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Former Police Station, Bury

Remedial Strategy Report

For: Cairnwell Developments

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1.0 INTRODUCTION

This Remedial Strategy Report has been prepared at the request of Cairnwell Developments. Instructions to proceed with this report were received in October 2024.

This report primarily follows the findings and recommendations of the IGE Consulting *Combined Phase 1 Desk Study and Phase 2 Geo-Environmental Ground Investigation Report* (Ref. 3842-01 Rev A, April 2023).

This report pertains to a c. 0.7Ha site, located to the south of Lower Bank Street, Bury, at the approximate postcode BL9 0JW. The National Ordnance Survey grid reference for the centre of the site is 380096E, 410680N. A site location plan is included in Appendix 2 (Drawing ref. *SI-01*).

The site currently comprises a vacant area of land. The site is bound by residential properties and Irwell Street to the west, Jubilee Way (A58) to the south, a car park to the east and Lower Bank Street to the north. Access to the site is off Lower Bank Street to the north.



Figure 1: Aerial image of the site dated April 2021.

1.1 Scope

This *Remedial Strategy Report* has been undertaken to determine the remedial requirements of the site based upon the existing site investigation works. The site is proposed to be developed in 2 No. stages, Site 1 (north) and Site 2 (south). It is the Client's intention to develop the site into a care home complex comprising 2 No. blocks (2 and 3 – storey), which are to include 40 beds each, with associated soft landscaping, parking spaces and access roads. No private gardens are included within the proposed development.

The proposed development plan is contained in Appendix 2. An extract of the proposed development plan is shown below:



Figure 2: Extract of the proposed development plan (taken from Dudleys Consulting Engineers, Site 1 External Levels and Works, 23389-DCE-XX-XX-D-C-155, Rev. P05, dated August 2024 and Amenity Tree Environmental Planning Consultants, Site 2 External Works / BNG., AT.24.11879.103, Rev. R.01, dated July 2024).

1.2 Brief

This report has been undertaken following the findings and recommendations of the IGE Consulting *Combined Phase 1 Desk Study and Phase 2 Geo-Environmental Ground Investigation Report* (Ref. 3842-01 Rev A, April 2023). Based on the IGE Consulting 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

IGE Consulting have undertaken an intrusive investigation of the site in November 2022, comprising 9 No. machine excavated trial pits to depths of between 0.50m and 3.80m bgl (87.24m and 94.20m AOD) and 6 No. dynamic sample boreholes to depths of between 1.50m and 5.45 bgl (85.59m and 93.20m AOD). 3 No. boreholes were installed with a combined ground gas and groundwater monitoring well. 10 No. soil samples from across site have been submitted for environmental analysis.

Made Ground Samples

5 No. samples of the Made Ground were sent for chemical analysis. Exceedances were found in 4 No. Made Ground Samples. Out of the 16 PAH compounds, exceedances were noted in 3 No. of the samples (TP01 @ 0.20m bgl, TP03 @ 0.30m bgl and TP09 @ 0.20m bgl) and concerned 4 No. PAH compounds. Elevated concentrations of Benzo(b)fluoranthene, Benzo(a)pyrene and Dibenz(a,h)anthracene were noted in all affected samples, with the Benzo(a)anthracene exceedance only present in TP09 at 0.20m bgl.

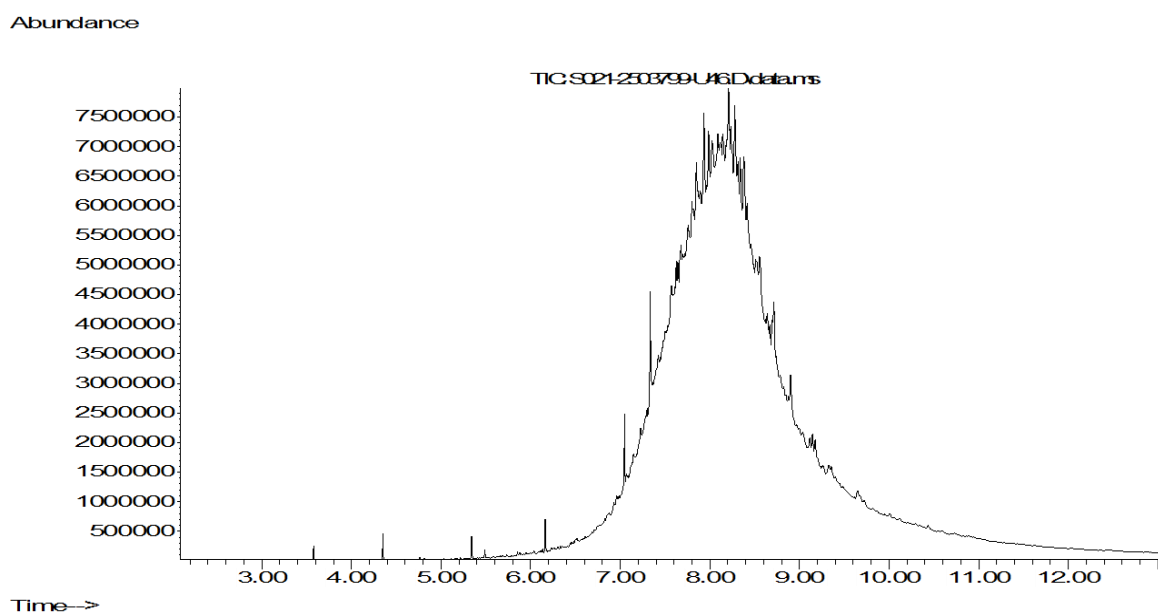
GAC exceedances of lead were detected in 2 No. samples (TP08 at 1.30m and TP09 at 0.20m bgl), both located in the southern site section, with the values ranging from 720mg/kg to 1100mg/kg of lead. Slightly elevated concentrations of TPH were noted in 3 No. samples of the Made Ground, however the values, which ranged from 95mg/kg to 190mg/kg of the TPH C10 – C25, and 100mg/kg – 460mg/kg of the TPH C25 – C40, are not considered significant enough to warrant forensic testing.

No further exceedances in the compounds analysed were found in the selected Made Ground samples.

