



STAGE 2 GEO-ENVIRONMENTAL REPORT

AT

WIKE RIDGE FARM
LEEDS

ON BEHALF OF

COMMERCIAL
DEVELOPMENT
PROJECTS LTD



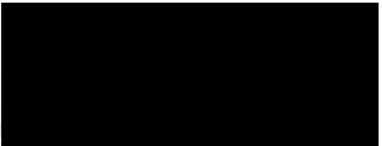

ARP GEOTECHNICAL LTD

CHARTERED CONSULTING ENGINEERS

Northwest House 5/6 Northwest Business Park Servia Hill Leeds LS6 2QH

0113 245 8498 leeds@arpgeotechnical.co.uk www.arpconsultingengineers.co.uk

CLIENT: COMMERCIAL DEVELOPMENT PROJECTS LTD
 JOB NUMBER: CDP/30
 PROJECT: WIKE RIDGE FARM, LEEDS
 REPORT TYPE: STAGE 2 GEO-ENVIRONMENTAL REPORT
 REPORT REFERENCE: CDP/30r2le

	Name	Signature
Prepared By:	J Pemberton (BSc)	
Reviewed By:	J Race BSc CGeol FGS EurGeol	

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1	4th DECEMBER 2023	VERSION 1 FINAL	

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1.0 EXECUTIVE SUMMARY

The pertinent conclusions of the report are tabulated below. However, the information below is not exhaustive, and it is recommended the report is read in its entirety.

Proposed Development	Conversion of existing stables to residential property.
Existing Site Description	Disused stone stable buildings surrounding a courtyard.
Site History	The stone buildings have been present since at least 1851
Geology	Sandstone of the East Carlton Grit Formation, with no recorded superficial deposits. No faults on/near the site.
Coal Mining	Site can be considered stable.
Hazardous Gases	No radon protection measures required, no landfills or other sources of landfill gas. Gas protection is not required.
Ground Conditions	Up to 0.5m of made ground, overlying cohesive and granular residual soil of weathered bedrock. Solid bedrock prevented further borehole penetration at depths of between 0.6m and 2.7m.
Contamination	No contamination identified. No remediation required. However, any imported subsoil/topsoil will need to be tested to confirm suitability for use.
Foundations	Existing foundations comprise shallow footings founded on firm clay. No new foundations are currently proposed.
Excavations	Excavations likely to be stable, with groundwater ingress unlikely.
Concrete	GEN1 designation for unreinforced buried concrete. For any reinforced concrete, other design-specific mixes will apply.
Soakaways	Infiltration rates may be of use for disposal of surface water. However, a drainage feasibility design is required to assess the suitability of soakaways for the site.
Road Pavement	A design CBR value of 3% is considered applicable on the natural clays or sands.

2.0 TERMS OF REFERENCE

- 2.1 Commercial Development Projects Ltd is considering developing the site at Wike Ridge Farm, Leeds by converting an existing stable to a residential property. It was considered appropriate to provide information to aid viability assessment and design of any subsequent development.
- 2.2 In May 2023, ARP Geotechnical Ltd issued a Stage 1 Desk Study Report (Reference: CDP/30r1) for the site. It should be noted this report covered a larger area than the current subject site. The report involved an assessment of the geological and coal mining aspects, Ordnance Survey archive maps, radon gas, indicative flood risk, hydrogeology, landfill, and other environmental issues, primarily by assessment of a Landmark Envirocheck Report. In addition to comments and conclusions on a wide range of environmental and geotechnical issues, the report also provided recommendations for intrusive investigation and assessment.
- 2.3 In October 2023, ARP Geotechnical Ltd was appointed by Commercial Development Projects Ltd to undertake the recommended further works, with the intrusive investigation comprising window sample boreholes and hand dug pits to assess the ground conditions.
- 2.4 The investigation was implemented generally in accordance with BS 5930:2015 +A1:2020 "Code of practice for site investigations", NHBC Standard Chapter 4.1 "Land quality - managing ground conditions", Environment Agency LCRM "Land Contamination Risk Management" and BS10175: 2011 + A2: 2017 "Investigation of potentially contaminated sites - Code of practice". This report is limited to the data obtained as part of this investigation. It should be noted that there is a possibility of variation in ground conditions between test locations and interpretation of strata is given for guidance only. No liability is accepted for changes to site conditions, including groundwater levels, after the preparation of this report.
- 2.5 The findings or contents of the Stage 1 Desk Study Report are not reproduced here in full, and it is recommended that this report is read in conjunction with the Stage 1 Report.

- 2.6 The general observation and assessment of the ground surface, and the identification/classification of vegetation is made in general terms only. It would be prudent for a specialist to undertake a more detailed survey, including for any invasive/harmful weeds.
- 2.7 The assessment of any topsoil is carried out in terms of potential chemical effects on human health only, and no account is taken of aesthetic or horticultural properties. Such considerations should be referred to a horticulturist or landscape architect.
- 2.8 The report has been prepared for the use and reliance of the Client only. The report shall not be relied upon or transferred to any other parties without the written agreement of ARP Geotechnical Ltd. For the avoidance of any doubt, where ARP Geotechnical Ltd enters into a letter of reliance for the benefit of a third party, that third party will be permitted to rely on the report. No responsibility will be accepted where this report is used, either in its entirety or in part, by any other party without ARP Geotechnical Ltd.'s consent.
- 2.9 Attention is drawn to the requirements of the Construction Design and Management Regulations 2015, and in particular the duties and obligation of the Client.
- 2.10 The report refers to, and includes, a copy of an indicative proposed layout. This is only for the purposes of generating a conceptual site model for the contamination risk assessment. Unless the proposed layout changes significantly, such that the conceptual model and risk assessment is affected, there is no requirement to re-issue this report when the layout is revised.

3.0 THE SITE

Site Location

- 3.1 The site, which is centred on Ordnance Survey Grid Reference 433229, 441328 is located off Wike Ridge Lane, in Harewood on the outskirts of Leeds.
- 3.2 A site location plan, aerial photograph and proposed site layout, are presented in Appendix A.

Site Description

- 3.3 The site currently comprises disused stone stable buildings surrounding a central courtyard. The building along the northern edge of the courtyard is two storey high and the buildings along the eastern and western edges are single storey and are in various states of disrepair. The courtyard is under concrete hardstanding with sporadic vegetation growth. The site is bounded to the south by a small field, opening out onto a larger grazing field. The site is bounded to the east by large agricultural barns with fields beyond, and to the west by a residential property including a private garden, with Wike Ridge Lane beyond. To the north, the site is bounded by an access track, with a narrow strip of undeveloped land and some small outbuildings north of the track. Grassed fields, most likely used for animal grazing, are present further north.

Site History

- 3.4 Ordnance Survey archive maps show that, since 1851, the site has been occupied by farm buildings that are still present on site today. Additional small buildings were added north of the access track, off site, around 1965, and barns adjacent to (off-site) the east. A well is indicated to have been present, just north of the access track (off site). Old quarries were once present off-site approximately 265m south, but infilled/restored by 1893.

4.0 ENVIRONMENTAL SETTING

4.1 The environmental setting for the site was established by the Stage 1 Desk Study Report undertaken by ARP Geotechnical Ltd under reference CDP/30r1 and dated May 2023. The findings of the Desk Study Report, updated and amended where deemed appropriate, are summarised below.

Geology

4.2 The geological maps show the site to be underlain by sandstone of the East Carlton Grit Formation, with no recorded superficial deposits. There are no faults shown to affect the site.

Coal Mining

4.3 The site is not located within a coal mining area and can, therefore, be regarded stable with respect to coal mining.

