PHASE I DESK STUDY REPORT FOR LAND ADJACENT TO 67 CHEETHAM HILL ROAD, MANCHESTER, M4 4ES

23-03-12 Revision 1

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Prepared for

Brightwise Constructions Limited

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EXECUTIVE SUMMARY

A Phase I Desk Study Report (which includes a preliminary risk assessment) was required by Manchester City Council under Part 2A of the Environmental Protection Act 1990, the Contaminated Land (Wales) Regulations, 2006 (as amended), regulations associated with radioactivity on contaminated land and the Guidance on 'Land contamination risk management (LCRM). This report is required to support the planning application for the site. Manchester City Council requires the report to satisfy the National Planning Policy Framework in which it is stated that:

1. "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);

2. "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

3. "adequate site investigation information, prepared by a competent person, is available to inform these assessments."

In order to support the planning application for the site, ***Brightwise Constructions Limited*** commissioned ***Demeter Environmental Ltd*** to undertake a Phase I Desk Study Report (which includes a preliminarily risk assessment) for land adjacent to 67 Cheetham Hill Road, Manchester, M4 4ES, to support the planning application for the erection of a 3 storey mixed use development with retail on the ground floor and apartments on the upper floors.

The report has been completed to fulfil the requirements of a preliminary risk assessment in accordance with and the Guidance on 'Land contamination risk management (LCRM)'. and the documents referred to in Appendix A.

These procedures relate to 'past' contamination, and assume that legislative controls such as Pollution Prevention and Control authorisations control current potentially polluting activities. Emphasis is therefore upon historic site use and how this may affect potential future users of the site should the proposed development plans be realised.

The project has been carried out within the existing legislative framework, which is outlined in Appendix B.

It should be noted that the table below only offers a brief summary of the information presented in this report and is for briefing purposes only. Reference should be made to the main report for detailed analysis undertaken.

Table 1: Executive Summary

	SUBJECT		DATA
SITE INFORMATION AND SETTING	Client		Brightwise Constructions Limited
	Site		Land adjacent to 67 Cheetham Hill Road
	Site location		Land adjacent to 67 Cheetham Hill Road, Manchester, M4 4ES
	Proposed development		the erection of a 3 storey mixed use development with retail on the ground floor and apartments on the upper floors.
	Planning Reference		N/A
	Grid Reference		384121E 399525N
	Current Land Use		The site extended to an area of approximately 0.02Ha, the site comprised of a roughly grassed parcel of land, levels on the south eastern boundary were higher than street level. Demolition rubble was noted across the site as well a fly tipping along the western area
	Access		Via Back Elsworth Street.
CONCEPTUAL SITE MODEL	History		Initially (1848) the site had been developed and was occupied by a terraced dwelling associated with York Place. The building appears to have been demolished between 1972 and 1980, no further significant changes could be discerned.
	Geology	Drift	Devensian Till
		Solid	Chester Pebble Beds Formation (sandstone) of the Early Triassic Epoch
	Radon		Less than 1% of properties are above the action level. No radon protective measures are required.
	Hydrology		There no water bodies within 250m.
	Hydrogeology	Drift	The drift is regarded as a very low sensitivity aquifer
		Solid	The solid is regarded as a low sensitivity aquifer
	Previous Site Investigation		N/A
	Potential Sources of Contamination		Made ground
	Potential Contaminants of Concern		Wide range of contaminants in the made ground
	Potential Receptors		Human beings (construction workers) Human beings (future residents) Human beings (future worker occupants) Human beings (trespassers / transient users) Human beings (worker occupants of adjacent properties) Property in the form of buildings (on site) Potable water mains (on site)
Proposed Phase II Works			See Table 14. Summarised overleaf.
This sheet is intended as a summary of the report; it does not provide a definitive analysis and should not be treated as an independent document.			

Table 1 (continued): Executive Summary

PPL ID	AIM(S) / OBJECTIVES(S)	Proposed Further Investigation
N/A	Enabling works	Prior to any intrusive investigation the following will need to be undertaken in order to access the site; 1. Approval from the local authority on the scope of the proposed works;
N/A	Sequence of works	The works in sequence is given below.
6	To determine if made ground is present on the site and if present, is it impacted by elevated levels of contamination:	On completion of the site clearance samples of the soils that will be in direct contact with concrete will be taken and subject to pH and water soluble sulphate analysis (nr 4)

This sheet is intended as a summary of the report; it does not provide a definitive analysis and should not be treated as an independent document.

1.0 INTRODUCTION

1.1 Desk Study Terms of Reference

1.1.1 This report presents the results of a Phase I Desk Study carried out on ***Land adjacent to 67 Cheetham Hill Road, Manchester, M4 4ES***, performed for ***Brightwise Constructions Limited***. This report was written in April 2023, revised in September 2025 and should be read in the light of any subsequent changes in legislation, statutory requirements or industry practices.

1.1.2 The works were carried out in accordance with the standard terms of contract of ***Demeter Environmental Ltd***.

1.1.3 The aim of the report is to support the planning application for the site.

1.1.4 This report has been prepared in accordance to the Demeter Environmental Limited Quality Management System.

1.2 Aims and Objectives of Desk Study

1.2.1 The objectives of the desk study are as follows:

- To provide information on past and current uses of the site and surrounding area and the nature of any hazards and physical constraints;
- To determine the risks associated with hazardous ground gas, including radon;
- To identify current and likely future receptors, potential sources of contamination and likely pathways and any features of immediate concern, including those that could be introduced in the future;
- To identify any aspect of the site requiring immediate attention (e.g., insecure fences, hazardous substances accessible to trespassers or likely to be dispersed by water or wind);
- To provide information on the geology, geochemistry, soil, hydrogeology and hydrology of the site;
- To identify potentially different sub-areas (zones) of a site, based on differing ground conditions; potential contamination; and past, present and future uses;
- To provide information for the preliminary risk assessment;
- To provide data to assist in the design of potential subsequent exploratory and main investigations and to give an early indication of possible remedial requirements;

- To provide information relevant to worker health and safety and to the protection of the environment during field investigations;
- To provide data to assist in the design of potential subsequent investigations and to give early indication of possible remedial requirements;
- To identify the need to involve regulatory bodies prior to intrusive investigation.

1.2.2 The primary objective of the desk study is to identify potential environmental issues that may represent a constraint to the proposed redevelopment of the site. The findings of this assessment can be used to determine, if required, the scope of a follow on Phase II intrusive site investigation.

1.2.3 The desk top study provides an initial view in respect of the status of the site with regard to:

- The potential impact on the site of interest from surrounding land uses and other environmental factors;
- Potential contamination of the site strata by historical and or current use;
- The potential impact on the wider environment by historical and or current use of the site of interest;
- Potential problems associated with geological features such as faulting, mineral extraction, mining and land instability;
- The location of above-surface features that may affect the proposed redevelopment.

1.2.4 This study includes a review of the available geological, historical and environmental information in order to establish the likely ground conditions at the site. The review is based on the following information:

- Align any report to the requirements of relevant guidance;
- To assess historical activities, referring to past Ordnance Survey maps, at the site with respect to their potential impact on the site environment;
- To characterise the environmental setting of the site, identify migration pathways and vulnerable receptors for contamination originating at the site, focusing on potential soil and groundwater liabilities;

- To assess historical and current surrounding land use, referring to past Ordnance Survey maps, in relation to known or potential off-site contamination issues that may impact the subject property;
- To identify likely ground conditions at the site and the potential geotechnical and environmental constraints to development;
- To establish development abnormals prior to site development;
- Assessment of the potential risks to both on and off site receptors;
- To develop a preliminary conceptual model.

1.2.5 The data collated in this study has been undertaken to allow the construction of a preliminary conceptual model, which represents the potential contaminant linkages that have been identified on the site. This is used as a basis to develop a strategy for an intrusive investigation where required.

1.3 Scope of Desk Study

1.3.1 The scope of work for this report comprises of the following:

- Procurement of Groundsure Enviro+Geo Insight Report;
- Procurement of Ordnance Survey maps;
- Review of published geology;
- Review of data available in the public domain (borehole section sheets etc.);
- Review of planning history and any associated documents using information in the public domain;
- Site walkover survey;
- Preparation of a preliminarily risk assessment.

1.4 Basis of Risk Assessment

1.4.1 This assessment has been undertaken with due regard to the Environmental Protection Act 1990, associated statutory guidance (NPPF, PAN 33 etc.), 'Guidance for the Safe Development of Housing on Land Affected by Contamination', the Guidance on 'Land contamination risk management (LCRM)', the Contaminated Land Guidance Documents issued by the Environment Agency and the documents referred to in Appendix A. The methods used follow a risk based

approach with the potential risk assessed using the 'Source – pathway – receptor contaminant linkage concept introduced by the Environmental Protection Act.

1.5 Limitations and Exceptions of this Report

1.5.1 This report was undertaken for ***Brightwise Constructions Limited*** and as such should not be entrusted to any third party without written permission of ***Demeter Environmental Ltd***.

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a) The date on which this assessment was undertaken;
b) The date on which the final report is delivered.

1.5.4 This report has been compiled from a number of sources, within the time constraints of the programme, which ***Demeter Environmental Ltd*** believes to be trustworthy. However, ***Demeter Environmental Ltd*** is unable to guarantee the accuracy of information provided by third parties.

1.5.5 The findings and opinions provided in this document are made in good faith and are based on data provided by third parties (Groundsure, Environment Agency, The Coal Authority, and Regulatory Bodies) and the report should be read in conjunction with the limitations on the document control form. The accuracy of map extracts cannot be guaranteed and it should be recognised that different conditions on /adjacent to the site may have existed between and subsequent to the various map surveys.

1.5.6 This report is prepared and written in the context of the purposes stated above and should not be used in a different context. Furthermore, new information, improved practices and legislation may necessitate an alteration to this report in whole or in part after its submission. Therefore, with any change in circumstances or after the expiry of one year from the date of this Report, the report should be referred to ***Demeter Environmental Ltd*** for reappraisal.

1.5.7 The conclusions and recommendations of this report are based on the development described in Clause 2.2, for any other development the report may require revision.

1.5.8 ***Demeter Environmental Ltd*** makes no representation whatsoever concerning the legal significance of its findings or to other legal matters referred to in the following report.

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1.5.10 The report should be read in its entirety, including all associated drawings and appendices. ***Demeter Environmental Ltd*** cannot be held responsible for any misinterpretations arising from the use of extracts that are taken out of context.

1.5.11 This report does not comprise a geotechnical assessment of the strata underlying the site.

1.5.12 Any borehole data from the British Geological Survey sources is included on the following basis: 'The British Geological Survey accept no responsibility for omissions or misinterpretations of the data from their Data Bank as this may be old or obtained from non-BGS sources and may not represent current interpretation'.

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1.5.15 Any risks identified in a Phase I Desk Study Report are perceived risks. Actual risks can only be assessed following a physical investigation of the site. ***Brightwise Constructions Limited*** should be aware that this report is based on information available at the time. Where a site investigation has been undertaken, the ground conditions can only be defined precisely at the exploratory positions, whilst an intermediate positions they can only be inferred. It is possible that factors may vary due to seasonal effects or other climatic effects, and may at times differ from those measured during the investigation. While every attempt is made to assess the likelihood and extent of such variations, conditions may nevertheless exist which are undisclosed by this investigation.

1.5.16 The findings of this report are based on finite information obtained from research and consultations. Demeter Environmental Ltd cannot guarantee the reliability of all such information and the searches should not be considered exhaustive. The findings of the report

may need to be reviewed as any future exploratory investigations progress and in the event that additional archive information becomes available.

1.5.17 Notwithstanding the findings of this study (and any subsequent investigations), if any indication of contaminated soil (visual or olfactory) is encountered at any stage of the development further investigation may be required.

1.5.18 Arboricultural Survey and advice on arboricultural issues are considered to be outside the scope of this report except for their effect on the foundations to the proposed buildings. Where identification of any species is made, especially invasive plants such as Japanese Knotweed, Himalayan Balsam or Giant Hogweed, this should only be considered as a preliminary assessment and subject to confirmation by a professional Arboriculturist. Demeter Environmental Ltd takes no responsibility for failing to identify, or the incorrect identification of, any tree or plant species on site.

1.5.19 Our investigations exclude surveys to identify the presence injurious and invasive weeds. Under the Weeds Act 1959, the Secretary of State may serve an enforcement notice on the occupier of land on which injurious weeds are growing, requiring the occupier to take action to prevent the spread of injurious weeds. The Weeds Act specifies five Injurious weeds: Common Ragwort, Spear Thistle, Creeping of Field Thistle, Broad-leaved Dock and Curled Dock. The Wildlife and Countryside act 1981 provides the primary controls on the release of non-native species into the wild in Great Britain. It is an offence under section 14(2) of the act to 'plant or otherwise cause to grow in the wild' any plants listed in schedule 9, part II. The only flowering plants currently listed are Japanese Knotweed and Giant Knotweed. The presence of such weeds on site may have considerable effects on the cost / timescale in developing the site.