Targeted Natural Deposit Sample

A single sample of natural Glaciofluvial Deposits was taken from TP03 at 3.30m bgl, which was targeted due to the presence of a strong hydrocarbon odour and black sheen in a localised pocket in the stratum. High concentrations of Total Petroleum Hydrocarbons (TPHs) were found in the sample, with the value for TPH C6 – C40 recorded as high as 16,000mg/kg. TPH-CWG testing was undertaken which found that the majority of the TPHs detected in the sample were present in the fraction C21 – C35 (10,000mg/kg aliphatic and 3,400mg/kg aromatic), which is a heavier-end fraction, above the range of petrol or diesel.

Forensic TPH analysis was undertaken, which gave the following chromatograph:



It can be seen that the sample is mostly represented by an Unresolved Complex Mixture (UCM), which is the large 'bump' in the centre of the graph, in the range C10 to greater than C40, with both aliphatic and aromatic product sources. The lab reported that *'The trace does not match the standard product profiles but is suggestive of lube oil from engine petrol'*.

It is important to note that the contamination was sampled directly, so these findings are not representative of the entirety of the site or even of the stratum in which the contamination was found, due to the relatively small scale of the contamination. The contaminative material comprises high-end TPHs signifying high density and low

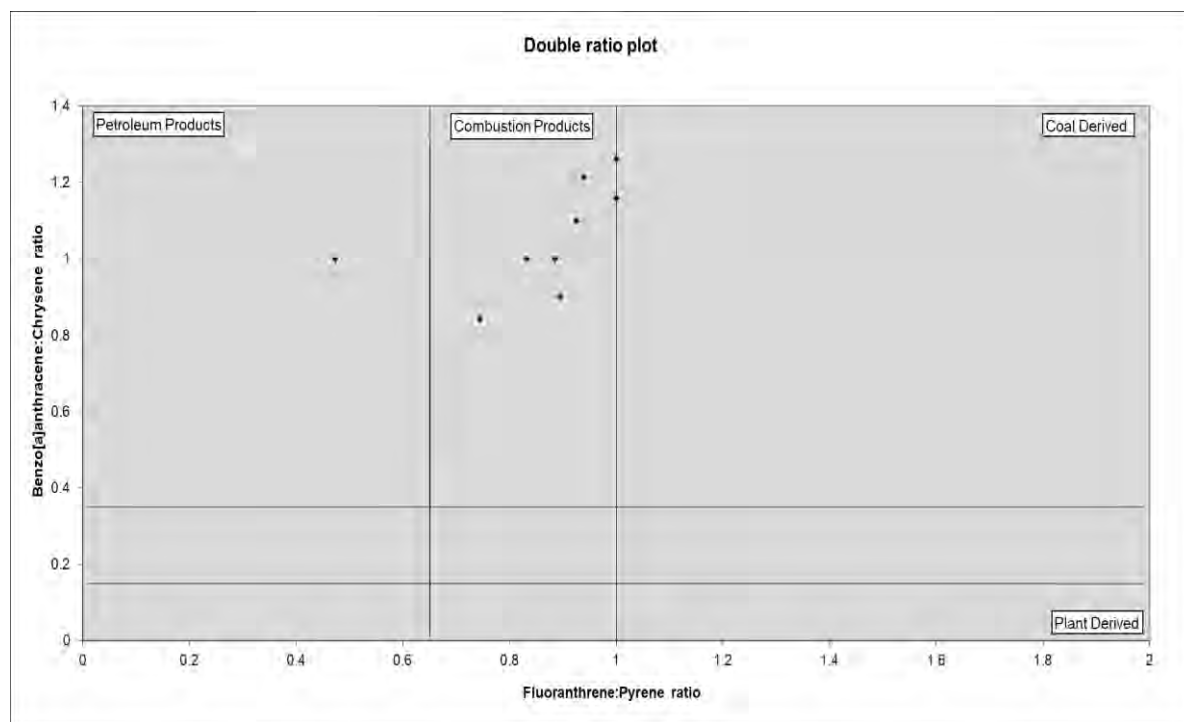
mobility substances. No other similar contaminative hotspots were found on-site, therefore it is anticipated that the presence of contamination in TP03 is an isolated event with a low likelihood of spreading. No further exceedances in the compounds analysed were found in the selected samples of the Glaciofluvial Deposits.

Natural Deposits Samples

There were no GAC exceedances recorded in the (non-targeted) samples of the natural Glaciofluvial and Glacial Till superficial deposits. No elevated TPH was detected in any natural samples other than the targeted sample discussed above.

Double Ratio Plot for PAHs

A Double Ratio Plot for all of the PAH compounds analysed across the site was produced to reveal the possible sources of the substances found on-site:

