.20m depth and no services were found. (Pit obscured by water at 0.40m depth). ES sample = 1 x 60ml glass vial, 2 x 258ml amber glass jars and 1 x 1 litre plastic tub. Chiselling: 1.50-1.60m for 60 minutes. Rig moved to avoid obstruction. A 50mm standpipe was installed to 6.80m with a geowrapped slotted section from 1.00m to 6.80m with a flush cover installed. Backfill details from base of hole: bentonite seal up to 6.80m, gravel filter up to 1.00m, bentonite seal up to 0.20m, concrete up to ground level.	Logged by SF Checked by JK Figure Sheet 1 of 1 04/03/2024
Symbols and abbreviations are explained on the accompanying key sheets. All dimensions are in metres.			Logged in accordance with BS5930:2015 + A1:2020
			GEOTECHNICS

BOREHOLE RECORD - Cable Percussion

Project	Pyramid Park, Bury	Engineer	Campbell Reith Hill LLP	Project No.	PN234595
Client	Campbell Reith Hill LLP	National Grid Coordinates	380484.1 E 410306.7 N	Borehole	BH104
				Ground Level	85.51 m OD

Sampling			Properties			Strata	Scale 1:50							
Depth	Sample Type	Depth Cased & (to Water)	Strength kPa	w(%)	SPT N	Description	Depth	Legend	Level (m OD)					
0.00 - 0.50	B	1.20 (DRY)		19	C50/ 255mm	Grass over TOPSOIL: Brown sandy slightly clayey subrounded to rounded medium to coarse gravel of various lithologies. Some rootlets.	0.50		85.01					
0.20	ES													
0.50	ES					2.00 (DRY)			14	C50/ 70mm	MADE GROUND: Firm to stiff brown slightly sandy gravelly clay. Gravel is angular to subrounded fine to medium of siltstone and sandstone. Some ash.	1.00		84.51
0.50 - 1.20	B													
0.50 - 1.20	D													
1.00	ES													
1.20 - 1.60														
1.20 - 1.65	B													
2.00 - 2.14														
2.00	D													
2.00 - 2.45	B													
3.00 - 3.14		3.00 (DRY)		14	C50/ 70mm			Below 3.00m, slightly gravelly sandy. Gravel is fine to medium.						
3.00 - 3.45	B													
4.00 - 4.10														
4.00	D													
4.00 - 4.45	B													
5.00 - 5.11														
5.00 - 5.45	B													
6.00 - 6.11														
6.00	D													
6.00 - 6.45	B													
		6.00 (DRY)		15	C50/ 50mm	Below 6.00m, brown mottled grey.								
						Extremely weak to very weak bluish grey MUDSTONE (Recovered as gravel).	6.80		78.71					
						End of Borehole	7.00		78.51					

Boring				Progress					Groundwater					
Depth	Hole Dia.	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
1.20	0.40	Inspection Pit	JG/GB	0.00			17/11/23	08:00	0.00					
7.00	0.15	Cable Percussion	JG/GB	7.00	7.00	DRY	17/11/23	16:00					1.20	Surface inflow.

Remarks	Inspection pit hand excavated to 1.20m depth and no services were found. (Pit obscured by water from ground level). ES sample = 1 x 60ml glass vial, 2 x 258ml amber glass jars and 1 x 1 litre plastic tub. Chiselling: 6.80-7.00m for 30 minutes. A 50mm standpipe was installed to 5.00m with a geowrapped slotted section from 2.00m to 5.00m with a flush cover installed. Backfill details from base of hole: bentonite seal up to 5.00m, gravel filter up to 2.00m, bentonite seal up to 0.20m, concrete up to ground level.	Logged by Checked by Figure	SF JK Sheet 1 of 1 04/03/2024
Symbols and abbreviations are explained on the accompanying key sheets. All dimensions are in metres.		Logged in accordance with BS5930:2015 + A1:2020	



BOREHOLE RECORD - Cable Percussion

Project		Pyramid Park, Bury		Engineer		Campbell Reith Hill LLP		Project No.		PN234595	
Client		Campbell Reith Hill LLP		National Grid Coordinates		380534.0 E 410335.7 N		Borehole		BH105	
								Ground Level		86.21 m OD	

Sampling			Properties			Strata			Scale 1:50		
Depth	Sample Type	Depth Cased & (to Water)	Strength kPa	w(%)	SPT N	Description	Depth	Legend	Level (m OD)		
0.00 - 0.50	B					Grass over MADE GROUND: Soft dark grey mottled black slightly sandy slightly gravelly clay with some rootlets. Gravel is angular to subrounded fine to coarse of various lithologies and brick fragments.					
0.20	ES										
0.50	ES										
0.50 - 1.20	B										
0.50 - 1.20	D										
1.00	ES										
1.20 - 1.62		1.20 (DRY)			C50/275mm	Firm to stiff greyish brown slightly sandy slightly gravelly CLAY. Gravel is subangular to subrounded fine to coarse of various lithologies. At 1.20m, obstruction pushed to 2.00m depth**.	1.20		85.01		
1.20 - 1.65	B					Firm to stiff dark greyish brown slightly gravelly sandy CLAY. Gravel is subangular to subrounded fine to coarse including mudstone, siltstone and sandstone.	1.40		84.81		
2.00 - 2.45		2.00 (1.50)			C22						
2.00 - 2.45	B		HV = 121,20,>140,43								
3.00 - 3.45		3.00 (DRY)			C26	Below 3.00m, medium cobble content.					
3.00 - 3.45	B			20							
4.00 - 4.38		3.00 (DRY)			C50/230mm	Extremely weak to very weak bluish grey MUDSTONE.	4.00		82.21		
4.00 - 4.45	B										
4.00 - 4.45	D					End of Borehole	4.38		81.83		

Boring				Progress				Groundwater						
Depth	Hole Dia.	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
1.20	0.40	Inspection Pit	DF/SF	0.00			29/11/23	08:00						None encountered.
4.00	0.15	Cable Percussion	DF/SF	4.38	3.00	DRY	29/11/23	16:00						

Remarks

Inspection pit hand excavated to 1.20m depth and no services were found.

ES sample = 1 x 60ml glass vial, 2 x 258ml amber glass jars and 1 x 1 litre plastic tub.

Chiselling: 1.20-1.40m for 60 minutes. ** Drillers description.

Water was added to assist boring between 1.20m and 2.00m.

A 50mm standpipe was installed to 4.00m with a geowrapped slotted section from 1.40m to 4.00m with an up-standing cover installed.

Backfill details from base of hole: bentonite seal up to 4.00m, gravel filter up to 1.40m, bentonite seal up to 0.20m, concrete up to ground level.

Logged in accordance with BS5930:2015 + A1:2020

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Figure

Sheet 1 of 1

04/03/2024

GEOTECHNICS

BOREHOLE RECORD - Cable Percussion

Project	Pyramid Park, Bury	Engineer	Campbell Reith Hill LLP	Project No.	PN234595
Client	Campbell Reith Hill LLP	National Grid Coordinates	380521.7 E 410290.8 N	Borehole	BH106
				Ground Level	85.53 m OD

Sampling			Properties			Strata		Scale 1:50	
Depth	Sample Type	Depth Cased & (to Water)	Strength kPa	w(%)	SPT N	Description	Depth	Legend	Level (m OD)
0.00 - 0.60	B	1.20 (DRY)			C15	Grass over TOPSOIL: Soft dark grey mottled black slightly sandy slightly gravelly clay with many rootlets. Gravel is subangular to subrounded fine to coarse of various lithologies.	0.50		85.03
0.20	ES								
0.50	ES								
0.60 - 1.20	B					Brown gravelly clayey fine to coarse SAND with occasional bands of clay. Gravel is subangular to subrounded fine to coarse of various lithologies.			
1.00	ES								
1.20 - 1.65		3.00 (DRY)			S19	Below 1.20m, medium dense. Grading to sand and gravel.	1.80		83.73
1.20 - 1.65	B								
2.00 - 2.45	B					Soft dark grey slightly sandy slightly gravelly CLAY with a low subangular to subrounded cobble content of siltstone and sandstone. Gravel is subrounded to rounded fine to medium including mudstone, siltstone and sandstone.			
2.50	B					Brown silty fine to coarse SAND.			
3.00 - 3.45						Soft to firm brown mottled orange slightly gravelly sandy CLAY. Gravel is subangular to subrounded fine to medium including mudstone, siltstone and sandstone.			
3.00 - 3.45	B	3.00 (DRY)	15		C27	Below 3.00m, stiff.	3.80		81.73
3.00 - 3.45	D								
3.80	B								
4.00 - 4.45									
4.00 - 4.45	B								
4.00 - 4.45	D	3.00 (DRY)	18		C28				
5.00 - 5.45									
5.00 - 5.45	B								
5.00 - 5.45	D								
6.00 - 6.45									
7.00 - 7.38		3.00 (DRY)			S50/225mm	Extremely weak to very weak bluish grey MUDSTONE (Recovered as gravel).	6.90		78.63
7.00 - 7.45	D					End of Borehole			
							7.38		78.15

Boring				Progress				Groundwater					
Depth	Hole Dia.	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed
1.20	0.40	Inspection Pit	DF/SF	0.00			30/11/23	08:00	2.00	2.00	1.00	20	3.00
7.38	0.15	Cable Percussion	DF/SF	7.38	3.00	DRY	30/11/23	16:00					

Remarks	AGS	Inspection pit hand excavated to 1.20m depth and no services were found. ES sample = 1 x 60ml glass vial, 2 x 258ml amber glass jars and 1 x 1 litre plastic tub. Chiselling: 5.50-5.70m for 60 minutes. A 19mm standpipe was installed to 8.50m with a geowrapped slotted section from 6.50m to 8.50m and a 50m standpipe was installed to 4.00m with a geowrapped slotted section from 1.00m to 4.00m with an up-standing cover installed. Backfill details from base of hole: bentonite seal up to 8.50m, gravel filter up to 6.50m, bentonite seal up to 4.00m, gravel filter up to 1.00m, bentonite seal up to 0.20m, concrete up to ground level. Logged in accordance with BS5930:2015 + A1:2020	Logged by SF Checked by JK Figure Sheet 1 of 1 04/03/2024
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BOREHOLE RECORD - Cable Percussion

Project	Pyramid Park, Bury	Engineer	Campbell Reith Hill LLP	Project No.	PN234595
Client	Campbell Reith Hill LLP	National Grid Coordinates	380562.3 E 410266.2 N	Borehole	BH107
				Ground Level	90.59 m OD

Sampling			Properties			Strata	Scale 1:50		
Depth	Sample Type	Depth Cased & (to Water)	Strength kPa	w(%)	SPT N	Description	Depth	Legend	Level (m OD)
0.00 - 0.30	B					MADE GROUND: Black asphalt.	0.10		90.49
0.20	ES					MADE GROUND: Light grey sandy angular to subangular fine to coarse gravel of limestone and concrete fragments (Sub base).	0.30		90.29
0.30 - 1.20	B					MADE GROUND: Reddish brown gravelly slightly clayey fine to coarse sand. Gravel is angular to subangular fine to coarse of clinker and brick fragments.			
0.30 - 1.20	ES								
0.50	ES								
1.00	ES								
1.20 - 1.55		1.20 (DRY)			C48/200mm	MADE GROUND: Greyish brown sandy clayey angular to subrounded fine to coarse gravel of siltstone, sandstone, slag, concrete and brick fragments. Low angular cobble content of concrete and bricks.	1.20		89.39
1.20 - 1.65	B								
2.00 - 2.27		2.00 (DRY)			C50/120mm				
2.00	ES								
2.00 - 2.45	B								
2.00 - 2.45	D								
3.00 - 3.45		3.00 (DRY)			C27	Below 3.00m, medium dense.			
3.00	ES								
3.00 - 3.45	B								
4.00 - 4.45		4.00 (DRY)			C34	MADE GROUND: Very stiff dark greyish brown slightly sandy gravelly clay. Gravel is angular to subrounded fine to coarse of siltstone, sandstone, slag, concrete and brick fragments.	4.00		86.59
4.00	ES			20					
4.00 - 4.45	B								
4.00 - 4.45	D								
5.00 - 5.45		5.00 (DRY)			C35				
5.00	ES								
5.00 - 5.45	B								
6.00 - 6.45		6.00 (DRY)			C20	Medium dense brown gravelly medium to coarse SAND. Gravel is subangular to subrounded fine to medium of various lithologies.	6.10		84.49
6.00	ES								
6.00 - 6.45	B								
7.50 - 7.95		7.60 (6.00)			C20	Below 7.50m, grading to very sandy clayey fine to coarse gravel.			
7.50 - 7.95	B								
8.50	B					Soft to firm brown mottled grey slightly sandy slightly gravelly CLAY. Gravel is subangular to subrounded fine to coarse including mudstone, siltstone and sandstone.	8.50		82.09
9.00 - 9.45	UT27	9.00 (DRY)	101			Between 9.00-9.45m, UUT, Cu = 101kPa, high strength.			
9.00 - 9.45									
10.00	D						10.00		80.59

Boring				Progress				Groundwater					
Depth	Hole Dia.	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed
1.20	0.40	Inspection Pit	DF/SF	0.00			20/11/23	08:00	7.00	7.00	6.00	20	9.00
11.77	0.15	Cable Percussion	DF/SF	2.50	2.50	DRY	20/11/23	16:00					
				2.50	2.50	DRY	21/11/23	08:00					
				11.77	11.50	DRY	21/11/23	16:00					

Remarks

AGS Inspection pit hand excavated to 1.20m depth and no services were found.

ES sample = 1 x 60ml glass vial, 2 x 258ml amber glass jars and 1 x 1 litre plastic tub.

Chiselling: 2.00-2.30m for 60 minutes, 5.50-5.60m for 60 minutes and 11.30-11.40m for 60 minutes.

A 19mm standpipe was installed to 8.50m with a geowrapped slotted section from 6.50m to 8.50m and a 50mm standpipe was installed to 4.00m with a geowrapped slotted section from 1.00m to 4.00m with an up-standing cover installed.

Backfill details from base of hole: bentonite seal up to 8.50m, gravel filter up to 6.50m, bentonite seal up to 4.00m, gravel filter up to 1.00m, bentonite seal up to 0.20m, concrete up to ground level.