1.5.20 Good guidance on injurious and invasive weeds is provided on DEFRA and Environment Agency web sites.

1.5.21 Our investigations exclude surveys to identify the presence or indeed absence of asbestos in buildings/infrastructure on site. If asbestos is suspected to be present, we recommend specialists in the identification and control / disposal of asbestos are appointed prior to commencement of any works on site or, if appropriate, purchase of the site. The presence of asbestos on site may have considerable effects on the cost / timescale in developing the site. There is good guidance in relation to Asbestos available on the Health and Safety Executive (HSE) web site.

1.5.22 The scope of this investigation does not include an assessment for the presence of asbestos containing materials within or below the buildings or in associated infrastructure in the ground at the site. Should there be a requirement under Regulation 4 of the Control of Asbestos at

Work Regulations 2002 for any part of the site to be deemed 'non-domestic premises' the duty holders should prepare an asbestos risk management plan and this may require technical survey works as described in the HSE Guidance HSG264 (2nd edition).

1.5.23 The Health and Safety at Work Act requires that Employers provide safe places of work for their employees. The Control of Asbestos at Work Regulations (CAWR) place very heavy specific duties on those who commission and carry out work on asbestos containing materials. Construction work that is likely to involve exposure of workers to hazards associated with asbestos in existing buildings will be subject to the Construction (Design and Management) Regulations which impose duties upon Clients, Designers and the Contractors carrying out the work. Other health and safety and welfare regulations place duties on Employers to undertake risk assessments and prepare hazard management plans which, in the case of a building likely to contain asbestos, could involve the commissioning of surveys, hazardous materials location registers and proposals for remedial work.

1.5.24 Whilst a site walkover has been undertaken as part of this report, the survey does not constitute either an asbestos or structural survey and all areas of the site may not have been visited / inspected.

1.5.25 Consideration of occupational health and safety issues are beyond the scope of this report.

1.5.26 All assessments and recommendations should be forwarded to the relevant planning authorities for comment and approval prior to implementation.

1.6 Principal Sources of Information

1.6.1 Documents that were available or have been obtained for reference or obtaining data are given in Appendix A. Further information on data used in this report and dates the data was obtained/accessed is given below:

Table 2: Summary of Information Obtained

Source	Data Provided	Date Obtained
Groundsure	Ordnance Survey Maps Groundsure Enviro+Geo Report	31st March 2023
Manchester City Council	Planning history	2nd April 2023
British Geological Survey	1:50,000 Geological Maps 1:10,000 Geological maps Borehole Section sheets	2nd April 2023
Environment Agency	Historic Landfill Data (last updated 5th April 2016) Authorised Landfills (5th April 2016)	2nd April 2023
Coal Authority	Interactive Map Viewer Coalfield Plans	2nd April 2023
Google Earth©	Aerial plates	2nd April 2023
Google Streetview©	Street level imagery	2nd April 2023

2 SITE CONTEXT

2.1 Site Location

2.1.1 The site is located off Cheetham Hill Road, the approximate grid reference is 384121E 399525N, as shown on Drawing 1 and Plate 2 in Appendix D.

2.1.2 The site is located within the administrative jurisdiction of Manchester City Council.

2.2 Proposed Development

2.2.1 It is proposed that a 3 storey mixed use development with retail on the ground floor and apartments on the upper floors is erected on the site.

2.3 Site Description & Site Reconnaissance Visit

2.3.1 The aims of the walkover were to determine whether there were any obvious potential sources of contamination, pathways and receptors on or near the site and whether there were any obvious geotechnical difficulties with the site. In addition, access routes into the site were investigated in order to establish the feasibility of further site investigation.

2.3.2 A site walkover survey was undertaken in April 2023 by a consultant from Demeter Environmental Ltd, in general accordance with CLEA CLR 2, on completion of a review of relevant historical and environmental data. The observations of the walkover are presented hereunder:

Table 3: Summary of Walkover Survey

Topic		Discussion
Site Description / Use		The site extended to an area of approximately 0.02Ha, the site comprised of a roughly grassed parcel of land, levels on the south eastern boundary were higher than street level. Demolition rubble was noted across the site as well a fly tipping along the western area. No visual or olfactory evidence of contamination was noted during the walkover survey.
Description of surrounding area		Commercial
Surrounding Land Uses	North	Commercial
	East	Commercial
	South	Commercial
	West	Commercial
Access		Via Back Elsworth Street
Structures		N/A
Surfacing		The site was covered with demolition rubble.
Made Ground		Made ground in the form of rubble was noted across the site.
Vegetation / Trees		The site was roughly grassed
Invasive Species		During the site walkover, we did not notice the presence of any Japanese Knotweed, however this plant can be difficult to identify in the early stages of growth and therefore it is not always possible to identify its presence at certain times of the year. It should be noted that we are not qualified ecologists and as such cannot guarantee the absence of Knotweed or other invasive vegetation. It is recommended that if it is suspected that this species or other similarly invasive plants are present at the site, a specialist contractor should be commissioned to make a detailed assessment.
Storage Tanks		No evidence of either historical or current underground or aboveground storage tanks was noted at the site.
Raw Material and Chemical Use and Storage		No evidence of significant raw material or chemical use or storage was observed at the site.
Solid Wastes		No significant observations were made of solid waste storage at the site.
Hazardous and Industrial Wastes		No evidence of significant hazardous and industrial waste storage was observed at the site.
Air Emissions		No significant sources of air emissions were observed at the site.
Asbestos Containing Materials		The made ground identified on the site may be impacted by asbestos as the source of the material is unknown. It should be noted that we are not qualified asbestos surveyors and as such cannot guarantee the presence or absence of ACM's.
Spills and Releases		No evidence of any spills or releases of substances which may contain potentially polluting materials was noted at the site.
Fly Tipping		Fly tipping was noted on the western area of the site

2.3.3 A plan of the site in its current configuration is presented on Drawing 3 in Appendix D.

2.3.4 Photographs of the site and a photograph key plan are presented in Appendix E.

3 SITE HISTORY

3.1 Historical O.S. Maps, Aerial Plates and Street View Images

3.1.1 The historical usage of both the site and the surrounds has been researched by reference to historical maps and aerial plates presented in Appendix F (O.S. maps, Old Maps Online, and

National Library of Scotland), street plans, street directories, historical aerial photographs (Google Earth, Britain From Above, historical street level imagery and plates in the public domain.) are summarised hereunder in Table 4.

Table 4: Summary of Review of Historical Maps and Aerial Plates

Area	Summary of Historical Review
Site	Initially (1848) the site had been developed and was occupied by a terraced dwelling associated with York Place. The building appears to have been demolished between 1972 and 1980, no further significant changes could be discerned.
Area adjacent to the site	Initially the site boundaries were formed by dwellings to the north and south with a road to the east and a brick field to the west. By 1890 the brick field had been developed and the western boundary was formed by Back Elsworth Street and terraced houses. By 1958 the houses on the western boundary had been cleared and replaced by a warehouse.
Area within 50m (including ponds)	A number of potentially contaminative land uses have been identified on the historical O.S. maps, which are discussed below by order of date. **1958-1963:** Warehouse 45m west – the buildings are identified on subsequent maps. **1968:** Clothing factory 30m west – the buildings are identified on subsequent maps. Clothing factory – 40m north - the buildings are identified on subsequent maps.
Potentially In-Filled Land Within 250m (excluding ponds)	No areas of potentially in-filled land have been identified within 250m of the site.

3.1.2 A summary of potentially contaminative land uses is presented on Drawing 4.

3.2 Anecdotal Evidence

3.2.1 No additional information on the site history could be sourced.

3.3 Archaeological Considerations

3.3.1 No known archaeological considerations have currently been identified.

3.3.2 Archaeological information has not been sought as part of this desk study and has not been identified as an issue by the Client. Some Local Authorities require at least an initial archaeological appraisal for development sites.

3.3.3 Archaeological investigations occasionally reveal ground-related problems from ancient times (prior to the 1st Edition O.S. maps) and can occasionally cause foundation and contamination development hazards.

3.3.4 The Local Authority archaeological officer has not been contacted at this stage.

3.4 Planning Information

3.4.1 A search of on-line planning information held by Manchester City Council was undertaken, no salient information was sourced.

3.5 Previous Reports

3.5.1 Demeter Environmental Limited has no knowledge nor has received any reports relating to the site or the surrounding area.

4 ENVIRONMENTAL SETTING

4.1 Published Geology – 1:10,000 Geological Maps

4.1.1 The documented geology has been ascertained by the examination of British Geological Survey 1:10,000 Sheet SJ89NW and the appropriate geological memoir is summarised hereunder:

4.1.2 Deposits of made ground are recorded 37m NW and 90m SE of the site.

4.1.3 The drift geology is given as Devensian Till.

4.1.4 The solid geology is given as the Chester Pebble Beds Formation (sandstone) of the Early Triassic Epoch.

4.2 Published Geology – 1:50,000 Geological Maps

4.2.1 The documented geology has been ascertained by the examination of British Geological Survey 1:50,000 Sheet 85 (Manchester) and the appropriate geological memoir is summarised hereunder:

4.2.2 Deposits of made ground are recorded 37m NW and 90m SE of the site.

4.2.3 The drift geology is given as Devensian Till.

4.2.4 The solid geology is given as the Chester Pebble Beds Formation (sandstone) of the Olenekian Epoch.

4.3 Data From The Coal Authority

4.3.1 The Coal Authority interactive map viewer was accessed, the map indicates the site is not within a "Development High Risk Area".

4.3.2 The Development High Risk Area is defined as 'The Development High Risk Area is the part of the coal mining reporting area which contains one or more recorded coal mining related features which have the potential for instability or a degree of risk to the surface from the legacy of coal mining operations. The combination of features includes mine entries; shallow coal workings (recorded and probable); recorded coal mining related hazards; recorded mine

gas sites; fissures and breaklines and previous surface mining sites. New development in this defined area needs to demonstrate that the development will be safe and stable taking full account of former coal mining activities. This area was formally known as the Development Referral Area'.

4.4 Borehole Records

4.4.1 The BGS Borehole map indicates that there are no borehole records available within 25m of the site.

4.5 Geological Hazards

4.5.1 Potential natural geological hazards which may represent a risk to the proposed development on the site could include the following:

Table 5: Summary of Potential Natural Geological Hazards Identified in the Groundsure© Reports

Potential Hazard	Assessed Risk on the Site			
Radon	The property is not in a Radon Affected Area, as less than 1% of properties are above the Action Level. No radon protective measures are necessary.			
Background Soil Chemistry	Element	Estimated Geometric Mean (mg/kg)	Residential Threshold(mg/kg)	Industrial / Commercial Threshold (mg/kg)
	Arsenic	15-25	37 (S4UL)	640 (S4UL)
	Bioaccessible Arsenic	No data		
	Lead	200-300	200 (C4SL)	750 (C4SL)
	Bioaccessible Lead	120-240		
	Cadmium	1.8	10 (S4UL)	230 (S4UL)
	Chromium	60-90	620 (S4UL)	30,400 (S4UL)
	Nickel	30-45	130 (S4UL)	1,700 (S4UL)

4.6 Review of Data Obtained from Geology and Ground Stability Groundsure Report

4.6.1 A geology and ground stability report has been procured from Groundsure©, which is presented in Appendix G, and is summarised hereunder.

Table 6: Summary of Data within Groundsure© Geology and Ground Stability Report

Data	Distance (m)	Comments	Significance
Faults	<50m	No data	-
Natural cavities	<250m	No data	
BritPits	<250m	213m W – Strangeways Brick Field	Potential source
Surface ground workings	<250m	1m W – Brick Field 44m NW – ponds 113m S – workings 149m SW – ponds	Potential sources
Underground workings	<250m	No data	

5 HYDROLOGY AND HYDROGEOLOGY

5.1.1 The geological succession underlying the site may be regarded as a series of discrete units in terms of their hydrogeological significance, as illustrated hereunder:

Table 7: Hydrogeological Interpretation

UNIT	PROPERTIES	AQUIFER TYPE	FLOW TYPE	PERMEABILITY
Made Ground	Likely to be generally granular and permeable and will permit vertical and lateral transmission of groundwater. Where underlain by an aquiclude perched groundwater may be present in depressions at the interface.	N/A	N/A	N/A
Devensian Till	This classification has been assigned in cases where it has not been possible to attribute either category A or B to a rock type. In most cases, this means that the layer in question has previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type.	Secondary Undifferentiated	Mixed	Low to high
Sandstone	These are layers of rock or drift deposits that have high intergranular and/or fracture permeability - meaning they usually provide a high level of water storage. They may support water supply and/or river base flow on a strategic scale. In most cases, principal aquifers are aquifers previously designated as major aquifers.	Principal	Mixed	High

5.2 Assessment of Vulnerability of Surface Water Receptors

5.2.1 The sensitivity of both the surface water receptors and the underlying groundwater in both the drift deposits and bedrock has been assessed in line with the methodology in Appendix C based on the information presented below. Where the risk is regarded as low or very low the receptor will not be regarded as a credible receptor and will not be assessed further.

