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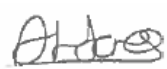
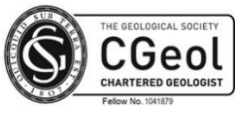
Domett Street, Manchester

Remedial Strategy Report

For: John Southworth Builders Ltd.

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The logo graphic for John Southworth Builders Ltd. consists of three parallel, slanted orange lines of increasing length, forming a stylized 'V' or arrow shape pointing towards the top right.

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CONTENTS

1.0 INTRODUCTION

- 1.1 Scope
- 1.2 Brief
- 1.3 Summary of Previous Phase 2 Investigation Findings

2.0 REMEDIAL STRATEGY FOR HUMAN HEALTH

- 2.1 Installation of a Clean Cover System
- 2.2 Validation of Clean Cover System

3.0 OTHER REMEDIAL REQUIREMENTS

- 3.1 Decommissioning of Boreholes
- 3.2 Definition of Waste: Code of Practice
- 3.3 Material Management
- 3.4 Discovery Strategy
- 3.5 Design Variation
- 3.6 Validation Report

APPENDICES

APPENDIX 1	LIMITATIONS OF INVESTIGATION WORK AND REPORT
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APPENDIX 2	FIGURES AND DRAWINGS
-------------------	----------------------

- Site Location Plan
- Proposed Development Plan

APPENDIX 3	DISCOVERY STRATEGY
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1.0 INTRODUCTION

This Remedial Strategy Report has been prepared at the request of John Southworth Builders Ltd. Instructions to proceed with this report were received in December 2024.

This report follows the findings and recommendations and should be read in conjunction with the following reports:

- **Curtins Phase 1 Preliminary Risk Assessment** (Ref: 077873-CUR-00-XX-RP-GE-018 Revision V01, Dated: 10 May 2021).
- **E3P Phase II Geoenvironmental Site Assessment** (Ref: 16-716-R1-2, Dated: August 2024)

This report pertains to a triangular shaped c. 0.06 Ha site located to the west of Domett Street, Manchester at the approximate post code M9 8DG. The National Ordnance Survey Grid Reference for the centre of the site is 385441E, 402917N. A site location plan is included in Appendix 2 (Drawing ref: *SI-01*).

The site currently comprises a vacant area of previously used as a construction storage area for a nearby construction site. The site is accessed via Old Market Street off the northern boundary. The site is bound by Domett Street to the east, residential dwellings to the south, mixed use retail and residential premises to the west and Old Market Street to the north. An aerial photo of the site is below:



Figure 1: Aerial image of the site dated April 2022.

1.1 Scope

This Remedial Strategy Report has been undertaken to determine the remedial requirements of the site based upon the previous site investigation works. It is the client's intention to develop the site into a low-rise residential development comprising 4 No. apartments with associated areas of soft landscaping and hardstanding. The proposed development plan is contained in Appendix 2. An extract is shown below:



Figure 2: Extract of the proposed development plan

1.2 Brief

This report has been undertaken following the findings and recommendations of **Curtins Phase 1 Preliminary Risk Assessment** (Ref: 077873-CUR-00-XX-RP-GE-018 Revision V01) and **E3P Phase II Geoenvironmental Site Assessment** (Ref: 16-716-R1-2). Based on the E3P ground investigation findings, this report will outline the remedial strategy with regard to human health, controlled waters and ground gas risk on site.

The limitations of the report are contained in Appendix 1.

1.3 Summary of Previous Phase 2 Investigation Findings

E3P undertook a ground investigation at the site in June and September 2023, comprising 6 No. trial pits to depths of between 1.70m and 2.00m bgl and 4 No. window sample holes to depths of 5.45m bgl.

Ground Conditions

The ground conditions encountered are as follows:

- **Made Ground** comprising light grey GRAVEL underlain by brown, very gravelly, clayey SAND with occasional cobbles to a depth of between 0.50m and 1.20m bgl, underlain by;
- **Glaciofluvial Sheet Deposits** comprising loose to medium dense, clayey, fine to coarse SAND to a depth of at least 5.45m bgl, underlain by;
- **Glacial Till** typically comprising a heterogeneous mixture of CLAY, SAND and GRAVEL to a depth of between 25m and 48m bgl, underlain by;
- **Manchester Marls Formation** comprising red MUDSTONE and SILTSTONE.

Contamination

8 No. soil samples from across site have been submitted for environmental analysis. Numerous GAC exceedances were recorded including arsenic, lead and PAHs.

The below table summarises the findings of the chemical analysis of the samples.

Determinand	Concentration (mg/kg)	Assessment Criteria (mg/kg)	Location and Depth (m bgl)	Strata
Arsenic	110	37	TP201 at 0.60m	Made Ground
Lead	270	200	TP201 at 0.60m	Made Ground
Benzo(b)Fluoranthene	4.1	2.6	WS103 at 0.50m	Made Ground
Benzo(a)Pyrene	3.6	2.2	WS103 at 0.50m	Made Ground
Dibenzo(a,h)Anthracene	0.55	0.24	WS103 at 0.50m	Made Ground

Remedial measures are required within the proposed soft landscaped areas to negate exposure pathway risks with existing site materials. The remedial measures required are outlined in Section 2.2. No private gardens are included within the proposed development.

Ground Gas

E3P undertook 9 No. ground gas monitoring visits. The results are summarised below:

Gas Monitoring Well	Response Zone (m bgl)	Peak CO ₂ Concentration (%)	Peak CH ₄ Concentration (%)	Atmospheric Pressure (mbar)	Steady Gas Flow (l/hr)
WS101	0.50 – 1.00 (Made Ground)	0.1 – 2.8	<0.1	984 - 1009	<0.1
WS103	2.00 – 3.00 (Natural Ground)	0.1 – 4.5	<0.1	983 - 1007	<0.1
WS104	1.50 – 2.00 (Natural Ground)	0.1 – 3.6	<0.1	984 - 1010	<0.1

Consequently, based on the above, E3P stated that the site falls in line with Characteristic Situation 1, requiring no ground gas protection measures (inclusive of radon).

