



Intégrale

Understanding Ground Conditions

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Proposed Redevelopment
The Workshop
King Cliffe Works
Off King Cliffe Road
Huddersfield
West Yorkshire
HD2 2RR

GEOTECHNICAL REPORT

REPORT NO. 1979/02, January 2019

GEOLOGICAL • GEOTECHNICAL • ENVIRONMENTAL • ENGINEERING

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Proposed Redevelopment
Geotechnical Report
The Workshop
King Cliffe Works
Off King Cliffe Road
Huddersfield
West Yorkshire
HD2 2RR

Client: Ms Roheena Akhtar

Intégrale Report No. 1979/02, January 2019

		Signature/Date
Project Co-ordinator & Report Preparation:	Joseph Begaj	
Mentor Consultant, Advice & Report Approved by:	Chris Whale	
Final Check by:	Millie Lewis	

CONFIDENTIALITY STATEMENT

This report is addressed to and may be relied upon by the following:

Ms Roheena Akhtar,
29 Aquamarine Drive,
Fartown,
Huddersfield,
HD2 1BG

Intégrale Limited has prepared this report solely for the use of the client named above. Should any other parties wish to use or rely upon the contents of this report, written approval must be sought from Intégrale Limited. An assignment fee may then be charged.

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EXECUTIVE SUMMARY
1979/02 – Geotechnical Report
The Workshop, Huddersfield, HD2 2RR

Ms R. Akhtar (the client) proposes to redevelop this site by refurbishing and converting the existing workshop into a residential property. The foundations for an extension have already been constructed and a further extension is planned.

Geological mapping indicates that the site is underlain by the Carboniferous Age Pennine Lower Coal Measures Formation comprising interbedded grey mudstone, siltstone and pale grey sandstone.

The Soft Bed Coal (Halifax Soft Bed) outcrop is mapped close to the west. With a general eastwards dip of the strata, this seam is anticipated to be 12-15m below the site.

Historical mapping show the site to have been in its current layout since 1948, having previously been occupied by another building since the early 1900s with the oldest mapping showing it as open land.

Intrusive investigation by windowless sampling has encountered a thin mantle of silt topsoil and reworked clay over sandstone bedrock at depths between 0.7 and 1.0m BEGL.

Dynamic probing reached refusal at depths between 0.9 and 1.7m depth, with the shallowest refusal noted in the east of the site, below and adjacent to the proposed development.

No groundwater was encountered to the depths investigated.

The client has purchased the site as seen, there is an existing footprint of an extension with some blockwork construction.

The proposed development for which planning is being sought comprises extending the current build approximately 1.5m to the east.

The CMRA has shown that the “Soft Coal” could outcrop approximately 20m to the west and it dips 8-10 degrees to the east. The coal should outcrop approximately at the base of the valley to the west and dip into the hillside beneath the site. It is tentatively concluded that the coal would be 10-15m beneath the site. If the seam was worked it would generally be assumed that either the works would have gone into the slope at the base near Jack Hill, if so then there should be more than 10 x seam thickness cover over the workings. If there were bell pit workings from a higher level, then this would be a shaft down approximately 0-15m to intersect the seam or perhaps from crop workings from the west. The latter might be less likely given access from lower down the slope would be an easier alternative.

Window sampling and dynamic probing has been completed across the site at accessible locations, all those have refused at depths of 1-1.7m depth below existing ground levels. The window sampling and the hand dug trial pit for the foundations, all proved solid sandstone at the base.

The present building appears to be in good conditions and there are no indication of any structural distress, likewise none was noted from the local walkover. A brief reconnaissance down the slope to the west does not show any indications of mining, mining spoil or any significant disturbance.

Based on the above and the lack of any reference that the coal has been worked in this area, it is concluded that there is negligible risk of mine entries beneath the site and any inherent risk can be mitigated within appropriate foundation design.

1.0 INTRODUCTION

Ms R. Akhtar is proposing to redevelop this site by refurbishing and converting a workshop into a residential property. The proposals also include the construction of a two-storey extension to the rear (western elevation) of the existing building along with phased renovation of the existing garage and outhouses. The project planning agent and architect is UH Design.

Intégrale Limited (Intégrale) has been commissioned to undertake a ground investigation and complete a geotechnical report. The investigation scope was determined by Intégrale.

A Coal Mining Risk Assessment (CMRA) has been completed for the site by Intégrale (Report No 1979, June 2018) as part of the planning process. This report should be read in conjunction and it is assumed the reader is familiar.

This interpretative report summarises the findings of the CMRA, describes the scope of fieldworks completed, discusses the ground and groundwater conditions encountered, and gives advice on the risk posed to the development by coal mining legacy together with advice on other geotechnical aspects.

2.0 THE SITE

2.1 Location and Description

As shown in Appendix A, the site is located on an unnamed access road linking Jack Hill and King Cliffe Road to the west of Halifax Old Road in the Birkby area of Huddersfield, approximately 1.5km north from the town centre. It has a central Ordnance Survey Grid Reference of E414160 N418154 and postcode HD2 2RR.

A site walkover was not completed as part of the CMRA, notes describing the site have now been prepared from the recent site visit and are included as Appendix B, together with typical photographs. The main features and pertinent aspects on the site and immediately adjacent land are summarised below, and annotated on Figure 1:

Current Use	Vacant, under development.
Site Area & Plan Shape	0.014 Hectares (the proposed extension and garden area only), wider site is approximately 0.038 Ha. Half-trapezoid in shape
Maximum Dimensions	14m (E-W) by 10 (N-S) (extension, garden area and adjacent land N to the garage wall)
Ground Slopes & Topography	Flat, some local undulation from clearance and trenching for service run.
Buildings & Condition	Mid-Twentieth Century, with existing extension foundation constructed between 2005-2007. The Workshop is in good condition, no evidence of structural distress noted.
Surfacings & Condition	Tarmac adjacent to the N elevation of The Workshop in reasonable condition, remainder of the site is either topsoil (W of the extension) or reworked silt (N of the extension).
Vegetation & Trees	The site has been cleared. There appears to be signs of new growth from two of the stumps within the site, it is assumed these will be removed. Mixed deciduous trees line the steep slope to the W of the site, these are all upright and mature.
Water Courses	None within or adjacent to the site. Grimescar Dike flows S through parkland W of the site.
Site Boundary Features	Heras fencing/steep slope down to Jack Hill (W), densely treed slope, site difference of approximately 8m between site and Jack Hill; Vehicle Maintenance Garage (N); Unnamed Road (E); Hillhouse & Birkby Bowling Club (S)
Contamination Issues	None anticipated, possible historic backfilling of unrecorded shallow coal workings.
Geotechnical Issues	Potential for unrecorded shallow coal workings, i.e. bell pits or similar.
Other Features	None.

2.2 Published Geology

British Geological Survey (BGS) maps indicate the following strata beneath and adjacent to the site:

Map / Scale	Sheet 77 (Huddersfield) Solid & Drift at 1:50,000 scale.
Artificial Ground	None mapped on or adjacent to site.
Superficial Deposits	None mapped on the site, although Alluvium shown with 25m to the SW.
Solid Geology	Pennine Lower Coal Measures Formation of Carboniferous Age comprising interbedded mudstones, siltstones and pale grey sandstones.
Coal Seams	Middle Band Coal outcropping to the east & dipping down to the E and will not occur beneath the site. Soft Bed Coal (0-0.8m) shown close to the west of the site, with strata dipping to the E, potentially beneath the site. No other coal seams mapped of significance. Given the regional dip of the strata, this seam is anticipated to be 12-15m depth beneath the site.
Shafts	No shafts shown on 1:50,000 scale geology map within influencing distance.

Geological Features	The general strata dip of the area is 8-10° down to the E. The Kirk Burton Faults N & S converge close to the SE. Mine entry 125m SE, accessing workings in a NE direction.
---------------------	--

2.3 Coal Mining Risk Assessment (CMRA).

A CMRA (Intégrale Ref. 1979, June 2018) was completed prior to the ground investigation and should be read alongside this report. It is assumed the reader is familiar with that report.

The pertinent points from which are summarised below for completeness:

- A TerraSearch Coal Report confirms the site is within a Coal Mining Reporting Area and assesses the overall Coal Mining Risk as Moderate.
- The Coal Authority identified the site as being in a Development High Risk Area due to potential for past mining and raised a substantive concern requiring a CMRA.
- A Consultants Coal Mining Report obtained from the Coal Authority indicates no past mining records, mine entries within 100m of the site or remediation activity required locally, but that there is the potential for probable unrecorded shallow workings.
- The aforementioned report identifies the Soft Bed Coal (Halifax Soft Bed) outcropping approximately 19.5m west of the site, a seam classified as workable. Geological mapping indicates that the strata in the area dip eastwards at 8-10°, thus the seam is anticipated to be present below the site at a depth of 12-15m, when taking into account the 8m height difference between the site and Jack Hill.
- The Geology of Huddersfield Memoir identified the Soft Bed Coal as the lowest worked seam in the district at approximately 0.3 to 0.6m thick, but only 0.1 to 0.3m in the north. However, all references to shallow workings within the seam in the district are related to Halifax, i.e. the Halifax Soft Bed, **there is no reference to this seam being mined in Huddersfield.**
- Close study of the Kirklees Council Planning Portal for mining references in relation to nearby development shows that a planning permission was granted for a two-storey extension in close proximity south of the site in 2008.

It was initially concluded that there is moderate to high risk from surface or near-surface workings pre-dating formal records, i.e. crop workings (GL to 5m) or bell pits (GL to 10m), given the potential for the aforementioned seam to be within 3-5m of the surface (no site visit had occurred at that time, and the 6-8m height difference between the site and Jack Hill was not known); whilst these workings are generally well backstowed and latent voiding is minimal, the risk does remain from any workings not backfilled which could result in 'crownhole' subsidence at ground surface during the lifespan of the proposed structure.

With regards of mitigation, it was considered that a foundation raft could be designed to overcome the risk of shallow mine workings which can be piled should a suitable bearing stratum not be present at shallow depth.

It was recommended that a ground investigation be undertaken to assess the presence of any historic unrecorded shallow mine workings and determine the depth to a suitable bearing stratum in order to provide sufficient advice as to whether a raft foundation would need to be piled.

3.0 GROUND INVESTIGATION

In view of the access constraints/current site layout, anticipated ground conditions, and proposed redevelopment, the following scope of investigation was completed.

The CMRA concludes the risk from old workings would either be from crop workings or bell pits, accessing the Soft Bed Coal within approximately 10m of ground level. It was therefore decided to adopt window sampling/dynamic probing to check if evidence of such workings were present. In the context of the development, deep borehole drilling was not deemed warranted at this time.

3.1 Lined Sampling Boreholes and Dynamic Probing

2 No. small diameter boreholes were drilled with a tracked, open-drive percussive lined sampler rig on 18th January 2019. These borehole locations, chosen by the Intégrale, are shown on Figure 1 and were referenced as WSI-2. Boreholes were sunk to between 0.9 and 1.5m depth. The general procedures adopted during windowless sampling, together with the detailed borehole records are included in Appendix C.

One borehole was sunk within the footprint of the existing extension, the second in the garden area at the western limit of a proposed 1.5m increase to the existing extension's footprint.

In addition, 13 No. dynamic probes were sunk in an approximate grid across the remainder of the site, allowing for topographic and other surficial features. 2 No. were completed within the footprint of the existing extension. The results of the dynamic probing are included in Appendix D.

3.2 Referencing

Locations of the exploratory positions were set out using taped offsets from existing features. Ground levels at the exploratory positions have been determined by interpolating between spot levels given on Google Earth the reduced elevation of which is understood to be mAOD.

4.0 GROUND & GROUNDWATER CONDITIONS

4.1 Summary of Strata Encountered

The strata encountered across the site, where undeveloped, are presumed to be broadly similar and can be summarised as follows:

Depth (m)	Description
GL to 0.15	Scrub over TOPSOIL: (Comprising dark brown sandy gravelly Silt.)
0.15 to 0.8	MADE GROUND: (Comprising reworked dark brown sandy gravelly Silt.)
0.8 to 1.0	Medium dense lightly brown silty gravelly SAND. (HIGHLY WEATHERED PENNINE LOWER COAL MEASURES)
Below 1.0m Proven to 1.5m	Weak thinly laminated grey SANDSTONE (WEATHERED PENNINE LOWER COAL MEASURES).

No evidence of coal seams, crop workings or bell pits were identified in any of the 14No. investigation locations.

4.2 Strata Properties

4.2.1 Made Ground / Topsoil

Made Ground was proven in all both of the exploratory positions and can be categorised as:

Made Ground Type/Location	Made Ground (WS1 only)	Topsoil (WS2 only)	Reworked Silt (WS2 only)
Min/Max. thickness (m)	0.7 max.	0.15 max.	0.65 max.
Main Constituents	Multi-coloured Cobbles over greyish-brown Sand. Brick, sandstone, concrete, slate, breezeblock.	Dark brown Silt. Brick, sandstone, charcoal fragments.	Dark brown Silt. Brick, sandstone and charcoal, low cobble content.
Properties	Granular, loosely to moderately compact.	Cohesive, loosely compact, rootlets throughout.	Cohesive, firm.
Evidence of Contamination	None noted.	None noted.	None noted.

4.2.2 Pennine Lower Coal Measures Formation

For the purposes of this report the uppermost horizons of the natural ground have been defined as Highly Weathered where they are light brown sand and Weathered bedrock where grey or greyish-brown and predominantly Gravel. The properties can be summarised as:

Stratum	Highly Weathered Pennine Lower Coal Measures Formation	Weathered Pennine Lower Coal Measures Formation
Min / Max Thickness (m)	0.2 max.	0.2/0.5 proven to base of hole. WS could not penetrate.
Soil Strength /Properties	Granular, medium dense, light brown Sand.	Competent, weak to medium strong, thinly laminated, grey, fine-grained sandstone recovered as sandy Gravel.
Occurrence	Proven in western (garden) area only.	Proven across complete site.
Evidence of Contaminations	None noted.	None noted.

4.3 Groundwater

Groundwater was not proven at the depths investigated.