Table 8: Assessment of Vulnerability of Surface Water Receptors

INFORMATION	Surface Water	Superficial Soils	Bedrock
Aquifer Status of Geology:	N/A	Secondary Undifferentiated	Principal
Likely Geology (based on closest BGS Borehole Section Sheets / Previous Site investigations)	Nearby boreholes indicate a minimum of drift cover.		
Groundwater Vulnerability	Leaching class: Low Infiltration value: <40% Dilution value: 300-550mm/year	Vulnerability: Low Aquifer type: Secondary Thickness: >10m Patchiness value: >90% Recharge potential: Low	Vulnerability: Low Aquifer type: Principal Flow mechanism: Well-connected fractures
Groundwater Vulnerability Summary:	Summary Classification: Secondary superficial aquifer - Low Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer		
Groundwater Vulnerability (soluble rock risk):	N/A	No data	
Groundwater Vulnerability-Local Information:	N/A	No data	
Groundwater Abstractions (<1,000m) (Only Current Abstractions Are Listed):	N/A	168m N – general cooling / process water 921m SW – general cooling	
Surface Water Abstractions (<500m) (Only Current Abstractions Are Listed):	None	N/A	
Potable Abstractions (<2,000m) (Only Current Abstractions Are Listed):	N/A	None	
Source Protection Zones:	N/A	No – none within 500m	
Source Protection Zones (Confined Aquifer):	No data	No data	No data
Surface Water Bodies (<100m):	None	N/A	
Surface Water Features (<250m):	None	N/A	
Sensitivity of Surface Water / Groundwater:	L2 – very low	L2 – very low	L1 - low

6 DATA OBTAINED FROM REGULATORY BODIES AND OTHERS

6.1 Data From Groundsure

6.1.1 An Environmental Data Report was procured from Groundsure©. Groundsure© reports contain a broad spectrum of environmental data collated from many sources, including the Environment Agency and the relevant local authority. The report is contained in Appendix G.

6.1.2 Relevant data on potentially contaminative land uses within the report, covering an area within a radius of 50m (250m for landfill and other waste sites) from the site is summarised hereunder:

Table 9: Summary of Groundsure© Environmental Data Report

Data	Distance (m)	Comments	Significance
Historical industrial land uses	<50m	1mW – brick field	Potential source
Historical tanks	<50m	-	N/A
Historical energy features	<50m	-	N/A
Historical petrol stations	<50m	-	N/A
Historical garages	<50m	-	N/A
Historical military land	<50m	-	N/A
Waste and landfill	<250m	-	N/A
Current industrial land use	<50m	35m S – Printec Studio Ltd 35m S – Subakj Signs 42m N - Hurriprint & Design Print	Potential source

7 PRELIMINARY CONCEPTUAL MODEL AND PRELIMINARILY RISK ASSESSMENT

7.1 Introduction

7.1.1 The findings of the desk study have been used to develop a preliminary conceptual model of the site, which identifies potential contaminant linkages. The scope of the model is intended primarily to identify potential impacts to human health and environmental receptors from potential on site and off-site contamination sources. More generalised comments may be included with respect to potential impacts to the wider ecosystem if relevant.

7.1.2 Contaminated land is defined under Section 78A(2) of the Environmental Protection Act 1990 IIA, as "Any land which appears to the Local Authority in whose area it is situated to be in such a condition, by reason of substances in, on or under the land that:

- Significant harm is being caused, or there is significant possibility of such harm being caused, or
- Pollution of controlled waters is being or is likely to be caused"

7.1.3 Thus, land can be defined as contaminated if it is causing significant harm; or where substances in, on or under the land are polluting a controlled water, or there is a significant risk of this happening.

7.1.4 Current approaches (Guidance on 'Land contamination risk management (LCRM), Part IIA of the Environmental Protection Act 1990 and the National Planning Policy Framework) to risk assessment of contaminated land suggest the construction of a Preliminary Conceptual Model. The purpose of this model is to define all possible complete contaminant linkages, where the requisite source – pathway – target elements are present, and these elements being defined as:

- a contaminant (source) is a hazardous substance or agent, present at levels that have the potential to cause harm or damage a receptor
- a pathway is the means by or through which a contaminant comes into contact with, or otherwise affects, the receptor
- a receptor (target) is an entity (human being, aquatic environment, flora and fauna etc.) that is vulnerable to the adverse effects of the contaminant

7.1.5 This relationship is termed a "contaminant linkage". It should be recognised that for a health or environmental risk to exist, all three elements of the relationship or linkage must be present, i.e.

- if there is no contaminant, or contaminant present at levels below those considered to be harmful or damaging to a receptor, then there can be no adverse effect on a receptor
- if there is no receptor present that can be adversely affected by a contaminant, no harm or damage can arise
- even where both a contaminant and a receptor are present, no harm or damage will occur if there is no pathway by or through which a linkage between the two can be established

7.1.6 The information collated in the desk study was assessed hereunder to determine the potential contaminant linkage(s) existing on this site, and the likelihood of the linkage being present, allowing the construction of a preliminary conceptual model, as discussed hereunder.

7.2 Assessment of Potential Sources of Contamination

7.2.1 The potential sources of contamination identified in the desk study summarised hereunder:

Table 10: Potential Sources of Contamination

Potential Source of Contamination	Distance to Site	Dates Identified on Historical Maps	Discussion	Probability	Consequence	Risk	Does source warrant further assessment?
Made ground	On site	N/A	Made ground was observed during the site walkover survey.	Likely	Medium – chronic effect on human health	Moderate	Yes
Made ground	On site	N/A	As there is no evidence the made ground on the site is in excess of 1m (no evidence to suggest made ground is up to 5m thick or has an average thickness of 3m – the desk study has not identified any evidence of excavations on the site) thick with low organic matter the made ground is not regarded as a credible source of ground gases. It is also unlikely that there will be sufficient organic matter to generate ground gases (SOM is likely to be <5%).	None – not a credible source	Severe – acute risk to human health	None	No
Site buildings	On site	<1848 – 1980	The use of the site as a dwelling is unlikely to have impacted site soils.	Unlikely	Medium – chronic effect on human health	Low	No
Use / storage of chemicals and/or fuel on the site	On site and within 15m of the site	N/A	Based on the information within this desk study report it is unlikely that chemicals / fuel have been used and/or stored either on the site or within 15m of the site.	Unlikely	Medium – ingress of contaminants through plastic potable water pipes	Low	No
Potentiel for mobile contamination (VOC's, fuels etc.)	On site	N/A	Based on the information within this desk study report it is unlikely that mobile contamination will be present on the site.	Unlikely	Medium – chronic effect on human health	Low	No
Brick field	Western boundary	1848	Given the brick field is developed by the 1890 map and the area is occupied by terraced dwellings the probability of risk occurring is regarded as negligible.	Negligible	Severe – acute risk to human health	Low	No
Warehouse	45m west	1958 – 2023	Whilst the past and current uses of the surrounds have the potential to impact site soils, given the distance the probability of risk occurring is regarded as unlikely.	Unlikely	Medium – chronic effect on human health	Low	No
Clothing factory	30m west	1968 - 2023				Low	No
Printec Studio Ltd / Subakj Signs	35m south	N/A				Low	No
Clothing factory	40m north	1968 - 2023				Low	No
Hurriprint & Design Print	42m north	N/A				Low	No

7.3 Identification of Potential Receptors

7.3.1 Potential receptors of contamination on this site may be represented as tabulated hereunder:

Table 11: Potential Receptors

ID	POTENTIAL RECEPTOR	IS THE RECEPTOR PRESENT?	JUSTIFICATION FOR INCLUSION / EXCLUSION
A	Human beings (construction workers)	**Yes**	Will be on site during the construction phase
B	Human beings (future residents)	**Yes**	The proposed development is residential and commercial
C	Human beings (future worker occupants)	**Yes**	
D	Human beings (trespassers / transient users)	**Yes**	May be present on the proposed development
E	Human beings (worker occupants of adjacent properties)	**Yes**	Commercial buildings adjoin the site
F	Human beings (residents of adjacent properties)	**No**	Dwellings do not adjoin the site
G	Designated ecological systems	**No**	None have been identified
H	On site flora and fauna	**No**	No sensitive species have been identified
I	Property in the form of buildings (on site)	**Yes**	The development includes the erection of dwellings/buildings
J	Property in the form of buildings (adjacent)	**No**	Buildings form the site boundaries
K	Property in the form of crops/livestock (on site)	**No**	Will not form part of the development
L	Property in the form of crops/livestock (adjacent)	**No**	None have been identified
M	Potable water mains (on site)	**Yes**	The site will be served by potable water mains
N	Potable water mains (off site)	**No**	It is unlikely that water mains for nearby sites will run through the subject site.
O	Groundwater (underlying aquifer)	**No**	The site is underlain by low sensitivity aquifers
P	Surface water bodies	**No**	No high/moderate sensitivity water bodies within 250m

7.4 Potential Pathways

7.4.1 Taking account of the intended use of the site, the pathways by which the above sources and receptors may be linked may be summarised as follows:

Table 12: Potential Pathways

ID	POTENTIAL RECEPTOR	ASSOCIATED POTENTIAL PATHWAYS	JUSTIFICATION FOR EXCLUSION
A	Human beings (construction workers)	Ingestion of soil / soil dust Dermal contact with soil / soil dust Inhalation of soil dust ~~Migration of ground gases through permeable strata / preferential pathways~~	No credible sources of ground gases
B	Human beings (future residents)	Ingestion of soil / soil dust Dermal contact with soil / soil dust Inhalation of soil dust Dermal contact with soil / soil dust outdoors Dermal contact with soil dust indoors Ingestion of home-grown produce Ingestion of soil attached to home-grown produce Inhalation of soil dust indoors Inhalation of soil dust outdoors Inhalation of soil vapours indoors Inhalation of soil vapours outdoors Inhalation of water vapours indoors Inhalation of water vapours outdoors ~~Migration of ground gases through permeable strata / preferential pathways~~	~~Migration of ground gases through permeable strata / preferential pathways~~
C	Human beings (future worker occupants)	Ingestion of soil / soil dust Dermal contact with soil / soil dust Inhalation of soil dust Dermal contact with soil / soil dust outdoors Dermal contact with soil dust indoors Inhalation of soil dust indoors Inhalation of soil dust outdoors Inhalation of soil vapours indoors Inhalation of soil vapours outdoors Inhalation of water vapours indoors Inhalation of water vapours outdoors ~~Migration of ground gases through permeable strata / preferential pathways~~	~~Migration of ground gases through permeable strata / preferential pathways~~
D	Human beings (trespassers / transient users)	Ingestion of soil / soil dust Dermal contact with soil / soil dust Inhalation of soil dust	
E	Human beings (worker occupants of adjacent properties)	Ingestion of soil / soil dust Dermal contact with soil / soil dust Inhalation of soil dust Dermal contact with soil / soil dust outdoors Dermal contact with soil dust indoors Inhalation of soil dust indoors Inhalation of soil dust outdoors Inhalation of soil vapours indoors Inhalation of soil vapours outdoors Inhalation of water vapours indoors Inhalation of water vapours outdoors ~~Migration of ground gases through permeable strata / preferential pathways~~	~~Migration of ground gases through permeable strata / preferential pathways~~
I	Property in the form of buildings (on site)	Direct contact with aggressive ground conditions ~~Migration of ground gases through permeable strata / preferential pathways~~	~~Migration of ground gases through permeable strata / preferential pathways~~
M	Potable water mains (on site)	Direct contact with aggressive ground conditions Direct contact with organic contamination	

7.5 Preliminarily Qualitative Risk Assessment

7.5.1 In accordance with the current UK Government of 'suitable for use' approach to the assessment of contaminated land, a preliminarily qualitative risk assessment has been undertaken on the potential contaminant linkages identified above, which considers the magnitude of the potential consequence of the risk occurring, the magnitude of the probability of the risk occurring and provides an overall risk classification.