Logged in accordance with BS5930:2015 + A1:2020

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Figure Sheet 1 of 2

04/03/2024

BOREHOLE RECORD - Cable Percussion

Project		Pyramid Park, Bury		Engineer		Campbell Reith Hill LLP		Project No.		PN234595	
Client		Campbell Reith Hill LLP		National Grid Coordinates		380562.3 E 410266.2 N		Borehole		BH107	
								Ground Level		90.59 m OD	

Sampling			Properties			Strata				Scale 1:50		
Depth	Sample Type	Depth Cased & (to Water)	Strength kPa	w(%)	SPT N	Description	Depth	Legend	Level (m OD)			
10.50 - 10.92		9.00 (DRY)			S50/265mm	Stiff to very stiff reddish brown slightly sandy slightly gravelly CLAY. Gravel is subangular to subrounded fine to medium of sandstone.						
10.50 - 10.92	D			17								
10.50 - 10.95	B											
11.50 - 11.76		10.50 (DRY)			S50/115mm	Extremely weak to very weak laminated reddish brown MUDSTONE.	11.40		79.19			
11.50 - 11.77	D					End of Borehole	11.77		78.82			

Boring				Progress					Groundwater					
Depth	Hole Dia.	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks


Symbols and abbreviations are explained on the accompanying key sheets.
All dimensions are in metres.

Logged in accordance with BS5930:2015 + A1:2020

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Sheet 2 of 2

04/03/2024



BOREHOLE RECORD - Cable Percussion

Project	Pyramid Park, Bury	Engineer	Campbell Reith Hill LLP	Project No.	PN234595
Client	Campbell Reith Hill LLP	National Grid Coordinates	380616.2 E 410293.1 N	Borehole	BH108
				Ground Level	85.57 m OD

Sampling			Properties			Strata	Scale 1:50		
Depth	Sample Type	Depth Cased & (to Water)	Strength kPa	w(%)	SPT N	Description	Depth	Legend	Level (m OD)
0.00 - 1.20	B					Grass over TOPSOIL: Brown sandy clayey subrounded to rounded fine to coarse gravel of various lithologies including mudstone, siltstone and sandstone. Medium cobble content. Occasional rootlets.	0.10		85.47
0.20	ES								
0.50	ES					Brown sandy clayey subrounded to rounded fine to coarse GRAVEL of various lithologies. Low subangular to subrounded cobble content of siltstone and sandstone.			
1.00	ES								
1.20 - 1.65		1.20 (1.00)			C19	Below 1.20m, medium dense.			
2.00 - 2.45		2.00 (1.00)			C20	Medium dense brown very sandy slightly clayey subrounded to rounded fine to coarse GRAVEL of various lithologies.	2.00		83.57
3.00 - 3.45		3.00 (DRY)			S16	Firm to stiff brown slightly sandy slightly gravelly CLAY. Gravel is subangular to subrounded fine to medium including mudstone, siltstone and sandstone.	3.00		82.57
3.00	B			15					
3.00 - 3.45	D								
4.00 - 4.45		3.00 (DRY)			S22				
4.00	B			19					
4.00 - 4.45	D								
5.00 - 5.39		4.50 (DRY)			SS0/240mm	Extremely weak to very weak bluish grey MUDSTONE.	4.80		80.77
5.00 - 5.45	D					End of Borehole	5.39		80.18

Boring				Progress				Groundwater					
Depth	Hole Dia.	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed
1.20	0.40	Inspection Pit	DF/SF	0.00			22/11/23	08:00	0.20		0.00	20	3.00
5.39	0.15	Cable Percussion	DF/SF	3.00	3.00	1.00	22/11/23	16:00					
				3.00	3.00	DRY	23/11/23	08:00					
				5.39	4.50	DRY	23/11/23	16:00					

Remarks	AGS	Inspection pit hand excavated to 1.20m depth and no services were found. (Pit obscured by water from 0.20m depth). ES sample = 1 x 60ml glass vial, 2 x 258ml amber glass jars and 1 x 1 litre plastic tub. A 50mm standpipe was installed to 6.00m with a geowrapped slotted section from 2.00m to 6.00m with an up-standing cover installed. Backfill details from base of hole: bentonite seal up to 6.00m, gravel filter up to 2.00m, bentonite seal up to 0.20m, concrete up to ground level.	Logged by ZL Checked by JK Figure Sheet 1 of 1 04/03/2024
Symbols and abbreviations are explained on the accompanying key sheets. All dimensions are in metres. Logged in accordance with BS5930:2015 + A1:2020			

FIELDWORK RESULTS - SPT Results Summary

Project Pyramid Park, Bury

Engineer

Campbell Reith Hill LLP

Project No.

PN234595

Client Campbell Reith Hill LLP

Hole	Depth (m bgl)	Level (m OD)	SPT Type	SWP (mm)	Seating Drive		Test Drive				SPT 'N' Value	Uncorrected SPT 'N' value				
					0 - 75 (mm)	75 - 150 (mm)	0 - 75 (mm)	75 - 150 (mm)	150 - 225 (mm)	225 - 300 (mm)		10	20	30	40	50
BH101	1.20	85.15	S		2	3	4	4	5	6	19					
BH101	3.00	83.35	S		6	10	12	14	18	6	50/240					
BH101	4.00	82.35	S		6	8	15	10	10	12	47					
BH101	5.00	81.35	S		8	7	20	12	9	9	50/290					
BH101	6.00	80.35	S		4	5	12	13	18	7	50/240					

Hammer No.:	AR1101	Remarks
Energy Ratio, Er (%):	72	

-/- Blows/penetration (mm) after seating

S - SPT with split spoon sampler

-*/- Total blows/penetration (mm)

C - SPT with cone

SWP Penetration under own weight (mm)

L - Split Spoon liner used



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FIELDWORK RESULTS - SPT Results Summary

Project Pyramid Park, Bury

Engineer

Campbell Reith Hill LLP

Project No.

PN234595

Client

Campbell Reith Hill LLP

Hole	Depth (m bgl)	Level (m OD)	SPT Type	SWP (mm)	Seating Drive		Test Drive				SPT 'N' Value	Uncorrected SPT 'N' value				
					0 - 75 (mm)	75 - 150 (mm)	0 - 75 (mm)	75 - 150 (mm)	150 - 225 (mm)	225 - 300 (mm)		10	20	30	40	50
BH102	1.20	85.54	S		4	4	4	4	4	4	16					
BH102	2.00	84.74	S		5	5	6	7	8	8	29					
BH102	3.00	83.74	C		6	7	8	9	9	9	35					
BH102	4.00	82.74	S		8	16	30	20			50/115					
BH102	5.00	81.74	S		13	17	50				50/75					
BH102	6.00	80.74	S		25		50				50/60					
BH102	7.50	79.24	S		9	15	27	23			50/125					
Hammer No.:			AR1101				Remarks									
Energy Ratio, Er (%):			72													

-/- Blows/penetration (mm) after seating

S - SPT with split spoon sampler

-*/- Total blows/penetration (mm)

C - SPT with cone

SWP Penetration under own weight (mm)

L - Split Spoon liner used



Printed: 04/12/2023

FIELDWORK RESULTS - SPT Results Summary

Project Pyramid Park, Bury

Engineer

Campbell Reith Hill LLP

Project No.

PN234595

Client Campbell Reith Hill LLP

Hole	Depth (m bgl)	Level (m OD)	SPT Type	SWP (mm)	Seating Drive		Test Drive				SPT 'N' Value	Uncorrected SPT 'N' value				
					0 - 75 (mm)	75 - 150 (mm)	0 - 75 (mm)	75 - 150 (mm)	150 - 225 (mm)	225 - 300 (mm)		10	20	30	40	50
BH103	1.20	84.85	S		3	3	3	4	3	3	13					
BH103	2.00	84.05	S		3	3	3	3	3	3	12					
BH103	3.00	83.05	S		3	4	5	5	5	5	20					
BH103	4.00	82.05	S		3	4	7	7	8	12	34					
BH103	5.00	81.05	S		4	5	6	10	14	12	42					
BH103	6.00	80.05	S		5	5	10	10	12	18	50/275					
BH103	7.50	78.55	S		5	7	10	14	14	12	50/265					
Hammer No.:			AR1101				Remarks									
Energy Ratio, Er (%):			72													

-/- Blows/penetration (mm) after seating

S - SPT with split spoon sampler

*/- Total blows/penetration (mm)

C - SPT with cone

SWP Penetration under own weight (mm)

L - Split Spoon liner used



Printed: 04/12/2023

FIELDWORK RESULTS - SPT Results Summary

Project Pyramid Park, Bury

Engineer

Campbell Reith Hill LLP

Project No.

PN234595

Client Campbell Reith Hill LLP

Hole	Depth (m bgl)	Level (m OD)	SPT Type	SWP (mm)	Seating Drive		Test Drive				SPT 'N' Value	Uncorrected SPT 'N' value				
					0 - 75 (mm)	75 - 150 (mm)	0 - 75 (mm)	75 - 150 (mm)	150 - 225 (mm)	225 - 300 (mm)		10	20	30	40	50
BH104	1.20	84.31	C		7	10	13	15	15	7	50/255					
BH104	2.00	83.51	C		25		50				50/70					
BH104	3.00	82.51	C		25		50				50/70					
BH104	4.00	81.51	C		25		50				50/40					
BH104	5.00	80.51	C		25		50				50/50					
BH104	6.00	79.51	C		25		50				50/50					

Hammer No.:	VC 1	Remarks
Energy Ratio, Er (%):	73	

-/- Blows/penetration (mm) after seating

S - SPT with split spoon sampler

-*/- Total blows/penetration (mm)

C - SPT with cone

SWP Penetration under own weight (mm)

L - Split Spoon liner used



Printed: 04/12/2023

FIELDWORK RESULTS - SPT Results Summary

Project Pyramid Park, Bury

Engineer

Campbell Reith Hill LLP

Project No.

PN234595

Client Campbell Reith Hill LLP

Hole	Depth (m bgl)	Level (m OD)	SPT Type	SWP (mm)	Seating Drive		Test Drive				SPT 'N' Value	Uncorrected SPT 'N' value				
					0 - 75 (mm)	75 - 150 (mm)	0 - 75 (mm)	75 - 150 (mm)	150 - 225 (mm)	225 - 300 (mm)		10	20	30	40	50
BH105	1.20	85.01	C		4	4	8	12	17	13	50/275					
BH105	2.00	84.21	C		5	5	5	5	6	6	22					
BH105	3.00	83.21	C		5	6	6	6	7	7	26					
BH105	4.00	82.21	C		7	8	12	16	18	4	50/230					

Hammer No.:	VC 1	Remarks
Energy Ratio, Er (%):	73	

-/- Blows/penetration (mm) after seating

S - SPT with split spoon sampler

-*/- Total blows/penetration (mm)

C - SPT with cone

SWP Penetration under own weight (mm)

L - Split Spoon liner used



Printed: 04/12/2023

FIELDWORK RESULTS - SPT Results Summary

Project	Pyramid Park, Bury
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Engineer

Campbell Reith Hill LLP

Project No.

PN234595

Client Campbell Reith Hill LLP

Hole	Depth (m bgl)	Level (m OD)	SPT Type	SWP (mm)	Seating Drive		Test Drive				SPT 'N' Value	Uncorrected SPT 'N' value				
					0 - 75 (mm)	75 - 150 (mm)	0 - 75 (mm)	75 - 150 (mm)	150 - 225 (mm)	225 - 300 (mm)		10	20	30	40	50
BH106	1.20	84.33	C		3	3	4	4	3	4	15					
BH106	3.00	82.53	S		3	4	4	5	5	5	19					
BH106	4.00	81.53	C		6	6	6	6	7	8	27					
BH106	5.00	80.53	C		6	6	5	7	8	8	28					
BH106	6.00	79.53	C		7	10	14	7	8	9	38					
BH106	7.00	78.53	S		10	10	15	18	17		50/225					

Hammer No.:	VC 1	Remarks
Energy Ratio, Er (%):	73	

-/- Blows/penetration (mm) after seating

S - SPT with split spoon sampler

-*/- Total blows/penetration (mm)

C - SPT with cone

SWP Penetration under own weight (mm)

L - Split Spoon liner used

Printed: 04/12/2023



FIELDWORK RESULTS - SPT Results Summary

Project Pyramid Park, Bury

Engineer

Campbell Reith Hill LLP

Project No.

PN234595

Client

Campbell Reith Hill LLP

Hole	Depth (m bgl)	Level (m OD)	SPT Type	SWP (mm)	Seating Drive		Test Drive				SPT 'N' Value	Uncorrected SPT 'N' value				
					0 - 75 (mm)	75 - 150 (mm)	0 - 75 (mm)	75 - 150 (mm)	150 - 225 (mm)	225 - 300 (mm)		10	20	30	40	50
BH107	1.20	89.39	C		5	7	10	19	19		48/200					
BH107	2.00	88.59	C		9	14	27	23			50/120					
BH107	3.00	87.59	C		4	5	6	7	7	7	27					
BH107	4.00	86.59	C		7	8	9	10	7	8	34					
BH107	5.00	85.59	C		10	7	8	9	9	9	35					
BH107	6.00	84.59	C		4	4	5	5	5	5	20					
BH107	7.50	83.09	C		5	5	6	5	4	5	20					
BH107	10.50	80.09	S		10	10	15	17	15	3	50/265					
BH107	11.50	79.09	S		2	17	27	23			50/115					

Hammer No.:	VC 1	Remarks
Energy Ratio, Er (%):	73	

-/- Blows/penetration (mm) after seating

S - SPT with split spoon sampler

*/- Total blows/penetration (mm)

C - SPT with cone

SWP Penetration under own weight (mm)

L - Split Spoon liner used



Printed: 04/12/2023

FIELDWORK RESULTS - SPT Results Summary

Project Pyramid Park, Bury

Engineer

Campbell Reith Hill LLP

Project No.

