



152-154 Uxbridge Road, Hayes, UB4 0JH

Ground Investigation Interpretative Report

Report No: 2024-065-PRE-UXB_REP001_REV03

Date: 13/08/2025

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DOCUMENT CONTROL SHEET

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Remarks		Revised to include findings from internal foundation pitting.	Revised to adjust the allowable bearing capacity of the Langley Silt Member	Amended foundations section in executive summary
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PREAMBLE

The work undertaken to provide the basis of this report comprised a study of the available documented information from a variety of sources, together with (where appropriate) meetings and discussions with relevant authorities and other interested parties. The information reviewed should not be considered exhaustive and has been accepted in good faith by Geofirma as providing a true description of site conditions. However, no liability can be accepted for the detailed accuracy or otherwise of any of the reports or documents prepared by others for the Client or for third parties, or for any associated errors or omissions.

The exploratory holes undertaken during the fieldwork only represents a small volume of the ground in relation to the size of the site and can therefore only provide a general indication of the site conditions.

The comments and recommendations given in this report are based on the ground conditions apparent within the boreholes and trial pits excavated on site. It is likely ground conditions elsewhere on the site have not been disclosed by this investigation and have therefore not been included in this report.

The comments made on groundwater conditions are based on observations made during the time that site works were undertaken. As part of the scope, standpipes were installed for monitoring of ground gas concentrations and groundwater levels. It should be noted that groundwater levels can vary owing to seasonal or other effects.

In relation to asbestos, we are unable to accept the associated liability as indemnity covering asbestos related matters is restricted from our policy. This is typically the industry norm. During the ground investigation, the site supervisor and geotechnical engineer had identified asbestos on the site which is located within the existing on-site 1-2No. storey joint retail and residential building.

The scope of the investigation was decided in consultation with the structural engineer, Precision Structural Engineering, the architect, MS4 Architects Ltd and the Client (Sukanth Yoganathan) and, the limitations of which were made clear. This report is produced solely for the use of the Client and his/her agent and should not be relied upon in any way by any third party.

EXECUTIVE SUMMARY

PROJECT NAME	Uxbridge Road
CLIENT	Sukanth Yoganathan
SITE LOCATION	152-154 Uxbridge Road, Hayes, UB4 0JH
GROUND INVESTIGATION	<p>The intrusive investigation comprised of</p> <ul style="list-style-type: none"> • 1 cable percussion borehole extending to 20m bgl • 3 window sampler boreholes terminating at the top of the River Terrace Deposits • 4 trial pits excavated for CBR testing at 0.5m bgl. Two of these pits were extended conduct soakaway testing. • 2 foundation inspection pits at the boundary wall and substation building. • Groundwater and ground gas monitoring was undertaken in all the boreholes. • 3 foundation inspection pits undertaken inside the existing building. These pits were excavated at a later date due to the discovery of asbestos during the initial investigation.
GROUND CONDITIONS	<p>Approximately 0.45m thickness of Made Ground was encountered across the site.</p> <p>Langley Silt Member was encountered below the Made Ground at all locations, and is typically described as firm slightly gravelly slightly silty CLAY.</p> <p>River Terrace Deposits were encountered in all boreholes but only proven down to 4.20m bgl depth in BH1. The material is typically a dense sandy GRAVEL.</p> <p>BH1 encountered London Clay between 4.2m and 20m, described as firm to stiff CLAY.</p>
GROUNDWATER	<p>During the investigation groundwater was only encountered within TP4 at 0.45m bgl.</p> <p>A groundwater monitoring visit was conducted on 19/12/2024. Boreholes with response zones</p>

	<p>within the River Terrace Deposits recorded groundwater at approximately 3.1m bgl while variable groundwater levels were recorded in those with response zones within the Made Ground. It is expected that surface water is present perched above the cohesive Langley Silt member, but the groundwater table at 3.1m bgl within the River Terrace Deposits is more indicative of the in-situ groundwater conditions.</p>
<p>CONTAMINATION</p>	<p>No remedial action is required at the site. Following recommendations from the ground investigation. The Asbestos Demolition Survey by Home Counties Asbestos (Appendix I) recommends that the vinyl tile flooring and bitumen adhesive (ACMs) are removed prior to demolition of the existing on-site building. The asbestos removal works was carried out by a licenced asbestos contractor (All Asbestos), which allowed Geofirma Ltd to excavate the indoor foundation pits.</p> <p>Surplus excavated soils on site will need to be removed from the site and disposed of in accordance with current waste management and Duty of Care regulations.</p>
<p>FOUNDATIONS</p>	<p>Pad or strip foundations may be founded at minimum 1.0 m bgl in the Langley Silt Member. Allowable bearing capacity will range between 150 kPa and 175 kPa depending on the founding level.</p> <p>Preliminary safe working loads for pile foundations have been calculated as an alternative to shallow pad/strip foundations. Based on the estimated column load provided \varnothing300mm or \varnothing450mm CFA piles are deemed viable.</p>
<p>BURIED CONCRETE</p>	<p>A Design Sulphate Class of DS-1 and an ACEC classification AC-1s may be adopted the selection of the concrete to be used for pad foundations founded on or above the River Terrace Deposits or bored piles.</p>

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1 INTRODUCTION

1.1 PROJECT BACKGROUND

Geofirma has been appointed by Sukanth Yoganathan (henceforth referred to as “the Client”) to conduct a ground investigation located at the rear of 152-154 Uxbridge Road, Hayes, UB4 0JH. The site features a joint one and two-storey combined retail and residential building with a dedicated parking area located at the rear of the site. The project proposal involves demolition of existing structures for the subsequent: erection of three-storey mixed use retail and nine residential apartments with ancillary parking, amendments to dropped kerbs, refuse and bicycle storage.

Figure 1. Existing Site and Ground Investigation Location



1.2 OBJECTIVES AND METHODOLOGY

The primary objectives of the ground investigation as stated in the client's scope are as follows:

- Establish ground and groundwater conditions beneath the site;
- Determine the strata on which the existing building foundations are found on;
- Derive geotechnical parameters to inform the bearing capacity for the proposed foundations;
- Provide engineering recommendations for the foundation design based on the current proposal, including an assessment of the existing bearing capacity at the site and

potential deep/pile foundations. Additionally, evaluate the feasibility of implementing a ground-bearing slab foundation for the proposed development;

- Determine the sulphate classification for buried concrete structures at the site;
- Provide a recommended CBR value for the design of car parking and pavements at the site, based on the results obtained from the ground investigation;
- Determine the infiltration rate of the soil for surface water and soakaway design;
- Present geotechnical advice on any exceptional or difficult ground related issues on the site that may have influence on the proposed scheme.

1.3 PREVIOUS REPORTS

Before commencing the ground investigation, a Phase 1 Contaminated Land Assessment was provided to Geofirma by the Client. This assessment, prepared by Reports4Planning, was issued to the Client on 13th December 2021. It will be frequently referenced and can be found in Appendix H.

As part of the assessment, a site walkover was conducted. No significant changes to the site were observed during Geofirma Ltd's pre-ground investigation site walkover on 28th November 2024.

2 SITE DETAILS

2.1 SITE LOCATION AND DESCRIPTION

The site summary is in Table 1 below:

Table 1. Site Summary

Location	The existing site is approximately 0.17 acres in plan and is shown (outlined in red) in Figure 2. The approximate British National Grid coordinates for the main building is Easting 511419 Northing 180817.
Full Address	152-154 Uxbridge Road, Hayes, London, UB4 0JH
Development Proposals	<p>The proposed redevelopment involves the construction of a three-story mixed-use building comprising retail space and nine residential apartments, along with ancillary parking, modifications to dropped kerbs, and provisions for refuse and bicycle storage.</p> <p>The development will feature two structures positioned to the north and south, with a car parking area situated between them.</p>

Figure 2: Site Location



2.2 GEOLOGY

According to the published geology, based on the British Geological Survey (BGS) map 1:50,000 geological map series, the site is underlain by the Langley Silt Member superficial deposits, as seen in Figure 3. The BGS describes the Langley Silt Member as silt to clay,

commonly yellow-brown and massively bedded. There are localised areas of Lynch Hill Gravel Members shown to the south of the site, but well outside the site boundary. The bedrock geology is from the London Clay Formation, as shown in Figure 4. The BGS describes the London Clay Formation bioturbated or poorly laminated, blue-grey or grey-brown, slightly calcareous, silty to very silty clay, clayey silt and sometimes silt, with some layers of sandy clay.

The published geology at the site is summarised below in Table 2.

Figure 3: BGS Superficial Geology Map at Site Location

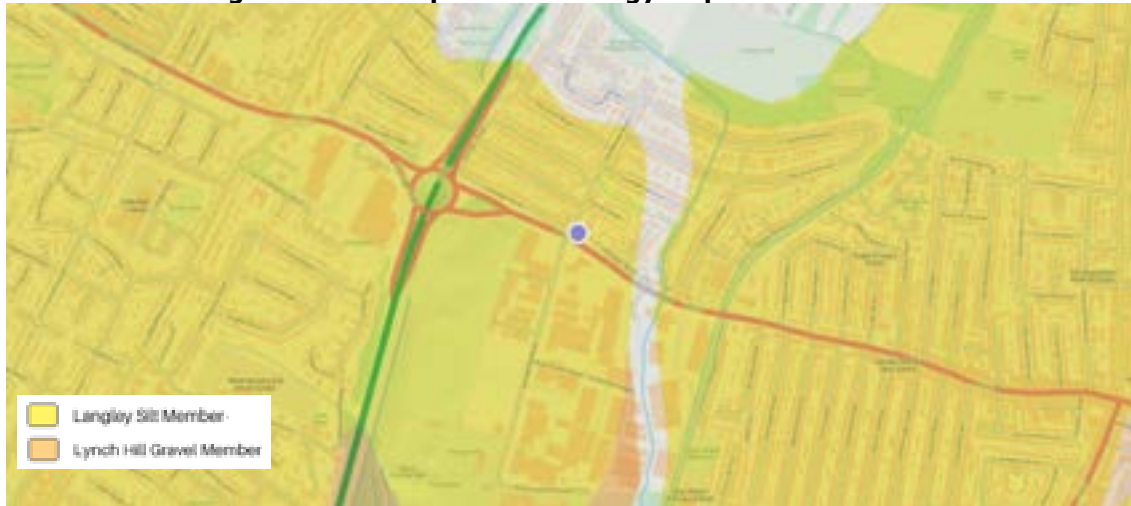


Figure 4: BGS Bedrock Geology Map at Site Location



Table 2. Summary of Published Geology

Geological Unit	Strata Name	Composition	BGS Lexicon Description
Superficial	Langley Silt Member	Silt and Clay	Varies from silt to clay, commonly yellow-brown and massively bedded. The lower boundary rests on sand and gravel River Terrace Deposits, with sharp base.
Bedrock	London Clay Formation	Silty Clay	Mainly comprises bioturbated or poorly laminated, blue-grey or grey-brown, slightly calcareous, silty to very silty clay, clayey silt and sometimes silt, with some layers of sandy clay. It commonly contains thin courses of carbonate concretions ('cementstone nodules') and disseminated pyrite. It also includes a few thin beds of shells and fine sand partings or pockets of sand, which commonly increase towards the base and towards the top of the formation. At the base, and at some other levels, thin beds of black rounded flint gravel occurs in places. Glauconite is present in some of the sands and in some clay beds, and white mica occurs at some levels.

2.3 BGS-NEARBY HISTORICAL BOREHOLE LOGS

The nearest historical borehole log (100 m south) with BGS Reference: TQ18SW7, confirmed that based on the above descriptions the ground likely commences in the Langley Silt Member (characterised by brown, sand, clay properties) which is likely underlain by the River Terrace Deposits which, is subsequently underlain by the London Clay Formation. The historical borehole log can be viewed in Appendix G.

2.4 GROUND INVESTIGATION

The investigation was carried out between 10th to 13th December 2024 and 20th February by Geofirma and comprised the following:

- The drilling of 4 No. boreholes:
 - BH1 was drilled to 20 m bgl under the proposed footprint of the proposed building using a cable-percussion rig. Standard Penetration Tests (SPT's) were undertaken at 1.0 m intervals to top of London Clay; SPTs were undertaken at 1.5 m intervals from the top of the London Clay Formation to base of borehole (20 m bgl).
 - WS1-WS3 was drilled to a maximum depth of 3.7 m bgl using a window sampling rig which refused within and at the top of the River Terrace Deposits.
- The excavation of 6 No. trial pits (SA1, SA2, TP3 and TP4) within the existing car parking area and 3 No. trial pits (TP1, TP5 and TP6) inside the existing building following asbestos removal:

- Trial pits SA1 and SA2 was undertaken for the BRE365 soakaway testing. The pits were logged prior to soakaway testing.
 - Trial pits TP1, TP3, TP4 and TP5 were undertaken to expose the underside of the third-party wall foundations so that the profile of the wall and foundation can be logged. Foundation inspection pit sketches can be found in Appendix B.
 - Trial pit TP2 was cancelled as the proposed location was covered 250 mm reinforced concrete slab and it would have taken too long to uncover the foundation (at TP2) without a concrete coring rig.
 - Trial Pit TP6 was excavated as an additional investigation to assess variations in the materials supporting the existing concrete slab. The findings are presented in the exploratory hole location plan in Appendix A; a sketch of the pit is provided in Appendix B.
- The breaking out of an additional 4 No. shallow trial pits (CBR1 to CBR4) for Californian Bearing Ratio testing. Samples at the base of these pits were taken off-site for Moisture Content testing at a geotechnical laboratory.
 - After CBR1 and CBR2 were tested for Californian Bearing Ratio tests, the pits were subsequently widened and deepened for subsequent infiltration testing, referenced as SA1 and SA2.

The fieldwork was supervised on a full-time basis by a Geotechnical Engineer from Geofirma. The exploratory hole record with soil descriptions is included in Appendix B prepared by Geofirma. The location of the borehole and trial pits is shown on the Exploratory Hole Location Plans in Appendix A. Selected samples were taken off-site for advanced geotechnical laboratory testing. Results of the tests are shown in Appendix C.

3 GROUND CONDITIONS

3.1 INTRODUCTION

The composition of Made Ground roughly varied from north to south of site, however the profile of the natural strata encountered was consistent. Table 3 summarises the descriptions of the different strata encountered during the ground investigation.

Table 3. Proven ground Conditions

Strata	Summary of Descriptions
Tarmac	Road surfacing/ tarmacadam.
Concrete	Road surfacing.
Topsoil	Vegetation over loose dark brown slightly clayey sandy GRAVEL. Sand is angular coarse. Gravel is rounded to angular fine to medium to brick fragments, tarmacadam and flint. Rare presence of ash.
	Vegetation over very dark brown clayey silty SAND. Sand is angular fine. Frequent rootlets. Rare presence of ash.
Made Ground	Loose dark brown slightly gravelly slightly clayey SAND. Gravel is angular medium to coarse of flint and brick fragments. Sand is angular coarse.
	Multicoloured sandy GRAVEL. Sand is angular coarse. Gravel is subangular to angular medium of shingle, tarmacadam and brick fragments.
Langley Silt Member	Firm light brown slightly gravelly slightly silty CLAY.
	Firm to stiff light grey stained dark brown mottled light brown CLAY, Occasional lenses of sand and gravel. Sand is angular coarse. Gravel is angular fine to medium of flint.
River Terrace Deposits	Medium dense to very dense slightly clayey slightly sandy GRAVEL. Sand is angular coarse. Gravel is subangular to angular fine to coarse of flint.
London Clay Formation	Firm to very stiff light grey silty CLAY with rare to occasional presence of selenite crystals. Laminated bedding noted near base of borehole (19.85 m bgl).

3.2 MADE GROUND

3.2.1 Description

The composition of Made Ground material varies across the site; the Made Ground varied underneath the different road surfaces and topsoil:

- Beneath the tarmac area - comprised of debris of brick fragment, various sized sands and flints/imported shingle and tarmac fragments. Composition is slightly clay.
- Beneath the concrete area – primarily comprised of imported sand and gravel of various sizes with occasional presence of brick and tarmac. Becomes clayey with increasing depth.
- Beneath the landscaped area – comprised of CLAY with imported sand and gravel of various sizes with occasional tarmac fragments.

Based on the material description a friction angle of 28° and a unit weight of 17 kN/m³ is appropriate for this material.

3.3 LANGLEY SILT MEMBER

3.3.1 Description

The Langley Silt Member was encountered at roughly 0.45 m bgl and was described as a firm silty CLAY with stiffness increasing with depth. The thickness of the Langley Silt Member ranged from 1.0 m to 1.8 m, with the thickest section located at the centre of the car parking area. The stratum was occasionally dark brown mottled, occasionally light grey stained light brown CLAY. This material was encountered in all exploratory holes.

Based on the material description a unit weight of 18 kN/m³ is deemed appropriate for this stratum.

3.3.2 Moisture Content

A total of 2No. natural moisture content tests were conducted on selected samples from depths of 1.2 m to 1.8 m bgl. 4 No. additional moisture content tests were conducted on samples taken from the base of the CBR test locations, for which the results are summarised in Table 4. The results indicate an average moisture content of 21% for the Langley Silt Member.

Table 4. Natural Moisture Content of Langley Silt samples

Location	Depth (m)	Description	Moisture Content (% by mass)
WS2	1.4	High strength brown slightly sandy silty CLAY	24
WS3	1.2	Brown slightly sandy slightly gravelly silty CLAY (gravel is fine to medium and sub-angular to sub-rounded)	17
CBR1	0.5	Brown slightly sandy silty CLAY	24
CBR2	0.5	Brown slightly sandy silty CLAY	23
CBR3	0.5	Brown slightly sandy silty CLAY	21
CBR4	0.5	Brown slightly sandy slightly gravelly silty CLAY (gravel is fine to medium and sub-rounded)	18

3.3.3 Atterberg Limit

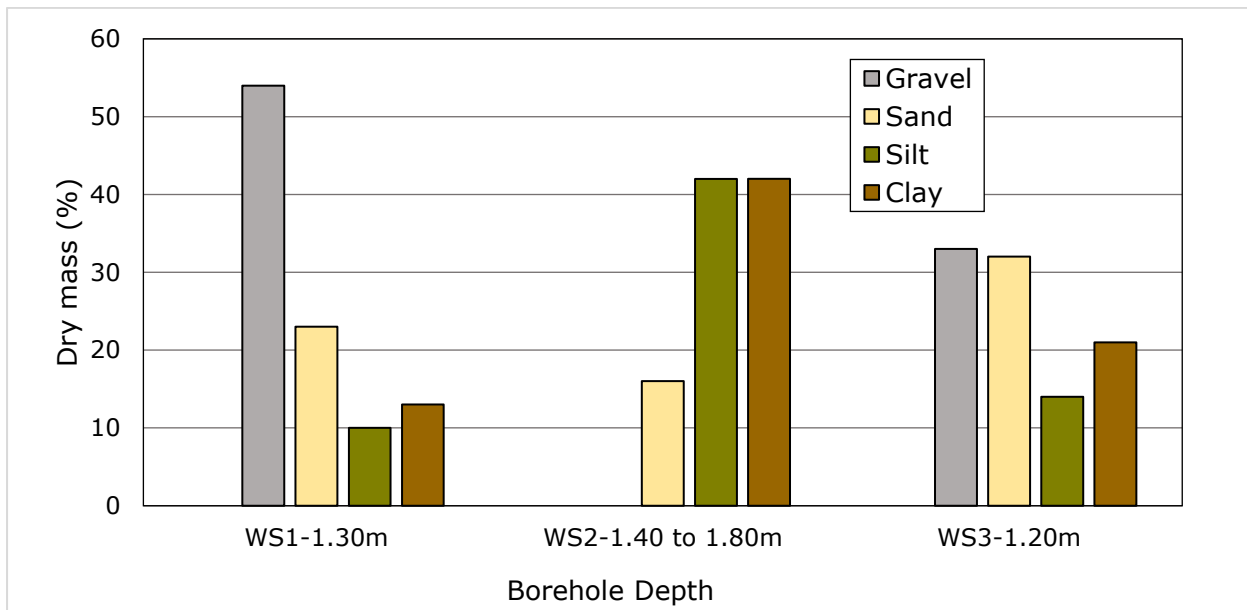
2No. Atterberg limit tests were conducted on samples of Langley Silt member from WS2 and WS3 at depths between 1.2 m and 1.8 m bgl respectively. The tests recorded a liquid limit ranging from 49% to 50%, a plastic limit between 18% and 20%, and a plasticity index from 30% to 31%. Given that the percentage of particles passing the 425 µm sieve was not 100%, a modified plasticity index (I_p) is calculated.

The percentage passing 425 µm for the tested samples are between 57% and 98%, for which the maximum modified plasticity index was 30%. Based on Table 1 in Section 4.2.4 of the NHBC Guidelines the soil has a medium volume change potential and therefore is likely to exhibit compressibility and shrink-swell behaviour.

3.3.4 Particle Size Distribution

3 No. single Particle Size Distribution (PSD) tests were conducted on samples from the Langley Silt Member, obtained at depths between 1.2 and 1.8 m bgl during the Geofirma investigation. The results, illustrated in Figure 5, show that the samples of this stratum contains between 23 and 84% fine particles (<0.063 mm).

Figure 5: Particle size distribution of the Langley Silt Member



The sample from WS2 is the most indicative of the general composition of this stratum. It is expected that the high proportion of sand and gravel in the sample from WS1 is due to the sample being within a transition layer with the River Terrace Deposits, and the sample from WS3 appears to include a lens of sand and gravel at the sampled location.

3.3.5 Strength Characteristics

Standard Penetration Testing (SPT) was carried out and the uncorrected SPT 'N' Values were recorded on the exploratory hole records. The data shows results ranging from 14 to 28 blows. Shear strengths were derived from the SPT 'N' using the empirical formula $c_u = 5N$ (Stroud and Butler and CIRIA R143). One undrained triaxial test was also conducted. Summary of the results are included in Table 5:

Table 5: Undrained shear strength results for Langley Silt Member

Hole Reference	Depth (m)	SPT N Value	c_u (kPa)
WS1	1.00	28	140
WS2	1.00	17	85

Hole Reference	Depth (m)	SPT N Value	c_u (kPa)
WS3	2.00	14	70
WS3	1.00	27	135
WS2 (Triaxial)	1.60	-	90

Based on the SPT testing, triaxial test, the material description and moisture content, an undrained shear strength of $45 + 30z$ kPa is recommended for the Langley Silt Member.

Atterberg tests results have been used to determine the index properties of the soil and hence establish the effective stress angle of friction using guidelines from BS 8002:2015. The critical state angle of friction derived is 24° . The worst case characteristic critical state effective cohesion c' is assumed to be zero.

3.3.6 Young's Modulus

The value of undrained Young's Modulus, E_u , for the Langley Silt Member can be determined by using SPT 'N' values and relationships recommended by CIRIA 760 and Burland, Standing, and Jardine (2001). The stiffness modulus is calculated using the formula $E_u = 500c_u$. Therefore, an E_u value of 30 MPa may be adopted for settlement calculations (SLS).

Assuming a Poisson's ratio (ν) of 0.35, an E' (drained young modulus) of $0.75 \cdot E_u$ should be adopted. Therefore, an $E' = 23$ MPa may be adopted for the computation of settlements (SLS).

3.4 RIVER TERRACE DEPOSITS

3.4.1 Description

The River Terrace Deposits was encountered at roughly 0.9 m to 1.7 m bgl within all boreholes. The thickness of the strata was verified only once (at BH1) with a thickness of 3.3 m. The stratum was described as dense to very dense with decreasing density when approaching the underlying London Clay Formation.

The only discrepancy was that the material in WS2 was described as loose to medium dense, likely due to the loosening of granular deposits caused by an artificially elevated water table or overnight water seepage. This observation aligns with the borehole, where overnight water seeped into the inspection pit (at a depth of 1.2 m bgl) which caused the water level to rise to 0.3 m bgl. A unit weight of 19 kN/m³ will be considered suitable for design purposes for this stratum.

3.4.2 Moisture Content

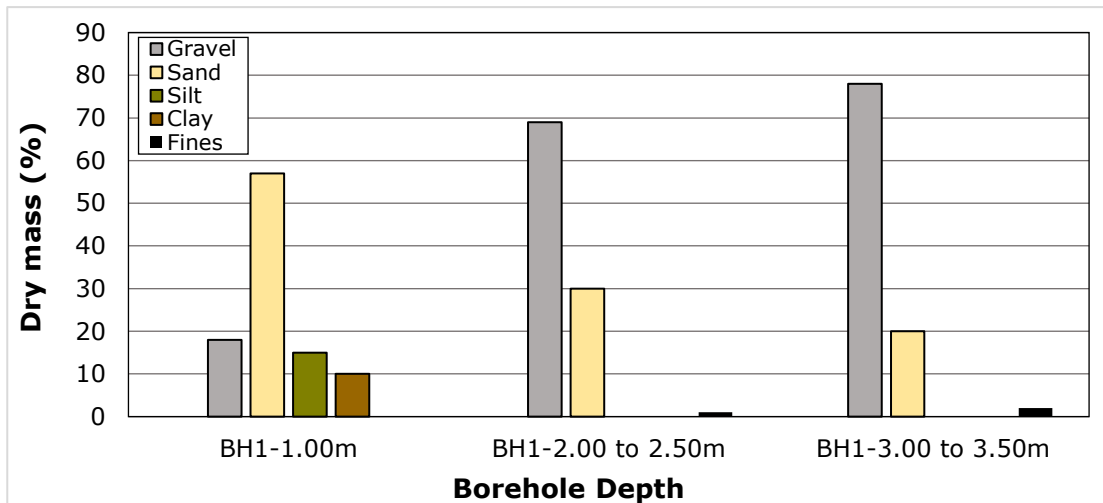
2 No. natural moisture content test was conducted from samples taken from the River Terrace Deposits from 1.30m bgl at WS1 and 1.00m bgl at BH1, giving moisture content values of 10% and 15% respectively.

3.4.3 Particle Size Distribution

3No. Particle Size Distribution (PSD) tests were carried out on materials from the River Terrace Deposits. Samples were taken from depths between 1.0 m to 3.5 m bgl. The results, depicted graphically in Figure 6, indicate that this stratum is predominantly granular, comprising between 75% and 99% of granular material, with fine particles (<0.063mm) present in smaller proportions (total of 1% to 25%). Consequently, the soil is predominantly a sandy GRAVEL.

It is noted that to progress through the dense River Terrace Deposits water was added to the borehole, which may have washed out some of the fines from the River Terrace Deposits, leading to a lower fines content in the sampled material than may be present in the in-situ material.

Figure 6: Particle size distribution overview of River Terrace Deposits samples



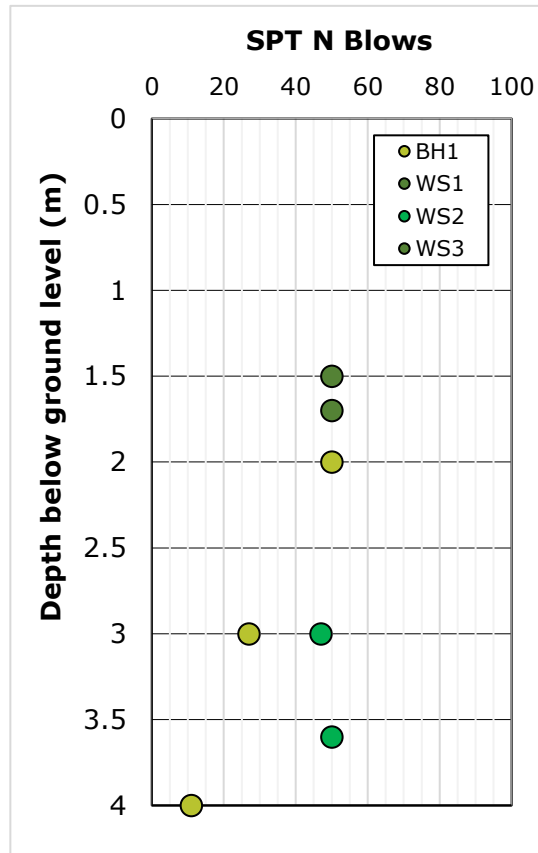
3.4.4 Strength Characteristics

The River Terrace Deposits Formation found on site is predominantly granular, hence the characteristic critical state effective angles of friction ϕ'_{cv} can be determined using Equation 3 of BS 8002:2015. This equation is based on the uniformity coefficient obtained from the grading analysis, along with the description of the angularity of the samples. The equation is given as:

$$\phi'_{cv} = 30^\circ + \phi'_{PSD} + \phi'_{ang}$$

where ϕ'_{PSD} is the contribution from the soil's particle size distribution and ϕ'_{ang} is from the angularity of the soil particles. Based on the guidelines from BS 8002:2015, the River Terrace Deposits Formation granular deposits exhibit a characteristic friction angle of 36° .

Figure 7: SPT N Results vs Depth Plot for River Terrace Deposits



3.4.5 Young's Modulus

Standard Penetration Testing (SPT) was conducted, with uncorrected SPT 'N' values recorded in the exploratory hole logs and shown in Figure 7. Measured SPT N-values in the River Terrace Deposits typically exceeded 50, reducing towards the base of the stratum. Using the correlation $E' = 2N$ (MPa), the drained Young's Modulus (E') was estimated as 60 MPa, taking into account the reduced stiffness at the bottom of the layer.

