

Remediation Strategy

Land off Oldham Road, Rochdale



Report Status

Project Number	20511
Report Number	002
Revision	V01 – Issue for information
Date Issued	18 July 2025 (V01)

Report Author

Russell Bowman (Director) BSc (Hons) MSc CEng CWEM MCIWEM

Contents

1.0	The Site and Proposed Development.....	1
2.0	Summary of Risk Assessments.....	2
3.0	Remedial Works.....	3
4.0	Validation Plan.....	7

Appendices	Drawings > Exploratory Hole Logs (from existing ground-related reporting > Juta GP Titanflex Technical Datasheet
------------	--

Appointment

Soil and Structures Ltd were instructed by Metalcraft Group Ltd (*the Client*) in January 2025 to prepare Remediation Strategy (*this Report*) in support of a planned development of a parcel of land located off Oldham Road, Rochdale (the Site).

Development proposals include for the construction of a single-storey retail unit and associated hard standing (parking and goods yard).

Reliance on the advice presented herein rests solely with the Client.

Scope and Context

The Remediation Strategy offers advice on risk mitigation measures or ‘remedial actions’ that have been recommended to bring the site up to a condition that would be deemed ‘suitable for use’.

The legal context of this advice is rooted within national planning policy guidance (the National Planning Policy Framework) that is governed by planning law (various acts).

In this scenario, the Site would be deemed ‘suitable for use’ if residual risk is reduced to acceptable levels for two ground-related hazards; i) potentially harmful material in soils and, ii) potentially polluting material in soils.

Other ground-related hazards, e.g. slope stability, are beyond the scope of this Report but should be addressed through the design process.

Background to this Report

This Report is preceded by ground-related reporting relating to the Site. This includes a ‘Phase 1: Desk Top Study & Coal Mining Risk Assessment’ prepared by ARC Environmental Ltd dated 09 September 2022 ref. 22-562 and a Ground Investigation Report (intrusive) prepared by Soil and Structures Ltd dated 15 July 2025 ref. 20511-R-001-V01.

References

The Remediation Strategy has been written with reference to various sources of information including; design drawings (appended); and, existing ground-related reporting referenced above (not appended; readers of this Report assumed have access to it).

Reference is also made to the ‘Engineer’ within this Report that relates to the appointed design engineer (structural and/or civil) who is most likely to be the main point of contact within the design team.

Non-Technical Summary

The existing geo-environmental reporting identified the presence of residual, below-ground infrastructure relating to the former use of Site as a petrol filling station. Whilst the main underground storage tank (petrol) has been removed, the possible presence of two remaining underground storage tanks (diesel) as well as fuel pipelines are highlighted as key features for the planned groundworks. Where not managed appropriately, these features stand to result in a greater chance of nuisance and/or harm to end users (shop workers and visitor) and harm to the environment (groundwater).

This Remediation Strategy provides advice on: i) the risk mitigation measures; and, ii) the more general actions required to ensure the proposed development can be deemed ‘suitable for use’.

Land off Oldham Road, Rochdale

Location and size: The Site comprises an existing parcel of open land that is approximately 0.14 ha in area located between Oldham Road and Watkin Street, Oldham – Figure 1.

Topography: The surface topography of the Site falls from east to west with levels at the eastern boundary of the Site resting around 139.0 mAOD (Watkin Street at 140.0 mAOD locally to the Site) and levels at the western boundary resting around 138.0 mAOD.

Existing structures: At the point of the fieldworks, no existing structures were present on Site however the eastern boundary is formed of a masonry retaining wall (Watkin Street is higher than the Site).

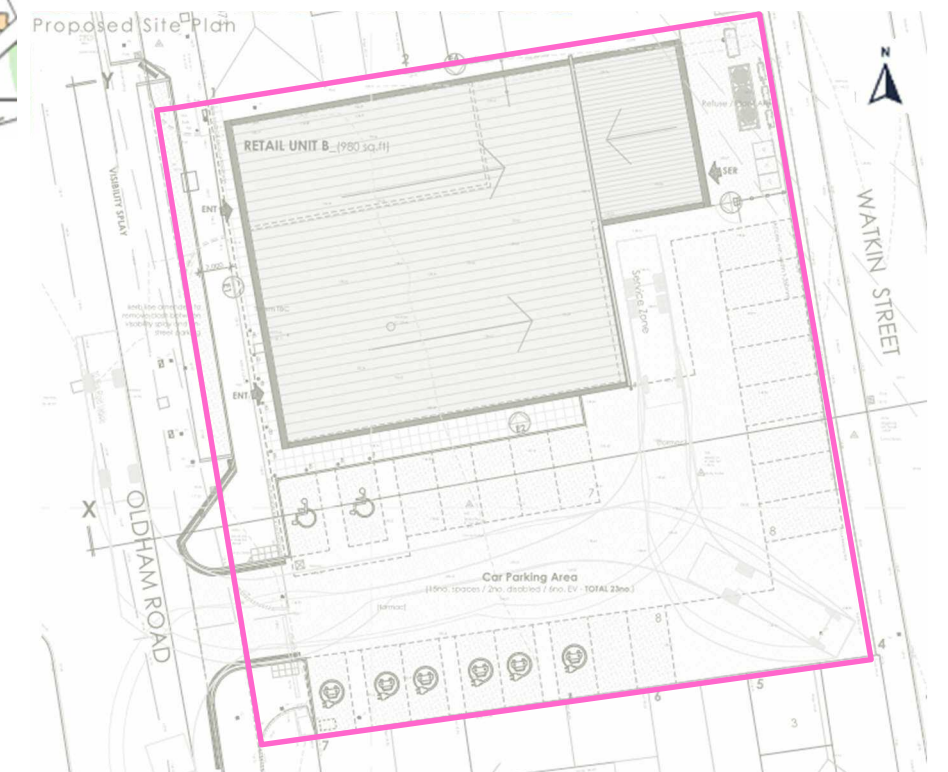
Development proposals: include for the construction of a single-storey retail unit and associated hard standing (parking and goods yard) – Figure 1.

To enable this development, the following groundworks are likely to be required, N.B. listing is outline only.

- The thickness of this 'wedge' will taper/thin towards the eastern boundary of the Site to limit the scale of underpinning works, potentially required along the eastern boundary retaining wall.

- > **Tank Pulls:** Anecdotally, two 'small' underground storage tanks (diesel) remain on Site that, if present, would require controlled removal by a suitably qualified and experienced contractor.

- > **Utility Excavations:** Excavation of new drainage and other utility alignments.
- > **Foundations:** Construction of new sub-structures (foundations) for the retail unit.
- > **Surfacing:** Formation of hardstanding (no soft landscaping planned).



- > *Extract from appended Site Location Plan*
- > *Site approximately centred on NGR 390460, 411760*
- > *Post code: OL16 4TD*
- > **INSERT:** *extract from appended Proposed Site Plan*

2.0 Summary of Risk Assessments

Context and scope of the risk assessments *The assessment of a Site's suitability for its proposed end use is rooted within national planning policy guidance (the National Planning Policy Framework) that is governed by planning law (various acts).*

This assessment of suitability is an assessment of the risk presented by specific, ground-related hazards; i) potentially harmful and, ii) polluting material. Ground gas and vapour risk is also included as part of the assessment for potentially harmful material.

Other ground-related hazards, i.e. slope stability and sub-structures (relic foundations), have been identified as potentially affecting the development. Whilst the management of these hazards is beyond the scope of this Report, attention to this is highlighted as any work in the ground stands to influence the risk presented by.

Summary: The Ground Investigation Report concluded that, based on the available evidence and following removal of any remaining underground fuel infrastructure (tanks and pipe-lines), the risk presented to end users of the Site from potentially harmful was likely to be acceptably low.

The Ground Investigation Report also highlighted that:

- > Until removal of this infrastructure was complete, this assessment of risk remained provisional, i.e. even where extensive pre-construction investigation is completed, there remains the potential for isolated areas of fuel-impacted soils to remain in the ground.
- > Precautionary risk mitigation measures are proposed alongside 'source removal' of any fuel-impacted material.
- > Construction phase risks mitigation is recommended to ensure risks presented to operatives and local residents are kept acceptably low.

2.1 The underground storage tanks and fuel pipelines

The underground storage tanks and fuel pipelines are the main sources of potentially harmful and polluting material on Site as well as likely representing obstructions to new foundations. It is therefore critical that the removal of any remaining underground fuel infrastructure (tanks and pipe-lines) is completed in a controlled manner by a suitably qualified and experienced groundworks contractor.

2.2 Potentially harmful material

Sources of harmful material: Beyond the USTs, two additional sources of potentially harmful material are identified:

1. **Fuel containing soils surrounding the infrastructure:** carbon chain lengths of C16 and less with greater levels of volatility within the sub-surface.
2. **Asbestos containing soils:** loose asbestos fibres detected within the Made Ground soils.

Routes or 'pathways' by which this material could present harm to 'receptors' (end users):

- a) Any residual fuel range hydrocarbons (C16 and below) present within the soils beneath the proposed retail store have the potential to generate vapours under various environmental conditions, even at very low concentrations. These vapours have the potential to enter internal spaces (chimney stack effects) with the potential for both harm and cause a nuisance (odours) to the shop operatives and visitors.

- b) Any asbestos present within the soils (asbestos containing soils; ACS) beneath the Site will be encapsulated by the proposed 'hard' cover across the Site and therefore no 'pathways' to harm exist to end users of the Site.

However, this material does present a potential risk of harm to both Site operatives and local residents during the construction phase and therefore the Contractor should allow for suitably controls to be in place during the works to reduce this risk to acceptably low levels.

Evidence of asbestos containing material (ACM) was confirmed in the soils on Site with a reduction in the overall proportion of this material favourable for both any waste disposal classifications and the legacy risk this material presents to future groundwork operatives beyond the completion of groundworks as part of the proposed development.

Risk assessment:

- ✓ Following 'source removal' the risk presented by potentially harmful material (fuel range hydrocarbons) is assessed to be acceptably low. Precautionary risk mitigation is recommended to further limit the likelihood of any vapours generated by fuel-impacted soils entering internal spaces.
- ✓ The risk presented by asbestos containing soils is assessed to be acceptably low post-construction but not during construction with risk management recommended. Outline advice is presented within the Ground Investigation Report (intrusive) prepared by Soil and Structures Ltd dated 15 July 2025 ref. 20511-R-001-V01

2.3 Potentially Polluting material

Sources of harmful material: Beyond the USTs, one source of potentially polluting material is identified:

1. **Fuel containing soils surrounding the infrastructure:** carbon chain lengths of C16 and less with greater levels of mobility within the sub-surface.

Routes or 'pathways' by which this material could present harm:

- a) Any residual fuel range hydrocarbons present within the soils (including those released from the fuel infrastructure) have the potential to migrate vertically down through the soil column into the deeper groundwater beneath the Site (a Controlled Water body).

Risk assessment:

- ✓ Following 'source removal' the risk presented by potentially harmful material (fuel range hydrocarbons) is assessed to be acceptably low noting that until this infrastructure is removed and the surrounding soils fully exposed, the full extent of this work (and associated level of risk) cannot be confirmed.

2.4 Unforeseen encounters and changing risk

Risk is not static and can change for various reasons. In this scenario, the level of risk may change due to encounters of unforeseen material in the ground, e.g. fuel impacted soils being encountered outside of areas where underground fuel infrastructure is located.

3.0 Remedial Works

Context and scope of the remedial works: Remedial action has been recommended to reduce the risk relating to ground-related hazards to acceptably low levels. When this remedial action is completed satisfactorily, the development can be deemed 'suitable for use'.

The two hazards for which, without remedial action, residual risk is likely to be unacceptable include: i) potentially harmful material in the soils on Site; and, ii) potentially polluting material in the soils on Site.

Remedial action 1: Common to both these hazards and a requirement of the groundworks more generally is the removal of any remaining underground fuel infrastructure (tanks and pipe-lines). This infrastructure represents a source of potentially harmful and polluting material.

Remedial action 2: Following removal of any remaining underground fuel infrastructure, it is recommended that any fuel impacted soils are 'chased out' and removed from Site to a suitably licensed facility (disposal or treatment). The fuel impacted soils represent a source of potentially harmful and polluting material.

Remedial Action 3: Following removal of fuel impacted soils, it is recommended that the new retail unit is provided with a continuously sealed, low permeability barrier to limit the potential for any residual vapours in the soils entering the retail unit.

These remedial actions are detailed more fully within the following sub-sections.

Other actions are also recommended that relate to land quality advice on which is detailed in Section 3.3 to 3.5 hereafter.

3.1 Remedial Action 1 – Removal of underground fuel infrastructure

The objective of this remedial action is to: ensure the underground fuel infrastructure (tanks and pipelines) their contents (residual fuel) are removed from the Site that represent 'sources' of potentially harmful and polluting material.

This remedial action is inherent to the development process with any underground fuel infrastructure representing obstructions to new sub-structures (foundations) and infrastructure (drainage).

A plan illustrating the likely extent of this work is presented at the end of this Section.

This remedial action can be achieved through: Removal of the underground fuel infrastructure from Site and recovery/disposal at a suitably licensed facility.

The removal of underground storage tanks (USTs) and other fuel infrastructure is covered under various, specific guidance documents with the [Environment Agency guidance](#) offering high-level advice on the various stages of decommissioning and signposts to other core guidance.

As a minimum requirement, notification of all the relevant regulatory authorities is recommended prior to any works commencing. This will include but may not be limited to notification of; the local fire service's [petroleum officer](#) and the local planning authority's contaminated land officer.

Of specific relevance to the notification and works themselves are the following details:

- a) The primary petroleum UST appears to have already been removed from the Site with anecdotal comments from the neighbour who witnessed the work confirmed by the presence of locally deep 'fill' and a relic concrete base (as anticipated at the base of the UST) where this UST was indicated to be present.

- b) Details relating to the petrol filling station are very limited with these anecdotal comments from the neighbour the primary point of reference alongside the findings of the ground investigation fieldworks.
- c) Residual, underground fuel infrastructure potentially includes: i) two 'small' diesel tanks; and, ii) fuel pipelines connecting the tanks to the pumps. No evidence of the diesel tanks was found during the ground investigation fieldworks however it was noted that the tanks may remain in other areas, not readily accessible at the point of investigation (dense tree cover).
- d) Only limited evidence of drainage infrastructure (general drainage) was noted on Site with no evidence of fuel odours or staining within the access covers that were accessible during the ground investigation fieldworks.

Given the age and relatively small-scale of the petrol filling station, it is likely that no dedicated drainage system was installed with any surface spillages draining to the grated drains at the access points (outfall unknown) or into the highway drainage system as run-off from the Site.

Following notification and approval to proceed, it is recommended that the following actions are completed, listed in outline below:

- > **Exposing the infrastructure:** Excavations locally to the underground fuel infrastructure and other drainage infrastructure are progressed slowly and methodically under the watching brief of a suitably qualified and experienced engineer.

The watching brief is intended to support segregation of materials and limit the potential for any damage to the infrastructure.

As a minimum, provision of spill response kits is recommended to limit the potential for any residual fuel within the infrastructure entering the surrounding soils.

- > **Decommissioning the infrastructure:** Once exposed, any residual fuel and gases should be removed from the tanks and pipelines by a suitably qualified and experienced contractor with appropriate certification, e.g. decommissioning certificates retained on Site.
- > **Excavation the infrastructure:** Once decommissioned, the infrastructure can be recovered from the ground and removed from Site to a suitably licensed facility for waste recovery or disposal with appropriate certification, e.g. Waste Transfer Note retained on Site.

Validation requirements for this work are set out within Section 4.1.

3.2 Remedial Action 2 – Removal of fuel impacted soils

The objective of this remedial action is to: ensure any fuel impacted soils are removed from Site that, where present, represent 'sources' of potentially harmful and polluting material.

A plan illustrating the likely extent of this work is presented at the end of this Section.

This remedial action can be achieved through: Removal of any fuel impacted soils from Site for recovery/disposal at a suitably licensed facility.

- > **Supervision:** This work is overseen by a suitably qualified and experienced engineer.

- > **Extent of works:** The extent of hydrocarbon impacted soils is 'chased out' to their lateral and vertical extent that is initially determined based on visual evidence and odours with the use of alternative means of screening, e.g. photo-ionisation detection (PID) and/or soil sampling and laboratory analysis, used at the discretion of the supervising engineer.
- > **Recovery and removal:** Any hydrocarbon impacted soils are to be excavated, loaded onto sealable wagons and removed from Site for disposal and/or recovery at a suitably licensed facility with appropriate certification, e.g. Waste Transfer Note retained on Site.

Validation requirements for this work are set out within Section 4.2.

3.3 Remedial Action 3 – Vapour protection measures

The objective of this remedial action is to: prevent end users of the Site being exposed to noxious or toxic vapours arising from residual concentrations of fuel-range hydrocarbons within the soils

This remedial action can be achieved through: provision of a continuously sealed, vapour resistant membrane to the full footprint of the retail unit.

- > A hydrocarbon and Volatile Organic Compound resistant membrane as defined by CIRIA C748:2014, e.g. Juta GP Titanflex (datasheet appended).
- > Well-sealed, e.g. welded or double-jointed with service penetrations sealed, such that it can act as an effectively 'air tight' barrier to the movement of vapours into the retail store.