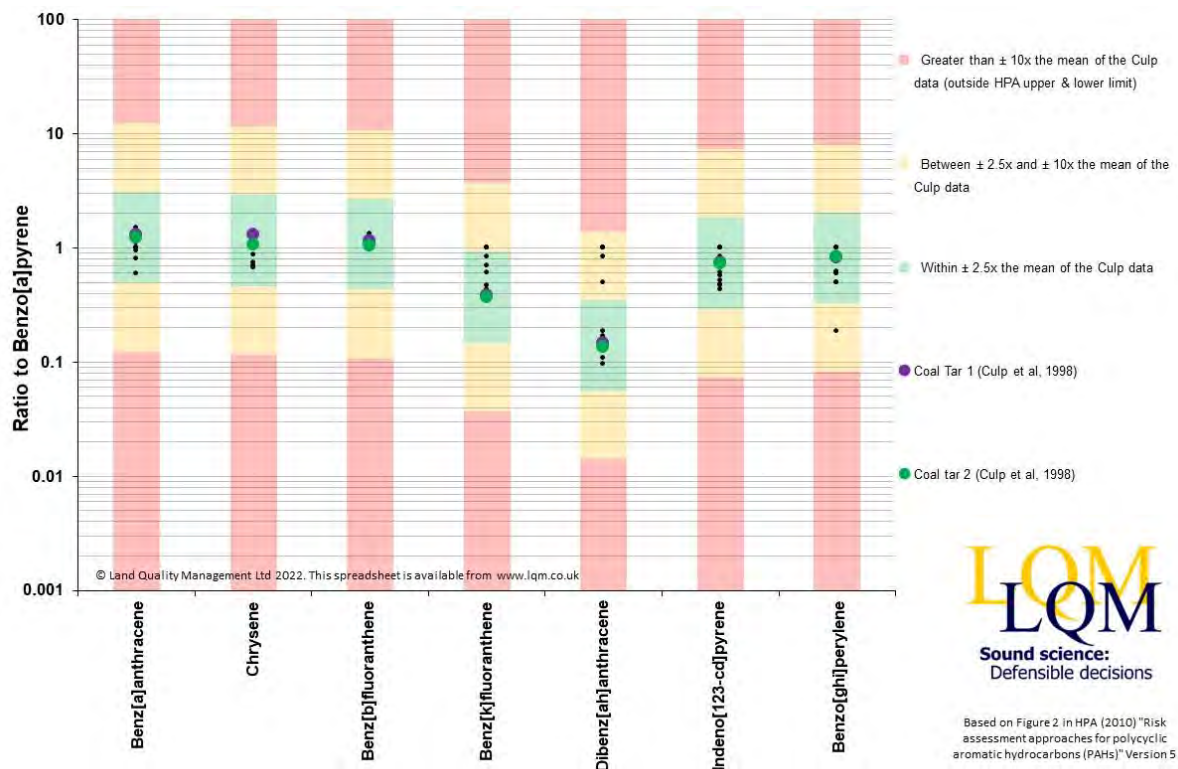


As seen above, the majority of the PAHs on-site are derived from combustion processes but could also stem specifically from the combustion of coal-derived materials, i.e., clinker. A single exception is noted within the results, signifying a petroleum product; this is unsurprising as it has been found in TP03 at 3.30m bgl, which is a sample targeted for its strong hydrocarbon odour, and where TPH exceedances have been found, as discussed above.

PAH Surrogate Marker

The 'surrogate marker' approach has been used to assess PAHs based on Benzo(a)pyrene (BaP) representing a complex mixture of PAHs. The following

graph shows the PAH data from the soil samples plotted against the PAH data from the Culp et al. (1998)¹ study, the pivotal toxicity study from which the surrogate marker approach was derived:



*LQM PAH profiling tool used. Where a concentration of <0.05mg/kg was present, a value of 0.05mg/kg was used for graphing purposes.

As shown in the above graph, the distribution of PAHs in the topsoil samples are similar to those in the Culp et al. (1998)¹ study, with the majority being within just 2.5x the mean of the Culp et al. (1998)¹ data. Based on this information alone, it is appropriate to use the surrogate marker approach.

Using the Surrogate Marker approach, the concentrations of BaP are above the pC4SL surrogate marker GAC in 3 No. of the samples (TP01 @ 0.20m bgl, TP03 @ 0.30m bgl and TP09 @ 0.20m bgl). These are the same Made Ground samples identified above in which individual PAHs were also in exceedance of their individual S4ULs, so this separate assessment concurs that the concentrations of PAHs are not at an acceptable level in these samples.

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.

2.0 REMEDIAL STRATEGY FOR HUMAN HEALTH

The proposed development is to include areas of soft landscaping, which are detailed on both proposed site plans included within Appendix 2. As GAC exceedances were noted within Made Ground (TP01 @ 0.20m, TP03 @ 0.30m, and TP09 @ 0.20m), and a single targeted Glaciofluvial deposits sample (TP03 @ 3.30m), the IGE Combined Phase 1 and Phase 2 report recommended a cover system in these areas to break any pathways between the existing site soils and the end user.

2.1 Installation of a Clean Cover System

The following Landscaping Plan details the proposed and POS soft landscaping (Public Open Space / POS_{resi} – highlighted in green).

The below remedial recommendations will refer to the landscaping designations detailed in the below extract.



Figure 3: Extract of the landscape plans of the 2 No. site phases ((taken from Amenity Tree Environmental Planning Consultants, Softworks and Planting Plan, AT.24.11879.102, Rev. R.08, dated July 2024 and Amenity Tree Environmental Planning Consultants, Site 2 External Works / BNG., AT.24.11879.103, Rev. R.01, dated July 2024)).

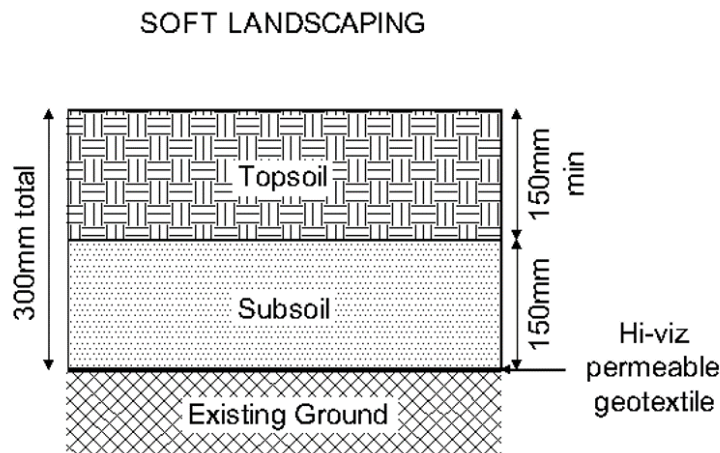
Green = soft landscaping / public open space.

Made Ground containing exceeding GACs with respect to human health is present below finalised garden levels at depths greater than 300mm in areas of proposed soft landscaping across the site. The following procedure is outlined for use in all areas of soft landscaping:

The cover system for the soft landscaping is to be 300mm thick, due to the presence of human health GAC exceedances on site, and consist of:

- A minimum of 150mm suitable topsoil, underlain by;
- Suitable subsoil, to a total thickness of 300mm.

This is shown diagrammatically below:



Where Made Ground is shallower than 300mm below finalised levels in soft landscaping areas, excavating to the required depth for a cover system in these areas would constitute source removal. Therefore, where this is the case, the following procedure is proposed:

1. Excavate to the base of the Made Ground (less than 300mm in areas of soft landscaping areas). A clean cover system is not necessary.
2. Add suitable subsoil and topsoil to create a garden or soft landscaping to Client's standard specification.

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 300mm clean cover system is installed to break contaminative linkages, 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; and
- 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). The local Contaminated Land Strategy is under review by the Bury Met Borough Council at the time of writing, so the below testing regime is proposed.

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:

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 50m 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	
	Benzo(ghi)perylene	320	640	1400	
E	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)² 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.

² 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 REMEDIAL STRATEGY FOR GROUND GAS PROTECTION

3.1 Ground Gas Risk Assessment

Previous Ground Gas and Groundwater Monitoring

IGE Consulting have undertaken 6 No. ground gas and groundwater monitoring visits between 6th November 2022 and 20th March 2023. 3 No. boreholes have been installed with a combined ground gas and groundwater monitoring well. The response zones of the installed wells are detailed below.