PN234595

Client

Campbell Reith Hill LLP

Hole	Depth (m bgl)	Level (m OD)	SPT Type	SWP (mm)	Seating Drive		Test Drive				SPT 'N' Value	Uncorrected SPT 'N' value				
					0 - 75 (mm)	75 - 150 (mm)	0 - 75 (mm)	75 - 150 (mm)	150 - 225 (mm)	225 - 300 (mm)		10	20	30	40	50
BH108	1.20	84.37	C		5	4	4	5	5	5	19					
BH108	2.00	83.57	C		5	5	5	5	5	5	20					
BH108	3.00	82.57	S		3	4	4	4	4	4	16					
BH108	4.00	81.57	S		5	5	5	5	6	6	22					
BH108	5.00	80.57	S		6	6	10	14	16	10	50/240					
Hammer No.:			VC 1				Remarks									
Energy Ratio, Er (%):			73													

-/- Blows/penetration (mm) after seating

S - SPT with split spoon sampler

-*/- Total blows/penetration (mm)

C - SPT with cone

SWP Penetration under own weight (mm)

L - Split Spoon liner used



Printed: 04/12/2023

SPT Hammer Energy Test Report

in accordance with BSEN ISO 22476-3:2005

ARCHWAY ENGINEERING UK LTD
AINLEYS INDUSTRIAL ESTATE
ELLAND
WEST YORKSHIRE
HX5 9JP

SPT Hammer Ref: VC 1
Test Date: 25/01/2023
Report Date: 25/01/2023
File Name: VC 1.spt
Test Operator: CM

Instrumented Rod Data

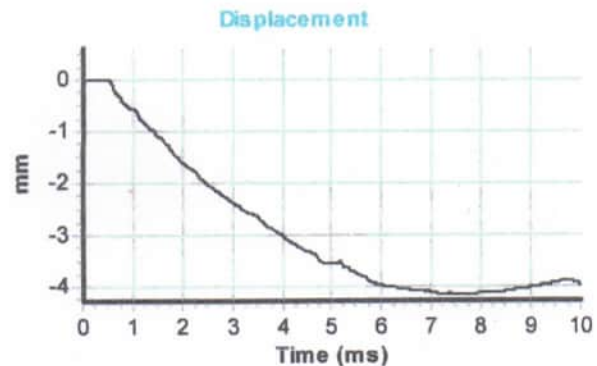
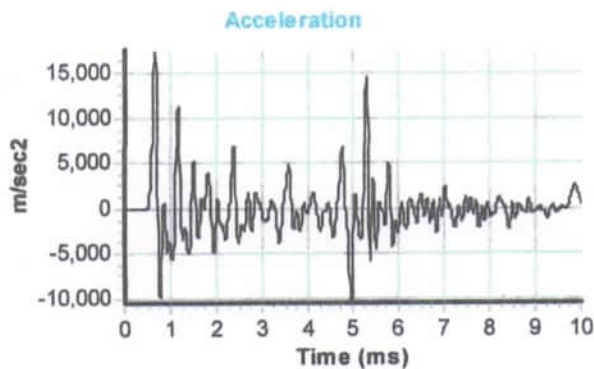
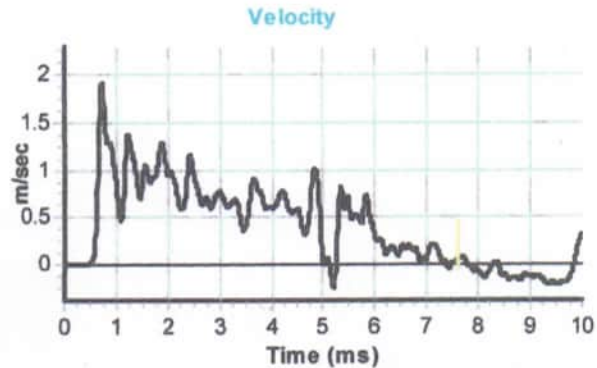
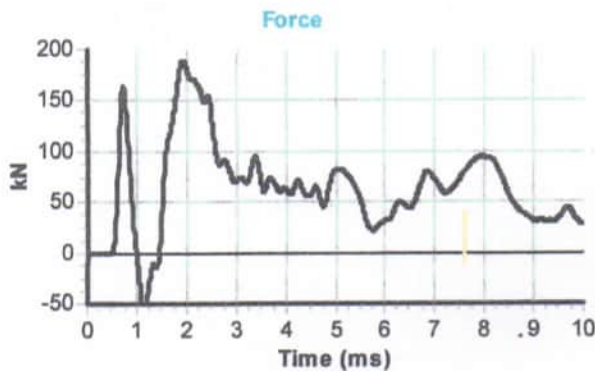
Diameter d_r (mm): 54
Wall Thickness t_r (mm): 6.0
Assumed Modulus E_a (GPa): 200
Accelerometer No.1:
Accelerometer No.2:

SPT Hammer Information

Hammer Mass m (kg): 63.5
Falling Height h (mm): 760
SPT String Length L (m): 10.0

Comments / Location

VC DRILLING LTD - 83450



Calculations

Area of Rod A (mm^2): 905
Theoretical Energy E_{theor} (J): 473
Measured Energy E_{meas} (J): 347

Energy Ratio E_r (%): **73**

Signed: J. LOCK
Title: FITTER

SPT Hammer Energy Test Report

In accordance with BSEN ISO 22476-3:2005

ARCHWAY ENGINEERING UK LTD
AINLEYS INDUSTRIAL ESTATE
ELLAND
WEST YORKSHIRE
HX5 9JP

SPT Hammer Ref: AR1101
Test Date: 25/01/2023
Report Date: 25/01/2023
File Name: AR1101.spt
Test Operator: CM

Instrumented Rod Data

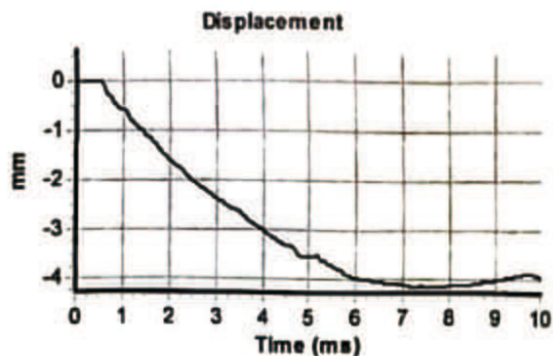
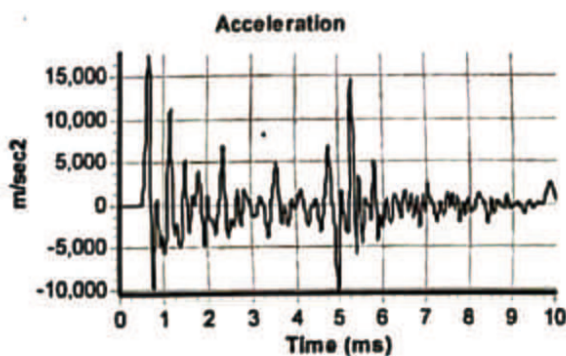
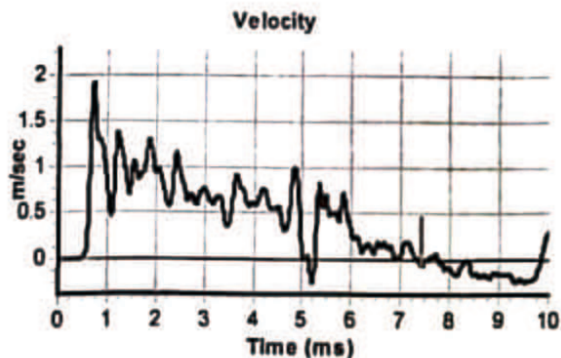
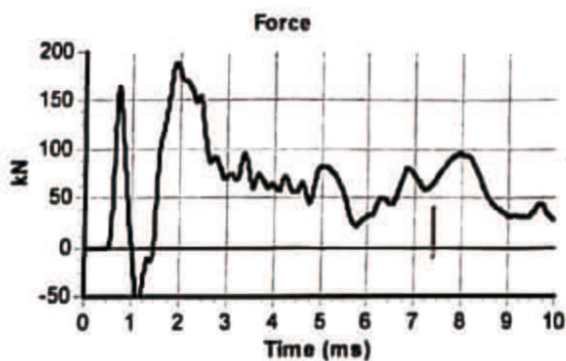
Diameter d_r (mm): 54
Wall Thickness t_r (mm): 6.0
Assumed Modulus E_a (GPa): 200
Accelerometer No.1:
Accelerometer No.2:

SPT Hammer Information

Hammer Mass m (kg): 63.5
Falling Height h (mm): 760
SPT String Length L (m): 10.0

Comments / Location

VC DRILLING LTD - 83450



Calculations

Area of Rod A (mm^2): 905
Theoretical Energy E_{theor} (J): 473
Measured Energy E_{meas} (J): 339

Energy Ratio E_r (%): **72**

Signed: J. LOCK
Title: FITTER

APPENDIX 7

Monitoring Results

FIELDWORK - *In Situ Gas Monitoring - Visit Record*

Project	Pyramid Park, Bury	Client	Campbell Reith Hill LLP	Project No.	PN234595
		Instrument used	GA5000 Tiger PID	Date	10/01/2024

Meteorological Conditions:
 Ground Condition:
 Precipitation:
 Wind:
 Cloud Cover:
 Atmospheric Pressure Trend:

Location ID	Pipe Ref.	Installation Diameter (mm)	Time of Reading (hh:mm:ss)	Flow (Peak) (l/hr)	Flow (Steady) (l/hr)	Methane (Peak) (% v/v)	Methane (Steady) (% v/v)	Carbon Dioxide (Peak) (% v/v)	Carbon Dioxide (Steady) (% v/v)	Oxygen (Peak) (% v/v)	Oxygen (Steady) (% v/v)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)	PID (ppm)	Air Temperature (°C)	Atmospheric Pressure (mb)	Diff. Pressure (Pa)	Depth to Water (m bgl)	Depth to Base (m bgl)	Remarks
BH101	1	50	08:57:34	1.6	1.3	0.0	0.0	0.6	0.6	20.9	14.5	0	0		4.0	1020	85	3.18	6.26	
BH102	1	33	09:24:51	-0.3	-0.3	0.0	0.0	0.4	0.4	21.1	19.8	0	0		4.0	1021	80	4.34	7.48	
BH102	2	50	09:16:44	0.0	0.0	0.0	0.0	2.7	2.7	21.2	13.1	0	0		4.0	1021	84	1.23	1.63	
BH104	1	50	09:51:58	0.3	0.3	0.1	0.1	0.8	0.8	21.4	13.5	0	0		4.0	1023	86	2.82	4.39	
BH105	1	50	10:36:31	25.0	20.4	0.0	0.0	2.1	2.1	21.2	18.3	3	0		4.0	1023	80	0.48	2.16	
BH106	1	50	10:15:07	0.3	0.3	0.0	0.0	0.2	0.2	21.4	21.4	0	0		4.0	1023	78	2.37	3.83	
BH106	2	19	10:08:25	0.0	0.0	0.0	0.0	0.2	0.2	21.3	20.8	0	0		4.0	1023	79	1.13	2.07	
BH107	1	19	11:21:06	0.3	0.3	0.0	0.0	0.1	0.1	21.6	21.5	0	0		4.0	1022	78	5.97	7.66	
BH107	2	50	11:13:33	0.0	0.0	0.0	0.0	0.2	0.2	21.5	21.4	1	0		4.0	1022	78	DRY	3.98	
BH108	1	50	10:51:34	7.8	5.9	0.0	0.0	0.9	0.9	21.4	18.5	0	0		4.0	1022	81	0.13	2.30	

FIELDWORK - *In Situ Gas Monitoring - Visit Record*

Project	Pyramid Park, Bury	Client	Campbell Reith Hill LLP	Project No.	PN234595
		Instrument used	GA5000	Date	24/01/2024

Meteorological Conditions:
 Ground Condition:
 Precipitation:
 Wind:
 Cloud Cover:
 Atmospheric Pressure Trend:

Location ID	Pipe Ref.	Installation Diameter (mm)	Time of Reading (hh:mm:ss)	Flow (Peak) (l/hr)	Flow (Steady) (l/hr)	Methane (Peak) (% v/v)	Methane (Steady) (% v/v)	Carbon Dioxide (Peak) (% v/v)	Carbon Dioxide (Steady) (% v/v)	Oxygen (Peak) (% v/v)	Oxygen (Steady) (% v/v)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)	PID (ppm)	Air Temperature (°C)	Atmospheric Pressure (mb)	Diff. Pressure (Pa)	Depth to Water (m bgl)	Depth to Base (m bgl)	Remarks
BH101	1	50	11:32:30	0.0	0.0	0.0	0.0	0.4	0.4	21.5	18.8	0	0		8.0	1010	81	3.18		
BH102	1	33	12:03:17	4.3	2.2	0.0	0.0	0.3	0.3	21.6	21.3	1	0		8.0	1011	78	4.31		
BH102	2	50	11:51:33	0.0	0.0	0.0	0.0	0.3	0.3	21.6	21.0	0	0		8.0	1010	79	1.17		
BH103	1	50	12:21:13	-12.1	-10.5	0.0	0.0	2.8	2.8	21.6	10.0	0	0		8.0	1012	87	2.92	7.03	
BH104	1	50	12:44:32	-7.2	-5.1	0.0	0.0	2.1	2.1	21.8	8.7	0	0		8.0	1013	89	3.81		
BH105	1	50	13:26:44	13.6	9.1	0.0	0.0	2.4	2.4	21.9	15.9	1	0		8.0	1012	82	0.19		
BH106	1	50	13:09:48	-6.3	-2.1	0.0	0.0	1.5	0.2	21.8	18.2	1	0		8.0	1013	82	2.58		
BH106	2	19	12:59:35	0.4	0.4	0.0	0.0	4.7	4.7	21.8	7.9	0	0		8.0	1013	87	1.31		
BH107	1	19	14:17:38	-0.8	-0.8	0.0	0.0	0.1	0.1	22.0	19.8	1	0		8.0	1012	80	6.05		
BH107	2	50	14:09:30	0.1	0.1	0.0	0.0	0.2	0.2	22.0	21.7	0	0		8.0	1011	78	DRY		
BH108	1	50	13:48:51	-0.3	-0.3	0.0	0.0	0.5	0.5	21.9	21.3	4	0		8.0	1013	78	0.15		

FIELDWORK - *In Situ Gas Monitoring - Visit Record*

Project	Pyramid Park, Bury	Client	Campbell Reith Hill LLP	Project No.	PN234595
		Instrument used	GA5000 Tiger PID	Date	31/01/2024

Meteorological Conditions:
 Ground Condition:
 Precipitation:
 Wind:
 Cloud Cover:
 Atmospheric Pressure Trend:

Location ID	Pipe Ref.	Installation Diameter (mm)	Time of Reading (hh:mm:ss)	Flow (Peak) (l/hr)	Flow (Steady) (l/hr)	Methane (Peak) (% v/v)	Methane (Steady) (% v/v)	Carbon Dioxide (Peak) (% v/v)	Carbon Dioxide (Steady) (% v/v)	Oxygen (Peak) (% v/v)	Oxygen (Steady) (% v/v)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)	PID (ppm)	Air Temperature (°C)	Atmospheric Pressure (mb)	Diff. Pressure (Pa)	Depth to Water (m bgl)	Depth to Base (m bgl)	Remarks
BH101	1	50	09:28:28	0.4	0.4	0.0	0.0	0.7	0.6	21.7	17.2	0	0	0.1	5.0	1014	82	3.19		
BH102	1	33	10:01:59	17.2	14.6	0.0	0.0	1.0	1.0	21.8	16.4	0	0	0.2	5.0	1014	83	4.69		
BH102	2	50	09:51:15	0.0	0.0	0.0	0.0	0.4	0.4	21.7	21.5	0	0	0.1	5.0	1014	78	1.13		
BH103	1	50	10:22:39	6.1	5.5	0.0	0.0	3.0	3.0	21.9	10.7	0	0	0.5	5.0	1013	86	3.34		
BH104	1	50	10:41:33	0.7	0.7	0.0	0.0	2.3	2.3	22.0	9.8	0	0	0.5	5.0	1014	86	2.89		
BH105	1	50	11:31:04	18.2	11.1	0.0	0.0	1.8	1.8	22.2	21.0	0	0	0.3	5.0	1014	77	0.28		
BH106	1	50	11:14:26	15.7	4.8	0.1	0.1	0.7	0.7	21.9	17.5	2	0	0.4	5.0	1013	82	2.81		
BH106	2	19	11:07:45	0.2	0.2	0.0	0.0	6.0	6.0	22.1	3.3	0	0	0.8	5.0	1014	91	1.15		
BH107	1	19	12:22:10	-0.3	-0.3	0.0	0.0	0.1	0.1	22.1	19.9	1	0	0.1	5.0	1012	80	6.01		
BH107	2	50	12:14:30	0.0	0.0	0.0	0.0	0.2	0.2	22.0	21.9	0	0	0.0	5.0	1013	78	DRY		
BH108	1	50	11:51:20	0.0	0.0	0.0	0.0	0.6	0.6	22.2	21.7	0	0	0.4	5.0	1014	78	0.37		