3.5 LONDON CLAY FORMATION

3.5.1 Description

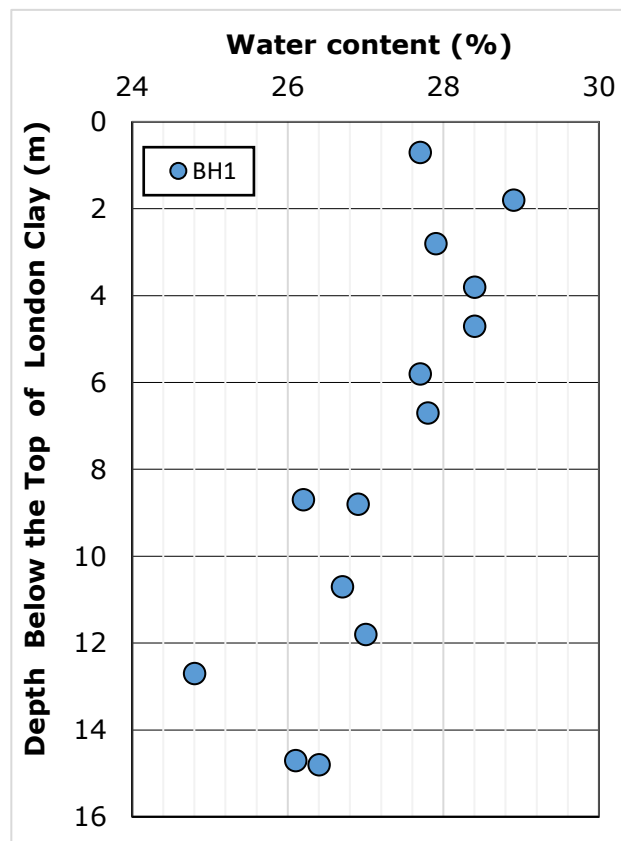
The London Clay Formation was only reached once at 4.2 m bgl within BH1 and the thickness of this stratum was not verified; the borehole terminated at 20 m bgl after reaching the required depth for potential pile foundation design. The material was described as firm to stiff becoming very stiff with increasing depth, light grey silty CLAY. Rare to occasional presence of selenite crystals (with increasing depth) was noted within the clay matrix.

Based on the material description a unit weight of 19 kN/m^3 is deemed appropriate for this stratum.

3.5.2 Moisture Content

A total of 14No. natural moisture content tests were conducted on selected samples from depths of 4.9 m to 26.4 m bgl. The results indicate that the moisture content of the London Clay Formation across these depths is between 25 to 29%. The distribution of water content with depth is illustrated in Figure 8.

Figure 8. Moisture content against depth plot for London Clay



3.5.3 Atterberg Limit

2No. Atterberg limit tests were conducted on samples taken from depths of 10 m and 14.9 m bgl from BH1. The tests recorded a liquid limit ranging from 71% to 77%, a plastic limit between 28% and 30%, and a plasticity index from 43% to 47%. Given that the percentage of particles passing the 425 µm sieve was 100% for both samples, the modified plasticity index (I_p) is the same as the plasticity index in this case.

Based on Table 1 in Section 4.2.4 of the NHBC Guidelines the soil has a high-volume change potential, therefore may be at risk of shrink-swell behaviour due to changes in moisture content.

3.5.4 Particle Size Distribution

No particle size distribution tests were carried out on the London Clay, however it is noted that both samples from the Atterberg Limit tests were comprised of 100% fines particles.

3.5.5 Strength Characteristics

Standard Penetration Testing (SPT) was carried out and the uncorrected SPT 'N' Values were recorded on the exploratory hole records. The data shows results ranging from 16 to 50 blows and a general trend of increasing N-value with depth. Shear strengths were derived from the SPT 'N' using the empirical formula $c_u = 5N$ (Stroud and Butler and CIRIA R143). The results from the triaxial testing and undrained shear strengths derived from the SPTs are plotted in Figure 9. Based on the SPT and triaxial results, the material description and moisture content, the following undrained shear strength vs depth relationship has been adopted:

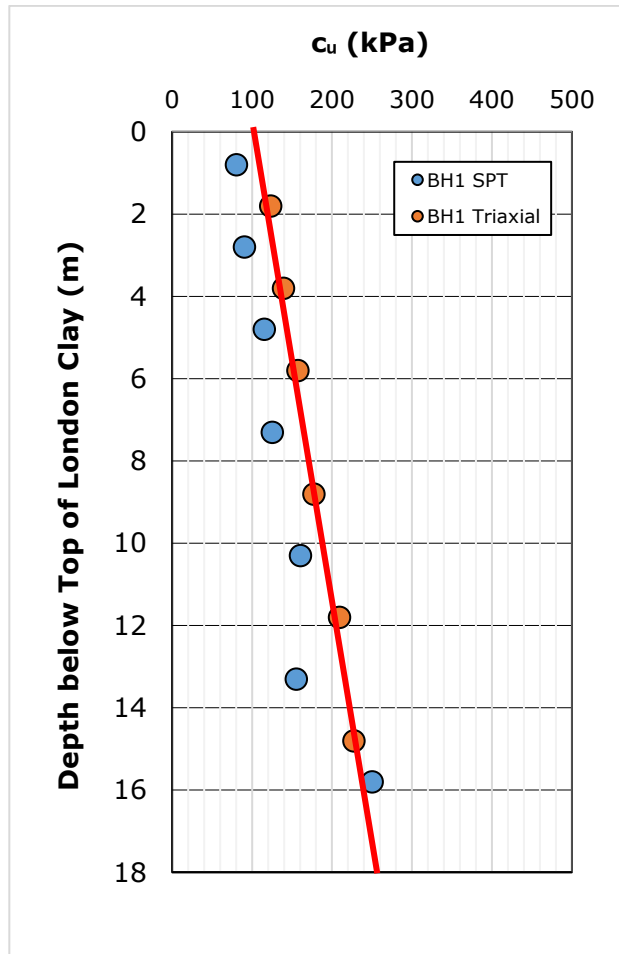
$$c_u \text{ (kPa)} = 8.5z + 100$$

Where z is the depth below the top of the London Clay.

Note that the triaxial testing has been more heavily weighted when deriving the design line for the London Clay, since there is only an indirect correlation between SPT N values and the undrained shear strength that is heavily dependent on the factor f_1 chosen.

The effective angle of friction for London Clay is taken as 24° , based on prior experience working in London Clay. The worst case characteristic critical state effective cohesion c' is assumed to be zero.

Figure 9: Undrained Shear Strength vs Depth of London Clay



3.5.6 Young's Modulus

The value of undrained Young's Modulus, E_u , for the Langley Silt Member can be determined by using SPT 'N' values and relationships recommended by CIRIA 760 and Burland, Standing, and Jardine (2001). The stiffness modulus is calculated using the formula $E_u = 500c_u$. Therefore, an E_u value of $4.2z + 50$ MPa may be adopted for settlement calculations (SLS).

Assuming a Poisson's ratio (ν) of 0.35, an E' (drained young modulus) of $0.75 \cdot E_u$ should be adopted. Therefore, an $E' = 3.2z + 38$ MPa may be adopted for the computation of settlements (SLS).

3.6 SUMMARY OF GEOTECHNICAL PARAMETERS

Based on the ground investigation and laboratory testing, the following design parameters have been derived and presented in Table 6. These may be relied upon in the design of geotechnical structures.

Table 6: Summary of Geotechnical Parameters

Stratum	Depth to base (m)	γ (kN/m ³)	c_u (kPa)	ϕ' (°)	E_u (MPa)	E' (MPa)	ν
Made Ground	0.45	17	-	28	-	25	0.4
Langley Silt Member	1.8	19	$30z_1 + 45$	24	30	23	0.35
River Terrace Deposits	4.2	19	-	36	-	60	0.25
London Clay	Unknown	19	$8.5z_2 + 100$	24	$4.2z + 50$	$3.2z + 38$	0.35

Z₁ is taken from the top of the Langley Silt Member

Z₂ is taken from the top of the London Clay

3.7 GENERAL GROUNDWATER REGIME

Groundwater was not encountered in any of the exploratory holes however, water was recorded at 0.3 m bgl in WS2 where overnight rainfall had entered the inspection pit.

One groundwater monitoring visit was undertaken on 19/12/2024. The water levels recorded are summarised in the table below:

Table 7: Groundwater Monitoring Results

Location	Response Zone (m bgl)	Water Level (m bgl)
BH1	2.00 to 4.00	3.18
WS1	0.25 to 1.50	0.62
WS2	0.70 to 3.00	3.12
WS3	0.25 to 1.25	1.26

The monitoring results suggest that groundwater within the River Terrace Deposits is present at approximately 3.1m bgl. A higher groundwater table was encountered for the monitoring points with response zone in the Made Ground layer. It is expected that water in the Made Ground is generally perched on the cohesive Langley Silt member, and therefore a

groundwater table at 3.10m bgl is more representative of the site conditions.

3.8 VISUAL AND OLFACTORY EVIDENCE OF CONTAMINATION

As part of the initial site inspection carried out by Reports4Planning on 17th November 2021 to support the Phase 1 Land Contamination Assessment for the site, an electrical sub-station (dating to the early-1970s) was identified as a potential source of contamination at the site. The electricity substation was located immediately adjacent to the north-eastern corner of the site and was housed in a red, fully enclosed brick-built structure, accessed via the track to the rear of the site. At the time of the ground investigation, no obvious evidence of significant contamination associated with the sub-station was noted.

It was proposed that two trial pits (TP1 & TP2) were to be undertaken inside the existing joint residential/commercial dwelling to profile the existing building foundations however, asbestos was identified within the existing vinyl-tile flooring and the screed that adhered the tiles to the floor. Sample photos of the ACMs can be viewed in Appendix I.

No evidence of spills, leaks, staining or other potential sources of contamination were noted during the ground investigation on site.

As detailed in Section 3.2 of this report, the Made Ground on site was 0.45 m to 1 m thick and was present at ground level in all exploratory holes on site. The upper surface of the Made Ground comprised tarmacadam (BH1, WS1, WS2 and SA2), concrete (WS3) and re-worked topsoil (SA1, TP3 and TP4). The rare presence of ash was recorded in SA1 between ground level and 0.3 m bgl and the foundation inspection pits, TP3 and TP4 between ground level and 0.2 m to 0.25 m bgl. No other evidence of contamination was found during the ground investigation.

4 ENGINEERING CONSIDERATIONS

4.1 FOUNDATION DESIGN

4.1.1 Introduction

The current proposal is to redevelop the site by constructing a new three-storey building. The footprint of the new building will be larger than that of the existing one and is expected to extend into the current parking area. The ground investigation was required to determine the properties and depths of the existing ground conditions to inform the foundation design.

4.1.2 Bearing Capacity Assessment for Pad Foundations

Based on the data obtained during the ground investigation, shallow foundations may be founded on the Langley Silt Member or River Terrace Deposits. The allowable bearing capacity has therefore been calculated for both materials and the lower value used. For the Langley Silt Member the allowable bearing capacity is calculated by:

$$q_{all} = \frac{N_c s_c c_u}{FOS} + q$$

- c_u Undrained shear strength
- FOS Factor of safety (3)
- q Overburden pressure above base of foundation
- N_c Bearing capacity factor
- s_c Shape factor

For the River Terrace Deposits the allowable bearing capacity is calculated by:

$$q_{all} = \frac{0.5 \gamma B N_\gamma s_\gamma + q N_q s_q}{FOS}$$

- γ Unit weight of subgrade
- B Breadth of foundation
- FOS Factor of safety (2)
- q Overburden pressure above base of foundation
- N_γ, N_q Bearing capacity factors
- s_γ, s_q Shape factors

The allowable bearing capacity in the Langley Silt Member soils are considered suitable. See below in Table 8 for assumed allowable bearing capacity of the Langley Silt Member. Note the bearing capacity is reduced by lateral and eccentric loads, and therefore any foundations that will be subject to lateral or eccentric loads will require detailed design.

For a 500 kN load we would assume the foundations would be founded at least 1 m below the surface of the Langley Silt Member, and therefore a minimum pad size of 1.70m is required and anticipated foundation settlements would be in the region of 10 to 20 mm.

The 500kN column load has been provided as a preliminary estimate, and does not reflect the final structural loads of the building.

Table 8. Summary of Assumed Allowable Bearing Capacity at specified depths.

Depth below surface of Langley Silt Member [Clay] (m)	0	0.5	1
Estimated depth, to be confirmed on site (m bgl)	0.5	1	1.5
Estimated Undrained Shear Strength C_u (kN/m ²)	60	75	90
Estimated Allowable Bearing Capacity (kN/m ²)	120	150	175

4.1.3 Safe Working Loads for Piled Foundations

The use of piles to support the frame of the proposed new building has been considered as an alternative to the use of shallow foundations.

Given the size of the site, it is considered appropriate to use minipiles, therefore pile capacities have been assessed for pile diameters between 225mm and 450mm (Table 9). For the 500kN column load given, it will not be possible to support this load on single piles and pile diameters between 300mm and 450mm are recommended.

The settlement of each pile is not expected to exceed 5 mm under loading.

Table 9. Estimated Pile Safe Working Loads (SWL) for different pile diameters.

Pile Length (m)	Allowable capacity SWL		
	$\varnothing = 225$ mm	$\varnothing = 300$ mm	$\varnothing = 450$ mm
	[kN]	[kN]	[kN]
6	70	100	172
6.5	78	112	190
7	87	124	209
7.5	96	136	228
8	106	149	248
8.5	116	163	269
9	126	176	290
9.5	136	190	312
10	147	205	334
10.5	158	219	357
11	169	235	381
11.5	180	250	405

It is important to note that using piles will generate a larger proportion of spoil than the shallow foundation options. The spoil will have to be disposed offsite and appropriate

contamination testing will be required to correctly classify for offsite disposal, hence will incur cost. CFA piling is likely to be the preferred piling technique due to the presence of groundwater in the River Terrace Deposits as it reduces the risk of bore instability.

4.1.4 Existing Foundations

Trial pits TP3 and TP4 were undertaken to expose the underside of the third-party wall foundations so that the profile of the wall and foundation can be logged. Trial pits TP1 and TP5 were undertaken at a later date (due to the presence of asbestos discovered in the initial investigation), to expose the underside of the third-party wall foundations from within the existing building. Foundation inspection pit sketches can be found in Appendix B.

In TP1 the base of the column foundation was encountered at 1.1 m bgl. The column is founded on a pad foundation that protrudes 0.25 m outside the face of the columns. The ground below the foundation was confirmed to be Langley Silt Member, described as soft to firm light brown sandy gravelly CLAY. Based on the depth of the column foundations, it is assumed that the party-wall foundations (that support the two-storey building) are no deeper than 1.1 m bgl.

In TP3 the base of the wall foundation was encountered at 0.35 m bgl. The wall is founded on a 0.2 m strip foundation that protrudes 0.15m beyond the face of the wall. The ground below the foundation was confirmed to be Langley Silt Member, described as Firm sandy gravelly CLAY.

In TP4 at the wall of the substation building the masonry brick wall was exposed down to 0.95m bgl where it is founded on the Langley Silt Member, described as firm silty slightly sandy slightly gravelly CLAY. No foundation was encountered below the external wall.

In TP5, the base of the party wall foundation (that support the one-storey building) was encountered at 0.35 m bgl; the party wall is founded on a 350 m strip foundation. The ground below the foundation was confirmed to be Langley Silt Member, described as soft light brown sandy gravelly CLAY.

Based on the shallow foundation found at TP5, we can assume that the party wall foundation at TP2 is similar to that of TP5. This is because the party-wall at TP2 supports only a single-storey structure, whereas the party-wall at TP5 supports a two-storey structure.

4.2 FLOOR SLAB

Ground-bearing floor slabs may be appropriate for this site. The Langley Silt Member soils demonstrate sufficient load-bearing capacity but has a modified plasticity index that indicates medium volume change potential. However, the lack of nearby trees may mean that soil moisture variation over the building's lifespan will likely not be sufficient to cause significant shrinkage. It is recommended that the slab construction follows NHBC guidelines 4.2 for best practices. Alternatively, a reinforced cast-in-situ suspended floor could also be a feasible option.

4.3 EXCAVATIONS

As the site is relatively level, with no basement structures proposed to date, the depth of any proposed excavations is expected to be relatively shallow.

Short term stability is expected to be favourable in the original ground given the high undrained shear strength of the Langley Silty Member. Short term stability of the granular River Terrace deposits will be significantly reduced if exposed to water, therefore it is recommended that drainage measures are used to keep any excavations extending through the River Terrace Deposits dry. Groundwater was encountered at 3.1 m bgl during the monitoring period, therefore exposure to water during excavations should be considered highly likely.

Excavations in the Langley Silt Member should be battered back at 1V:1H in the upper Made Ground layer and 2V:1H in original ground. However any excavations within the River Terrace Deposits should be battered at 1V:1H over the full height.

4.4 CONCRETE SULPHATE RESISTANCE

4No. Soil samples were recovered for sulphate classification related chemical testing from BH1 at depth: 2.9 m, 5.9 m, 9.0 m and 14.5 m bgl.

Based on the guidance in BRE Guidance Special Digest 1:2005, a design sulphate class and an Aggressive Chemical Environment for Concrete (ACEC) classification can be determined for the concrete to be used for buried structures.

The water-soluble sulphate values vary between 32.9 mg/l (DS-1) and 447 mg/l (DS-1) and the total potential sulphate between 0.28 % (DS-2) and 1.1 % (DS-3). pH values range between 8.6 and 9.8. Assuming static groundwater and brownfield location, a Design Sulphate Class of DS-3 and an Aggressive Chemical Environment for Concrete (ACEC) classification of AC-2s would need to be used for the design of the concrete foundations at the site.

However, as stated in Section 4.1.2, shallow foundations would only be viable if located within the Gravels, in which the risk of oxidation due to pyritic content is minimal. Therefore, a DS-1 Design Sulphate Class and an ACEC classification AC-1s may be adopted for shallow foundations.

Figure 10. Excerpt from BRE Special Digest 1:2005

Box C8 Practical notes on pyritic ground

- Concrete in pyritic ground which is initially low in soluble sulfate does not have to be designed to withstand a high potential sulfate class unless it is exposed to ground which has been disturbed to the extent that contained pyrite might oxidise and the resultant sulfate ions reach the concrete. This may prompt redesign of the structure or change to the construction process to avoid ground disturbance; for example, by using precast or cast-in-situ piles instead of constructing a spread footing within an excavation.

As explained in Figure 10, although the quantity of pyrites might be important, the bored/SFA/CFA technique used to form the piles is unlikely to disturb and hence oxidise the pyrites to convert to sulphate ions. Hence the pile concrete can be solely classified on the basis of the soluble sulphate content as determined from the water-soluble sulphate tests.

Thus, a Design Sulphate Class of DS-1 and an ACEC classification AC-1s may be adopted the selection of the concrete to be used for the pile foundation.

4.5 SUDS DESIGN

Infiltration testing was carried out to determine infiltration rates for the design of SuDS elements.

4.5.1 Infiltration Rate

Infiltration testing was carried out to inform the design of soakaways at the site as part of the future development, however the change in water level over the course of the test was insufficient to allow the water to drain to half empty within 24 hours, and therefore the site is not recommended for use with soakaways.

Table 10. Infiltration rate derived from soakaway tests

Hole ID	Stratum	Depth (m)	Infiltration Rate (m ³ /m ² /s)
SA1	Langley Silt Member	1.30	N/A
SA2	River Terrace Deposits	2.80	N/A

In both soakaway tests (testing duration ~5 hours) and, when 1 metre of the testing stratum was submerged in water, there was a:

- 20 mm drop in water level within SA1 and;
- Zero drop in water level within SA2.
 - It was noted that during the filling of SA2, the water was 'free-draining' until water level started to rise so that the soakaway test could commence.

It is noted that there was light rainfall during the day of testing, however this is expected to have very little influence on the infiltration test.

It is noted that River Terrace Deposits would typically be favourable for infiltration, however this was not observed during the infiltration testing. Possible reasons for this include:

1. Fines content in the River Terrace Deposits may be higher than recorded from the samples, due to the addition of water to aid the drilling process.
2. A high groundwater table was encountered during the monitoring period that would be close to the level at the base of the soakaway pit.

A planning portal search was conducted to see if nearby any nearby sites had successfully adopted infiltration-based drainage measures. The only example found that included a Drainage Strategy document was at Bullsbrook Road Substation, which had excluded infiltration as a drainage strategy due to both low infiltration rates and risk of contaminating groundwater. Additionally, the Surface Water Report by Reports4Planning for the site notes

that the site geology is not expected to be suitable for infiltration.

Ultimately, as the River Terrace Deposits exhibited free draining behaviour initially and is typically expected to be suitable for soakaways, it is recommended that further soakaway testing is undertaken to confirm the results of SA2.

4.6 PAVEMENT DESIGN

In-situ CBR testing was carried out at four locations, giving a minimum CBR value of 2.2% at location CBR2. A subgrade CBR value of 2% is recommended for the design of pavements at the site. A summary of the results obtained is given in the table below:

Table 11: Summary of CBR Results

Location	Moisture Content (%)	CBR Value (%)
CBR1	24	6.4
CBR2	23	2.2
CBR3	21	3.5
CBR4	18	3.0

Note that while testing has only been carried out on the subgrade, the existing subbase material encountered at the test locations may be suitable for reuse.

5 CONTAMINATION DATA REVIEW

5.1 PRELIMINARY RISK ASSESSMENT

A detailed Phase 1 Land Contamination Assessment, also known as a Desk Study, was undertaken in December 2021 by Reports4Planning (report reference: 21CLR5516NH) for the site. The Desk Study should be read in conjunction with this report.

No significant contamination sources were identified on site as part of the assessment carried out, though a layer of Made Ground, of unknown thickness and composition was considered likely to be present across the site area. The potential for Asbestos and Asbestos-Containing Materials (ACMs) to be present within the existing structures on site was also identified. Nearby off-site contaminant sources identified locally included an adjacent electrical sub-station, a former motor vehicle garage approximately 40 m south (which was investigated in 2012 and not found to be significantly contaminated), a historic inert landfill approximately 120 m west and the former Brookside brickworks from approximately 180 m east. The site was considered to pose a very low to low risk, assuming the proposed redevelopment of the site for residential use.

5.2 CONTAMINATION SAMPLING AND TESTING

During the ground investigation undertaken by Geofirma Ltd in December 2024, 3 No. soil samples were taken from BH1 (at 1.3 m bgl within the Langley Silt Member), WS2 (at 0.6 m bgl within the Langley Silt Member) and SA2 (at 0.3 m bgl within the Made Ground) for contamination testing. The rationale for the selection of sampling locations is that they provide general coverage of the site, focussing on the proposed residential accommodation at the north of the site, while also considering access limitations at the site to facilitate an assessment of contamination on site. BH1 and SA2 were located at the north of the site and WS1 was located within the centre of the site as shown in Figure 11.

Figure 11: Exploratory Hole Location Plan



The three soil samples were tested for a range of commonly occurring contaminants and indicators of contamination including those given by the Contaminated Land Exposure Assessment (CLEA). These included heavy metals, semi-metals and metalloids (including Cyanide, Lead and Arsenic), speciated Poly-cyclic Aromatic Hydrocarbons (PAHs), speciated aromatic and aliphatic Total Petroleum Hydrocarbons (TPH C10-C40) and BTEX and MTBE in accordance with Environment Agency guidelines. All 3 No. soil samples were also assessed for the presence of Asbestos. Full copies of the soil chemical analysis certificates are included as Appendix D.

The chemical testing was carried out in accordance with standard industry methods in a UKAS approved laboratory which is also currently accredited in accordance with MCERTS for most of its testing. Further information regarding this accreditation is available on request together with a full list of test methods if required.

5.3 HUMAN HEALTH RISK ASSESSMENT

An initial Tier 1 (generic) quantitative risk assessment has been undertaken by screening measured contaminant concentrations derived from the ground investigation works against reference values for chronic (long-term) risk to human health known as Generic Assessment Criteria (GACs). Key human health receptors at the site, identified for the site include site end users (future site users including residents, staff, visitors, neighbours and groundworkers - construction workers and future refurbishment and maintenance workers).

All soil results have been compared against the Geofirma Ltd soil GACs for a residential with plant uptake land use. There is limited potential for exposure pathways in terms of human health from exposed soils once the site has been redeveloped. On this basis, the use of such GACs is considered to be a very conservative assumption given that the proposed soft landscaping on site which comprises ornamental landscaping only, with no areas of usable recreational space or gardens to be constructed. The site will also include a commercial premise at the south of the site, which is a much less sensitive land use in terms of contaminated land risk. GACs based on an assumed Soil Organic Matter (SOM) of 1% on site (which results in the most conservative set of available GACs).

These guideline values have been derived using the updated CLEA v1.071 model, previously published Category 4 Screening Levels (C4SLs) by DEFRA and information in the Environment Agency guidance SR2. Where Geofirma soil SSVs have not been derived, the Category 4 Screening Levels have been used, and for determinands which do not have either of the above, the LQM / CIEH Suitable 4 Use Levels (S4ULs) assessment criteria have been used. A summary of the results and relevant GACs is provided in Appendix J.

Asbestos

All 3 No. samples taken from the Made Ground and the Langley Silt Member (superficial deposit) were analysed for Asbestos. None of the samples were found to contain Asbestos or ACMs. The results of the laboratory asbestos screen corroborated with the absence of visual findings in terms of Asbestos and ACMs during the investigation.

Metals, heavy metals and semi-metals

The concentration of Total Cyanide was below the laboratory detection limit (<1 mg/kg) in all three samples. No exceedances of the relevant GACs were recorded for metals, heavy metals or semi-metals within the three samples of the Made Ground and Langley Silt Member.

TOTAL TPH, BTEX and MTBE

3 No. soil samples taken from the Made Ground and Langley Silt Member did not record concentrations of TPHs (both aliphatic and aromatic fractions) that exceeded the residential with plant uptake land use GACs. Recorded BTEX and MTBE concentrations in all samples were below the detection limit of the analysing equipment (<5 ug/kg).

During the ground investigation, there was no obvious olfactory evidence relating to the TPHs, BTEX or MTBE on site, supporting the findings of the laboratory testing undertaken.

PAHs

A maximum total concentration of PAHs of 22.2 mg/kg was recorded in the sample taken from 1.3m bgl in BH1. The total PAH concentrations in the remaining 2 No. samples were lower ranging between <0.8 mg/kg and 18.5 mg/kg. None of the 3 No. samples taken from the Made Ground and Langley Silt Member were considered to be highly elevated and did not record any exceedances of the relevant GACs.

This supports the PID data obtained as part of groundwater monitoring programme with no vapour risk from groundwater recorded. No elevated ground gas readings, which often act as an indicator of PAHs in soils were recorded during the ground gas monitoring, as detailed in Section 5.4 of this report.

5.4 GROUND GAS MONITORING

A single ground gas monitoring visit was undertaken on 19th December 2024 within the four boreholes installed with standpipes during the ground investigation (BH1, WS1, WS2 and WS3). The monitoring round aimed to confirm the absence of ground gas and vapour risk at the site. Should any potential ground gas risk be realised, based on the findings of the gas monitoring and from the findings of the soil logging and chemical testing on site, then further rounds of ground gas monitoring were to be undertaken, subject to agreement by the Client.

The atmospheric pressure during the monitoring visit was 1002 mb and pressure conditions were stable.

The key hazardous ground gases tested for were methane (CH₄) and carbon dioxide (CO₂), carbon monoxide (CO), hydrogen sulphide (H₂S), as well as a vapour risk from Volatile Organic Compounds (VOCs) in the form of vapours. Vapour concentrations were recorded within the wells as part of the ground gas monitoring using a Photo Ionisation Detector (PID).

Table 12 summarises the ground gas concentrations recorded in BH1, WS1, WS2 and WS3 during the single round of ground gas monitoring undertaken.

Table 12: Summary of Ground Gas Monitoring Data

Date	Borehole No.	Maximum Carbon Dioxide concentrations (% v/v)	Maximum Methane concentrations (% v/v)	Minimum Oxygen concentrations (% v/v)	Peak flow rate (l/hr)
19/12/2024	BH1	0.1	0.0	20.3	0.0
	WS1	0.1	0.0	20.5	0.0
	WS2	0.1	0.0	20.4	0.0
	WS3	0.2	0.0	20.3	0.0

As part of the monitoring no positive PID readings (>1ppm) were recorded on site and no associated odours indicating the presence of vapours were recorded.

No detectable methane was recorded during the visit on site (<0.1%). Therefore, the maximum carbon dioxide concentration has been used to calculate the Gas Screening Value (GSV) for the site. A worst-case scenario approach has been adopted, which takes into account the highest peak flow rate recorded and the highest carbon dioxide ground gas concentration recorded during the various monitoring rounds, irrespective of which borehole in which they were recorded. In this investigation a maximum flow rate of 0.0 l/h (recorded as <0.1 l/h) and a maximum CO₂ concentration of 0.2% v/v were recorded. Using these values, a ground gas screening value (GSV) has been calculated for the site as follows:

$$\text{GSV} = \text{peak flow rate (l/h)} \times \text{maximum carbon dioxide concentration (\%v/v)}$$

$$\text{GSV} = <0.1 \text{ l/h} \times 0.2/100 = < 0.0002 \text{ l/h}$$

The maximum carbon dioxide concentration of 0.2% v/v from WS3 and the maximum flow rate, recorded as <0.1 l/h were used to calculate a GSV value of < 0.0002 l/h.