① **Nature of the development:** *The development comprises construction of a commercial unit by an experienced contractor (the Client). Whilst this does not of itself guarantee compliance with the verification requirements, it does imply a higher level of duty of care will be applied to the installation of the membrane.*

The membrane is recommended as precautionary protection against the ingress of vapours in lieu of additional validation works associated with the removal of any fuel impacted soils, e.g. flux-box assessments.

Current guidance includes allowance for such scenarios however, it should be stated; without the correct installation, the vapour membrane stands to be compromised to the point of being useless. The membrane needs to form a continuous barrier to the entry of vapours across the full-footprint of the unit.

The Author's experience of independent verification of ground gas membranes and integrity testing (pumping tracer gas, usually hydrogen, under the membrane and 'sniffing' for leaks) confirms that service penetrations are commonly the 'weak-point' in the system.

- > **Guidance on Vapour Protection:** [Current guidance](#) on vapour protection focuses on ensuring the level of risk is adequately characterised and that the membrane is suitably robust and durable to serve as an effective barrier for the duration of the building's lifespan (or duration its performance is required).
- > **Overview of Vapour Protection:** In this scenario, the provision of a single form of vapour protection is recommended in the form of a low permeability vapour membrane. This recommended is made on a precautionary basis noting that, following removal of the underground fuel infrastructure and any fuel-impacted soils, the 'source' of any vapour generating material will have been removed.

Similarly, in meeting the requirements of current guidance, the recommended vapour resistant membrane is considered suitable for use noting that the long-term performance of vapour membranes under a constant head of pressure is rarely validated and, in this scenario, not considered necessary.

- > **Detailing of Vapour Protection:** The detailing of vapour protection should be completed by the Engineer or Architect (subject to responsibilities under the contract).

Guidance on detailing vapour protection membrane is provided within BRE 414 that although relating to 'ground gas' is relevant to vapour membranes.

The detailer's attention is also drawn to the following points:

For the membrane:

- ▶ The vapour protection membrane may also serve as a damp proof membrane (subject to suitability).

The membrane should comply with the specific requirements as defined by CIRIA C748:2014, be fully-sealed (including around service penetrations) and sufficiently robust to guard against incidental damage during the construction process.

The membrane selected should be clearly identified on the detailed drawings and, in any case, will need to be confirmed as compliant as part of the validation process.

- > **Installation of Vapour Protection:** The installation of vapour protection shall be completed by the Client, an experienced contractor.

Independent verification of the vapour protection membrane will be completed to ensure it has been installed to a suitable standard.

Validation requirements for this work are set out within Section 4.3.

3.4 Other Actions – New Water Supply Pipes

The objective of this action is to: ensure water supplies are not fouled by any potentially polluting material within the ground (confirming the chemical quality of the ground won't affect supply pipes).

This objective can be achieved through: the provision of suitable construction material for water supply pipes.

Based on the findings of the ground investigation report, new water supply pipes are expected to be formed within natural soil deposits (700 mm minimum depth; below the existing forecourt hardstanding) present across a former petrol filling station site.

Subject to the satisfactory completion of the remedial works detailed herein, the potential for any residual fuel-impacted soils to remain on Site is low however, there remains the potential for residual fuel-containing soils to be present. On this basis, given the potential for fuel-range hydrocarbons to act as organic solvents and permeate or degrade plastic pipework, it is recommended that a precautionary approach is adopted to water supply pipes.

In this scenario, the use of barrier pipe (PE/AL/PE is recommended for new water supply pipes).

If and where residual fuel impacted soils are encountered within pipe-runs, this would trigger the requirement for Remedial Action 2 to be extended to this area of the Site and therefore any potential increased risk to water supply pipes managed through this mechanism rather than the need adopt additional risk reduction measures, e.g. lining utility trenches with impermeable barriers.

Validation requirements for this work are set out within Section 4.4.

3.5

Other Actions – Response Plan for Unexpected or Unforeseen Harmful or Polluting Material

The objective of this action is to: ensure any unforeseen harmful or polluting material is dealt with in a way that ensures the development can still be deemed ‘suitable for use’ on completion and that future liabilities associated with the land are limited, e.g. pollution incidents.

This objective can be achieved through: continued inspection of formation soils through the groundworks operations.

If and where any material is revealed on Site that is suspected as being unsuitable, i.e. potentially harmful, then the advice of the Engineer or the Author of this Report should be sought.

Examples of ‘unforeseen contamination’ could include visibly stained or odorous soils. If and where soils are encountered that differ physically or in colour from those detailed and illustrated herein then it is also recommended that the advice of the Engineer or the author of this Report is sought.

The Engineer should in turn notify the local planning authority’s Contaminated Land Team of the encounter.

If and where the unforeseen contamination requires remedial action that differs from the actions detailed herein, then a revised Remediation Strategy should be submitted to local planning authority’s Contaminated Land Team and agreed in advance of any work on or around the potentially contaminated material recommencing.

Validation requirements for this work are set out within Section 4.4.

Remediation Strategy

Land off Oldham Road, Rochdale

SOIL AND STRUCTURES

Conceptualisation of Post-Development Condition of the Site (adapted from Ground Model - Plan in Section 5.0 of the Ground Investigation Report)



Remediation Strategy

Land off Oldham Road, Rochdale

SOIL AND STRUCTURES

4.0 Validation Plan

This section sets out the lines of evidence required to demonstrate, or validate, how the recommended remedial work achieve their stated aims.

On completion of the remedial work a [Validation Report](#) should be submitted to the Local Planning Authority for approval that confirms how the remedial action has been achieved.

Throughout the groundworks, it is recommended that a continual, daily diary of the works is maintained by the main contractor. As well as providing an evolving account of the groundworks operations this diary would serve as a valuable record for the Health & Safety File / Operations Manual for the retail unit and any future groundworks completed on the Site.

4.1 Remedial Action 1 – Removal of underground fuel infrastructure

The following lines of evidence should be sought to demonstrate this work has been completed:

- > **For the tanks decommissioning:**
 - o Decommissioning certification
 - o Waste transfer notes or other confirmation that any residual fuel has been removed from Site and transferred to a suitably licensed facility.
- > **For the tanks disposal / transfer off Site:**
 - o Waste transfer notes or other confirmation that the tanks have been transferred to a suitably licensed facility.

4.2 Remedial Action 2 – Removal of fuel impacted soils

The following lines of evidence should be sought to demonstrate this work has been completed:

- > **For the extent of hydrocarbon impacted soils being confirmed:**

Once the extent of the hydrocarbon impacted soils has been fully 'chased out' then confirmation samples are to be obtained from the side-walls and base of the excavation. Assuming a regularised, rectangular excavation, this would result in 5 samples being obtained – Figure 2.

Additional samples may be required where the geometry of excavations differs. Samples from the base of any pipeline excavations are to be taken at no greater than 3 m centres along pipe runs with a minimum of 3 samples per utility corridor, e.g. tank-end, middle, pump-end.

Samples are to be obtained in appropriate containers to limit the potential for hydrocarbons to volatilise off before testing and stored in temperature-controlled boxes (c. 4 degrees) for transit to a UKAS and MCerts accredited testing laboratory.

Samples are to be tested for total petroleum hydrocarbons (CWG banding) including methyl tert-butyl ether (MTBE) and benzene, toluene, ethylbenzene and xylene (BTEX).

Samples can be defined as 'free-from-fuel' where they contain less than 25 mg/kg of each CWG banding, e.g. C5-C7 aromatic, MTBE or BTEX compounds.

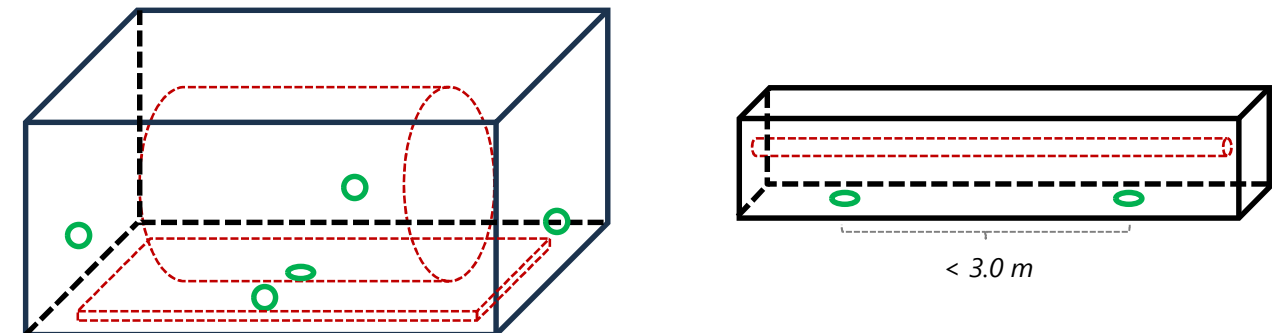


Figure 2: Model of idealised sampling locations within underground storage tank and fuel pipeline excavations

- > Green circles = sampling locations
- > Red dashed lines = conceptual illustration of UST or pipeline

4.3 Remedial Action 3 – Vapour protection measures

> **For the vapour protection design:**

The detailing of vapour protection should be completed by the Engineer or Architect (subject to responsibilities under the contract).

> **For the vapour protection installation:**

The installation of vapour protection shall be completed by the main contractor.

This approach is considered appropriate for this development type (single unit, simple design {membrane only}) and level of risk (precautionary protection) under current [good practice guidance](#).

> **For the vapour protection inspection:**

This guidance also clarifies that the 'verifier' of the gas protection installation should be an independent consultant or qualified and experienced installer. This is of specific importance where a non-skilled operative is installing the membrane; to ensure continuity of the membrane across the floor plate.

The appointed 'verifier' shall be the Author of this Report who is a *competent, experienced and suitably trained* individual with specific experience of detailed quantitative risk assessment (for ground gas and vapours) and inspection and sign-off of over 1000 units/plots.

The specific requirements of the verification process are set out within Table A3 of CIRIA C735 that the verifier should ensure compliance with but, in overview, verification shall be confirmed by signed inspection report, prepared by the 'verifier', confirming that the agreed vapour protection has been installed correctly in line with current guidance.

Given the scale and likely staging of the development it is likely that inspection of the membrane will be completed by the 'verifier' with photographic evidence presented for both.

Additional inspections by the 'verifier' shall be scheduled if and where concerns are raised either on the first inspection or on photographs subsequently submitted by the Contractor.

Remediation Strategy

Land off Oldham Road, Rochdale

Any non-conformances, e.g. inadequate sealing of service penetrations or multiple punctures, shall be immediately identified by the ‘verifier’ and, where not able to be rectified adequately on the inspection visit, an additional visit scheduled to demonstrate that appropriate steps have been taken to address the non-conformance.

① **Follow-on trades** should be made aware that any damage to the membrane is unacceptable and stands to compromise the vapour protection membrane.

4.4 Validation of Other Actions

The following lines of evidence should be sought to demonstrate that other actions have been completed satisfactorily:

> For water supply pipes:

There will likely be the requirement for sharing this Report with the water supplier as well as confirming, through order sheets and/or photographic records, that barrier pipe has been provided.

> For unexpected encounters of potentially harmful or polluting material:

If and where any unexpected encounters of potentially harmful or polluting material are made, then confirmation of the response plan having been completed satisfactorily should be included within the Validation Report.

OLDHAM ROAD, ROCHDALE

Site Location Information

NOTES
ALL WORK TO BE CARRIED OUT IN ACCORDANCE WITH THE BUILDING REGULATIONS AND THE REQUIREMENTS OF THE LOCAL AUTHORITY.



SITE PLAN - SCALE 1:1250



A	Boundary amended further to comment.	IR	08/08/22
REV	DESCRIPTION	BY	CHKD DATE

LOROC
ARCHITECTS

25A PARK SQUARE WEST, LEEDS, LS1 2PW
T: 0113 233 7755
W: www.loroc.co.uk

3RD FLOOR, 86 - 90 PAUL STREET, LONDON, EC2A 4NE
T: 0203 875 5333

PROJECT
OLDHAM ROAD
ROCHDALE

TITLE
PLANNING INFORMATION
General Arrangement
SITE LOCATION INFORMATION

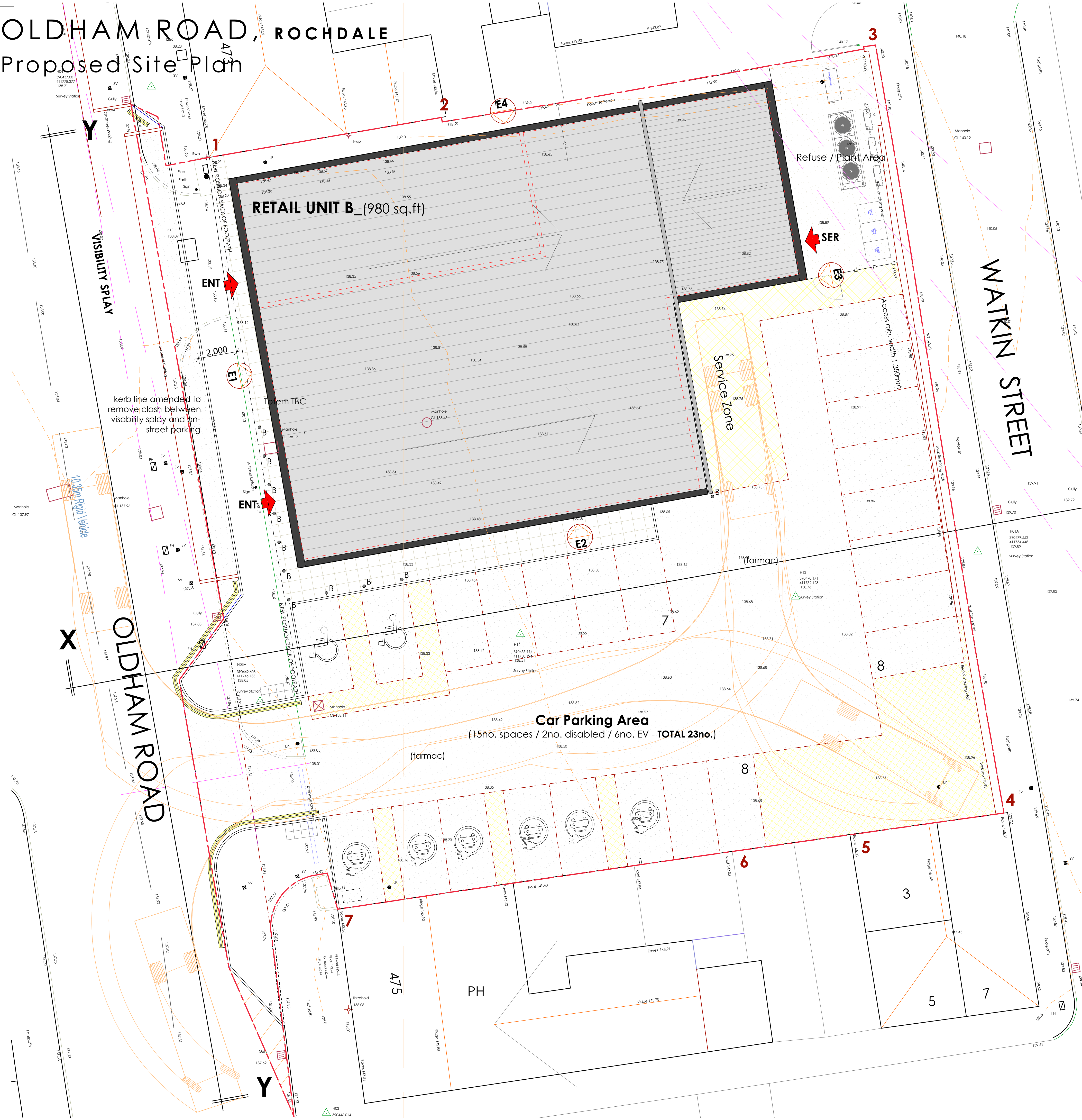
DRAWING NO.	1630_100(P)	REVISION	A
SCALE	1:500/1250 @ A3	DATE	MAY 2022
DRAWN BY	IR	CHECKED BY	