APPENDIX 8

Laboratory Test Results - Geotechnical

Laboratory Test Certificate

Form REP008 Rev 5

Issued from:	Geotechnics Ltd The Geotechnical Centre 203 Torrington Avenue Tile Hill Coventry, CV4 9AP	Date of issue	14/02/2024
		Issue No.	1
		Client Ref. No.	N/A
		Samples / Material Source	
		Samples Recv'd	09/01/2024
Testing Start Date	23/01/2024	Sample State	As received
Testing Complete	14/02/2024	Sampled by	Geotechnics Limited
Comments			
Project No	PN234595		
Project Name	Pyramid Park, Bury		

Summary of Tests

Standard	Test Description	Test Quantity	UKAS
BS EN ISO 17892-1:2014	Water Content	40	Yes
BS EN ISO 17892-12:2018 Cl. 5.3 & 5.5	Liquid Limit and Plastic Limit (4 Points Method)	25	Yes
BS EN ISO 17892-4:2016 Cl. 5.2	Particle Size Distribution by Sieving Method	13	Yes
BS EN ISO 17892-4:2016 Cl. 5.4	Particle Size Distribution by Pipette Method	3	Yes
BS 1377-4:1990 Cl. 3.3	2.5 kg Rammer Dry Density/Moisture Content Relationship (Compaction)	18	Yes
BS 1377-4:1990 Cl. 7.2	California Bearing Ratio (CBR)	5	Yes
Non BS1377 Test	Shear Strength by Hand Vane	41	No
BS 1377-4:1990 Cl. 5.5	Moisture Condition Value/Moisture Content Relationship	11	Yes
BS EN ISO 17892-8:2018	Shear Strength by Unconsolidated Undrained Triaxial Test - Single Stage	1	Yes

Note: Any descriptions, opinions or interpretations are outside the scope of UKAS accreditation.
The results within this report relate only to the samples tested and received from the client.



Test Results checked and approved for issue.
Signed for and on behalf of Geotechnics Limited

Paul Smart (Laboratory Testing Manager)



Classification and Strength

Symbol	C - Clay (0 - containing organic matter) Plasticity	M - Silt L - Low I - Intermediate H - High V - Very High E - Extremely High
I_p	Plasticity Index	
%	% retained on 425 μ m sieve, shown under I_p value	
w_L	Liquid Limit	
w_p	Plastic Limit	
NP	Non-Plastic	
NAT	Sample tested in natural state	
w	Water Content	
ρ_d	Particle Density	
Test	Quick undrained triaxial tests	
	SS	Single stage - 102mm diameter.
	S3	Single stage - set of 3 38mm diameter.
	MS	Multistage - 102mm diameter.
	D	Drained Test
	HV	Hand Vane
	PP	Pocket Penetrometer (kg/cm^2)
	NST	Not suitable for test
γ_b	Bulk Density	
σ_3	Triaxial Cell Pressure	
$\sigma_1 - \sigma_3$	Deviator Stress	
##	Excessive Strain	
c_u	Undrained Cohesion	
c	Cohesion Intercept	
ϕ	Angle of Shearing Resistance	
Linear Shrink	Linear Shrinkage	
Stab add-	Stabiliser which is added	

Consolidation

m_v	Coefficient of Volume Compressibility
c_{v50}	Coefficient of Consolidation - Log t
c_{v90}	Coefficient of Consolidation - $\sqrt{t}$

Rock

UF	Unacceptable Failure
----	----------------------

Chemical Analysis

Acid Soluble	Total sulphate in specimen, expressed as SO_3 %, value in brackets expressed as SO_4 %
Water Soluble	Soluble sulphate in 2:1 water : soil extract, expressed as SO_3 g/l, value in brackets expressed as SO_4 g/l
In Water	Sulphate content of groundwater, expressed as SO_3 g/l, value in brackets expressed as SO_4 g/l
pH	pH value
Organic content	Organic content expressed as a percentage of dry weight
Chloride	Chloride Ion content expressed as a percentage of dry weight

MCV, Compaction, CBR

MCV	Moisture Condition Value at natural water content
MCC	Moisture Condition Calibration
CCV	Chalk Crushing Value

Compaction

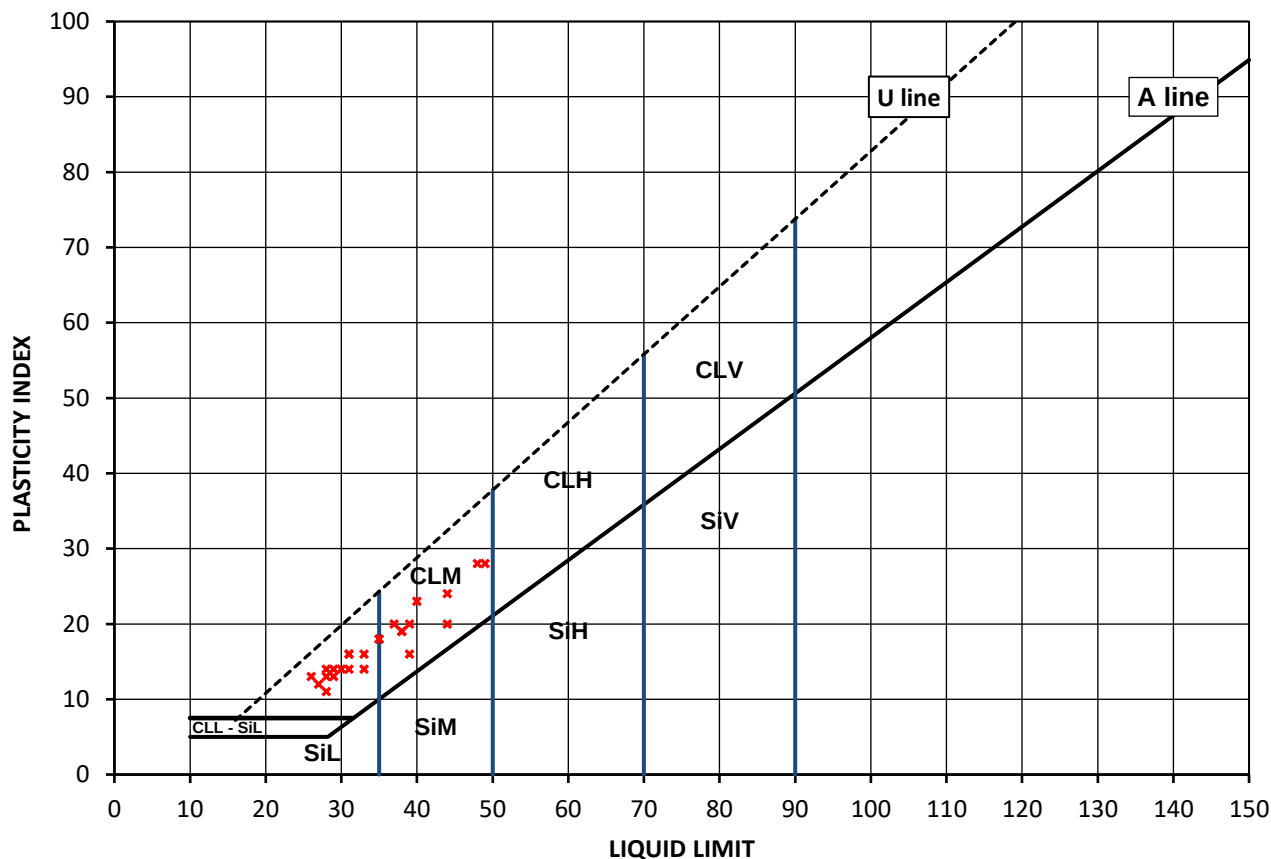
Type	2.5	=	2.5 kg Rammer
	4.5	=	4.5 kg Rammer
	V	=	Vibrating Hammer
γ_b	Bulk Density		
γ_d	Dry Density		
CBR California Bearing Ratio			
Type	2.5	=	Test on Specimen Recompacted using 2.5 kg Rammer
	4.5	=	As above but using 4.5 kg Rammer
	V	=	As above but using Vibrating Hammer
	M	=	Test on open drive mould specimen cut in field
	S	=	Soaked Specimen

Top	CBR at top of mould
Bottom	CBR at bottom of mould
ND	None Detected

* In the Sample Description denotes a laboratory only description

Project Name

Pyramid Park, Bury



Legend based on BS EN ISO 14688-2:2018

		Plasticity		Liquid Limit
CL	Clay	L	Low	below 35
Si	Silt	I	Medium	35 to 50
		H	High	50 to 70
		V	Very high	70 to 90
	Organic	O	append to classification for organic material (eg CHO)	

Date Printed

09/02/2024

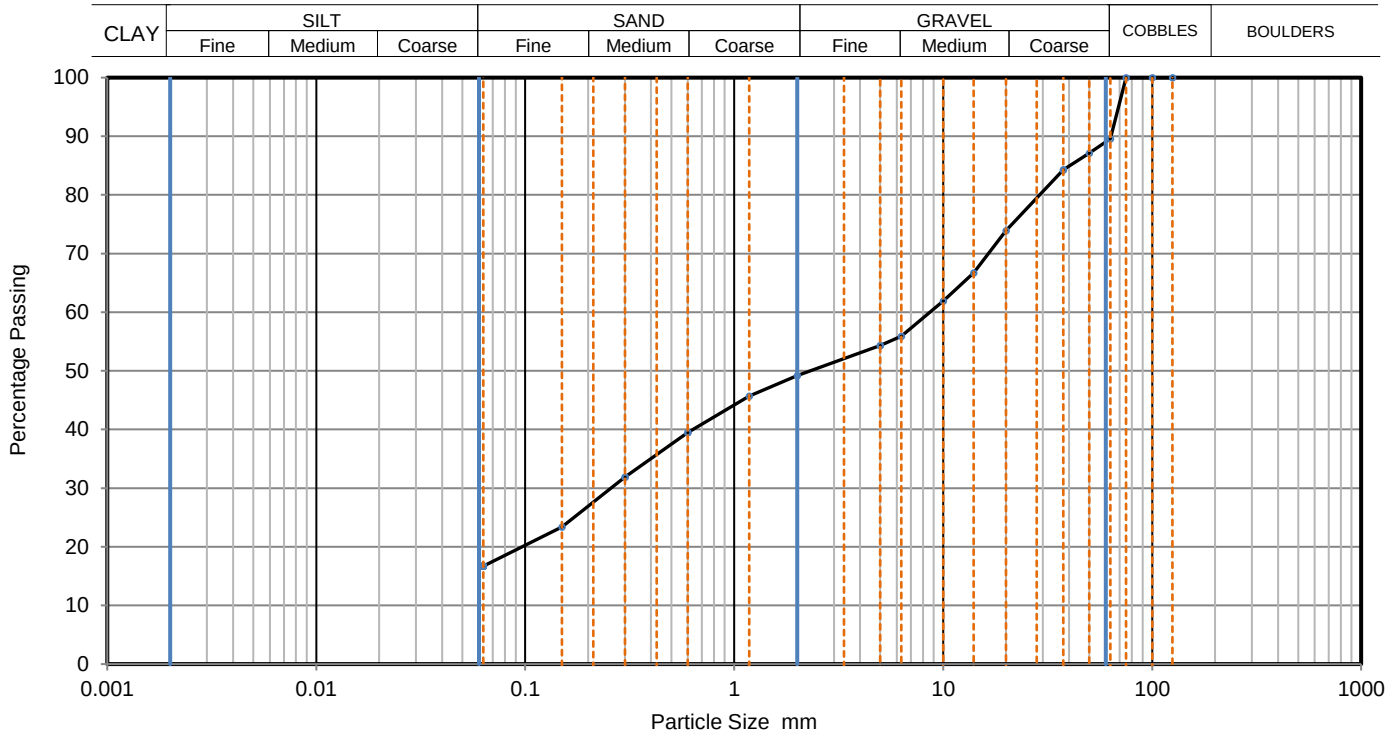
A' line derivation above PI of 6, PI = 0.73 (LL-20)