Hydrogeology

4.4 The Landmark Envirocheck Report indicates the Bedrock Aquifer Designation to be " Secondary A" Aquifer.

4.5 There are no groundwater abstractions for sensitive uses within 1km of the site.

4.6 The site is not within a groundwater Source Protection Zone.

Hydrology

4.7 There are no watercourses on or adjacent to the site. The nearest watercourse downslope is Sturdy Beck, 70m to the south. Any surface water run-off, which is not intercepted by drainage, is likely to eventually reach Sturdy Beck. The site is not in an area at risk from river flooding.

4.8 There are no surface water abstractions within 1km of the site.

Other Relevant Environmental Data

4.9 There are no closed or currently licensed landfills within 250m of the site.

4.10 No radon protective measures are stated to be necessary for new dwellings or extensions on the site, and the site is within a “lower probability radon area”.

4.11 The site is not within an area at risk from river flooding.

4.12 BGS data indicates the general area has the “limited potential for groundwater flooding to occur”.

Potential Contamination Sources

4.13 The following potential sources of contamination were identified in the Stage 1 Desk Study Report

4.13.1 Possible asbestos within existing buildings.

4.13.2 Possible made ground – metals, inorganics, total petroleum hydrocarbons (TPH), polyaromatic hydrocarbons (PAH), phenol, asbestos.

4.13.3 Possible minor hydrocarbons from leaks/spills associated with parking of vehicles and/or farm machinery: - TPH, PAH.

5.0 SITE INVESTIGATION

- 5.1 A site investigation was undertaken by ARP Geotechnical Ltd on the 23rd October 2023. The purpose of the investigation was to produce an assessment of the site in accordance with BS10175: 2011 + A2: 2017 “Investigation of potentially contaminated sites – Code of practice”, and to provide geotechnical information to aid design of the development.
- 5.2 Windowless sample boreholes and hand pits were sampled across the site. Nine boreholes (WS1 to WS9) were drilled, to depths of between 0.6m and 2.7m. In order to confirm the depth and dimensions of the existing foundations and to confirm the existing founding strata, two hand pits (HP1 and HP2) were excavated up against the existing buildings. The hand pits and boreholes were organised, supervised, and logged by an Engineer from ARP Geotechnical Ltd. Justifications for the exploratory hole locations are given on the table below.

Location	Justification
WS3 to WS7	Grid within central courtyard, location of proposed garden.
WS2 and WS8	Located within existing buildings to confirm soil profile beneath floor slab.
WS1 and WS9	Target external areas to the north and northeast of the building
HP1 and HP2	To confirm foundation dimensions/depths of existing buildings.

- 5.3 The borehole and trial pit location plan and logs are included in Appendix B.
- 5.4 Chemical analysis of eleven soil samples, for a range of contaminants, by the UKAS accredited Eurofins Chemtest Laboratory in Newmarket. The test certificates are included in Appendix C.
- 5.5 Analysis for Atterberg Limits and moisture content was undertaken by the UKAS accredited Professional Soils Laboratory (PSL) in Doncaster. Geochemical testing comprising pH and water-soluble sulphate was also undertaken by PSL. The test certificates are included in Appendix C.

6.0 SUMMARY OF GROUND CONDITIONS

Strata and Groundwater

- 6.1 All of the investigation locations revealed a surface covering of concrete, which was between 0.1m and 0.3m thick. The concrete was underlain by made ground, generally to depths of between 0.25m and 0.5m, comprising mainly slightly clayey sandy gravel of sandstone. In WS5, WS6 and WS7, the gravel included brick as well as sandstone, and in WS9, the gravel also included trace bitmac. In WS6 and WS7, the made ground was cohesive rather than granular, but the granular content was similar (sandstone and brick).
- 6.2 The made ground was underlain by firm, locally soft, stony clays and slightly clayey sands, gravels and cobbles, all of residual material derived from in situ weathering of rock. All the window sample boreholes (except WS4 which intentionally terminated at a shallower depth of 1.5m as part of the investigation design) terminated by refusals in rock at depths of between 0.6m and 2.7m.
- 6.3 Samples of Intact bedrock were obtained from WS1, WS2, WS5 and WS7, and were confirmed to comprise sandstone, recovered as sandy gravel with medium cobble content. In WS3, WS6, WS8 and WS9, no samples of the rock were obtained, but the refusals at between 0.8m and 2.0m, are considered likely to be sandstone.
- 6.4 No groundwater ingress was encountered during the investigation. Cores were noted to be wet beneath the concrete cores but this was as a result of the coring process that uses water as a lubricant. All positions were backfilled with arisings upon completion.

Foundation of the Existing Buildings

- 6.5 The foundation of the single storey stable along the western edge of the courtyard was exposed in HP1. The foundation comprised sandstone blocks down to 0.3m depth, founded on firm

brown clay. A hand shear vane test within the clay recorded an undrained shear strength of 50kN/m² indicating firm (medium strength).

- 6.6 The foundation of the two-storey barn along the northern edge of the courtyard was partially exposed in HP2. The surface of a concrete foundation was encountered at to 0.35m depth stepping out at least 0.5m beyond the area of floor slab that had been broken out. Due to the thickness of the floor slab, it was not possible to extend the pit further to confirm the dimensions of the foundation within the time constraints of the site works. Based on the ground conditions identified within nearby window samples, WS1 and WS7, it is likely that the foundations are seated on firm clay, with intact bedrock present at shallow depth at both locations (<1m depth).

7.0 CONTAMINATION ANALYSIS

Screening Values - Soils

- 7.1 There is presently conflicting opinion with regard to the appropriate generic assessment criteria, or screening values, for soils which should be used in contamination assessment for proposed development. In March 2014, DEFRA published Category 4 Screening Levels (C4SLs) for six contaminants: arsenic, benzene, benzo(a)pyrene, cadmium, chromium VI and lead. The values are based on the toxicological benchmark of a "low level of toxicological concern" (LLTC) rather than the previous regulatory approach of "minimal or tolerable level of risk". As the C4SLs are less protective of health than the previous approach, the Chartered Institute of Environmental Health (CIEH) has advocated an alternative approach based on minimal risk, but with some adjustment of exposure parameters to more realistic scenarios than those previously used. To this end, the CIEH has collaborated with Land Quality Management to publish "Suitable 4 Use Levels" (S4ULs) "The LQM/CIEH S4ULs for Human Health Risk Assessment", November 2014 (LQM/CIEH). However, DEFRA has reiterated its intention that the C4SLs should be used in generic risk assessment for proposed development, and there is indication that other parties will collaborate, in the near future, to extend the range of C4SL determinands beyond the six published so far.
- 7.2 In the absence of a final resolution to the debate, soil contamination test results in this report have been compared first against the more conservative S4UL, and where a C4SL exists for the same determinand, consideration given to the use of the C4SL for any exceedances of the S4UL, within the site-specific context (including the use of benzo(a)pyrene as a surrogate marker for genotoxic PAH compounds, where appropriate). Where no S4UL exists for a determinand, for example lead, the C4SL has been used. The LQM/CIEH screening values have been calculated for soil organic matter contents of 1% and 2.5%, as well as 6%, and the appropriate screening value is used for the organic matter content of the soil. All the C4SL values published are for a soil organic matter content of 6%.
- 7.3 A table showing the screening values utilised is included in Appendix C.

Soils Analysis

- 7.4 Eleven samples of made ground were issued to Eurofins Chemtest. Five samples from within the area proposed for gardens (WS3 to WS7 inclusive) were tested for a full suite of testing (As, Cd, Cr (VI), Cr (III), Cu, Hg, Ni, Pb, Se, Zn, Total Sulphate, Water Soluble Sulphate, pH, Phenol-monohydric, Speciated PAH, Total TPH, Asbestos, and Organic Matter). Six samples from areas which will be either beneath existing buildings (to be converted to residential use) or existing/proposed hardstanding (WS1, WS2, WS8, WS9, HP1, HP2) were tested for speciated PAH, banded TPH, and Organic Matter. A full suite of metals and inorganics was not deemed necessary for these internal samples, as all but the vapour inhalation pathways will be blocked.
- 7.5 For each material, any determinands with exceedances of screening values were subjected to statistical analysis to determine the 95% Upper Confidence Level (UCL).

