

Date: 16th December 2025

Reference: 16-218-L2

Richard Hutchinson
The Challenger Group
140 Lee Lane,
Horwich
BL6 7AF

By Email

GREEN LANE – HEYWOOD VALIDATION LETTER REPORT

1. INTRODUCTION

This letter report details the remediation and enabling works operations that were undertaken by The Challenger Group to facilitate the preparation of the site for the construction of a four-storey apartment block on a parcel of land intersected by Green Lane and Roeacre Street, Heywood, herein referred to as the site.

The site has already undergone remediation and groundworks, with the works being carried out by The Challenger Group. E3P has been appointed to prepare a validation report, based on a review of the information provided by The Challenger Group, to confirm whether the required remediation and enabling works have been completed in accordance with the approved E3P Remediation Strategy.

1.1. PROPOSED DEVELOPMENT

The Challenger Group intends to construct a four-storey block of apartments with car parking at ground floor level and residential accommodation above, including a mix of 1 and 2 bedroom apartments.

A snapshot of the proposed development layout is attached to this letter. Drawing Reference 16-218-002.

1.2. REGULATORY CORRESPONDENCE

The Challenger Group has been granted a detailed planning application by the local planning authority for the proposed redevelopment of the site, involving the erection of a four-storey apartment block, with provision for communal garden space, landscaping, and undercroft private car and cycle parking. The planning application reference for the development is 20/00562/FUL.

All reports relating to the assessment of risk to contaminated land have been submitted to the regulatory authorities for written approval. These have been approved by the Local Planning Authorities and the Environment Agency.





1.3. PREVIOUS WORKS

The following previous phases of site investigation and assessment have been completed at the subject site.

Table 1.1 Previous Works

Phase I Geoenvironmental Assessment	 STL Projects Ltd – Phase I Geo-Environmental Assessment – Land at Rochdale Road East. Ref: Report No. 19-3422, dated March 2019, Prepared for Maxstretti Homes (Heywood) Ltd.
Phase II Geoenvironmental Site Assessment	 E3P – Phase II Geo-Environmental Site Assessment – Green Lane, Heywood. Ref: Report No. 16-218-R1-1, dated October 2022, Prepared for The Challenger Group.
Remediation Strategy	 E3P – Remediation and Enabling Works Strategy Design Report – Green Lane, Heywood. Ref Report No. 16-218-R2-1, dated October 2022, Prepared for The Challenger Group.

2. SUMMARY OF REMEDIATION AND ENABLING WORKS

The proposed remediation activities were detailed within the E3P Remediation and Enabling Works Strategy (16-218-R2-1, dated October 2022) and supplementary supporting documents provided by E3P.

This letter has been prepared to document the completion of all necessary land remediation and enabling works, with the remediation points summarised below:

-  RE-1 – Pre-commencement Regulatory Compliance
-  RE-2 – Risk to Infrastructure
-  RE-3 – Environment and Nuisance Control
-  RE-4 – Identification, Isolation and Treatment of Invasive Plants
-  RE-5 – Site Clearance Operations
-  RE-6 – Delineation, Excavation and Treatment of Identified Asbestos Impact
-  RE-7 – Cut-and-Filling of Made Ground to Development Levels
-  RE-8 – Excavation, Breaking and Processing of All Above- and Below-Ground Structures
-  RE-9 – Removal of Deleterious Material
-  RE-10 – Construction of Temporary Working Platform
-  RE-11 – Replacement of Materials, Geotechnical Engineering Requirements
-  RE-12 – Importation of Bulk Fill
-  RE-13 – Preparation of Peripheral Landscaped Areas for Cover System
-  RE-14 – Provision of Topsoil
-  RE-15 – Provision of Subsoil
-  RE-16 – Independent Validation: Watching Brief
-  RE-17 – Waste Soils Surplus to Requirements
-  RE-18 – Validation of Materials for Portable Water Supply Infrastructure
-  RE-19 – Remedial Verification Report



3. DETAILED REMEDIATION AND ENABLING WORKS ACTIVITIES

The focus of the remediation and enabling works is to address the contaminant issues previously identified within the site investigations that presented an unacceptable risk to human health following the redevelopment of the site.

For completeness, each of these activities has been discussed below within the context of the actual remediation works that were undertaken on site. The Challenger Group have provided a detailed log of information to review to allow E3P to provide comments in relation to the remediation and enabling work activities.

Table 3.1 Remediation and Enabling Works Activities

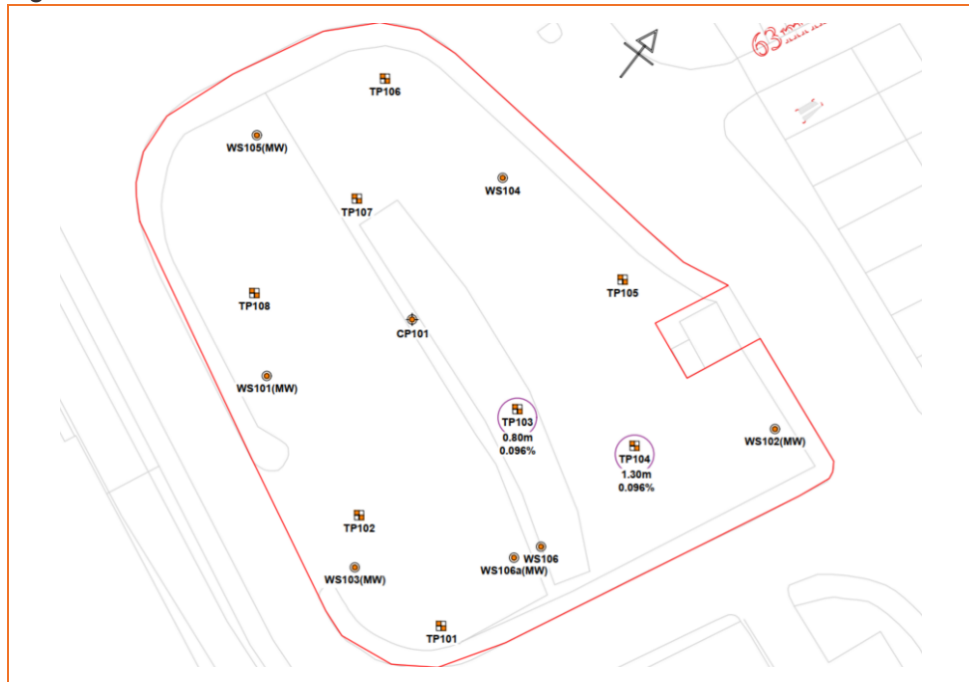
RE – Point	Detailed Discussion
RE-1	All reports relating to the assessment of risk to contaminated land have been submitted to the regulatory authorities for written approval.
RE-2	Works carried out in the vicinity of any boundaries were carefully monitored by the site manager to ensure structures or infrastructure that were to remain on-site or within close proximity to the site boundaries were not undermined and that the breaking out processes were not in excess to cause unnecessary disturbance to any adjacent properties or infrastructure. Throughout the works, heras fencing and boarding were erected around the site.
RE-3	All works were completed in a manner so as not to create any structural risk to the adjacent highways.
RE-4	No invasive species were identified on the site; therefore, no specific control measures were necessary.
RE-5	No buildings were present on site, with the former structures being removed prior to the remediation works. A vegetation strip was completed across the whole site, with this material being exported off site. Throughout the enabling works scrap metal and general waste was separated from demolition materials and placed into allocated skips for subsequent disposal off-site.
RE-6	During the E3P intrusive site investigation, detectable asbestos fibres were identified in discreet locations in the central sector of the site, associated with TP103 at 0.80 bgl (0.096%) and TP104 at 1.30m bgl (0.006%). The location of the known exceedances is presented in Figure 3.1 (overleaf). The site was previously formed of two plateaus with a steeply sloping grass embankment through the centre of the site, with the eastern sector of the site being at a greater elevation than that of the western sector. During remedial works, the site was cut to create a development platform, further discussed in RE-7. As part of these works, the embankment through the central sector and a portion of the eastern sector were cut to form a car park for the apartments to be constructed above.



RE – Point

Detailed Discussion

Figure 3.1 Asbestos Exceedance Plan



RE-6
(Continued)

During the aforementioned works, the asbestos impacted materials were excavated and stockpiled with the remainder of the cut material prior to being removed from the site. E3P have been provided the waste transfer note, which can be made available on request.

Prior to the commencement of the remedial works, a topographic survey of the site was completed, then, following the cut works, a secondary survey was completed to provide details on the updated ground level. E3P have been provided with this modelling and have plotted the locations on the asbestos exceedances to assess if the soils have been effectively excavated and removed. Table A presents this information.