 GEOTECHNICS					Summary of Classification Test Results							
Project Number: PN234595					Project Name: Pyramid Park, Bury							
Hole Number	Sample				Specimen Description	w	Passing	LL	PL	PI	Particle	Remarks
	Sample ID	Top (m)	Base (m)	Type		Water Content %	425µm %	Liquid Limit %	Plastic Limit %	Plasticity Index %	Density Mg/m³	
BH101		1.20	1.65	D	Dark greyish brown slightly sandy slightly gravelly CLAY.	11.1						
BH101		2.00	2.45	UT	Brown mottled grey slightly sandy slightly gravelly CLAY.	18.4						WC - HV = 51 kPa
BH101		2.50		D	Light brown slightly sandy slightly gravelly CLAY.	9.3	39	39 4pt	19	20		
BH101		3.00	3.45	D	Light brown gravelly SAND.	16.1						
BH102		1.20	1.65	D	Dark greyish brown slightly sandy gravelly CLAY with roots.	17.2	58	38 4pt	19	19		
BH102		2.00	2.45	D	Dark brown slightly sandy slightly gravelly CLAY.	12.3	86	31 4pt	15	16		
BH102		4.00	4.27	D	Blueish grey GRAVEL.(Weathered mudstone)	13.4						
BH102		7.50	7.78	D	Blueish grey GRAVEL.(Weathered mudstone)	10.9						
BH103		1.20	1.65	B	Dark greyish brown slightly sandy slightly gravelly CLAY.	19.5	76	40 4pt	17	23		
BH103		4.00	4.45	B	Light orangeish brown slightly sandy slightly gravelly CLAY.	16.0	63	29 4pt	16	13		
BH103		6.00	6.43	D	Light orangeish brown mottled dark grey slightly sandy slightly gravelly CLAY.	21.0						
BH104		2.00		D	Light orangeish brown slightly sandy gravelly CLAY.	18.8	45	33 4pt	17	16		
BH104		4.00		D	Light orangeish brown slightly gravelly sandy CLAY.	14.0						
BH104		6.00	6.45	B	Brown mottled grey slightly sandy slightly gravelly CLAY.	15.1	90	35 4pt	17	18		
BH105		3.00	3.45	B	Brown slightly gravelly sandy CLAY.	20.1	76	31 4pt	15	16		
BH106		3.00	3.45	B	Brown slightly gravelly sandy CLAY.	15.2	77	28 4pt	14	14		
BH106		4.00	4.45	B	Brown slightly sandy slightly gravelly CLAY.	18.2	68	30 4pt	16	14		
BH107		4.00	4.45	B	MADE GROUND: Dark greyish brown slightly sandy gravelly clay.	20.2	46	39 4pt	23	16		
BH107		10.50	10.95	B	Reddish brown slightly sandy slightly gravelly CLAY.	16.9	80	28 4pt	17	11		
BH108		3.00		B	Brown slightly sandy slightly gravelly CLAY.	15.1	81	26 4pt	13	13		
BH108		4.00		B	Brown slightly sandy slightly gravelly CLAY.	19.1	79	27 4pt	15	12		
TP101		0.30	0.50	D	MADE GROUND: Dark brown and dark grey slightly sandy slightly gravelly clay.	17.1	68	38 4pt	19	19		
TP101		0.80	1.00	D	MADE GROUND: Dark grey slightly sandy slightly gravelly clay.	21.6	98	44 4pt	20	24		PI - Tested in natural condition.
TP103		2.00	2.20	D	Dark grey slightly sandy slightly gravelly CLAY.	22.6						
TP103		3.00	3.30	D	Dark grey slightly sandy slightly gravelly CLAY.	22.4	97	48 4pt	20	28		
All tests performed in accordance with BS EN ISO 17892 unless specified otherwise.												
Key: <u>Liquid Limit</u> 80g / 30deg fall cone with increasing water content unless specified otherwise Sample washed through 0.425mm sieve unless specified otherwise 1pt - single point test (including factor) * BS1377 method						<u>Particle density</u> sp - small pycno gj - gas jar BS1377 <u>Plastic Limit</u> NP - Non Plastic		Printed 19/02/2024				 1365

 GEOTECHNICS					Summary of Classification Test Results							
Project Number: PN234595					Project Name: Pyramid Park, Bury							
Hole Number	Sample				Specimen Description	w	Passing	LL	PL	PI	Particle	Remarks
	Sample ID	Top (m)	Base (m)	Type		Water Content %	425µm %	Liquid Limit %	Plastic Limit %	Plasticity Index %	Density Mg/m³	
TP104		0.80	1.00	D	MADE GROUND: Black and dark grey slightly sandy slightly gravelly clay.	32.8	77	49 4pt	21	28		
TP106		0.30	0.50	D	MADE GROUND: Black slightly sandy slightly gravelly clay.	24.4	72	44 4pt	24	20		
TP108		2.00	2.20	D	MADE GROUND: Dark greyish brown slightly sandy gravelly clay.	21.7	56	33 4pt	19	14		
TP110		0.70	0.90	D	Dark brown slightly sandy slightly gravelly CLAY.	14.2	34	31 4pt	17	14		
TP110		1.60	1.90	D	Orangish brown slightly sandy slightly gravelly CLAY.	16.9	48	28 4pt	15	13		
TP110		2.70	3.00	D	Brown mottled grey slightly sandy slightly gravelly CLAY.	12.6						
TP116A		0.80	1.00	D	Dark brown slightly gravelly clayey SAND.	14.6						
TP116A		2.00	2.20	D	Dark brown slightly sandy slightly gravelly CLAY.	19.6	87	35 4pt	17	18		
TP118		0.00	0.10	D	TOPSOIL: Brown gravelly clayey sand with some rootlets.	18.4						
TP118		0.50	0.80	D	Dark brown very sandy slightly clayey GRAVEL.	6.5						
TP119		4.00	4.20	D	Dark grey slightly sandy slightly gravelly CLAY.	10.9	85	29 4pt	15	14		
TP120		2.00	2.20	D	Dark brown slightly gravelly slightly sandy CLAY.	12.4	90	37 4pt	17	20		
TP120		2.70	3.00	D	Orangish brown mottled grey slightly sandy gravelly CLAY.	9.9						WC - Insufficient fine material for Atterberg test
TP123		0.70	0.90	D	Dark brown gravelly slightly clayey SAND.	11.7						
TP123		2.40	2.60	D	Dark grey sandy clayey GRAVEL.	10.3						
All tests performed in accordance with BS EN ISO 17892 unless specified otherwise.												
Key: <u>Liquid Limit</u> 80g / 30deg fall cone with increasing water content unless specified otherwise Sample washed through 0.425mm sieve unless specified otherwise 1pt - single point test (including factor) * BS1377 method <u>Particle density</u> sp - small pycno gj - gas jar BS1377 <u>Plastic Limit</u> NP - Non Plastic						Printed 19/02/2024				 1365		

PARTICLE SIZE DISTRIBUTION

Hole No.	BH101
Sample No.	
Depth m	0.80 - 1.20
Sample Type	B
Specimen Depth m	
Sample	



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
100	100		
75	100		
63	90		
50	87		
37.5	84		
20	74		
14	67		
10	62		
6.3	56		
5	54		
2	49		
1.18	46		
0.6	40		
0.3	32		
0.15	23		
0.063	17		

Sample Proportions	% dry mass
Cobbles	10
Gravel	40
Sand	33
Fines <0.063mm	17

Grading Analysis		
D100	mm	75
D60	mm	8.62
D30	mm	0.257
D10	mm	
Uniformity Coefficient		

Initial sample mass less than BS EN ISO 17892 requirements

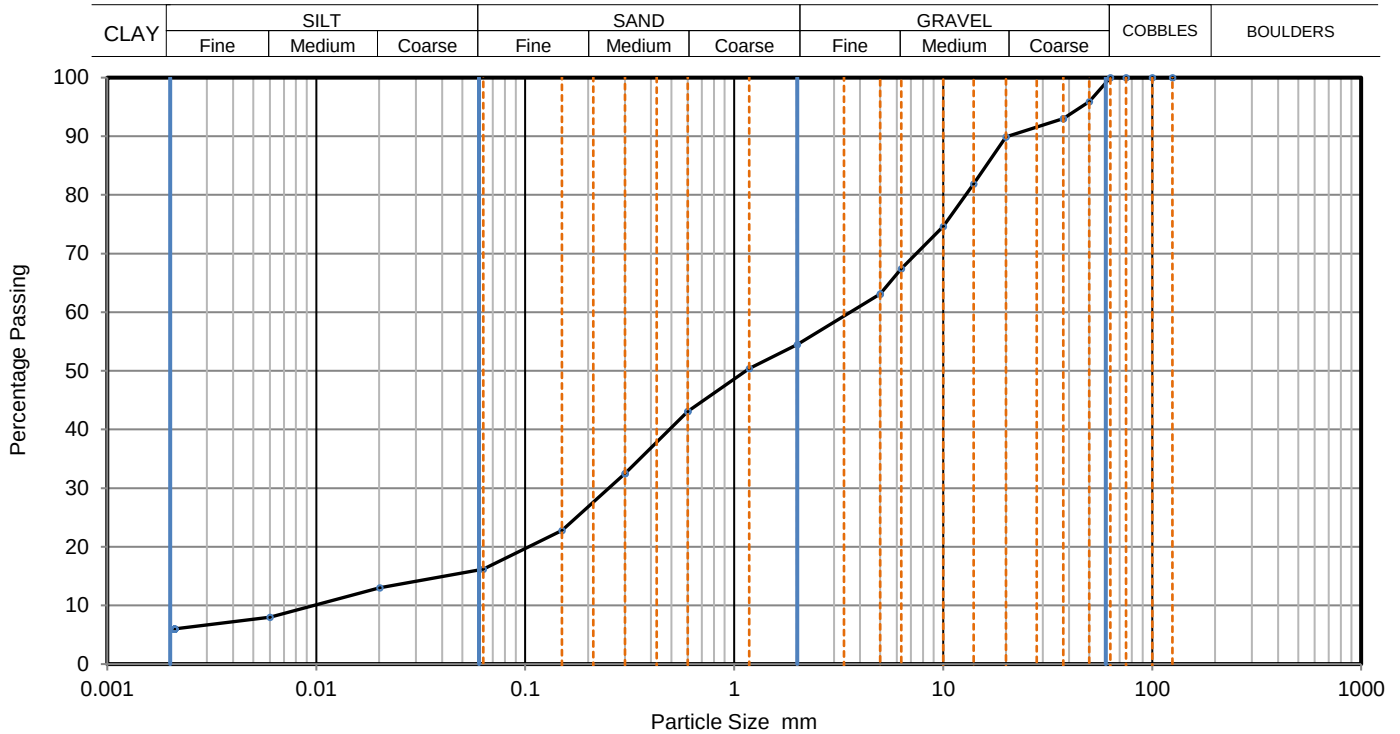
Remarks

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PARTICLE SIZE DISTRIBUTION

Hole No.	BH106
Sample No.	
Depth	



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.020	13
100	100	0.006	8
75	100	0.002	6
63	100		
50	96		
37.5	93		
20	90		
14	82		
10	75		
6.3	67		
5	63		
2	55		
1.18	50		
0.6	43		
0.3	33		
0.15	23	Particle density (assumed) 2.65 Mg/m3	
0.063	16		

Sample Proportions	% dry mass
Cobbles	0
Gravel	46
Sand	38
Silt	10
Clay	6

Grading Analysis		
D100	mm	63
D60	mm	3.59
D30	mm	0.251
D10	mm	0.00938
Uniformity Coefficient		380

PARTICLE SIZE DISTRIBUTION

Hole No.

BH107

Sample No.

Project Number:

PN234595

Depth

m

7.50 - 7.95

Project Name:

Pyramid Park, Bury

Sample Type

B

Specimen Description

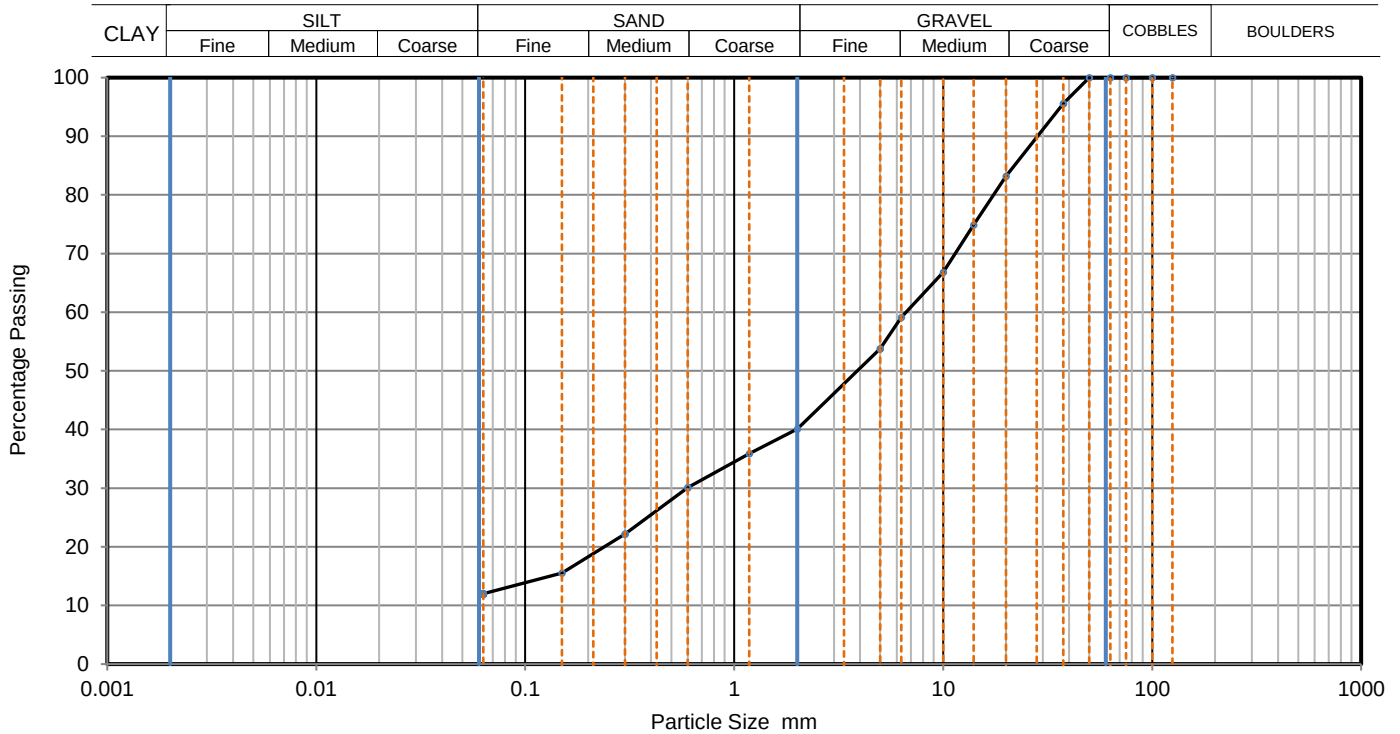
Brown very sandy clayey GRAVEL.

Specimen Depth

m

Test Method

ISO 17892 -4, by sieving on as received or wet sample



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
100	100		
75	100		
63	100		
50	100		
37.5	96		
20	83		
14	75		
10	67		
6.3	59		
5	54		
2	40		
1.18	36		
0.6	30		
0.3	22		
0.15	16		
0.063	12		

Sample Proportions	% dry mass
Cobbles	0
Gravel	60
Sand	28
Fines <0.063mm	12

Grading Analysis		
D100	mm	50
D60	mm	6.63
D30	mm	0.593
D10	mm	
Uniformity Coefficient		

Remarks

Printed

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PARTICLE SIZE DISTRIBUTION

Hole No.

HP117E

Sample No.