2.0 REMEDIAL STRATEGY FOR HUMAN HEALTH

As discussed in section 1.3, due to the human health GAC exceedances for the *residential without plant uptake scenario* recorded within the Made Ground remedial measures are required for the proposed development. A clean cover system will be required in areas of soft landscaping in order to break the contaminative linkages. Details of the required clean cover system are included below. **No private gardens** are present given the nature of the proposed development.

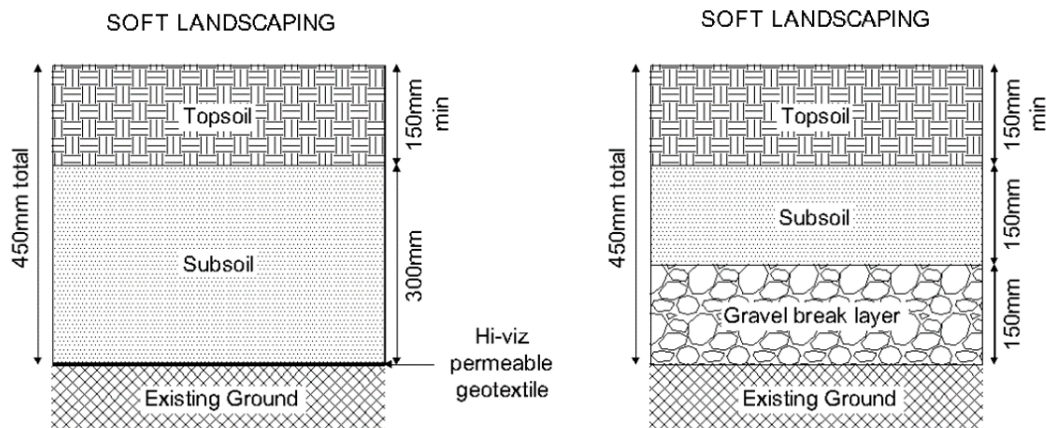
No remedial measures are deemed necessary for ground gas or controlled waters.

2.1 Installation of a Clean Cover System

Made Ground containing human health GAC exceedances is present below finalised soft landscaping levels at depths shallower than 450mm across the site. The following procedure is outlined for use in all private gardens and in areas of soft landscaping:

1. Excavate to 450mm in soft landscaping areas.
2. A 450mm clean cover system is recommended to be added to the proposed soft landscaping areas. This is to consist of:
 - No less than 150mm and no more than 300mm suitable topsoil, underlain by;
 - Suitable subsoil to a total (topsoil + subsoil) depth of 450mm in areas of soft landscaping, underlain by;
 - A high vis geotextile marker;
 - Validate in line with the below strategy.

This is shown diagrammatically below:



Soils for use in the above recommended cover system must be validated as detailed below to ensure their suitability for use.

2.2 Validation of Clean Cover System

Once the 450mm clean cover system is installed to break contaminative linkages in areas of soft landscaping, validation requirements include:

- Details of the source of the cover material;
- Chemical test results to demonstrate that the soil is free from contamination and 'suitable for use' in-line with the below chemical testing suites and rates.
- Waste transfer notes to provide evidence of source;
- Confirmation of cover depth by either measurement tape or topographical survey with photographs at a frequency of one pit per three plots.

No topsoil or subsoil is present on-site therefore all topsoil and subsoil will need to be imported and this must be validated as detailed below to ensure its suitability for use (i.e., no glass or plastic is to be included and meets chemical testing acceptability criteria).

Imported topsoil and subsoil is required to be tested at source prior to import to confirm suitability. All topsoil and subsoil, whether site-won or imported is required to be tested at the following frequency in line with Manchester City Council Planning and Contaminated Land Technical Guidance (Dated February 2021).:

Source	Material End Use	Sampling Frequency ¹	Testing Suites ³ (see below)
Greenfield Source:	Topsoil	1 per 200m ³	A, B, C, D, F
	Subsoil	1 per 200m ³	A, B, C, D, F
Brownfield Source:	Topsoil	1 per 50m ³	A, B, C, D, F, H
	Subsoil	1 per 100m ³	A, B, C, D, F
	General Fill ²	1 per 1000m ³	A, B, C, E, G

- 1) Minimum 3 samples regardless of volume.
- 2) 'General Fill' is material used primarily to raise levels, specifically not within areas of private gardens, public open space, or soft landscaping, e.g. 6F2.
- 3) In addition to the standard suites given, the laboratory testing suite should include any additional contaminants of concern based on the source of the samples.

Testing Suites:

- A. Asbestos ID, Asbestos quantification.
- B. pH, total and free cyanide, soluble sulfate, organic matter.
- C. Arsenic, Beryllium, Boron, Cadmium, Chromium (III and VI) Copper, Lead, Inorganic Mercury, Nickel, Selenium, Vanadium, Zinc.
- D. Speciated PAHs: Naphthalene, Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Anthracene, Fluoranthene, Pyrene, Benzo(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1,2,3-cd)pyrene, Dibenz(a,h)anthracene, Benzo(ghi)perylene.
- E. Total (non-speciated) PAHs.
- F. Speciated Total Petroleum Hydrocarbons (TPH): Aliphatic >EC5 - EC6, >EC6 - EC8, >EC8 - EC10, >EC10 - EC12, >EC12 - EC16, >EC16 - EC21, >EC21 - EC35, and > EC35 - EC44, and Aromatic >EC5 - EC7, >EC7 - EC8, >EC8 - EC10, >EC10 - EC12, >EC12 - EC16, >EC16 - EC21, >EC21 - EC35, > EC35 - EC44.
- G. Total Petroleum Hydrocarbons (TPH): TPH EC6 – EC40.
- H. BTEX: Benzene, Toluene, Ethylbenzene, p- & m-xylene, o-xylene. Methyl tertiary butyl ether (MTBE).