Made Ground Within the Proposed Garden Area

- 7.6 A results summary table for determinands found to be above screening values is given below.

Location	Depth (m)	Benzo(b)fluoranthene
WS3	0.15-0.3	0.1
WS4	0.2-0.3	3.9
WS5	0.15-0.25	0.1
WS6	0.1-0.3	0.1
WS7	0.3-0.5	0.1
Screening Values		3.3
95% UCL		2.4

Exceedance

Acceptable

Values are in mg/kg unless indicated otherwise

- 7.7 It can be seen from the table that the 95% UCL concentration of benzo(b)fluoranthene (2.4mg/kg) is below the screening value for residential within plant uptake, with no outliers.

Made Ground Within Existing (Proposed) Building Footprints and Hardstanding

7.8 Elevated dibenzo (a, h) anthracene (DahA) was identified within the made ground at one location (WS9 at 1mg/kg) but the concentrations within all other samples were below the detection limit. WS9 was located to the north of the existing building outside the proposed garden. As this area of the site will remain under hardstanding and volatility of this determinand is negligible, the risk to end users is negligible. It is, therefore, concluded that the elevated DahA does not need to be considered further.

Updated Risk Assessment and Conceptual Model

7.9 The categorisations of risk adopted in this report are adapted from CIRIA Report C552 (Contaminated Land Risk Assessment: A Guide to Good Practice, 2001). This approach assesses the potential severity of any pollution event and the probability of the event occurring, to arrive at a risk category, for the various potential source - pathway - receptor linkages. The relevant tables used, with the definitions, are presented in Appendix D.

7.10 The updated source – pathway – receptor matrix is presented below, taking into account the findings of the investigation. Any pathways in italics are deemed not to be viable and the reason given.

Viable Source - Pathway - Receptor Matrix (Finished Development)

Contamination Sources	Pathways	Receptors	Severity of Consequence	Probability of Event	Risk
Possible asbestos within existing buildings	Inhalation	Future occupants Maintenance workers Adjacent residents and general public	Severe	Low Likelihood	Moderate

7.11 It can be seen from the above matrix that there are remaining potential pathways from possible asbestos within existing buildings. However, provided an asbestos survey is carried out prior to any work on the existing buildings on the site, and any identified asbestos is removed and

disposed to a licenced facility, then the risk to receptors is negligible. The work should be carried out by appropriately qualified Contractors.

- 7.12 Any imported soils used on the site will need to be verified as suitable by inspection and testing, in accordance with regulatory guidance. A Method Statement for Assessment of Imported Soils, outlining how compliance with the above may be achieved, is included in Appendix E.

8.0 GEOTECHNICAL TESTING

8.1 Selected samples of the natural strata were delivered to PSL in Doncaster for testing with regard to plasticity indices and moisture content. Test certificates are presented in Appendix C and a summary of the results, including Modified Plasticity Indices, is given below.

Location	Depth (m)	MC	LL	PL	PI	<425µm	I'p
WS 2	2.00	25	56	25	31	100	31.0
WS6	0.9	18			NP		
WS9	1.5	13			NP		

* NP- Non-Plastic

I'p	VCP
>40%	High
20% - <40%	Medium
10% - <20%	Low

MC = Moisture Content (%)	LL = Liquid Limit (%)	PL = Plastic Limit (%)
PI = Plasticity Index (%)	I'p = Modified PI (%)	VCP = NHBC Standard Chapter 4.2 Volume Change Potential

8.2 The plasticity test data shows clays of intermediate plasticity, in accordance with BS 5930:2015 +A1:2020 "Code of Practice for Site Investigations". When the percentage retained on the 425-micron BS sieve is considered, the Modified Plasticity Index, in accordance with NHBC Standard Chapter 4.2 "Building Near Trees" is a maximum of 31.0. In accordance with the Standard, this equates to Medium Volume Change Potential. Two of the three samples were shown to be non-plastic and, therefore, do not show Plasticity Index.

8.3 Geochemical testing (water soluble sulphate and pH) was undertaken on selected samples by PSL and Eurofins Chemtest, comprising three samples of natural strata and five samples of made ground. In accordance with the BRE Special Digest 1 "Concrete in aggressive ground", the characteristic values for the two materials are given below:

Characteristic Values

Material	pH	SO ₄
Natural Strata	6.7	55
Made Ground	9.1	98

SO₄= Sulphate content in mg/l on a 2:1 water : soil extract pH = Acidity

- 8.4 The geochemical analyses show the natural strata to have low water-soluble sulphate content and slightly acidic pH. The Aggressive Chemical Environment for Concrete (ACEC) class is AC-1. Testing on the made ground also indicates class AC-1. Therefore, the use of GEN1 designated concrete will be satisfactory for unreinforced buried concrete. For any reinforced buried concrete, other design-specific mixes will apply.

9.0 GEOTECHNICAL ASSESSMENT

Coal Mining and Coal Recovery

- 9.1 The site is not in a coal mining reporting area and, therefore, is considered stable with regard to coal mining.

Existing foundations

- 9.2 If any significant additional loads are to be imposed by the proposed conversion, the existing foundations may need to be underpinned.
- 9.3 If new foundations are required, the underlying natural clays and sands, below any made ground, are considered suitable for the use of strip/trench fill foundations. An allowable bearing pressure of 100kN/m² is considered applicable.
- 9.4 The clays were shown to be of medium volume change potential. Therefore, in accordance with NHBC Standard Chapter 4.2 "Building Near trees", in the absence of trees, a minimum foundation depth of 0.9m below existing or proposed ground level is applicable, whichever is the lower. However, in the presence of any proposed, existing, or removed trees, the foundation may need to be deepened, depending on the type of tree and its distance from the face of the foundation. If not already available, a tree survey may be required to enable a foundation schedule to be prepared. The tree survey will also need to consider trees on third party properties.
- 9.5 If the founding strata are non-plastic, the minimum foundation depths given in NHBC Standard Chapter 4.2 "Building Near Trees" do not apply. However, to protect against fines washing subsidence in the event of a burst water supply pipe, it is recommended that a foundation depth of 0.9m is adopted in proximity to any such pipes.

- 9.6 Any new foundations should be taken below the depth of any existing foundations or obstructions, onto natural ground. The whole plan area of the foundation should be placed on similar natural material. Foundations should be reinforced where it is necessary to transition from suitable granular to suitable cohesive strata within a proposed building footprint.
- 9.7 If bedrock is encountered on part of a foundation excavation, the rest of the footprint should be deepened to ensure founding on similar material. However, if rock is not encountered by 2.5m depth on the remainder of the footprint, then the Engineer should be contacted for further advice.

Excavations

- 9.8 It is likely that excavations into the natural strata will remain stable in the short term, requiring minimal trench support, in accordance with the prevailing statutory guidance. However, instability may be anticipated within the made ground.
- 9.9 No groundwater was encountered during the investigation. Cores were noted to be wet in the made ground beneath the concrete core, but this is likely to be a result of using water as a lubricant when coring the concrete.
- 9.10 Excavations should be readily achieved using conventional hydraulic plant. However, excavations into intact bedrock or any buried foundations and structures are likely to require a hydraulic breaker.

Chemical Precautions

- 9.11 The Aggressive Chemical Environment for Concrete (ACEC) class is AC-1 for both the natural strata and made ground. Therefore, the use of GEN1 designated concrete will be satisfactory for unreinforced buried concrete, in accordance with BS 8500-1:2015+A2:2019. For any reinforced buried concrete, other design-specific mixes will apply.