Project Number:

PN234595

Depth

m

0.00 - 0.40

Project Name:

Pyramid Park, Bury

Sample Type

B

Specimen Description

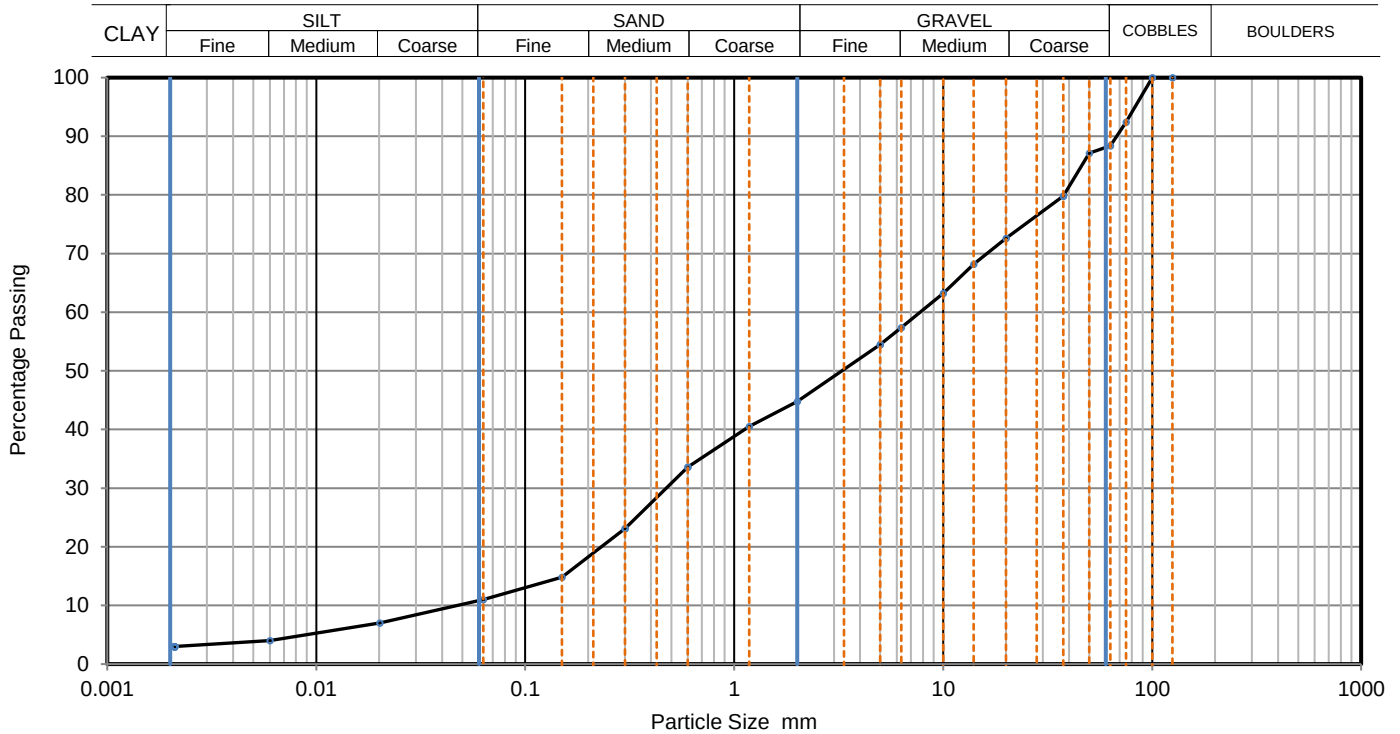
MADE GROUND: Dark brown very sandy clayey gravel with a medium cobble content.

Specimen Depth

m

Test Method

ISO 17892 -4, by sieving and pipette sedimentation



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.020	7
100	100	0.006	4
75	92	0.002	3
63	88		
50	87		
37.5	80		
20	73		
14	68		
10	63		
6.3	57		
5	55		
2	45		
1.18	41		
0.6	34		
0.3	23		
0.15	15	Particle density (assumed) 2.65 Mg/m3	
0.063	11		

Sample Proportions	% dry mass
Cobbles	12
Gravel	43
Sand	34
Silt	8
Clay	3

Grading Analysis	
D100	mm 100
D60	mm 7.76
D30	mm 0.473
D10	mm 0.0481
Uniformity Coefficient	160

Initial sample mass less than BS EN ISO 17892 requirements

Remarks

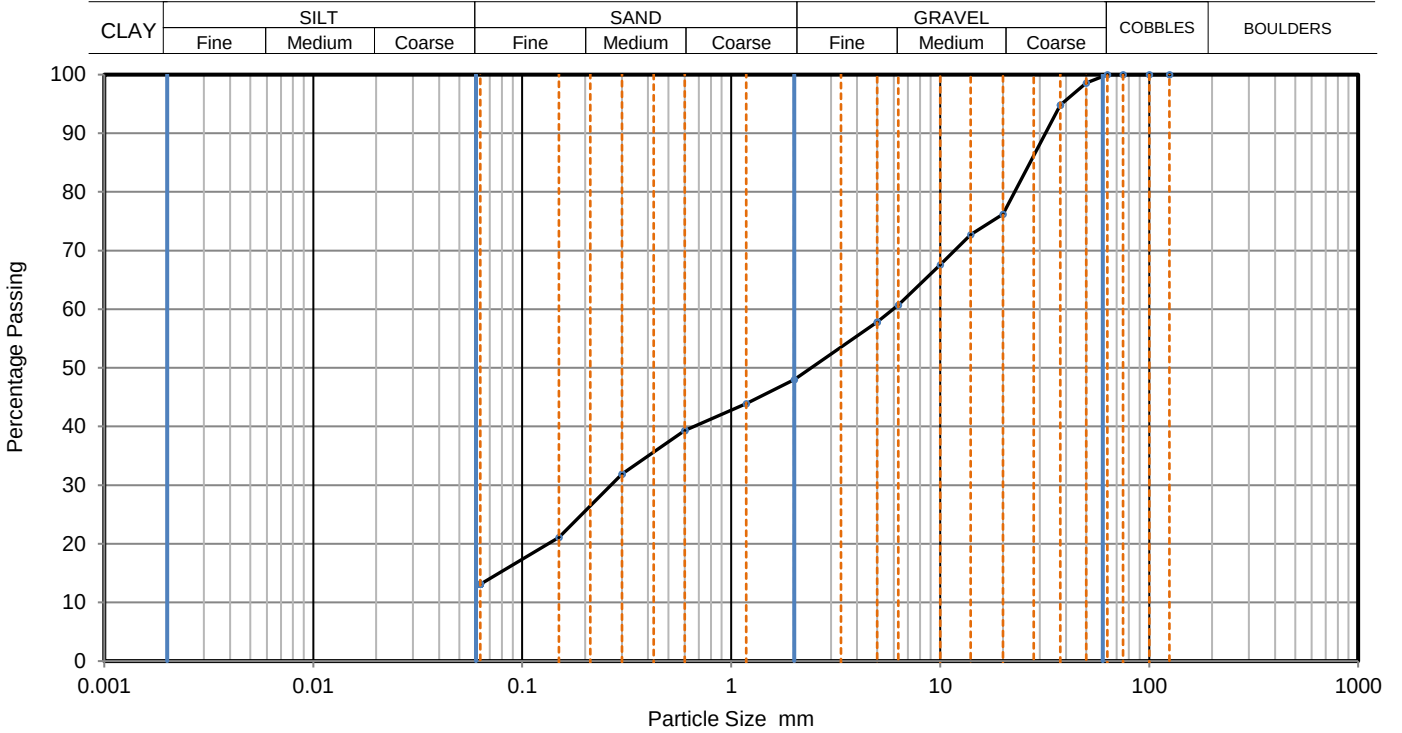
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PARTICLE SIZE DISTRIBUTION

Hole No.	TP103
Sample No.	
Depth m	0.30 - 0.50
Sample Type	B
Specimen Description	MADE GROUND: Grey very sandy clayey gravel.
Specimen Depth m	
Test Method	ISO 17892 -4, by sieving on as received or wet sample



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
100	100		
75	100		
63	100		
50	99		
37.5	95		
20	76		
14	73		
10	68		
6.3	61		
5	58		
2	48		
1.18	44		
0.6	39		
0.3	32		
0.15	21		
0.063	13		

Sample Proportions	% dry mass
Cobbles	0
Gravel	52
Sand	35
Fines <0.063mm	13

Grading Analysis	
D100	mm 63
D60	mm 5.94
D30	mm 0.265
D10	mm
Uniformity Coefficient	

PARTICLE SIZE DISTRIBUTION

Hole No.

TP104

Sample No.

Project Number:

PN234595

Depth

m

2.20 - 2.40

Project Name:

Pyramid Park, Bury

Sample Type

B

Specimen Description

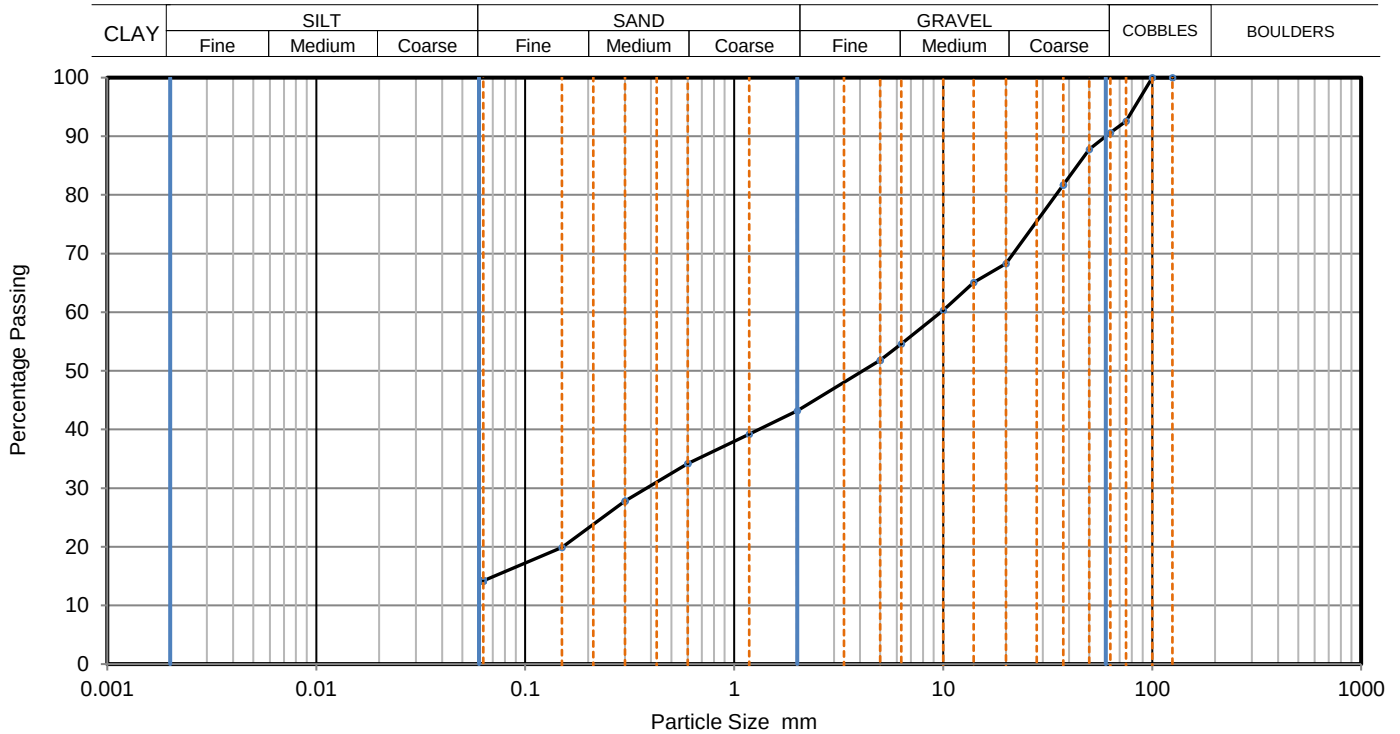
MADE GROUND: Dark brown very sandy clayey gravel with a medium cobble content.

Specimen Depth

m

Test Method

ISO 17892 -4, by sieving on as received or wet sample



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
100	100		
75	93		
63	91		
50	88		
37.5	82		
20	68		
14	65		
10	60		
6.3	55		
5	52		
2	43		
1.18	39		
0.6	34		
0.3	28		
0.15	20		
0.063	14		

Sample Proportions	% dry mass
Cobbles	9
Gravel	48
Sand	29
Fines <0.063mm	14

Grading Analysis	
D100	mm 100
D60	mm 9.76
D30	mm 0.382
D10	mm
Uniformity Coefficient	

Initial sample mass less than BS EN ISO 17892 requirements

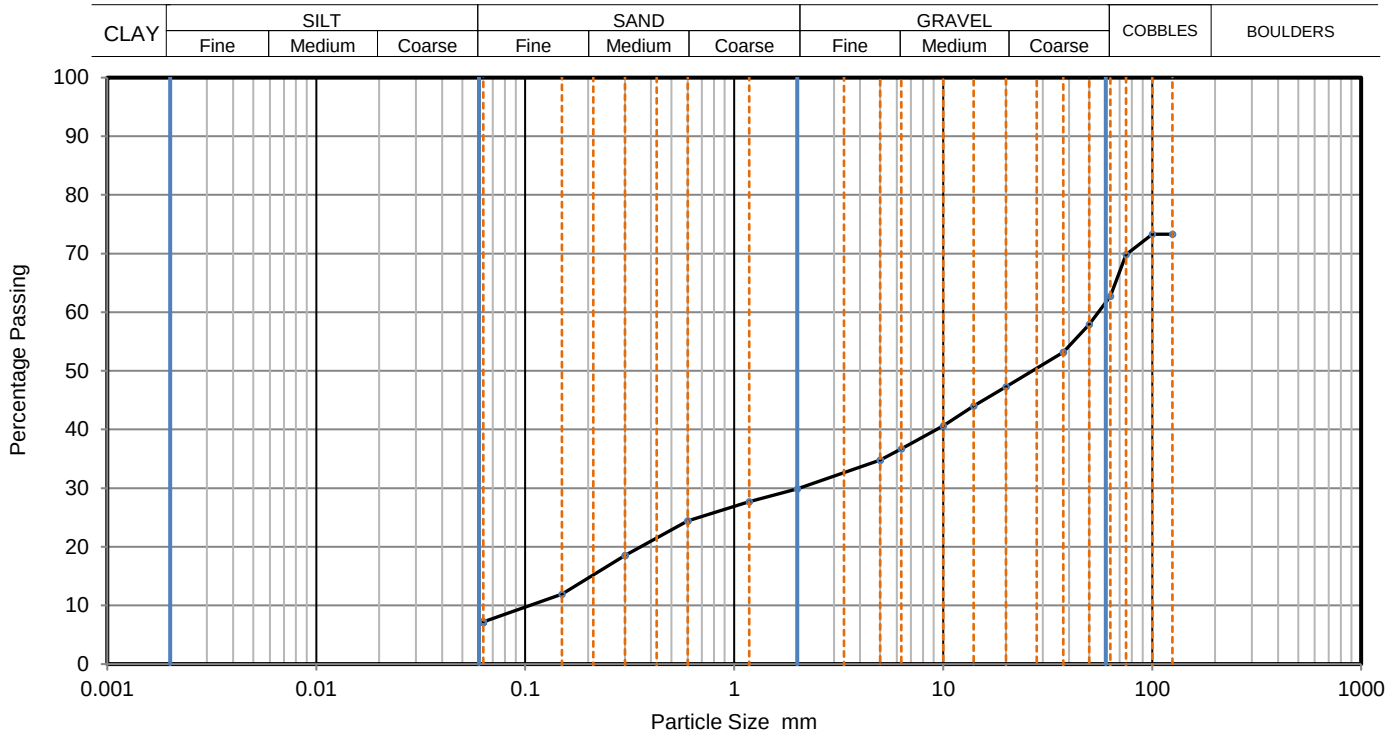
Remarks

Printed

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PARTICLE SIZE DISTRIBUTION

Hole No.	TP109
Sample No.	
Depth m	2.00 - 2.20
Sample Type	B
Specimen Description	MADE GROUND: Dark brown very sandy clayey gravel with a high cobble content.
Specimen Depth m	
Test Method	ISO 17892 -4, by sieving on as received or wet sample



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	73		
100	73		
75	70		
63	63		
50	58		
37.5	53		
20	47		
14	44		
10	41		
6.3	37		
5	35		
2	30		
1.18	28		
0.6	24		
0.3	19		
0.15	12		
0.063	7		

Sample Proportions	% dry mass
Cobbles	37
Gravel	33
Sand	23
Fines <0.063mm	7

Grading Analysis	
D100	mm
D60	mm
D30	mm
D10	mm
Uniformity Coefficient	520

Initial sample mass less than BS EN ISO 17892 requirements

PARTICLE SIZE DISTRIBUTION

Hole No.