7.5.2 The following sections discuss all the identified potential on and off site sources which warrant further consideration (see Clause 7.2), pathways and receptors in the context of the proposed development and plausible pollutant linkages which may represent a risk to identified receptors such as human health and/or controlled waters from the data gained from the desk study. At this stage the assessment is qualitative and aimed to determine all pollutant linkages, irrespective of significance or allowing for uncertainty.

7.5.3 The purpose of the PQRA is to:

- Refine and update the conceptual model;
- Confirm the presence of actual pollutant linkages;
- Evaluate potentially unacceptable risks; and
- Provide the basis for the options appraisal when unacceptable risks are identified at the site.

7.5.4 The methodology used in the 2001 CIRIA report C552 – "Contaminated Land Risk Assessment. A Guide to Good Practice' and 'Guidance for the Safe Development of Housing on Land Affected by Contamination' is used here and is discussed in Appendix C.

7.5.5 Based on the above a Preliminarily Conceptual Model (PCM) has been created and is presented in hereunder.

Table 13: Preliminary Conceptual Model

PPL ID	Source	Pollutant(s)	Receptor(s)	Pathways to Receptor	Probability	Consequence	Risk
1	Made Ground	Arsenic, asbestos, barium, beryllium, cadmium, chromium (III and VI), copper, cyanide, lead, mercury, molybdenum, nickel, PAH's (USEPA 16) selenium, sulphur, thallium, hydrocarbons (TPHCWG), vanadium, zinc	Human beings (construction workers)	Ingestion of soil / soil dust Dermal contact with soil / soil dust Inhalation of soil dust	Likely	Minor – can be prevented by the use of PPE	Low
2			Human beings (future residents)	Ingestion of soil / soil dust Dermal contact with soil / soil dust Inhalation of soil dust Dermal contact with soil / soil dust outdoors Dermal contact with soil dust indoors Ingestion of home-grown produce Ingestion of soil attached to home-grown produce Inhalation of soil dust indoors Inhalation of soil dust outdoors	Unlikely – no landscaped areas will be present and the ground floor will be commercial	Medium – there is a potential for chronic effects to humans	Low
3			Human beings (future worker occupants)	Ingestion of soil / soil dust Dermal contact with soil / soil dust Inhalation of soil dust Dermal contact with soil / soil dust outdoors Dermal contact with soil dust indoors Inhalation of soil dust indoors Inhalation of soil dust outdoors	Unlikely – no landscaped areas will be present	Medium – there is a potential for chronic effects to humans	Low
4			Human beings (trespassers / transient users)	Ingestion of soil / soil dust Dermal contact with soil / soil dust Inhalation of soil dust	Unlikely – no landscaped areas will be present	Medium – there is a potential for chronic effects to humans	Low
5			Human beings (worker occupants of adjacent properties)	Ingestion of soil / soil dust Dermal contact with soil / soil dust Inhalation of soil dust Dermal contact with soil / soil dust outdoors Dermal contact with soil dust indoors Inhalation of soil dust indoors Inhalation of soil dust outdoors	Unlikely – no evidence of o=mobile contamination	Medium – there is a potential for chronic effects to humans	Low
6			Property in the form of buildings (on site)	Direct contact with aggressive ground conditions	Likely	Medium– significant damage to buildings	Moderate
7			Potable water mains (on site)	Direct contact with aggressive ground conditions Direct contact with organic contamination	Unlikely – no evidence of the storage of chemicals on or within 15m of the site	Medium – ingress of contaminants through plastic potable water pipes	Low
8	Brick field	Ground gases (CO_2, CH_4, H_2S, CO)	Human beings (future residents)	Migration of ground gases through permeable strata / preferential pathways	Negligible	Severe – acute risk to human health	Low
9			Human beings (future worker occupants)			Severe – acute risk to human health	Low
10			Property in the form of buildings (on site)			Medium – effect on building fabric	Very low

7.5.6 The potential significant linkages listed above are based on the available data listed in the sections above and the features noted during the site walkover.

7.5.7 It can be seen that contaminant linkages 6, 8 and 9 require further investigation.

8 RECOMMENDATIONS FOR FURTHER WORKS AND SAMPLING STRATEGY

8.1 Introduction

8.1.1 In accordance with the National Policy Planning Framework, Demeter Environmental consider that sufficient information on the potential for contamination is available in this report to allow the validation of any future planning application by Manchester City Council and for conditional planning approval to be granted as it is unlikely that the site is capable of being determined as contaminated land under Part IIA of the Environmental Protection Act 1990. Where the report has proposed further intrusive works and/or remediation such a conditional approval will likely include the conditions requiring a site investigation, risk assessment and implementation plan are undertaken to the satisfaction of Manchester City Council prior to commencement of any development.

8.2 Proposals for Further Works

8.2.1 The proposals to investigate / break the potential contaminant linkages identified above in the PCM are discussed hereunder (in order of risk).

Table 14: Proposed Aims and Scope of Further Works

PPL ID	AIM(S) / OBJECTIVES(S)	Proposed Further Investigation
N/A	Enabling works	Prior to any intrusive investigation the following will need to be undertaken in order to access the site; 1. Approval from the local authority on the scope of the proposed works;
N/A	Sequence of works	The works in sequence is given below.
6	To determine if made ground is present on the site and if present, is it impacted by elevated levels of contamination:	On completion of the site clearance samples of the soils that will be in direct contact with concrete will be taken and subject to pH and water soluble sulphate analysis (nr 4)

8.3 Responsibility of Developer / Landowner

8.3.1 In line with the National Policy Planning Framework, where a site is affected by contamination or land stability issues, responsibility for securing a safe development rests with the developer and/or landowner.

8.4 Management of Unexpected Contamination

8.4.1 It is possible that further contamination may be found at any time during the development. Should such contamination be identified or suspected during the site clearance or ground works, these should be dealt with accordingly.

8.4.2 A number of options are available for handling this material, which include:

- The removal from site and disposal to a suitably licensed tip of all material suspected of being contaminated. The material would need to be classified prior to disposal.

- Short-term storage of the suspected material while undertaking verification testing for potential contamination. The storage area should be a contained area to ensure that contamination does not migrate and affect other areas of the site. Depending upon the amounts of material under consideration, this could be either a skip or a lined area.

- Having a suitably experienced environmental engineer either on-call or with a watching brief for the visual and olfactory assessment of the material, and sampling for verification purposes.

8.5 Liaison with the Local Planning Authority

8.5.1 Prior to the commencement of any site works it is recommended that a copy of this report is forwarded to Manchester City Council, and their approval of the conclusions/recommendations contained in this report is obtained prior to the commencement of any works on the site.

8.5.2 Where this report has recommended remedial measures, the methodology on the validation of the remedial measures should be agreed with Manchester City Council prior to commencement

of site works (Phase IIIa Implementation Plan). On completion of the remediation a Phase IIIb completion report will need to be submitted to Manchester City Council in order to demonstrate the site has been suitably remediated.

APPENDIX A: REFERENCES

The following documents were available or have been obtained for reference or obtaining data:

Groundsure Report			
BGS Borehole Record Viewer			
Land contamination risk management (LCRM)	Environment Agency	LCRM	2020
The Environmental Protection Act	1990		
The Contaminated Land (Wales) Regulations	2006		
The Contaminated Land (Scotland) Regulations	2000		
The Environment Act	1995		
The Radioactive Contaminated Land (Modifications of Enactments) (England) Regulations	2006		
The Radioactive Contaminated Land (Modifications of Enactments) (Wales) Regulations	2006		
The Radioactive Contaminated Land (Scotland) Regulations	2007		
The Water Resources Act	1991		
The Water Act	2003		
The Water Environment and Water Services (Scotland) Act	2003		
The Water (Northern Ireland) Order	1999		
The Wildlife and Country Act	1981		
The Conservation (Natural Habitats, etc.) Regulations	1994		
The Town and Country Planning Act	1990		
The Town and Country Planning (Scotland) Act	1997		
The Building Control Act	1990		
The Construction Design and Maintenance (CDM) Regulations	2007		
The Control of Substances Hazardous to Health (COSHH) Regulations	2002		
The Factories Act	1961		
The Offices, Shops and Railway Premises Act	1963		
The Health and Safety at Work, etc. Act	1974		
The Pollution Prevention and Control Act	1999		
The Control of Pollution Act 1994 as amended	1994		
The Environmental Damage (Prevention and Remediation) Regulations	2009		
The Environmental Damage (Prevention and Remediation) (Wales) Regulations	2009		
The Environmental Liability (Scotland)	2009		
The Environmental Protection (Duty of Care) Regulations	1991		
The Environmental Permitting (England and Wales) Regulations	2007		
The Pollution Prevention and Control (Scotland) regulations	2000		
Guidance on investigations for ground gas. Permanent gases and Volatile Organic Compounds (VOCs)	2013	BS 8576:2013	2013
Good practice on the testing and verification of protection systems for buildings against hazardous ground gases	CIRIA	C735	August 2014
Investigation of Potentially Contaminated Sites	BSI	BS10175:2011+A2:2017	2017
Environmental Protection Act 1990: Part 2A - Contaminated Land Statutory Guidance	DEFRA	-	April 2012
Environmental Protection Act 1990: Part 2A – Contaminated Land	DEFRA	Circular 1/2006	September 2006 (withdrawn April 2012)
National Planning Policy Framework	Communities and Local Government	-	19th February 2019
Guiding Principles for Land Contamination	Environment Agency	GPLC1 / GPLC2 / GPLC3	March 2010
Planning and Pollution Control	ODPM	PPS23	November 2004 (withdrawn March 2012)
Circular 22/87: Development of Contaminated Land	Welsh Government	22/87	August 1987
Planning Advice Note PAN 33	Scottish Government	PAN 33	October 2000
Contaminated Land Statutory Guidance for Wales	Welsh Government	WG15450	2012
Explanatory Memorandum to the Contaminated Land	Welsh Government	-	February

(Wales) (Amendment) Regulations 2012 and the draft Contaminated Land Statutory Guidance 2012			2012
NHBC Standards	NHBC	-	2014
Code of Practice for Ground Investigations	BSI	BS5930:2015+A1:2020	June 2020
Technical aspects of site investigations in relation to land contamination	Environment Agency	EA P5-065/TR:2000	2000
Contaminated Land Risk Assessment: A Guide to Good Practice	CIRIA	C552	2001
Secondary model for the development of appropriate soil sampling strategies for contaminated land	Environment Agency	EA P5-066/TR:2000	2000
Remedial Targets Methodology - Hydrogeological Risk assessment for Land Contamination	Environment Agency		2006
The physical properties of the minor aquifers in England and Wales	BGS		2000
A framework for assessing the impact of contaminated land on groundwater and surface water	Department of the Environment	DOE CLR 1	1994
Environment Agency technical advice to third parties on Pollution of Controlled Waters for Part IIA of the Environmental Protection Act 1990.	Environment Agency		May 2002
Guidance on Preliminary site inspection of contaminated land	Department of the Environment	DOE CLR 2	1994
Documentary search on industrial sites	Department of the Environment	DOE CLR 3	1994
Sampling strategies for contaminated land	Department of the Environment	DOE CLR 4	1994
Information systems for land contamination	Department of the Environment	DOE CLR 5	1994
Prioritisation + categorisation procedure for sites which may be contaminated	Department of the Environment	DOE CLR 6	1995
Model Procedures for the Management of Land Contamination	Environment Agency	CLEA CLR 11	September 2004 (withdrawn)
A quality approach for contaminated land consultancy	Department of the Environment	DOE CLR 12	1997
Human health toxicological assessment of contaminants in soil	Environment Agency	Science Report SC050021/SR2	January 2009
Updated technical background to the CLEA model	Environment Agency	Science Report SC050021/SR3	January 2009
A review of body weight and height data used within the Contaminated Land Exposure Assessment model (CLEA)	Environment Agency	SC050021/ Technical Review 1	2009
Compilation of Data for Priority Organic Pollutants for Derivation of Soil Guideline Values	Environment Agency	Science Report SC050021/SR7	2008
The UK Approach for Evaluating Human Health Risks from Petroleum Hydrocarbons in Soil	Environment Agency	Report P5-080/TR3	2005
Review of the Fate and Transport of Selected Contaminants in the Soil Environment	Environment Agency	Draft Technical Report P5-079/TR1	2003
Guidance on Comparing Soil Contamination Data with a Critical Concentration	CL:AIRE/ CIEH		May 2008
Industry Profiles	DEFRA		Various dates
Radon: guidance on protective measures for new developments	BRE	BRE 211	November 2007
Contaminated Land management manual	LQM	LQM2000	2000
Assessing risks posed by hazardous ground gases to buildings (revised)	CIRIA	CIRIA C665	December 2007
Code of practice for the design of protective measures for methane and carbon dioxide ground gas for new buildings	BSI	BS 8485:2015	2015
Using Soil Guideline Values		Science Report SC050021/SGV Introduction	March 2009
Soil guideline values for inorganic arsenic	Environment Agency	SC050021/ arsenic SGV	May 2009
Soil guideline values for mercury	Environment Agency	SC050021/ mercury SGV	April 2009
Soil guideline values for selenium	Environment Agency	SC050021/ selenium SGV	April 2009
Soil guideline values for benzene	Environment Agency	SC050021/ benzene SGV	April 2009
Soil guideline values for toluene	Environment Agency	SC050021/ toluene SGV	April 2009
Soil guideline values for ethylbenzene	Environment Agency	SC050021/	April 2009