Road Pavement Construction

- 9.12 For any areas of road pavement, including parking areas, the formation will be the natural clays and sands. Based on the observed characteristics of the material, and the results of the plasticity testing, a design California Bearing Ratio (CBR) value of 3% is considered applicable, below any obvious soft spots, and at equilibrium moisture content. If considered necessary, this should be confirmed by testing at proposed subgrade level before construction.

Flooding and Soakaways

- 9.13 The site is not at risk from river flooding. The risks of flooding from other causes such as adverse topography or insufficient surface water drainage, are not considered here. If such risk needs to be quantified, a separate specialist Flood Risk and Drainage Report should be commissioned, if not already available.
- 9.14 BGS data indicates the general area has "limited potential for groundwater flooding to occur".
- 9.15 Infiltration rates of the likely strata may be sufficient to allow disposal of surface water using soakaways, if necessary. However, this would be subject to confirmation by percolation testing, and any soakaway drainage solution for the site will depend on many factors. A feasibility assessment and design would need to be carried out to determine the appropriate solution.

Gas Protection

- 9.16 No radon protective measures are required for properties constructed on the site.
- 9.17 There are no landfills within 250m of the site, and no shallow coal seams/coal workings affecting the site. Therefore, there should be no requirement for gas protection within the proposed properties.

APPENDIX A

SITE LOCATION, SITE PLAN & INDICATIVE LAYOUT

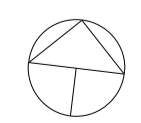


Ground Floor - Proposed Stable Refurbishment
1:100



First Floor - Proposed Stable Refurbishment
1:100

Notes.

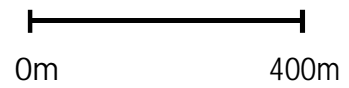
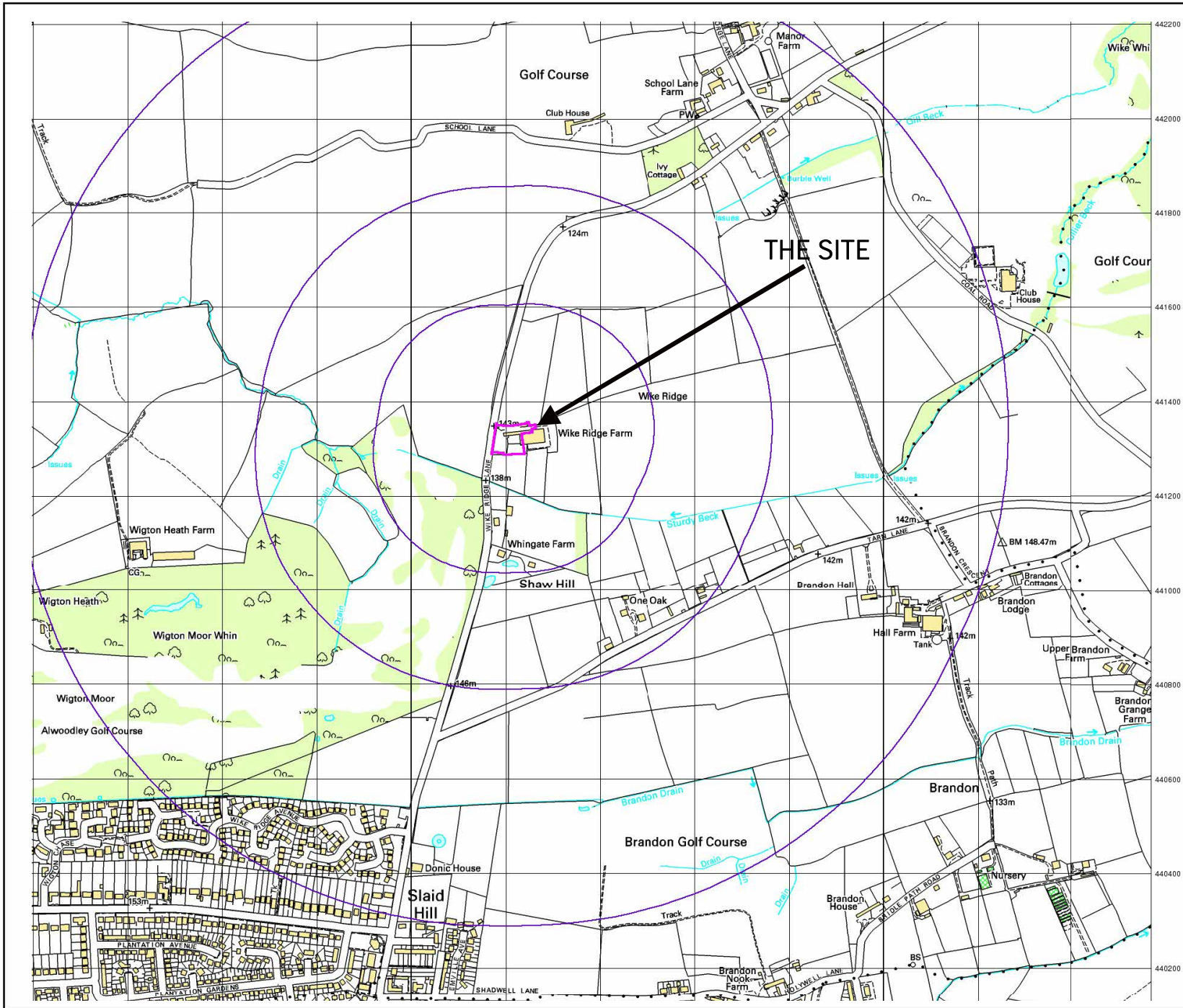


Contractor must verify all dimensions on site before commencing any work or shop drawings. If this drawing exceeds the quantities taken in any way the Architects are to be informed before the work is initiated. Only figured dimensions to be taken from this drawing. Do not scale off this drawing. Drawings based on Ordnance Survey and / or existing record drawings - design and drawing content subject to Site Survey, Structural Survey, Site Investigations, Planning and Statutory Requirements and Approvals. Authorised reproduction from Ordnance Survey Map with permission of the Controller of Her Majesty's Stationery Office. Crown Copyright reserved. Enjoy Design Ltd.

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Suitability	Enjoy Design Ltd The Old Brewery High Court Leeds LS2 7ES Tel: 0113 242 3622 www.enjoy-design.co.uk @enjoydesign enjoy_design_	Client: Owner	Job No: 22,071
		Project: Wike Ridge Farm	
		Title: Proposed Stable Refurbishment - Floor Plans	
		Date: 03/31/23	Scale: 1:100 @ A1
		Drawn: Author	Check: Checker
		Drawing No: - ENJ - - - -	Rev: -A- 20 111





Approximate Scale

ARP
 ARP GEOTECHNICAL LTD
 CHARTERED CONSULTING ENGINEERS
 Northwest House · 5-6 Northwest Business Park · Senvla Hill · Leeds LS6 2QH
 Telephone : 0113 245 8498 Fax : 0113 244 3864 E-Mail : leeds@arpassociates.co.uk

Project
**WIKE RIDGE FARM,
 LEEDS**

Client
**COMMERCIAL DEVELOPMENT
 PROJECTS LTD**

Title
SITE LOCATION PLAN

Date
MAY 2023

Drawn JP	Scale AS SHOWN
--------------------	--------------------------

Job No.
CDP/30



0m 20m

Approximate Scale

ARP

ARP GEOTECHNICAL LTD
CHARTERED CONSULTING ENGINEERS

Northwest House · 5-6 Northwest Business Park · Senvla Hill · Leeds LS6 2QH
Telephone : 0113 245 8498 Fax : 0113 244 3864 E-Mail : leeds@arpassociates.co.uk

Project

WIKE RIDGE FARM,
LEEDS

Client

COMMERCIAL DEVELOPMENT
PROJECTS LTD

Title

AERIAL PHOTOGRAPH

Date

MAY 2023

Drawn

JP

Scale

AS SHOWN

Job No.