- PURPOSE OF ISSUE
- ☐ PLANNING
 - ☐ BUILDING REGS
 - ☐ TENDER
 - ☐ COMMENT
 - ☐ INFORMATION
 - ☐ CONSTRUCTION

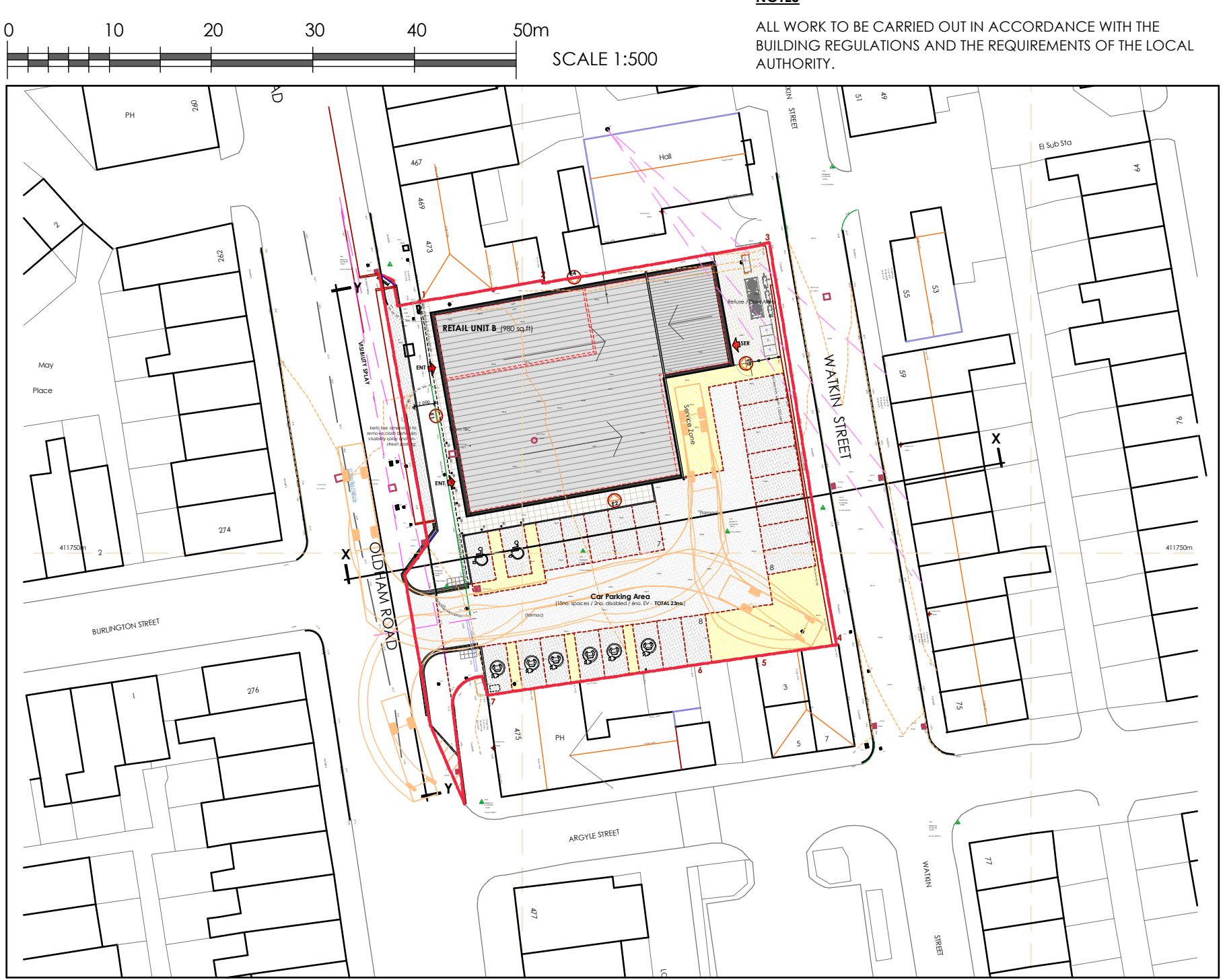
THIS DRAWING IS COPYRIGHT AND THE INTELLECTUAL PROPERTY OF LOROC ARCHITECTS LIMITED. THIS DRAWING MAY NOT BE REPRODUCED IN WHOLE OR IN PART WITHOUT WRITTEN AUTHORITY. NO DIMENSIONS TO BE SCALED FROM THIS DRAWING. ALL DIMENSIONS TO BE CHECKED ON SITE PRIOR TO COMMENCEMENT OF WORKS AND ANY DISCREPANCIES REPORTED TO THE ARCHITECT/ENGINEER/CONTRACTOR.



OLDHAM ROAD, ROCHDALE
Proposed Site Plan



CONTEXT SITE PLAN - SCALE 1:500



NOTES
ALL WORK TO BE CARRIED OUT IN ACCORDANCE WITH THE BUILDING REGULATIONS AND THE REQUIREMENTS OF THE LOCAL AUTHORITY.

- BOUNDARY TREATMENT KEY**
- 1-2 Existing brick elevation of adjoining building
 - 2-3 Existing palisade fence retained
 - 3-4 Existing wall and palisade fence retained, barbed wire removed from top of fence
 - 4-5 Existing brick elevation of adjoining building
 - 5-6 Existing brick wall retained
 - 6-7 Existing brick elevation of adjoining building
 - 7-1 No boundary treatment

Survey Control Co-ordinates				
Reference	East	North	Elevation	Description
H01	390492.796	411723.544	139.32	Survey Station
H01A	390479.552	411754.448	139.89	Survey Station
H02	390480.504	411787.992	140.26	Survey Station
H03	390446.014	411725.539	137.90	Survey Station
H03A	390442.603	411746.733	138.05	Survey Station
H04	390437.001	411778.377	138.21	Survey Station
H12	390455.994	411750.194	138.51	Survey Station
H13	390470.171	411752.123	138.76	Survey Station

REV	DESCRIPTION	BY	CHKD	DATE
Q	Scheme updated further to comments	IR		20/07/23
P	4no. EV spaces indicated.	IR		26/02/23
O	Minor alteration to service door	IR		06/02/23
N	Minor alterations further to highway consultants comments	IR		03/02/23
M	Minor alterations, tracking added.	IR		01/02/23
L	Site entrance altered to suit Highway Consultants comments and design.	IR		25/01/23
K	Parking amended.	IR		09/12/22
J	Site entrance position amended further to highway consultant comments.	IR		09/12/22
H	Visibility splay amended and on-street parking position amended to suit highway consultant comments.	IR		08/12/22
G	External works altered to suit highway consultant comments.	IR		06/12/22
F	Scheme layout amended to suit discussions, car parking, service access, building position amended.	IR		05/12/22
E	Boundary notes and site section positions added.	IR		06/08/22
D	Minor alteration in building positions, notes added.	IR		21/06/22
C	Minor amendment to parking layout	IR		01/06/22
B	External works amended to suit transport consultants information.	IR		31/05/22
A	Minor modification to Unit B	IR		18/05/22

LOROC
ARCHITECTS

5TH FLOOR, 15 ST. PAUL'S STREET, LEEDS, LS1 2JG
T: 0113 233 7755
W: www.loroc.co.uk

PROJECT
OLDHAM ROAD
ROCHDALE

TITLE
PLANNING INFORMATION
General Arrangement
PROPOSED SITE PLAN

DRAWING NO.	1430_101(P)	REVISION	Q
SCALE	1:100/500 @ A1	DATE	MAY 2022
DRAWN BY	IR	CHECKED BY	

- PURPOSE OF ISSUE
- ☐ PLANNING
 - ☐ BUILDING REGS
 - ☐ TENDER
 - ☐ COMMENT
 - ☐ INFORMATION
 - ☐ CONSTRUCTION

THIS DRAWING IS COPYRIGHT AND THE INTELLECTUAL PROPERTY OF LOROC ARCHITECTS LIMITED. THIS DRAWING MAY NOT BE REPRODUCED IN WHOLE OR IN PART WITHOUT WRITTEN AUTHORITY. NO DIMENSIONS TO BE SCALED FROM THIS DRAWING. ALL DIMENSIONS TO BE CHECKED ON SITE PRIOR TO COMMENCEMENT OF WORKS AND ANY DISCREPANCIES REPORTED TO THE ARCHITECT/ENGINEER/CONTRACTOR.



Key to exploratory hole symbols and abbreviations

SAMPLE TYPES

ACM - Asbestos sample
BLK - Block sample
D - Disturbed sample
G - Gas sample
TW - Pushed thin wall sample
W - Water sample

AMAL - Amalgamated sample
C - Core sample
ES - Environmental sample
J - Jar sample
U - Undisturbed sample

B - Bulk disturbed sample
CBR - CBR test sample
EW - Environmental water sample
L - Liner sample
UT - Undisturbed thin wall sample

IN-SITU TESTS

HV - Hand shear vane
PP - Hand penetrometer

HV(r) - Hand shear vane residual
SPT - Standard penetration test

PID - Photo ionisation detector
SPT(C) - SPT using cone

GROUNDWATER



Groundwater strike



Groundwater rest level

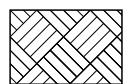
ROTARY CORE DETAILS

TCR - Total core recovery (%)
FI - Fracture index

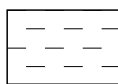
SCR - Solid core recovery (%)
NI - Non-intact core

RQD - Rock quality designation (%)
AZCL - Assumed zone of core loss

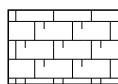
LEGEND



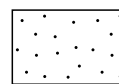
Topsoil



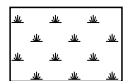
Clay



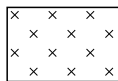
Chalk



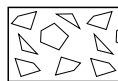
Sand backfill



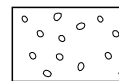
Peat



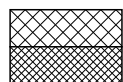
Silt



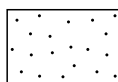
Breccia



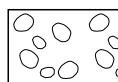
Gravel backfill



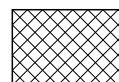
Made ground
[cohesive]



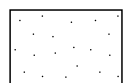
Sand



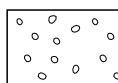
Conglomerate



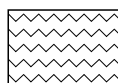
Arisings



Concrete



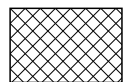
Gravel



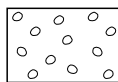
Metamorphic



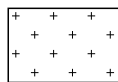
Bentonite



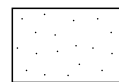
Wood



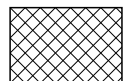
Cobbles



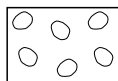
Igneous



Concrete



Brick



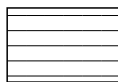
Boulders



Grout



Bituminous
material



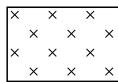
Mudstone



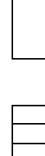
Plain pipe



Gypsum



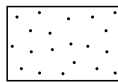
Siltstone



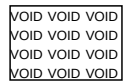
Slotted pipe



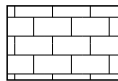
Coal



Sandstone



Void



Limestone



TP101

Hole Type	Easting	Northing	Ground Level (m)	Scale
TP	390471.00	411776.00	138.90	1:25
Project Name	Project No.		Start Date	End Date
Land off Oldham Road, Rochdale	20511		2025-03-27	2025-03-27

[illegible]

Method, Plant, Stability, Dimensions	Logger
0.00 - 0.60m TP - Trial Pi ² tonne tracked Stable $L = 1.20m$  $W = 0.60m$	RB

Created using Pebble Geo



SOIL AND
STRUCTURES

Trial Pit

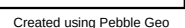
TP101
PHOTO PAGE

Hole Type TP	Easting 390471.00	Northing 411776.00	Ground Level (m) 138.90	Scale 1:25
Project Name Land off Oldham Road, Rochdale	Project No. 20511	Start Date 2025-03-27	End Date 2025-03-27	

Client Metalcraft Group	Consultant Soil and Structures Ltd	Contractor Metalcraft Group
----------------------------	---------------------------------------	--------------------------------



Remarks PURPOSE: General coverage of the Site. TERMINATION: Frequent, suspected asbestos containing material (ACM) encountered. LOCATION: Surveyed using freeware on Site. GL: Estimated off topographical survey. STABILITY: Stable. GROUNDWATER: None encountered. OTHER: No evidence of potentially harmful or polluting material other than ACM.	Method, Plant, Stability, Dimensions 0.00 - 0.60m TP - Trial Pit tonne tracked Stable L = 1.20m W = 0.60m	Logger RB
---	---	--------------



 SOIL AND STRUCTURES				Trial Pit					TP102	
									Sheet 1 of 1	
				Hole Type TP		Easting 390473.00	Northing 411764.00	Ground Level (m) 138.90	Scale 1:25	
Project Name Land off Oldham Road, Rochdale		Project No. 20511		Start Date 2025-03-27	End Date 2025-03-27					
Client Metalcraft Group				Consultant Soil and Structures Ltd			Contractor Metalcraft Group			
Inst/ Backfill	Water Levels	Samples and Tests			Level (m)	Depth (m)	Strata			
		Depth (m)	Type/ Ref	Results			Legend	Description		
					138.60	(0.30) 0.30		Black bituminous hardstanding (bound gravel; 75 mm thick) over light yellowish brown sandy, medium to coarse, angular GRAVEL of sandstone over concrete slab. [MADE GROUND, Hardstanding and sub-base]		
								End of Trial Pit at 0.30m		
									0.5	
									1.0	
									1.5	
									2.0	
									2.5	
									3.0	
									3.5	
									4.0	
									4.5	
									5.0	
Remarks PURPOSE: General coverage of the Site. TERMINATION: Practical refusal of excavator on concrete slab. LOCATION: Surveyed using freeware on Site. GL: Estimated off topographical survey. STABILITY: Stable. GROUNDWATER: None encountered. OTHER: No evidence of potentially harmful or polluting material.							Method, Plant, Stability, Dimensions 0.00 - 0.30m TP - Trial Pit tonne tracked Stable L = 1.50m W = 0.60m		Logger RB	
Checked By: RB Approved By: RB Status: FINAL										



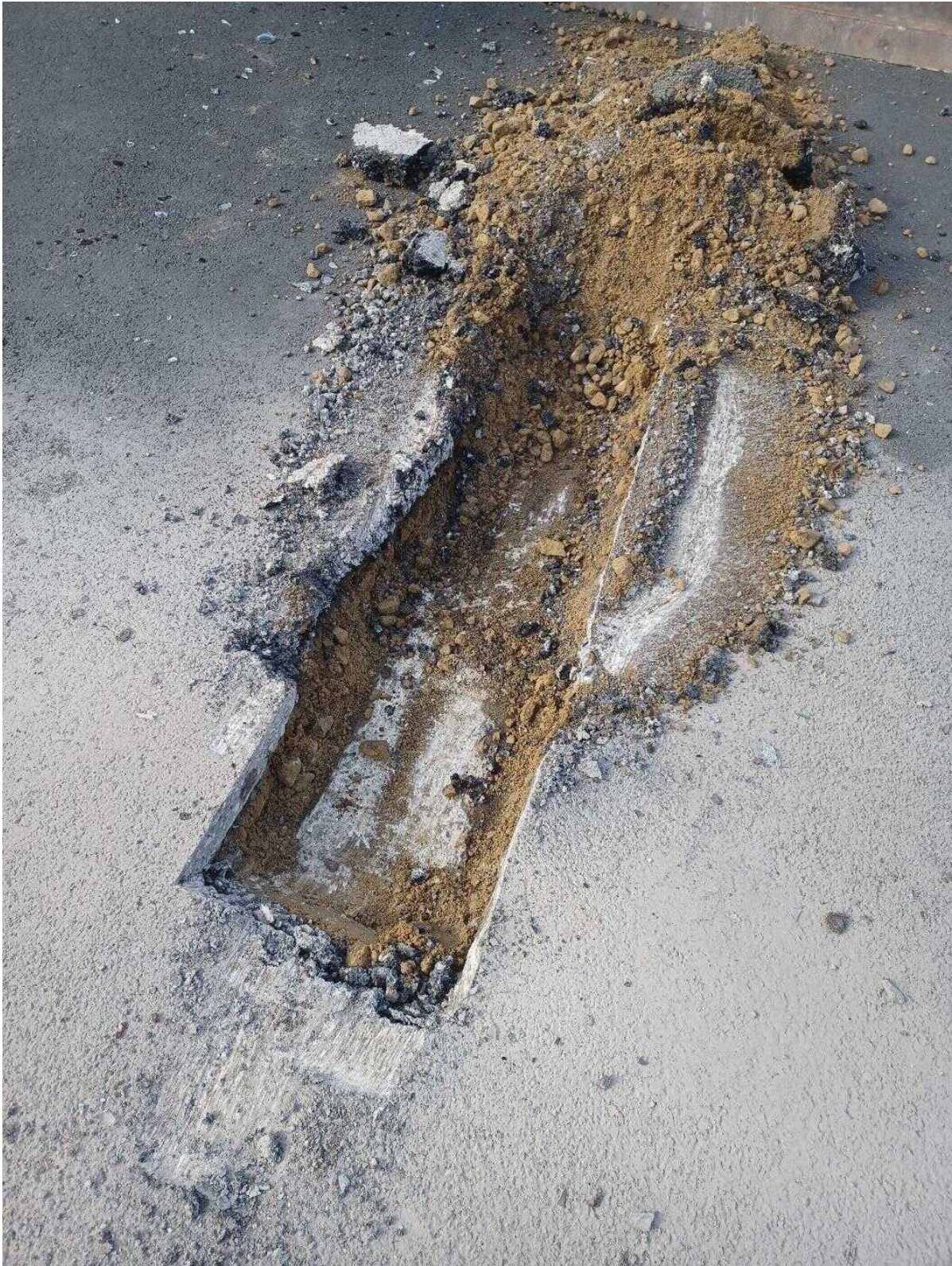
**SOIL AND
STRUCTURES**

Trial Pit

TP102
PHOTO PAGE

Hole Type TP	Easting 390473.00	Northing 411764.00	Ground Level (m) 138.90	Scale 1:25
Project Name Land off Oldham Road, Rochdale	Project No. 20511	Start Date 2025-03-27	End Date 2025-03-27	