The Workshop, Huddersfield, 1979/02, January 2019

5.0 GEOTECHNICAL CONSIDERATIONS

5.1 Scheme Details & Structural Loadings

The client has purchased the site as seen, there is an existing footprint of an extension with some blockwork construction.

The proposed development for which planning is being sought comprises extending the current build approximately 1.5m to the east.

In terms of proposed loadings for a typical two storey extension these should not be in excess of 100kN/m run and combined 'dead' and 'live' loading on the ground floor slabs should be will be less than 10kN/m². There is no basement development.

5.2 Risk Posed by Coal Mining

The CMRA has shown that the "Soft Coal" could outcrop approximately 20m to the west and it dips 8-10 degrees to the east. A tentative geological section has been completed and is included as Figure 2.

The coal should outcrop approximately at the base of the valley to the west and dip into the hillside beneath the site. It is tentatively concluded that the coal would be 10-15m beneath the site. If the seam was worked it would generally be assumed that either the works would have gone into the slope at the base near Jack Hill, if so then there should be more than 10 x seam thickness cover over the workings. Workings would likely only take the coal with minimal sandstone removal, therefore those workings would more than likely have been left open. Alternatively, if there were bell pit workings from a higher level, then this would be a shaft down approximately 0-15m to intersect the seam or perhaps from crop workings from the west. The latter might be less likely given access from lower down the slope would be an easier alternative.

Window sampling and dynamic probing has been completed across the site at accessible locations, all those have refused at depths of 1-1.7m depth below existing ground levels. The window sampling and the hand dug trial pit for the foundations, all proved solid sandstone at the base.

The present building appears to be in good conditions and there are no indication of any structural distress, likewise none was noted from the local walkover. A brief reconnaissance down the slope to the west does not show any indications of mining, mining spoil or any significant disturbance.

Based on the above and the lack of any reference that the coal has been worked in this area, it is concluded that there is negligible risk of mine entries beneath the site and any inherent risk can be mitigated within appropriate foundation design.

5.3 Foundations and Ground Floor Slabs

5.3.1 Existing Foundations

The client has purchased the site with the foundations for an extension already in place. A single trial pit was completed and the existing foundation was founded on weak sandstone at 700mm below existing ground levels and the foundations are assumed to be 450-500mm width. It is not known if they are reinforced. The foundations could possibly have been completed within permitted development, therefore would not have taken account of or have been assessed in line with any coal mining risk.

5.3.2 Typical Ground Conditions

The investigation has proven a veneer of Made Ground with construction spoil underlain by Weathered sandstone and refusal on bedrock at depths between approximately 1.0-1.7m depth. The groundwater table is below this depth and consequently the Pennine Lower Coal Measures can provide an adequate bearing stratum reinforced strip or other spread footings, subject to the comments below.

5.3.3 Design Bearing Pressures for Strip and Pad Footings

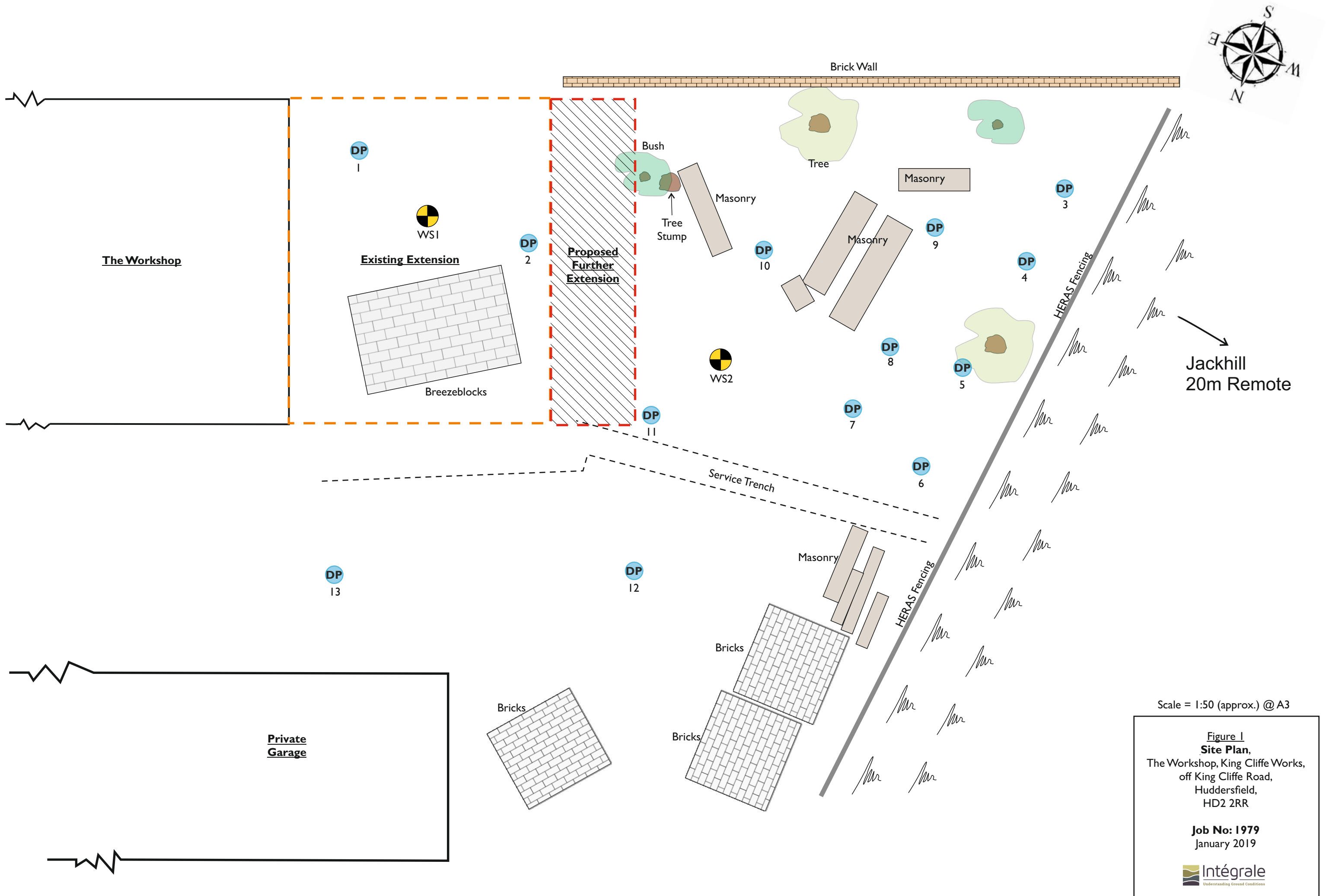
The following design bearing pressures are given for guidance:

Depth (m)BEGl	Stratum (Cu kN/m ²)	Design Bearing Pressure (kN/m ²)		
		1m*	2m*	3m*
1.0 to 1.4m	Weathered Pennine Lower Coal Measures	150	100	--

Notes: * Indicates width of foundation

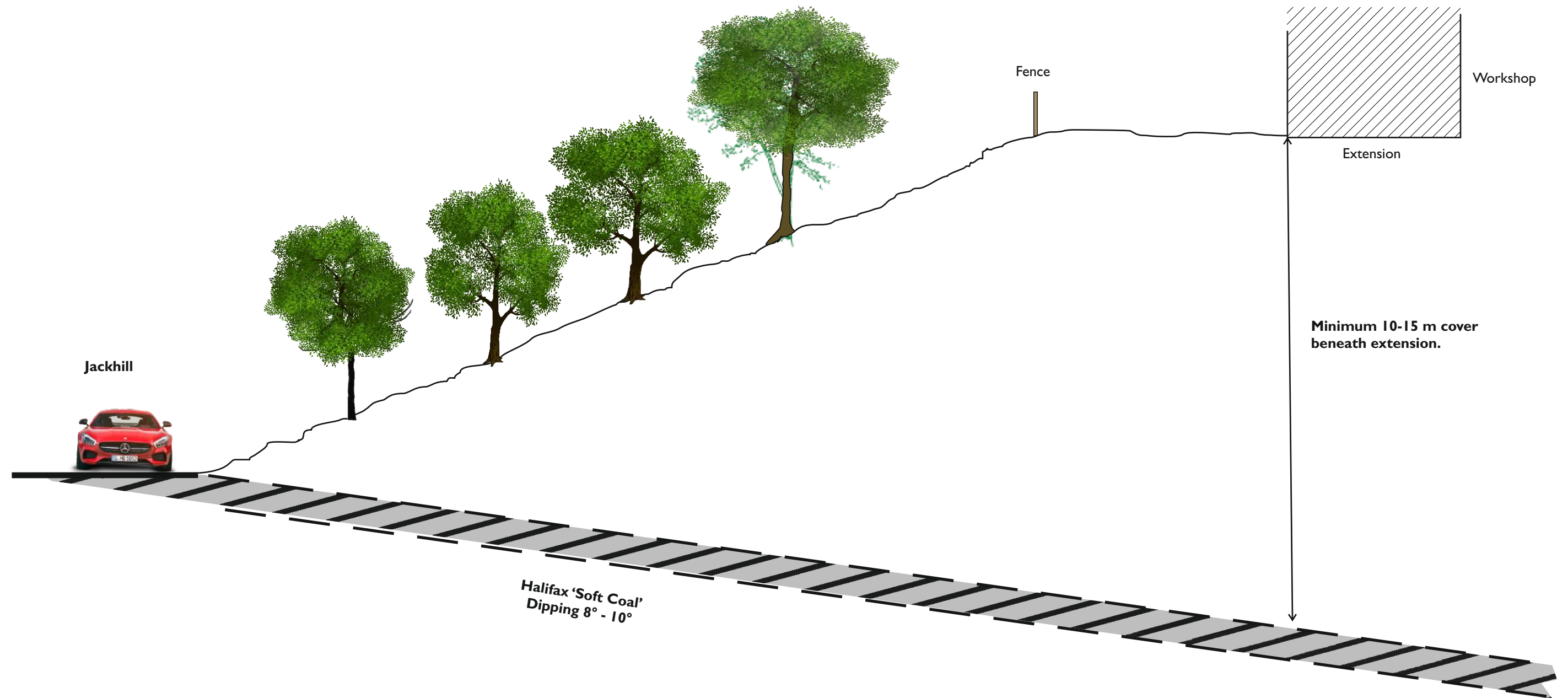
Normally, it would be recommended that a flexible raft foundation solution be adopted with mesh reinforcement throughout and poured monolithically. However, here foundations are already partially placed. In order to mitigate against the slight risk it is recommended cross foundations be completed within the existing footprint and the new foundations be extended 1m outside the footprint to span across a theoretical crownhole. Dowels should be drilled into the existing foundations to provide some continuity within the foundations structure, with an aim that they act monolithically.

The foundation excavations must be inspected and approved by a similarly qualified and experienced professional) who should be capable of increasing the degree of reinforcement in foundations as trenches are pulled; and to confirm the absence of coal seams/workings. Intégrale can assist with this aspect on request.



West

East



Scale = 1:100 (approx.) @ A3

Figure 2
Tentative Geological Cross-Section
The Workshop, King Cliffe Works,
off King Cliffe Road,
Huddersfield,
HD2 2RR

Job No: 1979
January 2019

Intégrale
Understanding Ground Conditions

Appendix A

Site Location



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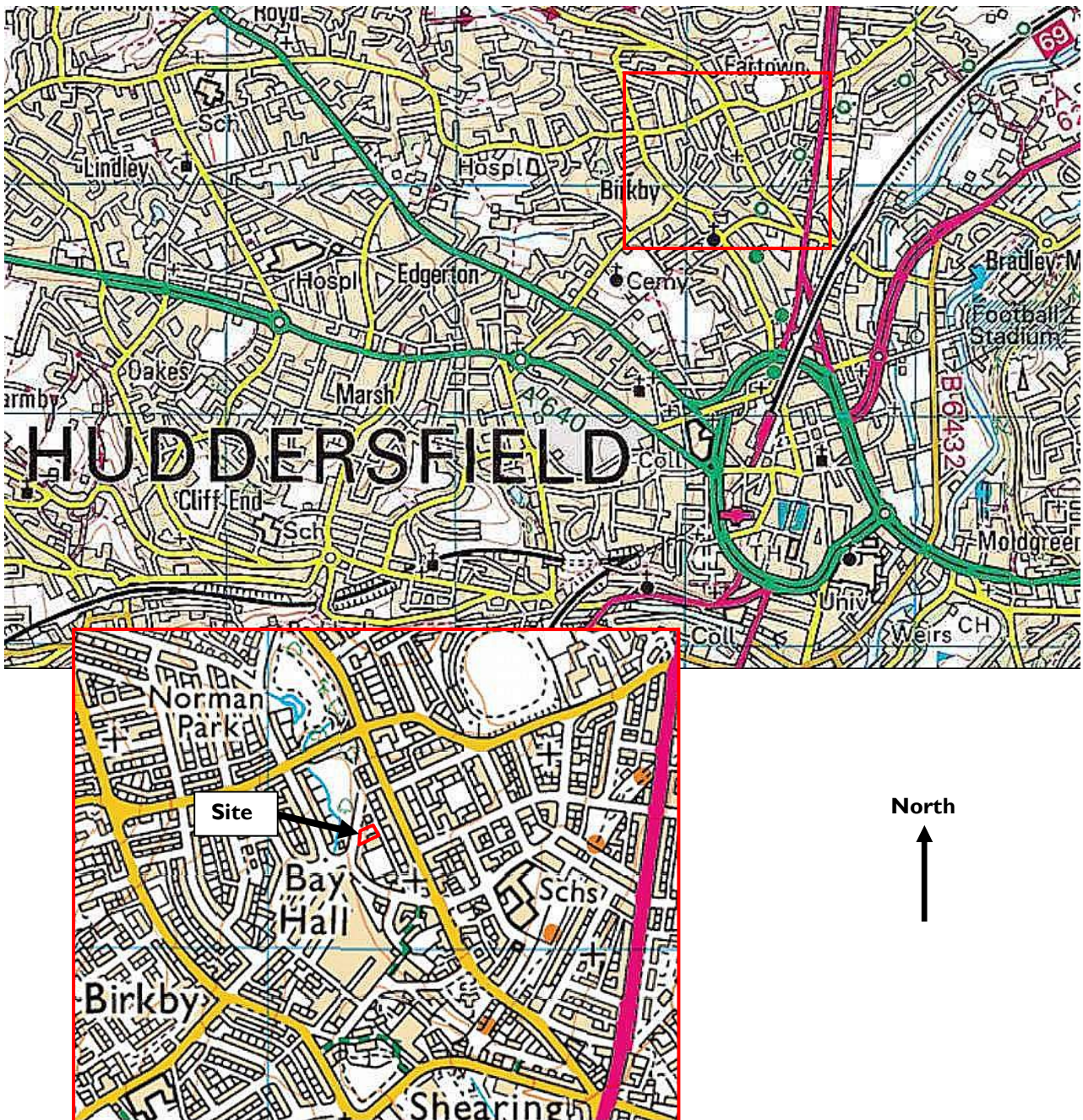
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Project: The Workshop, King Cliffe Works, off King Cliffe Road, Huddersfield, HD2 2RR
Job No: 1979

Site Location Plan



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Appendix B

Site Description/Photographs



Plate 1 – The Workshop, looking SW.