TP116A

Sample No.

Project Number:

PN234595

Depth

m

1.20 - 1.40

Project Name:

Pyramid Park, Bury

Sample Type

B

Specimen Description

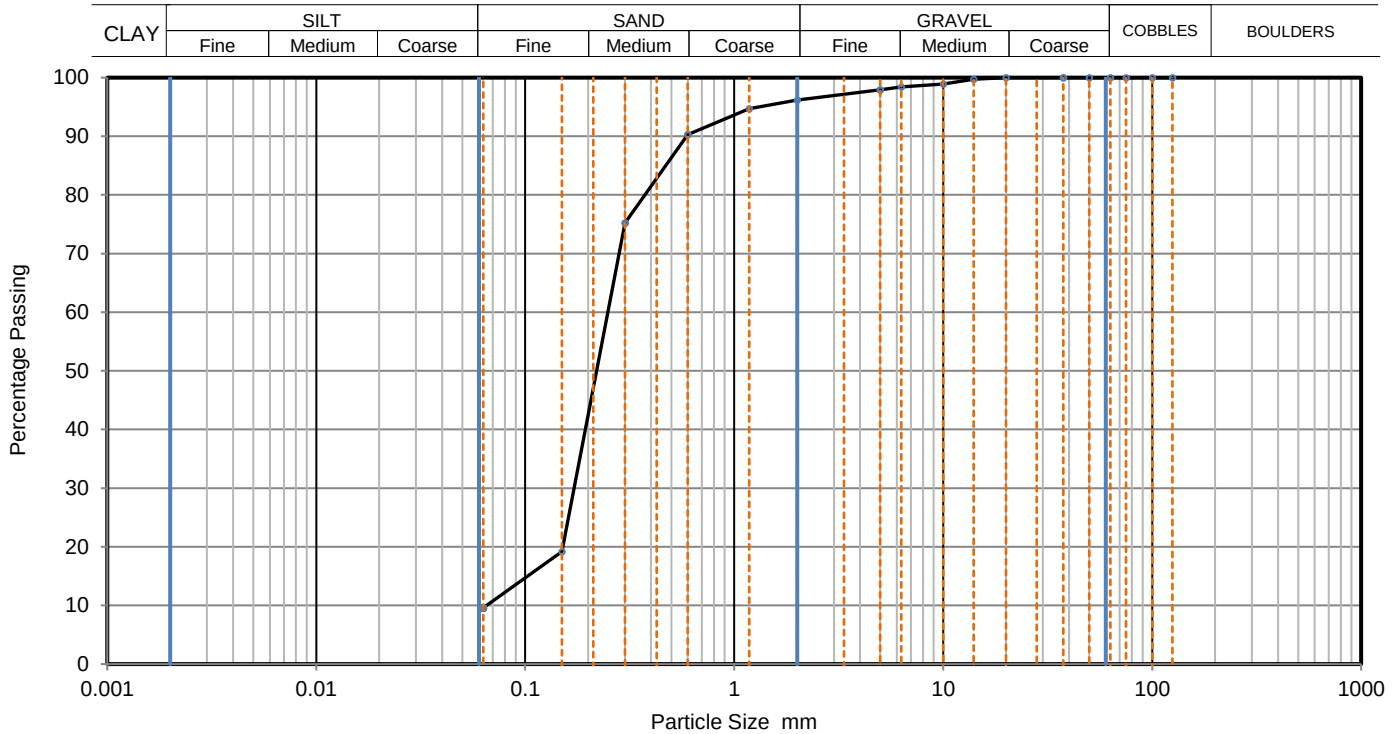
Dark brown slightly gravelly clayey SAND.

Specimen Depth

m

Test Method

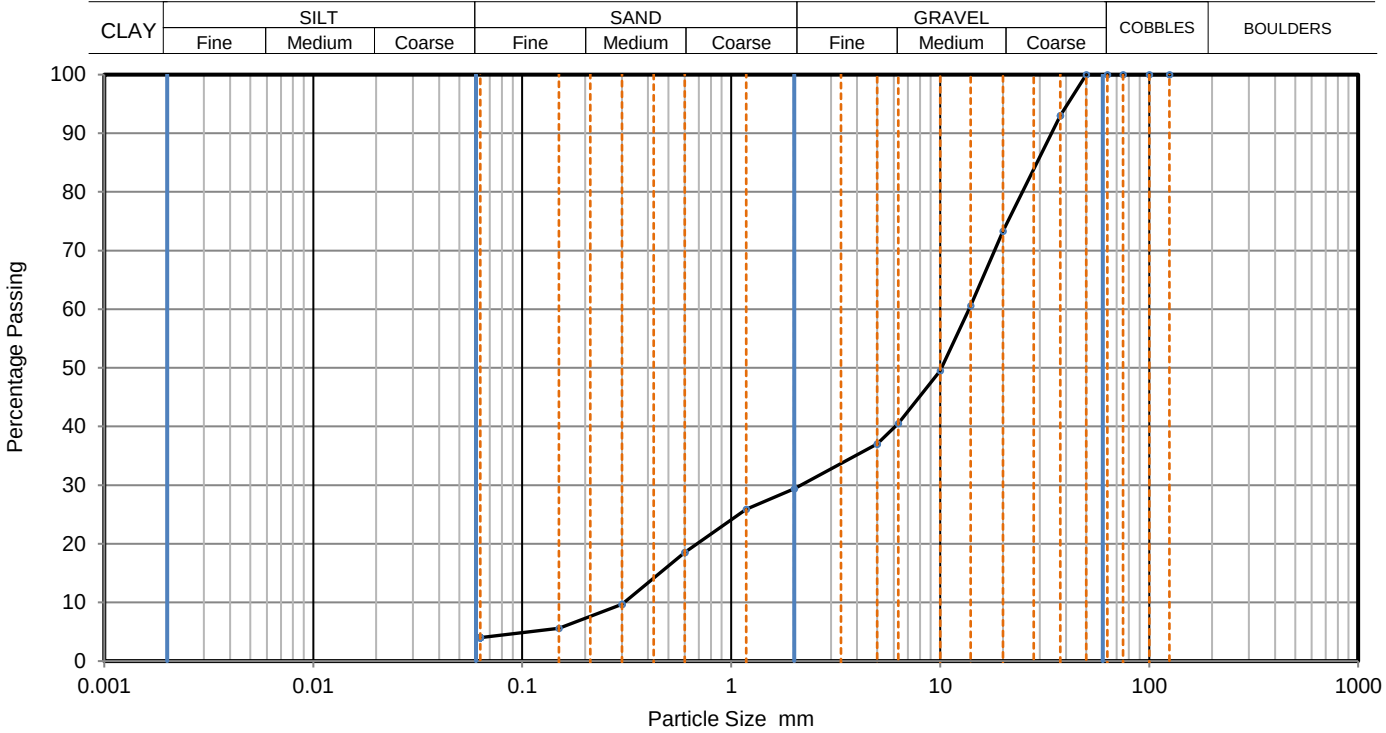
ISO 17892 -4, by sieving on as received or wet sample





PARTICLE SIZE DISTRIBUTION

Hole No.	TP118
Sample No.	
Depth m	0.50 - 0.80
Sample Type	B
Specimen Description	Dark brown very sandy slightly clayey GRAVEL.
Specimen Depth m	
Test Method	ISO 17892 -4, by sieving on as received or wet sample



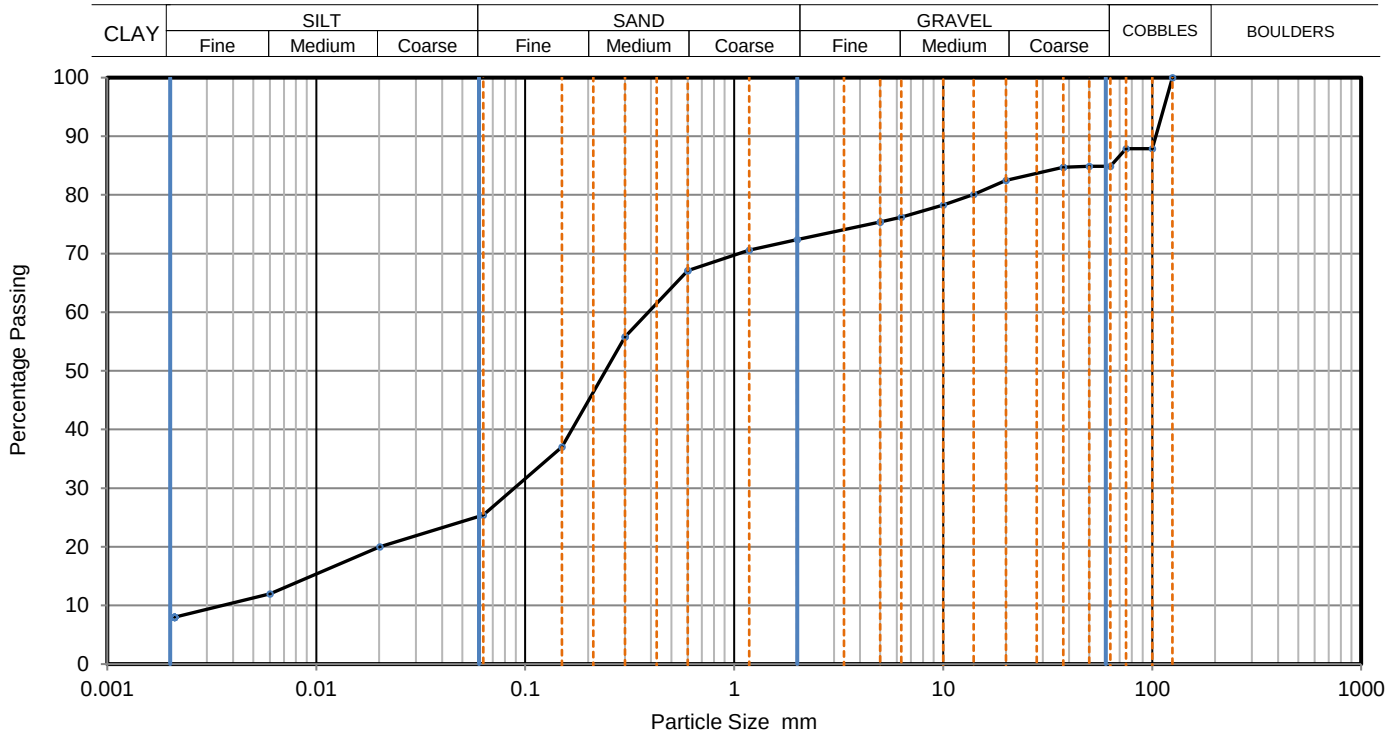
Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
100	100		
75	100		
63	100		
50	100		
37.5	93		
20	73		
14	61		
10	50		
6.3	41		
5	37		
2	29		
1.18	26		
0.6	19		
0.3	10		
0.15	6		
0.063	4		

Sample Proportions	% dry mass
Cobbles	0
Gravel	71
Sand	25
Fines <0.063mm	4

Grading Analysis		
D100	mm	50
D60	mm	13.8
D30	mm	2.15
D10	mm	0.307
Uniformity Coefficient		45

PARTICLE SIZE DISTRIBUTION

Hole No.	TP119
Sample No.	
Depth m	1.00 - 1.20
Sample Type	B
Specimen Description	MADE GROUND: Dark grey slightly gravelly sandy clay with a medium cobble content.
Specimen Depth m	
Test Method	ISO 17892 -4, by sieving and pipette sedimentation



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.020	20
100	88	0.006	12
75	88	0.002	8
63	85		
50	85		
37.5	85		
20	83		
14	80		
10	78		
6.3	76		
5	75		
2	72		
1.18	71		
0.6	67		
0.3	56		
0.15	37	Particle density (assumed) 2.65 Mg/m3	
0.063	25		

Sample Proportions	% dry mass
Cobbles	15
Gravel	13
Sand	47
Silt	17
Clay	8

Grading Analysis	
D100	mm 125
D60	mm 0.388
D30	mm 0.089
D10	mm 0.00345
Uniformity Coefficient	110

Initial sample mass less than BS EN ISO 17892 requirements



PARTICLE SIZE DISTRIBUTION

Hole No.

TP122

Sample No.