Client Metalcraft Group	Consultant Soil and Structures Ltd	Contractor Metalcraft Group
----------------------------	---------------------------------------	--------------------------------



Remarks	Method, Plant, Stability, Dimensions	Logger
PURPOSE: General coverage of the Site. TERMINATION: Practical refusal of excavator on concrete slab.	0.00 - 0.30m TP - Trial Pit tonne tracked	RB
LOCATION: Surveyed using freeware on Site. GL: Estimated off topographical survey. STABILITY: Stable.	Stable	
GROUNDWATER: None encountered. OTHER: No evidence of potentially harmful or polluting material.	L = 1.50m W = 0.60m	

Checked By: RB Approved By: RB Status: FINAL

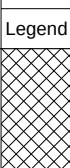


TP103

Hole Type	Easting	Northing	Ground Level (m)	Scale
TP	390475.00	411754.00	138.75	1:25

Project Name	Project No.	Start Date	End Date
Land off Oldham Road, Rochdale	20511	2025-03-27	2025-03-27

Inst/ er els	Samples and Tests	Level	Depth	Strata
--------------------	-------------------	-------	-------	--------

Backfill	Water Level	Depth (m)	Type/ Ref	Results	(m)	(m) (thickness)	Legend	Description	
		1.00-1.20	B 1		138.35	(0.40)		Light brown sandy, fine to coarse, angular GRAVEL of sandstone. [MADE GROUND, Sub-base]	
						0.40		Light brownish orange SAND and GRAVEL with low cobble content becoming more gravelly with depth. Sand is fine to coarse. Gravel is fine to coarse rounded mixed natural lithologies. Cobbles are small rounded mixed natural lithologies. [SUSPECTED GLACIOFLUVIAL DEPOSITS, Mapped as Hummocky Glacial Deposits]	-0.5 -1.0 -1.5
					136.85	1.90		End of Trial Pit at 1.90m	-2.0 -2.5 -3.0 -3.5 -4.0 -4.5 -5.0

Remarks PURPOSE: General coverage of the Site. TERMINATION: Engineer decision, target depth achieved. LOCATION: Surveyed using freeware on Site. GL: Estimated off topographical survey. STABILITY: Side wall collapse adjacent to relic wall to depth of 1 m below ground level. GROUNDWATER: None encountered. OTHER: No evidence of potentially harmful or polluting material.	Method, Plant, Stability, Dimensions 0.00 - 1.90m TP - Trial Pit tonne tracked Unstable  L = 2.00m W = 0.60m	Logge R
--	---	---------------------------

Checked By: RB Approved By: RB Status: FINAL

Method, Plant, Stability, Dimensions	Logge
--------------------------------------	-------

0.00 - 1.90m	TP - Trial Pit 7 tonne tracked	R
--------------	--------------------------------	---

Unstable
 $L = 2.00\text{m}$
 $W = 0.60\text{m}$

 SOIL AND STRUCTURES	Trial Pit				TP103
					PHOTO PAGE
	Hole Type TP	Easting 390475.00	Northing 411754.00	Ground Level (m) 138.75	Scale 1:25
Project Name Land off Oldham Road, Rochdale		Project No. 20511	Start Date 2025-03-27	End Date 2025-03-27	
Client Metalcraft Group		Consultant Soil and Structures Ltd	Contractor Metalcraft Group		
					
Remarks PURPOSE: General coverage of the Site. TERMINATION: Engineer decision, target depth achieved. LOCATION: Surveyed using freeware on Site. GL: Estimated off topographical survey. STABILITY: Side wall collapse adjacent to relic wall to depth of 1 m below ground level. GROUNDWATER: None encountered. OTHER: No evidence of potentially harmful or polluting material.			Method, Plant, Stability, Dimensions 0.00 - 1.90m TP - Trial Pit tonne tracked Unstable L = 2.00m W = 0.60m		
Checked By: RB Approved By: RB Status: FINAL			Logger RB		

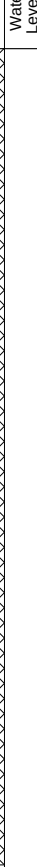
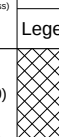
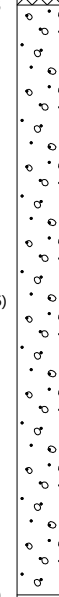
 SOIL AND STRUCTURES	Trial Pit				TP103 PHOTO PAGE
	Hole Type TP	Easting 390475.00	Northing 411754.00	Ground Level (m) 138.75	Scale 1:25
	Project Name Land off Oldham Road, Rochdale	Project No. 20511		Start Date 2025-03-27	End Date 2025-03-27
Client Metalcraft Group		Consultant Soil and Structures Ltd		Contractor Metalcraft Group	
					
Remarks PURPOSE: General coverage of the Site. TERMINATION: Engineer decision, target depth achieved. LOCATION: Surveyed using freeware on Site. GL: Estimated off topographical survey. STABILITY: Side wall collapse adjacent to relic wall to depth of 1 m below ground level. GROUNDWATER: None encountered. OTHER: No evidence of potentially harmful or polluting material.				Method, Plant, Stability, Dimensions 0.00 - 1.90m TP - Trial Pit tonne tracked Unstable L = 2.00m W = 0.60m	
Checked By: RB Approved By: RB Status: FINAL				Logger RB	



TP104

Hole Type	Easting	Northing	Ground Level (m)	Scale
TP	390461.00	411770.00	138.55	1:25
Project Name	Project No.		Start Date	End Date
Land off Oldham Road, Rochdale	20511		2025-03-27	2025-03-27

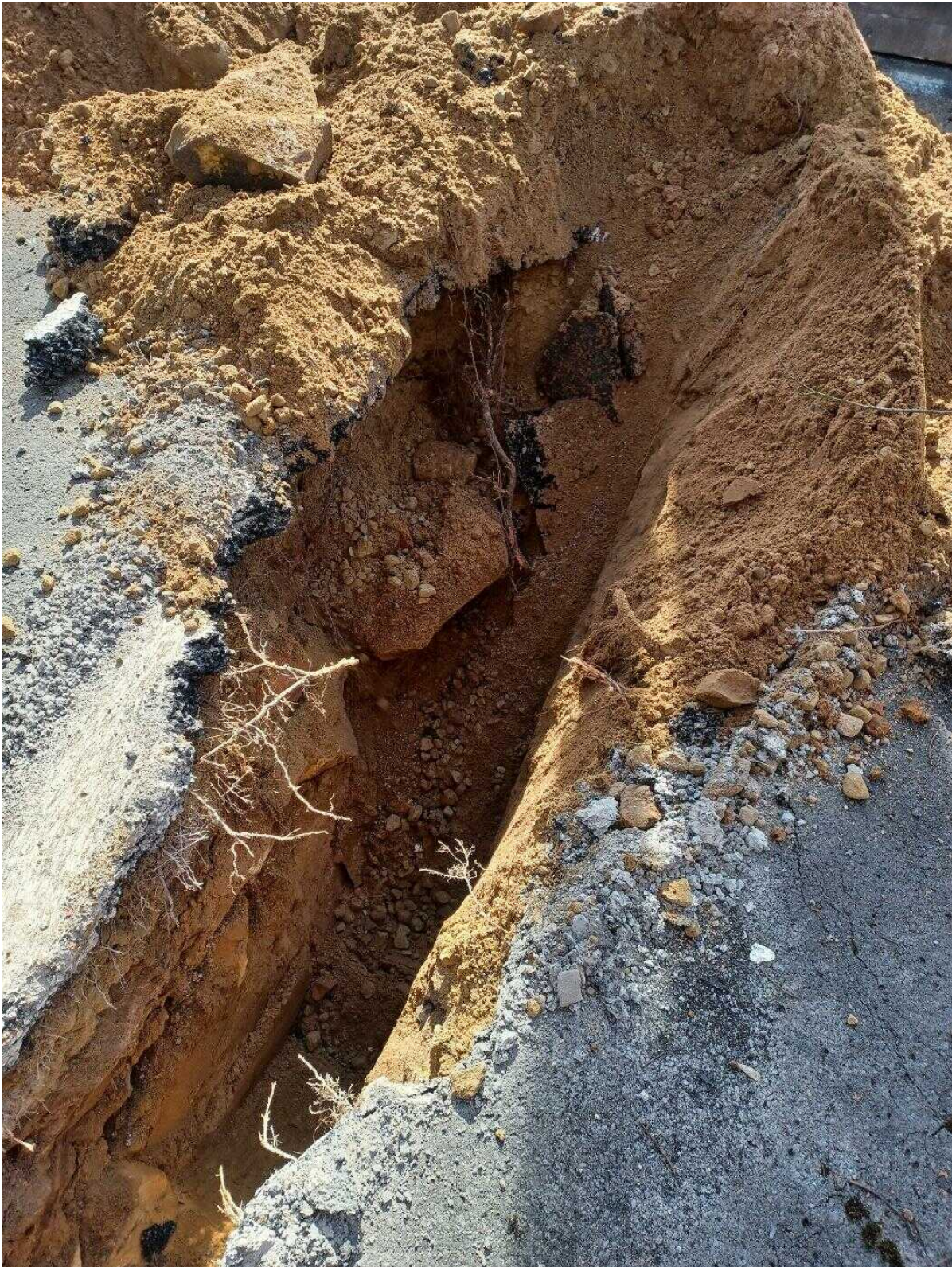
Inst/ er els	Samples and Tests	Level	Depth	Strata
--------------------	-------------------	-------	-------	--------

Backfill	Water Level	Depth (m)	Type/Ref	Results	(m)	(m) (thickness)	Legend	Description
		1.00-1.20	B 1		138.25	(0.30)		Black bituminous hardstanding (bound gravel; 75 mm thick) over light yellowish brown sandy, fine to coarse, angular GRAVEL of sandstone. [MADE GROUND, Hardstanding and sub-base]
						0.30		Light brownish orange SAND and GRAVEL with high cobble content and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, rounded, mixed natural lithologies. Cobbles are small to large rounded mixed natural lithologies and frequent red bricks and sandstone. Boulders are sandstone flagstones and blocks up to 700 mm. [MADE GROUND, Relic foundations (likely associated with the former church)]
						(0.45)		
		1.50	ES 1		137.80	0.75		Light brownish yellow SAND and GRAVEL with low to medium cobble content becoming more gravelly with depth. Sand is fine to coarse. Gravel is fine to coarse rounded mixed natural lithologies. Cobbles are small rounded mixed natural lithologies. [SUSPECTED GLACIOFLUVIAL DEPOSITS, Mapped as Hummocky Glacial Deposits]
					135.85	2.70		End of Trial Pit at 2.70m

Remarks PURPOSE: General coverage of the Site. TERMINATION: Engineer decision, target depth achieved. LOCATION: Surveyed using freeware on Site. GL: Estimated off topographical survey. STABILITY: Localised collapse adjacent to relic foundations to depths of 0.75 m below ground level. GROUNDWATER: None encountered. OTHER: No evidence of potentially harmful or polluting material.	Method, Plant, Stability, Dimensions 0.00 - 2.70m TP - Trial Pit tonne tracked Unstable  L = 2.20m W = 0.60m	Logge R
---	---	---------------------------

Checked By: RB Approved By: RB Status: FINAL

Created using Pebble Geo

 SOIL AND STRUCTURES	Trial Pit				TP104
					PHOTO PAGE
	Hole Type TP	Easting 390461.00	Northing 411770.00	Ground Level (m) 138.55	Scale 1:25
Project Name Land off Oldham Road, Rochdale		Project No. 20511	Start Date 2025-03-27	End Date 2025-03-27	
Client Metalcraft Group		Consultant Soil and Structures Ltd	Contractor Metalcraft Group		
					
Remarks PURPOSE: General coverage of the Site. TERMINATION: Engineer decision, target depth achieved. LOCATION: Surveyed using freeware on Site. GL: Estimated off topographical survey. STABILITY: Localised collapse adjacent to relic foundations to depths of 0.75 m below ground level. GROUNDWATER: None encountered. OTHER: No evidence of potentially harmful or polluting material.			Method, Plant, Stability, Dimensions 0.00 - 2.70m TP - Trial Pit tonne tracked Unstable L = 2.20m W = 0.60m		
Checked By: RB Approved By: RB Status: FINAL			Logger RB		