Plate 2 – Looking NE across the garden and extension area.



Plate 3 – The garden area, looking S towards the adjacent bowling club buildings.



Plate 4 – The existing extension, the centre of the foundations infilled with Made Ground.



Plate 5 – Looking upslope towards the site from Jack Hill.



Plate 6 – Looking N along the W boundary of the site.



Plate 7 – The NW corner of the existing extension foundations.



Plate 8 – The contact between the concrete foundation and underlying sandstone bedrock.



Plate 9 – Made Ground at WS1.



Plate 10 – Sandy gravel of sandstone recovered at the base of WS1.



Plate 11 – WS2 core, 0.6 to 1.5m BEGL.



Plate 12 – Thinly laminated sandstone at the base of WS2.

REFERENCES	
Project No.	1979
Site Address	The Workshop, King Cliffe Works, off King Cliffe Road, Huddersfield, West Yorkshire, HD2 2RR
Grid Reference	E414160, N418154
Date of Visit	18/01/2019
Names of persons met on site	Mr Sid Akhtar & Ms Roheena Akhtar (Owner/Developer)
Prepared by	JB
SITE – GENERAL	
Plan of site	See Figure 1.
Site size (area)	Approximately 0.038Ha; quadrilateral, half-trapezoid – entire site including existing workshop and associated buildings. 0.014Ha; quadrilateral, proposed extension/garden area.
Current use	Vacant, under development. Current operations include refurbishment of the interior of the existing old workshop building.
Maximum Dimensions	14m (E-W) by 10m (N-S).
Boundaries	1.5m brick wall to S, heras fencing to W, adjacent property to N and road to the remainder of the site to the E.
Access limitations	Keys required for access.
Specific working hours	08:00 -17:00
Specific H&S hazards	N/A
Water and power supply	In existing building.
SITE – BUILDINGS	
Age of building(s)	Mid-Twentieth Century with partially complete extension dating from 2005-07.
Building appearance	Two-storey red brick structure with foundations laid for extension to western elevation. Single storey garage and outhouse to the north.
State of buildings, i.e. cracks; structural distress etc.	None noted.
Tanks:	None on-site.
Heating: electric/gas/oil	None currently.
Gas control measures:	None currently.
Other evidence of industrial activity	Former property usage.
Asbestos/deleterious materials:	None noted.
Electrical equipment/Transformers:	N/A.
SITE – EXTERNAL	
Hard surfacings:	Tarmac adjacent to the N elevation of The Workshop.
Landscaped areas/soft landscaping:	None currently, site area has been cleared of vegetation.
Invasive species noted:	None noted.
Can investigation be in landscaped areas:	Yes, no specific reinstatement required.

Site topography:	Flat.
Evidence of earthworks or mass movement. Sloping ground – any indication of instability.	Service trench dug against northern elevation of extension foundations cutting across to the western boundary. No evidence of movement.
Soil drainage:	No boggy ground or surface cracking.
Trees – effects on buildings:	Those within the site have been cut down. Stumps remain with signs of new growth, it is assumed those closest will be removed prior to further groundworks.
Rock/soil exposures:	Silty topsoil exposed across the site.
Drainage	Service trench has been cut across the site.
Other evidence of Services	Scarring in unnamed road adjacent to the eastern elevation of The Workshop. Street lighting along unnamed road.
Vehicle maintenance: washdown areas, workshops, refuelling points.	Vehicle maintenance repair garage on plot of land to the N of the site.
Waste	None.
Sub-stations:	None.
Ecological features of note:	None noted.
Any seepages on or adjacent to site:	None.
Watercourses:	None within or adjacent to the site boundary.
Other features of note within site.	None.
SURROUNDING LAND USES	
General site context:	Residential.
Land use – N	On-site outhouse and private garage related to the development. Commercial vehicle maintenance/repair garage to the N.
Land use – E	The Workshop building with unnamed road beyond and back of properties on Halifax Old Road.
Land use – S	Buildings of former bowling club.
Land use – W	Steep tree-planted slope dropping down to Jack Hill.
Nearby (<500m) sources of pollution:	Vehicle maintenance garage
Nearby river/surface water features:	Grimescar Dike flowing S through Norman Park.
Local ground profiles and signs of instability.	No hummocky ground or rotated trees.
Evidence of structural distress on nearby buildings:	None noted.
Evidence of mining history:	None noted.
Nearby rock/soil outcrops:	Soil exposed on slope to the west.
Vegetation – distinctive change in vegetation:	None.
Adjacent geotechnical features of note:	Steep slope adjacent to the W boundary of the site, approximately 6-8m drop from the site down to Jack Hill.

Appendix C

Windowless Sample Logs



Borehole Log

Borehole No.

WS1

Sheet 1 of 1

Project Name: The Workshop, King Cliffe Works

Project No.
1979

Co-ords: -

Hole Type
WS

Location: King Cliffe Road, Huddersfield, HD2 2RR

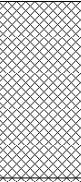
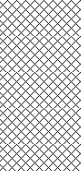
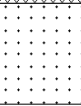
Level: 94.55

Scale
1:15

Client: Ms Roheena Akhtar

Dates: - 18/01/2019

Logged By
JB

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
					0.35	94.20		MADE GROUND: (Comprising loosely compact multi-coloured angular to subangular Cobbles of yellowish-brown sandstone, whole or fragmented orange bricks, weathered greyish-brown concrete, grey and dark grey fragmented breeze blocks, purplish-grey slate with much angular to subangular fine to coarse Gravel and some Sand of the same lithologies as well as rare glass and metal fragments).
					0.70	93.85		MADE GROUND: (Comprising loosely to moderately compact brownish-grey silty gravelly fine to coarse Sand. Gravel is angular to subangular fine to medium predominantly sandstone with lesser brick, slate and siltstone).
					0.90	93.65		Medium strong greyish-brown locally iron-stained fine-grained SANDSTONE recovered as sandy angular to subangular fine to coarse Gravel. (PENNINE LOWER COAL MEASURES FORMATION)
								<i>Borehole refused at 0.9m.</i> End of borehole at 0.90 m

1

2

3

Remarks

No groundwater encountered.



Borehole Log

Borehole No.

WS2

Sheet 1 of 1

Project Name: The Workshop, King Cliffe Works

Project No.
1979

Co-ords: -

Hole Type
WS

Location: King Cliffe Road, Huddersfield, HD2 2RR

Level: 94.28

Scale
1:15

Client: Ms Roheena Akhtar

Dates: - 18/01/2019

Logged By
JB

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
					0.15	94.13		Scrub over TOPSOIL: (Comprising dark brown slightly sandy slightly gravelly Silt. Gravel is angular to subangular fine to medium brick, sandstone, charcoal and rare glass.) <i>GL to 0.15m: Stratum contains abundant rootlets up to 5mm but typically fine and fibrous throughout.</i>
					0.82	93.46		MADE GROUND: (Comprising reworked dark brown slightly sandy slightly gravelly Silt with low cobble content. Gravel is angular to subangular fine to medium charcoal, sandstone and rare brick. Cobbles are angular to subangular concrete and brick.) <i>Stratum contains occasional fine roots up to 1mm throughout.</i>
					1.00	93.28		[Medium dense] light brown slightly gravelly silty SAND. Gravel is angular to subangular fine to medium sandstone. (WEATHERED PENNINE LOWER COAL MEASURES FORMATION)
					1.50	92.78		Weak thinly laminated grey fine-grained SANDSTONE recovered as sandy angular to subangular fine to medium gravel. (PENNINE LOWER COAL MEASURES FORMATION)
								<i>Borehole refused at 1.5m.</i> End of borehole at 1.50 m

1

2

3

Remarks

No groundwater encountered.

Appendix D

Dynamic Probe Results

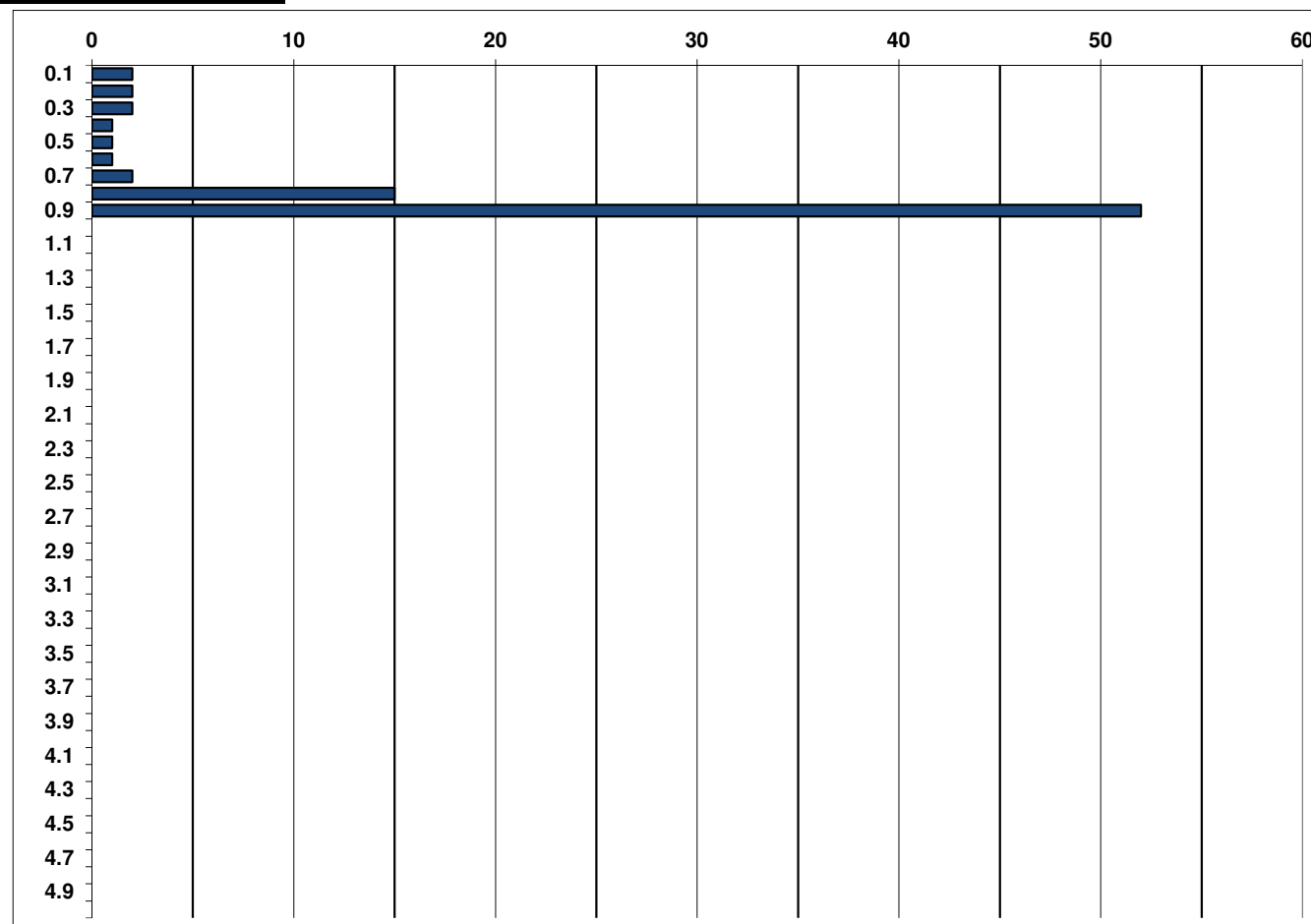
Super Heavy Dynamic Probe Records

Job Ref: 1979

Job Name: The Workshop, Huddersfield

Hole: DP1

Depth (m)	Blow Count	Depth (m)	Blow Count	Depth (m)	Blow Count	Depth (m)	Blow Count
0.1	2	2.6		5.1		7.6	
0.2	2	2.7		5.2		7.7	
0.3	2	2.8		5.3		7.8	
0.4	1	2.9		5.4		7.9	
0.5	1	3		5.5		8	
0.6	1	3.1		5.6		8.1	
0.7	2	3.2		5.7		8.2	
0.8	15	3.3		5.8		8.3	
0.9	52	3.4		5.9		8.4	
1		3.5		6		8.5	
1.1		3.6		6.1		8.6	
1.2		3.7		6.2		8.7	
1.3		3.8		6.3		8.8	
1.4		3.9		6.4		8.9	
1.5		4		6.5		9	
1.6		4.1		6.6		9.1	
1.7		4.2		6.7		9.2	
1.8		4.3		6.8		9.3	
1.9		4.4		6.9		9.4	
2		4.5		7		9.5	
2.1		4.6		7.1		9.6	
2.2		4.7		7.2		9.7	
2.3		4.8		7.3		9.8	
2.4		4.9		7.4		9.9	
2.5		5		7.5		10	