Table A - Topographical Data in Relation to Source Removal

HOLE	PRE-EXISTING GROUND LEVEL (m AOD)	DEPTH OF EXCEEDANCE		POST RE GROUND LEVEL (m AOD)	SOURCE REMOVED (Y/N)
		m bgl	m AOD		
TP103	118.47	0.80	117.67	117.184	Y
TP104	120.21	1.30	118.91	117.219	Y

Table A indicates that in both locations, the impacted soils have been excavated to a depth in excess of the identified exceedances, and it is considered that the residual risk of asbestos has been removed from the site. As part of the excavation works, no visual signs of ACM were noted.

Plates 1 and 2 show aerial drone photography of the site prior to the removal of the soils and following the cut to the development level.



RE – Point	Detailed Discussion
RE-7	The Made Ground deposits were noted to be present to substantial depth in some areas of the site (> 2.00 m), although, in general, Made Ground was encountered to a depth of less than 1.00 m bgl. As part of the proposed development, The Challenger Group have constructed a ground floor carparking facility with the apartment structure rising above this on columns supported by a piled foundation solution. To facilitate the construction of the structure, a programme of cut works was completed in the central and eastern sectors of the site. This was completed to create a level development platform as the western sector, leading from Roeacre Street, prior to works, was roughly 2m lower than the eastern boundary. E3P have been provided with the topographical surveys pre and post cut works with these drawings attached to this letter.
RE-8	All obstructions and relic foundations were grubbed out and removed in their entirety as part of the cut enabling works undertaken on site. The oversized obstructions were removed and stockpiled to be removed from the site. E3P have been provided the waste transfer note, which can be made available on request. Plate 3 indicates a stockpile of oversized hardcore in the northern sector of the site awaiting removal.
RE-9	The E3P Ground Investigation identified the presence of small quantities of potentially deleterious wastes within the Made Ground across the site. To facilitate the construction of the structure, a programme of cut works was completed in the central and eastern sectors of the site. These works included the removal of all Made Ground soils in these areas, and it is considered that the deleterious materials have been removed as part of this exercise.
RE-10	A temporary working platform was constructed to facilitate the installation of the foundations across the site.
RE-11	As part of the development, there was no requirement to place or engineer up fill with the site being cut to achieve development levels.
RE-12	As part of the development, there was no requirement to import bulk fill material to achieve development levels.



RE – Point	Detailed Discussion
RE-13	Peripheral landscaped areas are present on site, with these areas being constructed via the placement of clean material and consist of: ✿ Geotextile Membrane or aggregate break layer; ✿ 300 mm of imported topsoil. E3P have attended the site, following the construction of the clean cover system in these areas, to ensure they have been placed in line with the agreed remediation strategy. Plates 4 and 5 show the placement of the geotextile membrane and an example of the depth of the clean cover system placed.
RE-14	Approximately 75 m3 of topsoil has been imported from SED Services Ltd as a manufactured natural topsoil from their site at Landgate Farm, Wigan. Given that the soils are a manufactured product, E3P has treated these as a brownfield source. Three samples were tested in November 2025, which confirmed that the topsoil was chemically suitable for use within the proposed public open space areas. Chemical analysis results are included within the laboratory report 25-064299-1.
RE-15	Given the limited area occupied by the POS on site, Challenger Building Services Ltd opted to form the full depth of the cover system (300 mm) utilising imported topsoil. As such, no subsoil deposits have been utilised on site.
RE-16	During the enabling works undertaken by The Challenger Group, no further suspected or potential contamination was identified.
RE-17	As part of the cut enabling works that were undertaken by The Challenger Group across the site to create a level development platform, arisings we excavated and removed from the site throughout this phase of the development. Due to the size of the site, all the soils that were excavated were removed. E3P has been provided with waste transfer notes detailing the material and quantities removed. All waste transfer notes can be made available on request.
RE-18	Service infrastructure connects to the existing infrastructure surrounding the site, and it is not considered that extensive potable services are present below the site due to the nature of the development.
RE-19	E3P has been appointed to prepare a validation report, based on a review of the information provided by The Challenger Group, to confirm whether the required remediation and enabling works have been completed in accordance with the approved E3P Remediation Strategy.



4. POST REMEDIATION BUILD PHASE REQUIREMENTS

This document details the construction works that are required to ensure full compliance with the remediation Strategy, Regulatory Authorities, Building Control & Warranty Providers.

- ✿ Laboratory testing of imported topsoil deposits.
- ✿ Placement and validation of imported topsoil (clean material) in a 300 mm layer within all landscaped areas.

E3P attended the site in November 2025 to advance four hand excavated trial pits across the POS area, with the resulting strata and validation information attached to this letter. E3P can confirm that the POS area has been prepared in accordance with the agreed Remediation Strategy for the site.

5. CONCLUSION

The information provided to E3P by The Challenger Group confirms that the works have been carried out in accordance with the approved E3P Remediation Strategy.

The remediation elements identified within the approved Remediation and Enabling Works Strategy have been completed for the sector outlined within this report, with validation testing confirming that the required standard has been met.

As part of the build-phase works, The Challenger Group has completed the cover system within the peripheral landscaped areas. An E3P engineer attended site on 26/11/2025 to verify the thickness of the cover system installed within the Public Open Space (POS). Four hand-excavated trial pits were completed across the POS to confirm the required 300 mm cover system with an associated no-dig layer. E3P can confirm that our independent validation demonstrates that the POS area has been constructed in accordance with the requirements for a site of this nature.

I trust the information provided in this letter report is satisfactory. However, if there is anything further, please do not hesitate to contact me.

Yours sincerely,
For and on behalf of E3P Ltd

Written by:
Matt Jackson
Project Manager

Authorised by:
Alex Smith
Associate Director

Enclosed:

- ✿ Site Photographs
- ✿ Drawings
 - Proposed Development Plan (Ref: 16-218-002)
 - As Built Survey – Pre Earthworks (Ref: S23-0116-Rev C)
 - As Built Survey – Post Earthworks (Ref: S23-0116-Rev E)
- ✿ I2 Analytical Chemical Testing Data (Ref: 25-064299-1)
- ✿ E3P POS Cover System Validation (Ref: 16-218-V1)