CDP/30

APPENDIX B

INVESTIGATION PLAN, LOGS AND CROSS SECTION



Excavation Method Drive-in Windowless Sampler	Dimensions 100mm to 1.03m	Ground Level (mOD)	Client Commercial Development Projects Ltd	Job Number CDP/30
	Location	Dates 23/10/2023	Engineer JP	Sheet 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend
0.30-0.50	ES1				(0.15)	MADE GROUND: Concrete.	
					0.15 (0.15)	MADE GROUND: Grey slightly clayey sandy subrounded, fine to coarse gravel of sandstone.	
					0.30 (0.40)	Firm brown mottled grey and orange, slightly sandy, slightly gravelly CLAY. Gravel is subangular to subrounded, fine to coarse, of sandstone, with a low subangular cobble content of sandstone.	
0.80-1.03	SPT(C) 25*/105 50/125		18,7/27,23		0.70 (0.10) 0.80	SANDSTONE: Recovered as sandy subangular to subrounded, fine to coarse gravel, of sandstone with a medium subangular cobble content of sandstone.	
						Complete at 1.03m	

Remarks Borehole refused on sandstone bedrock. No groundwater encountered. Backfilled with arisings upon completion.	Scale (approx)	Logged By
	1:20	JP
	Figure No. CDP/30.WS01	



Excavation Method Drive-in Windowless Sampler	Dimensions 100mm to 2.70m	Ground Level (mOD)	Client Commercial Development Projects Ltd	Job Number CDP/30
	Location		Dates 23/10/2023	Engineer JP

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend
0.30-0.40	ES1					MADE GROUND: Concrete.	
					0.30	MADE GROUND: Brown slightly clayey sandy, subangular to subrounded, fine to coarse gravel, of sandstone.	
					0.10		
					0.40	Soft, turning firm bu 0.6m, brown slightly gravelly sandy CLAY. Gravel is subangular to subrounded, fine to coarse, of sandstone with low a cobble content of subrounded sandstone.	
					(0.50)		
0.90							
2.00-2.10	D1				0.10	Firm brown slightly sandy, slightly gravelly CLAY. Gravel is subangular to subrounded, fine to coarse, of sandstone.	
					1.00		
					0.10	No recovery.	
					1.10		
					(0.30)	Firm brown slightly sandy, slightly gravelly CLAY. Gravel is subangular to subrounded, fine to coarse, of sandstone.	
					1.40		
					(0.30)	Firm light brown mottled grey, slightly gravelly, sandy CLAY. Gravel is subangular to subrounded, fine to coarse, of sandstone with a low subrounded cobble content of sandstone.	
					1.70		
					(0.40)	Stiff greyish brown mottled orange, slightly sandy, silty CLAY.	
					2.10		
(0.40)	Firm dark grey mottled light grey, slightly sandy silty CLAY.						
2.50							
(0.20)	SANDSTONE: Recovered as sandy subangular to subrounded, fine to coarse gravel, of sandstone with a medium subangular cobble content of sandstone.						
2.70	Complete at 2.70m						

Remarks Borehole refused on sandstone bedrock. No groundwater encountered. Backfilled with arisings upon completion.	Scale (approx)	Logged By
	1:20	JP
	Figure No. CDP/30.WS02	



Excavation Method Drive-in Windowless Sampler	Dimensions 100mm to 2.41m	Ground Level (mOD)	Client Commercial Development Projects Ltd	Job Number CDP/30
	Location	Dates 23/10/2023	Engineer JP	Sheet 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend
0.15-0.30	ES1				(0.15)	MADE GROUND: Concrete.	
					0.15	MADE GROUND: Brown slightly clayey sandy, subangular to subrounded, fine to coarse gravel, of sandstone.	
					(0.15)	Soft to firm, brown slightly gravelly sandy CLAY. Gravel is subangular to subrounded, fine to coarse, of sandstone with low a subrounded cobble content of sandstone.	
					0.30		
1.00-1.45	SPT(C) N=13	3,2/2,3,3,5			(0.25)	Light brown sandstone cobble	
					0.55	No recovery.	
					(0.60)		
					(0.40)		
					1.00	No recovery. Cone SPT. Medium strength / Medium dense soil.	
					1.20	Firm medium strength grey, slightly sandy silty micaceous CLAY.	
2.00-2.41	SPT(C) 50/255	4,14/8,7,5,30			(0.30)	Firm light brownish grey slightly gravelly slightly sandy CLAY. Gravel is subangular to subrounded, fine to coarse, of sandstone.	
					1.50	Firm grey mottled orangish brown slightly sandy, silty CLAY.	
					(0.10)		
					1.60		
					(0.40)		
					2.00	No recovery. Cone SPT. Very high strength/very dense soil.	
					(0.41)		
					2.41	Complete at 2.41m	

Remarks Borehole refused on sandstone bedrock. No groundwater encountered. Backfilled with arisings upon completion.	Scale (approx)	Logged By
	1:20	JP
	Figure No. CDP/30.WS03	



Excavation Method Drive-in Windowless Sampler	Dimensions 100mm to 1.50m	Ground Level (mOD)	Client Commercial Development Projects Ltd	Job Number CDP/30
	Location	Dates 23/10/2023	Engineer JP	Sheet 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend
					(0.15)	MADE GROUND: Concrete.	
					0.15 (0.15)	MADE GROUND: Brown slightly clayey sandy, subangular to subrounded, fine to coarse gravel, of sandstone.	
					0.30 (0.20)	Light orangish brown, slightly clayey sandy GRAVEL, of subangular to subrounded, fine to coarse sandstone.	
					0.50 (0.30)	Firm, grey mottled orangish brown, slightly sandy, silty CLAY.	
					0.80 (0.20)	No recovery.	
					1.00 (0.50)	Firm brown mottled orangish brown and grey, slightly gravelly sandy CLAY. Gravel is subangular to subrounded, fine to coarse, of sandstone.	
					1.50	Complete at 1.50m	

Remarks Borehole terminated due to natural strata being found. No groundwater ingress encountered. Backfilled with arisings upon completion.	Scale (approx)	Logged By
	1:20	JP
	Figure No. CDP/30.WS04	



Excavation Method Drive-in Windowless Sampler	Dimensions 100mm to 0.60m	Ground Level (mOD)	Client Commercial Development Projects Ltd	Job Number CDP/30
	Location	Dates 23/10/2023	Engineer JP	Sheet 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend
0.15-0.25	ES1		Cores noted to be wet between 0.15m and 0.25m		(0.15) MADE GROUND: Concrete. 0.15 (0.10) MADE GROUND: Brown slightly clayey sandy gravel of subangular to subrounded, fine to coarse sandstone and brick. 0.25 (0.15) Firm grey mottled orangish brown, slightly sandy gravelly CLAY. Gravel is subangular to subrounded, fine to coarse, of sandstone. 0.40 (0.20) Light brown SANDSTONE recovered as sandy, subangular, fine to coarse gravel. 0.60 Complete at 0.60m		

Remarks Borehole refused on sandstone bedrock. Cores noted to be wet from 0.15m to 0.25m. Backfilled with arisings upon completion.	Scale (approx)	Logged By
	1:20	JP
	Figure No. CDP/30.WS05	