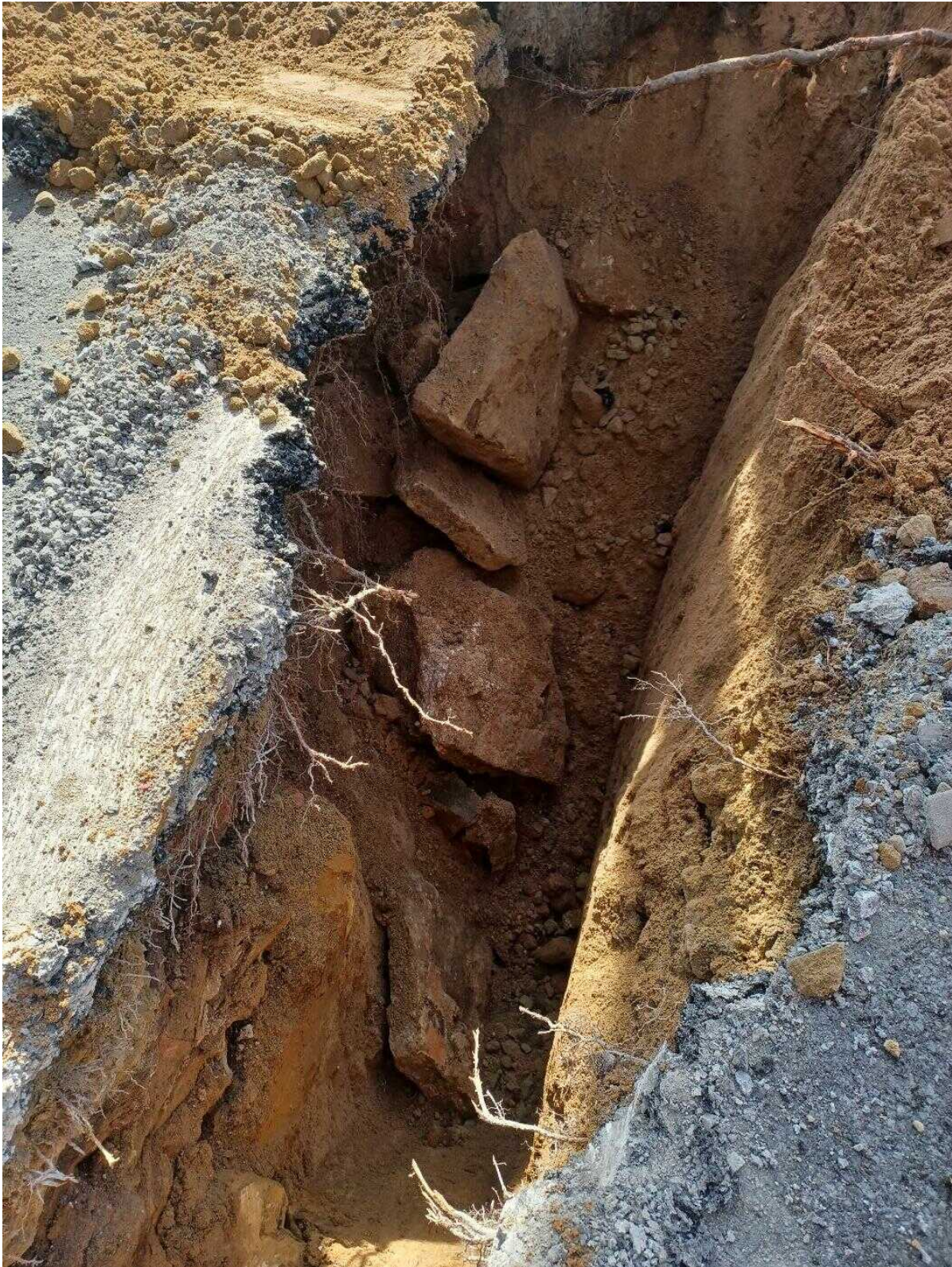
SOIL AND
STRUCTURES

Trial Pit

TP104
PHOTO PAGE

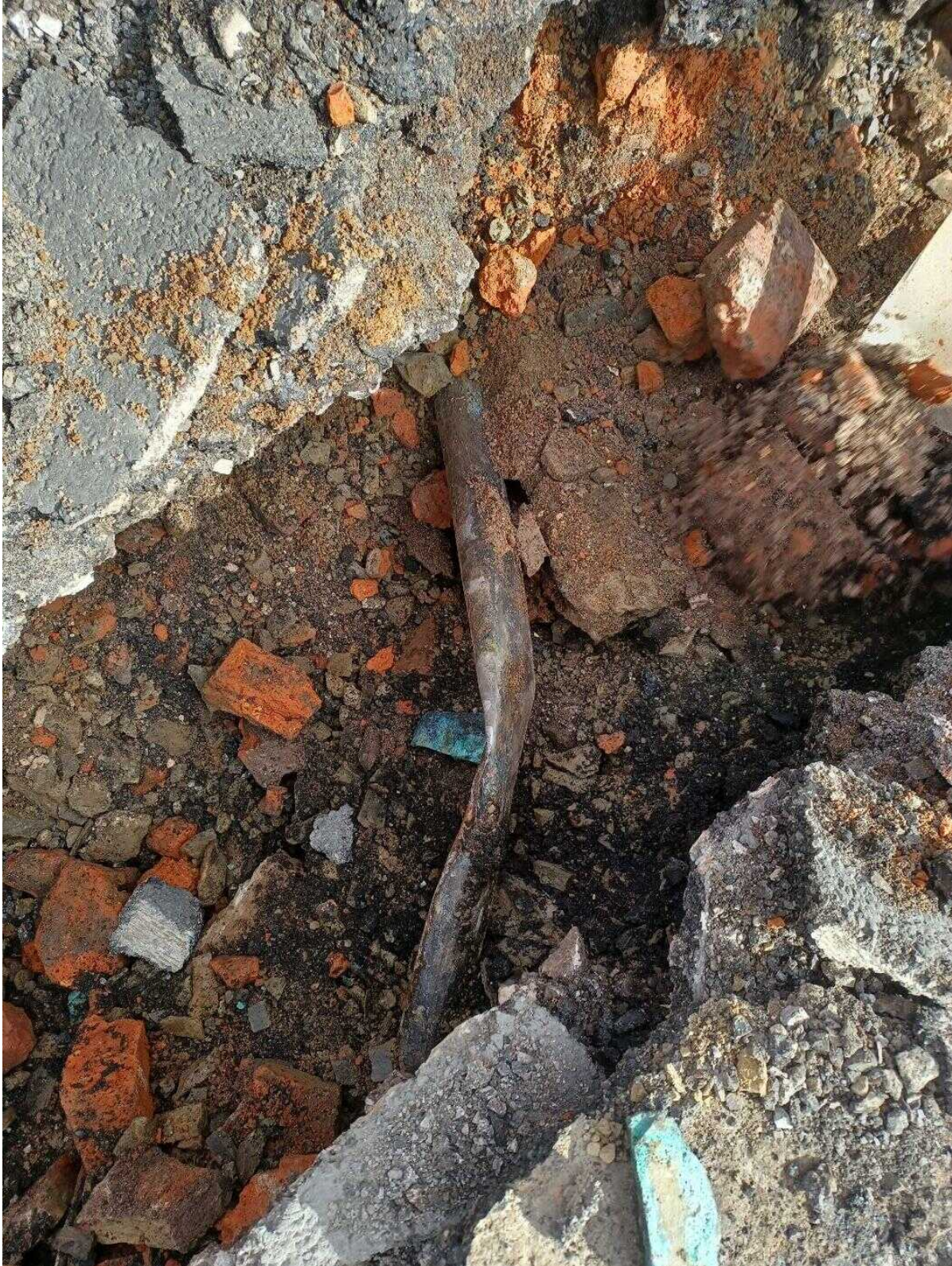
Hole Type TP	Easting 390461.00	Northing 411770.00	Ground Level (m) 138.55	Scale 1:25
Project Name Land off Oldham Road, Rochdale	Project No. 20511		Start Date 2025-03-27	End Date 2025-03-27

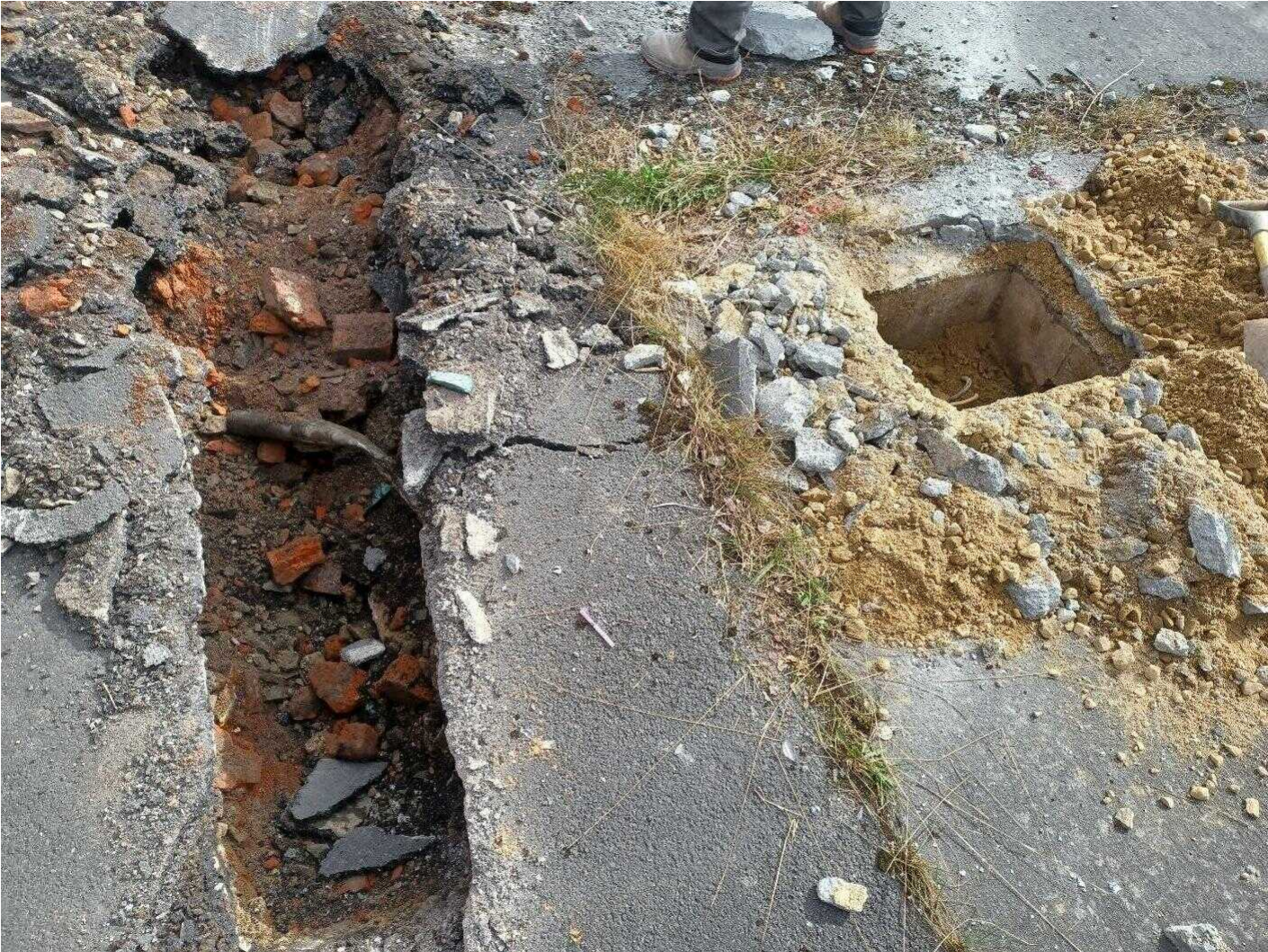
Client Metalcraft Group	Consultant Soil and Structures Ltd	Contractor Metalcraft Group
----------------------------	---------------------------------------	--------------------------------



Remarks PURPOSE: General coverage of the Site. TERMINATION: Engineer decision, target depth achieved. LOCATION: Surveyed using freeware on Site. GL: Estimated off topographical survey. STABILITY: Localised collapse adjacent to relic foundations to depths of 0.75 m below ground level. GROUNDWATER: None encountered. OTHER: No evidence of potentially harmful or polluting material.	Method, Plant, Stability, Dimensions 0.00 - 2.70m TP - Trial Pit tonne tracked Unstable L = 2.20m W = 0.60m	Logger RB
---	---	--------------

 SOIL AND STRUCTURES					Trial Pit TP105 Sheet 1 of 1				
Hole Type TP		Easting 390448.00		Northing 411769.00		Ground Level (m) 138.40		Scale 1:25	
Project Name Land off Oldham Road, Rochdale			Project No. 20511			Start Date 2025-03-27		End Date 2025-03-27	
Client Metalcraft Group					Consultant Soil and Structures Ltd			Contractor Metalcraft Group	
Inst/ Backfill	Water Levels	Samples and Tests			Level (m)	Depth (m)	Strata		
		Depth (m)	Type/ Ref	Results			Legend	Description	
					138.20	(0.20)		Black bituminous hardstanding (bound gravel; 75 mm thick) over light yellowish brown sandy, fine to coarse, angular GRAVEL of sandstone. [MADE GROUND, Hardstanding and sub-base]	
						0.20			
					137.90	(0.30)		Multicoloured typically dark brown very gravelly SAND with high cobble content and concrete encased 70 mm diameter metal pipe at 0.4 m depth running in a north to south alignment and faint petrol odour. Gravel is angular to sub-rounded brick and mixed natural lithologies. Cobbles are half bricks and whole bricks. [MADE GROUND, Brick fill and forecourt infrastructure]	
						0.50			
								End of Trial Pit at 0.50m	
0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0 4.5 5.0									
Remarks PURPOSE: Targeting are immediately north of former forecourt. TERMINATION: Evidence of concrete encased, suspected fuel pipelines encountered. LOCATION: Surveyed using freeware on Site. GL: Estimated off topographical survey. STABILITY: Stable. GROUNDWATER: None encountered. OTHER: Faint, slight odour of petrol locally to pipeline within Made Ground.							Method, Plant, Stability, Dimensions 0.00 - 0.50m TP - Trial Pit tonne tracked Stable L = 2.00m W = 0.60m		Logger RB
Checked By: RB Approved By: RB Status: FINAL									

 SOIL AND STRUCTURES	Trial Pit				TP105
					PHOTO PAGE
	Hole Type TP	Easting 390448.00	Northing 411769.00	Ground Level (m) 138.40	Scale 1:25
Project Name Land off Oldham Road, Rochdale		Project No. 20511	Start Date 2025-03-27	End Date 2025-03-27	
Client Metalcraft Group		Consultant Soil and Structures Ltd	Contractor Metalcraft Group		
					
Remarks PURPOSE: Targeting are immediately north of former forecourt. TERMINATION: Evidence of concrete encased, suspected fuel pipelines encountered. LOCATION: Surveyed using freeware on Site. GL: Estimated off topographical survey. STABILITY: Stable. GROUNDWATER: None encountered. OTHER: Faint, slight odour of petrol locally to pipeline within Made Ground.			Method, Plant, Stability, Dimensions 0.00 - 0.50m TP - Trial Pit 7 tonne tracked Stable L = 2.00m W = 0.60m		
Checked By: RB Approved By: RB Status: FINAL			Logger RB		

 SOIL AND STRUCTURES	Trial Pit				TP105 PHOTO PAGE
	Hole Type TP	Easting 390448.00	Northing 411769.00	Ground Level (m) 138.40	Scale 1:25
	Project Name Land off Oldham Road, Rochdale	Project No. 20511		Start Date 2025-03-27	End Date 2025-03-27
Client Metalcraft Group		Consultant Soil and Structures Ltd		Contractor Metalcraft Group	
					
Remarks PURPOSE: Targeting are immediately north of former forecourt. TERMINATION: Evidence of concrete encased, suspected fuel pipelines encountered. LOCATION: Surveyed using freeware on Site. GL: Estimated off topographical survey. STABILITY: Stable. GROUNDWATER: None encountered. OTHER: Faint, slight odour of petrol locally to pipeline within Made Ground.					
Method, Plant, Stability, Dimensions 0.00 - 0.50m TP - Trial Pit tonne tracked Stable L = 2.00m W = 0.60m					
Logger RB					
Checked By: RB Approved By: RB Status: FINAL					



TP106
Sheet 1 of 1

Hole Type	Easting	Northing	Ground Level (m)	Scale
TP	390446.00	411768.00	138.30	1:25
Project Name		Project No.	Start Date	End Date
Land off Oldham Road, Rochdale		20511	2025-03-27	2025-03-27

Client Metalcraft Group	Consultant Soil and Structures Ltd	Contractor Metalcraft Group
-----------------------------------	--	---------------------------------------

Remarks PURPOSE: Targeting are immediately north of former forecourt. TERMINATION: Engineer decision, target depth achieved. LOCATION: Surveyed using freeware on Site. GL: Estimated off topographical survey. STABILITY: Stable. GROUNDWATER: None encountered. OTHER: No evidence of potentially harmful or polluting material.	Method, Plant, Stability, Dimensions 0.00 - 1.60m TP - Trial Pit tonne tracked Stable $L = 2.20m$  $W = 0.60m$	Logge
---	--	---------------------

Checked By: RB Approved By: RB Status: FINAL



SOIL AND
STRUCTURES

Trial Pit

TP106
PHOTO PAGE

Hole Type TP	Easting 390446.00	Northing 411768.00	Ground Level (m) 138.30	Scale 1:25
Project Name Land off Oldham Road, Rochdale	Project No. 20511		Start Date 2025-03-27	End Date 2025-03-27

Client Metalcraft Group	Consultant Soil and Structures Ltd	Contractor Metalcraft Group
----------------------------	---------------------------------------	--------------------------------



Remarks PURPOSE: Targeting are immediately north of former forecourt. TERMINATION: Engineer decision, target depth achieved. LOCATION: Surveyed using freeware on Site. GL: Estimated off topographical survey. STABILITY: Stable. GROUNDWATER: None encountered. OTHER: No evidence of potentially harmful or polluting material.	Method, Plant, Stability, Dimensions 0.00 - 1.60m TP - Trial Pit tonne tracked Stable L = 2.20m W = 0.60m	Logger RB
---	---	--------------



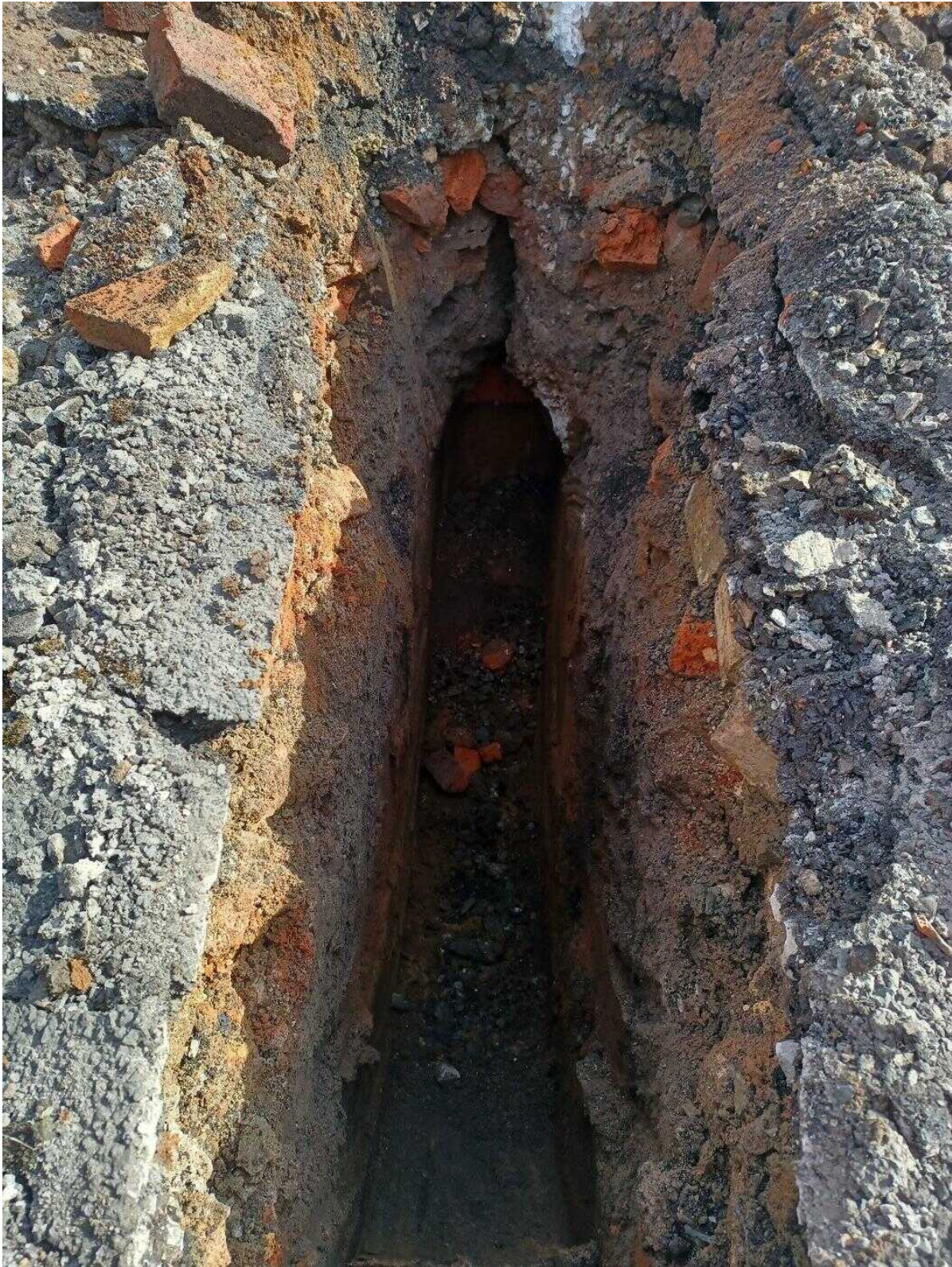
SOIL AND
STRUCTURES

Trial Pit

TP106
PHOTO PAGE

Hole Type TP	Easting 390446.00	Northing 411768.00	Ground Level (m) 138.30	Scale 1:25
Project Name Land off Oldham Road, Rochdale	Project No. 20511		Start Date 2025-03-27	End Date 2025-03-27