Based on the flow rate measured during the monitoring round in accordance with the NHBC

Traffic Lights Gas Risk Assessment, the site classifies as green or Characteristic Situation 1 when compared to the CIRIA C665 guidance. On this basis and taking into account the absence of contamination recorded on site and the limited thickness of Made Ground recorded (with no organic materials or indicators of significant contamination), the ground gas risk at the site was concluded to be negligible. It is considered that there is sufficient evidence at this stage to rule out a ground gas risk at the site and confirm that no ground gas protection measures are required within the proposed redevelopment scheme.

5.5 CONCLUSIONS AND REQUIREMENT FOR FUTURE WORKS

Samples were tested for a range of commonly occurring contaminants and indicators of contamination including those given by the Contaminated Land Exposure Assessment (CLEA). No olfactory evidence of contamination (such as vapours) was identified during sampling. No significant visual evidence of organic contaminants, such as oils, were noted on site, however, there was some evidence of visual contamination in the rare ash. No exceedances of the GACs were recorded in soils and no Asbestos or ACMs were identified.

A maximum carbon dioxide concentration of 0.2% v/v, a maximum methane concentration of <0.1% v/v and a maximum flow rate of <0.0 l/h were used to calculate a GSV value of 0.0002 l/h for the site. Based on this information, the findings of the logging (indicating no significant contamination and a limited thickness of Made Ground), laboratory testing, PID testing and taking into account the site history, it is considered that the site represents a negligible risk from ground gas and vapours. No ground gas protection measures will be required in the final redevelopment scheme.

Based on the findings, no remedial action is considered to be required at the site.

5.6 GUIDANCE AND GOOD PRACTICE MEASURES

No remedial action is required at the site. Following recommendations from the ground investigation, MS4 Architects has sent an Asbestos Demolition Survey by Home Counties Asbestos (Appendix I) to Geofirma on the 7th January 2025. The survey confirms the visual observations during the ground investigation and, the survey recommends that the vinyl tile flooring and bitumen adhesive (ACMs) are removed prior to demolition of the existing on-site building. The asbestos removal works will need to be carried out by a licenced asbestos contractor.

Surplus excavated soils on site will need to be removed from the site and disposed of in accordance with current waste management and Duty of Care regulations. For any potentially contaminated soil that is uncovered (while considered unlikely based on the current findings), Waste Acceptance Criteria (WAC) testing is likely to be required. The scope and nature of which should be agreed with the facility to which the spoil is being transported.

Due to the absence of topsoil and sub-soil on site, consideration to the import of clean capping materials should be made to facilitate the construction of the proposed soft landscaping areas on site.

AppIt is recommended that the following measures are also implemented at the site as standard good working practice:

- The separation of staff from Made Ground i.e. physical barriers around areas of

excavation, with limited access, as far as is reasonably practical;

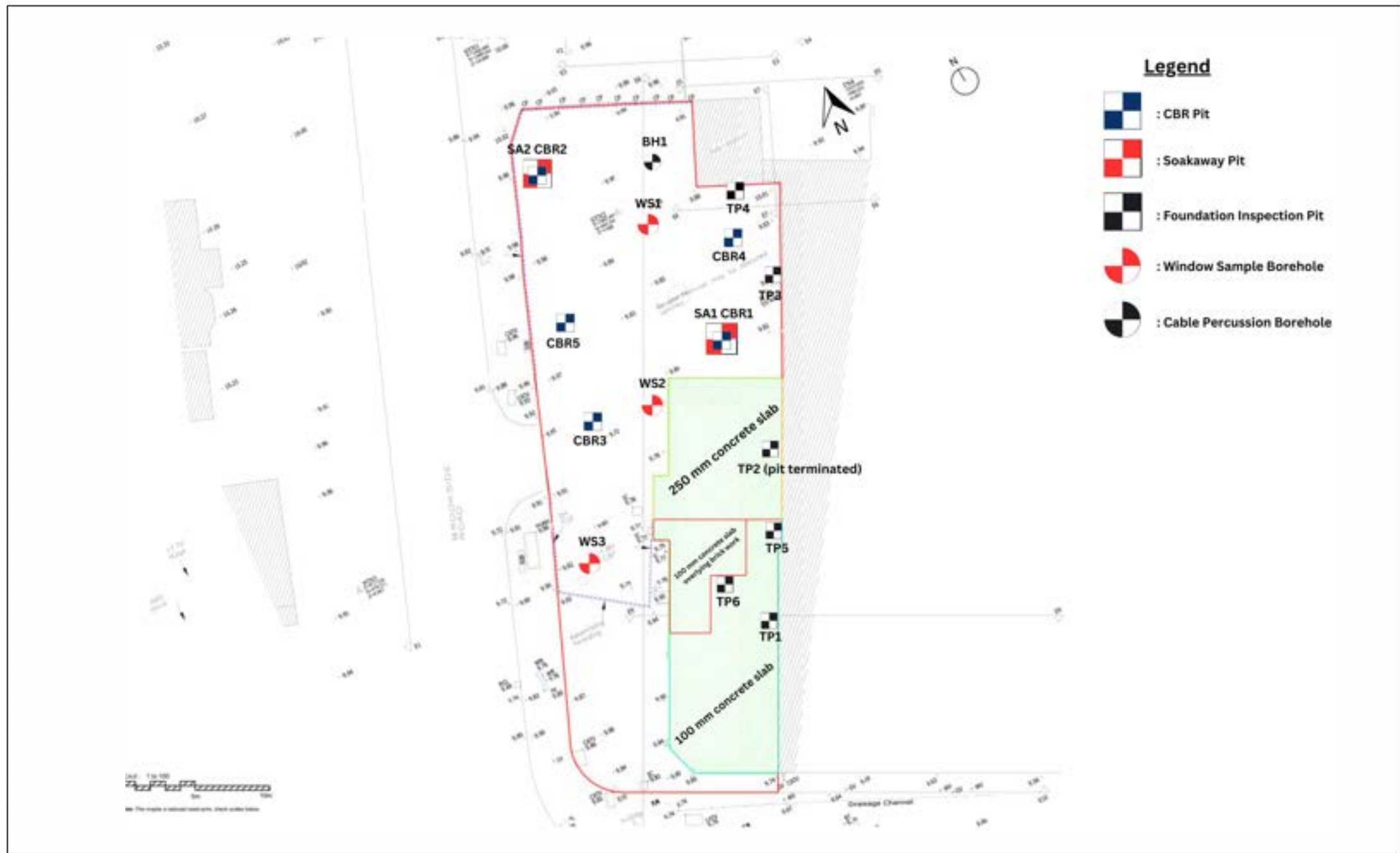
- Limit stockpiling on site due to the proximity of residents. All Made Ground to either be re-used on site or removed off-site as quickly as possible;
- Where possible, limiting the duration when Made Ground, excavations or voids are exposed to the atmosphere and ensure hardstanding (such as concrete slabs) is kept clean and tidy, limiting the potential for soil-derived dusts to be generated;
- The use of sprays and dampening down of soils during excavation to reduce the generation of dust, particularly given the proximity to other properties;
- The use of appropriate Personal Protective Equipment (PPE) and Respiratory Protective Equipment (RPE) (with the grade of filter specified by a suitable professional to provide protection against asbestos as and when required) during all works;
- Apply with the Control of Asbestos Regulations (CAR 2012) and CL:AIRE Control of Asbestos Regulations 2012: Interpretation for Managing and Working with Asbestos in Soil and Construction and demolition Materials Industry Guidance (CAR-SOIL) should ACMs be encountered on site during the earthworks;
- The appropriate management of unexpected, contaminated materials (i.e. stopping of works, adoption of quarantine measures, minimisation of further impacts to the environment and human health as appropriate);
- Engagement of specialist contractors to advise on the management of unexpected contamination (i.e., a specialist asbestos contractor if required); and
- Maintain a watching brief for contamination throughout the duration of the earthworks. This will focus on any visual or olfactory evidence of contamination (e.g., discoloured soils, unexpected or odours or buried waste). Any unexpected conditions should be investigated by a suitably qualified person and their recommendations implemented.

6 REFERENCES

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APPENDIX A -

EXPLORATORY HOLE LOCATION PLAN



EXPLORATORY HOLE LOCATION PLAN - EXISTIN SITE PLAN



EXPLORATORY HOLE LOCATION PLAN - PROPOSED SITE PLAN

APPENDIX B – BOREHOLE AND TRIAL PIT LOG RECORDS

Machine : Dando 2000	Casing Diameter 150 mm to 4.5 mbgl	Ground Level (mOD)	Client Sukanth Yoganathan	Job Number 2024-065-PRE-UXB
Method : Cable Percussion	Location	Dates 11/12/2024	Project Contractor Geofirma Ltd	Sheet 1/3

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
0.05 (0.20)						0.05 (0.20)	TARMAC			
0.20 (0.45)	D1 B2					0.20 (0.45)	MADE GROUND: Brown sandy GRAVEL. Sand is angular coarse. Gravel is subangular to angular fine to coarse of brick and flint.			
0.45 (0.70)						0.45 (0.70)	MADE GROUND: Firm brown and light grey slightly sandy very gravelly CLAY. Gravel is angular medium to coarse of tarmac fragments and flint.			
0.70 (1.60)	D3			8,13/11,15,18,6 for 15 mm		0.70 (1.60)	LANGLEY SILT MEMBER: Firm brown silty CLAY.			
1.60 (2.60)	SPT(C) N=50 B4 ES5					1.60 (2.60)	RIVER TERRACE DEPOSITS: Medium dense light orangish brown clayey sandy GRAVEL. Sand is angular coarse. Gravel is rounded to angular fine to coarse of flint.			
2.60 (3.50)	D6 SPT(C) N=50 B7			8,12/19,23,8 for 25 mm		2.60 (3.50)	RIVER TERRACE DEPOSITS: Dense to very dense yellowish brown sandy GRAVEL. Sand is angular coarse. Gravel is subangular to angular fine to coarse of flint.			
3.50 (4.20)						3.50 (4.20)	@ 2.9 mbgl - Becomes medium dense to dense.			
4.20 (4.50)	D8 SPT(C) N=27 B9			2,3/3,4,9,11		4.20 (4.50)	LONDON CLAY FORMATION: Firm light grey slightly sandy slightly gravelly silty CLAY. Sand is angular coarse. Gravel is subrounded to angular fine to coarse of flint.			
4.50 (5.00)						4.50 (5.00)	LONDON CLAY FORMATION: Firm to stiff light grey silty CLAY.			
5.00 (6.00)	D10 SPT(C) N=11			2,2/2,2,3,4		5.00 (6.00)				
6.00 (6.45)						6.00 (6.45)				
6.45 (7.00)	D11 SPT N=16 D12			2,2/2,4,5,5		6.45 (7.00)				
7.00 (7.90)						7.00 (7.90)	@ 7.0 mbgl - Rare presence of selenite crystals.			
7.90 (8.45)	D13 U13					7.90 (8.45)				
8.45 (8.90)						8.45 (8.90)	@ 8.5 mbgl - Henceforth becomes stiff.			
8.90 (9.00)	D14					8.90 (9.00)				
9.00 (9.90)	D15 SPT N=18 D16			2,2/3,4,5,6		9.00 (9.90)				
9.90 (9.90)						9.90 (9.90)				
9.90	D17 U18					9.90				
	D19									
	D20 SPT N=23 D21			2,2/4,4,7,8						
	D22									

Remarks Installation of a standpipe with slotted response zone from 2.0 m to 4.0 mbgl. Borehole was backfilled from base of borehole to 5.0 mbgl. Bentonite seal from ground level to 2.0 mbgl and 4.0 m to 5.0 mbgl. Handpit dug to 1.2 mbgl. Groundwater was not encountered during the drilling process however it may have been masked as water was continuously added into the borehole from 1.7 m to 2.9 mbgl to aid in the drilling process. On the 11/12/2024 shift, the borehole was drilled from ground level to 7.0 mbgl. On the 12/12/2024 shift, the borehole was drilled from 7.0 mbgl to 20.0 mbgl.	Scale (approx)	Logged By
	1:50	KL
	Figure No. 2024-065-PRE-UXB.BH1	

Machine : Dando 2000	Casing Diameter 150 mm to 4.5 mbgl	Ground Level (mOD)	Client Sukanth Yoganathan	Job Number 2024-065-PRE-UXB
Method : Cable Percussion	Location	Dates 11/12/2024	Project Contractor Geofirma Ltd	Sheet 2/3

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
10.00-10.45	U23						LONDON CLAY FORMATION: Stiff light grey silty CLAY.			
10.45	D24									
10.90	D25									
11.50-11.95	SPT N=25 D26			3,3/5,6,6,8						
12.00	D27					(15.50)				
12.90-13.00	D28 U29						@ 13.0 mbgl - Occasional presence of selenite crystals.			
13.45	D30									
13.90	D31						@ 14.0 mbgl - Becomes stiff to very stiff.			
14.50-14.95	SPT N=32 D32			2,5/9,7,7,9						
14.90	D33									
15.90-16.00	D34 U35									
16.45	D36									
16.90	D37									
17.50-17.95	SPT N=31 D38			3,6/6,7,8,10						
18.00	D39									
18.90-19.00	D40 U41									
19.40	D42									
19.90	D43						@ 19.85 mbgl - Laminated bedding noted. Clay is slightly friable and brittle			

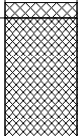
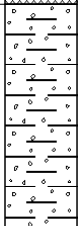
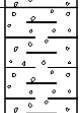
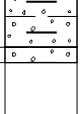


Remarks Installation of a standpipe with slotted response zone from 2.0 m to 4.0 mbgl. Borehole was backfilled from base of borehole to 5.0 mbgl. Bentonite seal from ground level to 2.0 mbgl and 4.0 m to 5.0 mbgl. Handpit dug to 1.2 mbgl. Groundwater was not encountered during the drilling process however it may have been masked as water was continuously added into the borehole from 1.7 m to 2.9 mbgl to aid in the drilling process. On the 11/12/2024 shift, the borehole was drilled from ground level to 7.0 mbgl. On the 12/12/2024 shift, the borehole was drilled from 7.0 mbgl to 20.0 mbgl.	Scale (approx)	Logged By
	1:50	KL
	Figure No. 2024-065-PRE-UXB.BH1	

Machine : Dando 2000 Method : Cable Percussion	Casing Diameter 150 mm to 4.5 mbgl	Ground Level (mOD)	Client Sukanth Yoganathan	Job Number 2024-065-PRE-UXB
	Location	Dates 11/12/2024	Project Contractor Geofirma Ltd	Sheet 3/3

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
20.00-20.38 20.00	SPT N=50 D44			3,5/6,7,37 for 75 mm		20.00	[LONDON CLAY FORMATION] Complete at 20.00m			


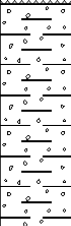
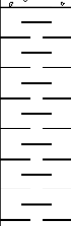
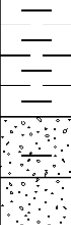

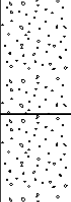

Remarks Installation of a standpipe with slotted response zone from 2.0 m to 4.0 mbgl. Borehole was backfilled from base of borehole to 5.0 mbgl. Bentonite seal from ground level to 2.0 mbgl and 4.0 m to 5.0 mbgl. Handpit dug to 1.2 mbgl. Groundwater was not encountered during the drilling process however it may have been masked as water was continuously added into the borehole from 1.7 m to 2.9 mbgl to aid in the drilling process. On the 11/12/2024 shift, the borehole was drilled from ground level to 7.0 mbgl. On the 12/12/2024 shift, the borehole was drilled from 7.0 mbgl to 20.0 mbgl.	Scale (approx) 1:50	Logged By KL
	Figure No. 2024-065-PRE-UXB.BH1	

Machine : Premier 110 Method : Drive-in Windowless Sampler	Dimensions See remarks	Ground Level (mOD)	Client Sukanth Yoganathan	Job Number 2024-065-PRE-UXB
	Location	Dates 11/12/2024	Project Contractor Geofirma Ltd	Sheet 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
0.60	ES1				0.05	TARMAC			
1.00-1.45	SPT N=28		3,3/5,7,7,9		(0.40)	MADE GROUND: Very soft to soft light grey slightly sandy very gravelly CLAY. Gravel is angular medium to coarse of tarmac fragments and flint.			
1.30	D2				0.45	LANGLEY SILT MEMBER: Firm light brownish grey slightly gravelly CLAY. Gravel is subrounded to subangular medium of flint.			
1.70-2.15	SPT(C) N=68		14,15/15,17,17,19		(0.75)	LANGLEY SILT MEMBER: Firm to stiff brownish grey very gravelly CLAY. Gravel is subrounded to angular of flint.			
1.75	D3				1.20	LANGLEY SILT MEMBER: Firm to stiff brownish grey very gravelly CLAY. Gravel is subrounded to angular of flint.			
					1.70	RIVER TERRACE DEPOSITS: Dense to very dense yellowish brown slightly clayey sandy GRAVEL. Sand is angular coarse. Gravel is subangular to angular fine to coarse of flint.			
					1.75	Complete at 1.75m			





Remarks Bentonite seal from ground level to 0.25 mbgl and 1.50 m to 1.75 mbgl. Installation of a standpipe with slotted response zone from 0.25 m to 1.50 mbgl. Handpit dug to 1.2 mbgl. No groundwater was encountered during the drilling process. Liner diameter was: 102 mm at 1.75 mbgl. Borehole terminated at 1.75 mbgl following SPT. Borehole refused due to dense sandy gravels.	Scale (approx) 1:25	Logged By KL
	Figure No. 2024-065-PRE-UXB.WS1	

Machine : Premier 110	Dimensions See remarks	Ground Level (mOD)	Client Sukanth Yoganathan	Job Number 2024-065-PRE-UXB
Method : Drive-in Windowless Sampler	Location	Dates 11/12/2024	Project Contractor Geofirma Ltd	Sheet 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
					0.05	TARMAC			
					(0.40)	MADE GROUND: Firm brown and light grey slightly sandy very gravelly CLAY. Gravel is angular medium to coarse of tarmac fragments and flint.			
0.60	D1				0.45	LANGLEY SILT MEMBER: Firm grey light bluish grey stained and black mottled brown gravelly CLAY. Gravel is rounded to subangular medium of flint.			
1.00-1.45	SPT N=17		3,4/4,4,4,5		(0.75)				
1.40-1.80	U2				1.20	LANGLEY SILT MEMBER: Firm dark grey stained light brown CLAY.			
2.00-2.45	SPT(C) N=14		3,3/3,3,4,4		(1.10)				
2.30	D3				2.30	RIVER TERRACE DEPOSITS: Yellowish brown loose to medium dense clayey sandy GRAVEL.			
2.50	D4				2.50	RIVER TERRACE DEPOSITS: Medium dense yellowish brown sandy GRAVEL. Sand is angular coarse. Gravel is subangular to angular fine to coarse of flint.			
3.00-3.45	SPT(C) N=47		7,7/8,10,14,15		(0.90)				
3.20	D5				3.40	RIVER TERRACE DEPOSITS: Dense to very dense multicoloured sandy GRAVEL. Sand is angular coarse. Gravel is subangular to angular fine to coarse of flint.			
3.60-4.05	SPT(C) N=73		11,14/14,17,22,20		(0.30)				
					3.70	Complete at 3.70m			



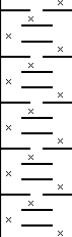
Remarks Handpit dug to 1.2 mbgl. Water seeped into inspection pit overnight and water level had rose to 0.3 mbgl. Water was removed to 1.2 mbgl. Liner diameter was: 102 mm at 2.0 mbgl, 87 mm at 3.0 mbgl and 77 mm at 3.75 mbgl Borehole terminated at 3.7 mbgl following SPT. Borehole refused due to dense sandy gravels. Bentonite seal from ground level to 0.7 mbgl and 3 m to 3.7 mbgl. Installation of a standpipe with slotted response zone from 0.7 m to 3.0 mbgl.	Scale (approx)	Logged By
	1:25	KL
	Figure No. 2024-065-PRE-UXB.WS2	

Machine : Premier 110		Dimensions See remarks		Ground Level (mOD)		Client Sukanth Yoganathan		Job Number 2024-065-PRE-UXB	
Method : Drive-in Windowless Sampler		Location		Dates 11/12/2024		Project Contractor Geofirma Ltd		Sheet 1/1	

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
1.00-1.45	SPT N=27		3,6/6,7,7,7		(0.15) 0.15	CONCRETE			
1.20	D1				(0.40) 0.55	MADE GROUND: Multicoloured sandy GRAVEL. Sand is angular coarse. Gravel is subangular to angular medium of shingle, brick, tarmacadam and brick fragments @ 0.4 mbgl - becomes slightly clayey.			
1.45	D2				(0.80) 1.35	LANGLEY SILT MEMBER: Firm to stiff light grey stained dark brown mottled light brown CLAY. Occasional lenses of sand and gravel. Sand is angular coarse. Gravel is angular fine to medium of flint.			
1.50-1.95	SPT(C) N=71		11,13/16,16,19,20		(0.15) 1.50	RIVER TERRACE DEPOSITS: Dense to very dense slightly clayey slightly sandy GRAVEL. Sand is angular coarse. Gravel is subangular to angular fine to coarse of flint. Complete at 1.50m			

Remarks Installation of a standpipe with slotted response zone from 0.25 m to 1.25 mbgl. Bentonite seal from ground level to 0.25 mbgl and 1.25 m to 1.50 mbgl. Handpit dug to 1.2 mbgl. No groundwater was encountered during the drilling process. Liner diameter was: 102 mm at 1.50 mbgl. Borehole terminated at 1.50 mbgl following SPT. Borehole refused due to dense sandy gravels.	Scale (approx)	Logged By
	1:25	KL
Figure No. 2024-065-PRE-UXB.WS3		


Machine : 2T Excavator Method : Trial Pit	Dimensions 0.6 m x 1.8 m x 1.3 m (deep)	Ground Level (mOD)	Client Sukanth Yoganathan	Job Number 2024-065-PRE-UXB
	Location	Dates 10/12/2024	Project Contractor Geofirma Ltd	Sheet 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					(0.30)	TOPSOIL: Vegetation over loose dark brown slightly gravelly slightly clayey SAND. Gravel is rounded to angular fine to medium of fint and tarmacadam. Sand is angular fine. Rare presence of ash.		
					0.30 (0.15) 0.45	MADE GROUND: Firm brown and light grey slightly sandy very gravelly CLAY. Gravel is angular medium to coarse of tarmac fragments and shingle.		
					(0.85)	LANGLEY SILT MEMBER: Firm light brown slightly gravelly slightly silty CLAY.		
					1.30	Complete at 1.30m		



Remarks

No groundwater was encountered during the pitting process. Excavation was backfilled from base of excavation to ground level. Trial pit terminated at 1.3 mbgl. Reached target depth.

North 	Scale (approx) 1:25	Logged By KL	Figure No. 2024-065-PRE-UXB.SA1
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



Machine : 2T Excavator
Method : Trial Pit

Dimensions
 0.6 m x 2.1 m x 2.8 m (deep)

Ground Level (mOD)
Client
 Sukanth Yoganathan
Job Number
 2024-065-PRE-UXB

Location
Dates
 10/12/2024

Project Contractor
 Geofirma Ltd
Sheet
 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					0.05	TARMAC		
					(0.40)	MADE GROUND: Firm brown and light grey slightly sandy very gravelly CLAY. Gravel is angular medium to coarse of tarmac fragments and flint.		
					0.45	LANGLEY SILT MEMBER: Firm light brown silty CLAY.		
					(1.35)	@ 1.5 mbgl - becomes firm to stiff.		
					1.80	RIVER TERRACE DEPOSITS: Dense yellowish brown sandy GRAVEL. Sand is angular coarse. Gravel is angular medium to coarse of flint.		
					(1.00)			
					2.80	Complete at 2.80m		

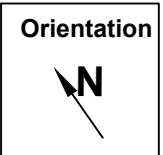

Remarks
 Trial pit terminated at 2.8 mbgl. Reached target depth. Excavation was backfilled from base of excavation to ground level. No groundwater was encountered during the pitting process.

Excavation Method Hand Excavated Trial Pit	Dimensions 0.45 m x 0.55 m
	Location

Ground Level (mOD)
Dates 19/02/2025

Client Sukanth Yoganathan
Project Contractor Geofirma Ltd

Job Number 2024-065-PRE-UXB
Sheet 1/5



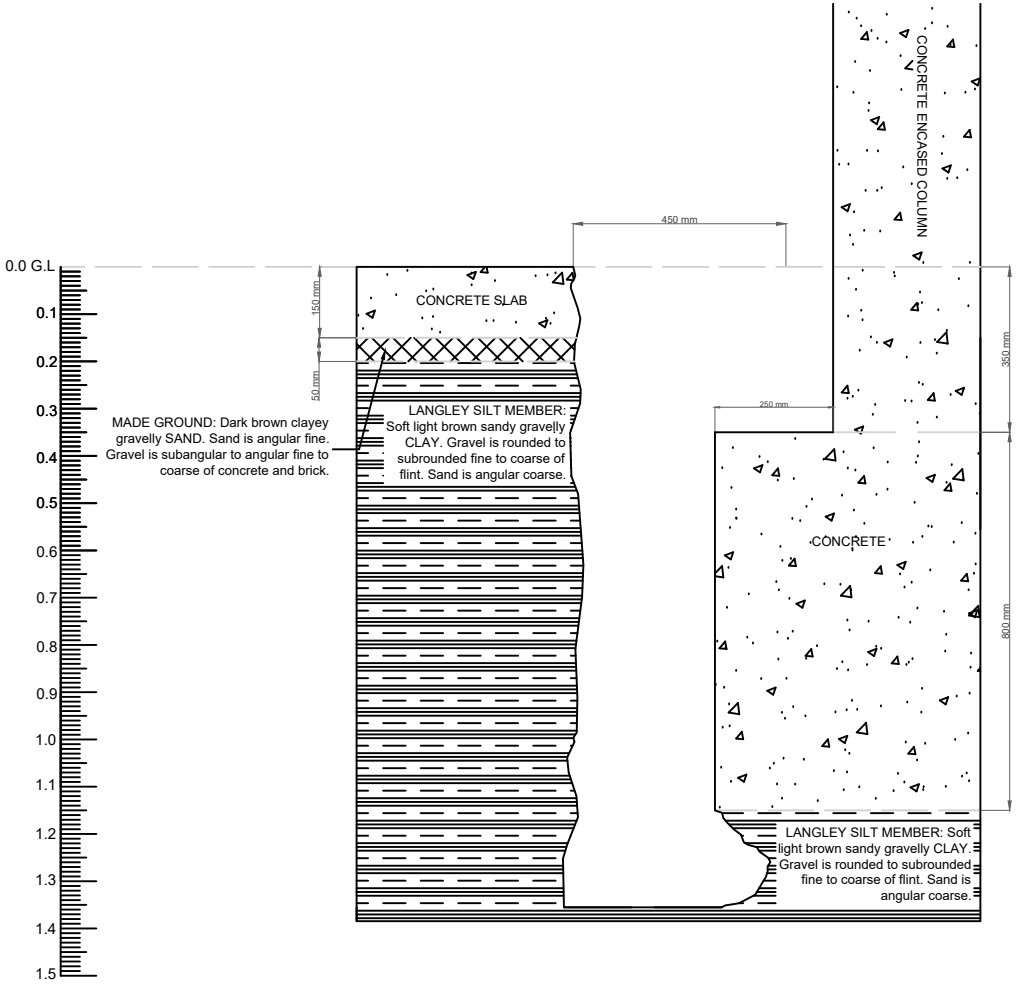
Plan view

Section A - A'



A'