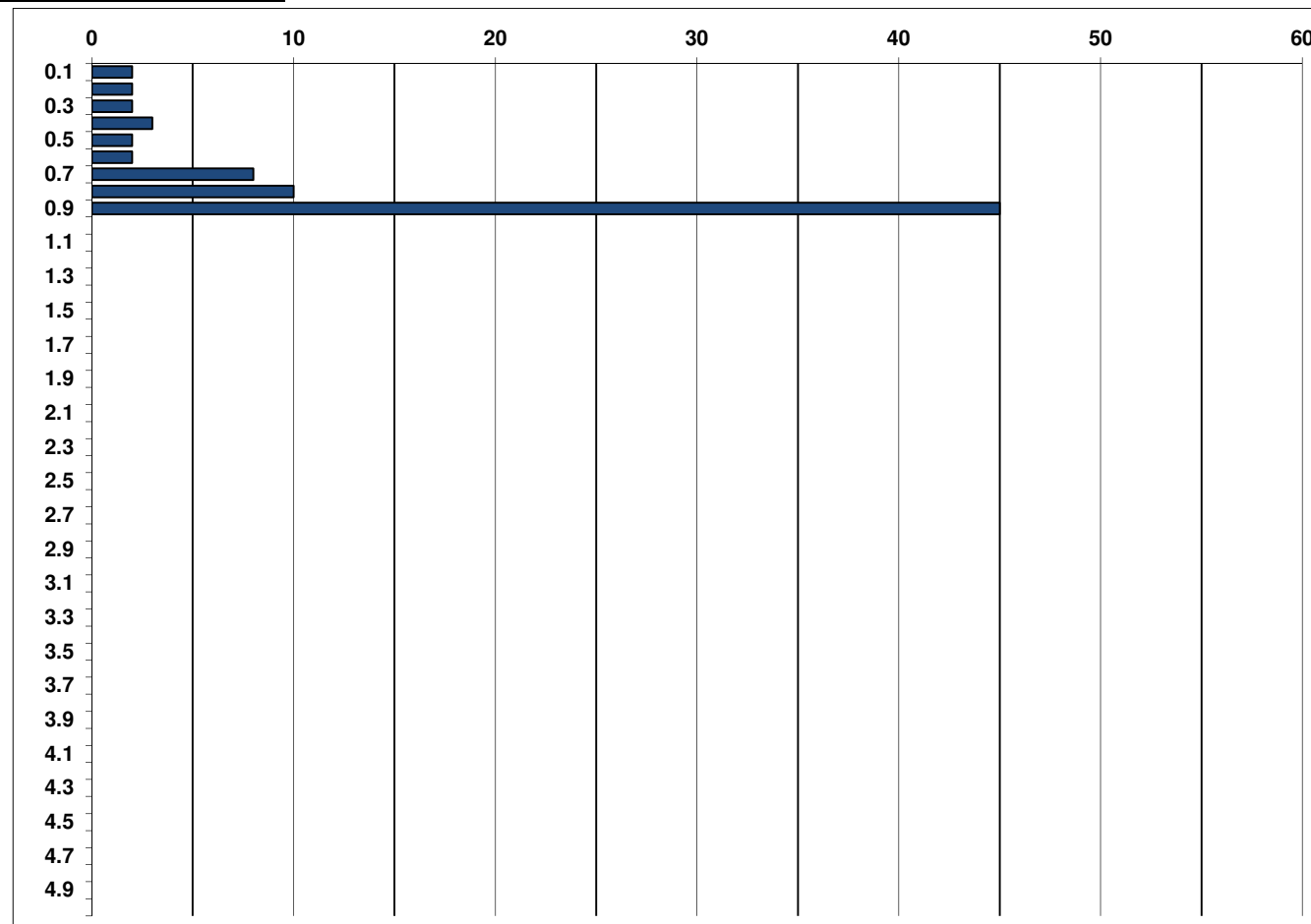
Super Heavy Dynamic Probe Records

Job Ref: 1979

Job Name: The Workshop, Huddersfield

Hole: DP2

Depth (m)	Blow Count	Depth (m)	Blow Count	Depth (m)	Blow Count	Depth (m)	Blow Count
0.1	2	2.6		5.1		7.6	
0.2	2	2.7		5.2		7.7	
0.3	2	2.8		5.3		7.8	
0.4	3	2.9		5.4		7.9	
0.5	2	3		5.5		8	
0.6	2	3.1		5.6		8.1	
0.7	8	3.2		5.7		8.2	
0.8	10	3.3		5.8		8.3	
0.9	45	3.4		5.9		8.4	
1		3.5		6		8.5	
1.1		3.6		6.1		8.6	
1.2		3.7		6.2		8.7	
1.3		3.8		6.3		8.8	
1.4		3.9		6.4		8.9	
1.5		4		6.5		9	
1.6		4.1		6.6		9.1	
1.7		4.2		6.7		9.2	
1.8		4.3		6.8		9.3	
1.9		4.4		6.9		9.4	
2		4.5		7		9.5	
2.1		4.6		7.1		9.6	
2.2		4.7		7.2		9.7	
2.3		4.8		7.3		9.8	
2.4		4.9		7.4		9.9	
2.5		5		7.5		10	



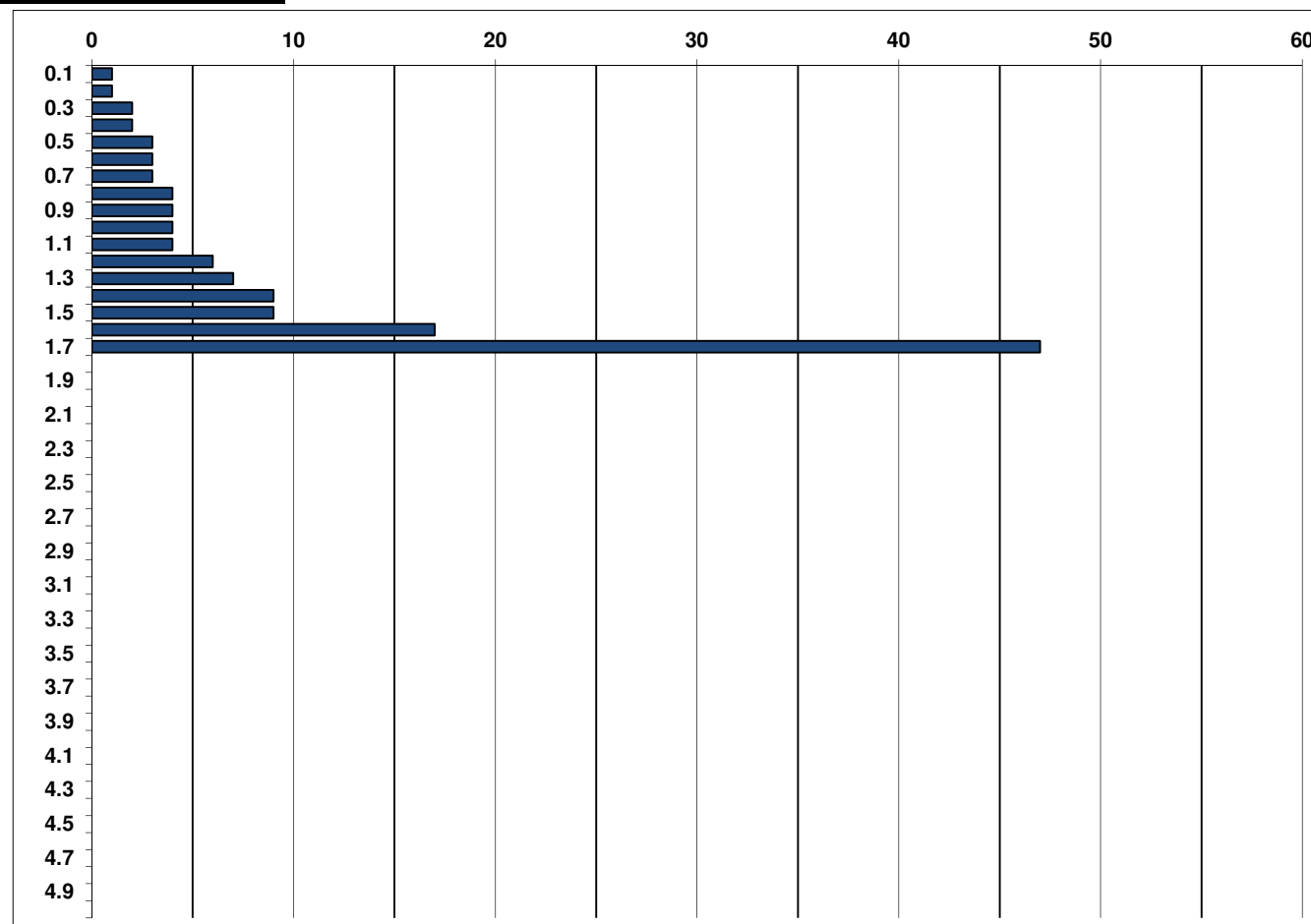
Super Heavy Dynamic Probe Records

Job Ref: 1979

Job Name: The Workshop, Huddersfield

Hole: DP3

Depth (m)	Blow Count	Depth (m)	Blow Count	Depth (m)	Blow Count	Depth (m)	Blow Count
0.1	1	2.6		5.1		7.6	
0.2	1	2.7		5.2		7.7	
0.3	2	2.8		5.3		7.8	
0.4	2	2.9		5.4		7.9	
0.5	3	3		5.5		8	
0.6	3	3.1		5.6		8.1	
0.7	3	3.2		5.7		8.2	
0.8	4	3.3		5.8		8.3	
0.9	4	3.4		5.9		8.4	
1	4	3.5		6		8.5	
1.1	4	3.6		6.1		8.6	
1.2	6	3.7		6.2		8.7	
1.3	7	3.8		6.3		8.8	
1.4	9	3.9		6.4		8.9	
1.5	9	4		6.5		9	
1.6	17	4.1		6.6		9.1	
1.7	47	4.2		6.7		9.2	
1.8		4.3		6.8		9.3	
1.9		4.4		6.9		9.4	
2		4.5		7		9.5	
2.1		4.6		7.1		9.6	
2.2		4.7		7.2		9.7	
2.3		4.8		7.3		9.8	
2.4		4.9		7.4		9.9	
2.5		5		7.5		10	



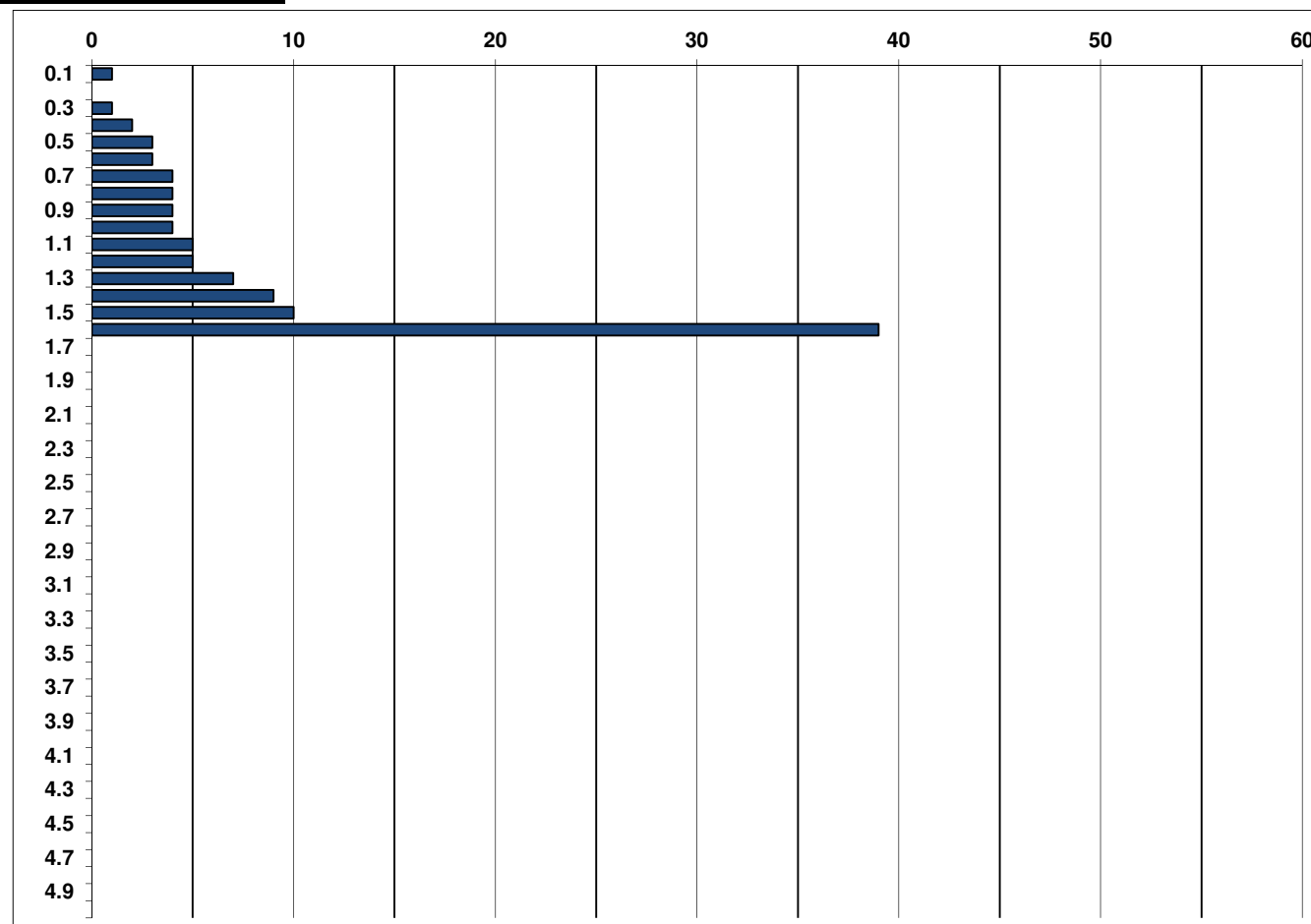
Super Heavy Dynamic Probe Records

Job Ref: 1979

Job Name: The Workshop, Huddersfield

Hole: DP4

Depth (m)	Blow Count	Depth (m)	Blow Count	Depth (m)	Blow Count	Depth (m)	Blow Count
0.1	1	2.6		5.1		7.6	
0.2	-	2.7		5.2		7.7	
0.3	1	2.8		5.3		7.8	
0.4	2	2.9		5.4		7.9	
0.5	3	3		5.5		8	
0.6	3	3.1		5.6		8.1	
0.7	4	3.2		5.7		8.2	
0.8	4	3.3		5.8		8.3	
0.9	4	3.4		5.9		8.4	
1	4	3.5		6		8.5	
1.1	5	3.6		6.1		8.6	
1.2	5	3.7		6.2		8.7	
1.3	7	3.8		6.3		8.8	
1.4	9	3.9		6.4		8.9	
1.5	10	4		6.5		9	
1.6	39	4.1		6.6		9.1	
1.7		4.2		6.7		9.2	
1.8		4.3		6.8		9.3	
1.9		4.4		6.9		9.4	
2		4.5		7		9.5	
2.1		4.6		7.1		9.6	
2.2		4.7		7.2		9.7	
2.3		4.8		7.3		9.8	
2.4		4.9		7.4		9.9	
2.5		5		7.5		10	