Once tested, the results are to be compared against the following Acceptability Criteria:

Suite	Determinand (mg/kg unless stated)	Acceptability Criteria for:			
		Private Gardens	Public Open Space (residential)	Soft Landscaping or Public Open Space (Park)	General Fill
A	Asbestos (%)	ND	ND	ND	<0.001 – 0.01%
B	pH	>6 - <8 ⁽³⁾	>6 - <8 ⁽³⁾	>6 - <8 ⁽³⁾	>5 - <10 ⁽³⁾
	Total Cyanide	0.5 ⁽³⁾	0.5 ⁽³⁾	0.5 ⁽³⁾	0.5 ⁽³⁾
	Free Cyanide	0.5 ⁽³⁾	0.5 ⁽³⁾	0.5 ⁽³⁾	0.5 ⁽³⁾
	Soluble Sulfate (mg/l)	500 ⁽³⁾	500 ⁽³⁾	500 ⁽³⁾	500 ⁽³⁾
C	Arsenic	37	79	170	640
	Beryllium	1.7	2.2	63	12
	Boron	290	21000	46000	240000
	Cadmium	11	120	560	190
	Chromium (III)	910	1500	33000	8600
	Chromium (VI)	6	7.7	220	33
	Copper	2400	12000	44000	68000
	Lead	200 ⁽¹⁾	630 ⁽¹⁾	1300	2330 ⁽¹⁾
	Inorganic Mercury	40	120	240	1100
	Nickel	130	230	800	980
	Selenium	250	1100	1800	12000
	Vanadium	410	2000	5000	9000
	Zinc	3700	81000	170000	730000
D	Naphthalene	2.3	4900	1200	
	Acenaphthylene	170	15000	29000	
	Acenaphthene	210	15000	29000	
	Fluorene	170	9900	20000	

	Phenanthrene	95	3100	6200	
	Anthracene	2400	74000	150000	
	Fluoranthene	280	3100	6300	
	Pyrene	620	7400	15000	
	Benzo(a)anthracene	7.2	29	49	
	Chrysene	15	57	93	
	Benzo(b)fluoranthene	2.6	7.1	13	
	Benzo(k)fluoranthene	77	190	370	
	Benzo(a)pyrene	2.2	5.7	11	
	Indeno(1,2,3-cd)pyrene	27	82	150	
	Dibenz(a,h)anthracene	0.24	0.57	1.1	
E	Benzo(ghi)perylene	320	640	1400	
	Total PAHs				1000 ⁽⁴⁾
F	TPH-CWG - Aliphatic >EC5 - EC6	42	570000	95000	
	TPH-CWG - Aliphatic >EC6 - EC8	100	600000	150000	
	TPH-CWG - Aliphatic >EC8 - EC10	27	13000	14000	
	TPH-CWG - Aliphatic >EC10 - EC12	130	13000	21000	
	TPH-CWG - Aliphatic >EC12 - EC16	1100	13000	25000	
	TPH-CWG - Aliphatic >EC16 - EC21	65000	250000	450000	
	TPH-CWG - Aliphatic >EC21 - EC35				
	TPH-CWG - Aliphatic > EC35 - EC44	65000	250000	450000	
	TPH-CWG - Aromatic >EC5 - EC7	70	56000	76000	
	TPH-CWG - Aromatic >EC7 - EC8	130	56000	87000	
	TPH-CWG - Aromatic >EC8 - EC10	34	5000	7200	
	TPH-CWG - Aromatic >EC10 - EC12	74	5000	9200	
	TPH-CWG - Aromatic >EC12 - EC16	140	5100	10000	
	TPH-CWG - Aromatic >EC16 - EC21	260	3800	7600	
	TPH-CWG - Aromatic >EC21 - EC35	1100	3800	7800	
	TPH-CWG - Aromatic > EC35 - EC44	1100	3800	7800	
G	TPH > EC6 - EC40				5000 ⁽⁴⁾
H	Benzene	0.087	72	90	
	Toluene	130	56000	87000*	
	Ethylbenzene	47	24000	17000*	
	p & m-xylene	56	41000	17000*&***	
	o-xylene	60	41000	17000*	
	MTBE (Methyl Tertiary Butyl Ether)	LOD ⁽³⁾	LOD ⁽³⁾	LOD ⁽³⁾	

LQM/CIEH S4ULs for Human Health Risk Assessment (3rd edition, 2015) used unless stated:

- 1) Category 4 Screening Levels (March 2014)
- 2) CL:AIRE Soil GAC for Human Health Assessment (January 2010)
- 3) In-house screening criteria used as no GAC methodology currently exists
- 4) Hazardous waste thresholds. This limit only applies to imported material, not to in-situ soil.

Assumed 1% SOM (most conservative) for those values dependent upon SOM.

ND = Not Detected

LOD = Limit of Detection

*Exceeds vapour saturation limit

**Exceeds solubility saturation limit

The above acceptability criteria for PAHs for imported topsoil and subsoil are based on the published LQM/CIEH S4ULs (2015) for each individual PAH and not based on the Category 4 Screening Level using benzo(a)pyrene as a surrogate marker. This is as the source of the imported material is unknown therefore using the surrogate marker approach may not be suitable as the distribution of PAHs in the imported

material may not be similar to those in the Culp et al. (1998)¹ study. Once chemical testing had been undertaken on imported soil and the distribution of PAHs compared to the distribution in the Culp et al. (1998) study, it may be suitable to use the surrogate marker approach / C4SL.