PLATE 1 – AERIAL PHOTOGRAPHY OF THE SITE PRIOR TO THE REMOVAL OF SOILS

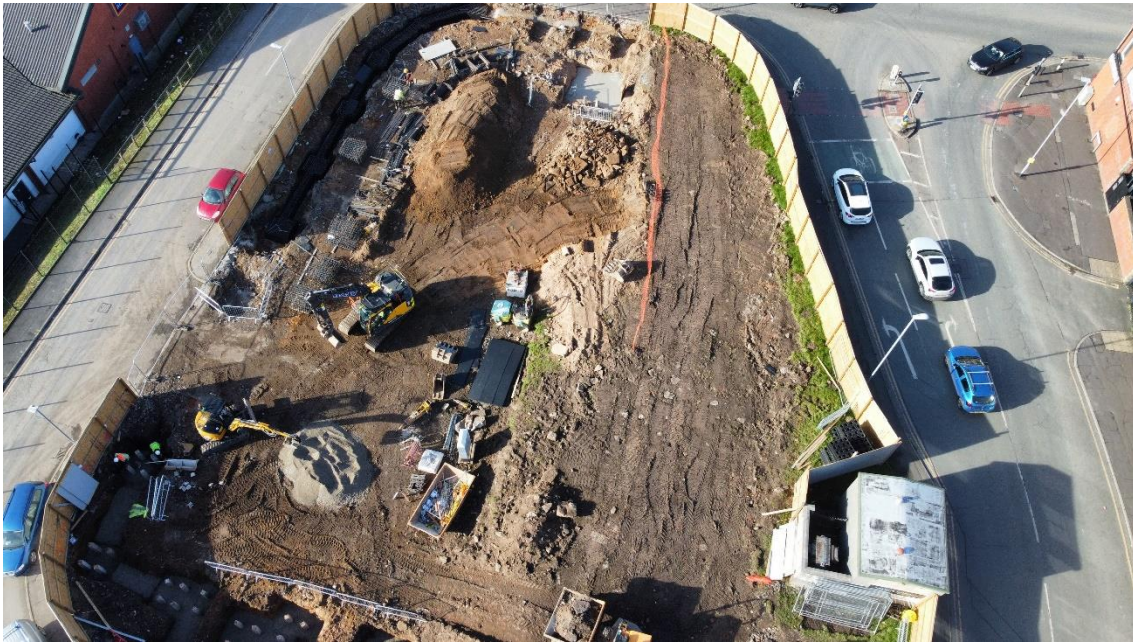


PLATE 2 – AERIAL PHOTOGRAPHY OF THE SITE FOLLOWING THE CUT OF THE SOILS

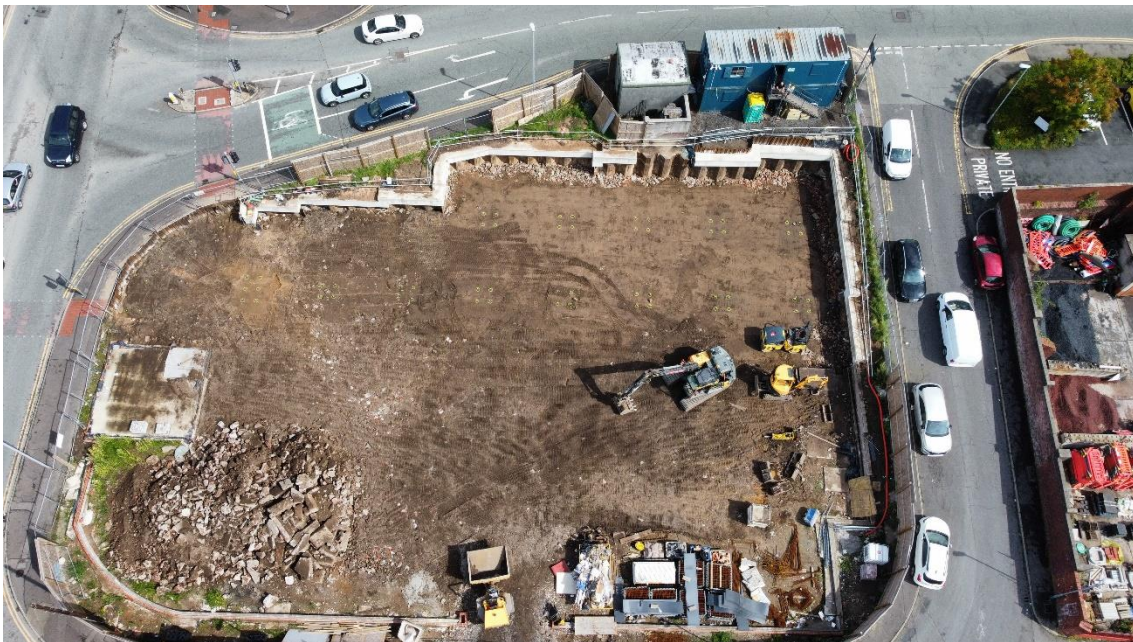




PLATE 3 – OVERSIZED HARDCORE STOCKPILE NORTHERN SECTOR OF THE SITE



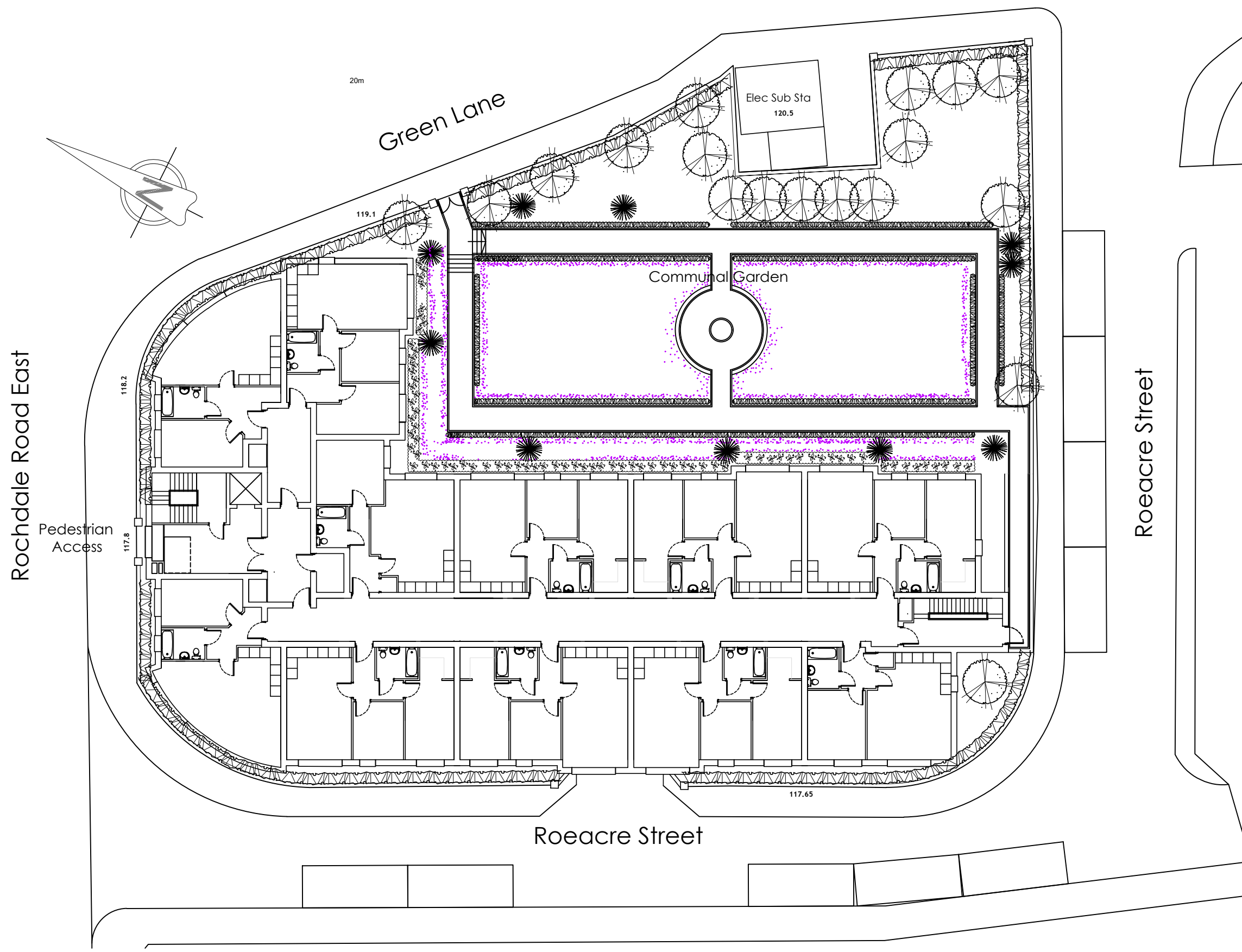
PLATE 4 – PLACEMENT MEMBRANE BELOW COVER SYSTEM