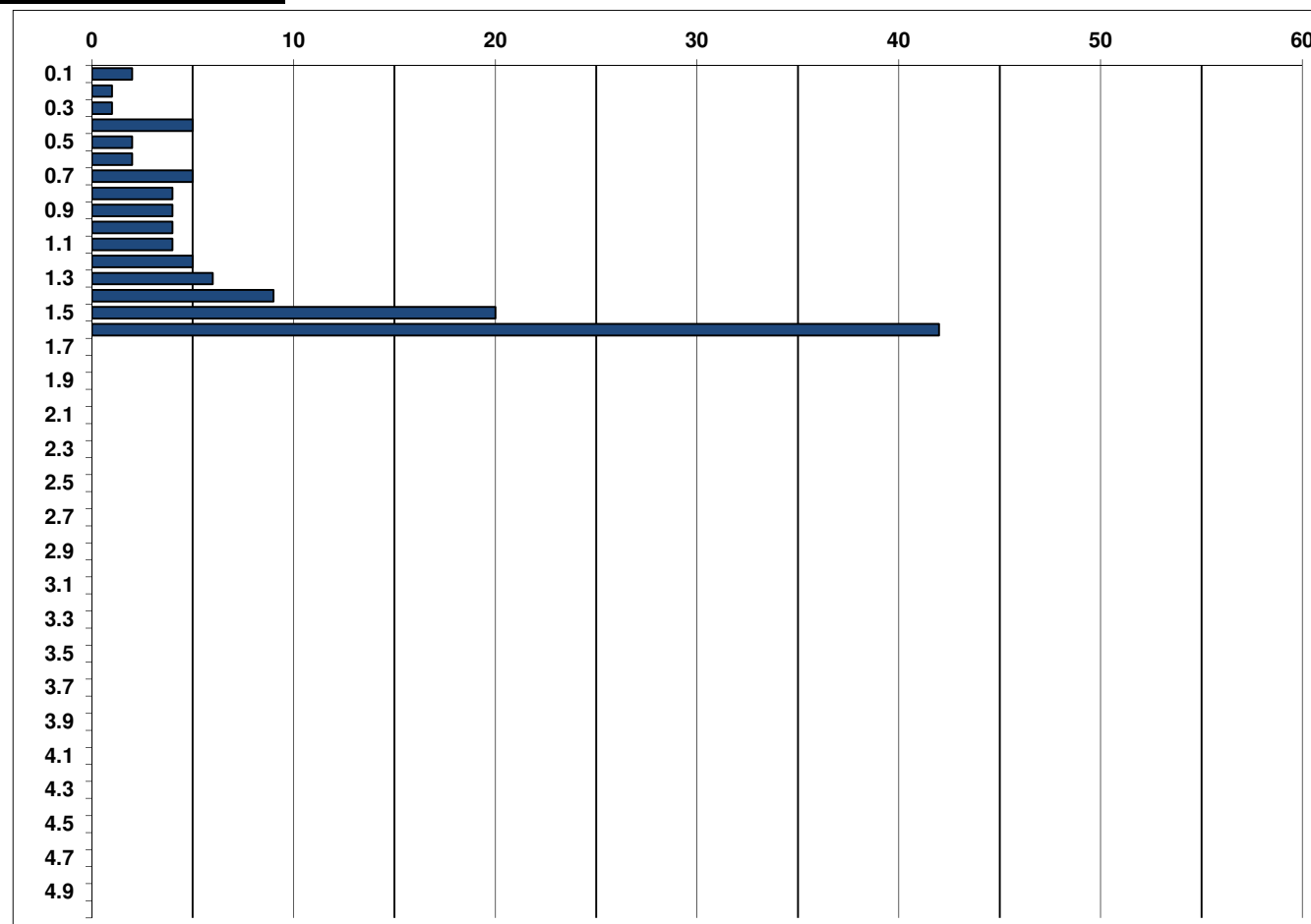
Super Heavy Dynamic Probe Records

Job Ref: 1979

Job Name: The Workshop, Huddersfield

Hole: DP5

Depth (m)	Blow Count	Depth (m)	Blow Count	Depth (m)	Blow Count	Depth (m)	Blow Count
0.1	2	2.6		5.1		7.6	
0.2	1	2.7		5.2		7.7	
0.3	1	2.8		5.3		7.8	
0.4	5	2.9		5.4		7.9	
0.5	2	3		5.5		8	
0.6	2	3.1		5.6		8.1	
0.7	5	3.2		5.7		8.2	
0.8	4	3.3		5.8		8.3	
0.9	4	3.4		5.9		8.4	
1	4	3.5		6		8.5	
1.1	4	3.6		6.1		8.6	
1.2	5	3.7		6.2		8.7	
1.3	6	3.8		6.3		8.8	
1.4	9	3.9		6.4		8.9	
1.5	20	4		6.5		9	
1.6	42	4.1		6.6		9.1	
1.7		4.2		6.7		9.2	
1.8		4.3		6.8		9.3	
1.9		4.4		6.9		9.4	
2		4.5		7		9.5	
2.1		4.6		7.1		9.6	
2.2		4.7		7.2		9.7	
2.3		4.8		7.3		9.8	
2.4		4.9		7.4		9.9	
2.5		5		7.5		10	



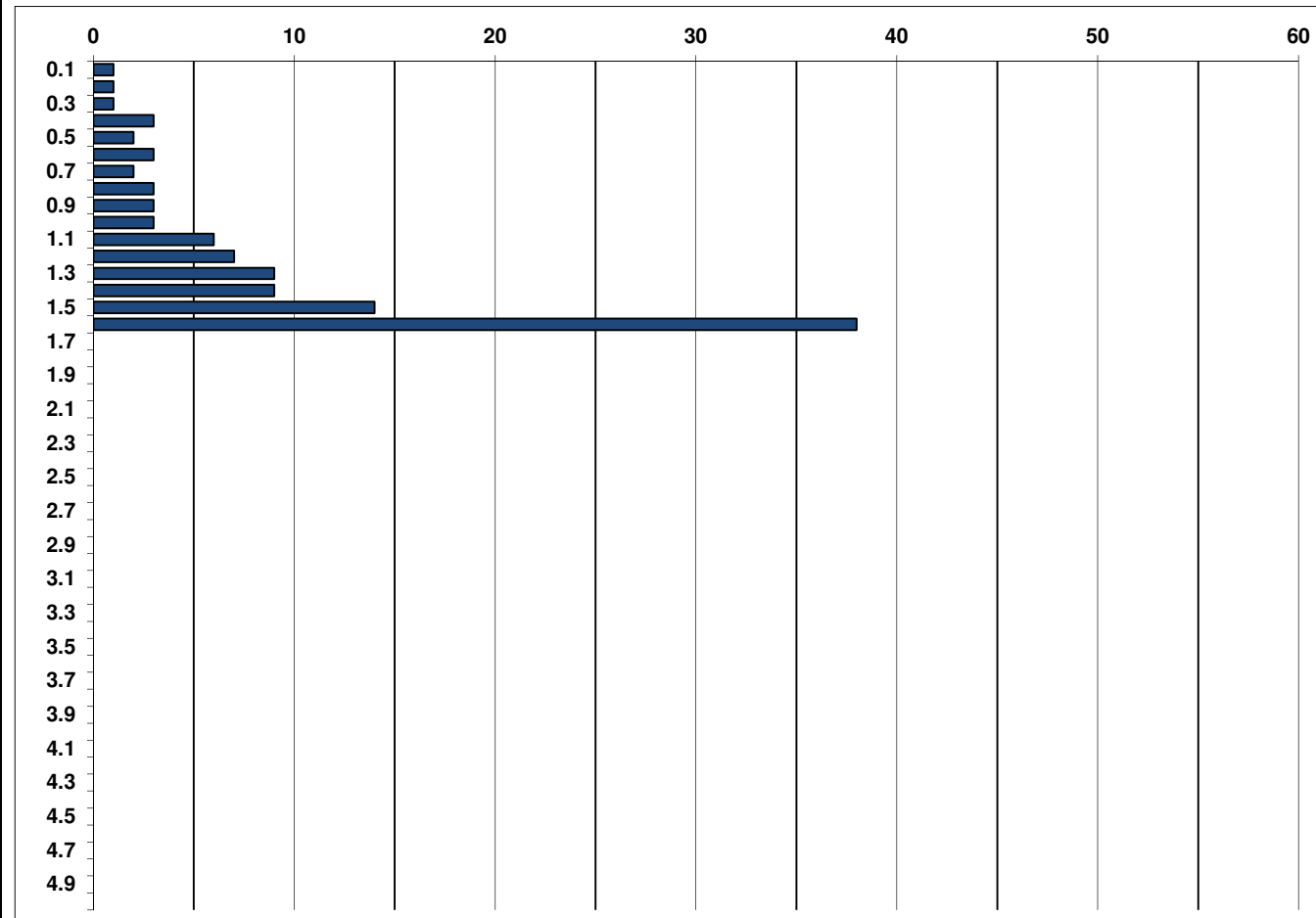
Super Heavy Dynamic Probe Records

Job Ref: 1979

Job Name: The Workshop, Huddersfield

Hole: DP6

Depth (m)	Blow Count	Depth (m)	Blow Count	Depth (m)	Blow Count	Depth (m)	Blow Count
0.1	1	2.6		5.1		7.6	
0.2	1	2.7		5.2		7.7	
0.3	1	2.8		5.3		7.8	
0.4	3	2.9		5.4		7.9	
0.5	2	3		5.5		8	
0.6	3	3.1		5.6		8.1	
0.7	2	3.2		5.7		8.2	
0.8	3	3.3		5.8		8.3	
0.9	3	3.4		5.9		8.4	
1	3	3.5		6		8.5	
1.1	6	3.6		6.1		8.6	
1.2	7	3.7		6.2		8.7	
1.3	9	3.8		6.3		8.8	
1.4	9	3.9		6.4		8.9	
1.5	14	4		6.5		9	
1.6	38	4.1		6.6		9.1	
1.7		4.2		6.7		9.2	
1.8		4.3		6.8		9.3	
1.9		4.4		6.9		9.4	
2		4.5		7		9.5	
2.1		4.6		7.1		9.6	
2.2		4.7		7.2		9.7	
2.3		4.8		7.3		9.8	
2.4		4.9		7.4		9.9	
2.5		5		7.5		10	