A

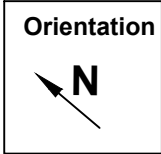


Excavation Method Hand Excavated Trial Pit	Dimensions 0.45 m x 0.60 m
	Location

Ground Level (mOD)	Dates 10/12/2024
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Client Sukanth Yoganathan	Project Contractor Geofirma Ltd
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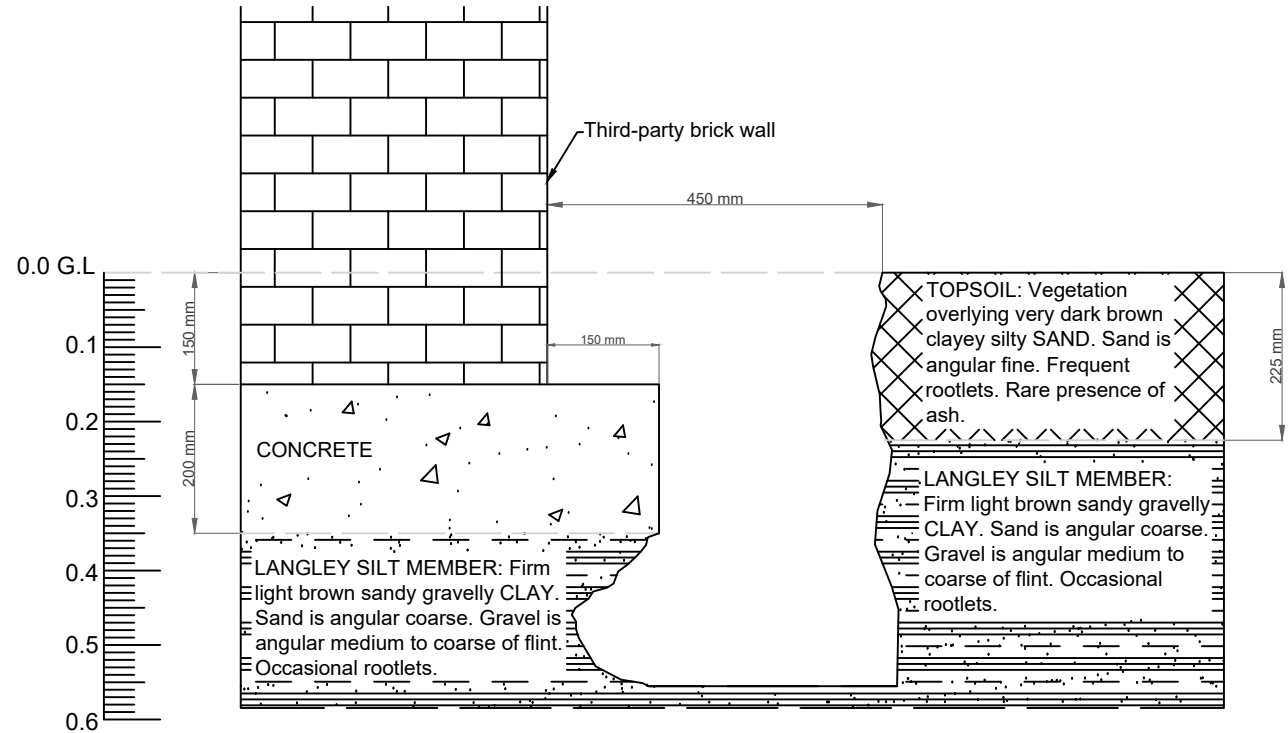
Job Number 2024-065-PRE-UXB	Sheet 2/5
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Plan view



Section B - B'

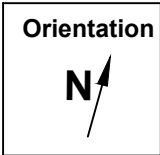


Excavation Method Hand Excavated Trial Pit	Dimensions 0.35 m x 0.30 m
	Location

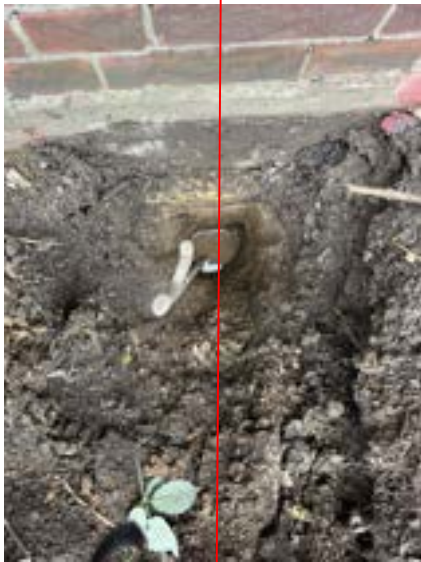
Ground Level (mOD)	Dates 10/12/2024
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Client Sukanth Yoganathan	Project Contractor Geofirma Ltd
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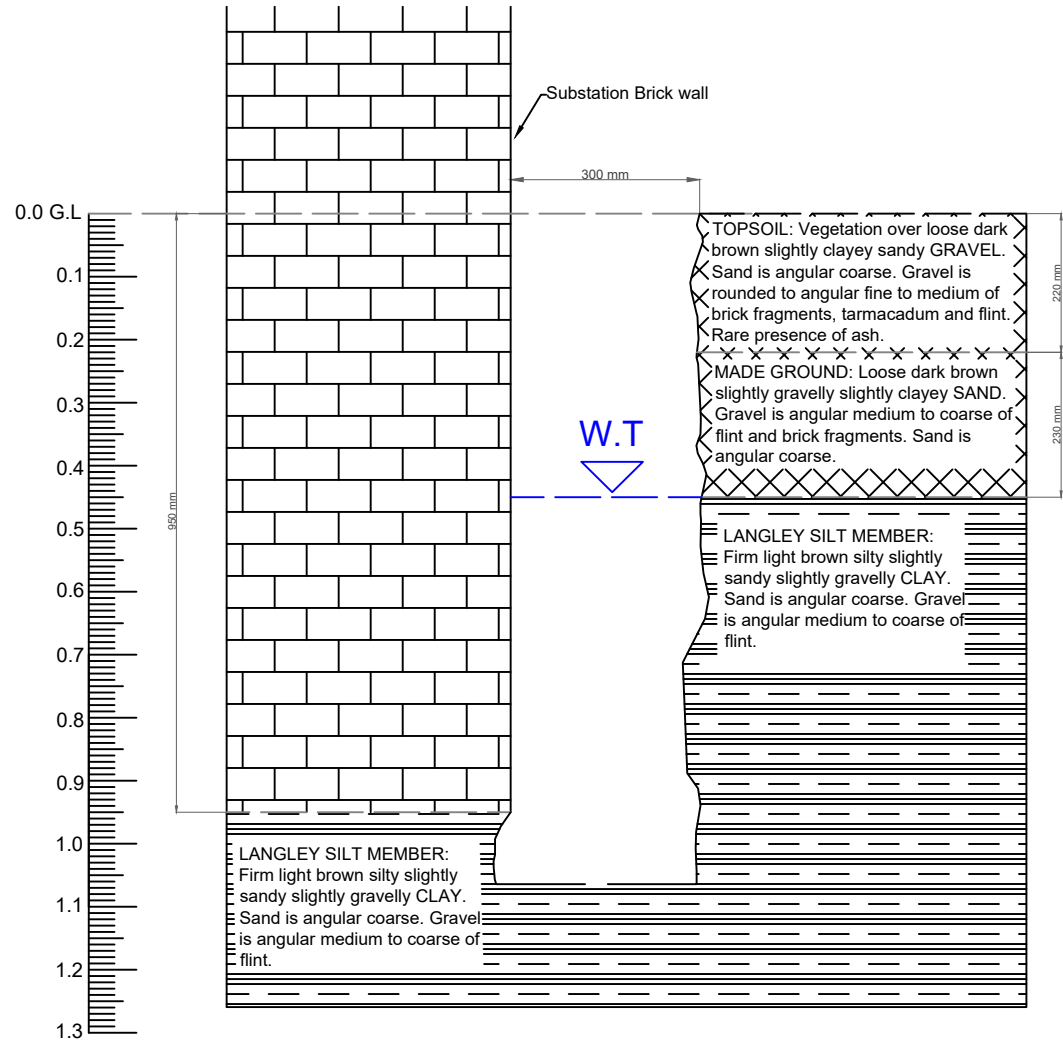
Job Number 2024-065-PRE-UXB	Sheet 3/5
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Plan view



Section C - C'

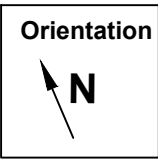


Excavation Method Hand Excavated Trial Pit	Dimensions 0.4 m x 0.45 m
	Location

Ground Level (mOD)
Dates 20/02/2025

Client Sukanth Yoganathan
Project Contractor Geofirma Ltd

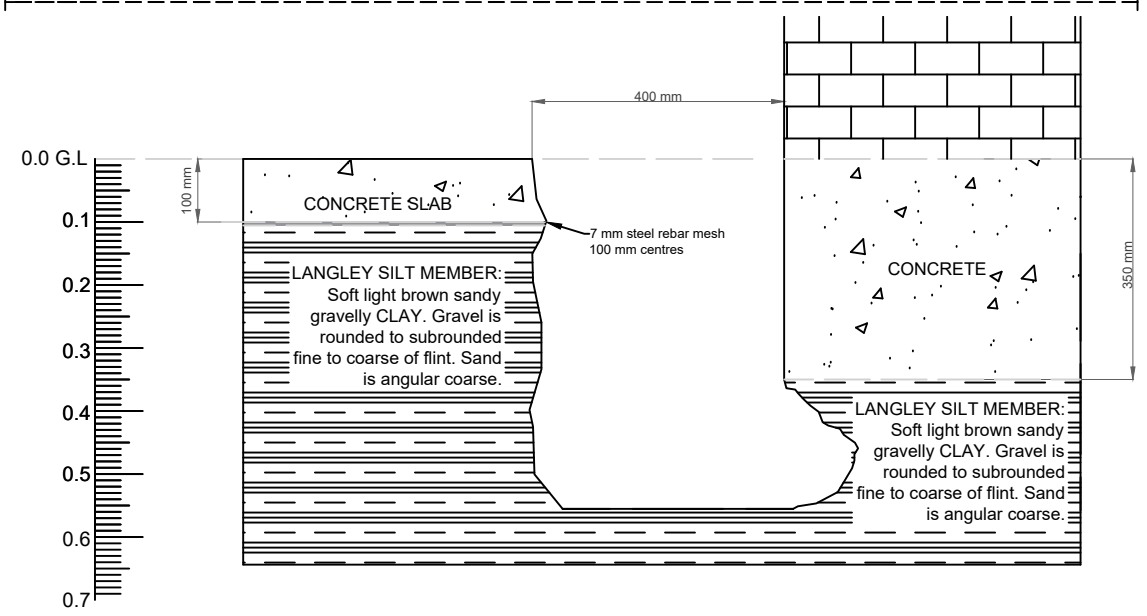
Job Number 2024-065-PRE-UXB
Sheet 4/5



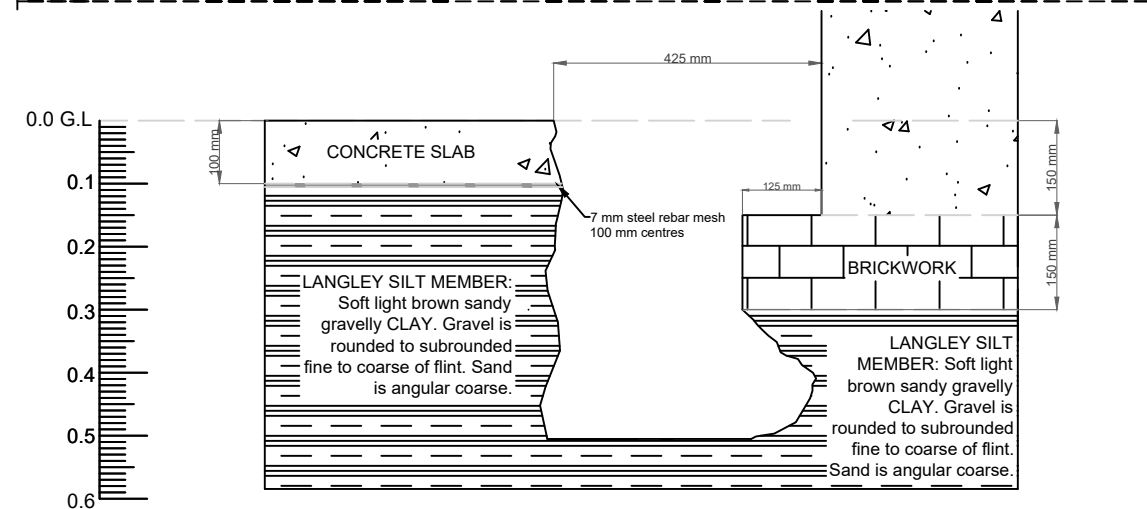
Plan view



Section D - D'



Section E - E'



Excavation Method
 Hand Excavated Trial Pit

Dimensions
 0.3 m x 0.25 m

Ground Level (mOD)

Client
 Sukanth Yoganathan

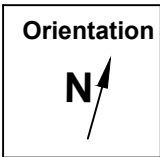
Job Number
 2024-065-PRE-UXB

Location

Dates
 19/02/2025

Project Contractor
 Geofirma Ltd

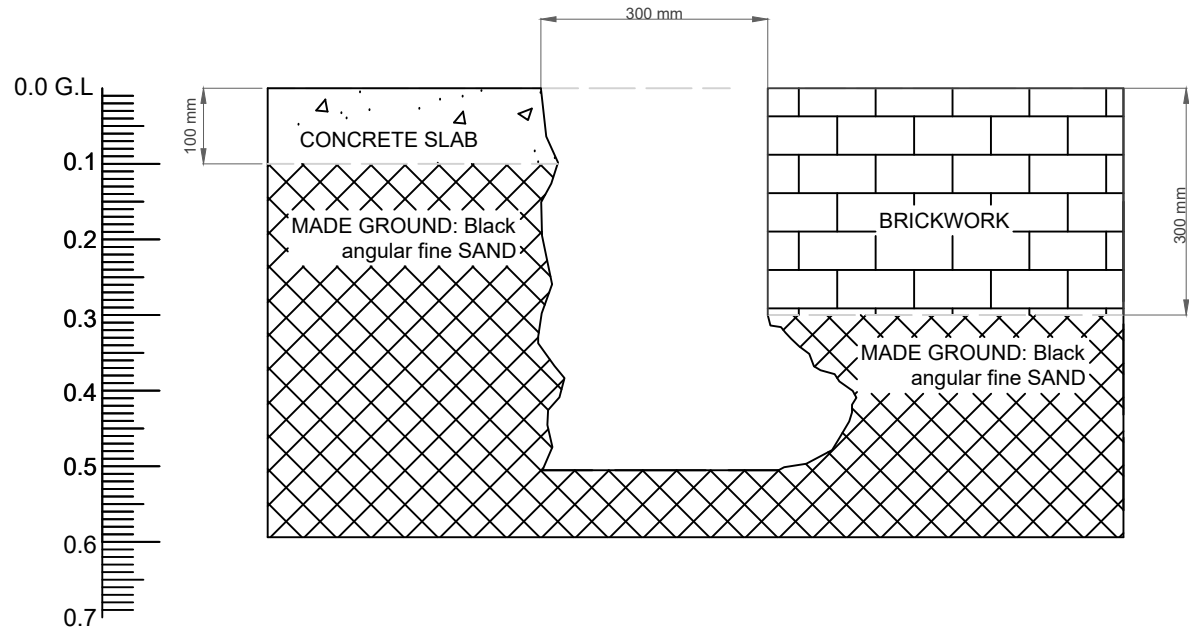
Sheet
 5/5




Plan view



Section F - F'



APPENDIX C – GEOTECHNICAL TEST RESULTS

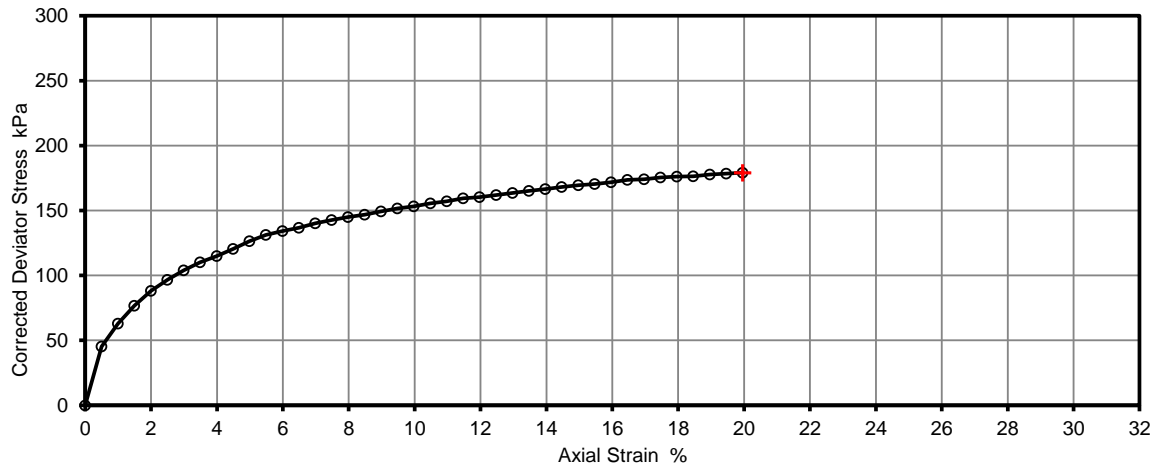
	Unconsolidated Undrained Triaxial Compression Test without measurement of pore pressure - single specimen			Job Ref	36508
				Borehole/Pit No.	WS2
Site Name	152-154 Uxbridge Road			Sample No.	-
Project No.	2024-065-PRE-UXB	Client	Geofirma	Depth Top	1.40 m
Soil Description	High strength brown slightly sandy silty CLAY			Depth Base	1.80 m
				Sample Type	U
				Samples received	13/12/2024
				Schedules received	17/12/2024
Test Method	BS EN ISO 17892-8:2018			Date of test	14/01/2025

Remarks

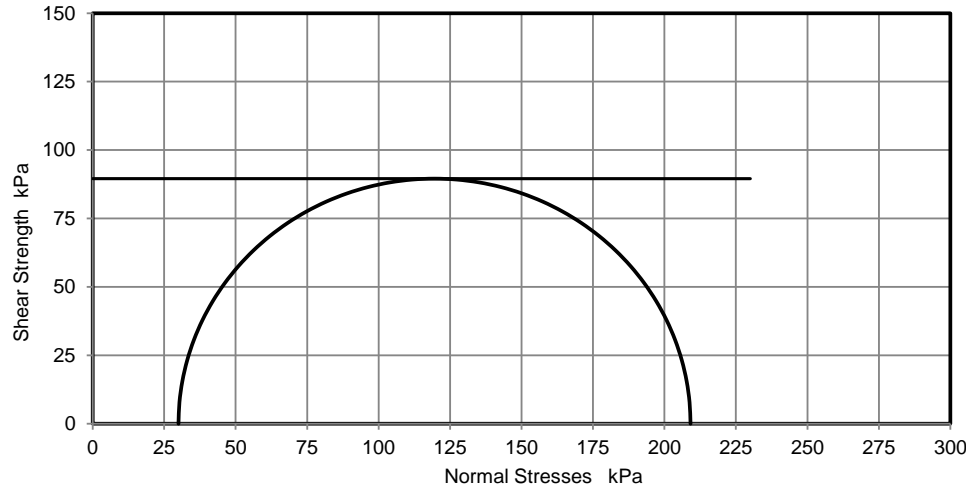


Test Number	1	
Length	150.3	mm
Diameter	75.3	mm
Bulk Density	2.05	Mg/m ³
Water Content	23.5	%
Dry Density	1.66	Mg/m ³
Rate of Strain	2.0	%/min
Cell Pressure	30	kPa
Axial Strain	20	%
Deviator Stress, (σ ₁ - σ ₃) _f	179	kPa
Undrained Shear Strength, c _u	90	kPa ½(σ ₁ - σ ₃) _f
Mode of Failure	Compound	

Deviator Stress v Axial Strain



Mohr Circles



Deviator stress corrected for area change and membrane effects


Mohr circles and their interpretation is not covered by BS1377. This is provided for information only.



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 Unit 8 Olds Close Olds Approach
 Watford Herts WD18 9RU
 Tel: 01923 711 288 Email: James@k4soils.com

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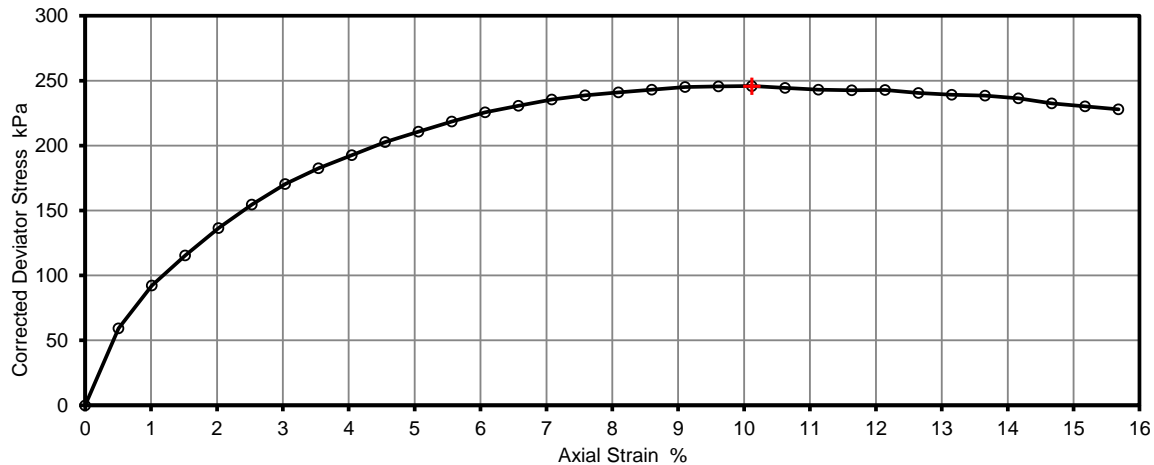
	Unconsolidated Undrained Triaxial Compression Test without measurement of pore pressure - single specimen			Job Ref	36508
				Borehole/Pit No.	BH1
Site Name	152-154 Uxbridge Road			Sample No.	-
Project No.	2024-065-PRE-UXB	Client	Geofirma	Depth Top	6.00 m
Soil Description	High strength dark grey silty CLAY			Depth Base	6.45 m
				Sample Type	U
				Samples received	13/12/2024
				Schedules received	17/12/2024
Test Method	BS EN ISO 17892-8:2018			Date of test	14/01/2025

Remarks

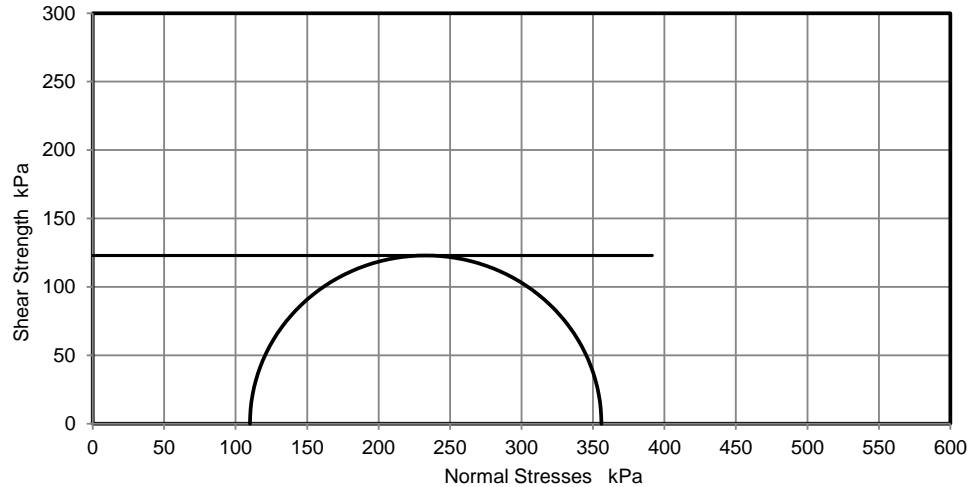


Test Number	1	
Length	197.7	mm
Diameter	102.3	mm
Bulk Density	2.04	Mg/m ³
Water Content	28.9	%
Dry Density	1.58	Mg/m ³
Rate of Strain	2.0	%/min
Cell Pressure	110	kPa
Axial Strain	10	%
Deviator Stress, (σ ₁ - σ ₃) _f	246	kPa
Undrained Shear Strength, c _u	123	kPa ½(σ ₁ - σ ₃) _f
Mode of Failure	Compound	

Deviator Stress v Axial Strain



Mohr Circles



Deviator stress corrected for area change and membrane effects

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**Unconsolidated Undrained Triaxial
Compression Test without measurement of
pore pressure - single specimen**

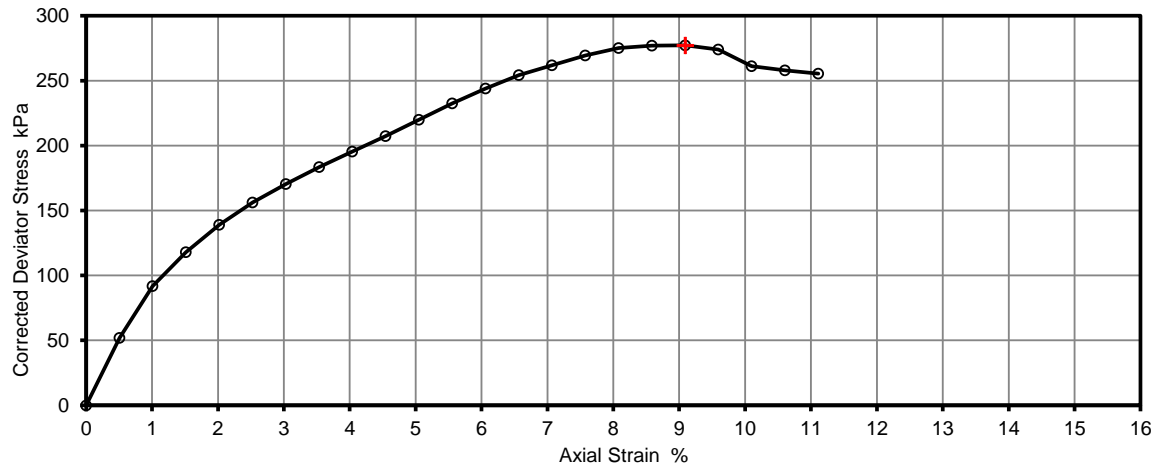
Job Ref	36508				
Borehole/Pit No.	BH1				
Site Name	152-154 Uxbridge Road		Sample No.	-	
Project No.	2024-065-PRE-UXB	Client	Geofirma	Depth Top	8.00 m
Soil Description	High strength dark grey silty CLAY			Depth Base	8.45 m
				Sample Type	U
				Samples received	13/12/2024
				Schedules received	17/12/2024
Test Method	BS EN ISO 17892-8:2018		Date of test	14/01/2025	

Remarks

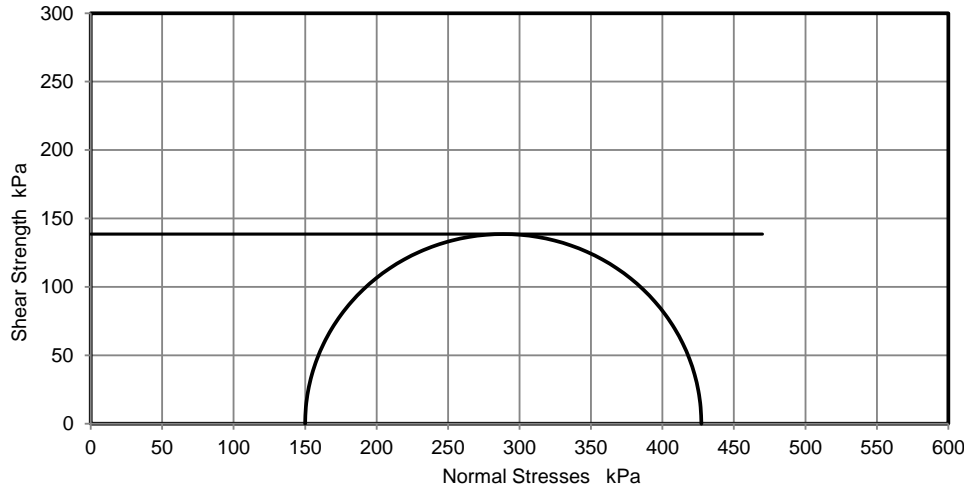


Test Number	1
Length	198.0 mm
Diameter	102.0 mm
Bulk Density	2.04 Mg/m ³
Water Content	28.4 %
Dry Density	1.59 Mg/m ³
Rate of Strain	1.5 %/min
Cell Pressure	150 kPa
Axial Strain	9.1 %
Deviator Stress, (σ ₁ - σ ₃) _f	277 kPa
Undrained Shear Strength, c _u	139 kPa ½(σ ₁ - σ ₃) _f
Mode of Failure	Compound

Deviator Stress v Axial Strain



Mohr Circles



Deviator stress corrected for area change and membrane effects

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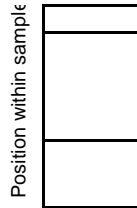


**Unconsolidated Undrained Triaxial
Compression Test without measurement of
pore pressure - single specimen**

Job Ref	36508
Borehole/Pit No.	BH1
Sample No.	-
Depth Top	10.00 m
Depth Base	10.45 m
Sample Type	U
Samples received	13/12/2024
Schedules received	17/12/2024
Date of test	14/01/2025