Plate 5 – Depth validation check of public open space





Notes:				
P1	REVA	20.09.2022	EB	NG
Phase	Issue	Date	Drawn	Checked

Client:	Challenger Building Serviced Ltd
	Green Lane, Heywood

Job No:	16-218
Drawing No:	002

Date:	20.09.2022
Scale:	NTS@ A3



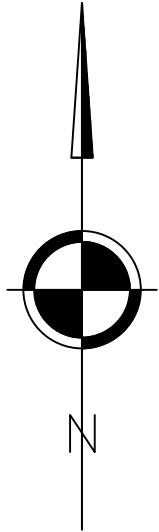
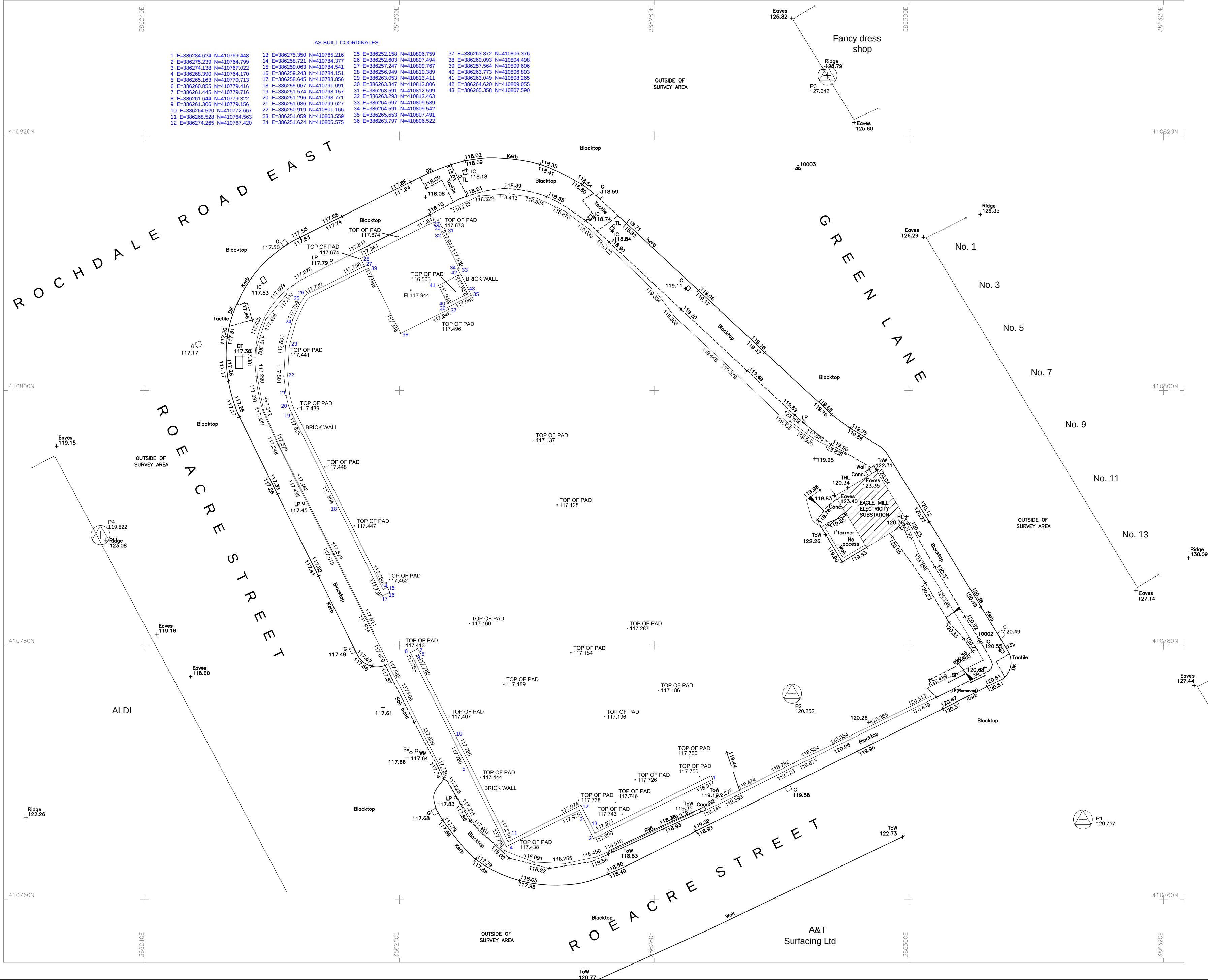
Environmental Engineering Partnership Ltd
Taylor Road, Trafford Park
Urmston, Manchester, M41 7JQ
Tel: 0161 707 9612
E-mail: info@e3p.co.uk
Website: www.e3p.co.uk

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Rochdale Road East

Roeacre Street

Roeacre Street



BENCH MARK INFORMATION

All levels relate to O.S (Newlyn) Datum, Established using network RTK. Survey plotted on a plane local grid, orientated to National Grid.

NOTES

ONLY MANHOLES AND SERVICES VISIBLE AT TIME OF SURVEY SHOWN
DRAINAGE INFORMATION MUST BE CHECKED AND VERIFIED WITH LOCAL AUTHORITY RECORDS
PRIOR TO WORK COMMENCING
Levels defining edge of carriageway are observed at channel (bottom of kerb). Unless otherwise stated.
TREE SPREADS ARE SYMBOLIC ONLY AND ARE REPRESENTATIVE OF THE THE AVERAGE SPREAD.
THE DRIP LINE LAYER DENOTES THE TREES EXTREMITY

SURVEY STATIONS

	386313.673	410766.282	120.757
P1	386290.829	410776.175	120.252
P2	386293.608	410824.742	127.642
P3	386236.519	410788.642	119.822

REVISIONS

REV	DESCRIPTION	SURVEYED	DRAWN	DATE
A	LIFT SHAFT SURVEYED & SPOT LEVEL THE	PB	JC	27.03.2023
B	TOP OF PADS	PB	JC	27.07.2023
C	BRICKWALL SURVEYED AS REQUESTED.	-	JC	10.08.2023
	ASBUILT COORDINATES ADDED	-	JC	10.08.2023

JLP Surveying

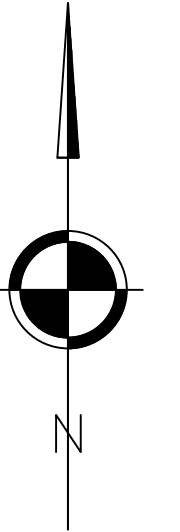
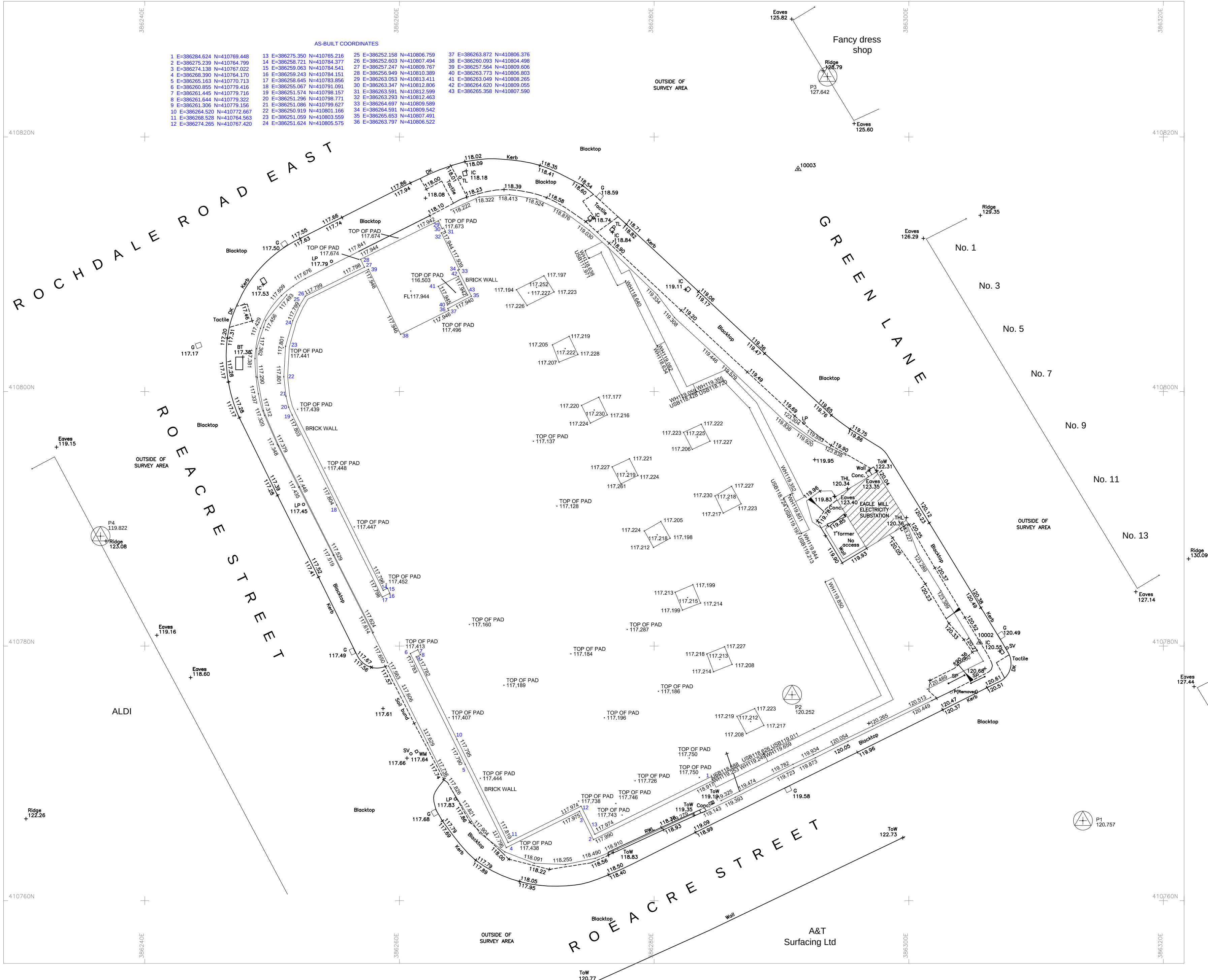
JLP Surveying Consultants Ltd,
Suite 45 Rodney House,
King Street,
Wigan
WN1 1BT
Tel - 01942 243313
Fax - 01942 492230
Mobile - 07710 428498
EMAIL:- peterhouston@jlp surveys.com

PROJECT
Roeadale Street
Heywood

DRAWING TITLE
As-Built Survey

SCALE	SHEET SIZE	No. of SHEETS	DATE	REVISION
1 : 200	A2	1	09.02.2023	C

DRAWING NUMBER
S23-0116



BENCH MARK INFORMATION

All levels relate to O.S (Newlyn) Datum, Established using network RTK. Survey plotted on a plane local grid, orientated to National Grid.