Project Number:

PN234595

Depth

m

0.40 - 0.80

Project Name:

Pyramid Park, Bury

Sample Type

B

Specimen Description

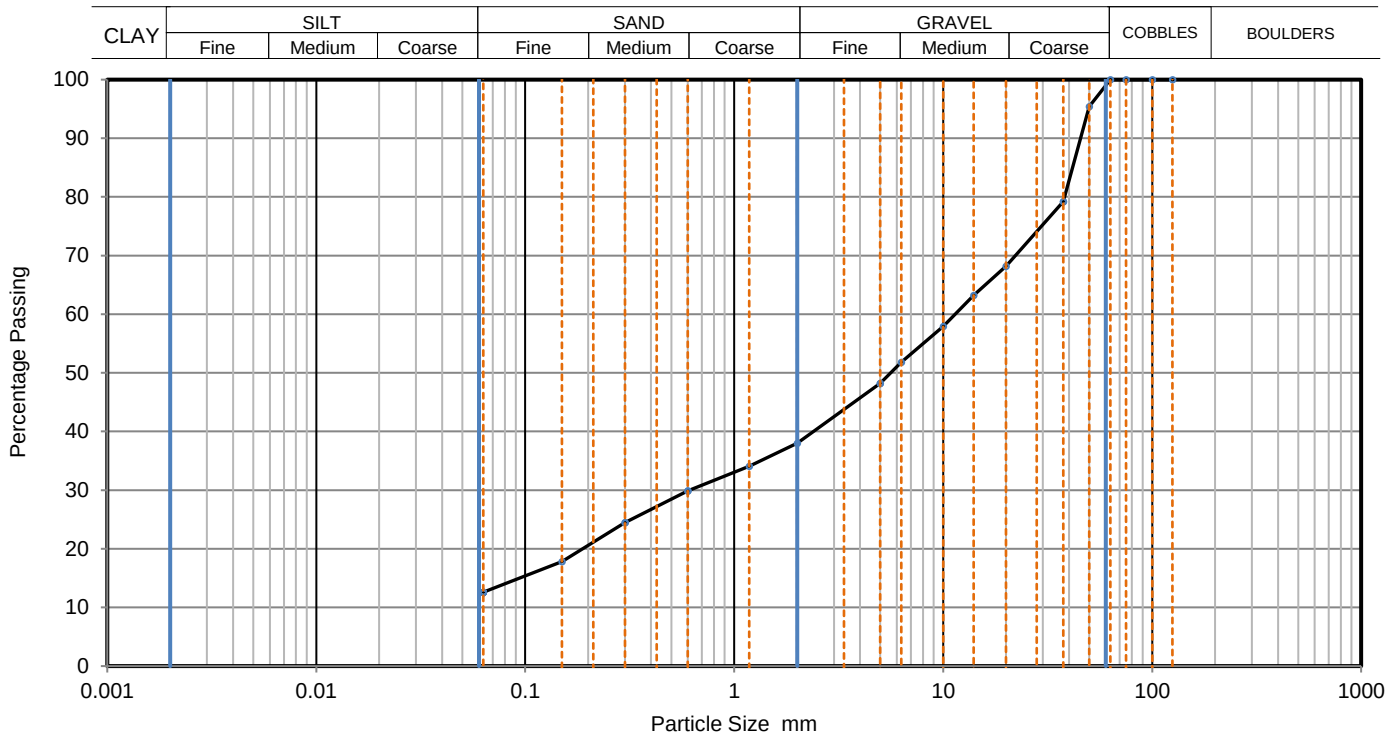
MADE GROUND: Dark grey very sandy clayey gravel.

Specimen Depth

m

Test Method

ISO 17892 -4, by sieving on as received or wet sample



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
100	100		
75	100		
63	100		
50	95		
37.5	79		
20	68		
14	63		
10	58		
6.3	52		
5	48		
2	38		
1.18	34		
0.6	30		
0.3	25		
0.15	18		
0.063	13		

Sample Proportions	% dry mass
Cobbles	0
Gravel	62
Sand	25
Fines <0.063mm	13

Grading Analysis	
D100	mm
D60	mm
D30	mm
D10	mm
Uniformity Coefficient	

Initial sample mass less than BS EN ISO 17892 requirements

Remarks

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1365

PARTICLE SIZE DISTRIBUTION

Hole No.

TP123

Sample No.

Project Number:

PN234595

Depth

m

2.00 - 2.20

Project Name:

Pyramid Park, Bury

Sample Type

B

Specimen Description

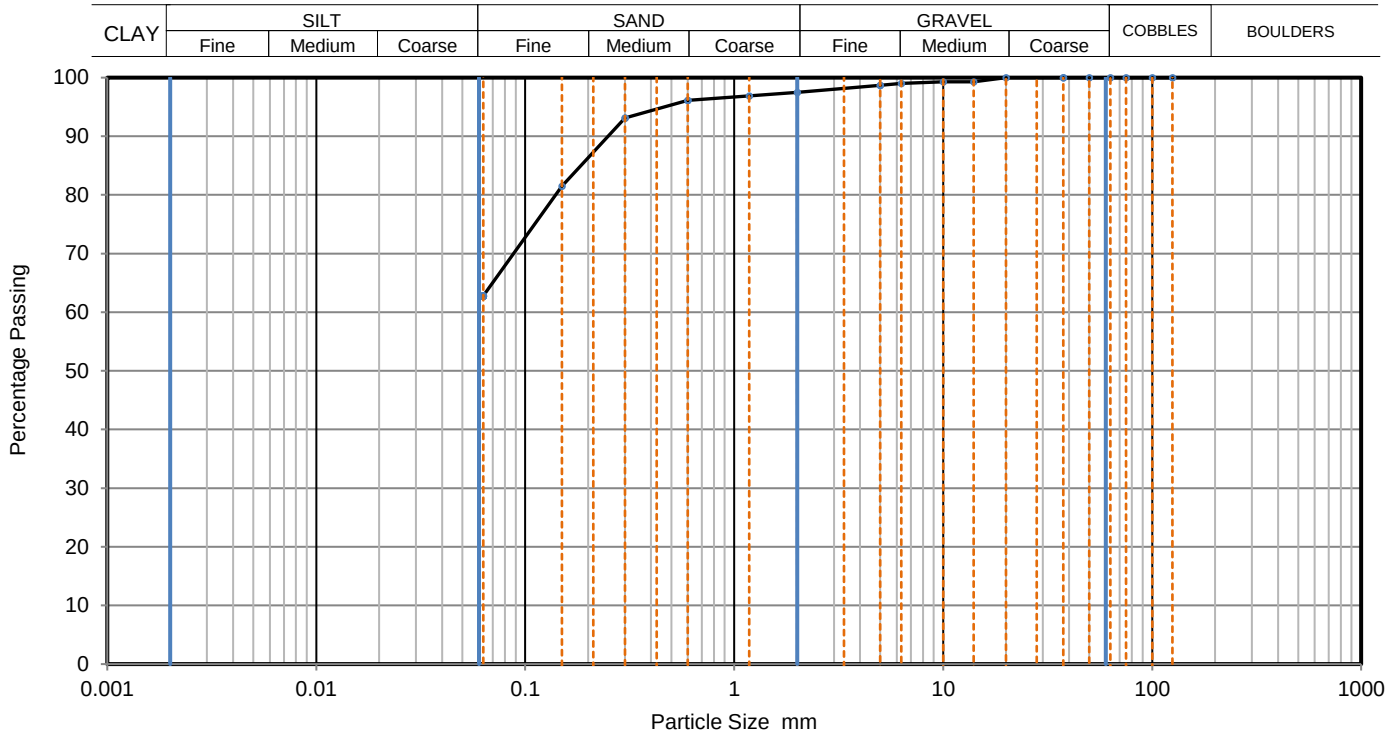
Dark brown slightly gravelly sandy CLAY.

Specimen Depth

m

Test Method

ISO 17892 -4, by sieving on as received or wet sample



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
100	100		
75	100		
63	100		
50	100		
37.5	100		
20	100		
14	99		
10	99		
6.3	99		
5	99		
2	98		
1.18	97		
0.6	96		
0.3	93		
0.15	82		
0.063	63		

Sample Proportions	% dry mass
Cobbles	0
Gravel	2
Sand	35
Fines <0.063mm	63

Grading Analysis		
D100	mm	20
D60	mm	
D30	mm	
D10	mm	
Uniformity Coefficient		

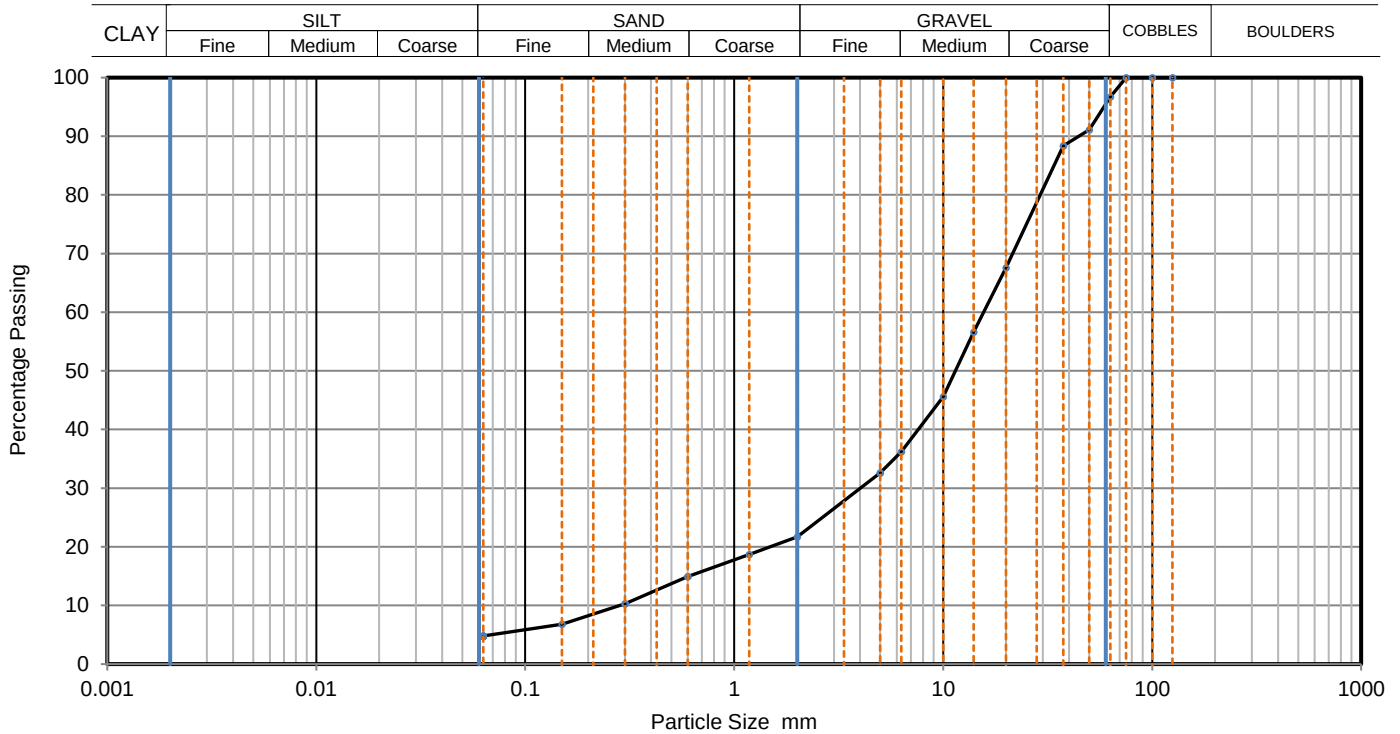
Remarks

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PARTICLE SIZE DISTRIBUTION

Hole No.	TP123
Sample No.	
Depth m	2.40 - 2.60
Sample Type	B
Specimen Description	Dark brown sandy clayey GRAVEL with a low cobble content.
Specimen Depth m	
Test Method	ISO 17892 -4, by sieving on as received or wet sample



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
100	100		
75	100		
63	97		
50	91		
37.5	88		
20	68		
14	57		
10	46		
6.3	36		
5	33		
2	22		
1.18	19		
0.6	15		
0.3	10		
0.15	7		
0.063	5		

Sample Proportions	% dry mass
Cobbles	3
Gravel	75
Sand	17
Fines <0.063mm	5

Grading Analysis		
D100	mm	75
D60	mm	15.6
D30	mm	4.02
D10	mm	0.284
Uniformity Coefficient		55

Initial sample mass less than BS EN ISO 17892 requirements

Project No.	PN234595
Hole No.	BH107
Sample ID.	
Depth m	9.00 - 9.45
Sample Type	UT
Date of Test	25/01/2024

Project Name	Pyramid Park, Bury		
Specimen Reference	3	Specimen Depth (m)	9.24
Specimen Description	Brown mottled grey slightly sandy slightly gravelly CLAY.		
Test Method	BS EN ISO 17892-8		

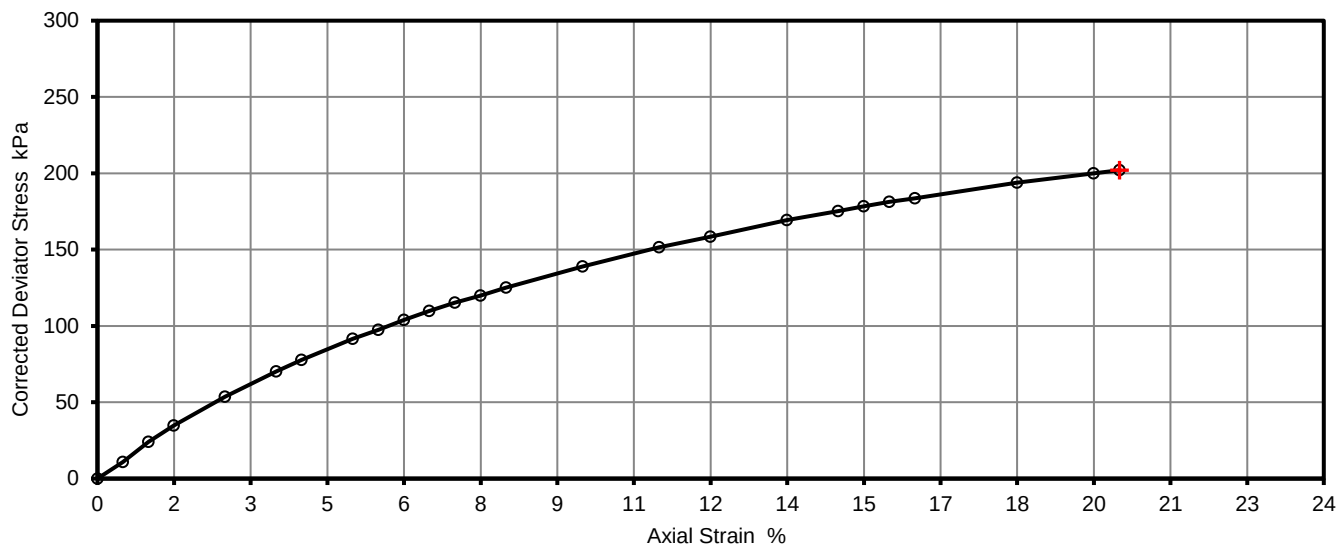
Test Number
Length
Diameter
Bulk Density
Water Content
Dry Density

Rate of Strain
Cell Pressure
At failure

Axial Strain
Deviator Stress, ($\sigma_1 - \sigma_3$) f
Undrained Shear Strength, cu
Mode of Failure

1	
212.2	mm
103.1	mm
2.25	Mg/m3
14.1	%
1.97	Mg/m3
1.8	%/min
180	kPa
20.0	%
202	kPa
101	kPa $\frac{1}{2}(\sigma_1 - \sigma_3)$ f
Plastic	

Deviator Stress v Axial Strain



Remarks

WC at failure Zone = 13.1% Gravel > one sixth of specimen diameter may affect test results.

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14/02/2024