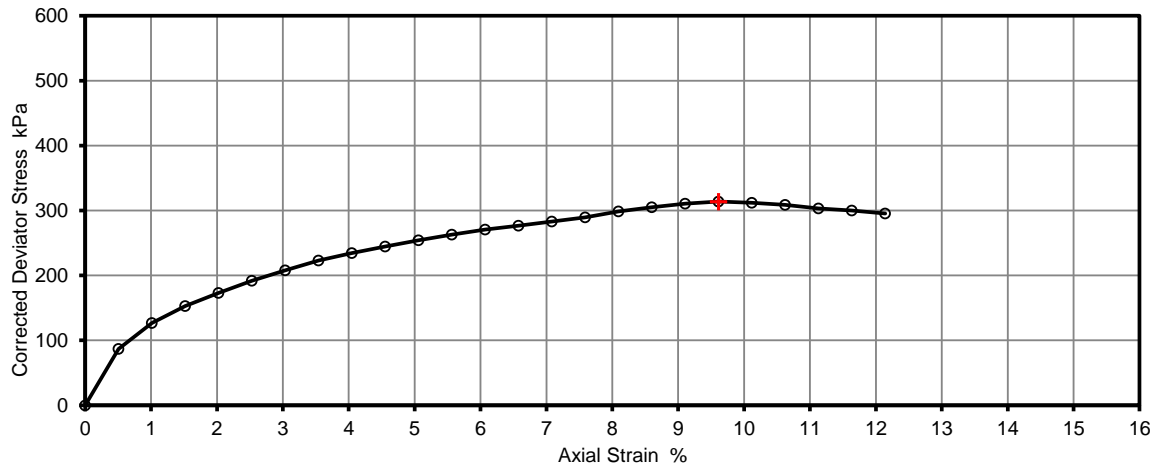
Site Name	152-154 Uxbridge Road		
Project No.	2024-065-PRE-UXB	Client	Geofirma
Soil Description	Very high strength dark grey silty CLAY		
Test Method	BS EN ISO 17892-8:2018		

Remarks

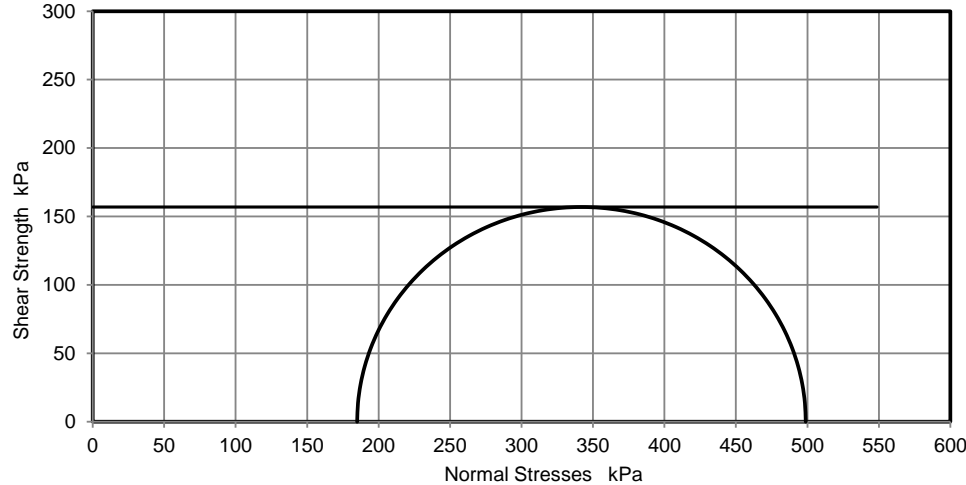


Test Number	1	
Length	197.7	mm
Diameter	101.8	mm
Bulk Density	2.07	Mg/m ³
Water Content	27.7	%
Dry Density	1.62	Mg/m ³
Rate of Strain	1.5	%/min
Cell Pressure	185	kPa
Axial Strain	9.6	%
Deviator Stress, (σ ₁ - σ ₃) _f	314	kPa
Undrained Shear Strength, c _u	157	kPa ½(σ ₁ - σ ₃) _f
Mode of Failure	Compound	

Deviator Stress v Axial Strain



Mohr Circles



Deviator stress corrected for area change and membrane effects

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**Unconsolidated Undrained Triaxial
Compression Test without measurement of
pore pressure - single specimen**

Job Ref	36508
Borehole/Pit No.	BH1
Sample No.	-
Depth Top	13.00 m
Depth Base	13.45 m
Sample Type	U
Samples received	13/12/2024
Schedules received	17/12/2024
Date of test	14/01/2025

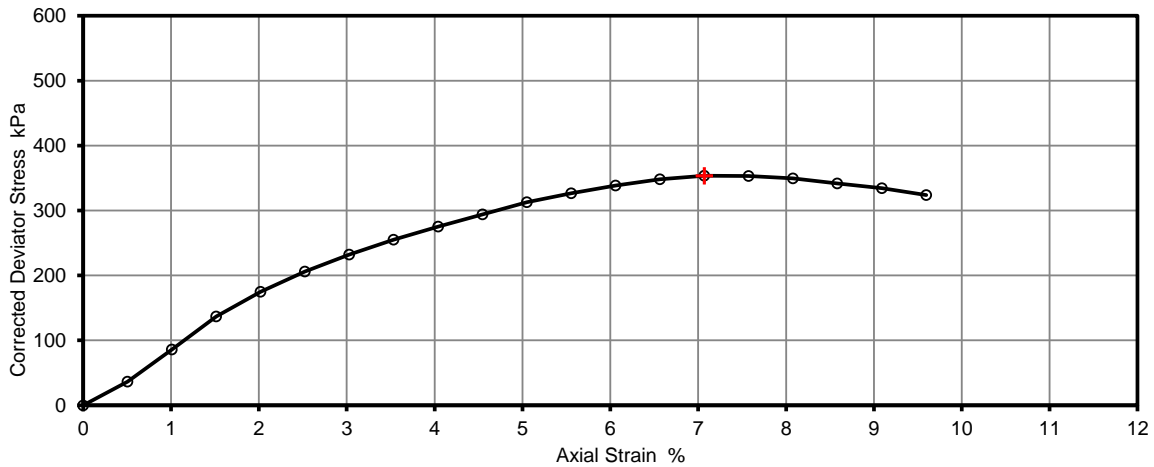
Site Name	152-154 Uxbridge Road		
Project No.	2024-065-PRE-UXB	Client	Geofirma
Soil Description	Very high strength dark grey silty CLAY		
Test Method	BS EN ISO 17892-8:2018		

Remarks

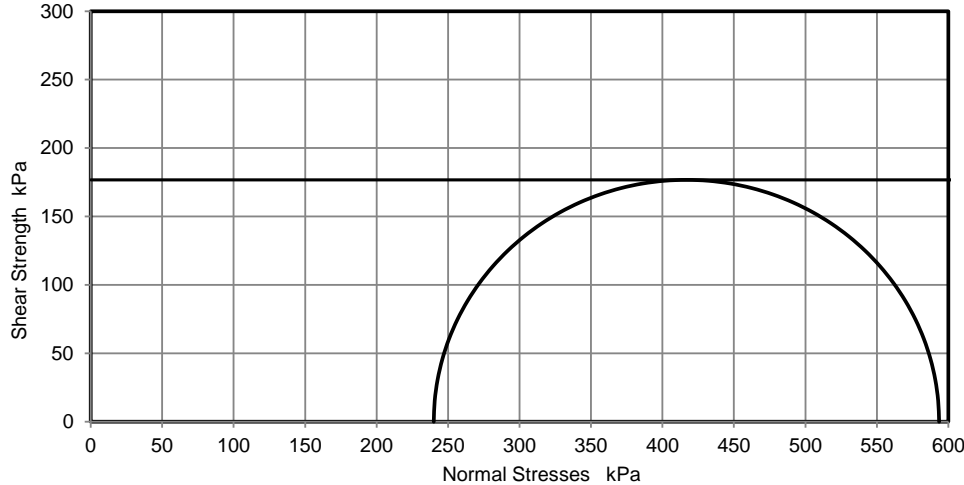


Test Number	1	
Length	198.0	mm
Diameter	102.0	mm
Bulk Density	2.08	Mg/m ³
Water Content	26.9	%
Dry Density	1.64	Mg/m ³
Rate of Strain	1.5	%/min
Cell Pressure	240	kPa
Axial Strain	7.1	%
Deviator Stress, (σ ₁ - σ ₃) _f	354	kPa
Undrained Shear Strength, c _u	177	kPa ½(σ ₁ - σ ₃) _f
Mode of Failure	Brittle	

Deviator Stress v Axial Strain



Mohr Circles




Deviator stress corrected for area change and membrane effects

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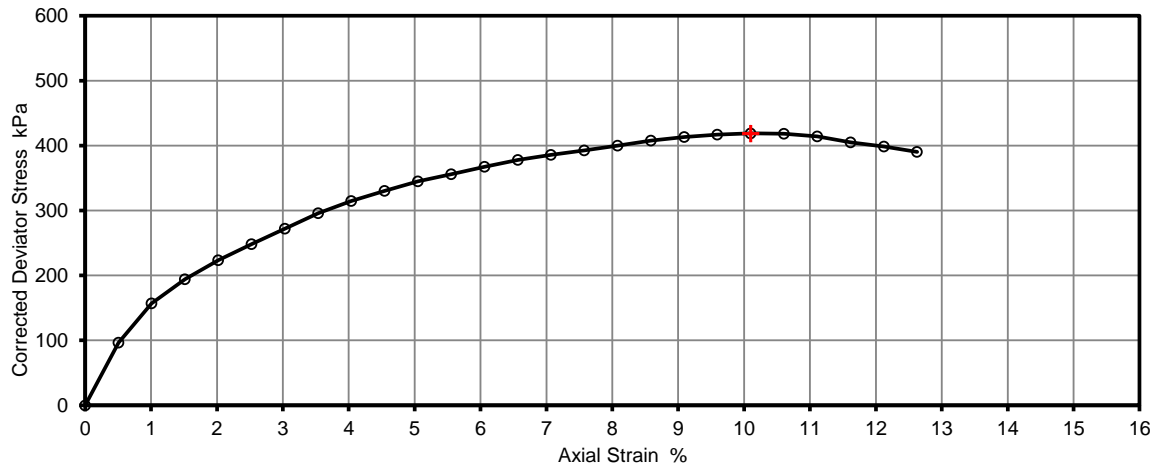
	Unconsolidated Undrained Triaxial Compression Test without measurement of pore pressure - single specimen			Job Ref	36508
				Borehole/Pit No.	BH1
Site Name	152-154 Uxbridge Road			Sample No.	-
Project No.	2024-065-PRE-UXB	Client	Geofirma	Depth Top	16.00 m
Soil Description	Very high strength dark grey silty CLAY			Depth Base	16.45 m
				Sample Type	U
				Samples received	13/12/2024
				Schedules received	17/12/2024
Test Method	BS EN ISO 17892-8:2018			Date of test	14/01/2025

Remarks

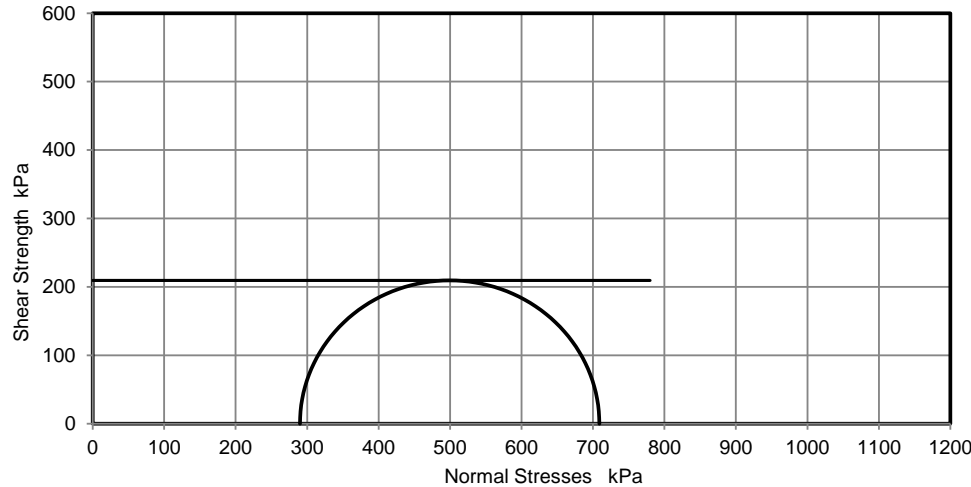


Test Number	1	
Length	198.0	mm
Diameter	102.3	mm
Bulk Density	2.06	Mg/m ³
Water Content	27.0	%
Dry Density	1.62	Mg/m ³
Rate of Strain	1.5	%/min
Cell Pressure	290	kPa
Axial Strain	10	%
Deviator Stress, (σ ₁ - σ ₃) _f	419	kPa
Undrained Shear Strength, c _u	209	kPa ½(σ ₁ - σ ₃) _f
Mode of Failure	Compound	

Deviator Stress v Axial Strain



Mohr Circles




Deviator stress corrected for area change and membrane effects

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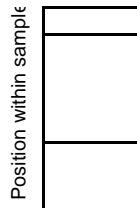


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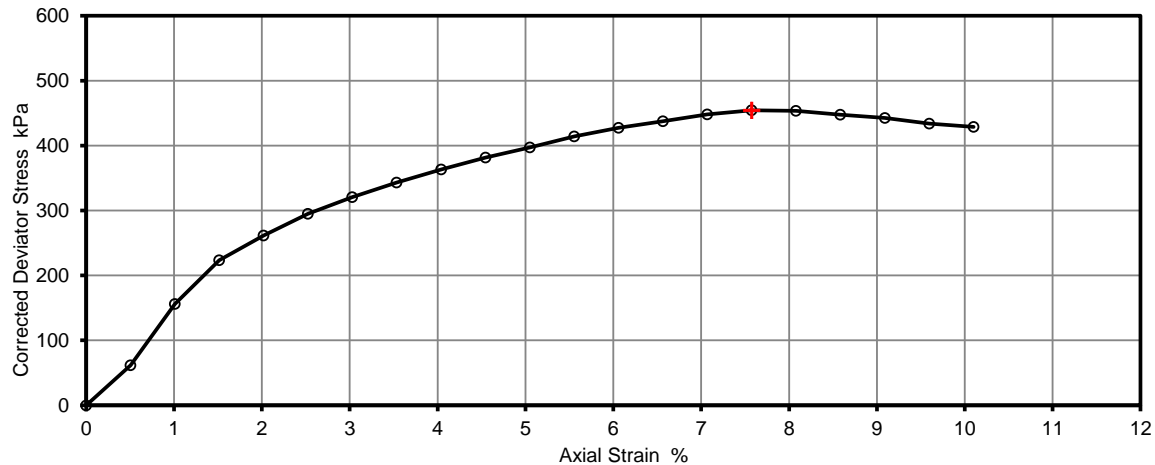
	Unconsolidated Undrained Triaxial Compression Test without measurement of pore pressure - single specimen			Job Ref	36508
				Borehole/Pit No.	BH1
Site Name	152-154 Uxbridge Road			Sample No.	-
Project No.	2024-065-PRE-UXB	Client	Geofirma	Depth Top	19.00 m
Soil Description	Very high strength dark grey silty CLAY			Depth Base	19.45 m
				Sample Type	U
				Samples received	13/12/2024
				Schedules received	17/12/2024
Test Method	BS EN ISO 17892-8:2018			Date of test	14/01/2025

Remarks

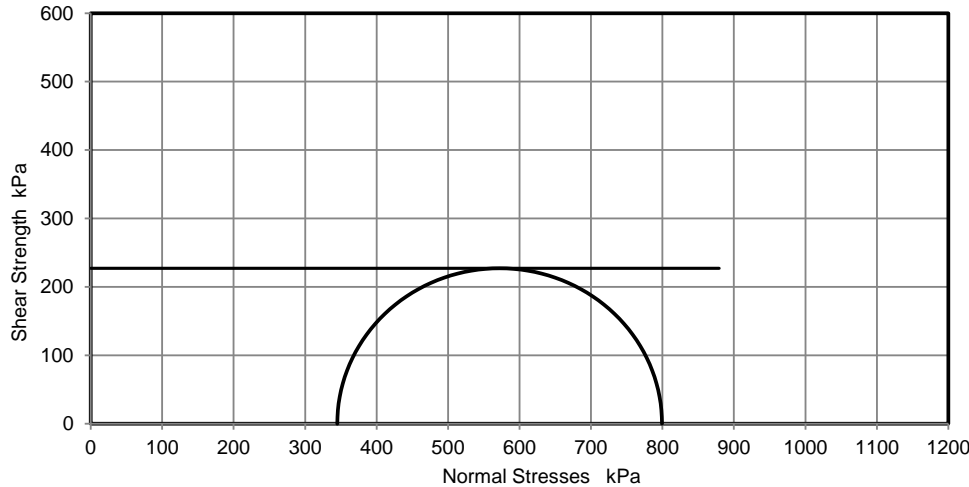


Test Number	1	
Length	198.0	mm
Diameter	102.0	mm
Bulk Density	2.08	Mg/m ³
Water Content	26.4	%
Dry Density	1.65	Mg/m ³
Rate of Strain	1.5	%/min
Cell Pressure	345	kPa
Axial Strain	7.6	%
Deviator Stress, (σ ₁ - σ ₃) _f	454	kPa
Undrained Shear Strength, c _u	227	kPa ½(σ ₁ - σ ₃) _f
Mode of Failure	Brittle	

Deviator Stress v Axial Strain



Mohr Circles



Deviator stress corrected for area change and membrane effects

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**Unconsolidated Undrained Triaxial Compression tests without measurement of pore pressure
Summary of Results**

Tests carried out in accordance with BS EN ISO 17892-8:2018

Job No. 36508	Project Name 152-154 Uxbridge Road	Programme	
		Samples received	13/12/2024
Project No. 2024-065-PRE-UXB	Client Geofirma	Schedule received	17/12/2024
		Project started	18/12/2024
		Testing Started	14/01/2025

Hole No.	Sample				Soil Description	Test Type	Density		w	Length	Diameter	σ_3	At failure				Remarks
	Ref	Top m	Base m	Type			bulk Mg/m3	dry					%	mm	mm	kPa	
WS2	-	1.40	1.80	U	High strength brown slightly sandy silty CLAY	UU	2.05	1.66	23.5	150.3	75.3	30	20	179	90	C	
BH1	-	6.00	6.45	U	High strength dark grey silty CLAY	UU	2.04	1.58	28.9	197.7	102.3	110	10	246	123	C	
BH1	-	8.00	8.45	U	High strength dark grey silty CLAY	UU	2.04	1.59	28.4	198	102	150	9.1	277	139	C	
BH1	-	10.00	10.45	U	Very high strength dark grey silty CLAY	UU	2.07	1.62	27.7	197.7	101.8	185	9.6	314	157	C	
BH1	-	13.00	13.45	U	Very high strength dark grey silty CLAY	UU	2.08	1.64	26.9	198	102	240	7.1	354	177	B	
BH1	-	16.00	16.45	U	Very high strength dark grey silty CLAY	UU	2.06	1.62	27.0	198	102.3	290	10	419	209	C	
BH1	-	19.00	19.45	U	Very high strength dark grey silty CLAY	UU	2.08	1.65	26.4	198	102	345	7.6	454	227	B	

Legend UU - single stage test (single and multiple specimens) σ_3 Cell pressure Mode of failure ; B - Brittle
 UUM - Multistage test on a single specimen $\sigma_1 - \sigma_3$ Maximum corrected deviator stress P - Plastic
 suffix R - remoulded or recompacted cu Undrained shear strength, $\frac{1}{2}(\sigma_1 - \sigma_3)$ C - Compound

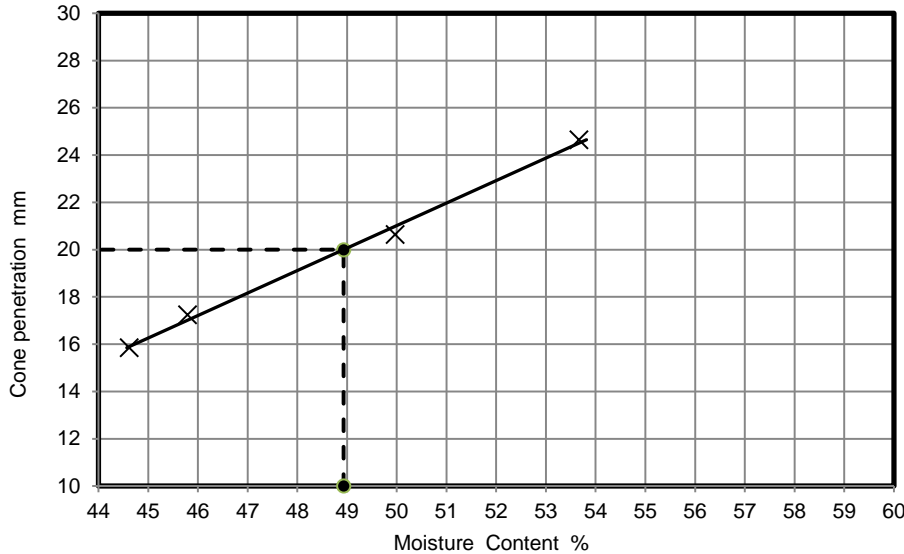
	Test Report by K4 SOILS LABORATORY Unit 8 Olds Close Olds Approach Watford Herts WD18 9RU Tel: 01923 711 288 Email: james@k4soils.com Email: james@k4soils.com	Checked and Approved Initials: J.P Date: 15/01/2025
	<i>These results only apply to the items tested. The report shall not be reproduced except in full without authority of the laboratory</i>	Approved Signatories: K.Phaure (Tech.Mgr) J.Phaure (Lab.Mgr)
2519		MSF-5-R7b



LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

Job No.	36508
Borehole/Pit No.	WS1
Sample No.	-
Depth Top	1.30 m
Depth Base	- m
Sample Type	D
Samples received	13/12/2024
Schedules received	17/12/2024
Project Started	18/12/2024
Date Tested	14/01/2025

Site Name	152-154 Uxbridge Road		
Project No.	2024-065-PRE-UXB	Client	Geofirma
Soil Description	Brown silty clayey very sandy GRAVEL (gravel is fmc and sub-angular to sub-rounded)		

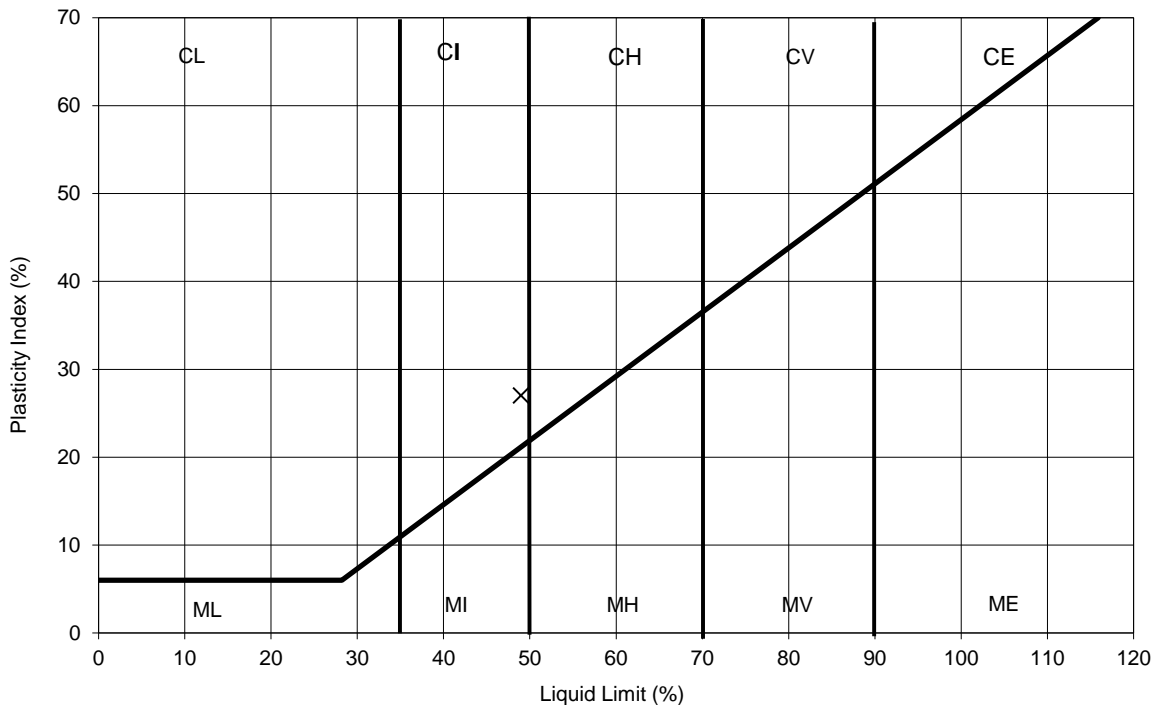


WATER CONTENT	10.0	%
% PASSING 425µm SIEVE	32	%
LIQUID LIMIT	49	%
PLASTIC LIMIT	22	%
PLASTICITY INDEX	27	%

Preparation Method	Tested after washing to remove >425um
--------------------	---------------------------------------

Remarks

PLASTICITY INDEX



TEST METHODS:

BS EN ISO 17892 Part 1: 2014 + A1:2022 Water Content
 BS EN ISO 17892 Part 12: 2018 +A2:2022 Liquid and plastic limit

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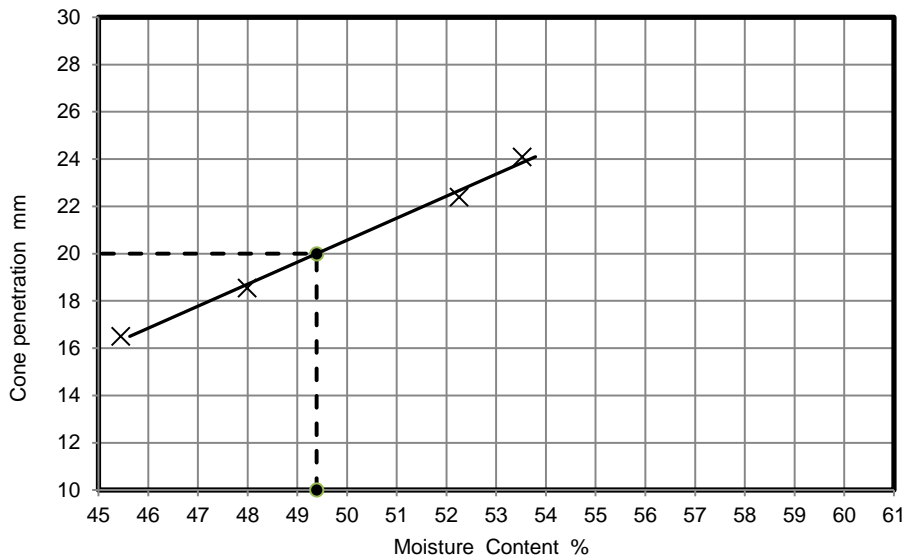




LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

Job No.	36508
Borehole/Pit No.	WS2
Sample No.	-
Depth Top	1.40 m
Depth Base	1.80 m
Sample Type	U
Samples received	13/12/2024
Schedules received	17/12/2024
Project Started	18/12/2024
Date Tested	14/01/2025

Site Name	152-154 Uxbridge Road		
Project No.	2024-065-PRE-UXB	Client	Geofirma
Soil Description	High strength brown slightly sandy silty CLAY		

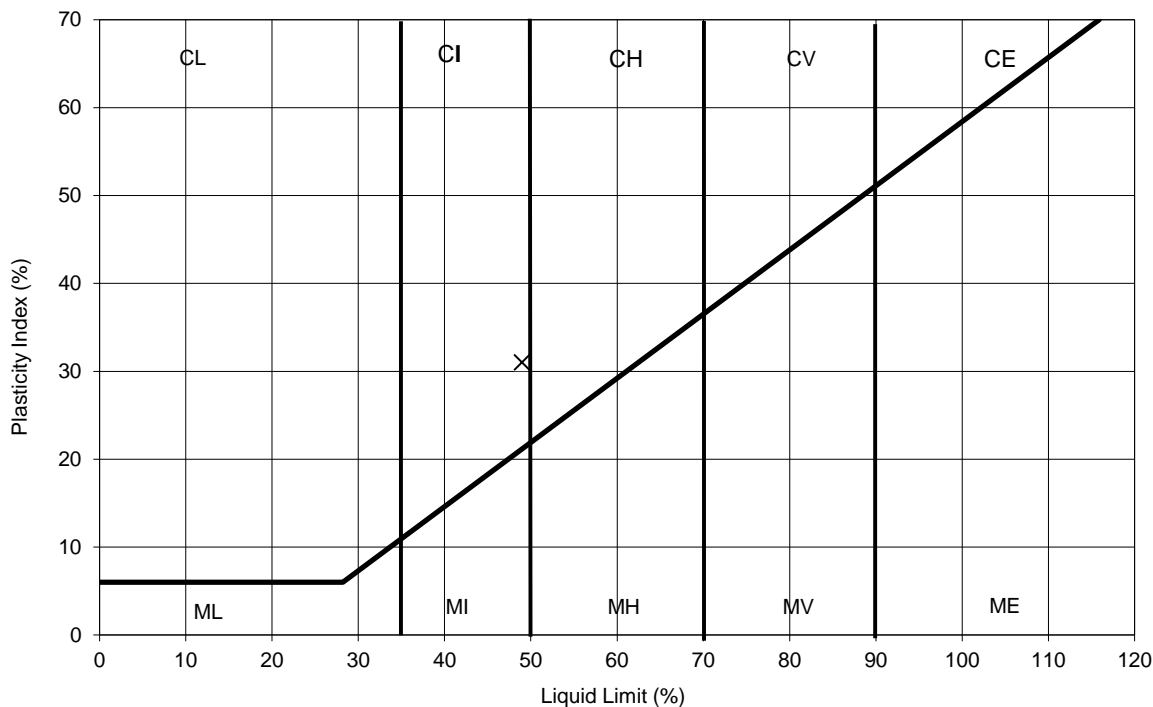


WATER CONTENT	23.9	%
% PASSING 425µm SIEVE	98	%
LIQUID LIMIT	49	%
PLASTIC LIMIT	18	%
PLASTICITY INDEX	31	%

Preparation Method	Tested in natural condition
--------------------	-----------------------------