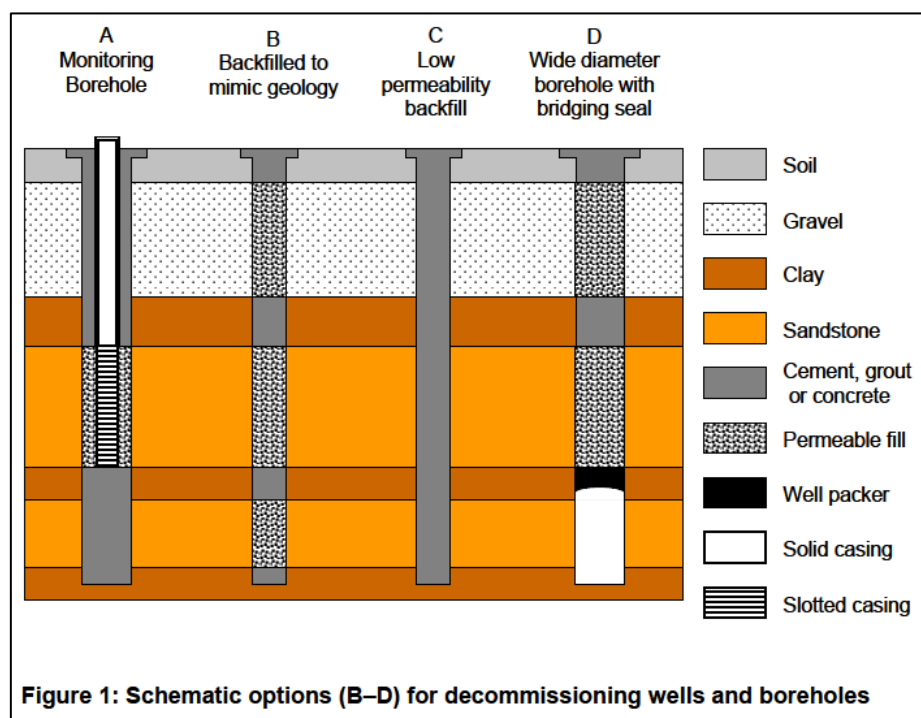
¹ Culp et al. (1998), *A comparison of the tumors induced by coal tar and benzo[a]pyrene in a 2-year bioassay*, **Carcinogenesis**, vol.19, no.1, pp.117–124.

3.0 OTHER REMEDIAL REQUIREMENTS

3.1 Decommissioning of Boreholes

Ground gas monitoring wells are currently installed on site which need to be decommissioned prior to development.

Utilising guidance provided in the Environment Agency's '*Good practice for decommissioning redundant boreholes and wells*' (October 2012), it is prudent to secure redundant boreholes to ensure that no groundwater pollution can occur. The Environment Agency (EA) offer advice on the methods of sealing wells to ensure that the preferential pathway is removed. The following diagram taken from the EA guidance shows a monitoring well (A) and 3 No. options for decommissioning (B, C and D):



It is considered prudent to utilise Option C – low permeability backfill, shown in the diagram above, to adequately seal the borehole. The guidance recommends that 'the backfill materials must be clean, inert and non-polluting', e.g. bentonite. It is recommended to remove the standpipe and seal with bentonite to ground level. This will be sufficient to prevent contaminant transport.

3.2 Definition of Waste: Code of Practice

Due to the likelihood of handling and re-use of excavated site-won materials outside of areas of soft landscaping, it is possible to avoid complex waste legislation by utilising the Definition of Waste: Code of Practice (2011, DoW:CoP). This allows assessment of whether or not excavated materials are waste, and when excavated and treated waste can be classified as 'no longer waste'.

It is recommended that in line with DoW:CoP, a robust, site-specific material management plan (MMP) may need to be emplaced and adhered to and verified in an appropriate verification report. This must be reviewed by a 'Qualified Person' who must provide a Declaration to the EA prior to works within the MMP being commenced.

3.3 Material Management

3.3.1 Import of Materials

Recommendations for the verification of topsoil and subsoil are given above in Section 2.2. Any other soils to be imported as General Fill* should be tested at a rate of 1 per 1000m³ for Asbestos ID, pH, total and free cyanide, soluble sulphate, organic matter, Arsenic, Beryllium, Boron, Cadmium, Chromium (III and VI) Copper, Lead, Inorganic Mercury, Nickel, Selenium, Vanadium, Zinc and TPH screen (EC6 – EC40).

*General Fill is material used primarily to raise levels, specifically not within areas of private gardens, public open space, or soft landscaping, e.g. 6F2.

Once tested, the results are to be compared against the Acceptability Criteria detailed in Section 2.2. The validation requirements include:

- Details of the source and waste transfer notes to provide evidence of source.
- Chemical test results to demonstrate that the concentrations are below the Acceptability Criteria.

3.3.2 Export of Materials

Any soils to be removed from site must be classified in accordance with WM3 under the definition of waste and chemically tested to determine their destination, i.e. reuse or landfill. Waste ticket records must also be retained as proof of the export of materials from site.

3.3.3 Stockpile Management

During the course of the development there will be areas of stockpiled soils intended for use within the soft landscaping area. These will have been subjected to off-site testing and approved for use on site. It is imperative that the stockpiles are well managed to avoid inadvertent mixing or depositing of surplus or deleterious materials that would compromise the continued use. We would recommend that the site management reviews the proposed positions for placement of stockpiles and places either fencing or warning signs to ensure compliance.

3.4 Discovery Strategy

In the event of unexpected contamination being discovered, the Discovery Strategy must be followed – this is contained in Appendix 4.

3.5 Design Variation

Following any variation in a finalised proposed development layout and / or detailed design including earthworks design it is recommended that the above conclusions are re-appraised to determine their suitability.

3.6 Validation Report

Once complete, the information gathered as recommended in Section 2.3 should be compiled into a validation report for the site, detailing the completion of the remedial and verification measures.