NOTES

ONLY MANHOLES AND SERVICES VISIBLE AT TIME OF SURVEY SHOWN
DRAINAGE INFORMATION MUST BE CHECKED AND VERIFIED WITH LOCAL AUTHORITY RECORDS
PRIOR TO WORK COMMENCING
Levels defining edge of carriageway are observed at channel (bottom of kerb). Unless otherwise stated.
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SURVEY STATIONS

	386313.673	410766.282	120.757
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REVISIONS

REV	DESCRIPTION	SURVEYED	DRAWN	DATE
A	LIFT SHAFT SURVEYED & SPOT LEVEL THE TOP OF PADS.	PB	JC	27.03.2023
B	BRICKWALL SURVEYED AS REQUESTED.	PB	JC	27.07.2023
C	ASBUILT COORDINATES ADDED	--	JC	10.08.2023
D	STEEL FOUNDATIONS SURVEYED	JD	JC	18.09.2023
E	CAPPING BEAMS SURVEYED WITH HEIGHTS	CH	CH	02.10.2023

JLP Surveying

JLP Surveying Consultants Ltd,
Suite 45 Rodney House,
King Street,
Wigan
WN1 1BT
Tel - 01942 243313
Fax - 01942 492230
Mobile - 07710 428498
EMAIL:- peterhouston@jlpssurveys.com

PROJECT
Roeadale Street
Heywood

DRAWING TITLE
As-Built Survey

SCALE	SHEET SIZE	No. of SHEETS	DATE	REVISION
1 : 200	A2	1	09.02.2023	E

DRAWING NUMBER
S23-0116

e3p
Taylor Road
Urmston
Manchester

i2 Analytical Ltd.
7 Woodshots Meadow,
Croxley Green
Business Park,
Watford,
Herts,
WD18 8YS

t:
e: mjackson@e3p.co.uk

t: 01923 225404
f: 01923 237404
e: info-i2analytical@normecgroup.com

Analytical Report Number : 25-064299

Project / Site name:	Green Lane Heywood	Samples received on:	27/11/2025
Your job number:	16-218	Samples instructed on/ Analysis started on:	27/11/2025
Your order number:	12833	Analysis completed by:	03/12/2025
Report Issue Number:	1	Report issued on:	03/12/2025
Samples Analysed:	3 soil samples		



Signed:

Anna Goc
PL Head of Reporting Team
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41-711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting
air	- once the analysis is complete

Excel copies of reports are only valid when accompanied by this PDF certificate.

Retention period for records and reports is minimum 6 years from the date of issue of the final report.
Some records may be kept for longer according to other legal/best practice requirements.

Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

Analytical Report Number: 25-064299
Project / Site name: Green Lane Heywood
Your Order No: 12833

Lab Sample Number	764035	764036	764037
Sample Reference	TS201	TS202	TS203
Sample Number	None Supplied	None Supplied	None Supplied
Water Matrix	N/A	N/A	N/A
Depth (m)	None Supplied	None Supplied	None Supplied
Date Sampled	Deviating	Deviating	Deviating
Time Taken	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status

Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	16	15	15
Total mass of sample received	kg	0.1	NONE	0.8	0.8	0.6

Asbestos

Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	MJN	MJN	MJN
Analysis completed	N/A	N/A	N/A	03/12/2025	03/12/2025	03/12/2025

General Inorganics

pH (L099)	pH Units	N/A	MCERTS	8	7.9	8.1
Total Cyanide	mg/kg	1	MCERTS	2.9	2.6	2.8
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	370	370	350
Water Soluble SO ₄ 16hr extraction (2:1)	mg/l	1.25	MCERTS	186	186	176
Total Organic Carbon (TOC) - Automated	%	0.1	MCERTS	3.9	3.6	4.1

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	0.1	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	0.29	0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	0.21	0.05
Phenanthrene	mg/kg	0.05	MCERTS	0.37	1.6	0.38
Anthracene	mg/kg	0.05	MCERTS	0.06	0.37	0.07
Fluoranthene	mg/kg	0.05	MCERTS	0.52	2	0.87
Pyrene	mg/kg	0.05	MCERTS	0.48	1.9	0.81
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.25	0.88	0.4
Chrysene	mg/kg	0.05	MCERTS	0.25	0.82	0.46
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	0.28	0.89	0.65
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	0.17	0.48	0.24
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.26	0.85	0.47
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.13	0.39	0.28
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	0.07	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.16	0.44	0.3

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	2.94	11.3	5.02
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Analytical Report Number: 25-064299
 Project / Site name: Green Lane Heywood
 Your Order No: 12833

Lab Sample Number	764035	764036	764037
Sample Reference	TS201	TS202	TS203
Sample Number	None Supplied	None Supplied	None Supplied
Water Matrix	N/A	N/A	N/A
Depth (m)	None Supplied	None Supplied	None Supplied
Date Sampled	Deviating	Deviating	Deviating
Time Taken	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	5.8	6.2	6
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.2	0.3	0.3
Chromium (hexavalent)	mg/kg	1.8	MCERTS	U/S ^{U/S} g	U/S ^{U/S} g	U/S ^{U/S} g
Chromium (hexavalent) by IC	mg/kg	1.8	NONE	< 1.80	< 1.80	< 1.80
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	11	15	12
Copper (aqua regia extractable)	mg/kg	1	MCERTS	38	25	19
Lead (aqua regia extractable)	mg/kg	1	MCERTS	35	37	40
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	8.9	14	9.6
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	90	96	100

Petroleum Hydrocarbons

TPH (>EC5 - EC10) _{HS_1D_TOTAL}	mg/kg	1	NONE	< 1.0	< 1.0	< 1.0
TPH (>EC5 - EC6) _{HS_1D_TOTAL}	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1
TPH (>EC6 - EC8) _{HS_1D_TOTAL}	mg/kg	0.01	MCERTS	< 0.01	< 0.01	< 0.01
TPH (>EC8 - EC10) _{HS_1D_TOTAL}	mg/kg	0.02	MCERTS	< 0.02	< 0.02	< 0.02
TPH (>EC10 - EC12) _{EH_CU_1D_TOTAL}	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0
TPH (>EC12 - EC16) _{EH_CU_1D_TOTAL}	mg/kg	4	MCERTS	< 4.0	< 4.0	4.6
TPH (>EC16 - EC21) _{EH_CU_1D_TOTAL}	mg/kg	10	MCERTS	< 10	12	14
TPH (>EC21 - EC35) _{EH_CU_1D_TOTAL}	mg/kg	10	MCERTS	46	56	79
TPH (>EC35 - EC40) _{EH_CU_1D_TOTAL}	mg/kg	10	MCERTS	< 10	< 10	22
TPH Total >EC5 - EC40 _{EH_CU+HS_1D_TOTAL}	mg/kg	10	NONE	61	77	120
TPH (EC10 - EC40) _{EH_CU_1D_TOTAL}	mg/kg	10	MCERTS	61	77	120

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Analytical Report Number : 25-064299

Project / Site name: Green Lane Heywood

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
764035	TS201	None Supplied	None Supplied	Brown loam and sand with gravel and vegetation
764036	TS202	None Supplied	None Supplied	Brown loam and sand with gravel and vegetation
764037	TS203	None Supplied	None Supplied	Brown loam and sand with gravel and vegetation

Analytical Report Number : 25-064299

Project / Site name: Green Lane Heywood

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters Heating/Cooling (PrW) DI Process Water (DI PrW)

Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos identification in Soil	Asbestos Identification with the use of polarised light microscopy in conjunction with dispersion staining techniques	In-house method based on HSG 248, 2021	A001B	D	ISO 17025
Total organic carbon (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate (Walkley Black Method)	In-house method	L009B	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically (up to 30°C)	In-house method	L019B	W	NONE
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight	In-house method based on British Standard Methods and MCERTS requirements.	L019B	D	NONE
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil	L038B	D	MCERTS
Sulphate, water soluble, in soil (16hr extraction)	Sulphate, water soluble, in soil (16hr extraction)	In-house method	L038B	D	MCERTS
Hexavalent chromium in soil by Ion Chromatography	Determination of hexavalent chromium in alkaline soil extract by use of ion chromatography with spectrophotometric detection	In-house method	L130B	W	NONE
Speciated PAHs and/or Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds (including PAH) in soil by extraction in dichloromethane and hexane followed by GC-MS	In-house method based on USEPA 8270	L064B	D	MCERTS
Total petroleum hydrocarbons by GC-FID in soil	Determination of total petroleum hydrocarbons in soil by GC-FID	In-house method	L076B	D	MCERTS
Total petroleum hydrocarbons by GC-FID/GC-MS HS in soil (Summed Bands)	Determination of total petroleum hydrocarbons in soil by GC-FID/GC-MS HS (Summed Bands).	Calculation	L076B/L088-PL	D/W	NONE
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in NaOH and addition of 1,5 diphénylcarbazide followed by colorimetry	In-house method	L080-PL	W	MCERTS
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080-PL	W	MCERTS
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080-PL	W	MCERTS
Total petroleum hydrocarbons by HS-GC-MS in soil	Determination of total petroleum hydrocarbons in soil by HS-GC/MS	In-house method	L088-PL	W	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement	In-house method	L099-PL	D	MCERTS

Analytical Report Number : 25-064299
Project / Site name: Green Lane Heywood

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters Heating/Cooling (PrW) DI Process Water (DI PrW)

Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Soil Descriptions	Textural classification	In-house method	L019B	W	NONE

For method numbers ending in 'UK' or 'A' analysis have been carried out in our laboratory in the United Kingdom (Watford).

For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).

For method numbers ending in 'PL' or 'B' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Quality control parameter failure associated with individual result applies to calculated sum of individuals.

The result for sum should be interpreted with caution

*U/S g- Unsuitable for analysis due to high colour intensity.

Analytical Report Number : 25-064299

Project / Site name: Green Lane Heywood

This deviation report indicates the sample and test deviations that apply to the samples submitted for analysis. Please note that the associated result(s) may be unreliable and should be interpreted with care.

Key: a - No sampling date b - Incorrect container/Insufficient material provided c - Holding time d - Headspace e - Temperature

Sample ID	Other ID	Sample Type	Lab Sample Number	Sample Deviation	Test Name	Test Ref	Test Deviation
TS201	N/A	S	764035	a	Asbestos identification in Soil	A001B	a
TS201	N/A	S	764035	a	Hexavalent chromium in soil	L080-PL	a
TS201	N/A	S	764035	a	Hexavalent chromium in soil by Ion Chromatography	L130B	a
TS201	N/A	S	764035	a	Metals in soil by ICP-OES	L038B	a
TS201	N/A	S	764035	a	Moisture Content	L019B	a
TS201	N/A	S	764035	a	Monohydric phenols in soil	L080-PL	a
TS201	N/A	S	764035	a	Sample Preparation	L019B	a
TS201	N/A	S	764035	a	Soil Descriptions	L019B	a
TS201	N/A	S	764035	a	Speciated PAHs and/or Semi-volatile organic compounds in soil	L064B	a
TS201	N/A	S	764035	a	Stones content of soil	L019B	a
TS201	N/A	S	764035	a	Sulphate, water soluble, in soil (16hr extraction)	L038B	a
TS201	N/A	S	764035	a	Total cyanide in soil	L080-PL	a
TS201	N/A	S	764035	a	Total organic carbon (Automated) in soil	L009B	a
TS201	N/A	S	764035	a	Total petroleum hydrocarbons by GC-FID in soil	L076B	a
TS201	N/A	S	764035	a	Total petroleum hydrocarbons by GC-FID/GC-MS HS in soil (Summed Bands)	L076B/L088-PL	a
TS201	N/A	S	764035	a	Total petroleum hydrocarbons by HS-GC-MS in soil	L088-PL	a
TS201	N/A	S	764035	a	pH in soil (automated)	L099-PL	a
TS202	N/A	S	764036	a	Asbestos identification in Soil	A001B	a
TS202	N/A	S	764036	a	Hexavalent chromium in soil	L080-PL	a
TS202	N/A	S	764036	a	Hexavalent chromium in soil by Ion Chromatography	L130B	a
TS202	N/A	S	764036	a	Metals in soil by ICP-OES	L038B	a
TS202	N/A	S	764036	a	Moisture Content	L019B	a
TS202	N/A	S	764036	a	Monohydric phenols in soil	L080-PL	a
TS202	N/A	S	764036	a	Sample Preparation	L019B	a
TS202	N/A	S	764036	a	Soil Descriptions	L019B	a
TS202	N/A	S	764036	a	Speciated PAHs and/or Semi-volatile organic compounds in soil	L064B	a
TS202	N/A	S	764036	a	Stones content of soil	L019B	a
TS202	N/A	S	764036	a	Sulphate, water soluble, in soil (16hr extraction)	L038B	a
TS202	N/A	S	764036	a	Total cyanide in soil	L080-PL	a
TS202	N/A	S	764036	a	Total organic carbon (Automated) in soil	L009B	a
TS202	N/A	S	764036	a	Total petroleum hydrocarbons by GC-FID in soil	L076B	a
TS202	N/A	S	764036	a	Total petroleum hydrocarbons by GC-FID/GC-MS HS in soil (Summed Bands)	L076B/L088-PL	a
TS202	N/A	S	764036	a	Total petroleum hydrocarbons by HS-GC-MS in soil	L088-PL	a
TS202	N/A	S	764036	a	pH in soil (automated)	L099-PL	a
TS203	N/A	S	764037	a	Asbestos identification in Soil	A001B	a
TS203	N/A	S	764037	a	Hexavalent chromium in soil	L080-PL	a
TS203	N/A	S	764037	a	Hexavalent chromium in soil by Ion Chromatography	L130B	a
TS203	N/A	S	764037	a	Metals in soil by ICP-OES	L038B	a
TS203	N/A	S	764037	a	Moisture Content	L019B	a
TS203	N/A	S	764037	a	Monohydric phenols in soil	L080-PL	a
TS203	N/A	S	764037	a	Sample Preparation	L019B	a
TS203	N/A	S	764037	a	Soil Descriptions	L019B	a
TS203	N/A	S	764037	a	Speciated PAHs and/or Semi-volatile organic compounds in soil	L064B	a
TS203	N/A	S	764037	a	Stones content of soil	L019B	a
TS203	N/A	S	764037	a	Sulphate, water soluble, in soil (16hr extraction)	L038B	a
TS203	N/A	S	764037	a	Total cyanide in soil	L080-PL	a
TS203	N/A	S	764037	a	Total organic carbon (Automated) in soil	L009B	a
TS203	N/A	S	764037	a	Total petroleum hydrocarbons by GC-FID in soil	L076B	a
TS203	N/A	S	764037	a	Total petroleum hydrocarbons by GC-FID/GC-MS HS in soil (Summed Bands)	L076B/L088-PL	a
TS203	N/A	S	764037	a	Total petroleum hydrocarbons by HS-GC-MS in soil	L088-PL	a
TS203	N/A	S	764037	a	pH in soil (automated)	L099-PL	a

Date: 03rd December 2025
Reference: 16-218-V1

POS VALIDATION – GREEN LANE, HEYWOOD

Project Name:	Green Lane, Heywood
Project Number:	16-218
Client:	Challenger Building Services
Date:	26/11/2025
Project Manager:	M. Jackson
E3P Engineer:	M. Jackson
Plots:	POS Validation

OVERVIEW

An E3P engineer attended the above site to validate the thickness of the cover system placed within the Public Open Space (POS) in the southeastern sector of development off Green Lane, Heywood.

Four hand excavated trial pits were advanced across the POS, with the resulting strata detailed at the rear of this letter.

The trial pits within the POS were completed to highlight the required cover system of 300 mm with a no dig layer. E3P can confirm that our independent validation demonstrates that the POS area has been installed inline with the requirements for a site of this nature.

Given the limited area occupied by the POS on site, Challenger Building Services Ltd opted to form the full depth of the cover system (300 mm) utilising imported topsoil.

A list of plots requiring validation and their associated validation letters is presented in Table 1 for reference.





TOPSOIL

E3P attended the site on 26/11/2025 to collect three samples of the imported topsoil deposits, which were analysed in accordance with the E3P Remediation Strategy. Chemical analysis results are included within the laboratory report 25-064299-1.

Approximately 75 m3 of topsoil has been imported from SED Services Ltd as a manufactured natural topsoil from their site at Landgate Farm, Wigan. Given that the soils are a manufactured product, E3P has treated these as a brownfield source. Three samples were tested in November 2025, which confirmed that the topsoil was chemically suitable for use within the proposed public open space areas.