Location	Depth (m bgl)	Stratum
DS01	1.00 – 5.00	Glaciofluvial Deposits
DS03	1.00 – 4.00	Made Ground / Glaciofluvial Deposits
DS05	1.00 – 3.00	Made Ground / Glaciofluvial Deposits

The results of a programme of 6 No. ground gas and groundwater monitoring visits undertaken by IGE Consulting are detailed in the below tables.

Location	Peak Methane Concentration (%)	Peak Carbon Dioxide Concentration (%)	Steady Oxygen Concentration (%)	Steady Gas Flow (l/hr)
DS01	<0.1	2.7 – <0.1	20.5 – 16.8	0.1 – <0.1
DS03	<0.1	4.1 – 1.0	18.6 – 12.9	<0.1
DS05	<0.1	4.6 – 2.0	18.8 – 14.5	<0.1

Location	Response Zone (m bgl)	Depth (m bgl)	Remarks
DS01	1.00 – 5.00	4.18 – 3.52	Well dry during visit 5.
DS03	1.00 – 4.00	DRY	-
DS05	1.00 – 3.00	2.95 – 2.87	Well dry during visits 5 and 6.

The results of the 6 No. ground gas monitoring visits undertaken by IGE Consulting have been assessed in accordance with BS 8485 (2015) + A1 (2019). The characteristic Gas Screening Value (GSV) is calculated by dividing the maximum methane or carbon dioxide concentration by 100 and multiplying by the maximum steady flow rate recorded at the same monitoring point (the instrument detection

limit of 0.1 l/hr is utilised when below detection limit flow rates are recorded). If required, the worst case GSV can be calculated by dividing the maximum carbon dioxide and methane concentration by 100 and multiplying by the maximum steady flow rate on-site.

As no steady flow rates were recorded on-site, the GSV and the worst case GSV for carbon dioxide at the site can be calculated as $(4.6/100) \times 0.1 = 0.0046 \text{ l/hr}$

The GSV and the worst case GSV for methane can be calculated as $(0.1/100) \times 0.1 = 0.0001 \text{ l/hr}$.

Consequently, at this stage, the ground gas risk on-site is deemed to be very low and in-line with **Characteristic Situation 1 (CS1)** in line with the GSV.

Radon

The Indicative Atlas of Radon in England and Wales produced by the Health Protection Agency and British Geological Survey, noted below in the extract form 2024:

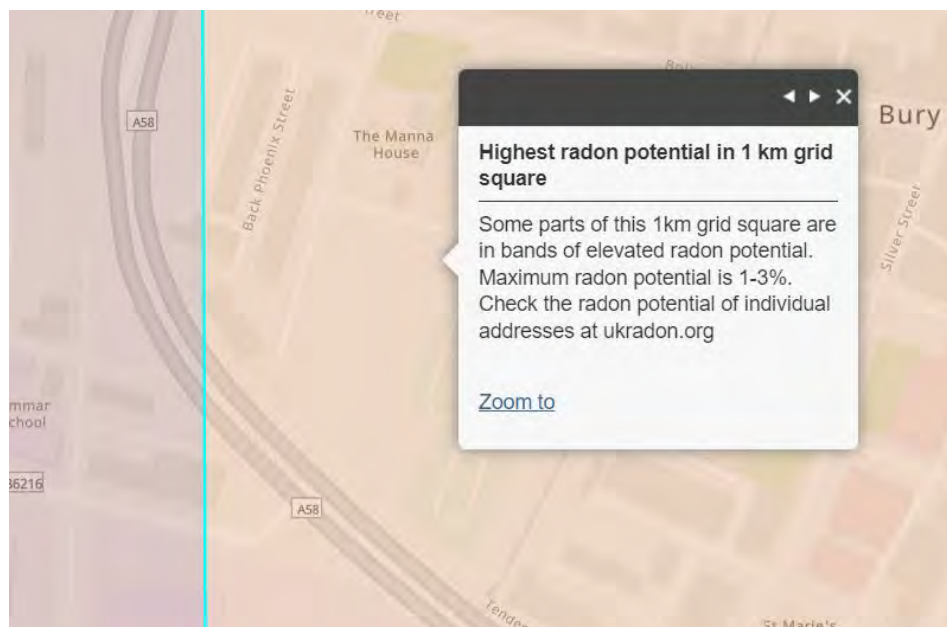


Figure 4: An extract of the UKRadon 1km grid online interactive map of the highest radon potential, taken from <https://www.ukradon.org/information/ukmaps> on the 07.11.2024.

The above extract indicates that the site lies within a lower probability area as 1-3% of homes are above the action level. Consequently, BR211 (2023) indicates that no

radon protection measures are necessary in the construction of new dwellings or extensions.