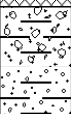



Excavation Method Drive-in Windowless Sampler	Dimensions 100mm to 1.26m	Ground Level (mOD)	Client Commercial Development Projects Ltd	Job Number CDP/30
	Location	Dates 23/10/2023	Engineer JP	Sheet 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend
0.10-0.30	ES1				0.10 0.10	MADE GROUND: Concrete.	
					0.40	MADE GROUND: Brown slightly gravelly sandy clay. Gravel is subangular to subrounded, fine to coarse, of sandstone and brick.	
					0.50	Grey subangular cobble of concrete.	
					0.80	Firm brown slightly gravelly, slightly sandy CLAY. Gravel is subrounded, fine to medium, of sandstone.	
0.90-1.00	D1				0.20	Firm orangish brown, slightly gravelly, clayey SAND with a low subrounded cobble content of sandstone. Gravel is subangular to subrounded, fine to coarse, of sandstone.	
1.00-1.26	SPT(C) 50/110		15,10/26,24		1.00	Light brown subrounded cobble of sandstone.	
					0.26	No recovery. Cone SPT. Very high strength / Very dense soil.	
					1.26	Complete at 1.26m	

Remarks Borehole refused on sandstone bedrock. No groundwater ingress encountered. Backfilled with arisings upon completion.	Scale (approx)	Logged By
	1:20	JP
	Figure No. CDP/30.WS06	

Excavation Method Drive-in Windowless Sampler	Dimensions 100mm to 0.90m	Ground Level (mOD)	Client Commercial Development Projects Ltd	Job Number CDP/30
	Location	Dates 23/10/2023	Engineer JP	Sheet 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend
0.30-0.50	ES1				(0.30)	MADE GROUND: Concrete.	
					0.30 (0.20)	MADE GROUND: Brown slightly gravelly sandy clay. Gravel is subangular to subrounded, fine to coarse, of sandstone and brick.	
					0.50 (0.30)	Firm light brown slightly gravelly sandy CLAY. Gravel is subangular to subrounded, fine to coarse, of sandstone.	
					0.80 (0.10) 0.90	Light brown SANDSTONE recovered as sandy, subangular, fine to coarse gravel.	
						Complete at 0.90m	

Remarks Borehole refused on sandstone bedrock. No groundwater ingress encountered. Backfilled with arisings upon completion.	Scale (approx)	Logged By
	1:20	JP
	Figure No. CDP/30.WS07	



Excavation Method Drive-in Windowless Sampler	Dimensions 100mm to 0.80m	Ground Level (mOD)	Client Commercial Development Projects Ltd	Job Number CDP/30
	Location	Dates 23/10/2023	Engineer JP	Sheet 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend
0.25-0.40	ES1		Cores noted to be wet between 0.15m and 0.25m.		(0.15)	MADE GROUND: Concrete.	
					0.15 (0.10) 0.25	MADE GROUND: Brown slightly clayey sandy subrounded, fine to coarse gravel of sandstone.	
					(0.55)	Orangish brown slightly clayey, gravelly fine to coarse SAND with medium subrounded cobble content of sandstone. Gravel is subangular to subrounded, fine to coarse, of sandstone (Weathered bedrock).	
					0.80	Complete at 0.80m	

Remarks Borehole refused on sandstone bedrock. Cores noted to be wet between 0.15m and 0.25m. Backfilled with arisings upon completion.	Scale (approx)	Logged By
	1:20	JP
	Figure No. CDP/30.WS08	



Excavation Method Drive-in Windowless Sampler	Dimensions 100mm to 2.00m	Ground Level (mOD)	Client Commercial Development Projects Ltd	Job Number CDP/30
	Location	Dates 23/10/2023	Engineer JP	Sheet 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend
0.10-0.30	ES1		Cores noted to be wet from 0.1m to 0.3m.		(0.10)	MADE GROUND: Concrete.	
					0.10	MADE GROUND: Brownish grey, slightly clayey sandy gravel, of subangular to subrounded, fine to coarse sandstone with tarmac and trace bitmac.	
					(0.20)		
					0.30	Firm dark brownish grey slightly gravelly, sandy CLAY. Gravel is subangular to subrounded, fine to coarse, of sandstone.	
					(0.30)		
1.50-1.70	D1				0.60	Orangish brown, slightly clayey, gravelly, fine to coarse SAND. Gravel is subangular to subrounded, fine to coarse, of sandstone.	
					(0.40)		
					1.00	No recovery.	
					(0.10)		
					1.10	Orangish brown, slightly clayey, gravelly, fine to coarse SAND. Gravel is subangular to subrounded, fine to coarse, of sandstone.	
					(0.80)		
					1.90	Orangish brown slightly clayey, gravelly fine to coarse SAND with medium subrounded cobble content of sandstone. Gravel is subangular to subrounded, fine to coarse, of sandstone (Weathered bedrock).	
					(0.10)		
					2.00	Complete at 2.00m	

Remarks Borehole refused on sandstone bedrock. Cores noted to be wet from 0.1m to 0.3m. Backfilled with arisings upon completion.	Scale (approx)	Logged By
	1:20	JP
	Figure No. CDP/30.WS09	



Excavation Method Drive-in Windowless Sampler	Dimensions 100mm to 1.03m	Ground Level (mOD)	Client Commercial Development Projects Ltd	Job Number CDP/30
	Location		Dates 23/10/2023	Engineer JP

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend
0.30-0.50	ES1				0.15	MADE GROUND: Concrete.	
					0.15	MADE GROUND: Grey slightly clayey sandy subrounded, fine to coarse gravel of sandstone.	
					0.30	Firm brown mottled grey and orange, slightly sandy, slightly gravelly CLAY. Gravel is subangular to subrounded, fine to coarse, of sandstone, with a low subangular cobble content of sandstone.	
0.80-1.03	SPT(C) 25*/105 50/125	18,7/27,23			0.40		
					0.70	SANDSTONE: Recovered as sandy subangular to subrounded, fine to coarse gravel, of sandstone with a medium subangular cobble content of sandstone.	
					0.80	No recovery. Cone SPT. Very high strength/very dense soil.	
					1.03	Complete at 1.03m	

Remarks Borehole refused on sandstone bedrock. No groundwater encountered. Backfilled with arisings upon completion.	Scale (approx)	Logged By
	1:20	JP
	Figure No. CDP/30.WS01	



Excavation Method Drive-in Windowless Sampler	Dimensions 100mm to 2.70m	Ground Level (mOD)	Client Commercial Development Projects Ltd	Job Number CDP/30
	Location	Dates 23/10/2023	Engineer JP	Sheet 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend
0.30-0.40	ES1				(0.30)	MADE GROUND: Concrete.	
					(0.30)	MADE GROUND: Brown slightly clayey sandy, subangular to subrounded, fine to coarse gravel, of sandstone.	
					(0.10)	Soft, turning firm by 0.6m, brown slightly gravelly sandy CLAY. Gravel is subangular to subrounded, fine to coarse, of sandstone with low a cobble content of subrounded sandstone.	
					(0.40)		
					(0.50)		
2.00-2.10	D1				(0.90)	Firm brown slightly sandy, slightly gravelly CLAY. Gravel is subangular to subrounded, fine to coarse, of sandstone.	
					(1.00)	No recovery.	
					(0.10)	Firm brown slightly sandy, slightly gravelly CLAY. Gravel is subangular to subrounded, fine to coarse, of sandstone.	
					(1.10)		
					(0.30)		
					(1.40)	Firm light brown mottled grey, slightly gravelly, sandy CLAY. Gravel is subangular to subrounded, fine to coarse, of sandstone with a low subrounded cobble content of sandstone.	
					(0.30)		
					(1.70)	Stiff greyish brown mottled orange, slightly sandy, silty CLAY.	
					(0.40)		
					(2.10)	Firm dark grey mottled light grey, slightly sandy silty CLAY.	
(0.40)							
(2.50)	SANDSTONE: Recovered as sandy subangular to subrounded, fine to coarse gravel, of sandstone with a medium subangular cobble content of sandstone.						
(0.20)							
(2.70)	Complete at 2.70m						

Remarks Borehole refused on sandstone bedrock. No groundwater encountered. Backfilled with arisings upon completion.	Scale (approx)	Logged By
	1:20	JP
	Figure No. CDP/30.WS02	