The validation report shall include, as a minimum, the following:

- Site Name / location, developer name, development use
- Plot No / description of landscaped area (incl. plan of inspection areas) and National Grid Reference
- Inspection visit date
- Description of remediation (as per agreed Remediation Strategy including depths / thickness checks, topographical readings)
- Material tracking information (including way tickets etc.)

- Name of groundwork's remediation contractor
- Name of supervising environmental consultant
- Site Specific chemical analysis results
- Verification Photographs (inc. remarks)
- Pass/fail and if material fails, how will this be managed i.e. removed, treated
- Detail any further remedial works and/or inspection
- 'Signed off'

Confirmation that remediation objectives have been met.

APPENDIX 1

LIMITATIONS OF INVESTIGATION WORK AND REPORT

LIMITATIONS OF REPORT

This consultancy report was compiled and carried out by IGE Consulting Limited ('IGE') for the client, as defined in the main report (the 'client'), on the basis of a defined programme and scope of works and the terms of a contract between IGE and the client. IGE undertook this with all reasonable skill and care, taking into account the limits of the scope of works required by the client, the prevailing site conditions, the time scale involved and the resources, including financial and manpower resources, agreed between IGE and the client. IGE cannot accept responsibility to any parties whatsoever, following the issue of this report, for any matters arising which may be considered outwith the agreed scope of works.

Unless otherwise agreed this report has been prepared exclusively for the use and reliance of the client in accordance with generally accepted consulting practices. This report may not be relied upon, or transferred to, by any other party without the written agreement of its author. If a third party relies on this report, it does so wholly at its own and sole risk and IGE disclaims any liability to such parties.

It is IGE's understanding that this report is to be used for the purpose described in the 'Brief' section of this report. That purpose was a significant factor in determining the scope and the services to be provided. Should the purpose for which the report is used, or the proposed use of the site change, this report may no longer be valid and any further use of, or reliance upon the report in those circumstances by the client without IGE's review and advice shall be at the client's sole and own risk.

The information contained in this report is protected by disclosure under Part 3 of the Environmental Information Regulations 2004 pursuant to the provisions of Regulation 12(5) without the consent in writing of a Director of IGE.

This report is a function of the date it was written and should be read in light of any subsequent changes in legislation, statutory requirements and industry practices. Ground conditions can also change over time and further investigations or assessment should be made if there is any significant delay in acting on the findings of this report. The passage of time may result in changes in site conditions, regulatory or other legal provisions, technology or economic conditions which could render the report inaccurate or unreliable. The information and conclusions contained in this report should not be relied upon in the future without the written advice of IGE. In the absence of such written advice of IGE, reliance on the report in the future shall be at the client's own and sole risk. Should IGE be requested to review the report in the future, IGE shall be entitled to additional payment at the then existing rate or such other terms as may be agreed between IGE and the client.

The observations and conclusions described in this report are based solely upon the scope of works agreed between the client and IGE. IGE has not performed any observations, investigations, studies or testing not specifically set out or mentioned within this report. IGE is not liable for the existence of any condition, the discovery of which would require performance of services not otherwise contained in the agreed scope of works. For the avoidance of doubt, this report is strictly limited to the nature of contamination contained within the ground and groundwater at the site. The report does not cover environmental aspects such as air or noise pollution and ground vibrations and the like. In addition, ecological matters relating to wildlife, flora and fauna have not been investigated as part of this report. In particular, the site has not been inspected for the presence or otherwise of invasive species (e.g. Japanese Knotweed). It is recommended that the client appoints a specialist in this subject to carry out a detailed inspection / survey of the site if its presence is suspected. Where mention has been made to the suspected presence asbestos or asbestos-containing materials this is for indicative purposes only and does not constitute or replace full and proper surveys.

Throughout the report the term 'geotechnical' is used to describe aspects relating to the physical nature of the site (such as foundation requirements) and the term 'geo-environmental' is used to describe aspects relating to ground-related environmental issues (such as potential contamination). However, it should be appreciated that this is an integrated investigation and these two main aspects are inter-related. The geo-environmental sections are written in broad agreement with BS 10175:2011+A2 2017.

LIMITATIONS OF INVESTIGATION WORK

Desk Study References

This report is based upon IGE's observations of existing physical conditions at the site gained from a walkover survey of the site together with IGE's interpretation of information including documentation, obtained from third parties and from the client on the history and usage of the site. Reliance has been placed on this publicly available data obtained from the sources identified in the main report. When using the information, it has been assumed that it is correct. The findings and recommendations contained in this report are based in part upon information provided by third parties, and whilst IGE have no reason to doubt the accuracy and that it has been provided in full from those it was requested from, the items relied on have not been verified. No responsibility can be accepted for errors within third party items presented in this report. IGE did not attempt to independently verify the accuracy or completeness of information, documentation or materials received from the client or third parties, including laboratories and information services. IGE is not liable for any inaccurate information or conclusions, the discovery of which inaccuracies required the doing of any act including the gathering of any information which was not reasonably available to IGE and including the doing of any independent investigation of the information provided to IGE except when otherwise provided in the terms of the contract between the client and IGE.

Historical Mapping

Historical Ordnance Survey maps do not provide a comprehensive description of a site history. They provide details of the site from a date prior to the publication of the map (i.e. a snapshot in time). The period between map editions can be substantial (i.e. several decades). Not all map series are available for every date range in many areas of the UK and therefore there will be gaps in this mapped record for some sites. Potentially contaminative land uses could have been present and removed during such periods and may therefore not form a part of this particular record. In addition, there will be potentially contaminative land uses which are not identified on the map records such as small scale storage / use of hazardous materials, illegal / unlicensed waste disposal activities etc. Different map series identify different features utilising different symbols which can result in features that remain on-site being removed from maps. Some features are also not mapped for security reasons (e.g. airfields and other military installations). These areas are mostly shown as blank areas on historical maps.