Analysis for topsoil has been undertaken by i2 Analytical Ltd Laboratory using UKAS accredited methods where applicable. The chemical analysis suite comprises heavy metals, sulphates, phenols, speciated Polycyclic Aromatic Hydrocarbons (PAHs), speciated and total Petroleum Hydrocarbons (TPH) and asbestos. Sampling frequency following the agreed Remediation Strategy. Laboratory analysis certificates are attached to this validation certificate.

CHEMICAL ANALYSIS

TOPSOIL/SUBSOIL	SOURCE	LAB REFERENCE	SAMPLE REFERENCE	PASS/FAIL
Topsoil	Onsite	25-064299	TS201-TS203	Pass



POS (public open space) Cover System Validation

Complete

Score	18 / 18 (100%)	Flagged items	0	Actions	0
Site Name	Green Lane				
Location	9 Green Lane Heywood England OL10 1NQ United Kingdom (53.593506708446746, - 2.208269520064761)				
Project Number	16218				
Developer	Challenger				
Project Manager	M. Jackson				
Conducted By	Mathew Jackson				
Date of visit	26 Nov 2025 12:35 PM GMT				



Subsoil/Topsoil Material Source (If the site manager can't supply you with detail of where the soil is sourced STOP THE INSPECTION and call the PM)

Where has the Subsoil been sourced

N/A - Topsoil for both

Where has the Topsoil been sourced

Imported – SED Services Ltd



<u>Plot Validation</u>	18 / 18 (100%)
<u>Plot Validation</u>	18 / 18 (100%)
Plot Validation 1	6 / 6 (100%)
What Three Words location	///ripe.slower.energy
Is Location Ready	Yes
 Photo 1	
Installation Standard	Pass
Depth of Cover System Materials (record the depth and support with Photo down the hole)	350
 Photo 2	
Depth of Topsoil (mm)	350
Depth of Subsoil (mm)	Topsoil cover
Depth of Cover System at Ground Level (Photo)	☒
 Photo 3	
Depth of Cover System in Relation to Plot (Ensure the whole plot can be seen in the photo)	☒
 Photo 4	



Soil suitable (Must be free from Brick, concrete, wood, plastics, glass, metal and anything none natural) if identified contact PM and take photos.

Yes

Geotextile membrane present

Yes



Photo 5

Plot Validation 2

6 / 6 (100%)

What Three Words location

///dime.sage.launch

Is Location Ready

Yes



Photo 6

Installation Standard

Pass

Depth of Cover System Materials (record the depth and support with Photo down the hole)

400



Photo 7

Depth of Topsoil (mm)

400

Depth of Subsoil (mm)

All topsoil

Depth of Cover System at Ground Level (Photo)



Photo 8



Depth of Cover System in Relation to Plot (Ensure the whole plot can be seen in the photo)



Photo 9

Soil suitable (Must be free from Brick, concrete, wood, plastics, glass, metal and anything none natural) if identified contact PM and take photos.

Yes

Geotextile membrane present

Yes



Photo 10

Plot Validation 3

6 / 6 (100%)

What Three Words location

///dish.puddles.worth

Is Location Ready

Yes



Photo 11

Installation Standard

Pass

Depth of Cover System Materials (record the depth and support with Photo down the hole)

300



Photo 12

Depth of Topsoil (mm)

300

Depth of Subsoil (mm)

All topsoil



Depth of Cover System at Ground Level (Photo)



Photo 13

Depth of Cover System in Relation to Plot (Ensure the whole plot can be seen in the photo)



Photo 14

Soil suitable (Must be free from Brick, concrete, wood, plastics, glass, metal and anything none natural) if identified contact PM and take photos.

Yes

Geotextile membrane present

Yes



Photo 15

Site Manager or Representative

Name

Graham

Signature

26 Nov 2025 12:40 PM GMT



Media summary



Photo 1



Photo 2



Photo 3



Photo 4



Photo 5



Photo 6



Photo 7



Photo 8



Photo 9



Photo 10



Photo 11



Photo 12



Photo 13



Photo 14



Photo 15

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Analytical Report Number : 25-064299

Project / Site name:	Green Lane Heywood	Samples received on:	27/11/2025
Your job number:	16-218	Samples instructed on/ Analysis started on:	27/11/2025
Your order number:	12833	Analysis completed by:	03/12/2025
Report Issue Number:	1	Report issued on:	03/12/2025
Samples Analysed:	3 soil samples		



Signed:

Anna Goc
PL Head of Reporting Team
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41-711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting
air	- once the analysis is complete

Excel copies of reports are only valid when accompanied by this PDF certificate.

Retention period for records and reports is minimum 6 years from the date of issue of the final report.
Some records may be kept for longer according to other legal/best practice requirements.

Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

Analytical Report Number: 25-064299
Project / Site name: Green Lane Heywood
Your Order No: 12833

Lab Sample Number	764035	764036	764037
Sample Reference	TS201	TS202	TS203
Sample Number	None Supplied	None Supplied	None Supplied
Water Matrix	N/A	N/A	N/A
Depth (m)	None Supplied	None Supplied	None Supplied
Date Sampled	Deviating	Deviating	Deviating
Time Taken	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status

Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	16	15	15
Total mass of sample received	kg	0.1	NONE	0.8	0.8	0.6

Asbestos

Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	MJN	MJN	MJN
Analysis completed	N/A	N/A	N/A	03/12/2025	03/12/2025	03/12/2025

General Inorganics

pH (L099)	pH Units	N/A	MCERTS	8	7.9	8.1
Total Cyanide	mg/kg	1	MCERTS	2.9	2.6	2.8
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	370	370	350
Water Soluble SO ₄ 16hr extraction (2:1)	mg/l	1.25	MCERTS	186	186	176
Total Organic Carbon (TOC) - Automated	%	0.1	MCERTS	3.9	3.6	4.1

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	0.1	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	0.29	0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	0.21	0.05
Phenanthrene	mg/kg	0.05	MCERTS	0.37	1.6	0.38
Anthracene	mg/kg	0.05	MCERTS	0.06	0.37	0.07
Fluoranthene	mg/kg	0.05	MCERTS	0.52	2	0.87
Pyrene	mg/kg	0.05	MCERTS	0.48	1.9	0.81
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.25	0.88	0.4
Chrysene	mg/kg	0.05	MCERTS	0.25	0.82	0.46
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	0.28	0.89	0.65
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	0.17	0.48	0.24
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.26	0.85	0.47
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.13	0.39	0.28
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	0.07	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.16	0.44	0.3

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	2.94	11.3	5.02
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Analytical Report Number: 25-064299
Project / Site name: Green Lane Heywood
Your Order No: 12833

Lab Sample Number	764035	764036	764037
Sample Reference	TS201	TS202	TS203
Sample Number	None Supplied	None Supplied	None Supplied
Water Matrix	N/A	N/A	N/A
Depth (m)	None Supplied	None Supplied	None Supplied
Date Sampled	Deviating	Deviating	Deviating
Time Taken	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	5.8	6.2	6
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.2	0.3	0.3
Chromium (hexavalent)	mg/kg	1.8	MCERTS	U/S ^{*U/S g}	U/S ^{*U/S g}	U/S ^{*U/S g}
Chromium (hexavalent) by IC	mg/kg	1.8	NONE	< 1.80	< 1.80	< 1.80
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	11	15	12
Copper (aqua regia extractable)	mg/kg	1	MCERTS	38	25	19
Lead (aqua regia extractable)	mg/kg	1	MCERTS	35	37	40
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	8.9	14	9.6
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	90	96	100

Petroleum Hydrocarbons

TPH (>EC5 - EC10) _{HS_1D_TOTAL}	mg/kg	1	NONE	< 1.0	< 1.0	< 1.0
TPH (>EC5 - EC6) _{HS_1D_TOTAL}	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1
TPH (>EC6 - EC8) _{HS_1D_TOTAL}	mg/kg	0.01	MCERTS	< 0.01	< 0.01	< 0.01
TPH (>EC8 - EC10) _{HS_1D_TOTAL}	mg/kg	0.02	MCERTS	< 0.02	< 0.02	< 0.02
TPH (>EC10 - EC12) _{EH_CU_1D_TOTAL}	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0
TPH (>EC12 - EC16) _{EH_CU_1D_TOTAL}	mg/kg	4	MCERTS	< 4.0	< 4.0	4.6
TPH (>EC16 - EC21) _{EH_CU_1D_TOTAL}	mg/kg	10	MCERTS	< 10	12	14
TPH (>EC21 - EC35) _{EH_CU_1D_TOTAL}	mg/kg	10	MCERTS	46	56	79
TPH (>EC35 - EC40) _{EH_CU_1D_TOTAL}	mg/kg	10	MCERTS	< 10	< 10	22
TPH Total >EC5 - EC40 _{EH_CU+HS_1D_TOTAL}	mg/kg	10	NONE	61	77	120
TPH (EC10 - EC40) _{EH_CU_1D_TOTAL}	mg/kg	10	MCERTS	61	77	120