Excavation Method Drive-in Windowless Sampler	Dimensions 100mm to 2.41m	Ground Level (mOD)	Client Commercial Development Projects Ltd	Job Number CDP/30
	Location	Dates 23/10/2023	Engineer JP	Sheet 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend
0.15-0.30	ES1				(0.15)	MADE GROUND: Concrete.	
					0.15	MADE GROUND: Brown slightly clayey sandy, subangular to subrounded, fine to coarse gravel, of sandstone.	
					(0.15)	Soft brown slightly gravelly sandy CLAY. Gravel is subangular to subrounded, fine to coarse, of sandstone with low a subrounded cobble content of sandstone.	
					0.30	Light brown sandstone cobble	
1.00-1.45	SPT(C) N=13		3,2/2,3,3,5		(0.35)	No recovery.	
					(0.60)	No recovery. Cone SPT. Medium strength / Medium dense soil.	
					1.00	Firm medium strength grey, slightly sandy silty micaceous CLAY .	
					(0.20)	Firm light brownish grey slightly gravelly slightly sandy CLAY. Gravel is subangular to subrounded, fine to coarse, of sandstone.	
2.00-2.41	SPT(C) 50/255		4,14/8,7,5,30		1.20	Firm grey mottled orangish brown slightly sandy, silty CLAY.	
					(0.30)	No recovery. Cone SPT. Very high strength/very dense soil.	
					1.50	Complete at 2.41m	
					(0.10)		

Remarks Borehole refused on sandstone bedrock. No groundwater encountered. Backfilled with arisings upon completion.	Scale (approx)	Logged By
	1:20	JP
	Figure No. CDP/30.WS03	



Excavation Method Drive-in Windowless Sampler	Dimensions 100mm to 1.50m	Ground Level (mOD)	Client Commercial Development Projects Ltd	Job Number CDP/30
	Location	Dates 23/10/2023	Engineer JP	Sheet 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend
					(0.15)	MADE GROUND: Concrete.	
					0.15 (0.15)	MADE GROUND: Brown slightly clayey sandy, subangular to subrounded, fine to coarse gravel, of sandstone.	
					0.30 (0.20)	Light orangish brown, slightly clayey sandy GRAVEL, of subangular to subrounded, fine to coarse sandstone.	
					0.50 (0.30)	Firm, grey mottled orangish brown, slightly sandy, silty CLAY.	
					0.80 (0.20)	No recovery.	
					1.00 (0.50)	Firm brown mottled orangish brown and grey, slightly gravelly sandy CLAY. Gravel is subangular to subrounded, fine to coarse, of sandstone.	
					1.50	Complete at 1.50m	

Remarks Borehole terminated due to natural strata being found. No groundwater ingress encountered. Backfilled with arisings upon completion.	Scale (approx)	Logged By
	1:20	JP
	Figure No. CDP/30.WS04	



Excavation Method Drive-in Windowless Sampler	Dimensions 100mm to 0.60m	Ground Level (mOD)	Client Commercial Development Projects Ltd	Job Number CDP/30
	Location	Dates 23/10/2023	Engineer JP	Sheet 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend
0.15-0.25	ES1		Cores noted to be wet between 0.15m and 0.25m		(0.15) MADE GROUND: Concrete. 0.15 (0.10) MADE GROUND: Brown slightly clayey sandy gravel of subangular to subrounded, fine to coarse sandstone and brick. 0.25 (0.15) Firm grey mottled orangish brown, slightly sandy gravelly CLAY. Gravel is subangular to subrounded, fine to coarse, of sandstone. 0.40 (0.20) Light brown SANDSTONE recovered as sandy, subangular, fine to coarse gravel. 0.60 Complete at 0.60m		

Remarks Borehole refused on sandstone bedrock. Cores noted to be wet from 0.15m to 0.25m. Backfilled with arisings upon completion.	Scale (approx)	Logged By
	1:20	JP
	Figure No. CDP/30.WS05	



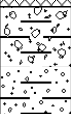



Excavation Method Drive-in Windowless Sampler	Dimensions 100mm to 1.26m	Ground Level (mOD)	Client Commercial Development Projects Ltd	Job Number CDP/30
	Location	Dates 23/10/2023	Engineer JP	Sheet 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend
0.10-0.30	ES1				0.10	MADE GROUND: Concrete.	
					0.10	MADE GROUND: Brown slightly gravelly sandy clay. Gravel is subangular to subrounded, fine to coarse, of sandstone and brick.	
					0.40	Grey subangular cobble of concrete.	
					0.50	Firm brown slightly gravelly, slightly sandy CLAY. Gravel is subrounded, fine to medium, of sandstone.	
					0.80	Firm orangish brown, slightly gravelly, clayey SAND with a low subrounded cobble content of sandstone. Gravel is subangular to subrounded, fine to coarse, of sandstone.	
0.90-1.00	D1				1.00	Light brown subrounded cobble of sandstone.	
1.00-1.26	SPT(C) 50/110		15,10/26,24		1.00	No recovery. Cone SPT. Very high strength / Very dense soil.	
					1.26	Complete at 1.26m	

Remarks Borehole refused on sandstone bedrock. No groundwater ingress encountered. Backfilled with arisings upon completion.	Scale (approx)	Logged By
	1:20	JP
	Figure No. CDP/30.WS06	

Excavation Method Drive-in Windowless Sampler	Dimensions 100mm to 0.90m	Ground Level (mOD)	Client Commercial Development Projects Ltd	Job Number CDP/30
	Location	Dates 23/10/2023	Engineer JP	Sheet 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend
0.30-0.50	ES1				0.30	MADE GROUND: Concrete.	
					0.30 (0.20)	MADE GROUND: Brown slightly gravelly sandy clay. Gravel is subangular to subrounded, fine to coarse, of sandstone and brick.	
					0.50 (0.30)	Firm light brown slightly gravelly sandy CLAY. Gravel is subangular to subrounded, fine to coarse, of sandstone.	
					0.80 (0.10) 0.90	Light brown SANDSTONE recovered as sandy, subangular, fine to coarse gravel.	
						Complete at 0.90m	

Remarks Borehole refused on sandstone bedrock. No groundwater ingress encountered. Backfilled with arisings upon completion.	Scale (approx) 1:20	Logged By JP
	Figure No. CDP/30.WS07	



Excavation Method Drive-in Windowless Sampler	Dimensions 100mm to 0.80m	Ground Level (mOD)	Client Commercial Development Projects Ltd	Job Number CDP/30
	Location	Dates 23/10/2023	Engineer JP	Sheet 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend
0.25-0.40	ES1		Cores noted to be wet between 0.15m and 0.25m.		(0.15)	MADE GROUND: Concrete.	
					0.15	MADE GROUND: Brown slightly clayey sandy subrounded, fine to coarse gravel of sandstone.	
					(0.10)		
					0.25	Orangish brown slightly clayey, gravelly fine to coarse SAND with medium subrounded cobble content of sandstone. Gravel is subangular to subrounded, fine to coarse, of sandstone (Weathered bedrock).	
		(0.55)					
					0.80	Complete at 0.80m	

Remarks Borehole refused on sandstone bedrock. Cores noted to be wet between 0.15m and 0.25m. Backfilled with arisings upon completion.	Scale (approx)	Logged By
	1:20	JP
	Figure No. CDP/30.WS08	