		ethylbenzene SGV	
Soil guideline values for xylenes	Environment Agency	SC050021	April 2009
Supplementary information for the derivation of for inorganic arsenic	Environment Agency	SC050021	May 2009
Supplementary information for the derivation of for mercury	Environment Agency	SC050021	April 2009
Supplementary information for the derivation of for selenium	Environment Agency	SC050021	April 2009
Supplementary information for the derivation of for benzene	Environment Agency	SC050021	April 2009
Supplementary information for the derivation of for toluene	Environment Agency	SC050021	April 2009
Supplementary information for the derivation of for ethylbenzene	Environment Agency	SC050021	April 2009
Supplementary information for the derivation of for xylenes	Environment Agency	SC050021	April 2009
Contaminants in soil: updated collation of toxicological data and intake values for humans : Inorganic Arsenic	Environment Agency	SC050021/Tox 1	May 2009
Contaminants in soil: updated collation of toxicological data and intake values for humans : Mercury	Environment Agency	SC050021	April 2009
Contaminants in soil: updated collation of toxicological data and intake values for humans : Selenium	Environment Agency	SC050021	April 2009
Contaminants in soil: updated collation of toxicological data and intake values for humans : Benzene	Environment Agency	SC050021	April 2009
Contaminants in soil: updated collation of toxicological data and intake values for humans : Toluene	Environment Agency	SC050021	April 2009
Contaminants in soil: updated collation of toxicological data and intake values for humans : Ethylbenzene	Environment Agency	SC050021	April 2009
Contaminants in soil: updated collation of toxicological data and intake values for humans : Xylenes	Environment Agency	SC050021	April 2009
Reclamation of Contaminated Land	Wiley		2004
Policy and Practice For The Protection of Groundwater	Environment Agency		1999
CIRIA Special Publication 102 - Remedial Treatment for Contaminated Land - Volume II: Decommissioning, Decontamination and Demolition	CIRIA	SP102	January 1995
Guidance on the Safe Development of Housing on Land affected by Contamination	Environment Agency	R&D Publication 66	2008
ProUCL User Guide and Technical Guide	USEPA	-	
Guidance on the assessment of and monitoring of natural attenuation of contaminants in groundwater	Environment Agency	R&D Publication 95	2000
The standard penetration test in insensitive clays and soft rocks	Proceedings of the European Symposium on Penetration Testing in the UK	-	1988
Trenching practice. 2nd edition	CIRIA	R97	2001
Desiccation in clay soils	BRE	412	February 1996
Methods of test for soils for civil engineering purposes	BSI	BS1377 (Parts 1 to 9)	1990
Eurocode 7: Geotechnical Design – Part 1: General Rules British	BSI	BS EN 1997-1	2004
Eurocode 7: Geotechnical Design – Part 2: Ground Investigation and Testing	BSI	BS EN 1997-2	2007
Geotechnical investigation and testing. Field testing. Electrical cone and piezocone penetration test	BSI	BS EN ISO 22476-1	2012
Geotechnical Investigation and Testing – Field Testing Part 2: Dynamic Probing	BSI	BS EN ISO 22476-2+A1	2011
Geotechnical Investigation and Testing – Field Testing Part 3: Standard Penetration Test	BSI	BS EN ISO 22476-3+A1	2011
Geotechnical investigation and testing. Field testing- Ménard pressuremeter test	BSI	BS EN ISO 22476-4	2012
Geotechnical investigation and testing. Field testing - Flexible dilatometer test	BSI	BS EN ISO 22476-5	2012
Geotechnical investigation and testing. Field testing - Borehole jack test	BSI	BS EN ISO 22476-7	2012
Geotechnical investigation and testing. Field testing – Flat dilatometer test	BSI	BS EN ISO 22476-11	2006
Geotechnical investigation and testing. Field testing - Mechanical cone penetration test (CPTM)	BSI	BS EN ISO 22476-12	2009

The standard penetration test (SPT): methods and use	CIRIA	R143	1995
Low-rise Buildings on Shrinkable Clay	BRE	BRE Digest 240 and 241	1993
Settlement of structures on clay soils	CIRIA	SP27	1983
Piled foundations in weak rock	CIRIA	R181	1999
Theoretical soil mechanics	Terazaghi	-	1943
Soils for civil engineering purposes	BSI	BS 1337	1990
Groundwater Control – Design and Practice	CIRIA	C515	2000
Trees in relation to design, demolition and construction. Recommendations	BSI	BS 5837	2012
Workmanship on Building Sites	BSI	BS 8000	Various
ICRCL 61/84 Notes on the fire hazards of contaminated land	ICRCL	61/84	1986
Soakaway Design	BRE	Digest 365	1991
Design guidance for road pavement foundations (draft HD 25) (Revision 1)	Highways Agency	Draft HD25	2006
Building Regulations Approved Documents	HM Government	Various	2013

APPENDIX B: LEGISLATIVE CONTEXT

LEGISLATION OVERVIEW

This report includes hazard identification and environmental risk assessment in line with the risk-based methods referred to in relevant UK legislation and guidance. Government environmental policy is based upon a "suitable for use approach". When considering the current use of land, Part IIA of the Environment Protection Act 1990 (EPA 1990) provides the regulatory regime, which was introduced by Section 57 of the Environment Act 1995, which came into force in England on 1 April 2000. The main objective of introducing the Part IIA regime is to provide an improved system for the identification and remediation of land where contamination is causing unacceptable risks to human health or the wider environment given the current use and circumstances of the land.

Part IIA provides a statutory definition of contaminated land under Section 78A(2) as:

"any land which appears to the Local Authority in whose area it is situated to be in such a condition, by reason of substances in, on, or under the land, that:

Significant harm is being caused or there is a significant possibility of such harm being caused; or Pollution of controlled waters is being, or is likely to be, caused."

Harm is defined under section 78A of the Environmental Protection Act as meaning 'harm to the health of living organisms or other interference with the ecological systems of which they form part and, in the case of man, includes harm to his property'. Part IIA provides a statutory definition of the pollution of controlled waters under Section 78A(9) as "the entry into controlled waters of any poisonous, noxious or polluting matter or any solid waste matter".

Types of harm are related to specific receptors in order to determine whether they can be regarded as "significant harm" or "significant possibility of significant harm', as defined in Clause 4 of the DEFRA publication 'Environmental Protection Act 1990: Part 2A Contaminated Land Statutory Guidance', which is presented hereunder:

Table 1: Categories Of Significant Harm and Significant Possibility of Significant Harm for Each Receptor

	Type of Receptor	Description of harm to that type of receptor that is to be regarded as:"	
		Significant Harm	**Significant Possibility of Significant Harm**
1	Human beings	Death; life threatening diseases (e.g. cancers); other diseases likely to have serious impacts on health; serious injury; birth defects; and impairment of reproductive functions Physical injury; gastrointestinal disturbances; respiratory tract effects; cardio-vascular effects; central nervous system effects; skin ailments; effects on organs such as the liver or kidneys; or a wide range of other health impacts. Death, disease, serious injury, genetic mutation, birth defects or the impairment of reproductive functions. For these purposes, disease is to be taken to mean an unhealthy condition of the body or a part of it and can include, for example, cancer, liver dysfunction or extensive skin ailments. Mental dysfunction is included only insofar as it is attributable to the effects of a pollutant on the body of the person concerned.	-
2	Any ecological system, or living organism forming part of such a system, within a location which is: • a site of special scientific interest (under section 28 of the Wildlife and Countryside Act 1981) • a national nature reserve (under s.35 of the 1981 Act) • a marine nature reserve (under s.36 of the 1981 Act) • an area of special protection for birds (under s.3 of the 1981 Act) • a "European site" within the meaning of regulation 8 of the Conservation of Habitats and Species Regulations 2010 • any habitat or site afforded policy protection under paragraph 6 of Planning Policy Statement (PPS 9) on nature conservation (i.e. candidate Special Areas of Conservation, potential Special Protection Areas and listed Ramsar sites); or • any nature reserve established under section 21 of the National Parks and Access to the Countryside Act 1949. and Access to the Countryside Act 1949.	The following types of harm should be considered to be significant harm: • harm which results in an irreversible adverse change, or in some other substantial adverse change, in the functioning of the ecological system within any substantial part of that location; or • harm which significantly affects any species of special interest within that location and which endangers the long-term maintenance of the population of that species at that location. In the case of European sites, harm should also be considered to be significant harm if it endangers the favourable conservation status of natural habitats at such locations or species typically found there. In deciding what constitutes such harm, the local authority should have regard to the advice of Natural England and to the requirements of the Conservation of Habitats and Species Regulations 2010.	Conditions would exist for considering that a significant possibility of significant harm exists to a relevant ecological receptor where the local authority considers that: • significant harm of that description is more likely than not to result from the contaminant linkage in question; or • there is a reasonable possibility of significant harm of that description being caused, and if that harm were to occur, it would result in such a degree of damage to features of special interest at the location in question that they would be beyond any practicable possibility of restoration.
3	Property in the form of: • crops, including timber; • produce grown domestically, or on allotments, for consumption; • livestock; • other owned or domesticated animals; • wild animals which are the subject of shooting or fishing rights.	For crops, a substantial diminution in yield or other substantial loss in their value resulting from death, disease or other physical damage. For domestic pets, death, serious disease or serious physical damage. For other property in this category, a substantial loss in its value resulting from death, disease or other serious physical damage. The local authority should regard a substantial loss in value as occurring only when a substantial proportion of the animals or crops are dead or otherwise no longer fit for their intended purpose. Food should be regarded as being no longer fit for purpose when it fails to comply with the provisions of the Food Safety Act 1990. Where a diminution in yield or loss in value is caused by a contaminant linkage, a 20% diminution or loss should be regarded as a benchmark for what constitutes a substantial diminution or loss.	Conditions would exist for considering that a significant possibility of significant harm exists to the relevant types of receptor where the local authority considers that significant harm is more likely than not to result from the contaminant linkage in question, taking into account relevant information for that type of contaminant linkage, particularly in relation to the ecotoxicological effects of the contaminant.
4	Property in the form of buildings. For this purpose, "building" means any structure or erection, and any part of a building including any part below ground level, but does not include plant or machinery comprised in a building, or buried services such as sewers, water pipes or electricity cables.	Structural failure, substantial damage or substantial interference with any right of occupation. The local authority should regard substantial damage or substantial interference as occurring when any part of the building ceases to be capable of being used for the purpose for which it is or was intended. In the case of a scheduled Ancient Monument, substantial damage should also be regarded as occurring when the damage significantly impairs the historic, architectural, traditional, artistic or archaeological interest by reason of which the monument was scheduled.	Conditions would exist for considering that a significant possibility of significant harm exists to the relevant types of receptor where the local authority considers that significant harm is more likely than not to result from the contaminant linkage in question during the expected economic life of the building (or in the case of a scheduled Ancient Monument the foreseeable future), taking into account relevant information for that type of contaminant linkage.