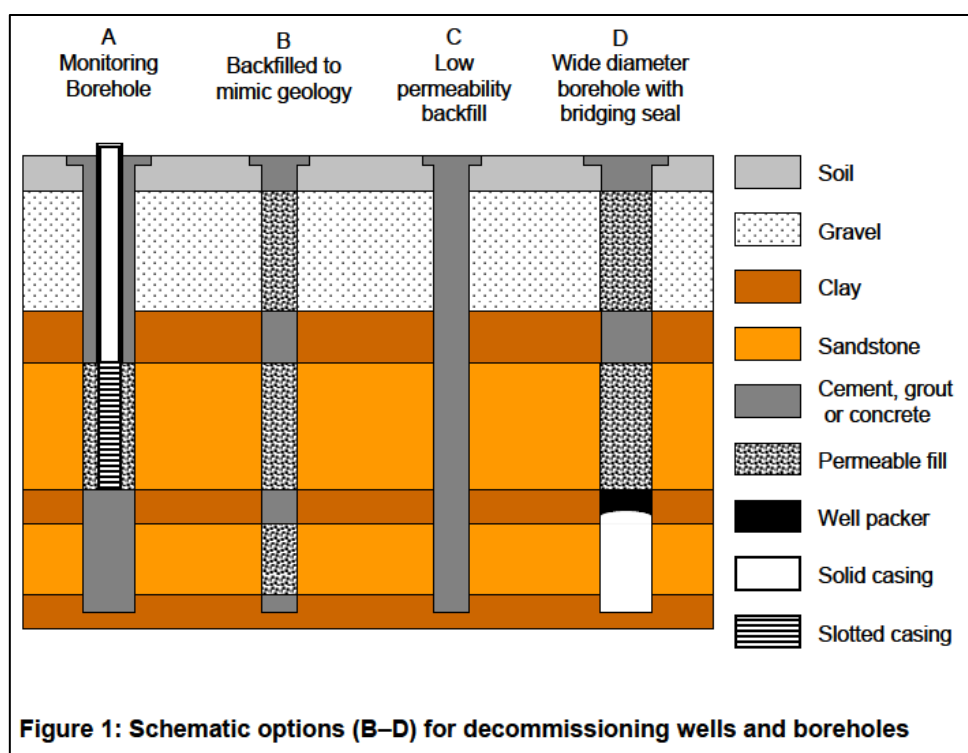
Mine Gas

Based on the IGE Combined Phase 1 and Phase 2 report, the site lies within a Coal Authority Coal Mining Reporting Area but there are no outcrops, mine entries or Development High Risk Areas recorded on-site, however, a coal seam, the Arley Mine, outcrops 300m north-east of the site with an associated Development High Risk Area. No mine shafts, recorded underground workings, recorded shallow workings or probable shallow workings are recorded within 400m of the site. Furthermore, no coal mining features have been recorded in close proximity to the site on historical mapping and given the presence of developments throughout the site history including churches, it is unlikely that mining has occurred on-site since the mid-19th Century. Therefore, the coal mining risk and the associated risk of mine gas across the site is deemed low.

4.0 OTHER REMEDIAL REQUIREMENTS

4.1 Decommissioning of Boreholes

It is imperative that all boreholes drilled into the site are located and appropriately grouted to negate any possible preferential ground gas pathways. Utilising guidance provided in the Environment Agency's '*Good practice for decommissioning redundant boreholes and wells*' (October 2012), it is prudent to secure redundant borehole 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.

4.2 Definition of Waste: Code of Practice

Due to the recommended handling and re-use of excavated site-won materials, 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.

4.3 Material Management

4.3.1 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.

4.3.2 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.

4.4 Discovery Strategy

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

In the event of the discovery of a previously unrecorded underground storage tank (UST), follow the above strategy, as well as excavate the soils present in the affected location for testing and validation. The excavated soils should be placed in a designated stockpile on an impermeable surface such as Visqueen sheeting. Continue to excavate the area until any visual evidence of contamination has been removed if free phase hydrocarbons are present within the soil, or until PID readings on all sides and base of the excavation are <25ppm, i.e., the size and depth of the excavation should be increased to chase out the extents of any contamination. Take validity samples of the sides and base of the resultant excavation at the rates given in Section 2.2. Assess these against the Acceptability Criteria given in Section 2.2. Continue excavating and testing until all concentrations of contaminants are below their respective Acceptability Criteria. Then, backfill with validated 'General Fill' to an engineering specification.

4.5 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.

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, 2023) 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 124 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 180 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'.*

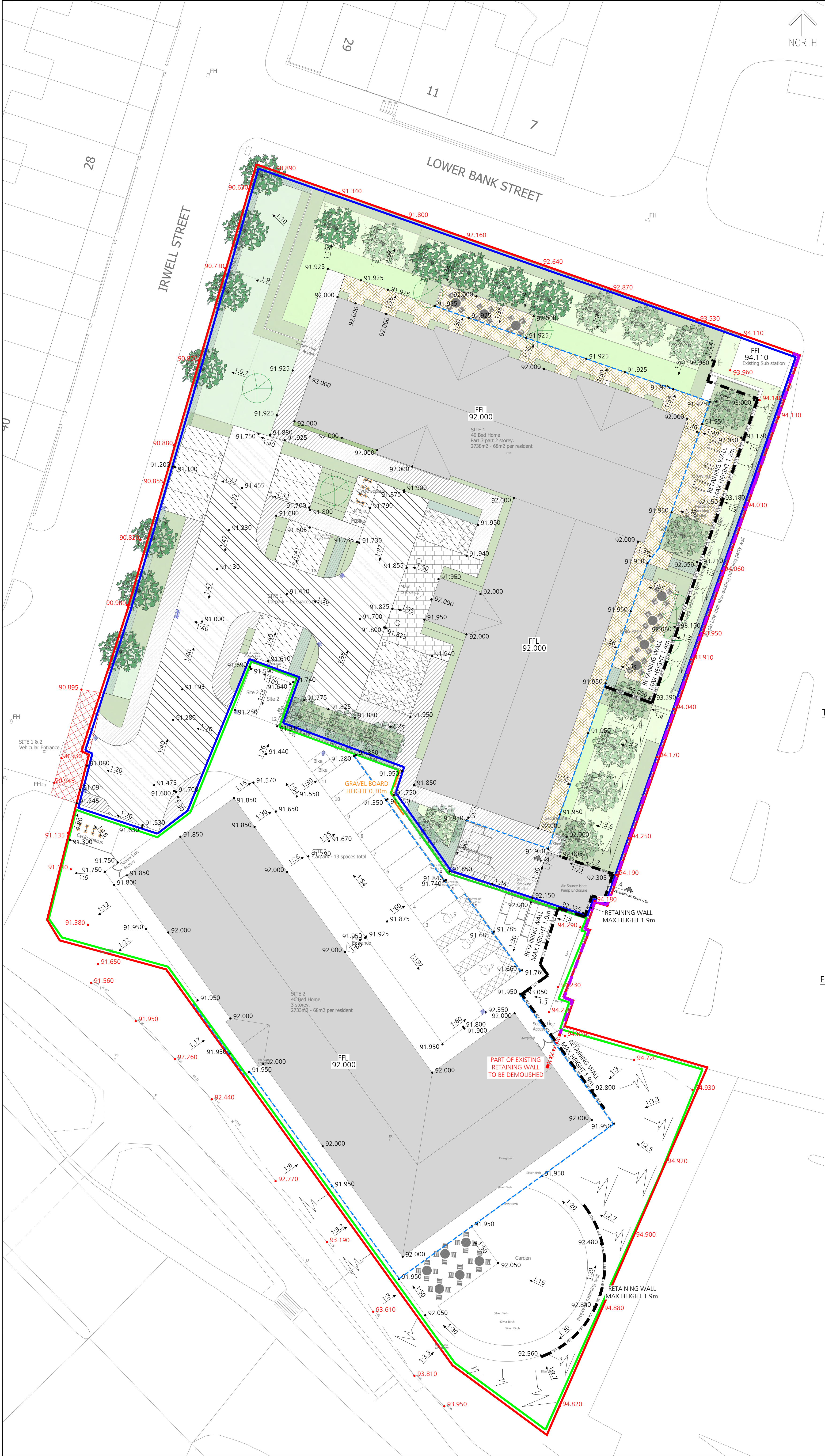
Paragraph 189 of the NPPF states that planning policies and decisions for developments should also ensure that:

- *'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



DO NOT SCALE

DESIGNERS HAZARD IDENTIFICATION

IT IS ASSUMED THAT ALL WORKS WILL BE UNDERTAKEN BY A COMPETENT CONTRACTOR WORKING, WHERE APPROPRIATE, TO AN APPROVED METHOD STATEMENT. IN ADDITION TO THE HAZARDS TYPICALLY ASSOCIATED WITH THE TYPES OF CONSTRUCTION DETAILED ON THIS DRAWING, ANY KNOWN ABNORMAL HAZARDS SPECIFIC TO THIS SCHEME HAVE BEEN IDENTIFIED.