Remarks

PLASTICITY INDEX



TEST METHODS:

BS EN ISO 17892 Part 1: 2014 + A1:2022 Water Content
 BS EN ISO 17892 Part 12: 2018 +A2:2022 Liquid and plastic limit

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Initials: J.P

Date: 15/01/2025

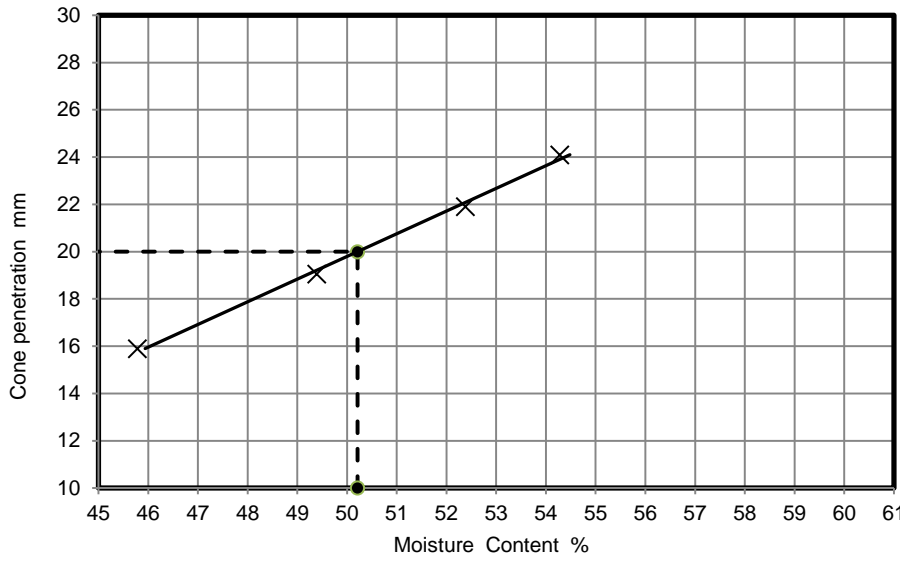




LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

Job No.	36508
Borehole/Pit No.	WS3
Sample No.	-
Depth Top	1.20 m
Depth Base	- m
Sample Type	D
Samples received	13/12/2024
Schedules received	17/12/2024
Project Started	18/12/2024
Date Tested	14/01/2025

Site Name	152-154 Uxbridge Road		
Project No.	2024-065-PRE-UXB	Client	Geofirma
Soil Description	Brown slightly sandy slightly gravelly silty CLAY (gravel is fm and sub-angular to sub-rounded)		

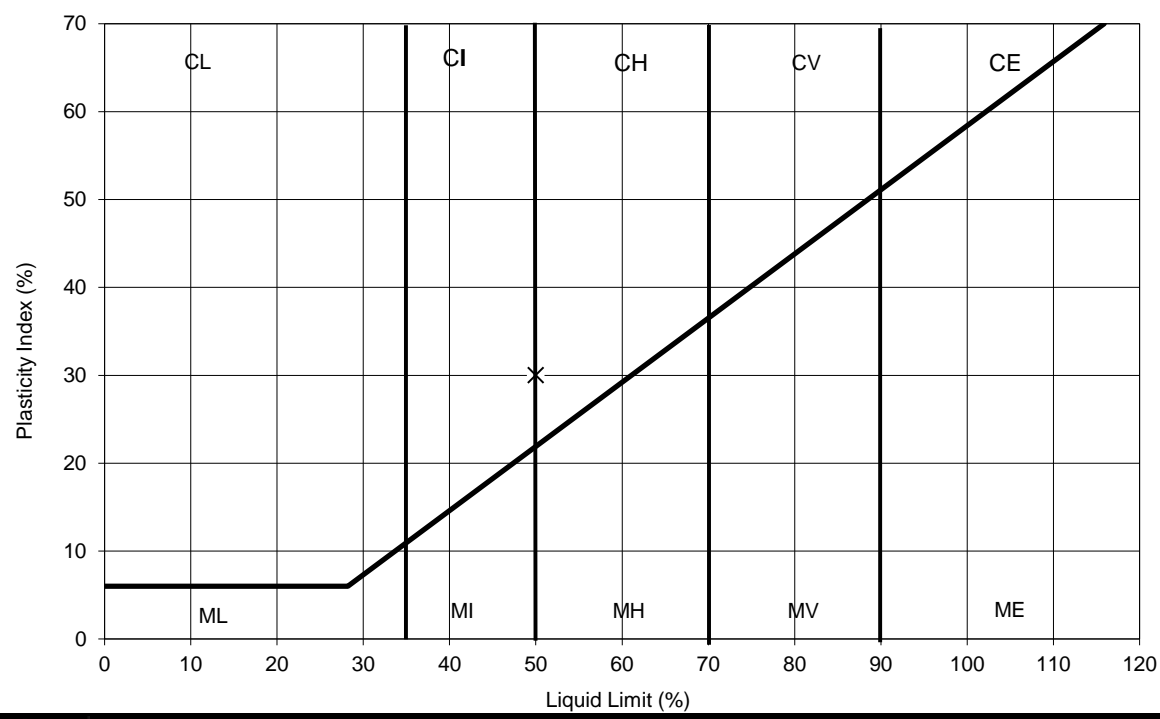


WATER CONTENT	17.1	%
% PASSING 425µm SIEVE	57	%
LIQUID LIMIT	50	%
PLASTIC LIMIT	20	%
PLASTICITY INDEX	30	%

Preparation Method	Tested after washing to remove >425um
--------------------	---------------------------------------

Remarks

PLASTICITY INDEX



TEST METHODS:
 BS EN ISO 17892 Part 1: 2014 + A1:2022 Water Content
 BS EN ISO 17892 Part 12: 2018 +A2:2022 Liquid and plastic limit
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Approved Signatories: K.Phaure (Tech.Mgr) J.Phaure (Lab.Mgr)

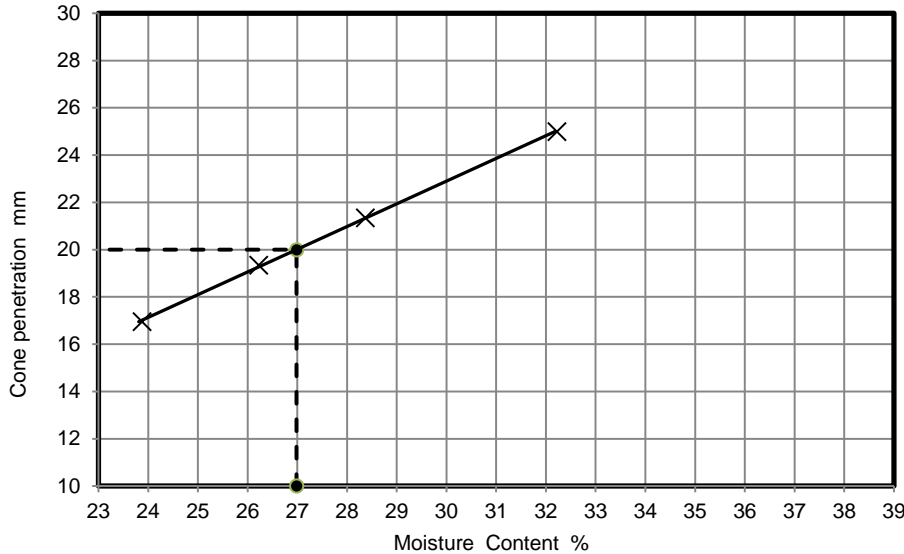
Checked and Approved

Initials: J.P
 Date: 15/01/2025



LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

		Job No.		36508							
		Borehole/Pit No.		BH1							
Site Name		152-154 Uxbridge Road		Sample No.		-					
Project No.		2024-065-PRE-UXB	Client	Geofirma		Depth Top		1.00 m			
Soil Description		Brown clayey silty gravelly SAND (gravel is fm and sub-angular to sub-rounded)						Depth Base		- m	
								Sample Type		D	
								Samples received		13/12/2024	
								Schedules received		17/12/2024	
								Project Started		18/12/2024	
								Date Tested		14/01/2025	

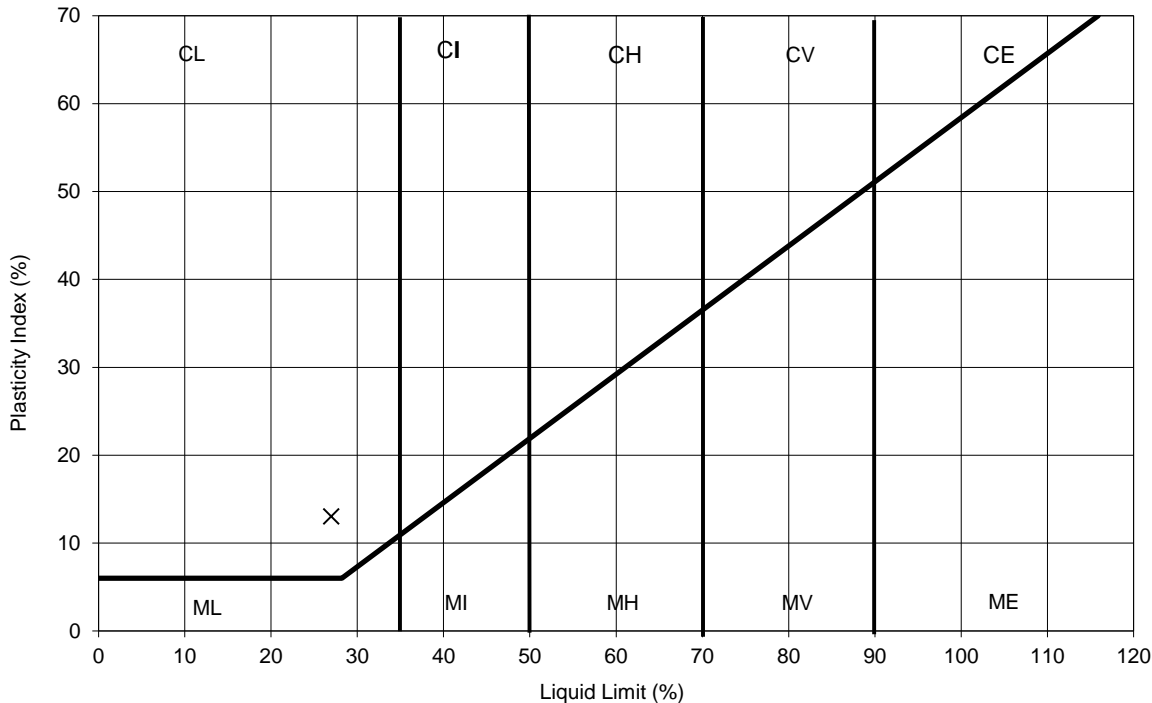


WATER CONTENT	15.1	%
% PASSING 425µm SIEVE	73	%
LIQUID LIMIT	27	%
PLASTIC LIMIT	14	%
PLASTICITY INDEX	13	%

Preparation Method	Tested after washing to remove >425um
---------------------------	---------------------------------------

Remarks

PLASTICITY INDEX



TEST METHODS:

BS EN ISO 17892 Part 1: 2014 + A1:2022 Water Content
 BS EN ISO 17892 Part 12: 2018 +A2:2022 Liquid and plastic limit

These results only apply to the items tested. The report shall not be reproduced except in full without authority of the laboratory

Test Report by K4 SOILS LABORATORY Unit 8 Olds Close Olds Approach Watford Herts WD18 9RU
 Tel: 01923 711 288 Email: James@k4soils.com

Checked and Approved

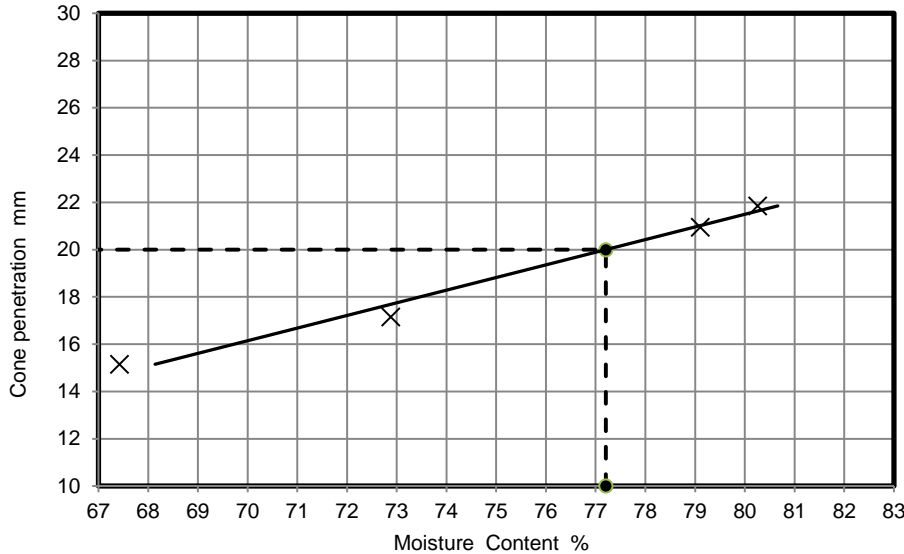
Initials: J.P
 Date: 15/01/2025



LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

Job No.	36508
Borehole/Pit No.	BH1
Sample No.	-
Depth Top	8.90 m
Depth Base	- m
Sample Type	D
Samples received	13/12/2024
Schedules received	17/12/2024
Project Started	18/12/2024
Date Tested	14/01/2025

Site Name	152-154 Uxbridge Road		
Project No.	2024-065-PRE-UXB	Client	Geofirma
Soil Description	Dark grey silty CLAY		

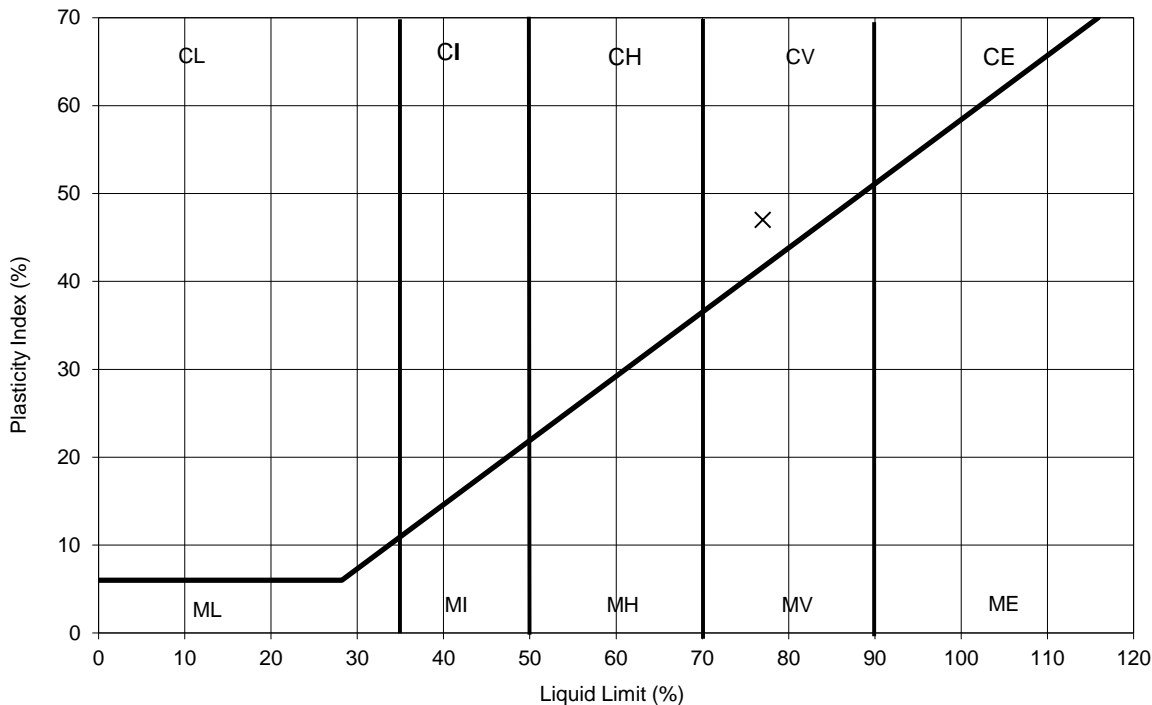


WATER CONTENT	28.4	%
% PASSING 425µm SIEVE	100	%
LIQUID LIMIT	77	%
PLASTIC LIMIT	30	%
PLASTICITY INDEX	47	%

Preparation Method	Tested in natural condition
--------------------	-----------------------------

Remarks

PLASTICITY INDEX



TEST METHODS:

BS EN ISO 17892 Part 1: 2014 + A1:2022 Water Content
 BS EN ISO 17892 Part 12: 2018 +A2:2022 Liquid and plastic limit

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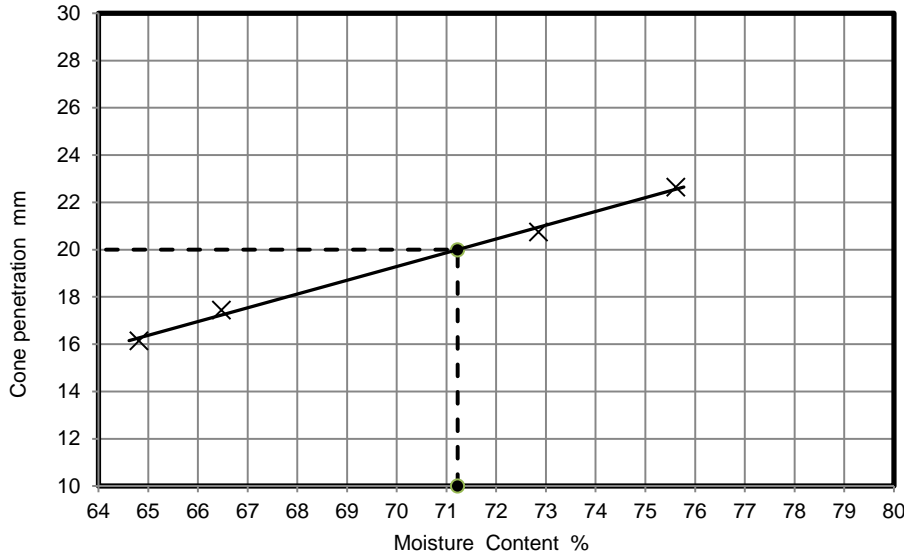




LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

Job No.	36508
Borehole/Pit No.	BH1
Sample No.	-
Depth Top	14.90 m
Depth Base	- m
Sample Type	D
Samples received	13/12/2024
Schedules received	17/12/2024
Project Started	18/12/2024
Date Tested	14/01/2025

Site Name	152-154 Uxbridge Road		
Project No.	2024-065-PRE-UXB	Client	Geofirma
Soil Description	Dark grey silty CLAY		

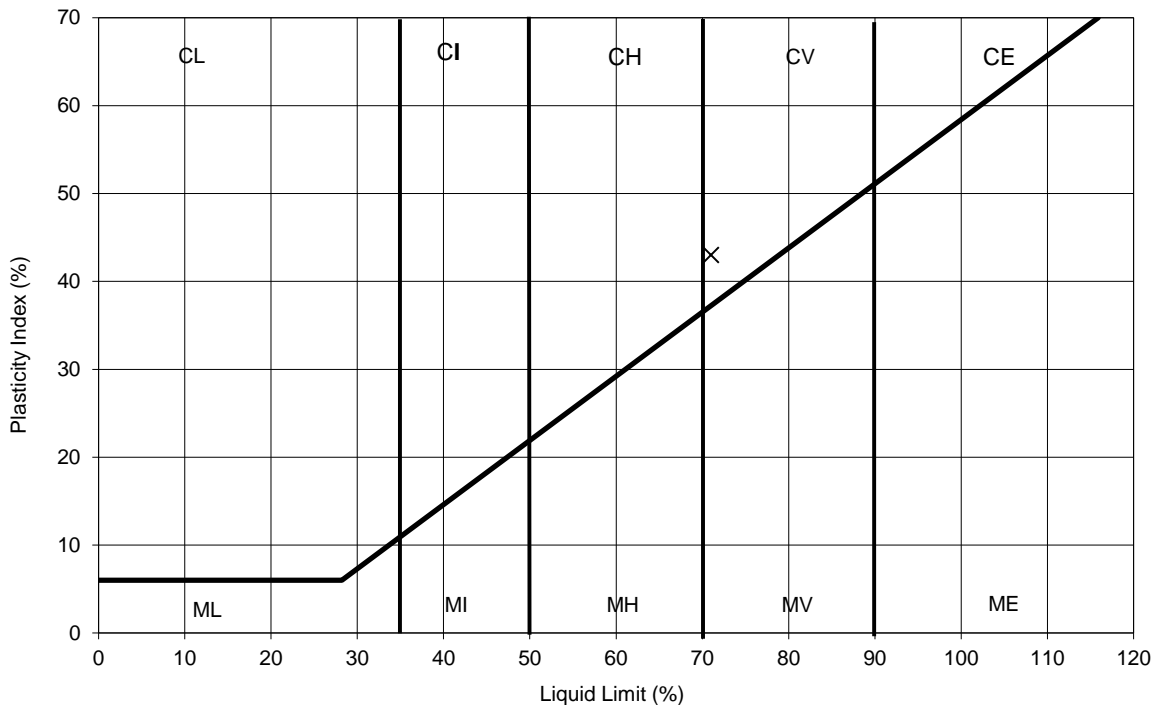


WATER CONTENT	26.7	%
% PASSING 425µm SIEVE	100	%
LIQUID LIMIT	71	%
PLASTIC LIMIT	28	%
PLASTICITY INDEX	43	%

Preparation Method	Tested in natural condition
--------------------	-----------------------------

Remarks

PLASTICITY INDEX



TEST METHODS:

BS EN ISO 17892 Part 1: 2014 + A1:2022 Water Content
 BS EN ISO 17892 Part 12: 2018 +A2:2022 Liquid and plastic limit

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 Tel: 01923 711 288 Email: James@k4soils.com

Checked and Approved

Initials: J.P
 Date: 15/01/2025





Summary of Water Content, Liquid Limit (4 point) and Plastic Limit Results

Job No. 36508	Project Name 152-154 Uxbridge Road	Programme	
		Samples received	13/12/2024
Project No. 2024-065-PRE-UXB	Client Geofirma	Schedule received	17/12/2024
		Project started	18/12/2024
		Testing Started	14/01/2025

Hole No.	Sample				Soil Description	Water Content %	Passing 425µm %	Preparation	LL %	PL %	PI %	Remarks
	Ref	Top m	Base m	Type								
WS1	-	1.30	-	D	Brown silty clayey very sandy GRAVEL (gravel is fmc and sub-angular to sub-rounded)	10.0	32	Tested after washing to remove >425µm	49	22	27	
WS2	-	1.40	1.80	U	High strength brown slightly sandy silty CLAY	23.9	98	Tested in natural condition	49	18	31	
WS3	-	1.20	-	D	Brown slightly sandy slightly gravelly silty CLAY (gravel is fm and sub-angular to sub-rounded)	17.1	57	Tested after washing to remove >425µm	50	20	30	
BH1	-	1.00	-	D	Brown clayey silty gravelly SAND (gravel is fm and sub-angular to sub-rounded)	15.1	73	Tested after washing to remove >425µm	27	14	13	
BH1	-	4.90	-	D	Dark greyish brown silty CLAY	27.7						
BH1	-	6.00	6.45	U	High strength dark grey silty CLAY	28.9						
BH1	-	7.00	-	D	Dark greyish brown silty CLAY	27.9						
BH1	-	8.00	8.45	U	High strength dark grey silty CLAY	28.4						
BH1	-	8.90	-	D	Dark grey silty CLAY	28.4	100	Tested in natural condition	77	30	47	
BH1	-	10.00	10.45	U	Very high strength dark grey silty CLAY	27.7						
BH1	-	10.90	-	D	Dark grey silty CLAY	27.8						

80g/300 cone used unless otherwise stated.

<p>Test Methods: BS EN ISO 17892 Part 1: 2014+A1:2022 Water content Part 12: 2018+A2:2022 Liquid & plastic limit</p> <p>These results only apply to the items tested NOTE: The report shall not be reproduced except in full without authority of the laboratory</p>	<p>Test Report by K4 SOILS LABORATORY Unit 8 Olds Close Olds Approach Watford Herts WD18 9RU</p> <p>Tel: 01923 711 288 Email: James@k4soils.com</p>	<p>Checked and Approved</p> <p>Initials J.P</p> <p>Date: 15/01/2025</p>
<p>2519 Approved Signatories: K.Phaure (Tech.Mgr) J.Phaure (Lab.Mgr)</p>		



Summary of Water Content, Liquid Limit (4 point) and Plastic Limit Results

Job No. 36508	Project Name 152-154 Uxbridge Road	Programme	
		Samples received	13/12/2024
Project No. 2024-065-PRE-UXB	Client Geofirma	Schedule received	17/12/2024
		Project started	18/12/2024
		Testing Started	14/01/2025

Hole No.	Sample				Soil Description	Water Content %	Passing 425µm %	Preparation	LL %	PL %	PI %	Remarks
	Ref	Top m	Base m	Type								
BH1	-	12.90	-	D	Dark grey silty CLAY	26.2						
BH1	-	13.00	13.45	U	Very high strength dark grey silty CLAY	26.9						
BH1	-	14.90	-	D	Dark grey silty CLAY	26.7	100	Tested in natural condition	71	28	43	
BH1	-	16.00	16.45	U	Very high strength dark grey silty CLAY	27.0						
BH1	-	16.90	-	D	Dark grey silty CLAY	24.8						
BH1	-	18.90	-	D	Dark grey silty CLAY	26.1						
BH1	-	19.00	19.45	U	Very high strength dark grey silty CLAY	26.4						

80g/300 cone used unless otherwise stated.