For human beings and controlled waters there are four categories of harm, given hereunder:

Table 2: Categories Of Harm for Human Beings and Controlled Waters

Category	Description of harm to that type of receptor that is to be regarded as:"	
	Human Beings	**Controlled Waters**
1	The local authority should assume that a significant possibility of significant harm exists in any case where it considers there is an unacceptably high probability, supported by robust science based evidence, that significant harm would occur if no action is taken to stop it. For the purposes of this Guidance, these are referred to as "Category 1: Human Health" cases. Land should be deemed to be a Category 1: Human Health case where: (a) the authority is aware that similar land or situations are known, or are strongly suspected on the basis of robust evidence, to have caused such harm before in the United Kingdom or elsewhere; or (b) the authority is aware that similar degrees of exposure (via any medium) to the contaminant(s) in question are known, or strongly suspected on the basis of robust evidence, to have caused such harm before in the United Kingdom or elsewhere; (c) the authority considers that significant harm may already have been caused by contaminants in, on or under the land, and that there is an unacceptable risk that it might continue or occur again if no action is taken. Among other things, the authority may decide to determine the land on these grounds if it considers that it is likely that significant harm is being caused, but it considers either: (i) that there is insufficient evidence to be sure of meeting the "balance of probability" test for demonstrating that significant harm is being caused; or (ii) that the time needed to demonstrate such a level of probability would cause unreasonable delay, cost, or disruption and stress to affected people particularly in cases involving residential properties.	This covers land where the authority considers that there is a strong and compelling case for considering that a significant possibility of significant pollution of controlled waters exists. In particular this would include cases where there is robust science-based evidence for considering that it is likely that high impact pollution (such as the pollution described in paragraph 4.38) would occur if nothing were done to stop it.
2	For land that cannot be placed into Categories 1 or 4, the local authority should decide whether the land should be placed into either: (a) Category 2: Human Health, in which case the land would be capable of being determined as contaminated land on grounds of significant possibility of significant harm to human health; or (b) Category 3: Human Health, in which case the land would not be capable of being determined on such grounds. The local authority should consider this decision in the context of the broad objectives of the regime and of the Government's policy as set out in Section 1. It should also be mindful of the fact that the decision is a positive legal test, meaning that the starting assumption should be that land does not pose a significant possibility of significant harm unless there is reason to consider otherwise. The authority should then, in accordance with paragraphs 4.26 to 4.29 below, decide which of the following two categories the land falls into: (a) Category 2: Human Health. Land should be placed into Category 2 if the authority concludes, on the basis that there is a strong case for considering that the risks from the land are of sufficient concern, that the land poses a significant possibility of significant harm, with all that this might involve and having regard to Section 1. Category 2 may include land where there is little or no direct evidence that similar land, situations or levels of exposure have caused harm before, but nonetheless the authority considers on the basis of the available evidence, including expert opinion, that there is a strong case for taking action under Part 2A on a precautionary basis. (b) Category 3: Human Health. Land should be placed into Category 3 if the authority concludes that the strong case described in 4.25(a) does not exist, and therefore the legal test for significant possibility of significant harm is not met. Category 3 may include land where the risks are not low, but nonetheless the authority considers that regulatory intervention under Part 2A is not warranted. This recognises that placing land in Category 3 would not stop others, such as the owner or occupier of the land, from taking action to reduce risks outside of the Part 2A regime if they choose. The authority should consider making available the results of its inspection and risk assessment to the owners/occupiers of Category 3 land.	This covers land where: (i) the authority considers that the strength of evidence to put the land into Category 1 does not exist; but (ii) nonetheless, on the basis of the available scientific evidence and expert opinion, the authority considers that the risks posed by the land are of sufficient concern that the land should be considered to pose a significant possibility of significant pollution of controlled waters on a precautionary basis, with all that this might involve (e.g. likely remediation requirements, and the benefits, costs and other impacts of regulatory intervention). Among other things, this category might include land where there is a relatively low likelihood that the most serious types of significant pollution might occur.
3		This covers land where the authority concludes that the risks are such that (whilst the authority and others might prefer they did not exist) the tests set out in Categories 1 and 2 above are not met, and therefore regulatory intervention under Part 2A is not warranted. This category should include land where the authority considers that it is very unlikely that serious pollution would occur; or where there is a low likelihood that less serious types of significant pollution might occur.
4	The local authority should not assume that land poses a significant possibility of significant harm if it considers that there is no risk or that the level of risk posed is low. For the purposes of this Guidance, such land is referred to as a "Category 4: Human Health" case. The authority may decide that the land is a Category 4: Human Health case as soon as it considers it has evidence to this effect, and this may happen at any stage during risk assessment including the early stages. The local authority should consider that the following types of land should be placed into Category 4: Human Health: (a) Land where no relevant contaminant linkage has been established. (b) Land where there are only normal levels of contaminants in soil. (c) Land that has been excluded from the need for further inspection and assessment because contaminant levels do not exceed relevant generic assessment criteria. (d) Land where estimated levels of exposure to contaminants in soil are likely to form only a small proportion of what a receptor might be exposed to anyway through other sources of environmental exposure (e.g. in relation to average estimated national levels of exposure to substances commonly found in the environment, to which receptors are likely to be exposed in the normal course of their lives). The local authority may consider that land other than the types described above should be placed into Category 4: Human Health if following a detailed quantitative risk assessment it is satisfied that the level of risk posed is sufficiently low. Local authorities may decide that particular land apparently matching the descriptions above immediately above poses sufficient risk to human health to fall into Categories other than Category 4. However, such cases are likely to be very unusual and the authority should take particular care to explain why the decision has been taken, and to ensure that it is supported by robust evidence.	This covers land where the authority concludes that there is no risk, or that the level of risk posed is low. In particular, the authority should consider that this is the case where: (a) no contaminant linkage has been established in which controlled waters are the receptor in the linkage; or (b) the possibility only relates to types of pollution described in paragraph 4.40 above (i.e. types of pollution that should not be considered to be significant pollution); or (c) the possibility of water pollution similar to that which might be caused by "background" contamination.

Category 1 or 2 encompass land which is capable of being determined as contaminated land on grounds of significant possibility of significant harm to human health.

The guidance defines what 'normal' levels of contamination is and that a site should not be classified as 'contaminated land'.

'Normal' levels of contamination is defined as:

> (a) The natural presence of contaminants (e.g. caused by soil formation processes and underlying geology) at levels that might reasonably be considered typical in a given area and have not been shown to pose an unacceptable risk to health or the environment.
>
> (b) The presence of contaminants caused by low level diffuse pollution, and common human activity other than specific industrial processes. For example, this would include diffuse pollution caused by historic use of leaded petrol and the presence of benzo(a)pyrene from vehicle exhausts, and the spreading of domestic ash in gardens at levels that might reasonably be considered typical.

The UK regulatory authorities have adopted the widely recognised pollutant linkage concept for assessing risks from land contamination. However, the scenarios under which significant harm may occur are often largely defined by the site conditions and the receptor sensitivity. The concept of suitability for use is adopted to ensure that the risk management process addresses the site-specific conditions and that any remediation undertaken reduces risks to an acceptable level. To meet requirements under Part IIA the site should be suitable for its current use, including use for which a planning permission is already held.

Part IIA of The Environmental Protection Act 1990 is supported by the DEFRA publication of April 2012 'Environmental Protection Act 1990: Part 2A Contaminated Land Statutory Guidance' (this replaces DETR Circular 06/2006), which defines the duties of Local Authorities in dealing with it. Part IIA places contaminated land responsibility as a part of planning and redevelopment process rather than Local Authority direct action except in situations of very high pollution risk. In the planning process guidance is provided by the National Planning Policy Framework which requires that a site which has been developed shall not be capable of being determined "contaminated land" under Part IIA.

The criteria for assessing levels of pollutants and hence determining whether a site represents a hazard are based on a range of techniques, models and guidance. Within this context it is relevant to note that Government objectives are:

(a) To identify and remove unacceptable risks to human health and the environment;

(b) To seek to ensure that contaminated land is made suitable for its current use;

(c) To ensure that the burdens faced by individuals, companies and society as a whole are proportionate, manageable and compatible with the principles of sustainable development.

These three objectives underlie the "suitable for use" approach to remediation of contaminated land. The "suitable for use" approach focuses on the risks caused by land contamination. The approach recognises that the risks presented by any given level of contamination will vary greatly according to the use of the land and a wide range of other factors, such as the underlying geology of the site. Risks therefore should be assessed on a site-by-site basis.

The "suitable for use" approach comprises of three elements:

(a) ensuring that land is suitable for its current use

(b) ensuring that land is made suitable for any new use, as planning permission is given for that new use

(c) limiting requirements for remediation to the work necessary to prevent unacceptable risks to human health or the environment in relation to the current use or future use of the land for which planning permission is being sought

The mere presence of pollutants does not therefore necessarily warrant action, and consideration must be given to the scale of risk involved for the use that the site has, and will have in the future.

Legislation in Scotland, Northern Ireland and Wales

Northern Ireland

The Northern Ireland Assembly was established as part of the Belfast Agreement and it is the prime source of authority for all devolved/transferred matters (including environment and planning) and has full legislative and executive authority. Devolution powers became the responsibility of the Northern Ireland Assembly on the 2nd December 1999. The Executive was subsequently suspended and Direct Rule restored on the 11th February 2000. Restoration of devolution subsequently took place on 30th May 2000. Twenty-four hour suspensions also took place in August and September 2001.

On the 14th October 2002 the Assembly was again suspended and then formally dissolved on the 28th April 2003. Subsequently the Assembly was restored to a state of suspension following elections in November 2003 with the Assembly finally being restored on 8th May 2007.

The Environment and Heritage Service (EHS) is the largest Agency within the Department of the Environment (DOE NI), one of the eleven Northern Ireland Departments created in 1999. The EHS takes the lead in advising on, and in implementing, the Government's environmental policy and strategy in Northern Ireland.

The Planning Service, another Agency which comes under the umbrella of the DOE NI, is responsible for developing and implementing Government planning policies and development plans in Northern Ireland.

Part 3 of the Waste and Contaminated Land (Northern Ireland) Order 1997 contains the main legal provisions for the introduction of a contaminated land regime in Northern Ireland. The Order was enacted in 1997 but the regime is not yet in operation. The provisions within Part 3 are virtually identical to those provided by part 2A and would establish a regime whereby local authorities are under a duty to investigate and identify contaminated land and identify those responsible for its remediation.

In terms of provision of technical guidance for regulators to assist them in the determination of contaminated land the DOE NI references the DEFRA SGV Task Force and CLEA publications.

The primary legislation governing planning in Northern Ireland is the Planning (Northern Ireland) Order 1991 (as amended). This is backed up by secondary legislation and planning policy, including planning policy statements (PPSs) and area plans. However there is currently no specific PPS addressing development on potentially contaminated land.

Planning applications are determined by the Planning Service with local councils, along with other government departments, acting as consultees to the approval process. Despite the lack of guidance the Planning Service, in considering planning applications for brownfield sites, will impose conditions for site investigation and remediation that broadly mirror the requirements of part 3/Part 2A.

Wales

Both the Environment Protection Act 1990 and the Environment Act 1995 were issued on a UK wide basis, so the same principles of Part 2A legislation are applicable. In July 1997 the UK Government published a white paper outlining proposals for devolution. In Wales a referendum was held in September 1997 and the result led to the Government of Wales Act 1998 being issued thus establishing the National Assembly for Wales (NAW) with powers being transferred on 1st July 1999.

Since this time subordinate legislation has been introduced in Wales that details how the provisions of an Act of Parliament will apply, hence the reason for different effects in Wales to that of England.

The elected Assembly Members effectively delegated their powers for implementation of policies and legislation to the Welsh Assembly Government (WAG). One of the subject areas within WAG is Environment Planning & Countryside, which covers the policies and subordinate legislation relevant to land contamination. The preliminary legislation was The Contaminated Land (Wales) Regulations 2001 Welsh Statutory Instrument 2001 No. 2197 (W.157) which came into force on 1st July 2001. This has now been revoked and replaced by The Contaminated Land (Wales) Regulations 2006 Welsh Statutory Instrument 2006 No. 2989 (W.278) which came into force on 10th December 2006. These include the changes for appeals on Remediation Notices, which are required to be made to NAW. The Radioactive Contaminated Land (Modification of Enactments) (Wales) Regulations 2006 were implemented at the same time.

Current Statutory Guidance relevant to Wales is the 'Contaminated Land Statutory Guidance – 2012' (2012) issued by the Welsh Government. This comprises Guidance previously issued in November 2001 and further guidance to accompany other modifications such as the introduction of radioactivity. The principle regulators of the Part 2A process are Environment Agency Wales and as appropriate the local authority responsible for the site in question. As in England the use of the CLEA v1.06 model and the relevant SGV and TOX reports are applicable in Wales.

In respect of Planning the circular 022/87 (WO) prepared by DETR (Department of Environment, Transport and the Regions) on Development of Contaminated Land remains applicable for outlining the requirements associated with new developments, including change of use. The document states that contamination is a material planning consideration, but is ambiguous in a number of areas. It does however indicate that an investigation will normally be required where the previous history of the site suggests contamination.

Planning Policy Wales (2002) outlines that the physical constraints on the land are to be taken into account at all stages of the planning process and this is in the context of land instability and land contamination. It also explains that LPA's (Local Planning Authorities) should be aware of the requirements of Part 2A and ensure that their policies and decisions are consistent with it. This implies that the methods used in assessing land for Part 2A purposes should be applied within the planning regime. Accordingly the concept of risk assessment as a tool to help direct development on a suitable for use basis is appropriate as in England.