ABNORMAL HAZARD REFERENCE

- NOTES
1. DO NOT SCALE FROM THIS DRAWING.

2. THIS DRAWING IS TO BE REPRODUCED IN COLOUR.

3. IF ANY DISCREPANCIES ARE FOUND IN THIS DRAWING, PLEASE REPORT TO DUDLEYS CONSULTING ENGINEERS.

4. THIS DRAWING IS BASED ON THE FOLLOWING INFORMATION:

4.1. 60307MCLS-01-B - TOPOGRAPHICAL SURVEY BY SURVEY SOLUTIONS DATED MARCH 2024.

4.2. IRWEL-WBA-SI-ZZ-DR-A-PL-003-P15 - PROPOSED SITE PLAN BY WATSON BATTY ARCHITECTS DATED JULY 2024.

4.3. IRWEL-WBA-NB-00-DR-A-20100 - GROUND FLOOR GA PLAN BY WATSON BATTY ARCHITECTS DATED MARCH 2024.

5. ALL WORK TO BE UNDERTAKEN IN ACCORDANCE WITH THE CURRENT EDITION OF THE BUILDING REGULATIONS, AND SEWERAGE SECTOR CODES OF PRACTICE.

6. DETAILS OF THE PROPOSED RETAINING STRUCTURES TO BE CONFIRMED AT THE DETAILED DESIGN STAGE.

KEY

OVERALL SITE BOUNDARY

SITE 1 BOUNDARY

SITE 2 BOUNDARY

PROPOSED SPOT LEVELS

PROPOSED FINISHED FLOOR LEVELS

EXISTING SPOT LEVELS

PROPOSED RETAINING WALL

EXISTING RETAINING WALL

PROPOSED GRADIENTS

PROPOSED BATTER

PROPOSED LINEAR DRAINAGE

PROPOSED GULLY

PROPOSED GRAVEL BOARD

PROPOSED S278 WORKS TO INCLUDE RISE OF EXISTING LEVELS IN THE HIGHWAY

ACCESS ROAD

SCALE 1:20

40mm AC 10 CLOSE SURF 100 / 150

60mm AC 20 DENSE BIN 100 / 150

100mm AC 32 DENSE BASE 100 / 150

320mm (5% CBR) TO 410mm (3% CBR) TYPE 1 SUB-BASE

PROOF ROLLED FORMATION

TARMAC FOOTPATH

SCALE 1:20

20mm AC 6 CLOSE SURF 100 / 150

50mm AC 20 DENSE BIN 40 / 60

100mm TYPE 1 SUB-BASE

BLOCK PAVED FOOTPATHS

SCALE 1:20

40mm TOBERMORE MAYFAIR OR SIMILAR

30mm BEDDING LAYER SAND/CEMENT 3:1

150mm TYPE 1 SUBBASE

CAR PARKING

SCALE 1:20

40mm AC 10 CLOSE SURF 100 / 150

60mm AC 20 DENSE BIN 100 / 150

320mm (5% CBR) TO 410mm (3% CBR) TYPE 1 SUB-BASE

PROOF ROLLED FORMATION

ENTRANCE PAVIOURS

SCALE 1:20

80mm TOBERMORE MANHATTAN OR SIMILAR

30mm BEDDING LAYER SAND/CEMENT 3:1

150mm TYPE 1 SUBBASE

CONCRETE BASE

SCALE 1:20

A393 MESH AT TOP AND BOTTOM

300mm THICK GRADE C28/35 CONCRETE PLINTH

300mm TYPE 1 SUBBASE (DEPENDING ON CBR & FROST PROTECTION REQUIREMENTS)

14.08.24	EXTERNAL LEVELS AND RETAINING REVISED TO SUIT THE AMENDED SITE LAYOUT PLAN.	GD	PB	P05
21.06.24	PAVING HATCHES & LEGEND ADDED, SITE 2 REMOVED	JL	PB	P04
17.04.24	SITE 1 NORTHERN CAR PARK LEVELS AMENDED, FOE ADDED WEST SIDE, STEPS & UB REMOVED.	GD	PB	P03
14.03.24	UPDATE TOPOGRAPHICAL SURVEY	GD	OB	P02
13.02.24	PRELIMINARY ISSUE	GD	PB	P01
DATE	REVISION DESCRIPTION	BY	CHK	REV.

DUDLEYS CONSULTING ENGINEERS

Tithe House
35 Town Street
Leeds, LS18 5UJ
0113 258 3611
info@dudleys.co.uk

PROJECT

EXEMPLAR HEALTH CARE
IRWELL STR. & LOWER BANK STR.
BURY, BL9 0HD

TITLE

SITE 1 EXTERNAL LEVELS
AND WORKS

SCALE	PAPER	STATUS
1:200	A1	PRELIMINARY
DRAWING NO.	REV.	
23389-DCE-XX-XX-D-C-155	P05	

AMENITYTREE
LIVING WITH A PLANTING COALITION

 TREE PLANTING
SEE SCHEDULE FOR DETAILS

SEE SCHEDULE FOR DETAILS

NATIVE HEDGE

 SEE SCHEDULE FOR DETAILS

SHRUB / ORNAMENTAL GRASSES

SEE SCHEDULE FOR DETAILS

MI DI OVER

WILDFLOWER
SEE SCHEDULE FOR DETAILS

 ASTRO TUBE

ASIRU IURF
30mm COMPACT PILE WITH CUS

100

AMENITY LAWN

1. All plants shall be in accordance with BS 4428, 1989/57.
2. Trees shall conform to BS 3935-1, 1992.
3. Trees plus shall be 1200x1200x150mm.
4. Multi stem plants shall be 100x100x600mm.
5. Backfill material 70% certified sandy loam/ 30% Approved tree compost (by volume)
6. No peat products permitted
7. Initial Greenleaf Mowra watering systems to trees.
8. Shrub planting, 450mm depth of free draining topsoil to BS 3932.
- 10 - Lawns : 150mm depth of free draining topsoil to BS 3932
- 11 - Wildflower : Ocho clean unimproved free draining subsoil to BS 9801