Excavation Method Drive-in Windowless Sampler	Dimensions 100mm to 2.00m	Ground Level (mOD)	Client Commercial Development Projects Ltd	Job Number CDP/30
	Location	Dates 23/10/2023	Engineer JP	Sheet 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend
0.10-0.30	ES1		Cores noted to be wet from 0.1m to 0.3m.		(0.10)	MADE GROUND: Concrete.	
					0.10	MADE GROUND: Brownish grey, slightly clayey sandy gravel, of subangular to subrounded, fine to coarse sandstone with tarmac and trace bitmac.	
					(0.20)		
					0.30	Firm dark brownish grey slightly gravelly, sandy CLAY. Gravel is subangular to subrounded, fine to coarse, of sandstone.	
					(0.30)		
1.50-1.70	D1				0.60	Orangish brown, slightly clayey, gravelly, fine to coarse SAND. Gravel is subangular to subrounded, fine to coarse, of sandstone.	
					(0.40)		
					1.00	No recovery.	
					(0.10)	Orangish brown, slightly clayey, gravelly, fine to coarse SAND. Gravel is subangular to subrounded, fine to coarse, of sandstone.	
					1.10		
					(0.80)		
					1.90	Orangish brown slightly clayey, gravelly fine to coarse SAND with medium subrounded cobble content of sandstone. Gravel is subangular to subrounded, fine to coarse, of sandstone (Weathered bedrock).	
					(0.10)		
					2.00	Complete at 2.00m	

Remarks Borehole refused on sandstone bedrock. Cores noted to be wet from 0.1m to 0.3m. Backfilled with arisings upon completion.	Scale (approx)	Logged By
	1:20	JP
	Figure No. CDP/30.WS09	



Excavation Method Trial Pit	Dimensions W - 0.3m L - 0.3m D - 0.4m	Ground Level (mOD)	Client Commercial Development Projects Ltd	Job Number CDP/30
	Location	Dates 23/10/2023	Engineer JP	Sheet 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend
0.20-0.40	ES1		Concrete foundations extend to 0.3m.		(0.10)	MADE GROUND: Concrete.	
					0.10	MADE GROUND: Orangish brown, fine to coarse SAND.	
0.40	HSV 50kPa				(0.25)	Firm brown, slightly gravelly, slightly sandy CLAY. Gravel is subangular to subrounded, fine to coarse, of sandstone.	
					0.40	Complete at 0.40m	



Remarks

Base of foundations reached.
 No groundwater ingress encountered.
 Backfilled with arisings upon completion.

Scale (approx) 1:20	Logged By JP	Figure No. CDP/30.HP01
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Excavation Method Trial Pit	Dimensions W - 0.3m L - 0.3m D - 0.35m	Ground Level (mOD)	Client Commercial Development Projects Ltd	Job Number CDP/30
	Location	Dates 23/10/2023	Engineer JP	Sheet 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend
0.20-0.30	ES1				0.15	MADE GROUND: Concrete.	
					0.20	MADE GROUND: Light brown gravelly, fine to coarse SAND. Gravel is subangular to rounded, fine to coarse, of sandstone and concrete.	
					0.35	MADE GROUND: Concrete foundation.	
					0.35	Complete at 0.35m	



Remarks

Pit terminated due to concrete foundation stepping out.
 No groundwater ingress encountered.
 Backfilled with arisings upon completion.

Scale (approx) 1:20	Logged By JP	Figure No. CDP/30.HP02
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Photo 1: 23-10-2023 General view of the foundation pit in the small barn to the south west of the site (HP01).



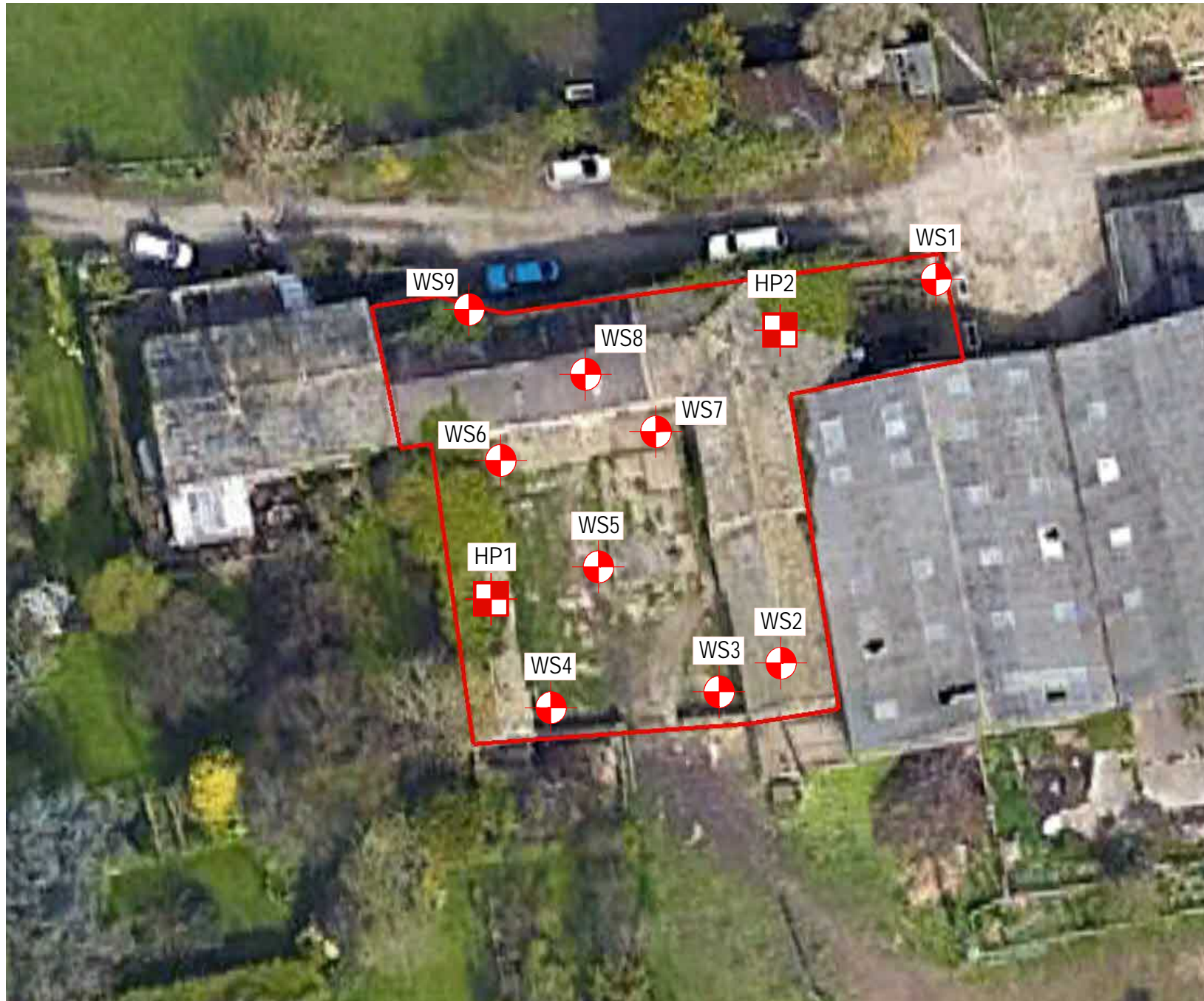
Photo 2: 23-10-2023 Closer view of HP01.



Photo 3: 23-10-2023 General view of the foundation pit in the larger building to the north east of the site (HP02).



Photo 4: 23-10-2023 Closer view of HP02.



0m 20m
Approximate Scale

Key

- Trial Pit
- Window Sample Borehole

ARP
ARP GEOTECHNICAL LTD
CHARTERED CONSULTING ENGINEERS
Northwest House · 5-6 Northwest Business Park · Senvla Hill · Leeds LS6 2QH
Telephone : 0113 245 8498 Fax : 0113 244 3864 E-Mail : leeds@arpassociates.co.uk

Project
**WIKE RIDGE FARM,
LEEDS**

Client
**COMMERCIAL DEVELOPMENT
PROJECTS LTD**

Title
SITE INVESTIGATION PLAN

Date
NOVEMBER 2023

Drawn
JP

Scale
AS SHOWN

Job No.
CDP/30