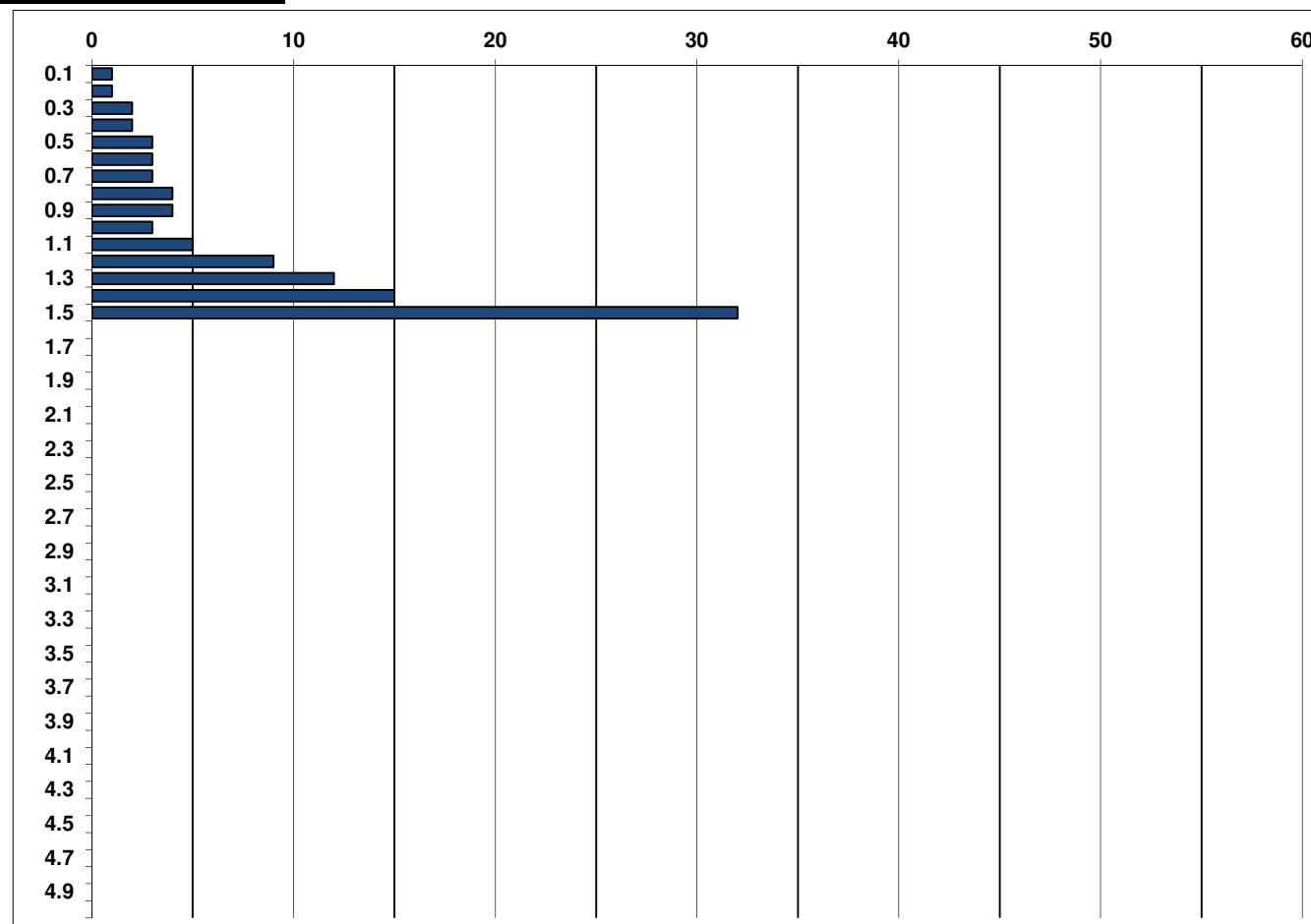
Super Heavy Dynamic Probe Records

Job Ref: 1979

Job Name: The Workshop, Huddersfield

Hole: DP7

Depth (m)	Blow Count	Depth (m)	Blow Count	Depth (m)	Blow Count	Depth (m)	Blow Count
0.1	1	2.6		5.1		7.6	
0.2	1	2.7		5.2		7.7	
0.3	2	2.8		5.3		7.8	
0.4	2	2.9		5.4		7.9	
0.5	3	3		5.5		8	
0.6	3	3.1		5.6		8.1	
0.7	3	3.2		5.7		8.2	
0.8	4	3.3		5.8		8.3	
0.9	4	3.4		5.9		8.4	
1	3	3.5		6		8.5	
1.1	5	3.6		6.1		8.6	
1.2	9	3.7		6.2		8.7	
1.3	12	3.8		6.3		8.8	
1.4	15	3.9		6.4		8.9	
1.5	32	4		6.5		9	
1.6		4.1		6.6		9.1	
1.7		4.2		6.7		9.2	
1.8		4.3		6.8		9.3	
1.9		4.4		6.9		9.4	
2		4.5		7		9.5	
2.1		4.6		7.1		9.6	
2.2		4.7		7.2		9.7	
2.3		4.8		7.3		9.8	
2.4		4.9		7.4		9.9	
2.5		5		7.5		10	



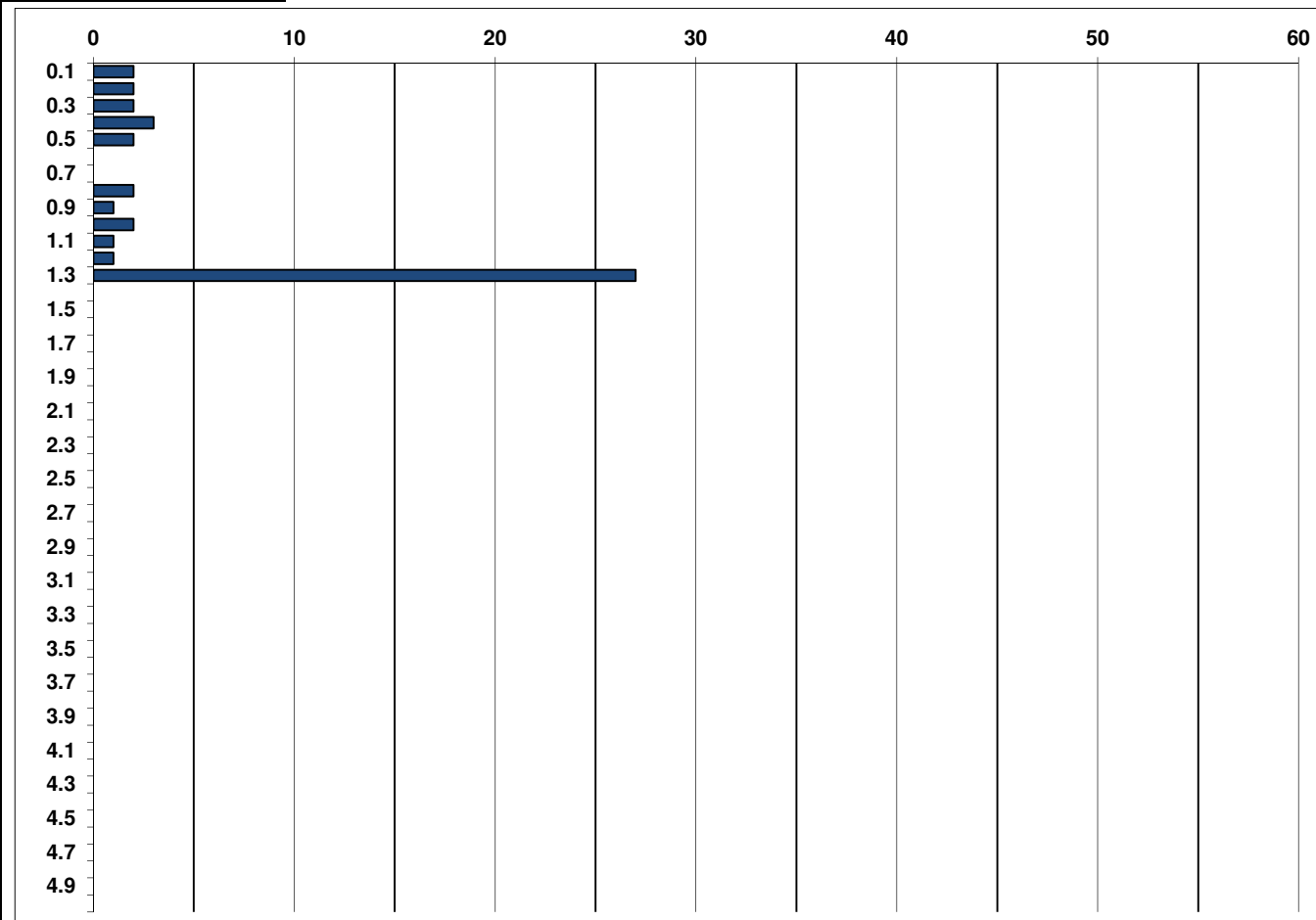
Super Heavy Dynamic Probe Records

Job Ref: 1979

Job Name: The Workshop, Huddersfield

Hole: DP8

Depth (m)	Blow Count	Depth (m)	Blow Count	Depth (m)	Blow Count	Depth (m)	Blow Count
0.1	2	2.6		5.1		7.6	
0.2	2	2.7		5.2		7.7	
0.3	2	2.8		5.3		7.8	
0.4	3	2.9		5.4		7.9	
0.5	2	3		5.5		8	
0.6	-	3.1		5.6		8.1	
0.7	-	3.2		5.7		8.2	
0.8	2	3.3		5.8		8.3	
0.9	1	3.4		5.9		8.4	
1	2	3.5		6		8.5	
1.1	1	3.6		6.1		8.6	
1.2	1	3.7		6.2		8.7	
1.3	27	3.8		6.3		8.8	
1.4		3.9		6.4		8.9	
1.5		4		6.5		9	
1.6		4.1		6.6		9.1	
1.7		4.2		6.7		9.2	
1.8		4.3		6.8		9.3	
1.9		4.4		6.9		9.4	
2		4.5		7		9.5	
2.1		4.6		7.1		9.6	
2.2		4.7		7.2		9.7	
2.3		4.8		7.3		9.8	
2.4		4.9		7.4		9.9	
2.5		5		7.5		10	



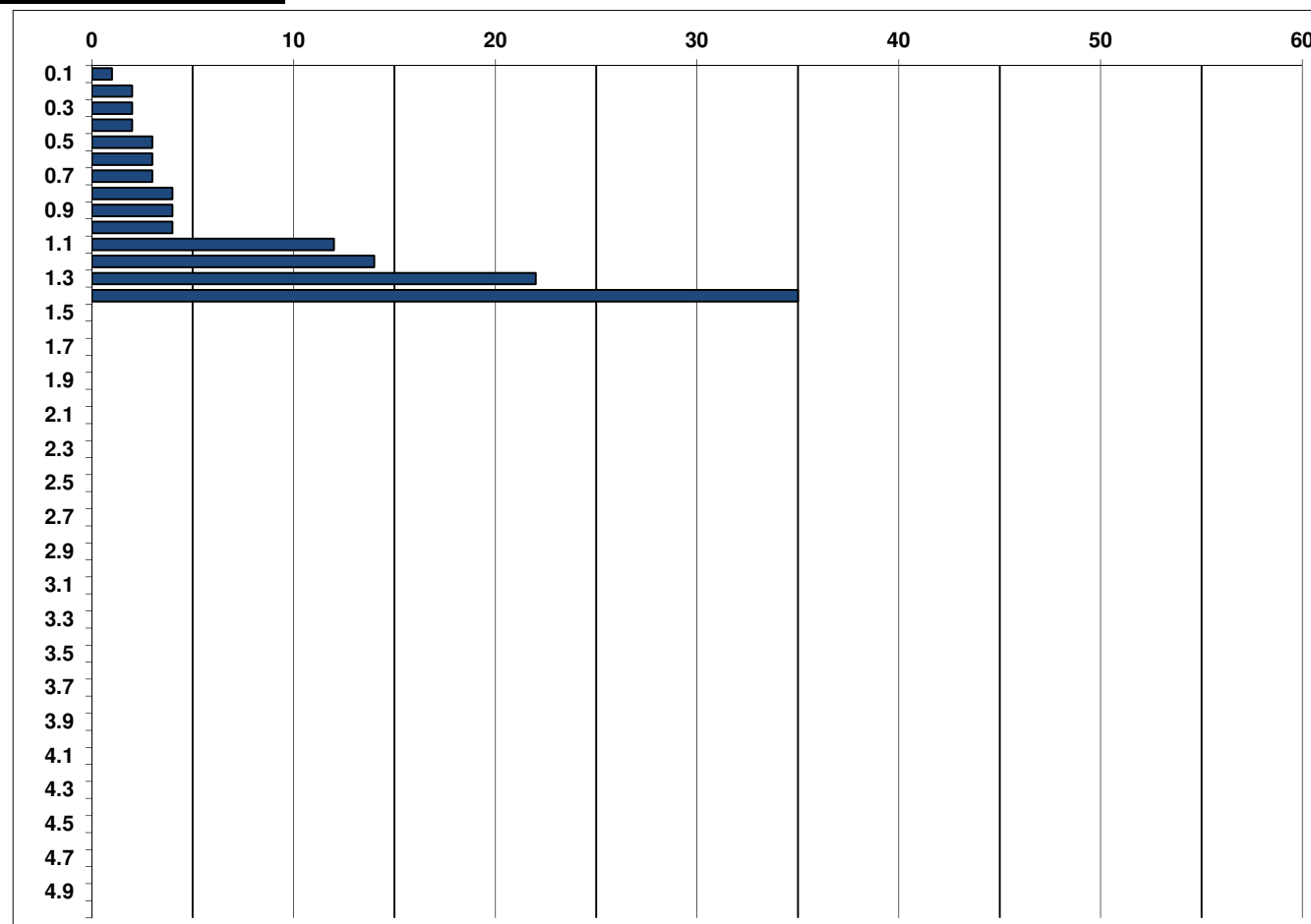
Super Heavy Dynamic Probe Records

Job Ref: 1979

Job Name: The Workshop, Huddersfield

Hole: DP9

Depth (m)	Blow Count	Depth (m)	Blow Count	Depth (m)	Blow Count	Depth (m)	Blow Count
0.1	1	2.6		5.1		7.6	
0.2	2	2.7		5.2		7.7	
0.3	2	2.8		5.3		7.8	
0.4	2	2.9		5.4		7.9	
0.5	3	3		5.5		8	
0.6	3	3.1		5.6		8.1	
0.7	3	3.2		5.7		8.2	
0.8	4	3.3		5.8		8.3	
0.9	4	3.4		5.9		8.4	
1	4	3.5		6		8.5	
1.1	12	3.6		6.1		8.6	
1.2	14	3.7		6.2		8.7	
1.3	22	3.8		6.3		8.8	
1.4	35	3.9		6.4		8.9	
1.5		4		6.5		9	
1.6		4.1		6.6		9.1	
1.7		4.2		6.7		9.2	
1.8		4.3		6.8		9.3	
1.9		4.4		6.9		9.4	
2		4.5		7		9.5	
2.1		4.6		7.1		9.6	
2.2		4.7		7.2		9.7	
2.3		4.8		7.3		9.8	
2.4		4.9		7.4		9.9	
2.5		5		7.5		10	