Client Metalcraft Group	Consultant Soil and Structures Ltd	Contractor Metalcraft Group
----------------------------	---------------------------------------	--------------------------------



Remarks	Method, Plant, Stability, Dimensions	Logger
PURPOSE: Targeting are immediately north of former forecourt. TERMINATION: Engineer decision, target depth achieved. LOCATION: Surveyed using freeware on Site. GL: Estimated off topographical survey. STABILITY: Stable. GROUNDWATER: None encountered. OTHER: No evidence of potentially harmful or polluting material.	0.00 - 1.60m TP - Trial Pit Stable L = 2.20m W = 0.60m	RB

Checked By: RB Approved By: RB Status: FINAL



**SOIL AND
STRUCTURES**

Trial Pit

TP106
PHOTO PAGE

Hole Type TP	Easting 390446.00	Northing 411768.00	Ground Level (m) 138.30	Scale 1:25
Project Name Land off Oldham Road, Rochdale	Project No. 20511	Start Date 2025-03-27	End Date 2025-03-27	

Client Metalcraft Group	Consultant Soil and Structures Ltd	Contractor Metalcraft Group
----------------------------	---------------------------------------	--------------------------------



Remarks PURPOSE: Targeting are immediately north of former forecourt. TERMINATION: Engineer decision, target depth achieved. LOCATION: Surveyed using freeware on Site. GL: Estimated off topographical survey. STABILITY: Stable. GROUNDWATER: None encountered. OTHER: No evidence of potentially harmful or polluting material.	Method, Plant, Stability, Dimensions 0.00 - 1.60m TP - Trial Pit tonne tracked Stable L = 2.20m W = 0.60m	Logger RB
---	---	--------------

Checked By: RB Approved By: RB Status: FINAL

 SOIL AND STRUCTURES				Trial Pit					TP107	
									Sheet 1 of 1	
				Hole Type TP		Easting 390451.00	Northing 411746.00	Ground Level (m) 138.10	Scale 1:25	
Project Name Land off Oldham Road, Rochdale		Project No. 20511		Start Date 2025-03-27		End Date 2025-03-27				
Client Metalcraft Group				Consultant Soil and Structures Ltd			Contractor Metalcraft Group			
Inst/ Backfill	Water Levels	Samples and Tests			Level (m)	Depth (m)	Strata			
		Depth (m)	Type/ Ref	Results			Legend	Description		
		0.40-0.50	ES 1		137.90	(0.20)		Black bituminous hardstanding (bound gravel; 75 mm thick) over light yellowish brown sandy, fine to coarse, angular GRAVEL of sandstone. [MADE GROUND, Hardstanding and sub-base]	0.5	
					137.70	(0.20)		Multicoloured typically brown, sitly, very gravelly SAND with low cobble content. Gravel is angular to sub-rounded brick and mixed natural lithologies. Cobbles are half bricks and whole bricks. [MADE GROUND, Brick fill]		
								End of Trial Pit at 0.40m		
									1.0	
									1.5	
									2.0	
									2.5	
									3.0	
									3.5	
									4.0	
									4.5	
									5.0	
Remarks PURPOSE: Targeting are immediately south of former forecourt. TERMINATION: Refusal on concrete slab. LOCATION: Surveyed using freeware on Site. GL: Estimated off topographical survey. STABILITY: Stable. GROUNDWATER: None encountered. OTHER: No evidence of potentially harmful or polluting material.							Method, Plant, Stability, Dimensions 0.00 - 0.40m TP - Trial Pit tonne tracked Stable L = 2.60m W = 0.60m		Logger RB	
Checked By: RB Approved By: RB Status: FINAL										



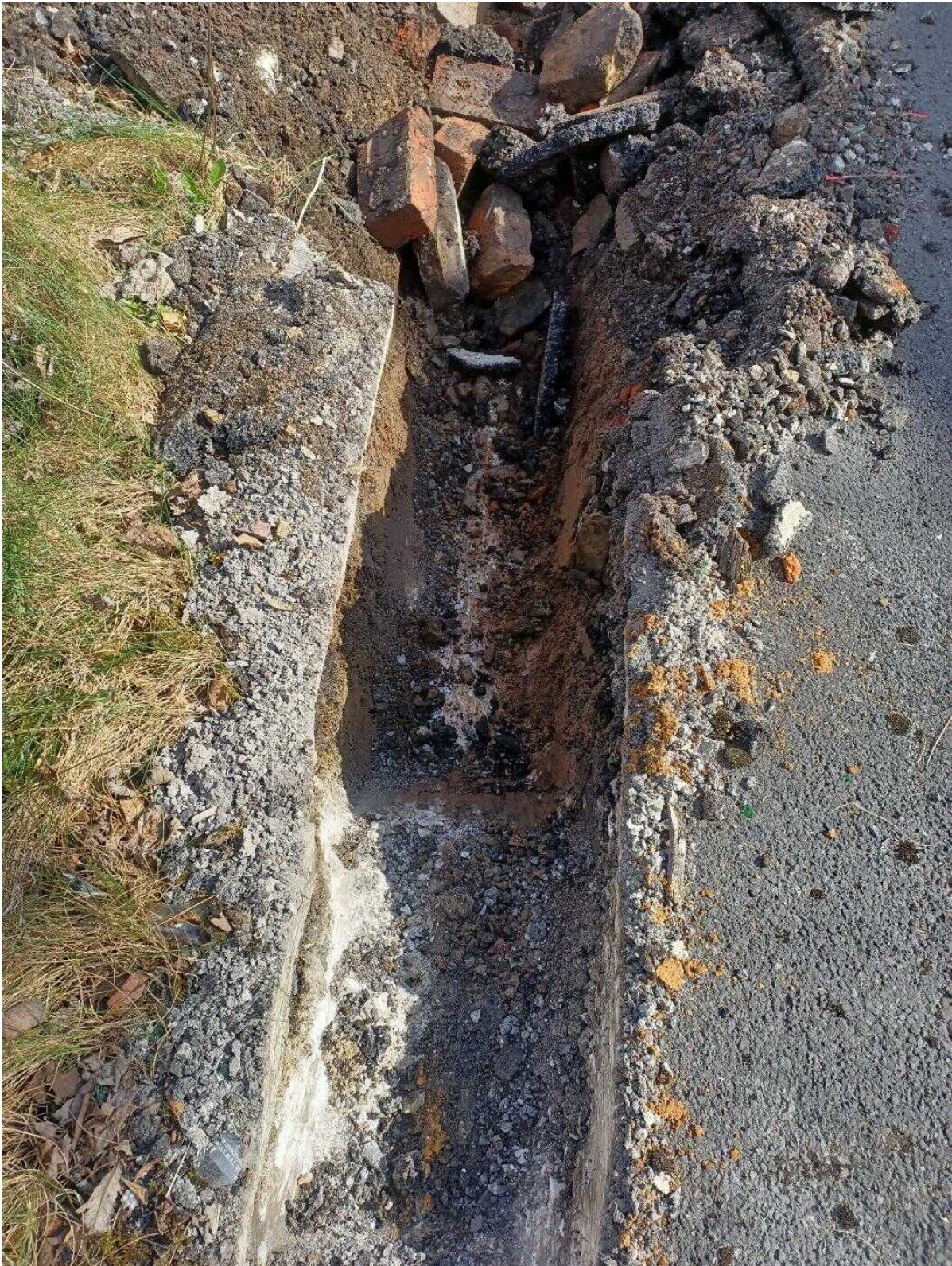
SOIL AND
STRUCTURES

Trial Pit

TP107
PHOTO PAGE

Hole Type TP	Easting 390451.00	Northing 411746.00	Ground Level (m) 138.10	Scale 1:25
Project Name Land off Oldham Road, Rochdale	Project No. 20511	Start Date 2025-03-27	End Date 2025-03-27	

Client Metalcraft Group	Consultant Soil and Structures Ltd	Contractor Metalcraft Group
----------------------------	---------------------------------------	--------------------------------



Remarks	Method, Plant, Stability, Dimensions	Logger
PURPOSE: Targeting are immediately south of former forecourt. TERMINATION: Refusal on concrete slab.	0.00 - 0.40m TP - Trial Pit tonne tracked	RB
LOCATION: Surveyed using freeware on Site. GL: Estimated off topographical survey. STABILITY: Stable.	Stable	
GROUNDWATER: None encountered. OTHER: No evidence of potentially harmful or polluting material.	L = 2.60m W = 0.60m	

Checked By: RB Approved By: RB Status: FINAL



SOIL AND
STRUCTURES

Trial Pit

TP107
PHOTO PAGE

Hole Type TP	Easting 390451.00	Northing 411746.00	Ground Level (m) 138.10	Scale 1:25
Project Name Land off Oldham Road, Rochdale	Project No. 20511	Start Date 2025-03-27	End Date 2025-03-27	

Client Metalcraft Group	Consultant Soil and Structures Ltd	Contractor Metalcraft Group
----------------------------	---------------------------------------	--------------------------------



Remarks	Method, Plant, Stability, Dimensions	Logger
PURPOSE: Targeting are immediately south of former forecourt. TERMINATION: Refusal on concrete slab.	0.00 - 0.40m TP - Trial Pit tonne tracked	RB
LOCATION: Surveyed using freeware on Site. GL: Estimated off topographical survey. STABILITY: Stable.	Stable	
GROUNDWATER: None encountered. OTHER: No evidence of potentially harmful or polluting material.	L = 2.60m	
	W = 0.60m	

Checked By: RB Approved By: RB Status: FINAL

 SOIL AND STRUCTURES					Trial Pit TP108 Sheet 1 of 1																																																																																																																								
Hole Type TP		Easting 390460.00		Northing 411748.00		Ground Level (m) 138.35		Scale 1:25																																																																																																																					
Project Name Land off Oldham Road, Rochdale				Project No. 20511		Start Date 2025-03-27		End Date 2025-03-27																																																																																																																					
Client Metalcraft Group				Consultant Soil and Structures Ltd				Contractor Metalcraft Group																																																																																																																					
<table><tr><td rowspan="2">Inst/ Backfill</td><td rowspan="2">Water Levels</td><td colspan="3">Samples and Tests</td><td rowspan="2">Level (m)</td><td rowspan="2">Depth (m) (thickness)</td><td colspan="2">Strata</td><td rowspan="2"></td></tr><tr><td>Depth (m)</td><td>Type/ Ref</td><td>Results</td><td>Legend</td><td>Description</td></tr><tr><td rowspan="2"></td><td rowspan="2"></td><td rowspan="2"></td><td rowspan="2"></td><td rowspan="2"></td><td rowspan="2">138.15</td><td>0.20</td><td></td><td>Light yellowish brown sandy, fine to coarse, angular GRAVEL of sandstone. [MADE GROUND, Sub-base]</td><td rowspan="2">0.5</td></tr><tr><td>0.20</td><td></td><td>Light brownish yellow SAND and GRAVEL. Sand is fine to coarse. Gravel is fine to coarse rounded mixed natural lithologies. [SUSPECTED GLACIOFLUVIAL DEPOSITS, Mapped as Hummocky Glacial Deposits]</td></tr><tr><td rowspan="2"></td><td rowspan="2"></td><td rowspan="2"></td><td rowspan="2"></td><td rowspan="2"></td><td rowspan="2">136.95</td><td>1.40</td><td></td><td>End of Trial Pit at 1.40m</td><td>1.5</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>2.0</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>2.5</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>3.0</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>3.5</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>4.0</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>4.5</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>5.0</td></tr></table>										Inst/ Backfill	Water Levels	Samples and Tests			Level (m)	Depth (m) (thickness)	Strata			Depth (m)	Type/ Ref	Results	Legend	Description						138.15	0.20		Light yellowish brown sandy, fine to coarse, angular GRAVEL of sandstone. [MADE GROUND, Sub-base]	0.5	0.20		Light brownish yellow SAND and GRAVEL. Sand is fine to coarse. Gravel is fine to coarse rounded mixed natural lithologies. [SUSPECTED GLACIOFLUVIAL DEPOSITS, Mapped as Hummocky Glacial Deposits]						136.95	1.40		End of Trial Pit at 1.40m	1.5																		2.0										2.5										3.0										3.5										4.0										4.5										5.0
Inst/ Backfill	Water Levels	Samples and Tests			Level (m)	Depth (m) (thickness)	Strata																																																																																																																						
		Depth (m)	Type/ Ref	Results			Legend	Description																																																																																																																					
					138.15	0.20		Light yellowish brown sandy, fine to coarse, angular GRAVEL of sandstone. [MADE GROUND, Sub-base]	0.5																																																																																																																				
						0.20		Light brownish yellow SAND and GRAVEL. Sand is fine to coarse. Gravel is fine to coarse rounded mixed natural lithologies. [SUSPECTED GLACIOFLUVIAL DEPOSITS, Mapped as Hummocky Glacial Deposits]																																																																																																																					
					136.95	1.40		End of Trial Pit at 1.40m	1.5																																																																																																																				
									2.0																																																																																																																				
									2.5																																																																																																																				
									3.0																																																																																																																				
									3.5																																																																																																																				
									4.0																																																																																																																				
									4.5																																																																																																																				
									5.0																																																																																																																				
Remarks PURPOSE: GEneral coverage of the Site and to permit in-situ testing. TERMINATION: Engineer decision, target depth achieved to permit infiltration testing. LOCATION: Surveyed using freeware on Site. GL: Estimated off topographical survey. STABILITY: Continual collapse within Made Ground deposits. GROUNDWATER: None encountered. OTHER: No evidence of potentially harmful or polluting material.								Method, Plant, Stability, Dimensions 0.00 - 1.40m TP - Trial Pit tonne tracked Stable		Logger RB																																																																																																																			
Checked By: RB Approved By: RB Status: FINAL																																																																																																																													

 SOIL AND STRUCTURES	Trial Pit				TP108 PHOTO PAGE
	Hole Type TP	Easting 390460.00	Northing 411748.00	Ground Level (m) 138.35	Scale 1:25
	Project Name Land off Oldham Road, Rochdale	Project No. 20511		Start Date 2025-03-27	End Date 2025-03-27
Client Metalcraft Group		Consultant Soil and Structures Ltd		Contractor Metalcraft Group	
					
Remarks PURPOSE: General coverage of the Site and to permit in-situ testing. TERMINATION: Engineer decision, target depth achieved to permit infiltration testing. LOCATION: Surveyed using freeware on Site. GL: Estimated off topographical survey. STABILITY: Continual collapse within Made Ground deposits. GROUNDWATER: None encountered. OTHER: No evidence of potentially harmful or polluting material.				Method, Plant, Stability, Dimensions 0.00 - 1.40m TP - Trial Pit tonne tracked Stable	
Checked By: RB Approved By: RB Status: FINAL				Logger RB	

 SOIL AND STRUCTURES	Trial Pit				TP108
					PHOTO PAGE
	Hole Type TP	Easting 390460.00	Northing 411748.00	Ground Level (m) 138.35	Scale 1:25
Project Name Land off Oldham Road, Rochdale		Project No. 20511	Start Date 2025-03-27	End Date 2025-03-27	
Client Metalcraft Group		Consultant Soil and Structures Ltd	Contractor Metalcraft Group		
					
Remarks PURPOSE: General coverage of the Site and to permit in-situ testing. TERMINATION: Engineer decision, target depth achieved to permit infiltration testing. LOCATION: Surveyed using freeware on Site. GL: Estimated off topographical survey. STABILITY: Continual collapse within Made Ground deposits. GROUNDWATER: None encountered. OTHER: No evidence of potentially harmful or polluting material.			Method, Plant, Stability, Dimensions 0.00 - 1.40m TP - Trial Pit tonne tracked Stable		
Checked By: RB Approved By: RB Status: FINAL			Logger RB		

 SOIL AND STRUCTURES	Trial Pit				TP108
					PHOTO PAGE
	Hole Type TP	Easting 390460.00	Northing 411748.00	Ground Level (m) 138.35	Scale 1:25
Project Name Land off Oldham Road, Rochdale		Project No. 20511		Start Date 2025-03-27	End Date 2025-03-27
Client Metalcraft Group		Consultant Soil and Structures Ltd		Contractor Metalcraft Group	
					
Remarks PURPOSE: GEneral coverage of the Site and to permit in-situ testing. TERMINATION: Engineer decision, target depth achieved to permit infiltration testing. LOCATION: Surveyed using freeware on Site. GL: Estimated off topographical survey. STABILITY: Continual collapse within Made Ground deposits. GROUNDWATER: None encountered. OTHER: No evidence of potentially harmful or polluting material.			Method, Plant, Stability, Dimensions 0.00 - 1.40m TP - Trial Pit 7 tonne tracked Stable		Logger RB
Checked By: RB Approved By: RB Status: FINAL					