REV NO	DDMMYY	DESCRIPTION OF REVISION	INITIALS
R.06	10.08.24	UK Amendments to the species	AP
R.07	29.07.24	Updated to incorporate latest revisions	AP
R.08	16.07.24	Added added in rel of Assessment	AC
R.05	10.07.24	Design development	AC
R.04	12.03.24	Initial review (rel of 01.04.24)	AC
R.03	06.03.24	Scheme amended - VMA (rel 03.03.24)	AC
R.02	28.02.24	Address the added	AC
R.01	22.02.24	First issue	AC

FOR COMMENT

SOFTWARES AND PLANTING PLAN

DWG.NO	REVISION
AT.24.11879.102.	R.08

SCALE	DRAWN	APPROVED	DATE
1:200 @ A1	AC	SD	16.07.24

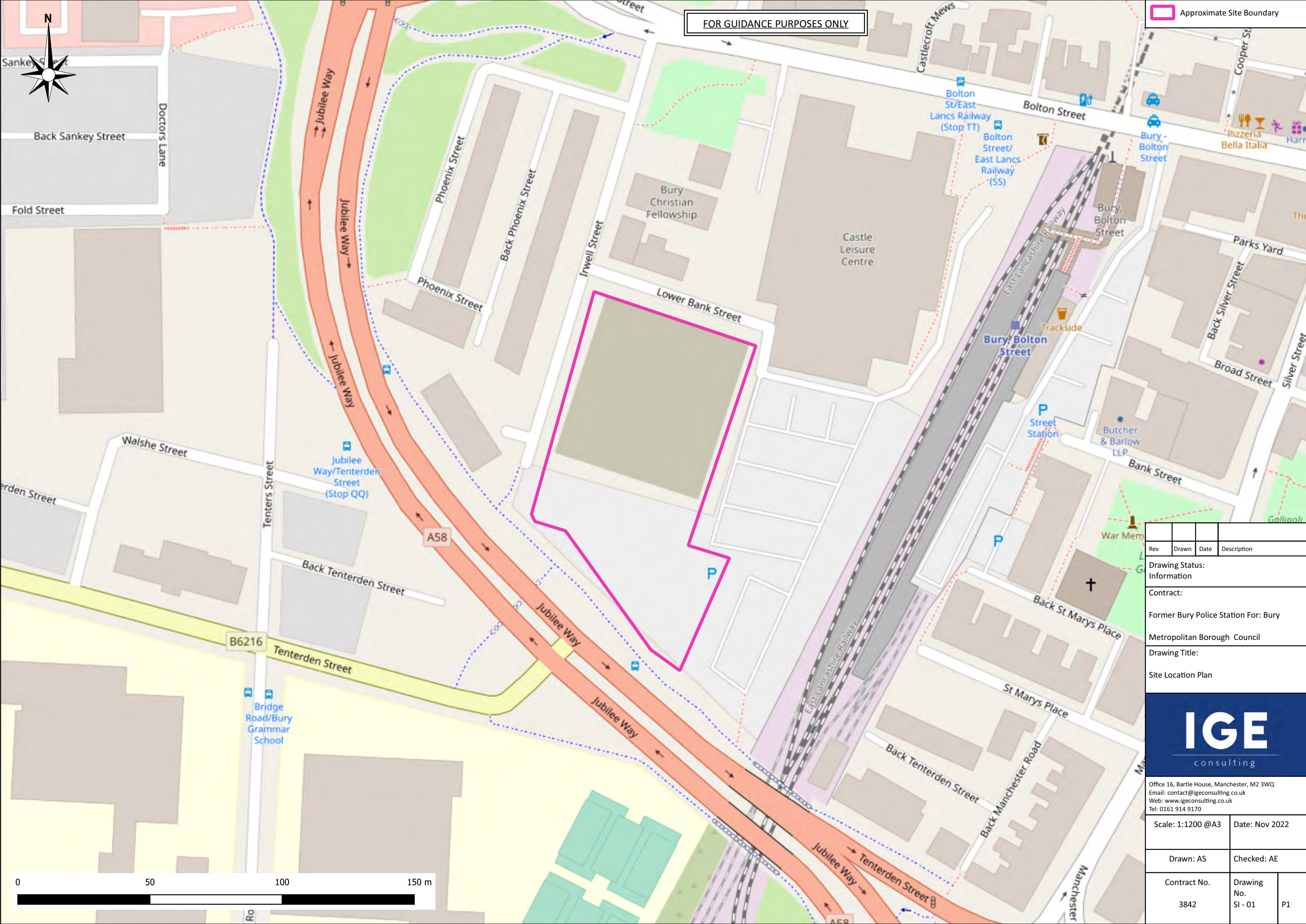
EXEMPLAR HEALTH CARE
BURY, BL9 0HD

AMENITYTREE
LANDSCAPE ARCHITECTS CONSULTANTS

KEY		
	URBAN SEALED SURFACES	
	URBAN INTRODUCED SHRUBS	
	ASTRO - SEMI SEALED SURFACES	
	NEUTRAL GRASSLAND	
	NATIVE HEDGE (1M WIDE)	
	TREE PLANTING	

REV. NO.	DO. DATE	DESCRIPTION OF REVISION	INITIALS
PREPARED BY			
AMENITY TREE			
STATUS			
FOR COMMENT			
TITLE			
SITE 2			
EXTERNAL WORKS / BNG.			
DWG. NO.			REVISION
AT 24.11879.103			R.01
SCALE	DRAWN	APPROVED	DATE
1:200 @ A1	AC	SD	29.07.24





FOR GUIDANCE PURPOSES ONLY

 Approximate Site Boundary

Rev	Drawn	Date	Description	
Drawing Status: Information				
Contract: Former Bury Police Station For: Bury Metropolitan Borough Council				
Drawing Title: Site Location Plan				
				
Office 16, Bartle House, Manchester, M2 3WQ Email: contact@igeconsulting.co.uk Web: www.igeconsulting.co.uk Tel: 0161 914 9170				
Scale: 1:1200 @A3			Date: Nov 2022	
Drawn: AS			Checked: AE	
Contract No.		Drawing No.		
3842		SI - 01	P1	

Notes

- 1
- This drawings is indicative and not to scale.
- 2
- This drawing is to be read in conjunction with all relevant Architects and Service Engineers drawings.