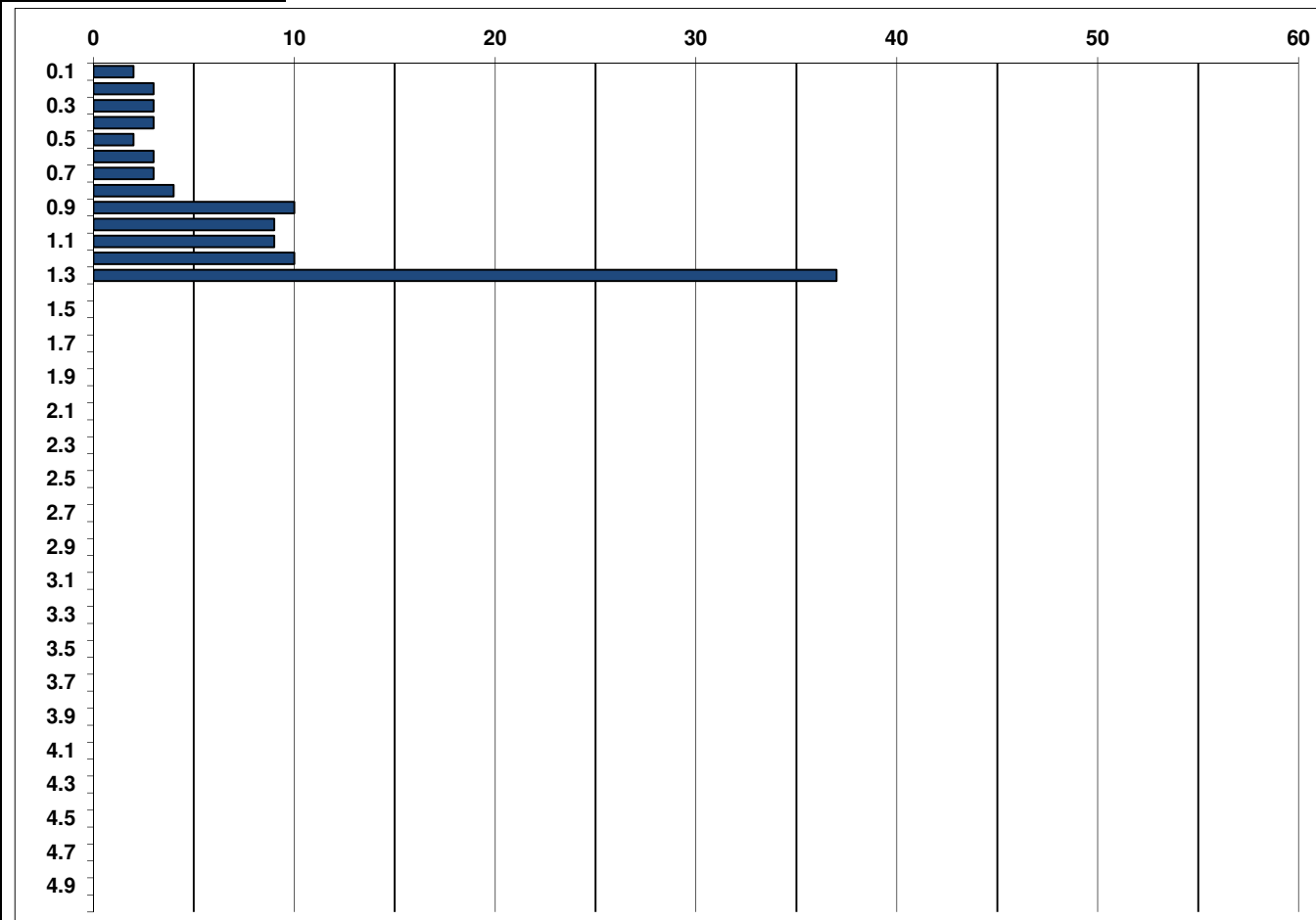
Super Heavy Dynamic Probe Records

Job Ref: 1979

Job Name: The Workshop, Huddersfield

Hole: DP10

Depth (m)	Blow Count	Depth (m)	Blow Count	Depth (m)	Blow Count	Depth (m)	Blow Count
0.1	2	2.6		5.1		7.6	
0.2	3	2.7		5.2		7.7	
0.3	3	2.8		5.3		7.8	
0.4	3	2.9		5.4		7.9	
0.5	2	3		5.5		8	
0.6	3	3.1		5.6		8.1	
0.7	3	3.2		5.7		8.2	
0.8	4	3.3		5.8		8.3	
0.9	10	3.4		5.9		8.4	
1	9	3.5		6		8.5	
1.1	9	3.6		6.1		8.6	
1.2	10	3.7		6.2		8.7	
1.3	37	3.8		6.3		8.8	
1.4		3.9		6.4		8.9	
1.5		4		6.5		9	
1.6		4.1		6.6		9.1	
1.7		4.2		6.7		9.2	
1.8		4.3		6.8		9.3	
1.9		4.4		6.9		9.4	
2		4.5		7		9.5	
2.1		4.6		7.1		9.6	
2.2		4.7		7.2		9.7	
2.3		4.8		7.3		9.8	
2.4		4.9		7.4		9.9	
2.5		5		7.5		10	



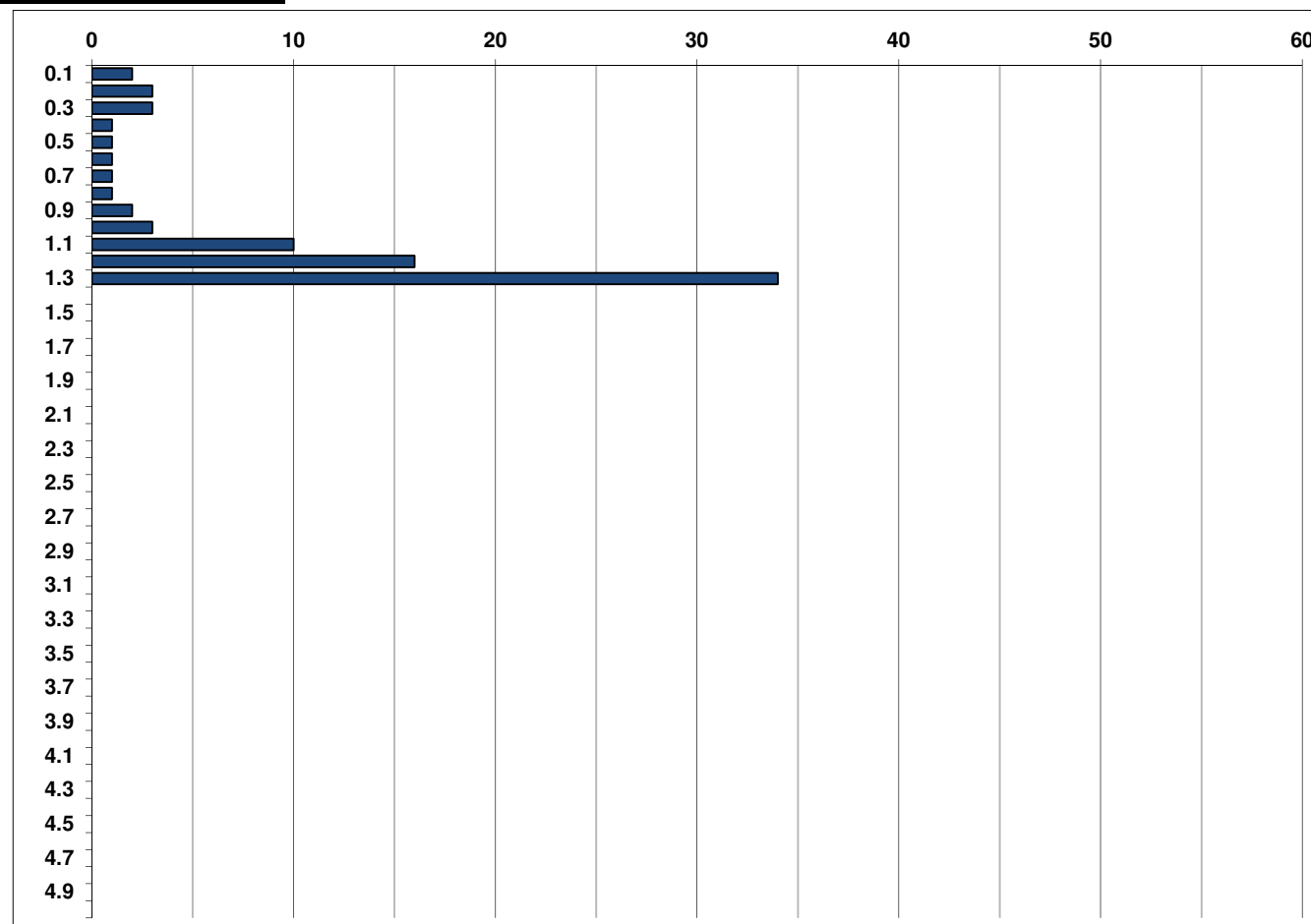
Super Heavy Dynamic Probe Records

Job Ref: 1979

Job Name: The Workshop, Huddersfield

Hole: DP11

Depth (m)	Blow Count	Depth (m)	Blow Count	Depth (m)	Blow Count	Depth (m)	Blow Count
0.1	2	2.6		5.1		7.6	
0.2	3	2.7		5.2		7.7	
0.3	3	2.8		5.3		7.8	
0.4	1	2.9		5.4		7.9	
0.5	1	3		5.5		8	
0.6	1	3.1		5.6		8.1	
0.7	1	3.2		5.7		8.2	
0.8	1	3.3		5.8		8.3	
0.9	2	3.4		5.9		8.4	
1	3	3.5		6		8.5	
1.1	10	3.6		6.1		8.6	
1.2	16	3.7		6.2		8.7	
1.3	34	3.8		6.3		8.8	
1.4		3.9		6.4		8.9	
1.5		4		6.5		9	
1.6		4.1		6.6		9.1	
1.7		4.2		6.7		9.2	
1.8		4.3		6.8		9.3	
1.9		4.4		6.9		9.4	
2		4.5		7		9.5	
2.1		4.6		7.1		9.6	
2.2		4.7		7.2		9.7	
2.3		4.8		7.3		9.8	
2.4		4.9		7.4		9.9	
2.5		5		7.5		10	



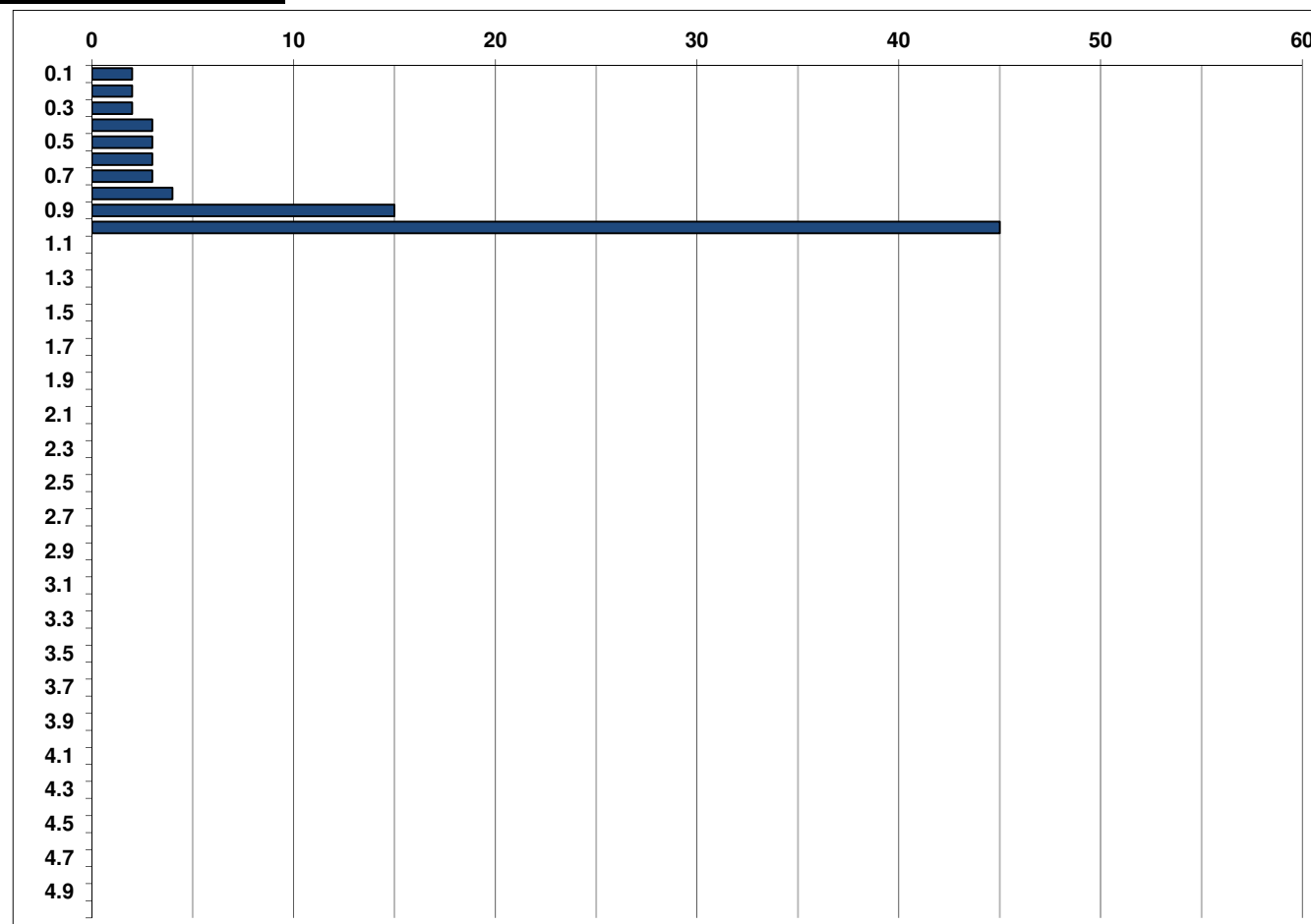
Super Heavy Dynamic Probe Records

Job Ref: 1979

Job Name: The Workshop, Huddersfield

Hole: DP12

Depth (m)	Blow Count	Depth (m)	Blow Count	Depth (m)	Blow Count	Depth (m)	Blow Count
0.1	2	2.6		5.1		7.6	
0.2	2	2.7		5.2		7.7	
0.3	2	2.8		5.3		7.8	
0.4	3	2.9		5.4		7.9	
0.5	3	3		5.5		8	
0.6	3	3.1		5.6		8.1	
0.7	3	3.2		5.7		8.2	
0.8	4	3.3		5.8		8.3	
0.9	15	3.4		5.9		8.4	
1	45	3.5		6		8.5	
1.1		3.6		6.1		8.6	
1.2		3.7		6.2		8.7	
1.3		3.8		6.3		8.8	
1.4		3.9		6.4		8.9	
1.5		4		6.5		9	
1.6		4.1		6.6		9.1	
1.7		4.2		6.7		9.2	
1.8		4.3		6.8		9.3	
1.9		4.4		6.9		9.4	
2		4.5		7		9.5	
2.1		4.6		7.1		9.6	
2.2		4.7		7.2		9.7	
2.3		4.8		7.3		9.8	
2.4		4.9		7.4		9.9	
2.5		5		7.5		10	