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Analytical Report Number : 25-064299

Project / Site name: Green Lane Heywood

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
764035	TS201	None Supplied	None Supplied	Brown loam and sand with gravel and vegetation
764036	TS202	None Supplied	None Supplied	Brown loam and sand with gravel and vegetation
764037	TS203	None Supplied	None Supplied	Brown loam and sand with gravel and vegetation

Analytical Report Number : 25-064299

Project / Site name: Green Lane Heywood

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters Heating/Cooling (PrW) DI Process Water (DI PrW)

Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos identification in Soil	Asbestos Identification with the use of polarised light microscopy in conjunction with dispersion staining techniques	In-house method based on HSG 248, 2021	A001B	D	ISO 17025
Total organic carbon (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate (Walkley Black Method)	In-house method	L009B	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically (up to 30°C)	In-house method	L019B	W	NONE
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight	In-house method based on British Standard Methods and MCERTS requirements.	L019B	D	NONE
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil	L038B	D	MCERTS
Sulphate, water soluble, in soil (16hr extraction)	Sulphate, water soluble, in soil (16hr extraction)	In-house method	L038B	D	MCERTS
Hexavalent chromium in soil by Ion Chromatography	Determination of hexavalent chromium in alkaline soil extract by use of ion chromatography with spectrophotometric detection	In-house method	L130B	W	NONE
Speciated PAHs and/or Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds (including PAH) in soil by extraction in dichloromethane and hexane followed by GC-MS	In-house method based on USEPA 8270	L064B	D	MCERTS
Total petroleum hydrocarbons by GC-FID in soil	Determination of total petroleum hydrocarbons in soil by GC-FID	In-house method	L076B	D	MCERTS
Total petroleum hydrocarbons by GC-FID/GC-MS HS in soil (Summed Bands)	Determination of total petroleum hydrocarbons in soil by GC-FID/GC-MS HS (Summed Bands).	Calculation	L076B/L088-PL	D/W	NONE
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in NaOH and addition of 1,5 diphénylcarbazide followed by colorimetry	In-house method	L080-PL	W	MCERTS
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080-PL	W	MCERTS
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080-PL	W	MCERTS
Total petroleum hydrocarbons by HS-GC-MS in soil	Determination of total petroleum hydrocarbons in soil by HS-GC/MS	In-house method	L088-PL	W	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement	In-house method	L099-PL	D	MCERTS

Analytical Report Number : 25-064299
Project / Site name: Green Lane Heywood

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters Heating/Cooling (PrW) DI Process Water (DI PrW)

Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Soil Descriptions	Textural classification	In-house method	L019B	W	NONE

For method numbers ending in 'UK' or 'A' analysis have been carried out in our laboratory in the United Kingdom (Watford).

For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).

For method numbers ending in 'PL' or 'B' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Quality control parameter failure associated with individual result applies to calculated sum of individuals.

The result for sum should be interpreted with caution

*U/S g- Unsuitable for analysis due to high colour intensity.

Analytical Report Number : 25-064299

Project / Site name: Green Lane Heywood

This deviation report indicates the sample and test deviations that apply to the samples submitted for analysis. Please note that the associated result(s) may be unreliable and should be interpreted with care.

Key: a - No sampling date b - Incorrect container/Insufficient material provided c - Holding time d - Headspace e - Temperature

Sample ID	Other ID	Sample Type	Lab Sample Number	Sample Deviation	Test Name	Test Ref	Test Deviation
TS201	N/A	S	764035	a	Asbestos identification in Soil	A001B	a
TS201	N/A	S	764035	a	Hexavalent chromium in soil	L080-PL	a
TS201	N/A	S	764035	a	Hexavalent chromium in soil by Ion Chromatography	L130B	a
TS201	N/A	S	764035	a	Metals in soil by ICP-OES	L038B	a
TS201	N/A	S	764035	a	Moisture Content	L019B	a
TS201	N/A	S	764035	a	Monohydric phenols in soil	L080-PL	a
TS201	N/A	S	764035	a	Sample Preparation	L019B	a
TS201	N/A	S	764035	a	Soil Descriptions	L019B	a
TS201	N/A	S	764035	a	Speciated PAHs and/or Semi-volatile organic compounds in soil	L064B	a
TS201	N/A	S	764035	a	Stones content of soil	L019B	a
TS201	N/A	S	764035	a	Sulphate, water soluble, in soil (16hr extraction)	L038B	a
TS201	N/A	S	764035	a	Total cyanide in soil	L080-PL	a
TS201	N/A	S	764035	a	Total organic carbon (Automated) in soil	L009B	a
TS201	N/A	S	764035	a	Total petroleum hydrocarbons by GC-FID in soil	L076B	a
TS201	N/A	S	764035	a	Total petroleum hydrocarbons by GC-FID/GC-MS HS in soil (Summed Bands)	L076B/L088-PL	a
TS201	N/A	S	764035	a	Total petroleum hydrocarbons by HS-GC-MS in soil	L088-PL	a
TS201	N/A	S	764035	a	pH in soil (automated)	L099-PL	a
TS202	N/A	S	764036	a	Asbestos identification in Soil	A001B	a
TS202	N/A	S	764036	a	Hexavalent chromium in soil	L080-PL	a
TS202	N/A	S	764036	a	Hexavalent chromium in soil by Ion Chromatography	L130B	a
TS202	N/A	S	764036	a	Metals in soil by ICP-OES	L038B	a
TS202	N/A	S	764036	a	Moisture Content	L019B	a
TS202	N/A	S	764036	a	Monohydric phenols in soil	L080-PL	a
TS202	N/A	S	764036	a	Sample Preparation	L019B	a
TS202	N/A	S	764036	a	Soil Descriptions	L019B	a
TS202	N/A	S	764036	a	Speciated PAHs and/or Semi-volatile organic compounds in soil	L064B	a
TS202	N/A	S	764036	a	Stones content of soil	L019B	a
TS202	N/A	S	764036	a	Sulphate, water soluble, in soil (16hr extraction)	L038B	a
TS202	N/A	S	764036	a	Total cyanide in soil	L080-PL	a
TS202	N/A	S	764036	a	Total organic carbon (Automated) in soil	L009B	a
TS202	N/A	S	764036	a	Total petroleum hydrocarbons by GC-FID in soil	L076B	a
TS202	N/A	S	764036	a	Total petroleum hydrocarbons by GC-FID/GC-MS HS in soil (Summed Bands)	L076B/L088-PL	a
TS202	N/A	S	764036	a	Total petroleum hydrocarbons by HS-GC-MS in soil	L088-PL	a
TS202	N/A	S	764036	a	pH in soil (automated)	L099-PL	a
TS203	N/A	S	764037	a	Asbestos identification in Soil	A001B	a
TS203	N/A	S	764037	a	Hexavalent chromium in soil	L080-PL	a
TS203	N/A	S	764037	a	Hexavalent chromium in soil by Ion Chromatography	L130B	a
TS203	N/A	S	764037	a	Metals in soil by ICP-OES	L038B	a
TS203	N/A	S	764037	a	Moisture Content	L019B	a
TS203	N/A	S	764037	a	Monohydric phenols in soil	L080-PL	a
TS203	N/A	S	764037	a	Sample Preparation	L019B	a
TS203	N/A	S	764037	a	Soil Descriptions	L019B	a
TS203	N/A	S	764037	a	Speciated PAHs and/or Semi-volatile organic compounds in soil	L064B	a
TS203	N/A	S	764037	a	Stones content of soil	L019B	a
TS203	N/A	S	764037	a	Sulphate, water soluble, in soil (16hr extraction)	L038B	a
TS203	N/A	S	764037	a	Total cyanide in soil	L080-PL	a
TS203	N/A	S	764037	a	Total organic carbon (Automated) in soil	L009B	a
TS203	N/A	S	764037	a	Total petroleum hydrocarbons by GC-FID in soil	L076B	a
TS203	N/A	S	764037	a	Total petroleum hydrocarbons by GC-FID/GC-MS HS in soil (Summed Bands)	L076B/L088-PL	a
TS203	N/A	S	764037	a	Total petroleum hydrocarbons by HS-GC-MS in soil	L088-PL	a
TS203	N/A	S	764037	a	pH in soil (automated)	L099-PL	a