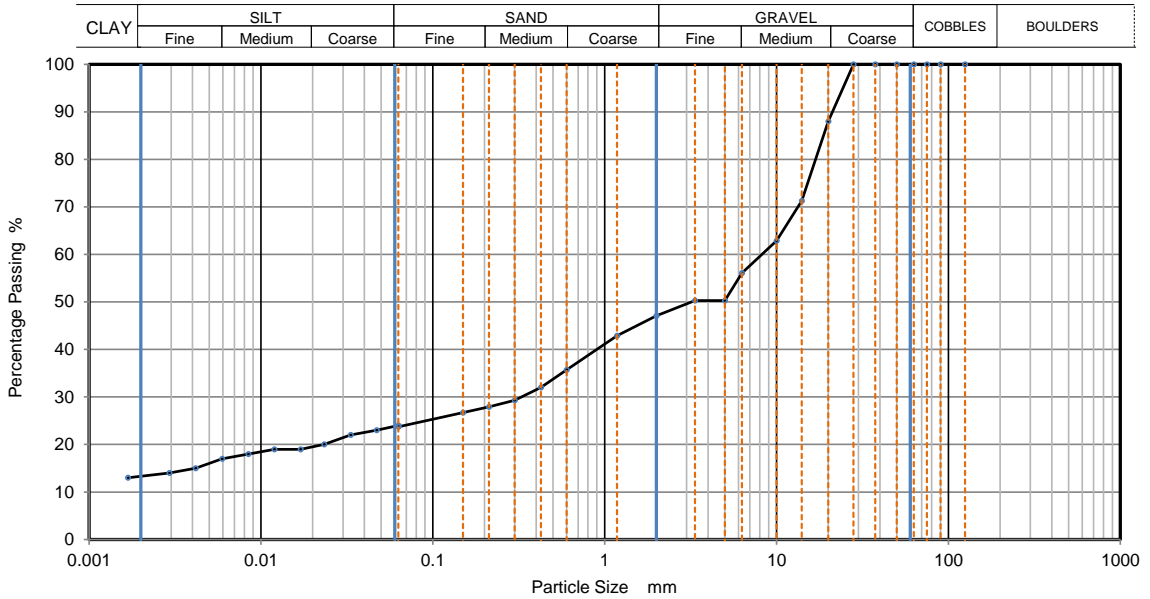
 Test Methods: BS EN ISO 17892 Part 1: 2014+A1:2022 Water content Part 12: 2018+A2:2022 Liquid & plastic limit These results only apply to the items tested NOTE: The report shall not be reproduced except in full without authority of the laboratory	Test Report by K4 SOILS LABORATORY Unit 8 Olds Close Olds Approach Watford Herts WD18 9RU Tel: 01923 711 288 Email: James@k4soils.com	Checked and Approved Initials J.P Date: 15/01/2025
	Approved Signatories: K.Phaure (Tech.Mgr) J.Phaure (Lab.Mgr)	



PARTICLE SIZE DISTRIBUTION

		Job Ref	36508		
		Borehole/Pit No.	WS1		
Site Name	152-154 Uxbridge Road		Sample No.	-	
Project No.	2024-065-PRE-UXB	Client	Geofirma	Depth Top	1.30 m
Soil Description	Brown silty clayey very sandy GRAVEL (gravel is fmc and sub-angular to sub-rounded)			Depth Base	- m
				Sample Type	D
				Samples received	13/12/2024
				Schedules received	17/12/2024
Test Method	BS EN ISO 17892 Part 4: 2016		Project started	18/12/2024	
			Date tested	13/01/2025	

These results only apply to the items tested



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0630	24
90	100	0.0472	23
75	100	0.0332	22
63	100	0.0233	20
50	100	0.0170	19
37.5	100	0.0120	19
28	100	0.0084	18
20	88	0.0059	17
14	71	0.0042	15
10	63	0.0029	14
6.3	56	0.0017	13
5	50		
3.35	50		
2	47		
1.18	43		
0.6	36	Particle density (assumed)	
0.425	32	2.70	Mg/m3
0.3	29		
0.212	28		
0.15	27		
0.063	24		

Sample Proportions	% dry mass
Very coarse	0
Gravel	54
Sand	23
Silt	10
Clay	13

Grading Analysis		
D100	mm	
D60	mm	8.19
D30	mm	0.327
D10	mm	
Uniformity Coefficient		
Curvature Coefficient		

Remarks
Preparation and testing in accordance with ISO17892 Part 4 unless noted below

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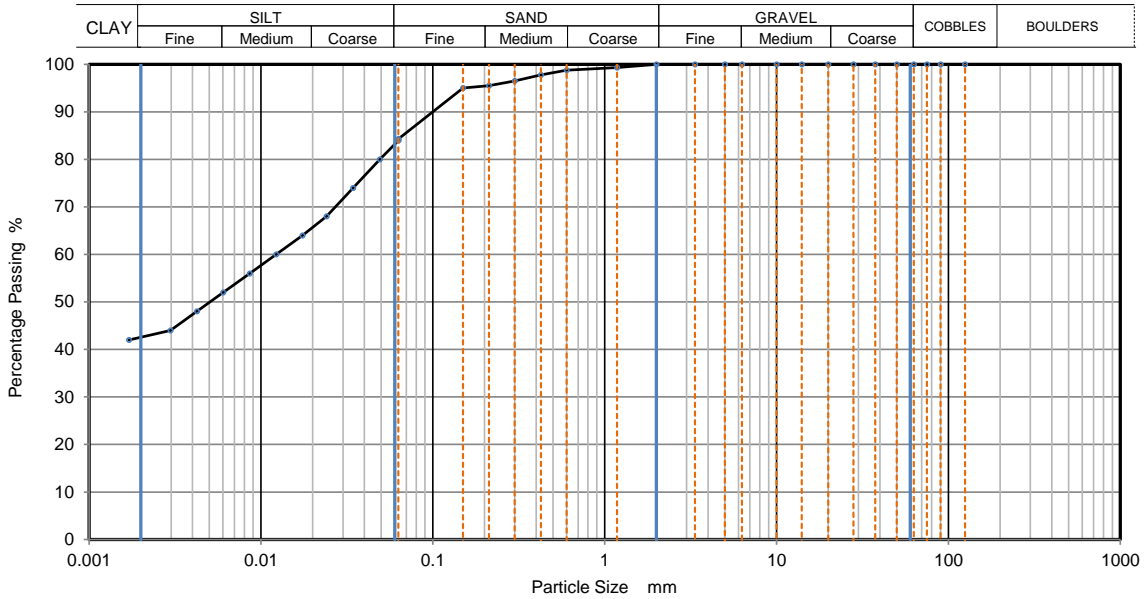
	K4 Soils Laboratory Unit 8, Olds Close, Watford, Herts, WD18 9RU Email: james@k4soils.com Tel: 01923 711288	Checked and Approved Initials: J.P Date: 14/01/2025	
	2519	Approved Signatories: K.Phaure (Tech.Mgr) J.Phaure (Lab.Mgr)	MSF-5-R3



PARTICLE SIZE DISTRIBUTION

		Job Ref	36508
		Borehole/Pit No.	WS2
Site Name	152-154 Uxbridge Road	Sample No.	-
Project No.	2024-065-PRE-UXB	Client	Geofirma
Soil Description	Brown slightly sandy silty CLAY	Depth Top	1.40 m
		Depth Base	1.80 m
		Sample Type	U
		Samples received	13/12/2024
		Schedules received	17/12/2024
Test Method	BS EN ISO 17892 Part 4: 2016	Project started	18/12/2024
		Date tested	14/01/2025

These results only apply to the items tested



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0630	84
90	100	0.0491	80
75	100	0.0344	74
63	100	0.0241	68
50	100	0.0174	64
37.5	100	0.0122	60
28	100	0.0086	56
20	100	0.0060	52
14	100	0.0042	48
10	100	0.0030	44
6.3	100	0.0017	42
5	100		
3.35	100		
2	100		
1.18	99		
0.6	99	Particle density (assumed)	
0.425	98	2.70	Mg/m3
0.3	97		
0.212	96		
0.15	95		
0.063	84		

Sample Proportions	% dry mass
Very coarse	0
Gravel	0
Sand	16
Silt	42
Clay	42

Grading Analysis		
D100	mm	
D60	mm	0.0124
D30	mm	
D10	mm	
Uniformity Coefficient		
Curvature Coefficient		

Remarks
Preparation and testing in accordance with ISO17892 Part 4 unless noted below

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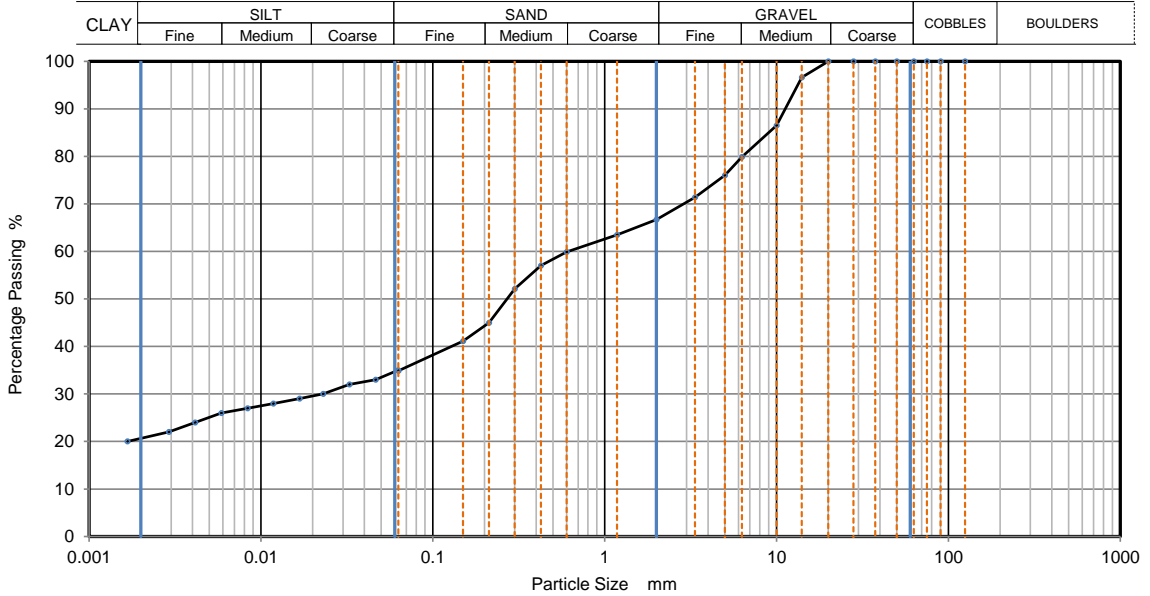
	K4 Soils Laboratory Unit 8, Olds Close, Watford, Herts, WD18 9RU Email: james@k4soils.com Tel: 01923 711288	Checked and Approved Initials: J.P Date: 14/01/2025	
	2519	Approved Signatories: K.Phaure (Tech.Mgr) J.Phaure (Lab.Mgr)	MSF-5-R3



PARTICLE SIZE DISTRIBUTION

		Job Ref	36508
		Borehole/Pit No.	WS3
Site Name	152-154 Uxbridge Road	Sample No.	-
Project No.	2024-065-PRE-UXB	Client	Geofirma
Soil Description	Brown slightly sandy slightly gravelly silty CLAY (gravel is fm and sub-angular to sub-rounded)	Depth Top	1.20 m
		Depth Base	- m
		Sample Type	D
		Samples received	13/12/2024
		Schedules received	17/12/2024
Test Method	BS EN ISO 17892 Part 4: 2016	Project started	18/12/2024
		Date tested	14/01/2025

These results only apply to the items tested



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0627	35
90	100	0.0464	33
75	100	0.0327	32
63	100	0.0230	30
50	100	0.0168	29
37.5	100	0.0118	28
28	100	0.0083	27
20	100	0.0059	26
14	97	0.0041	24
10	87	0.0029	22
6.3	80	0.0017	20
5	76		
3.35	71		
2	67		
1.18	64		
0.6	60	Particle density (assumed)	
0.425	57	2.70	Mg/m3
0.3	52		
0.212	45		
0.15	41		
0.063	35		

Sample Proportions	% dry mass
Very coarse	0
Gravel	33
Sand	32
Silt	14
Clay	21

Grading Analysis		
D100	mm	
D60	mm	0.616
D30	mm	0.0212
D10	mm	
Uniformity Coefficient		
Curvature Coefficient		

Remarks
Preparation and testing in accordance with ISO17892 Part 4 unless noted below

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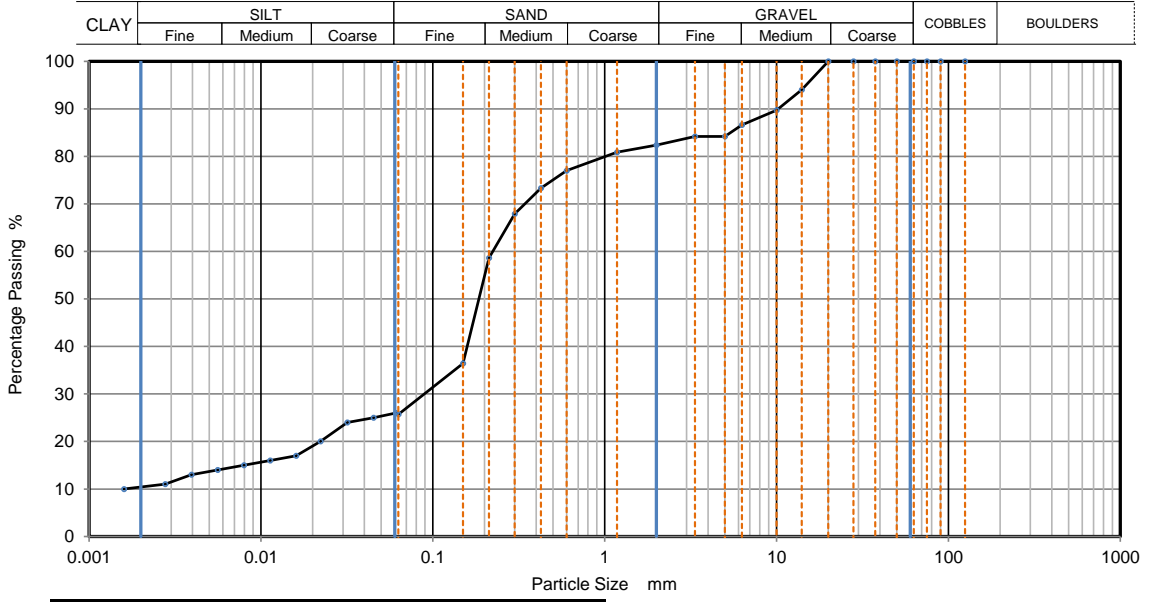
	K4 Soils Laboratory Unit 8, Olds Close, Watford, Herts, WD18 9RU Email: james@k4soils.com Tel: 01923 711288	Checked and Approved Initials: J.P Date: 14/01/2025	
	2519	Approved Signatories: K.Phaure (Tech.Mgr) J.Phaure (Lab.Mgr)	MSF-5-R3



PARTICLE SIZE DISTRIBUTION

		Job Ref	36508
		Borehole/Pit No.	BH1
Site Name	152-154 Uxbridge Road	Sample No.	-
Project No.	2024-065-PRE-UXB	Client	Geofirma
Soil Description	Brown clayey silty gravelly SAND (gravel is fm and sub-angular to sub-rounded)	Depth Top	1.00 m
		Depth Base	- m
		Sample Type	D
		Samples received	13/12/2024
		Schedules received	17/12/2024
Test Method	BS EN ISO 17892 Part 4: 2016	Project started	18/12/2024
		Date tested	13/01/2025

These results only apply to the items tested



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0609	26
90	100	0.0451	25
75	100	0.0318	24
63	100	0.0222	20
50	100	0.0160	17
37.5	100	0.0113	16
28	100	0.0080	15
20	100	0.0056	14
14	94	0.0039	13
10	90	0.0028	11
6.3	87	0.0016	10
5	84		
3.35	84		
2	82		
1.18	81		
0.6	77	Particle density (assumed)	
0.425	73	2.70	Mg/m3
0.3	68		
0.212	59		
0.15	36		
0.063	26		

Sample Proportions	% dry mass
Very coarse	0
Gravel	18
Sand	57
Silt	15
Clay	10

Grading Analysis		
D100	mm	
D60	mm	0.224
D30	mm	0.0895
D10	mm	
Uniformity Coefficient		
Curvature Coefficient		

Remarks
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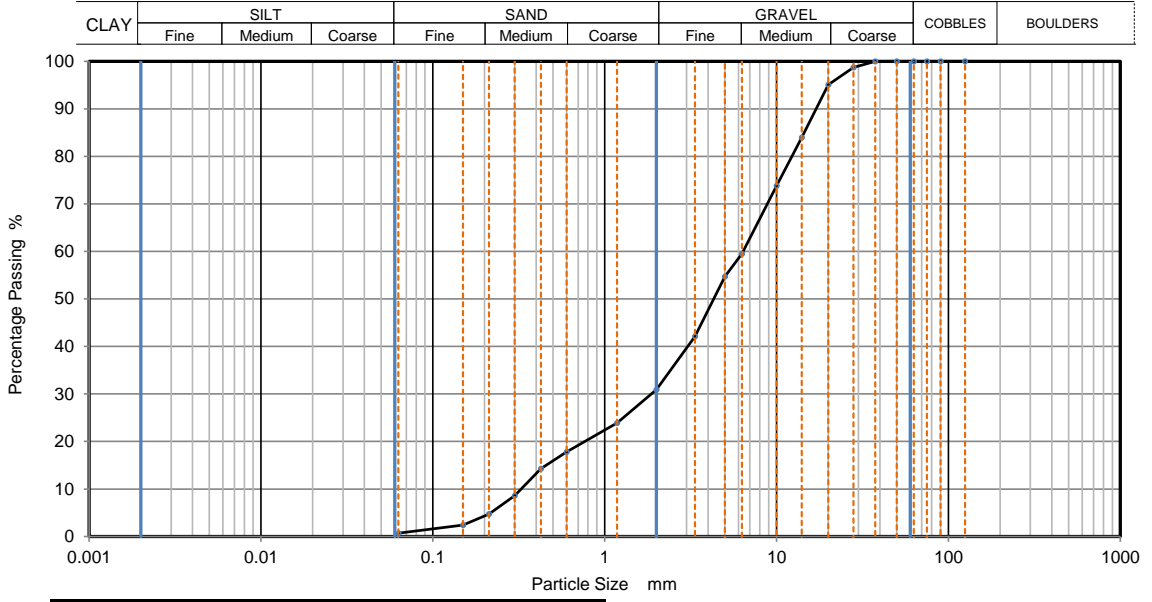
	K4 Soils Laboratory Unit 8, Olds Close, Watford, Herts, WD18 9RU Email: james@k4soils.com Tel: 01923 711288	Checked and Approved Initials: J.P Date: 14/01/2025
	Approved Signatories: K.Phaure (Tech.Mgr) J.Phaure (Lab.Mgr)	
	2519	MSF-5-R3



PARTICLE SIZE DISTRIBUTION

		Job Ref	36508
		Borehole/Pit No.	BH1
Site Name	152-154 Uxbridge Road	Sample No.	-
Project No.	2024-065-PRE-UXB	Client	Geofirma
Soil Description	Light brown very sandy GRAVEL (gravel is fmc and sub-angular to sub-rounded)	Depth Top	2.00 m
		Depth Base	2.50 m
		Sample Type	B
		Samples received	13/12/2024
		Schedules received	17/12/2024
Test Method	BS EN ISO 17892 Part 4: 2016	Project started	18/12/2024
		Date tested	14/01/2025

These results only apply to the items tested



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	99		
20	95		
14	84		
10	74		
6.3	60		
5	55		
3.35	42		
2	31		
1.18	24		
0.6	18		
0.425	14		
0.3	9		
0.212	5		
0.15	2		
0.063	1		

Sample Proportions	% dry mass
Very coarse	0
Gravel	69
Sand	30
Fines <0.063mm	1

Grading Analysis		
D100	mm	
D60	mm	6.41
D30	mm	1.87
D10	mm	0.327
Uniformity Coefficient		20
Curvature Coefficient		1.7

Remarks
Preparation and testing in accordance with ISO17892 Part 4 unless noted below

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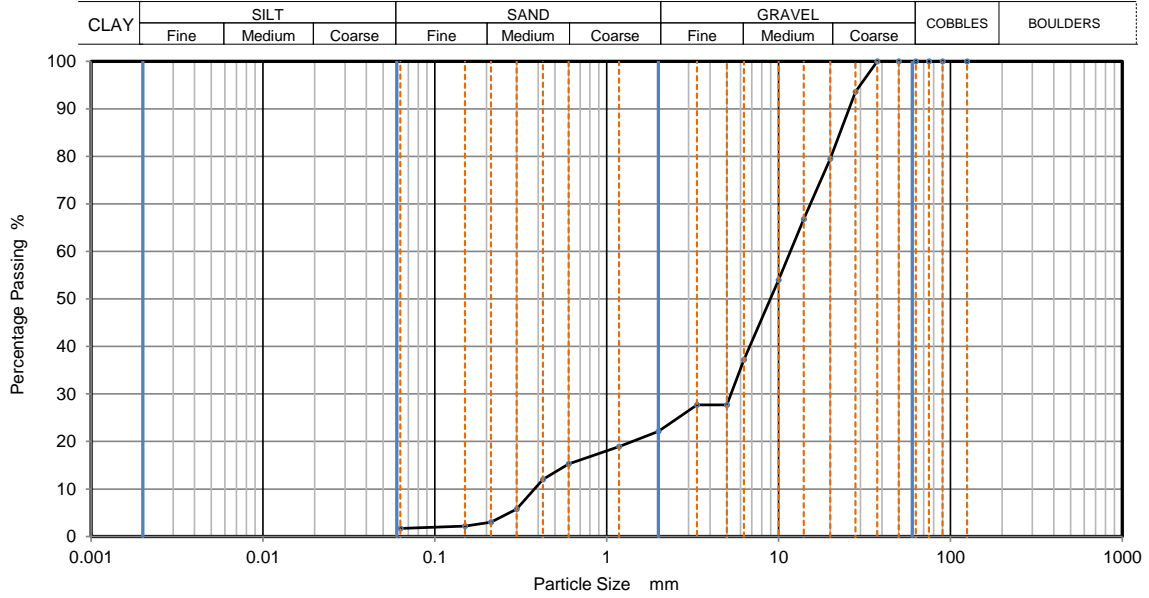
	K4 Soils Laboratory Unit 8, Olds Close, Watford, Herts, WD18 9RU Email: james@k4soils.com Tel: 01923 711288	Checked and Approved Initials: J.P Date: 14/01/2025	
	2519	Approved Signatories: K.Phaure (Tech.Mgr) J.Phaure (Lab.Mgr)	MSF-5-R3



PARTICLE SIZE DISTRIBUTION

		Job Ref	36508
		Borehole/Pit No.	BH1
Site Name	152-154 Uxbridge Road	Sample No.	-
Project No.	2024-065-PRE-UXB	Client	Geofirma
Soil Description	Orangish brown sandy GRAVEL (gravel is fmc and angular to rounded)	Depth Top	3.00 m
		Depth Base	3.50 m
		Sample Type	B
		Samples received	13/12/2024
		Schedules received	17/12/2024
Test Method	BS EN ISO 17892 Part 4: 2016	Project started	18/12/2024
		Date tested	13/01/2025

These results only apply to the items tested



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	94		
20	80		
14	67		
10	54		
6.3	37		
5	28		
3.35	28		
2	22		
1.18	19		
0.6	15		
0.425	12		
0.3	6		
0.212	3		
0.15	2		
0.063	2		

Sample Proportions	% dry mass
Very coarse	0
Gravel	78
Sand	20
Fines <0.063mm	2

Grading Analysis		
D100	mm	
D60	mm	11.7
D30	mm	5.28
D10	mm	0.38
Uniformity Coefficient		31
Curvature Coefficient		6.3

Remarks
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K4 Soils Laboratory

Unit 8, Olds Close, Watford, Herts, WD18 9RU
Email: james@k4soils.com
Tel: 01923 711288

Checked and Approved

Initials: J.P
Date: 14/01/2025

2519

Approved Signatories: K.Phaure (Tech.Mgr) J.Phaure (Lab.Mgr)

MSF-5-R3

APPENDIX D – CHEMICAL TEST RESULTS



Geofirma Ltd
Geofirma Ltd
Cardinal Point
Park Road
Rickmansworth
WD3 1RE

t: 01923 437840/ 0787533

e: technical@geofirmaconsultants.co.uk
technical@geofirmaconsultants.co.uk

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

t: 01923 225404
f: 01923 237404
e: reception@i2analytical.com

Analytical Report Number : 24-058755

Project / Site name:	152 159 Volbridge Road	Samples received on:	11/12/2024
Your job number:	2024 CGS BRE BXB	Samples instructed on/ Analysis started on:	11/12/2024
Your order number:		Analysis completed by:	19/12/2024
Report Issue Number:	1	Report issued on:	19/12/2024
Samples Analysed:	3 soil samples		

Signed:

Caterina Bentley
Customer Service Advisor
For & on behalf of i2 Analytical Ltd.

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

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

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

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

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

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

Analytical Report Number: 24-058755
Project / Site name: 152 159 Volbridge Road

Lab Sample Number	404762	404763	404764
Sample Reference	WS3	BH1	SA2
Sample Number	None Supplied	None Supplied	None Supplied
Water Matrix	N/A	N/A	N/A
Depth (m)	0.60	1.30	0.30
Date Sampled	11/12/2024	11/12/2024	11/12/2024
Time Taken	0845	1150	1010
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status

Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	17	13	17
Total mass of sample received	kg	0.1	NONE	0.6	0.6	0.6

Asbestos

Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	JWU	JWU	JWU

General Inorganics

Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
---------------	-------	---	--------	-------	-------	-------

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	0.06	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	0.43	0.28
Fluorene	mg/kg	0.05	MCERTS	< 0.05	0.54	0.34
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	3.6	2.3
Anthracene	mg/kg	0.05	MCERTS	< 0.05	0.52	0.48
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	4.6	3.9
Pyrene	mg/kg	0.05	MCERTS	< 0.05	3.8	3.2
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	1.4	1.4
Chrysene	mg/kg	0.05	MCERTS	< 0.05	1.7	1.6
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	< 0.05	2	1.6
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	< 0.05	0.6	0.79
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	1.5	1.5
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	0.68	0.64
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	0.11	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	0.79	0.72

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	< 0.80	22.2	18.5
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Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	28	26	13
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	1.7	1.2	0.91
Boron (water soluble)	mg/kg	0.2	MCERTS	0.9	1.1	0.7
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8	< 1.8	< 1.8
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	57	46	39
Copper (aqua regia extractable)	mg/kg	1	MCERTS	29	25	20
Lead (aqua regia extractable)	mg/kg	1	MCERTS	18	16	42
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	35	33	21
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	100	68	51
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	68	77	88

Analytical Report Number: 24-058755
 Project / Site name: 152 159 Volbridge Road

Lab Sample Number	404762	404763	404764
Sample Reference	WS3	BH1	SA2
Sample Number	None Supplied	None Supplied	None Supplied
Water Matrix	N/A	N/A	N/A
Depth (m)	0.60	1.30	0.30
Date Sampled	11/12/2024	11/12/2024	11/12/2024
Time Taken	0845	1150	1010
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status

Petroleum Hydrocarbons

TPHCWG - Aliphatic >EC5 - EC6 _{HS_1D_AL}	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010
TPHCWG - Aliphatic >EC6 - EC8 _{HS_1D_AL}	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010
TPHCWG - Aliphatic >EC8 - EC10 _{HS_1D_AL}	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010
TPHCWG - Aliphatic >EC10 - EC12 _{EH_CU_1D_AL}	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
TPHCWG - Aliphatic >EC12 - EC16 _{EH_CU_1D_AL}	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0
TPHCWG - Aliphatic >EC16 - EC21 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0
TPHCWG - Aliphatic >EC21 - EC35 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	< 8.0	13	< 8.0
TPHCWG - Aliphatic >EC5 - EC35 _{EH_CU+HS_1D_AL}	mg/kg	10	NONE	< 10	13	< 10

TPHCWG - Aromatic >EC5 - EC7 _{HS_1D_AR}	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010
TPHCWG - Aromatic >EC7 - EC8 _{HS_1D_AR}	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010
TPHCWG - Aromatic >EC8 - EC10 _{HS_1D_AR}	mg/kg	0.02	MCERTS	< 0.020	< 0.020	< 0.020
TPHCWG - Aromatic >EC10 - EC12 _{EH_CU_1D_AR}	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
TPHCWG - Aromatic >EC12 - EC16 _{EH_CU_1D_AR}	mg/kg	2	MCERTS	< 2.0	2.6	< 2.0
TPHCWG - Aromatic >EC16 - EC21 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	< 10	16	< 10
TPHCWG - Aromatic >EC21 - EC35 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	< 10	26	< 10
TPHCWG - Aromatic >EC5 - EC35 _{EH_CU+HS_1D_AR}	mg/kg	10	NONE	< 10	45	< 10

VOCs

MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0
Benzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0
Toluene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0
Ethylbenzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0
p & m-Xylene	µg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0
o-Xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0

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



Analytical Report Number : 24-058755
Project / Site name: 152 159 Volbridge Road

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

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

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
404762	WS3	None Supplied	0.6	Brown clay and sand with gravel
404763	BH1	None Supplied	1.3	Brown clay and sand with gravel
404764	SA2	None Supplied	0.3	Brown clay and sand with gravel

Analytical Report Number : 24-058755

Project / Site name: 152 159 Volbridge Road

Water matrix abbreviations:

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

Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos identification in Soil	Asbestos Identification with the use of polarised light microscopy in conjunction with dispersion staining techniques	In-house method based on HSG 248, 2021	A001B	D	ISO 17025
Moisture Content	Moisture content, determined gravimetrically (up to 30°C)	In-house method	L019B	W	NONE
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight	In-house method based on British Standard Methods and MCERTS requirements.	L019B	D	NONE
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil	L038B	D	MCERTS
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES	In-house method based on Second Site Properties version 3	L038B	D	MCERTS
Speciated PAHs and/or Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds (including PAH) in soil by extraction in dichloromethane and hexane followed by GC-MS	In-house method based on USEPA 8270	L064B	D	MCERTS
BTEX and/or Volatile organic compounds in soil	Determination of volatile organic compounds in soil by headspace GC-MS	In-house method based on USEPA 8260	L073B	W	MCERTS
Total petroleum hydrocarbons with carbon banding by GC-FID/GC-MS HS in soil	Determination of total petroleum hydrocarbons in soil by GC-FID/GC-MS HS with carbon banding aliphatic and aromatic	In-house method	L076B/L088-PL	D/W	MCERTS
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in NaOH and addition of 1,5 diphenylcarbazide followed by colorimetry	In-house method	L080-PL	W	MCERTS
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080-PL	W	MCERTS

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

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

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

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

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

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

The result for sum should be interpreted with caution



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Analytical Report Number : 24-058755

Project / Site name:	152-154 Uxbridge Road, Hayes, UB4 0JH	Samples received on:	11/12/2024
Your job number:	2024-065-PRE-UXB	Samples instructed on/ Analysis started on:	11/12/2024
Your order number:		Analysis completed by:	19/12/2024
Report Issue Number:	1	Report issued on:	19/12/2024
Samples Analysed:	3 soil samples		

Signed:

Caterina Bentley
Customer Service Advisor
For & on behalf of i2 Analytical Ltd.