Site Walkover

During the site walkover reasonable effort has been made to obtain an overview of the site conditions. However, during the site walkover no attempt has been made to enter areas of the site that are unsafe or present a risk to health and safety, are locked, barricaded, overgrown, or the location of the area has not been made known or accessible.

Flooding

Flooding in this report is defined as flooding caused by the sea, ditches, rivers, streams, ponds, lakes, reservoirs and the like. It does not extend to flooding caused by surcharged piped drainage systems and investigations into flooding of this nature are excluded from this report.

Extent of Contamination Studies

Site sensitivity assessments have been made based on available information at the time of writing and are ultimately for the decision of the regulatory authorities.

The conclusions and recommendations sections of the report provide an overview and guidance only and should not be specifically relied upon without considering the context of the reporting in full. The conclusions resulting from this study are not necessarily indicative of future conditions or operating practices at or adjacent to the site.

Intrusive Investigation

Where field investigations have been carried out these have been restricted to a level of detail required to achieve the stated objectives of the work. Ground conditions can also be variable and as investigation excavations only allow examination of the ground at discrete locations, the potential exists for ground conditions to be encountered which are different to those considered in this report. The explored extent of the site area depends on the soil and groundwater conditions, together with the position of any current structures and underground facilities and natural and other activities on site. In addition, chemical analysis was carried out for a limited number of parameters, based on an understanding of the available operational and historical information, and it should not be inferred that other chemical species are not present.

The groundwater conditions entered on the exploratory hole records are those observed at the time of investigation. The normal speed of investigation usually does not permit the recording of an equilibrium water level for any one water strike. Moreover, groundwater levels are subject to seasonal variation or changes in local drainage conditions and higher groundwater levels may occur at other times of the year than were recorded during this investigation.

Exploratory Holes

Where exploratory holes have been carried out as part of this investigation, the spacing has been determined to provide a reasonable indication of the general ground conditions across the site, but the number has ultimately been limited by commercial constraints. The findings of the exploratory holes relate specifically to the exploratory hole locations and are no absolute guarantee of the ground conditions between such locations. Due allowance should be made for the possibility of variation in conditions between exploratory hole locations.

Extent of Contamination Testing

The extent of contaminated land testing carried out on samples obtained from the site has been determined in accordance with the latest legal guidance issued by the government to provide, with reasonable certainty, the probable general levels of contamination present on site that could pose a significant hazard to human health or waters. The extent of site investigation works including chemical testing has also been limited by reasonable commercial constraints. Although extensive testing of samples has been carried out, the volume of samples taken for testing are a minute fraction of the total volume of soils and groundwater present on site. Therefore, there is a residual risk that undetected pockets of contamination may be present on site, situated between testing locations.

When investigating or developing potentially contaminated land it is important to recognise that sub-surface conditions may vary spatially and temporally. The absence of certain ground, ground gas, contamination or groundwater conditions at the positions tested is not a guarantee that such conditions do not exist anywhere across the site. Site sensitivity assessments have been made based on available information at the time of writing and are ultimately for the decision of the regulatory authorities. The conclusions resulting from this study are not necessarily indicative of future conditions or operating practices at or adjacent to the site.

Extent of Geo-Environmental Studies

This report is strictly limited to the nature of contamination contained within the ground and groundwater at the site. The report does not cover environmental aspects such as air or noise pollution and ground vibrations and the like. In addition, ecological matters relating to wildlife, flora and fauna have not been investigated as part of this report. In particular, the site has not been inspected for the presence or otherwise of invasive species e.g. Japanese Knotweed. It is recommended that the Client appoints a specialist in this subject to carry out a detailed inspection / survey of the site if its presence is suspected. Where mention has been made to the identification asbestos or asbestos-containing materials this is for indicative purposes only and does not constitute or replace a full and proper survey. If an Unexploded Ordnance (UXO) report has been obtained within the report, it has been so on the basis of Health and Safety concerns and no assessment has been made other than transcribing the

recommendations of the sub-contractor contained within the report. In terms of a potential contaminative source, unless ordnance has been manufactured / stored on site, UXOs will only be determined as a contaminative source following a positive identification on site.

PLANNING CONTEXT

The National Planning Policy Framework (NPPF, 2019) states that the purpose of the planning system is to contribute to the achievement of sustainable development. In order to do this the planning system has three overarching objectives, one of which directly relates to the potential for pollution and contaminated land:

- ***'environmental objective*** - *to contribute to protecting and enhancing our natural, built and historic environment; including making effective use of land, helping to improve biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy'.*

In accordance with this environmental objective, Paragraph 118 clarifies that 'making effective use of land' includes to:

- *'give substantial weight to the value of using suitable brownfield land within settlements for homes and other identified needs, and support appropriate opportunities to remediate despoiled, degraded, derelict, contaminated or unstable land'.*

In accordance with this environmental objective, Paragraph 170 clarifies that 'conserving and enhancing the natural environment includes:

- *'preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability'; and*
- *'remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate'.*

Paragraph 178 of the NPPF states that planning policies and decisions for developments should also ensure that:

- *'a site is suitable for its proposed use taking account of ground conditions and any risks arising from land instability and contamination. This includes risks arising from natural hazards or former activities such as mining, and any proposals for mitigation including land remediation (as well as potential impacts on the natural environment arising from that remediation)'; and,*
- *'after remediation, as a minimum, land should not be capable of being determined as contaminated land under Part IIA of the Environmental Protection Act 1990'; and*
- *'adequate site investigation information, prepared by a competent person, is available to inform these assessments'.*

This report has been prepared and authorised by staff that are competent as defined in the NPPF.