SOIL AND
STRUCTURES

Trial Pit

TP108
PHOTO PAGE

Hole Type TP	Easting 390460.00	Northing 411748.00	Ground Level (m) 138.35	Scale 1:25
Project Name Land off Oldham Road, Rochdale	Project No. 20511		Start Date 2025-03-27	End Date 2025-03-27

Client Metalcraft Group	Consultant Soil and Structures Ltd	Contractor Metalcraft Group
----------------------------	---------------------------------------	--------------------------------



Remarks PURPOSE: GEneral coverage of the Site and to permit in-situ testing. TERMINATION: Engineer decision, target depth achieved to permit infiltration testing. LOCATION: Surveyed using freeware on Site. GL: Estimated off topographical survey. STABILITY: Continual collapse within Made Ground deposits. GROUNDWATER: None encountered. OTHER: No evidence of potentially harmful or polluting material.	Method, Plant, Stability, Dimensions 0.00 - 1.40m TP - Trial Pit 1 tonne tracked Stable	Logger RB
---	---	--------------

 SOIL AND STRUCTURES				Trial Pit				TP109			
								Sheet 1 of 1			
				Hole Type TP		Easting 390453.00		Northing 411774.00		Ground Level (m) 138.50	
Project Name Land off Oldham Road, Rochdale				Project No. 20511		Start Date 2025-03-27		End Date 2025-03-27			
Client Metalcraft Group				Consultant Soil and Structures Ltd				Contractor Metalcraft Group			
Inst/ Backfill	Water Levels	Samples and Tests			Level (m)	Depth (m) (thickness)	Strata				
		Depth (m)	Type/ Ref	Results			Legend	Description			
		1.00-1.30	ES 1			(1.50)		Light brown, light orangish brown and brown mixed very gravelly fine to coarse SAND with medium cobble content, low boulder content, occasional metal and plastic fragments and rare fabric. Gravel is fine to coarse rounded to angular mixed natural lithologies and infrequent concrete and bound bituminous material. Cobbles are small to medium angular birck, half brick, sandstone and concrete. Boulders are angular concrete and rare brick sets up to 600 mm. [MADE GROUND, Unregulated fill to former UST position]		0.5	
		1.60-1.70	ES 2			137.00 136.90	1.50 (0.10) 1.60		Concrete. [MADE GROUND, Concrete base to UST]		1.5
							(0.40)		Light brownish orange SAND and GRAVEL with low cobble content. Sand is fine to coarse. Gravel is fine to coarse rounded mixed natural lithologies. Cobbles are small rounded mixed natural lithologies. [SUSPECTED GLACIOFLUVIAL DEPOSITS, Mapped as Hummocky Glacial Deposits]		2.0
						136.50	2.00	End of Trial Pit at 2.00m		2.0	
										2.5	
										3.0	
										3.5	
										4.0	
										4.5	
										5.0	
Remarks PURPOSE: Targeting former location of underground storage tank (UST) as indicated by neighbour. TERMINATION: Engineer decision, target depth achieved - relic concrete footing (base of former UST) encountered and dug through. LOCATION: Surveyed using freeware on Site. GL: Estimated off topographical survey. STABILITY: Continual collapse within Made Ground deposits. GROUNDWATER: None encountered. OTHER: No evidence of potentially harmful or polluting material.							Method, Plant, Stability, Dimensions 0.00 - 2.00m TP - Trial Pit tonne tracked Unstable			Logger RB	
Checked By: RB Approved By: RB Status: FINAL											



SOIL AND
STRUCTURES

Trial Pit

TP109
PHOTO PAGE

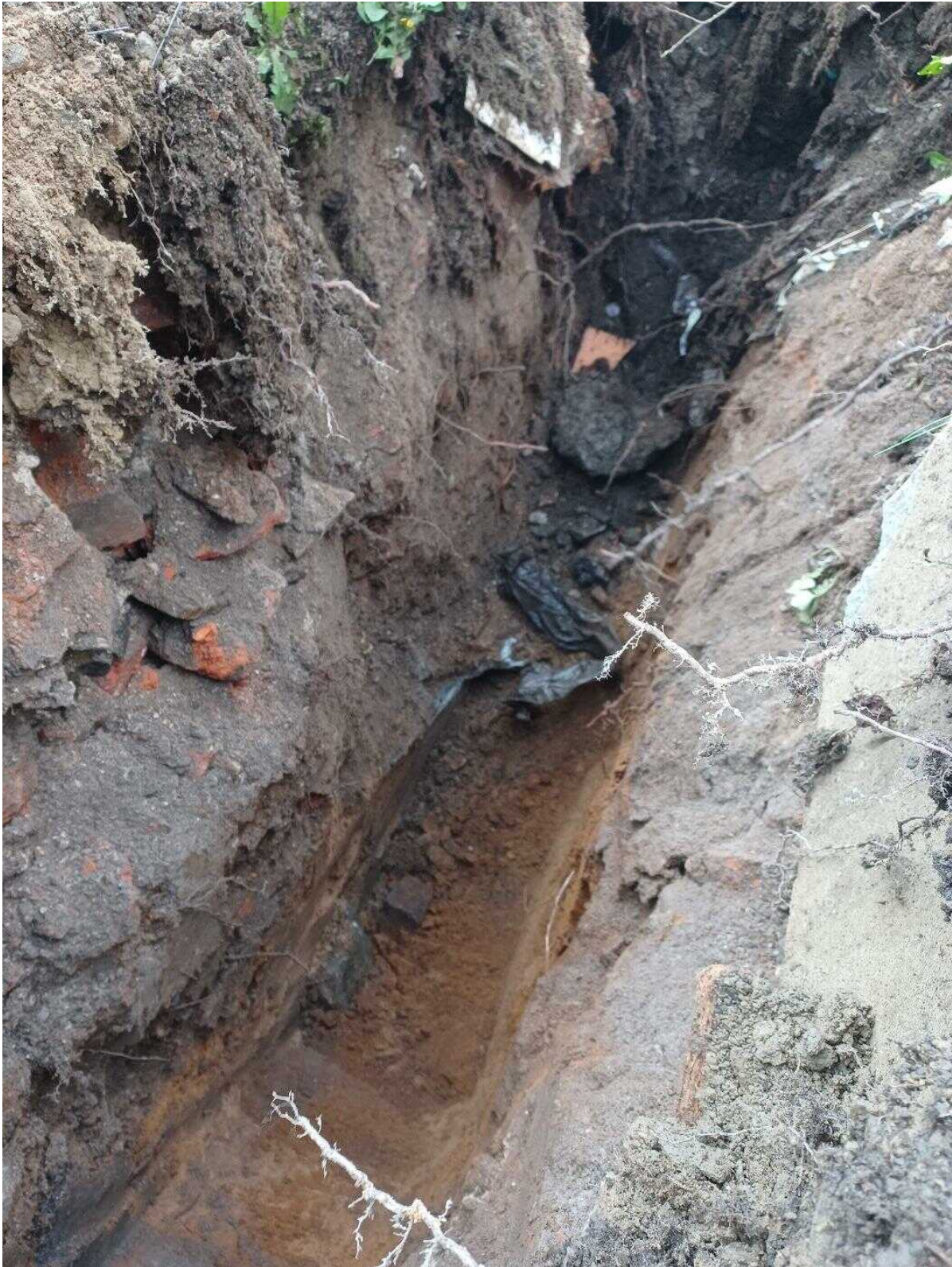
Hole Type TP	Easting 390453.00	Northing 411774.00	Ground Level (m) 138.50	Scale 1:25
Project Name Land off Oldham Road, Rochdale	Project No. 20511		Start Date 2025-03-27	End Date 2025-03-27

Client Metalcraft Group	Consultant Soil and Structures Ltd	Contractor Metalcraft Group
----------------------------	---------------------------------------	--------------------------------



Remarks PURPOSE: Targeting former location of underground storage tank (UST) as indicated by neighbour. TERMINATION: Engineer decision, target depth achieved - relic concrete footing (base of former UST) encountered and dug through. LOCATION: Surveyed using freeware on Site. GL: Estimated off topographical survey. STABILITY: Continual collapse within Made Ground deposits. GROUNDWATER: None encountered. OTHER: No evidence of potentially harmful or polluting material.	Method, Plant, Stability, Dimensions		Logger RB
	0.00 - 2.00m TP - Trial Pit tonne tracked		
	Unstable		

Checked By: RB Approved By: RB Status: FINAL

 SOIL AND STRUCTURES	Trial Pit				TP109
					PHOTO PAGE
	Hole Type TP	Easting 390453.00	Northing 411774.00	Ground Level (m) 138.50	Scale 1:25
Project Name Land off Oldham Road, Rochdale		Project No. 20511	Start Date 2025-03-27	End Date 2025-03-27	
Client Metalcraft Group		Consultant Soil and Structures Ltd	Contractor Metalcraft Group		
					
Remarks PURPOSE: Targeting former location of underground storage tank (UST) as indicated by neighbour. TERMINATION: Engineer decision, target depth achieved - relic concrete footing (base of former UST) encountered and dug through. LOCATION: Surveyed using freeware on Site. GL: Estimated off topographical survey. STABILITY: Continual collapse within Made Ground deposits. GROUNDWATER: None encountered. OTHER: No evidence of potentially harmful or polluting material.			Method, Plant, Stability, Dimensions 0.00 - 2.00m TP - Trial Pit tonne tracked Unstable		
Checked By: RB Approved By: RB Status: FINAL			Logger RB		



SOIL AND
STRUCTURES

Trial Pit

TP109
PHOTO PAGE

Hole Type TP	Easting 390453.00	Northing 411774.00	Ground Level (m) 138.50	Scale 1:25
Project Name Land off Oldham Road, Rochdale	Project No. 20511		Start Date 2025-03-27	End Date 2025-03-27

Client Metalcraft Group	Consultant Soil and Structures Ltd	Contractor Metalcraft Group
----------------------------	---------------------------------------	--------------------------------



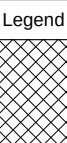
Remarks	Method, Plant, Stability, Dimensions	Logger
PURPOSE: Targeting former location of underground storage tank (UST) as indicated by neighbour. TERMINATION: Engineer decision, target depth achieved - relic concrete footing (base of former UST) encountered and dug through. LOCATION: Surveyed using freeware on Site. GL: Estimated off topographical survey. STABILITY: Continual collapse within Made Ground deposits. GROUNDWATER: None encountered. OTHER: No evidence of potentially harmful or polluting material.	0.00 - 2.00m TP - Trial Pit tonne tracked Unstable	RB

Checked By: RB Approved By: RB Status: FINAL

 SOIL AND STRUCTURES					Trial Pit TP110 Sheet 1 of 1					
Hole Type TP		Easting 390464.00		Northing 411776.00		Ground Level (m) 138.65		Scale 1:25		
Project Name Land off Oldham Road, Rochdale				Project No. 20511		Start Date 2025-03-27		End Date 2025-03-27		
Client Metalcraft Group				Consultant Soil and Structures Ltd				Contractor Metalcraft Group		
Inst/ Backfill	Water Levels	Samples and Tests			Level (m)	Depth (m) (thickness)	Strata			
		Depth (m)	Type/ Ref	Results			Legend	Description		
					138.40	(0.25)		Light yellowish brown sandy, fine to coarse, angular GRAVEL of sandstone. [MADE GROUND, Sub-base]	0.5	
						0.25		Light reddish brown very sandy slightly gravelly small to large angular to sub-angular COBBLES of half brick and brick. Sand is fine to coarse. Gravel is fine to coarse angular to sub-angular mortar, brick and rare concrete. [MADE GROUND, Brick fill]		
						(1.15)			1.0	
					137.25	1.40		End of Trial Pit at 1.40m	1.5	
									2.0	
									2.5	
									3.0	
									3.5	
									4.0	
									4.5	
									5.0	
Remarks PURPOSE: Targeting location of remaining underground storage tank (UST) as indicated by neighbour. TERMINATION: Engineer decision, target depth achieved - no evidence of relic USTs. LOCATION: Surveyed using freeware on Site. GL: Estimated off satellite imagery. STABILITY: Localised collapse within Made Ground deposits. GROUNDWATER: None encountered. OTHER: No evidence of potentially harmful or polluting material.								Method, Plant, Stability, Dimensions 0.00 - 1.40m TP - Trial Pit tonne tracked Unstable		Logger RB
Checked By: RB Approved By: RB Status: FINAL										

 SOIL AND STRUCTURES	Trial Pit				TP110
					PHOTO PAGE
	Hole Type TP	Easting 390464.00	Northing 411776.00	Ground Level (m) 138.65	Scale 1:25
Project Name Land off Oldham Road, Rochdale		Project No. 20511	Start Date 2025-03-27	End Date 2025-03-27	
Client Metalcraft Group		Consultant Soil and Structures Ltd	Contractor Metalcraft Group		
					
Remarks PURPOSE: Targeting location of remaining underground storage tank (UST) as indicated by neighbour. TERMINATION: Engineer decision, target depth achieved - no evidence of relic USTs. LOCATION: Surveyed using freeware on Site. GL: Estimated off satellite imagery. STABILITY: Localised collapse within Made Ground deposits. GROUNDWATER: None encountered. OTHER: No evidence of potentially harmful or polluting material.			Method, Plant, Stability, Dimensions 0.00 - 1.40m TP - Trial Pit tonne tracked Unstable		Logger RB
Checked By: RB Approved By: RB Status: FINAL					

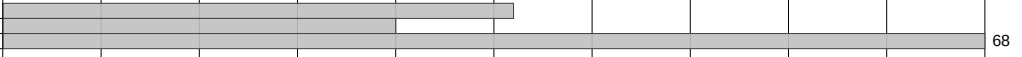
 SOIL AND STRUCTURES	Trial Pit				TP110
					PHOTO PAGE
	Hole Type TP	Easting 390464.00	Northing 411776.00	Ground Level (m) 138.65	Scale 1:25
Project Name Land off Oldham Road, Rochdale		Project No. 20511		Start Date 2025-03-27	End Date 2025-03-27
Client Metalcraft Group		Consultant Soil and Structures Ltd		Contractor Metalcraft Group	
					
Remarks PURPOSE: Targeting location of remaining underground storage tank (UST) as indicated by neighbour. TERMINATION: Engineer decision, target depth achieved - no evidence of relic USTs. LOCATION: Surveyed using freeware on Site. GL: Estimated off satellite imagery. STABILITY: Localised collapse within Made Ground deposits. GROUNDWATER: None encountered. OTHER: No evidence of potentially harmful or polluting material.				Method, Plant, Stability, Dimensions 0.00 - 1.40m TP - Trial Pit tonne tracked Unstable	
Checked By: RB Approved By: RB Status: FINAL				Logger RB	

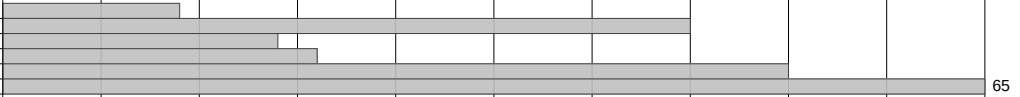
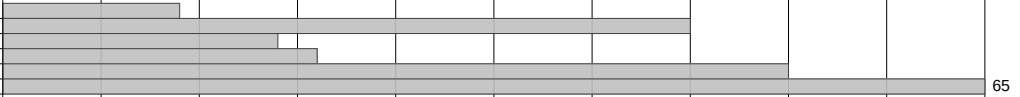
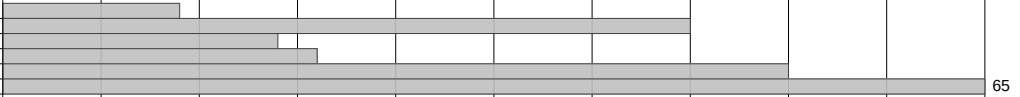
 SOIL AND STRUCTURES				Trial Pit					TP111	
									Sheet 1 of 1	
				Hole Type TP		Easting 390461.00	Northing 411777.00	Ground Level (m) 138.65	Scale 1:25	
Project Name Land off Oldham Road, Rochdale		Project No. 20511		Start Date 2025-03-27		End Date 2025-03-27				
Client Metalcraft Group				Consultant Soil and Structures Ltd			Contractor Metalcraft Group			
Inst/ Backfill	Water Levels	Samples and Tests			Level (m)	Depth (m) (thickness)	Strata			
		Depth (m)	Type/ Ref	Results			Legend	Description		
					138.30	(0.35)		Light yellowish brown sandy, fine to coarse, angular GRAVEL of sandstone. [MADE GROUND, Sub-base]	0.5	
						0.35		Brown and light reddish brown very silty sandy slightly gravelly small to large angular to sub-angular COBBLES of half brick and brick. Sand is fine to coarse. Gravel is fine to coarse angular to sub-angular mortar and brick. [MADE GROUND, Relic foundations (likely associated with the former church)]		
						(0.45)				
					137.85	0.80 (0.10)		Orangish brown slightly gravelly fine to coarse SAND. Gravel is fine to coarse rounded mixed natural lithologies. [SUSPECTED GLACIOFLUVIAL DEPOSITS, Mapped as Hummocky Glacial Deposits]	1.0	
					137.75	0.90		End of Trial Pit at 0.90m		
									1.5	
									2.0	
									2.5	
									3.0	
									3.5	
									4.0	
									4.5	
									5.0	
Remarks PURPOSE: Targeting location of remaining underground storage tank (UST) as indicated by neighbour. TERMINATION: Engineer decision, target depth achieved - no evidence of disturbed ground or evidence of relic USTs. LOCATION: Surveyed using freeware on Site. GL: Estimated off topographical survey. STABILITY: Stable. GROUNDWATER: None encountered. OTHER: No evidence of potentially harmful or polluting material.							Method, Plant, Stability, Dimensions 0.00 - 0.90m TP - Trial Pit tonne tracked Stable		Logger RB	
							Checked By: RB Approved By: RB Status: FINAL			