NPPF does not apply in Wales, however it may be referred to as good practice, though this may be open to challenge. In Wales Technical Advice Notes (TAN) are used as Planning Policy Statements and currently there is no TAN applicable to land contamination in Wales. WAG is considering the preparation of a TAN and it is understood that this will look at the suitability of PPS23 for Wales, though no timetable for delivering this has been made.

Land Contamination: A Guide for Developers prepared on behalf of the Welsh Local Government Association, Environment Agency Wales & WAG was issued in July 2006. Whilst this is not statutory guidance, it helps confirm good practice and broadly details the risk assessment process in line with the Guidance on 'Land contamination risk management (LCRM)'

Scotland

Since the passing of the Scotland Act and the official convening of the Scottish Parliament and the Scottish Executive on the 1st July 1999 devolved matters, including the environment and planning, have been the responsibility of Scottish Ministers.

There are two regulatory enforcement bodies in Scotland with duties and powers in terms of identification and remediation of contaminated land and development of brownfield sites; Local Authorities and the Scottish Environment Protection Agency (SEPA) which was established in 1996.

The current structure of local government in Scotland was established by the Local Government (Scotland) Act 1994. Since the passing of the Act Scotland has been divided into 29 unitary authorities and 3 island authorities. It is the responsibility of the Scottish Executive to implement Part 2A of the Environmental Protection Act, 1990. Scottish Ministers therefore implemented.

The Contaminated Land (Scotland) Regulations 2000 (SI2000/178) (the 2000 Regulations) with accompanying statutory guidance on the 14th July 2000. The 2000 Regulations were replaced on the 1st April 2006 by the Contaminated Land (Scotland) 2005 Regulations (the 2005 Regulations). The 2005 Regulations amended Part 2A of the Environmental Protection Act 1990 and the 2000 Regulations in the light of the Water Environment and Water Services (Scotland) Act 2003. Guidance on the 2005 Regulations was published in June 2006 in the form of Paper SE/2006/44 (Statutory Guidance; Edition 2) by the Scottish Executive. The document replaces in its entirety the guidance issued July 2000.

Contaminated land was defined in the 2000 Regulations where pollution of controlled waters is being, or is likely to be caused. This meant that any degree of pollution of controlled waters could have resulted in the land being designated as contaminated. The 2005 Regulations addressed the anomaly whereby trivial amounts of pollution resulted in land being designated as contaminated by introducing a requirement that pollution be "significant" or likely to be "significant" in relation to the water environment.

Unlike England and Wales the 2005 Regulations do not include radioactive contamination. The Radioactive Contaminated Land (Scotland) Regulations 2007 came into force in Scotland on the 30th October 2007. The Regulations make provision for Part 2A to have effect with modifications for the purpose of the identification and remediation of radioactive contaminated land.

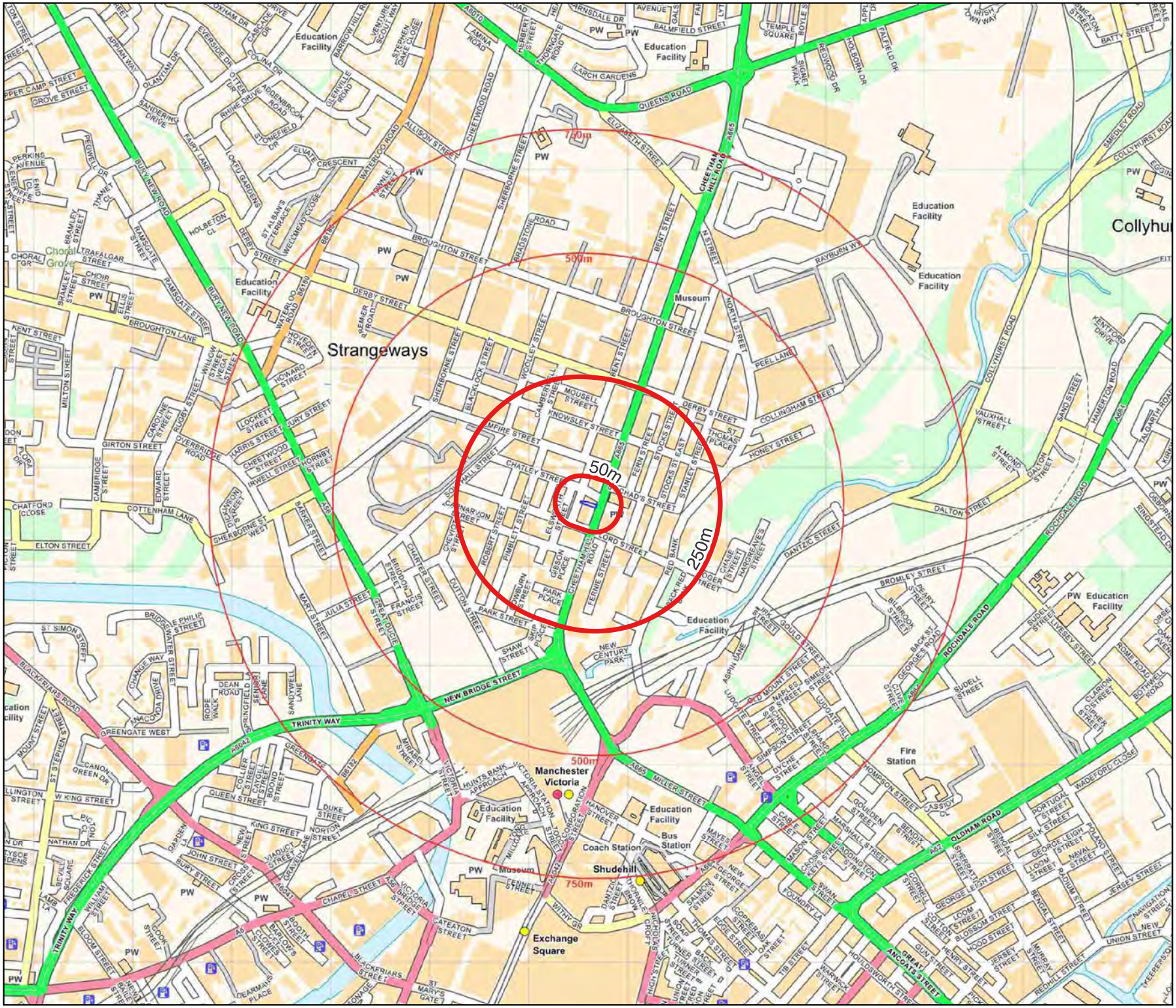
When brownfield or contaminated sites are being developed, Local Authorities require that the need for remediation is determined using guidance provided by Planning Advice Note (PAN) 33. PAN 33 uses the Suitable for Use Approach. The approach focuses on the risks caused by land contamination and recognises that the risks presented by any given level of contamination will vary greatly according to the use of the land and a wide range of other factors such as the underlying geology.

The Suitable for Use Approach comprises three elements:

- Ensuring that land is suitable for its current use;
- Ensuring that land is made suitable for any new use as planning permission is given for that use; and
- Limiting the requirements for remediation to the work necessary to prevent unacceptable risks to human health or the environment in relation to the current use or future use for which planning permission is being sought.

APPENDIX C: RISK ASSESSMENT METHODOLOGIES

APPENDIX D: DRAWINGS



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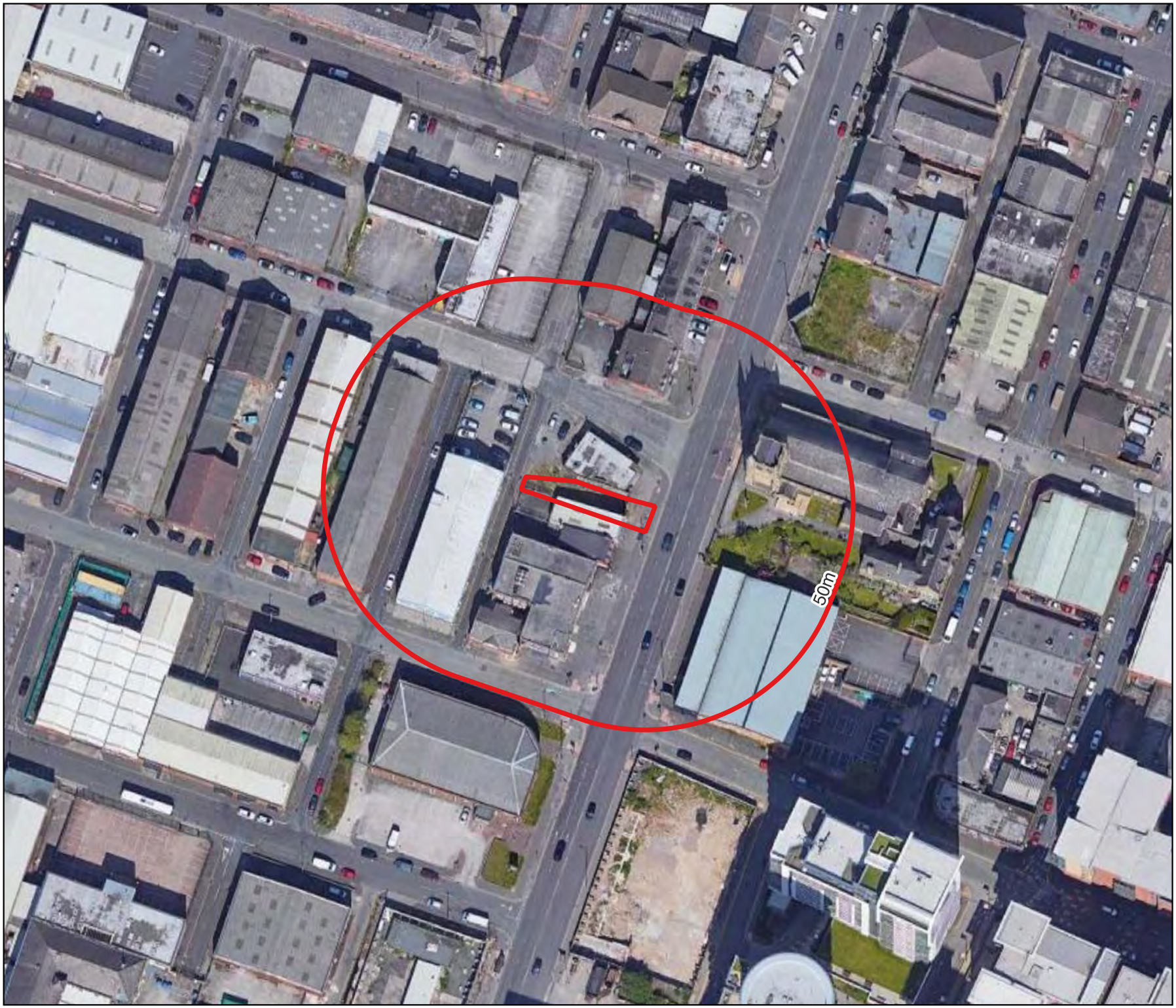
Email: enquiries@demeter-environmental.c