APPENDIX 2

FIGURES AND DRAWINGS



00 Proposed Site Plan
1 : 200

Area Schedule		
Type	Description	Area
BTP - Car Parking	Salmon	50 m²
BTP - Front Garden	Dark Green	45 m²
BTP - Plot Hardstanding	Light Grey	222 m²
BTP - Private Garden	Light Green	61 m²
BTP - Unadopted Drive	Brown	84 m²
Total: 7		462 m²

Fence Schedule			
Type	Length	Fence Height	Count
Fence - TSW 1800mm Trellis	6.8	1800	1
Fence - TSW 2100mm	2.3	2100	2
Metal railings 900mm	3.3	900	3
Railing 300MM	14.1	300	2
Total: 8		26.5	

This drawing is copyright Bernard Taylor Partnership Ltd and must not be copied or disclosed by or to any unauthorised persons without the prior written consent of Bernard Taylor Partnership Ltd.

Do not scale from this drawing. Do not take measurements from the CAD base. Any discrepancies are to be reported to the architect for clarification.

All dimensions are to be checked on site prior to construction, manufacture of any components and ordering of materials and equipment.

All materials and workmanship to be in accordance with the current British Standards and codes of practice.

Schedule of Accommodation

Social Rent		
B2P Flat	2no.	50m2
1B2P Flat	2no.	56m2
TOTAL 4no		

Layout subject to confirmation of red line boundary, all statutory approvals including highways, planning and building regulations, relevant surveys and reports such as topographical, ecology, trees, ground investigation and flood risk.

Indicates approximate location of ASHP to be confirmed and detailed by contractor

Note:
> Make allowance for Brick piers to front boundary wall at max. 2000mm centers
> Timber walls refer to timber sheds in rear gardens
> Make allowance for metal gates to entrance footpaths and carparks if required



View 1



View 2

13	14.11.24	HG	Drawing revised in line with planning conditions and client feedback to form NMA
12	15.12.23	JW	Social rent note added to schedule of accomodation
11	21.11.23	JW	Plan revised to show visibility splay
10	08.10.23	JW	Revisions in line with highway comments on 01.11.23
9	20.10.23	JW	Entrance updated to show new entrance at North of site inline with highways feedback
8	26.07.23	HG	Drawing package revised following feedback at client meeting
7	21.07.23	JW	Drawing package revised following value engineering
6	19.04.23	HG	Layout amended in line with comments following client meeting
5	02.03.23	HG	Layout updated following client meeting and comments
4	04.06.21	AP	GIA amended to corresponde with the Manchester's emerging space standards
3	Date 3	JP	Drawing revised to show amended SoA
2	10.12.20	JP	Drawing revised following meeting with LPA
1	07.12.20	ED	Drawing revised following initial feedback from LPA
Rev	Date	Int	Description



CLIENT:
Jigsaw

PROJECT:
Domett Street, Manchester

DESCRIPTION:
Proposed Site Plan

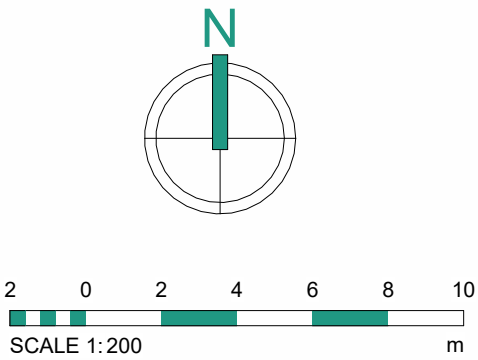
PURPOSE OF ISSUE:
Planning

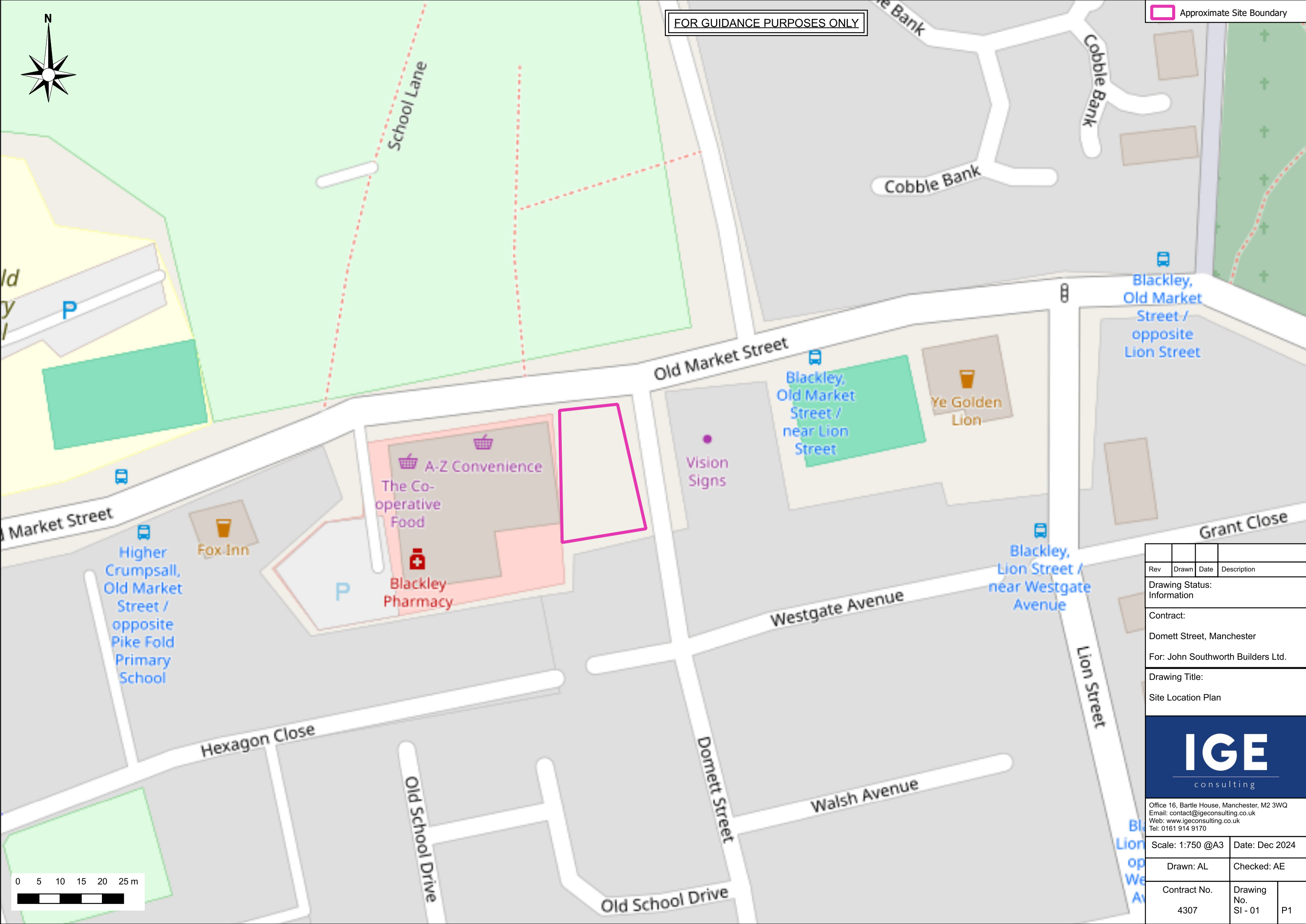
DRAWN BY:	CHECKED	DATE:	SCALE @ A1:
VS	VS	15.06.21	As indicated