 SOIL AND STRUCTURES	Trial Pit				TP111
					PHOTO PAGE
	Hole Type TP	Easting 390461.00	Northing 411777.00	Ground Level (m) 138.65	Scale 1:25
Project Name Land off Oldham Road, Rochdale		Project No. 20511	Start Date 2025-03-27	End Date 2025-03-27	
Client Metalcraft Group		Consultant Soil and Structures Ltd	Contractor Metalcraft Group		
					
Remarks PURPOSE: Targeting location of remaining underground storage tank (UST) as indicated by neighbour. TERMINATION: Engineer decision, target depth achieved - no evidence of disturbed ground or evidence of relic USTs. LOCATION: Surveyed using freeware on Site. GL: Estimated off topographical survey. STABILITY: Stable. GROUNDWATER: None encountered. OTHER: No evidence of potentially harmful or polluting material.			Method, Plant, Stability, Dimensions 0.00 - 0.90m TP - Trial Pit tonne tracked Stable		
Checked By: RB Approved By: RB Status: FINAL			Logger RB		

 SOIL AND STRUCTURES	Dynamic Probe DPL101 Sheet 1 of 1													
	Probe Type DPL	Easting 390459.00	Northing 411748.00	Ground Level (m) 138.35	Scale 1:50									
	Project Name Land off Oldham Road, Rochdale		Project No. 20511	Start Date 2025-03-27	End Date 2025-03-27									
Client Metalcraft Group		Consultant Soil and Structures Ltd		Contractor Metalcraft Group										
	Readings (Blows/100mm)	Diagram (N100 Values)										Torque (Nm)		
		5	10	15	20	25	30	35	40	45	50			
15	25													
23	16													
45														
57												57		
-0.5													0.5	
-1.0													1.0	
-1.5													1.5	
-2.0													2.0	
-2.5													2.5	
-3.0													3.0	
-3.5													3.5	
-4.0													4.0	
-4.5													4.5	
-5.0													5.0	
-5.5													5.5	
-6.0													6.0	
-6.5													6.5	
-7.0													7.0	
-7.5													7.5	
-8.0													8.0	
-8.5													8.5	
-9.0													9.0	
-9.5													9.5	
-10.0													10.0	
Remarks PURPOSE: Stiffness profiling of natural soils locally to TP108. TERMINATION: Refusal. LOCATION: Surveyed using freeware on Site. GL: Estimated off topographical survey.												Method, Plant 0.00 - 0.60m DP - Dynamic Probe		Logger RB
Checked By: RB Approved By: RB Status: FINAL												Hammer Weight (kg) 10.0 Hammer Drop (mm) 500 Cone Diameter (mm) 35 Cone Angle 60 Rod Diameter (mm) 22 Damper None		

 SOIL AND STRUCTURES		Dynamic Probe				DPL101a					
		Sheet 1 of 1									
		Probe Type DPL	Easting 390459.00	Northing 411748.00	Ground Level (m) 138.35	Scale 1:50					
Project Name Land off Oldham Road, Rochdale		Project No. 20511		Start Date 2025-03-27		End Date 2025-03-27					
Client Metalcraft Group		Consultant Soil and Structures Ltd		Contractor Metalcraft Group							
Readings (Blows/100mm)		Diagram (N100 Values)								Torque (Nm)	
6 17 22 35 61		5 10 15 20 25 30 35 40 45 50									
0.5		61								0.5	
1.0										1.0	
1.5										1.5	
2.0										2.0	
2.5										2.5	
3.0										3.0	
3.5										3.5	
4.0										4.0	
4.5										4.5	
5.0										5.0	
5.5										5.5	
6.0										6.0	
6.5										6.5	
7.0										7.0	
7.5										7.5	
8.0										8.0	
8.5										8.5	
9.0										9.0	
9.5										9.5	
10.0										10.0	
Remarks PURPOSE: Stiffness profiling of natural soils locally to TP108. TERMINATION: Refusal. LOCATION: Surveyed using freeware on Site. GL: Estimated off topographical survey.						Method, Plant 0.00 - 0.50m DP - Dynamic Probe					
Checked By: RB Approved By: RB Status: FINAL						Logger RB					
						Hammer Weight (kg) 10.0 Hammer Drop (mm) 500 Cone Diameter (mm) 35 Cone Angle 60 Rod Diameter (mm) 22 Damper None					

 SOIL AND STRUCTURES		Dynamic Probe DPL101b Sheet 1 of 1										
		Probe Type DPL	Easting 390459.00	Northing 411748.00	Ground Level (m) 138.35	Scale 1:50						
		Project Name Land off Oldham Road, Rochdale	Project No. 20511	Start Date 2025-03-27	End Date 2025-03-27							
Client Metalcraft Group		Consultant Soil and Structures Ltd		Contractor Metalcraft Group								
Readings (Blows/100mm)		Diagram (N100 Values)										Torque (Nm)
		5	10	15	20	25	30	35	40	45	50	
26 20 68												
-0.5												-0.5
-1.0												-1.0
-1.5												-1.5
-2.0												-2.0
-2.5												-2.5
-3.0												-3.0
-3.5												-3.5
-4.0												-4.0
-4.5												-4.5
-5.0												-5.0
-5.5												-5.5
-6.0												-6.0
-6.5												-6.5
-7.0												-7.0
-7.5												-7.5
-8.0												-8.0
-8.5												-8.5
-9.0												-9.0
-9.5												-9.5
-10.0												-10.0
Remarks PURPOSE: Stiffness profiling of natural soils locally to TP108. TERMINATION: Refusal. LOCATION: Surveyed using freeware on Site. GL: Estimated off topographical survey.						Method, Plant 0.00 - 0.40m DP - Dynamic Probe						Logger RB
						Hammer Weight (kg) 10.0 Hammer Drop (mm) 500 Cone Diameter (mm) 35 Cone Angle 60 Rod Diameter (mm) 22 Damper None						
Checked By: RB Approved By: RB Status: FINAL												

 SOIL AND STRUCTURES		Dynamic Probe				DPL101c																																		
		Sheet 1 of 1																																						
		Probe Type DPL	Easting 390459.00	Northing 411748.00	Ground Level (m) 138.35	Scale 1:50																																		
Project Name Land off Oldham Road, Rochdale		Project No. 20511		Start Date 2025-03-27	End Date 2025-03-27																																			
Client Metalcraft Group		Consultant Soil and Structures Ltd		Contractor Metalcraft Group																																				
<table><tr><td rowspan="2">Readings (Blows/100mm)</td><td colspan="10">Diagram (N100 Values)</td><td rowspan="2">Torque (Nm)</td></tr><tr><td>5</td><td>10</td><td>15</td><td>20</td><td>25</td><td>30</td><td>35</td><td>40</td><td>45</td><td>50</td></tr><tr><td>9 35 14 16 40 65</td><td colspan="10"></td><td>0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0 4.5 5.0 5.5 6.0 6.5 7.0 7.5 8.0 8.5 9.0 9.5 10.0</td></tr></table>							Readings (Blows/100mm)	Diagram (N100 Values)										Torque (Nm)	5	10	15	20	25	30	35	40	45	50	9 35 14 16 40 65											0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0 4.5 5.0 5.5 6.0 6.5 7.0 7.5 8.0 8.5 9.0 9.5 10.0
Readings (Blows/100mm)	Diagram (N100 Values)										Torque (Nm)																													
	5	10	15	20	25	30	35	40	45	50																														
9 35 14 16 40 65											0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0 4.5 5.0 5.5 6.0 6.5 7.0 7.5 8.0 8.5 9.0 9.5 10.0																													
Remarks PURPOSE: Stiffness profiling of natural soils locally to TP108. TERMINATION: Refusal. LOCATION: Surveyed using freeware on Site. GL: Estimated off topographical survey.				Method, Plant 0.00 - 0.70m DP - Dynamic Probe		Logger RB																																		
Checked By: RB Approved By: RB Status: FINAL				Hammer Weight (kg) 10.0 Hammer Drop (mm) 500 Cone Diameter (mm) 35 Cone Angle 60 Rod Diameter (mm) 22 Damper None																																				



**GP®
TITANFLEX®**

GP® TITANFLEX® gas and hydrocarbon barrier is a multi-layer, polyethylene membrane. GP® TITANFLEX® is specifically designed, manufactured, tested and certified to perform as a methane, carbon dioxide, radon ground gas, VOC, Air moisture and hydrocarbon protection system.

TITANTECH®

For developers of brownfield and contaminated sites the TITANTECH® family of products represent a major step forward in safeguarding projects against gaseous and chemical contamination.

GP® TITANFLEX® complies with the latest codes of practice as published by BRE, CIRIA (C748) and BSI (BS8485:2015). Suitable for use as ground gas/hydrocarbon protection for NHBC, Green, Amber 1, Amber 2 and Red site characterisations.

Handling

Roll weights can be in excess of 20kg and hence appropriate care and equipment is required for unloading and handling.

Storage

Rolls of GP® TITANFLEX® should be stored on stable/level ground and stacked not more than five rolls high, with no other material stacked on top. The rolls can be stored outdoors when packaged, but should be protected from exposure to UV.

Installation

GP® TITANFLEX® should be installed in accordance with the product installation guidelines, and in accordance with best practice.

Thickness	0.5 mm
Width	2 m
Length	50 m
Weight	500 g/m ²

Certifications



Please
Scan



Rev 2024



Feature	Characteristics	Test Method	GP® TITANFLEX®
Physical Properties	Thickness	EN 1849-2	0.5 mm
	Width	EN 1849-2	2 m
	Length	EN 1849-2	50 m
	Weight	EN 1849-2	500 g/m ²
Hydraulic Press	Water Vapour Transmission Rate	EN 1931	0.11 - 0.18 g/m ² /day
	Water Tightness (60 kPa)	EN 1928	Pass
	Water Tightness (196 kPa - 20 m Water Head) (Basement Application)	EN 1928	Pass
Mechanical Properties	Resistance to Static Load	EN 12730-B	≥ 20 kg
	Puncture Resistance	EN 12236	≥ 2.0 kN
	Tensile Strength (MD)	EN 12311-1	> 550 N/50mm
	Tensile Strength (CMD)	EN 12311-1	> 400 N/50mm
	Tensile Elongation (MD/CMD)	EN 12310-1	> 550 %
	Tear Resistance (MD/CMD)	EN 12310-1	> 300 N
	Resistance to Impact	EN 12691-B	650 mm
	Reaction to Fire	EN 13501-1	E Class
	Resistance to Artificial Ageing	EN 1296/EN 1928	Pass
	Resistance to Chemicals	EN 1296/EN 1928	Pass
Compliance and Certification	CE Mark - EN13967:2012		
	NHBC Standards Compliant		
	CIRIA C748 Compliant		
	BS 8485:2015 Compliant		
Vapour Permeability 100% Concentration	Transmission Rate of Benzene	EN ISO 15105-2	< 3.6 mg/m ² /day
	Transmission Rate of Toluene	EN ISO 15105-2	< 13.8 mg/m ² /day
	Transmission Rate of Ethyl Benzene	EN ISO 15105-2	< 2.7 mg/m ² /day
	Transmission Rate of Xylenes (M,P,O)	EN ISO 15105-2	< 7.7 mg/m ² /day
	Transmission Rate of Hexane	EN ISO 15105-2	< 0.6 mg/m ² /day
	Transmission Rate of Vinyl Chloride	EN ISO 15105-2	< 0.05 mg/m ² /day
	Transmission Rate of Trichloroethene (TCE)	EN ISO 15105-2	< 54.7 mg/m ² /day
	Transmission Rate of Tetrachloroethene (PCE)	EN ISO 15105-2	< 26.2 mg/m ² /day
	Transmission Rate of Naphthalene	EN ISO 15105-2	< 0.0006 mg/m ² /day
	Transmission Rate of CIS-1,2-Dichloroethylene	EN ISO 15105-2	< 1.1 mg/m ² /day
Gas Permeability	Methane Permeability	EN ISO 15105-1	0.13 ml/m ² /day/atm
	Methane Permeability (Jointed)	EN ISO 15105-1	1.00 ml/m ² /day/atm
	Carbon Dioxide Permeability	EN ISO 15105-1	3.01 ml/m ² /day/atm
	Vinyl Chloride Gas Permeability	EN ISO 15105-1	0.04 ml/m ² /day/atm
	Radon Permeability	K124/02/95	1.0 x 10 ⁻¹² m ² /S
	Hydrogen Sulphide Permeability	EN ISO 15105-1	< 0.16 ml/m ² /day/atm



Feature	Characteristics	Test Method	GP® TITANFLEX®
Durability and Chemical Resistance	Chemical Resistance - Sulfuric ACID (10% Solution of Sulfuric Acid (H ₂ SO ₄)) 50° For 56 Days	EN 14414-A	TENSILE STRENGTH RETAINED 100% RESULT - PASS
	Chemical Resistance - BASIC (Calcium Hydroxide Saturated Suspension) 50° For 56 Days	EN 14414-B	TENSILE STRENGTH RETAINED 100% RESULT - PASS
	Chemical Resistance - SOLVENTS (35% Diesel, 35% Paraffin, 30% Oil Hd30 (Vol)) 50° For 56 Days	EN 14414-C	TENSILE STRENGTH RETAINED >80% RESULT - PASS
	Chemical Resistance - SYNTHETIC LEACHATE (Mixture of 14 Acids, Chlorides, Sulphates & Phosphates) 50° For 56 Days	EN 14414-D	TENSILE STRENGTH RETAINED 100% RESULT - PASS
	Resistance to Leaching - HOT WATER (Deionised Water) 50° For 56 Days	EN 14415-A	TENSILE STRENGTH RETAINED 100% RESULT - PASS
	Resistance to leaching - AQUEOUS ALKALINE (Saturated Calcium Hydroxide) 50° For 56 Days	EN 14415-B	TENSILE STRENGTH RETAINED 100% RESULT - PASS
	Resistance to Leaching - ORGANIC ALCOHOL (30% Methanol, 30% Isopropanol, 40% Glycol) 50° For 56 Days	EN 14415-C	TENSILE STRENGTH RETAINED 100% RESULT - PASS
	Chemical Resistance - BENZENE - 100% Saturated Concentration	EN 14414-D (MOD)	TENSILE STRENGTH RETAINED 95% (MD), 102% (CMD) RESULT - PASS
	Chemical Resistance - TOLUENE - 100% Saturated Concentration	EN 14414-D (MOD)	TENSILE STRENGTH RETAINED 94% (MD), 91% (CMD) RESULT - PASS
	Chemical Resistance - ETHYL BENZENE - 100% Saturated Concentration	EN 14414-D (MOD)	TENSILE STRENGTH RETAINED 99% (MD), 97% (CMD) RESULT - PASS
	Chemical Resistance - XYLENES - 100% Saturated Concentration	EN 14414-D (MOD)	TENSILE STRENGTH RETAINED 91% (MD), 106% (CMD) RESULT - PASS
	Chemical Resistance - TCE - 100% Saturated Concentration	EN 14414-D (MOD)	TENSILE STRENGTH RETAINED 99% (MD), 93% (CMD) RESULT - PASS
	Chemical Resistance - PCE - 100% Saturated Concentration	EN 14414-D (MOD)	TENSILE STRENGTH RETAINED 93% (MD), 93% (CMD) RESULT - PASS
	Chemical Resistance - NAPHTHALENE - 100% Saturated Concentration	EN 14414-D (MOD)	TENSILE STRENGTH RETAINED 101% (MD), 93% (CMD) RESULT - PASS
	Chemical Resistance - HEXANE - 100% Saturated Concentration	EN 14414-D (MOD)	TENSILE STRENGTH RETAINED 99% (MD), 104% (CMD) RESULT - PASS



JUTA UK

Please contact JUTA
UK Directly for more
information on
GP® TITANFLEX®

Jointing and Sealing

GP® TITANFLEX® can be heat welded or taped, with jointing carried out by competent personnel with suitable qualifications in accordance with best practice. GP® TITANFLEX® should be overlapped by at least 100mm. If taping joints, only suitable tape must be used, ensuring application with a silicone roller to remove trapped air. JUTA pre-formed details, or self adhesive gas membrane are available for sealing around protuberances.

Accessory Products

- GP® DPC
- GP® Tape
- GP® Self Adhesive Membrane (SAM)
- GP® Primer
- GP® Top Hats and Preformed Corners
- GP® Protection Fleece
- GP® Void Vent (24/40mm)