Drawing 1

Site Name: LA 67 Cheetham Hill Road

Site Location

Scale: 1:10,000at A4



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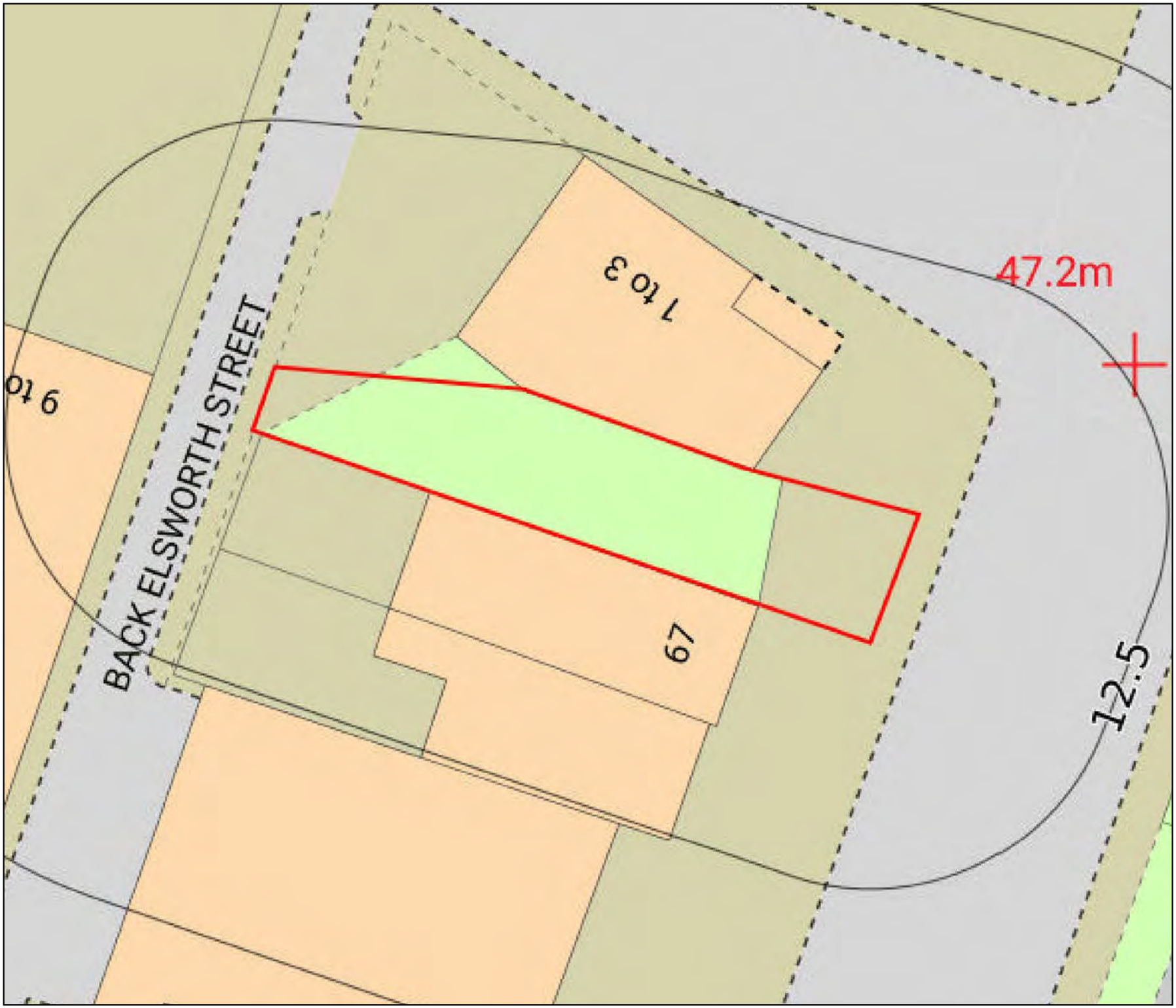
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Drawing: 2

Site Name: LA 67 Cheetham Hill Road

Aerial Plate

Scale: 1:1,250 at A4



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Drawing 3

Site Name: LA 67 Cheetham Hill Road

Site Layout

Scale: 1:250 at A4



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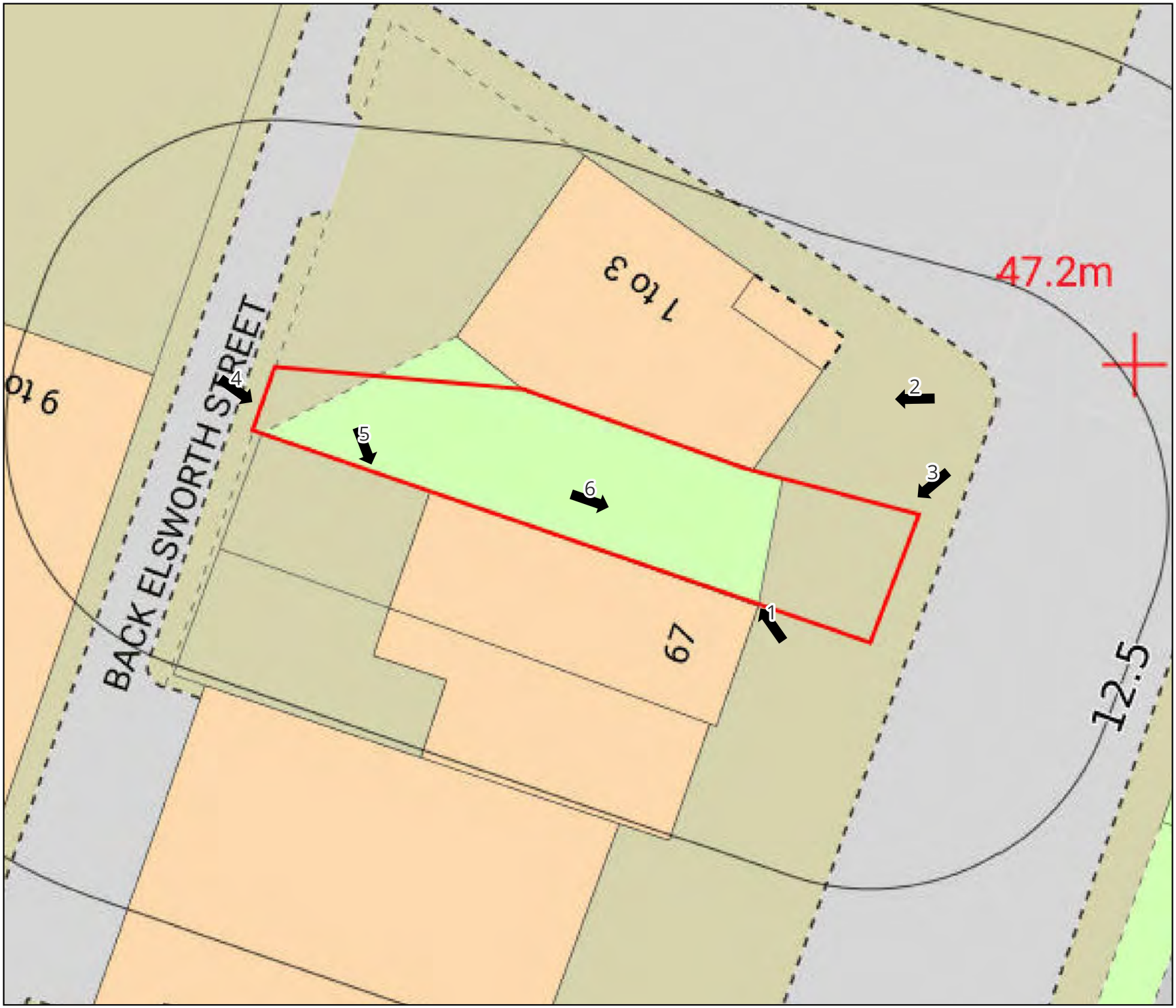
Drawing 4

Site Name: LA 67 Cheetham Hill Road

Potential Sources

Scale: 1:2,500 at A4

APPENDIX E: SITE PHOTOGRAPHS AND PHOTOGRAPH KEY PLAN



DEMETER ENVIRONMENTAL LTD

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Ropewalks
301 Tea Factory,
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Liverpool, L1 4DQ

Tel: 0151 521 2539
Fax: 0151 909 3661

Brighton Office:
Gemini House
136-140 Old Shoreham Road
Brighton, East Sussex
BN3 7BD
Tel: 01273 741 727

Email:
enquiries@demeter-environmental.c

Drawing 5

Site Name: LA 67 Cheetham Hill Road

Photograph Key Plan

Scale: 1:250 at A4



DEMETER ENVIRONMENTAL LTD

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Plate: 1

Site Name: LA 67 Cheetham Hill Road

Description: South eastern area of the site



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Plate: 2

Site Name: LA 67 Cheetham Hill Road

Description: Property on the northern boundary



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Plate: 3

Site Name: LA 67 Cheetham Hill Road

Description: View of southern area of the site



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Plate: 4

Site Name: LA 67 Cheetham Hill Road

Description: Western boundary of the site



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Plate: 5

Site Name: LA 67 Cheetham Hill Road

Description: Central area of the site



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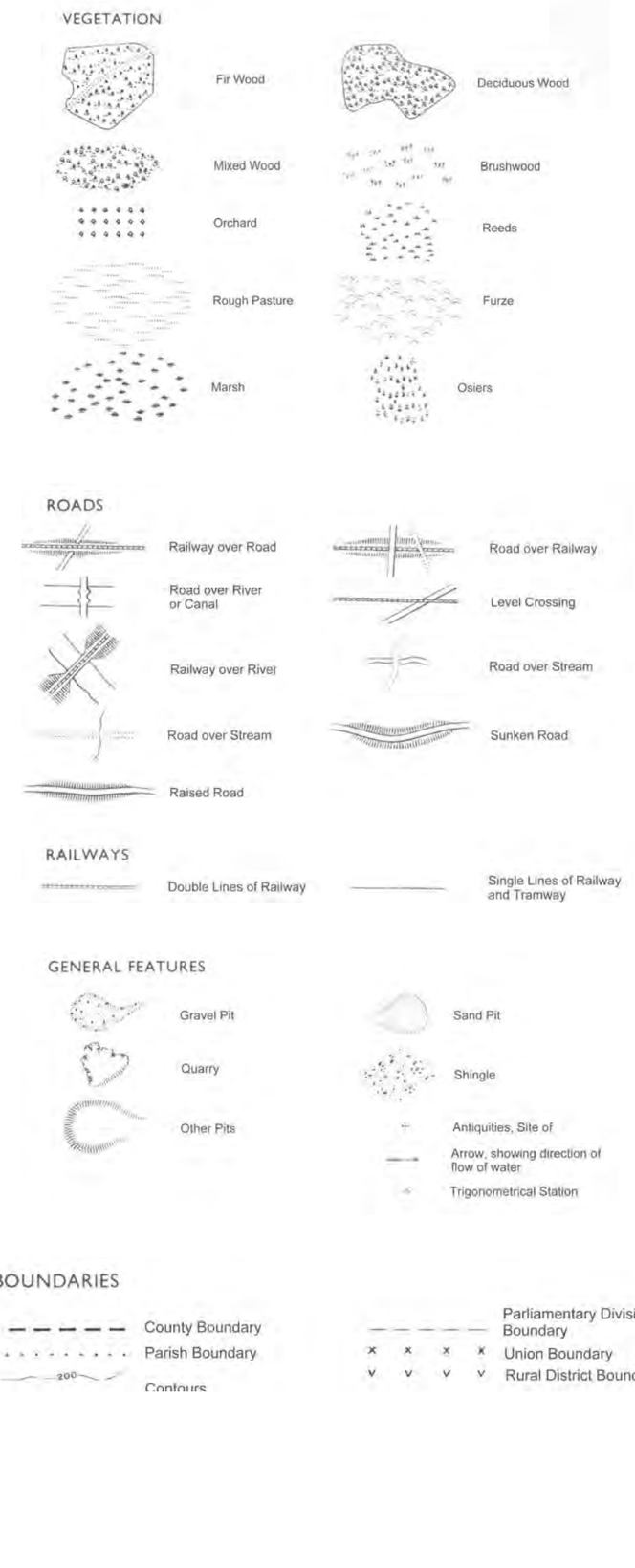
Plate: 6

Site Name: LA 67 Cheetham Hill Road

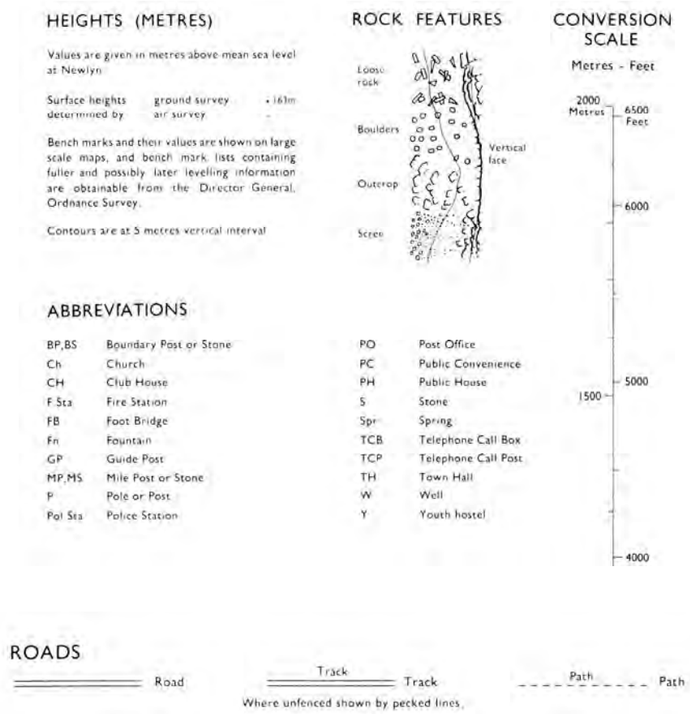
Description: South eastern area of the site

APPENDIX F: HISTORICAL O.S. MAPS

County Series 1:10,560 scale



National Grid 1:10,000 scale



GroundSure

Historical Map Pack Legend

County Series & National Grid

1:10,560 scale

Information present on these legends is sourced from the same Ordnance Survey mapping as the maps used in this product.

If you have a query regarding any of the maps provided please contact GroundSure's technical helpline. We will endeavour to answer any queries you may have.

Technical Helpline

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