JOB NO:	STATUS CODE:	DRAWING NO:	REV
3784	S2	105	13

FILE IDENTIFIER:
DS-BTP-00-SP-DR-A-3784_105.13

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FOR GUIDANCE PURPOSES ONLY

 Approximate Site Boundary

Rev	Drawn	Date	Description
Drawing Status: Information			
Contract: Domett Street, Manchester			
For: John Southworth Builders Ltd.			
Drawing Title: Site Location Plan			
IGEconsulting Office 16, Bartle House, Manchester, M2 3WQ Email: contact@igeconsulting.co.uk Web: www.igeconsulting.co.uk Tel: 0161 914 9170			
Scale: 1:750 @A3		Date: Dec 2024	
Drawn: AL		Checked: AE	
Contract No.	Drawing No.		
4307	SI - 01	P1	

APPENDIX 3

DISCOVERY STRATEGY



DISCOVERY STRATEGY

Office 11
Bartle House
Oxford Court
Manchester
M2 3WQ

Tel: 0161 914 9171
Email: contact@igeconsulting.co.uk
Web: www.igeconsulting.co.uk

What to Look Out For

Potentially contaminative material can be identified as follows:

- Appears oily / has an iridescent sheen
- Hydrocarbon odour e.g., oily or petroleum odour
- Solvent odour e.g., sharp or sweet odour
- Waste materials e.g., metals, plastic etc.
- Asbestos e.g., fibrous sheeting / roofing / board / lagging etc.
- 'Landfill' odour e.g., rotten / putrefying / leachate odour

Or any other material that looks man-made or does not match its surroundings – if in doubt, check.

Procedure for Discovery of Unexpected Contamination

If any of the above material is discovered, the following procedure must be carried out:

- a) Stop works in the area of the contamination discovery.
- b) Inform the Site Manager.
- c) Record the visual and olfactory evidence of contamination.
- d) Suitably qualified geo-environmental engineer to investigate the contamination; take samples, photographs and in-situ tests and discover the extents of the contamination, and to identify potential contaminants and specify chemical testing, if necessary.
- e) Either dig out the contaminated material and stockpile, on an impermeable membrane if necessary, or leave in-situ whilst awaiting chemical test results, if needed – whichever presents the least risk.



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- f) Suitably qualified geo-environmental engineer to re-visit the site's risk assessment, taking into account the newly discovered contamination and recommend remediation, if necessary, or other next steps.
- g) If the risk assessment and remediation strategy is changed as a result, the Local Authority and/or the Environment Agency should be informed and/or consulted.
- h) Lastly, undertake remediation of the affected area if this has been deemed appropriate.

Procedure for Discovery of an Unexpected Tank

Former industrial sites may contain unrecorded underground storage tanks (USTs).

Follow the below steps if a UST is found:

- a) Stop works in the area of the UST discovery.
- b) Inform the Site Manager.
- c) Suitably qualified geo-environmental engineer to investigate the tank, including measuring the size, contents, condition, and visual and olfactory evidence of contamination. Geo-environmental engineer to record the location of the tank on a site plan, take photographs, and sample the contents to send for chemical testing to determine the contents.
- d) Suitably qualified contractor to empty the tank and dispose of contents at a suitably licensed disposal facility.
- e) Suitably qualified contractor to undertake integrity testing in line with the 'Blue Book' method (APEA / EI '*Design, Construction, Modification, Maintenance and Decommissioning of Petrol Filling Stations*' 4th ed. (April 2018)), to determine whether the tank is intact or has been compromised.
- f) Suitably qualified geo-environmental engineer to undertake a risk assessment based on the contents of the tank and the results of the integrity testing, to determine whether to decommission the tank and leave in-situ or to remove the tank.
- g) Suitably qualified contractor to clean and 'inert' the tank, and provide a gas safe certificate, in line with the 'Blue Book' method.

- h) Suitably qualified contractor to either decommission the tank in-situ in line with the 'Blue Book' method or remove the tank and dispose of at an appropriate facility.
- i) If excavated and removed, suitably qualified geo-environmental engineer to investigate the base and the sides of the resultant excavations and if any contamination is found, undertake the Procedure for Discovery of Unexpected Contamination above.

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