Key

- Made Ground
- Topsoil
- Glacial Till – Cohesive
- Glacial Till – Granular Pockets
- Glaciofluvial Sheet Deposits
- Cannel Rock
- Pennine Lower Coal Measures

SOURCES

Sources

1. On-Site Made Ground
2. On-Site Former Bury Police Station
3. Off-Site Historical and Current Industrial Uses
4. On-Site Former Underground Storage Tanks

Secondary Sources

5. Pooling Beneath Current and / or Future Foundations
6. Pooling in Relative Low Points Above Low Permeability Deposits
7. Pooling within Granular Lenses within Low Permeability Deposits

Ground Gas Sources

1. On-Site Made Ground
2. Off-Site Historical Landfills (149m-468m S/NE/W, 1970s-1990s)
3. Potentially Organic Glaciofluvial Deposits

PATHWAYS

Pathways To Human Health

1. Dermal Contact
2. Inhalation of Soil Dust and Vapours
3. Ingestion of Soil Directly

Pathways To Controlled Waters

1. Vertical Migration Along Current and Future Foundations
2. Vertical Migration Through Granular Made Ground, Granular Natural Deposits and Granular Lenses Within Natural Cohesive Deposits
3. Negligible Infiltration Through Low Permeability Natural Deposits
4. Lateral Migration Along Low-Permeability Natural Deposits
5. Migration Through Fractures and Fissures in Bedrock
6. Migration Along Groundwater Flow

Ground Gas Pathways

1. Preferential Migration Beneath Hardstanding, Along Foundations, Service Ducts and Trenches
2. Dissolved Gases Within Groundwater
3. Ingress Through Wall Cavities / Floors and Subsequent Accumulation
4. Inhalation of Ground Gas and Vapours
5. Vertical Migration Through Granular Deposits

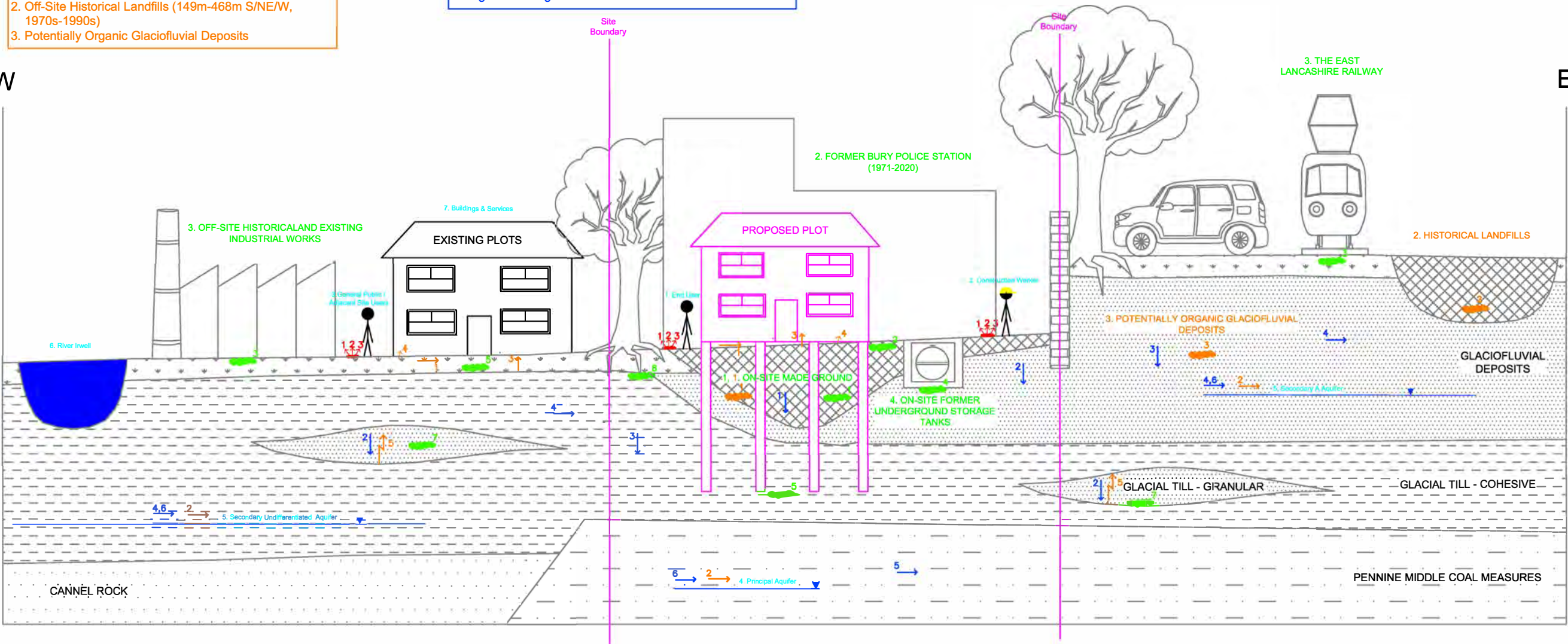
RECEPTORS

Receptors

1. End User
2. Construction Workers
3. General Public / Adjacent Site Users
4. Principal Aquifer in Bedrock
5. Secondary A and Undifferentiated Aquifers in Superficial Deposits
6. Surface Water - River Irwell (303m W)
7. Buildings and Services

W

E



Rev	Drawn	Date	Description
Drawing Status			
INFORMATION			
Contract			
BURY FORMER POLICE STATION			
FOR: BURY METROPOLITAN BOROUGH COUNCIL			
Drawing Title			
CONCEPTUAL SITE MODEL			
IGE consulting			
Office 15, Barile House, Manchester, M2 3WQ email: contact@igeconsulting.co.uk web: www.igeconsulting.co.uk tel: 0161 914 9170			
Scale		Date	
NTS		DEC 2022	
Drawn		Checked	
AS		AE	
Contract No.		Drawing No.	
3842		SI-04 P1	

APPENDIX 3

DISCOVERY STRATEGY



DISCOVERY STRATEGY

Office 16
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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Registered in England No 10780128



- 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.

IGE

consulting

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