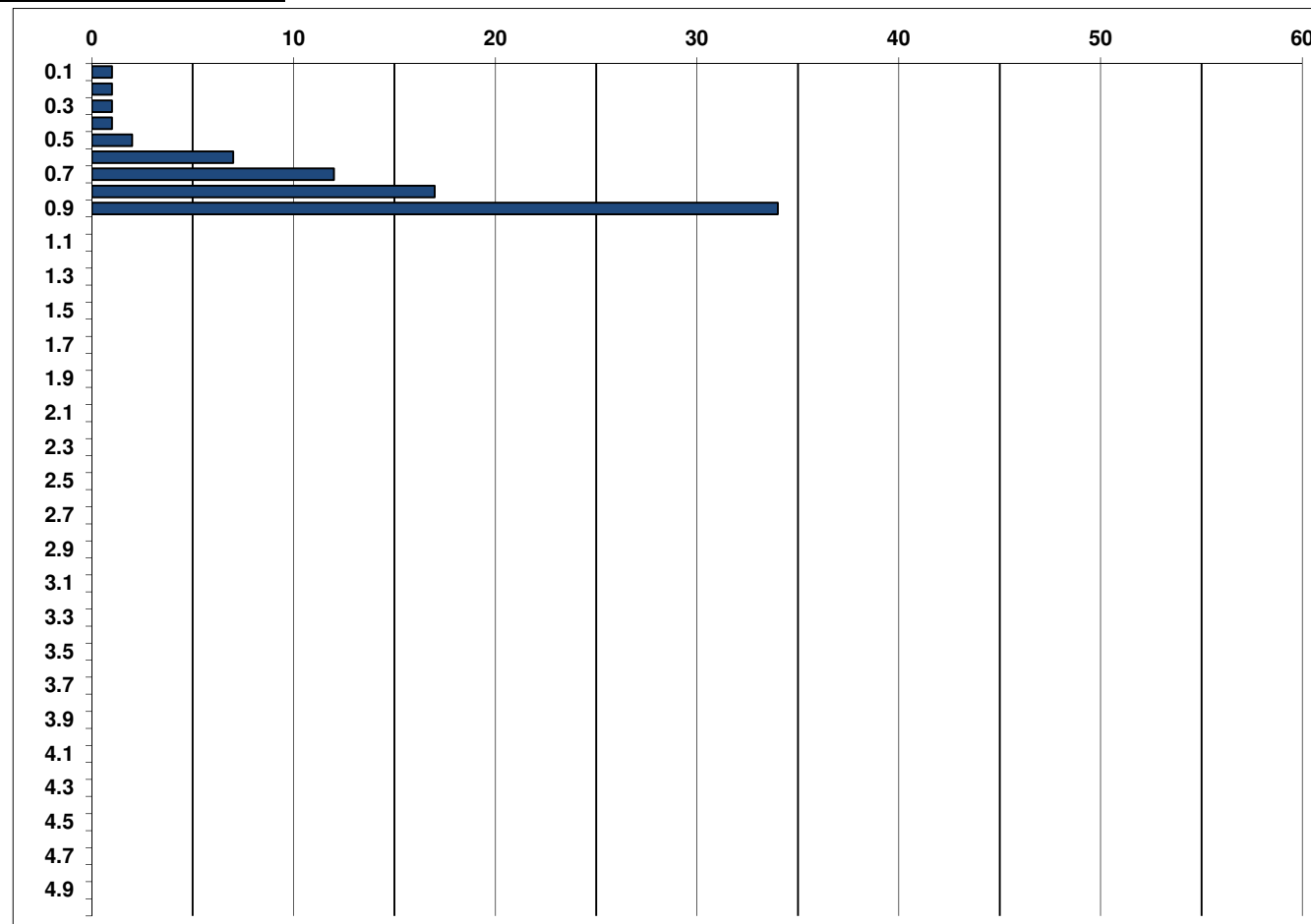
Super Heavy Dynamic Probe Records

Job Ref: 1979

Job Name: The Workshop, Huddersfield

Hole: DP13

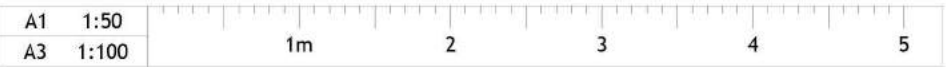
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0.2	1	2.7		5.2		7.7	
0.3	1	2.8		5.3		7.8	
0.4	1	2.9		5.4		7.9	
0.5	2	3		5.5		8	
0.6	7	3.1		5.6		8.1	
0.7	12	3.2		5.7		8.2	
0.8	17	3.3		5.8		8.3	
0.9	34	3.4		5.9		8.4	
1		3.5		6		8.5	
1.1		3.6		6.1		8.6	
1.2		3.7		6.2		8.7	
1.3		3.8		6.3		8.8	
1.4		3.9		6.4		8.9	
1.5		4		6.5		9	
1.6		4.1		6.6		9.1	
1.7		4.2		6.7		9.2	
1.8		4.3		6.8		9.3	
1.9		4.4		6.9		9.4	
2		4.5		7		9.5	
2.1		4.6		7.1		9.6	
2.2		4.7		7.2		9.7	
2.3		4.8		7.3		9.8	
2.4		4.9		7.4		9.9	
2.5		5		7.5		10	



Appendix E
Proposed Redevelopment

[illegible]

ten dimensions on these drawings shall take precedence over scaled dimensions. Contractors shall verify and be responsible for all dimensions and conditions on the project and UH Design must be notified of any variations from the dimensions and conditions shown by these drawings prior to commencement of any work. All contractors are deemed to have made themselves aware of site conditions prior to entering into any contract.



Location P_{Lan} 1.1250

B	Proposal reduced in scale	13.06.18	UH
A	Updated site boundry	26.03.18	UH
REV	DESCRIPTION	DATE	DRAWN

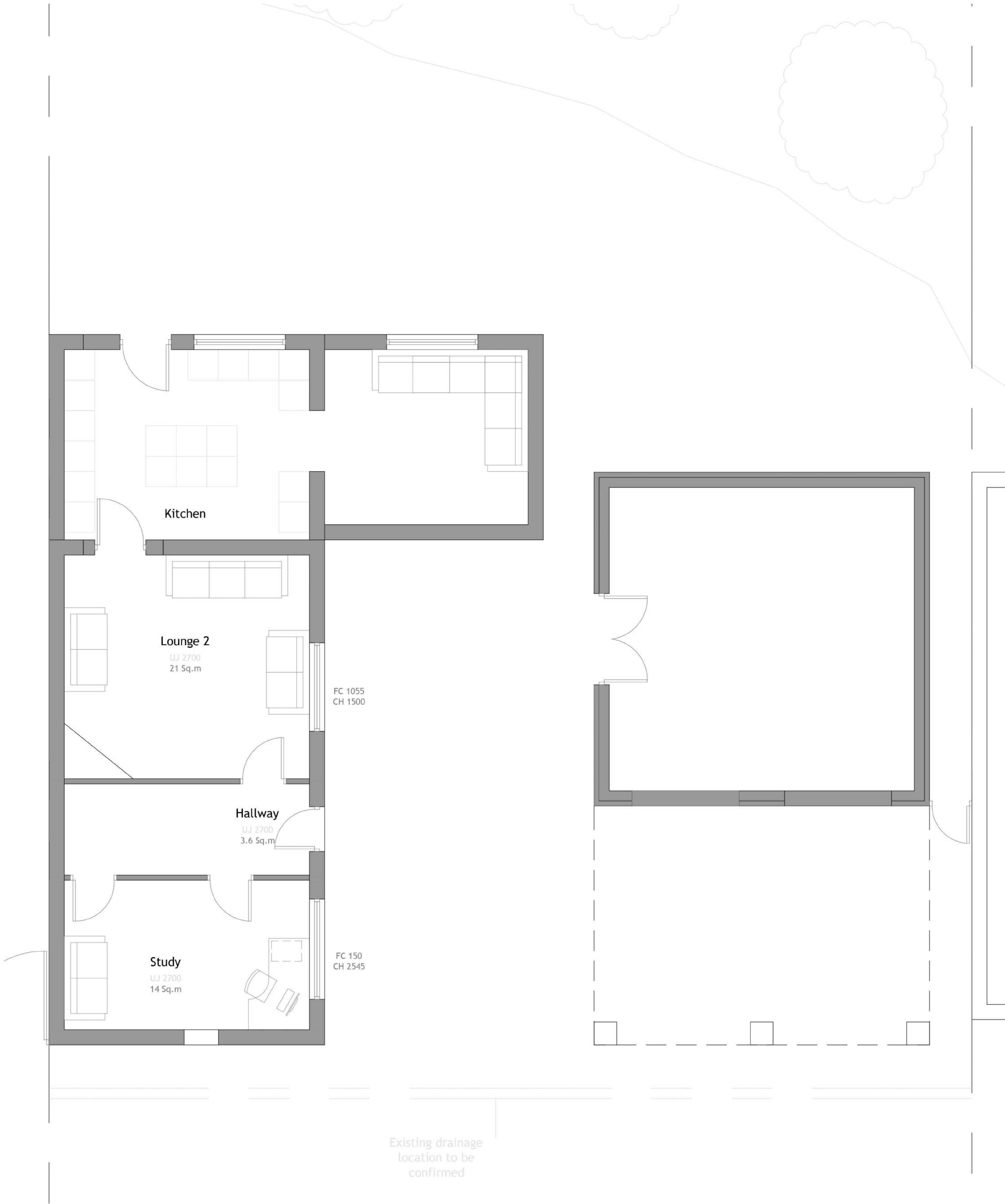


CLIENT	Mrs Roheena Akhtar
ADDRESS	29 Aqua Marine Drive Fartown, HD2 1BG
PROJECT	Rear extension and garage roof conversion
DRAWING	Proposed elevations

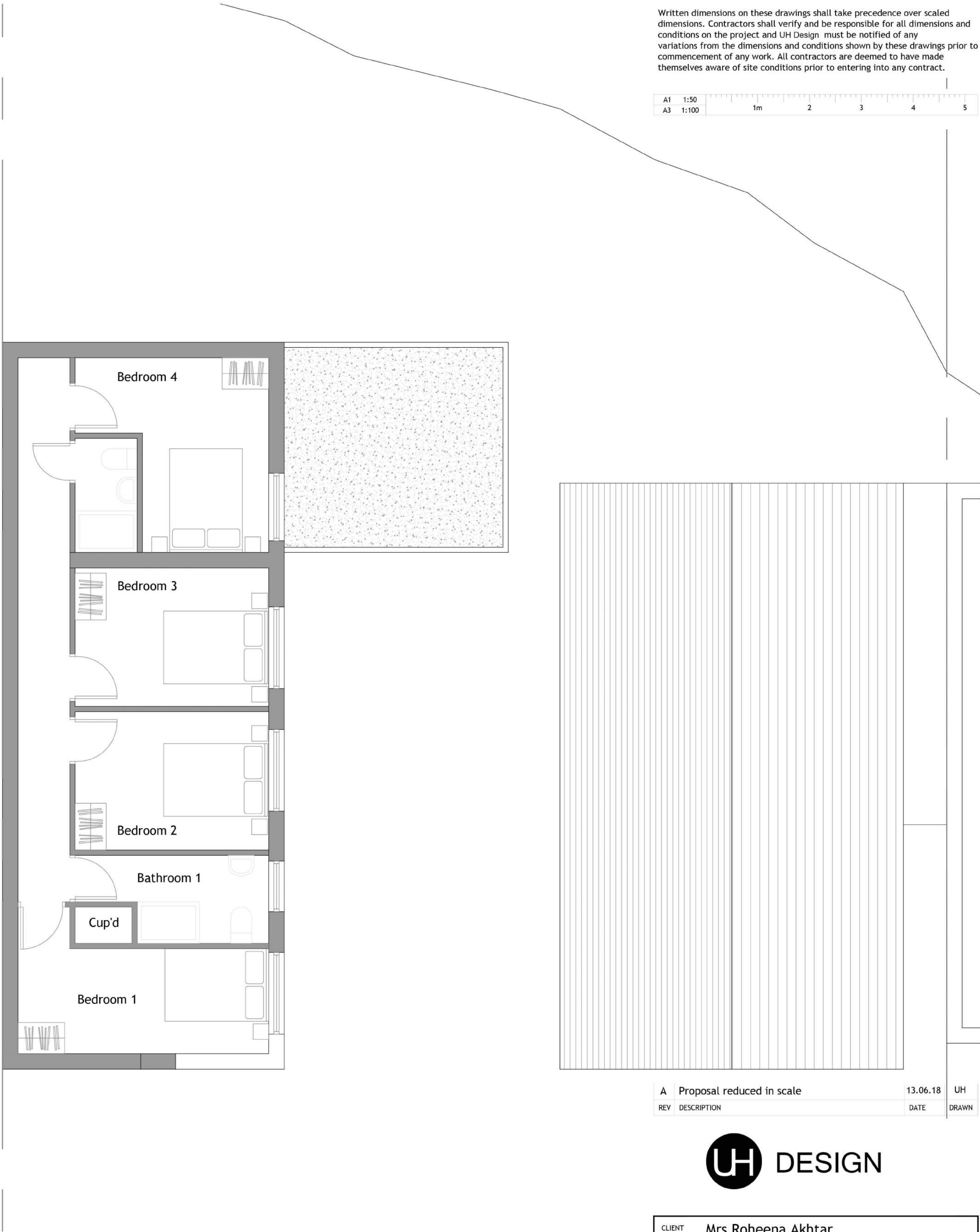
DRAWN	UH	DATE	Jan 18	SCALE	1.50@A1
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DWG No. 1503/03B

STATUS **PLANNING**



Ground Floor Layout 1.50



First Floor Layout 1.50

Written dimensions on these drawings shall take precedence over scaled dimensions. Contractors shall verify and be responsible for all dimensions and conditions on the project and UH Design must be notified of any variations from the dimensions and conditions shown by these drawings prior to commencement of any work. All contractors are deemed to have made themselves aware of site conditions prior to entering into any contract.

A1	1:50	1m	2	3	4	5
A3	1:100					

A	Proposal reduced in scale	13.06.18	UH
REV	DESCRIPTION	DATE	DRAWN



CLIENT	Mrs Roheena Akhtar		
ADDRESS	29 Aqua Marine Drive Fartown, HD2 1BG		
PROJECT	Rear extension and garage roof conversion		
DRAWING	Proposed layouts		
DRAWN	UH	DATE	Jan 18
DWG No.	1503/02A		
STATUS	PLANNING		