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

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

Standard sample disposal times, unless otherwise agreed with the laboratory, are :	soils	- 4 weeks from reporting
	leachates	- 2 weeks from reporting
	waters	- 2 weeks from reporting
	asbestos	- 6 months from reporting
	air	- once the analysis is complete

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

Analytical Report Number: 24-058755

Project / Site name: 152-154 Uxbridge Road, Hayes, UB4 0JH

Lab Sample Number	404762	404763	404764
Sample Reference	WS3	BH1	SA2
Sample Number	None Supplied	None Supplied	None Supplied
Water Matrix	N/A	N/A	N/A
Depth (m)	0.60	1.30	0.30
Date Sampled	11/12/2024	11/12/2024	11/12/2024
Time Taken	0845	1150	1010
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status

Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	17	13	17
Total mass of sample received	kg	0.1	NONE	0.6	0.6	0.6

Asbestos

Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	JWU	JWU	JWU

General Inorganics

Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	0.06	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	0.43	0.28
Fluorene	mg/kg	0.05	MCERTS	< 0.05	0.54	0.34
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	3.6	2.3
Anthracene	mg/kg	0.05	MCERTS	< 0.05	0.52	0.48
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	4.6	3.9
Pyrene	mg/kg	0.05	MCERTS	< 0.05	3.8	3.2
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	1.4	1.4
Chrysene	mg/kg	0.05	MCERTS	< 0.05	1.7	1.6
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	< 0.05	2	1.6
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	< 0.05	0.6	0.79
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	1.5	1.5
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	0.68	0.64
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	0.11	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	0.79	0.72

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	< 0.80	22.2	18.5
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Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	28	26	13
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	1.7	1.2	0.91
Boron (water soluble)	mg/kg	0.2	MCERTS	0.9	1.1	0.7
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8	< 1.8	< 1.8
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	57	46	39
Copper (aqua regia extractable)	mg/kg	1	MCERTS	29	25	20
Lead (aqua regia extractable)	mg/kg	1	MCERTS	18	16	42
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	35	33	21
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	100	68	51
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	68	77	88

Analytical Report Number: 24-058755

Project / Site name: 152-154 Uxbridge Road, Hayes, UB4 0JH

Lab Sample Number	404762	404763	404764
Sample Reference	WS3	BH1	SA2
Sample Number	None Supplied	None Supplied	None Supplied
Water Matrix	N/A	N/A	N/A
Depth (m)	0.60	1.30	0.30
Date Sampled	11/12/2024	11/12/2024	11/12/2024
Time Taken	0845	1150	1010
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status

Petroleum Hydrocarbons

TPHCWG - Aliphatic >EC5 - EC6 _{HS_1D_AL}	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010
TPHCWG - Aliphatic >EC6 - EC8 _{HS_1D_AL}	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010
TPHCWG - Aliphatic >EC8 - EC10 _{HS_1D_AL}	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010
TPHCWG - Aliphatic >EC10 - EC12 _{EH_CU_1D_AL}	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
TPHCWG - Aliphatic >EC12 - EC16 _{EH_CU_1D_AL}	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0
TPHCWG - Aliphatic >EC16 - EC21 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0
TPHCWG - Aliphatic >EC21 - EC35 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	< 8.0	13	< 8.0
TPHCWG - Aliphatic >EC5 - EC35 _{EH_CU+HS_1D_AL}	mg/kg	10	NONE	< 10	13	< 10

TPHCWG - Aromatic >EC5 - EC7 _{HS_1D_AR}	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010
TPHCWG - Aromatic >EC7 - EC8 _{HS_1D_AR}	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010
TPHCWG - Aromatic >EC8 - EC10 _{HS_1D_AR}	mg/kg	0.02	MCERTS	< 0.020	< 0.020	< 0.020
TPHCWG - Aromatic >EC10 - EC12 _{EH_CU_1D_AR}	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
TPHCWG - Aromatic >EC12 - EC16 _{EH_CU_1D_AR}	mg/kg	2	MCERTS	< 2.0	2.6	< 2.0
TPHCWG - Aromatic >EC16 - EC21 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	< 10	16	< 10
TPHCWG - Aromatic >EC21 - EC35 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	< 10	26	< 10
TPHCWG - Aromatic >EC5 - EC35 _{EH_CU+HS_1D_AR}	mg/kg	10	NONE	< 10	45	< 10

VOCs

MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0
Benzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0
Toluene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0
Ethylbenzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0
p & m-Xylene	µg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0
o-Xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0

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



Analytical Report Number : 24-058755

Project / Site name: 152-154 Uxbridge Road, Hayes, UB4 0JH

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

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

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
404762	WS3	None Supplied	0.6	Brown clay and sand with gravel
404763	BH1	None Supplied	1.3	Brown clay and sand with gravel
404764	SA2	None Supplied	0.3	Brown clay and sand with gravel

Analytical Report Number : 24-058755

Project / Site name: 152-154 Uxbridge Road, Hayes, UB4 0JH

Water matrix abbreviations:

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

Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos identification in Soil	Asbestos Identification with the use of polarised light microscopy in conjunction with dispersion staining techniques	In-house method based on HSG 248, 2021	A001B	D	ISO 17025
Moisture Content	Moisture content, determined gravimetrically (up to 30°C)	In-house method	L019B	W	NONE
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight	In-house method based on British Standard Methods and MCERTS requirements.	L019B	D	NONE
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil	L038B	D	MCERTS
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES	In-house method based on Second Site Properties version 3	L038B	D	MCERTS
Speciated PAHs and/or Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds (including PAH) in soil by extraction in dichloromethane and hexane followed by GC-MS	In-house method based on USEPA 8270	L064B	D	MCERTS
BTEX and/or Volatile organic compounds in soil	Determination of volatile organic compounds in soil by headspace GC-MS	In-house method based on USEPA 8260	L073B	W	MCERTS
Total petroleum hydrocarbons with carbon banding by GC-FID/GC-MS HS in soil	Determination of total petroleum hydrocarbons in soil by GC-FID/GC-MS HS with carbon banding aliphatic and aromatic	In-house method	L076B/L088-PL	D/W	MCERTS
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in NaOH and addition of 1,5 diphenylcarbazide followed by colorimetry	In-house method	L080-PL	W	MCERTS
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080-PL	W	MCERTS

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

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

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

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

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

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

The result for sum should be interpreted with caution



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Analytical Report Number : 24-060273

Project / Site name:	152-154 Uxbridge Road, Hayes, UB4 0JH	Samples received on:	19/12/2024
Your job number:	2024-065-PRE-UXB	Samples instructed on/ Analysis started on:	19/12/2024
Your order number:		Analysis completed by:	30/12/2024
Report Issue Number:	1	Report issued on:	30/12/2024
Samples Analysed:	4 soil samples		

Signed: _____

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

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

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

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

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

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

Analytical Report Number: 24-060273

Project / Site name: 152-154 Uxbridge Road, Hayes, UB4 0JH

Lab Sample Number				412799	412800	412801	412826
Sample Reference				BH1	BH1	BH1	BH1
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix				N/A	N/A	N/A	N/A
Depth (m)				5.90	9.00	14.50	2.90
Date Sampled				11/12/2024	11/12/2024	11/12/2024	11/12/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status				

Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	53.4
Moisture Content	%	0.01	NONE	21	20	15	4.9
Total mass of sample received	kg	0.1	NONE	0.7	0.4	0.4	0.6

General Inorganics

pH (L099)	pH Units	N/A	MCERTS	9.8	8.6	8.7	8.7
Total Sulphate as SO ₄	%	0.005	MCERTS	0.095	0.079	0.125	0.018
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	890	710	770	66
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	447	355	384	32.9
Total Sulphur	mg/kg	50	MCERTS	2800	3700	3200	100
Total Sulphur	%	0.005	MCERTS	0.275	0.371	0.318	0.01

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



4041



Analytical Report Number : 24-060273

Project / Site name: 152-154 Uxbridge Road, Hayes, UB4 0JH

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

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

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
412799	BH1	None Supplied	5.9	Brown clay
412800	BH1	None Supplied	9	Brown clay
412801	BH1	None Supplied	14.5	Brown clay
412826	BH1	None Supplied	2.9	Brown sand with gravel and stones

Analytical Report Number : 24-060273

Project / Site name: 152-154 Uxbridge Road, Hayes, UB4 0JH

Water matrix abbreviations:

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

Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Moisture Content	Moisture content, determined gravimetrically (up to 30°C)	In-house method	L019B	W	NONE
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight	In-house method based on British Standard Methods and MCERTS requirements.	L019B	D	NONE
Total sulphate (as SO ₄ in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES	In-house method	L038B	D	MCERTS
Sulphate, water soluble, in soil (16hr extraction)	Sulphate, water soluble, in soil (16hr extraction)	In-house method	L038B	D	MCERTS
Total Sulphur in soil	Determination of total sulphur in soil by extraction with aqua-regia, potassium bromide/bromate followed by ICP-OES	In-house method	L038B	D	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement	In-house method	L099-PL	D	MCERTS

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

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

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

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

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

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

The result for sum should be interpreted with caution

APPENDIX E – IN SITU TEST RESULTS



In Situ California Bearing Ratio (CBR)

Job Ref 36497

CBR No. CBR1

Site Name 152-154 Uxbridge Road, Hayes, UB4 0JH

Depth m 0.50

Project No. - Client

Geofirma Date of Test 10/12/2024

Soil Description Brown slightly sandy silty CLAY

Test Method BS1377 : Part 9 : 1990, clause 4.3

CBR Test Number 1

Note: Test only applicable when maximum particle size beneath the plunger does not exceed 20mm

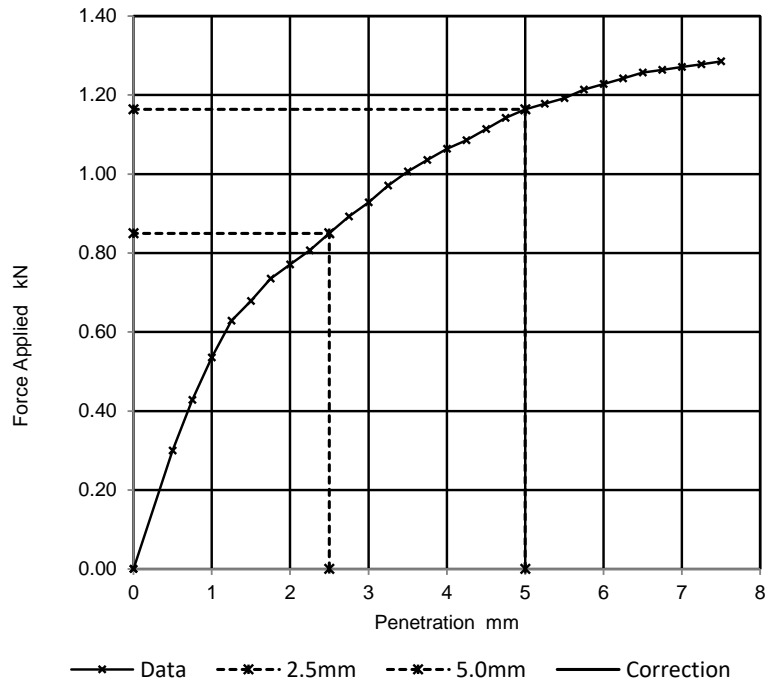
Rate of Strain 1.00 mm/min
 Mass of Surcharge 4.5 kg
 Proving Ring Factor 7.14 N/div

Temperature 7 °C
 Environmental Conditions Overcast

Readings

Penetration of Plunger mm	Force on Plunger	
	Dial Reading	Load kN
0.00	0	0.00
0.25		
0.50	42	0.30
0.75	60	0.43
1.00	75	0.54
1.25	88	0.63
1.50	95	0.68
1.75	103	0.74
2.00	108	0.77
2.25	113	0.81
2.50	119	0.85
2.75	125	0.89
3.00	130	0.93
3.25	136	0.97
3.50	141	1.01
3.75	145	1.04
4.00	149	1.06
4.25	152	1.09
4.50	156	1.11
4.75	160	1.14
5.00	163	1.16
5.25	165	1.18
5.50	167	1.19
5.75	170	1.21
6.00	172	1.23
6.25	174	1.24
6.50	176	1.26
6.75	177	1.26
7.00	178	1.27
7.25	179	1.28
7.50	180	1.29

Force versus Penetration Plot



Remarks

Results

Curve correction applied	CBR Values, %			Moisture Content %
	Penetration 2.5mm	Penetration 5mm	CBR Value	
No	6.4	5.8	6.4	24



Test Report by K4 SOILS LABORATORY
 Unit 8 Olds Close Olds Approach
 Watford Herts WD18 9RU
 Tel: 01923 711 288
 Email: James@k4soils.com

Checked and Approved

Initials: J.P

Date: 19/12/2024

NOTE: The report shall not be reproduced except in full without authority of the laboratory. These results only apply to the locations tested.



In Situ California Bearing Ratio (CBR)

Job Ref 36497

CBR No. CBR2

Site Name 152-154 Uxbridge Road, Hayes, UB4 0JH

Depth m 0.50

Project No. - Client

Geofirma

Date of Test 10/12/2024

Soil Description Brown slightly sandy silty CLAY

Test Method BS1377 : Part 9 : 1990, clause 4.3

CBR Test Number 2

Note: Test only applicable when maximum particle size beneath the plunger does not exceed 20mm

Rate of Strain 1.00 mm/min

Mass of Surcharge 4.5 kg

Proving Ring Factor 0.42 N/div

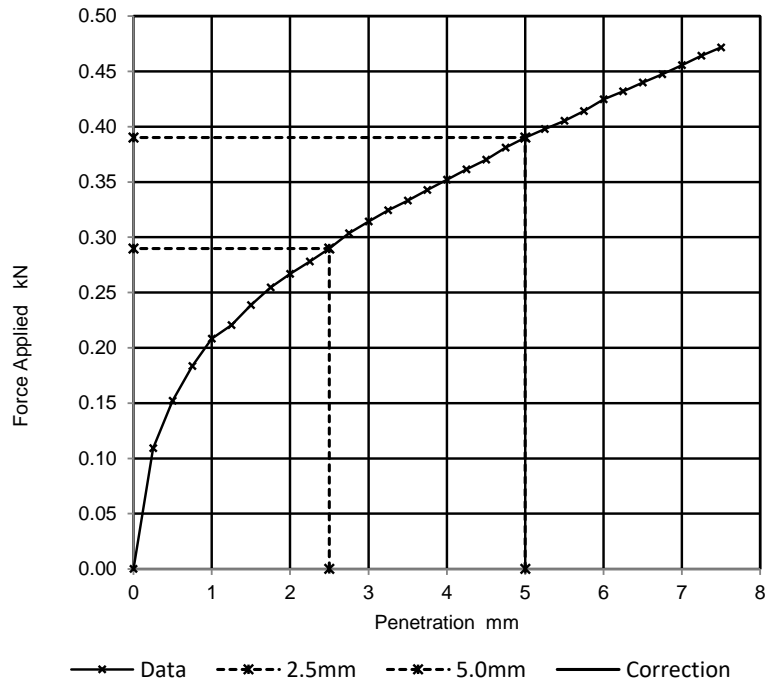
Temperature 7 °C

Environmental Conditions Overcast

Readings

Penetration of Plunger mm	Force on Plunger	
	Dial Reading	Load kN
0.00	0	0.00
0.25	260	0.11
0.50	362	0.15
0.75	437	0.18
1.00	496	0.21
1.25	525	0.22
1.50	568	0.24
1.75	606	0.25
2.00	635	0.27
2.25	662	0.28
2.50	690	0.29
2.75	723	0.30
3.00	748	0.31
3.25	772	0.32
3.50	793	0.33
3.75	816	0.34
4.00	838	0.35
4.25	860	0.36
4.50	881	0.37
4.75	907	0.38
5.00	929	0.39
5.25	947	0.40
5.50	965	0.41
5.75	986	0.41
6.00	1011	0.42
6.25	1028	0.43
6.50	1047	0.44
6.75	1065	0.45
7.00	1085	0.46
7.25	1105	0.46
7.50	1123	0.47

Force versus Penetration Plot



Remarks

Results

Curve correction applied	CBR Values, %			Moisture Content %
	Penetration		CBR Value	
	2.5mm	5mm		
No	2.2	2.0	2.2	23



Test Report by K4 SOILS LABORATORY
 Unit 8 Olds Close Olds Approach
 Watford Herts WD18 9RU
 Tel: 01923 711 288
 Email: James@k4soils.com

Checked and Approved

Initials: J.P

Date: 19/12/2024

NOTE: The report shall not be reproduced except in full without authority of the laboratory. These results only apply to the locations tested.

2519

Approved Signatories: K.Phaure (Tech.Mgr) J.Phaure (Lab.Mgr)

MSF-5-R16



In Situ California Bearing Ratio (CBR)

Job Ref 36497

CBR No. CBR3

Site Name 152-154 Uxbridge Road, Hayes, UB4 0JH

Depth m 0.50

Project No. - Client

Geofirma Date of Test 10/12/2024

Soil Description Brown slightly sandy silty CLAY

Test Method BS1377 : Part 9 : 1990, clause 4.3

CBR Test Number 3

Note: Test only applicable when maximum particle size beneath the plunger does not exceed 20mm

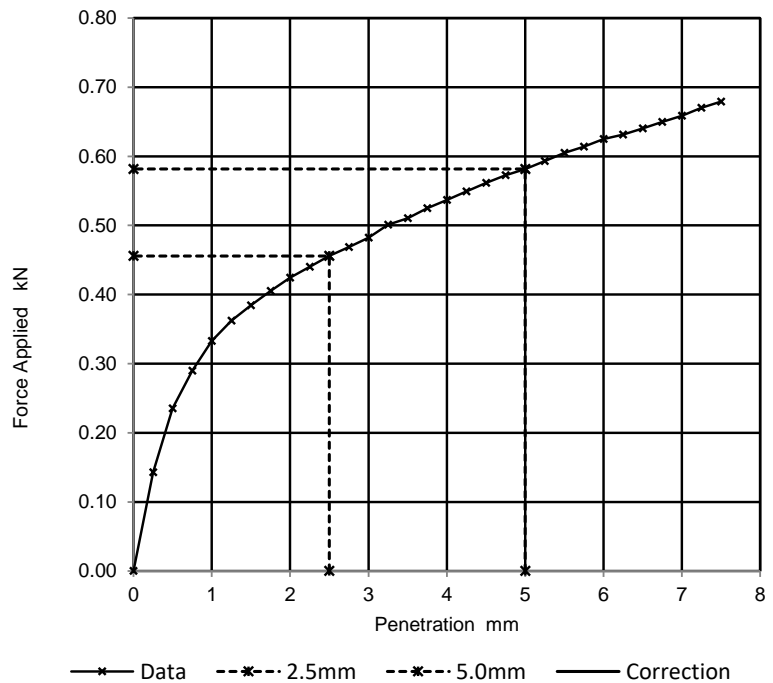
Rate of Strain	1.00	mm/min
Mass of Surcharge	4.5	kg
Proving Ring Factor	0.42	N/div

Temperature	7	OC
Environmental Conditions	Overcast	

Readings

Penetration of Plunger mm	Force on Plunger	
	Dial Reading	Load kN
0.00	0	0.00
0.25	340	0.14
0.50	560	0.24
0.75	690	0.29
1.00	792	0.33
1.25	862	0.36
1.50	915	0.38
1.75	965	0.41
2.00	1010	0.42
2.25	1048	0.44
2.50	1085	0.46
2.75	1116	0.47
3.00	1148	0.48
3.25	1193	0.50
3.50	1215	0.51
3.75	1250	0.53
4.00	1278	0.54
4.25	1308	0.55
4.50	1337	0.56
4.75	1363	0.57
5.00	1385	0.58
5.25	1412	0.59
5.50	1440	0.60
5.75	1462	0.61
6.00	1488	0.62
6.25	1503	0.63
6.50	1525	0.64
6.75	1547	0.65
7.00	1568	0.66
7.25	1596	0.67
7.50	1617	0.68

Force versus Penetration Plot



Remarks

Results

Curve correction applied	CBR Values, %			Moisture Content %
	Penetration 2.5mm	5mm	CBR Value	
No	3.5	2.9	3.5	21



Test Report by **K4 SOILS LABORATORY**
 Unit 8 Olds Close Olds Approach
 Watford Herts WD18 9RU
 Tel: 01923 711 288
 Email: James@k4soils.com

Checked and Approved

Initials: J.P

Date: 19/12/2024

NOTE: The report shall not be reproduced except in full without authority of the laboratory. These results only apply to the locations tested.

2519

Approved Signatories: K.Phaure (Tech.Mgr) J.Phaure (Lab.Mgr)

MSF-5-R16



In Situ California Bearing Ratio (CBR)

Job Ref 36497

CBR No. CBR4

Site Name 152-154 Uxbridge Road, Hayes, UB4 0JH

Depth m 0.50

Project No. - Client

Geofirma

Date of Test 10/12/2024

Soil Description Brown slightly sandy slightly gravelly silty CLAY (gravel is fm and sub-rounded)

Test Method BS1377 : Part 9 : 1990, clause 4.3

CBR Test Number 4

Note: Test only applicable when maximum particle size beneath the plunger does not exceed 20mm

Rate of Strain

1.00	mm/min
------	--------

 Mass of Surcharge

4.5	kg
-----	----

 Proving Ring Factor

0.42	N/div
------	-------

Temperature

7	°C
---	----

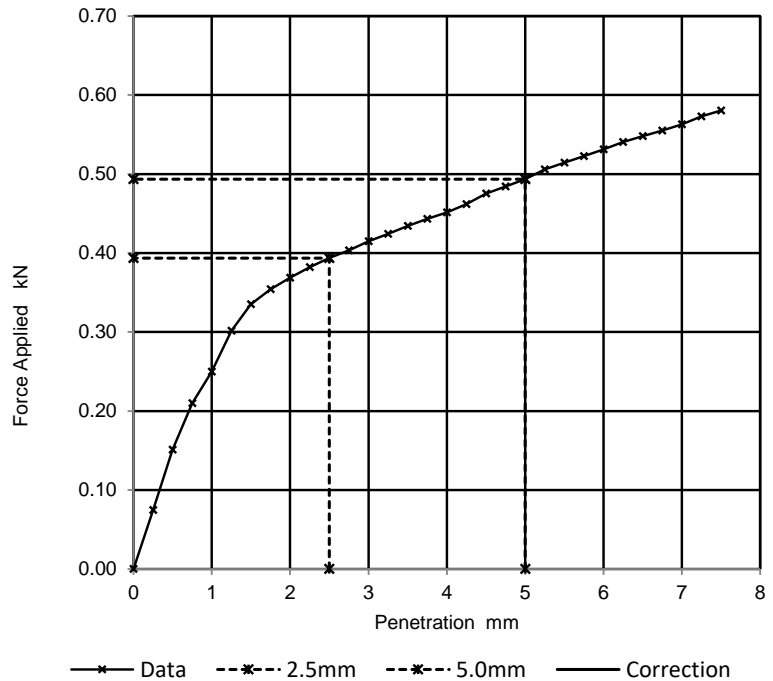
 Environmental Conditions

Overcast

Readings

Penetration of Plunger mm	Force on Plunger	
	Dial Reading	Load kN
0.00	0	0.00
0.25	178	0.07
0.50	360	0.15
0.75	500	0.21
1.00	595	0.25
1.25	718	0.30
1.50	798	0.34
1.75	843	0.35
2.00	878	0.37
2.25	910	0.38
2.50	937	0.39
2.75	960	0.40
3.00	988	0.41
3.25	1010	0.42
3.50	1034	0.43
3.75	1055	0.44
4.00	1075	0.45
4.25	1100	0.46
4.50	1132	0.48
4.75	1153	0.48
5.00	1175	0.49
5.25	1204	0.51
5.50	1225	0.51
5.75	1244	0.52
6.00	1265	0.53
6.25	1287	0.54
6.50	1305	0.55
6.75	1322	0.56
7.00	1340	0.56
7.25	1364	0.57
7.50	1382	0.58

Force versus Penetration Plot



Remarks

Results

Curve correction applied	CBR Values, %			Moisture Content %
	Penetration 2.5mm	Penetration 5mm	CBR Value	
No	3.0	2.5	3.0	18



Test Report by **K4 SOILS LABORATORY**
 Unit 8 Olds Close Olds Approach
 Watford Herts WD18 9RU
 Tel: 01923 711 288
 Email: James@k4soils.com

Checked and Approved

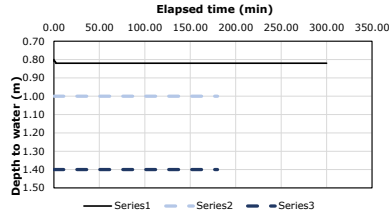
Initials: J.P

Date: 19/12/2024

NOTE: The report shall not be reproduced except in full without authority of the laboratory. These results only apply to the locations tested.

CALCULATION INFILTRATION RATE - SA1 SOAKAWAY 1

Elapsed time (min)	Depth to water (m)
0.00	0.80
0.17	0.81
0.33	0.81
0.50	0.81
0.67	0.81
0.83	0.81
1.00	0.81
1.50	0.81
2.00	0.82
2.50	0.82
3.00	0.82
3.50	0.82
4.00	0.82
4.50	0.82
5.00	0.82
5.50	0.82
6.00	0.82
7.00	0.82
8.00	0.82
9.00	0.82
10.00	0.82
12.00	0.82
14.00	0.82
16.00	0.82
18.00	0.82
20.00	0.82
25.00	0.82
30.00	0.82
40.00	0.82
50.00	0.82
60.00	0.82
90.00	0.82
120.00	0.82
150.00	0.82
180.00	0.82
210.00	0.82
240.00	0.82
270.00	0.82
300.00	0.82



1) Define the dimensions of the Soakaway Pit

Length (m)	1.80
width (m)	0.60
Effective storage depth (m)	0.80

2) Depths at start and end of the test

Start Depth (m)	0.5
End Depth (m)	1.3

3) Define the elapsed time for the water level to fall 75% and 25% of the effective depth - From the graph

Interpollation for 75%

Time 75% (min)	N/A
75% effective depth (m)	1

Depth (m)	Time (min)
Depth A	Time A
Depth B	Time B

Interpollation for 25%

Time 25% (min)	N/A
25% effective depth (m)	1.4

Depth (m)	Time (min)
Depth A	Time A
Depth B	Time B

4) Define the void space of the granular fill used (if used)

% void in granular fill	0
-------------------------	---

5) Compute effective storage volume of water (VP75-VP25)

Area of Pit x Depth of outflow

Pit Area (m ²)	1.08
Outflow Depth (m)	0.4
75% effective depth (m)	1
25% effective depth (m)	1.4

With Granular fill	
Effective storage volume (m ³)	0

Without granular fill	
Effective storage volume (m ³)	0.432

6) Compute outflow Mean surface area a50

With Granular fill	
Mean surface area (m ²)	3

Without granular fill	
Mean surface area (m ²)	1.92

6) Compute outflow time

Time 75% (min)	N/A
Time 25% (min)	N/A

Outflow time (min)	N/A
--------------------	-----

Outflow time (seg)	N/A
--------------------	-----

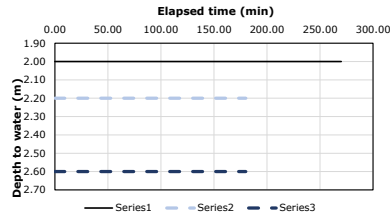
7) Compute soil infiltration rate

With Granular fill	
Soil infiltration rate (m/s)	N/A

Without granular fill	
Soil infiltration rate (m/s)	N/A

CALCULATION INFILTRATION RATE - SA2 SOAKAWAY 1

Elapsed time (min)	Depth to water (m)
0.00	2.00
0.17	2.00
0.33	2.00
0.50	2.00
0.67	2.00
0.83	2.00
1.00	2.00
1.50	2.00
2.00	2.00
2.50	2.00
3.00	2.00
3.50	2.00
4.00	2.00
4.50	2.00
5.00	2.00
5.50	2.00
6.00	2.00
7.00	2.00
8.00	2.00
9.00	2.00
10.00	2.00
12.00	2.00
14.00	2.00
16.00	2.00
18.00	2.00
20.00	2.00
25.00	2.00
30.00	2.00
40.00	2.00
50.00	2.00
60.00	2.00
90.00	2.00
120.00	2.00
150.00	2.00
180.00	2.00
210.00	2.00
240.00	2.00
270.00	2.00



1) Define the dimensions of the Soakaway Pit

Length (m)	2.10
width (m)	0.60
Effective storage depth (m)	0.80

2) Depths at start and end of the test

Start Depth (m)	2.0
End Depth (m)	2.8

3) Define the elapsed time for the water level to fall 75% and 25% of the effective depth - From the graph

Interpollation for 75%

Time 75% (min)	N/A
75% effective depth (m)	2.2

Depth (m)	Time (min)
Depth A	Time A
Depth B	Time B

Interpollation for 25%

Time 25% (min)	N/A
25% effective depth (m)	2.6

Depth (m)	Time (min)
Depth A	Time A
Depth B	Time B

4) Define the void space of the granular fill used (if used)

% void in granular fill	0
-------------------------	---

5) Compute effective storage volume of water (VP75-VP25)

Area of Pit x Depth of outflow

Pit Area (m ²)	1.26
Outflow Depth (m)	0.4
75% effective depth (m)	2.2
25% effective depth (m)	2.6

With Granular fill	
Effective storage volume (m ³)	0

Without granular fill	
Effective storage volume (m ³)	0.504

6) Compute outflow Mean surface area a50

With Granular fill	
Mean surface area (m ²)	3.42

Without granular fill	
Mean surface area (m ²)	2.16

6) Compute outflow time

Time 75% (min)	N/A
Time 25% (min)	N/A

Outflow time (min)	N/A
--------------------	-----

Outflow time (seg)	N/A
--------------------	-----

7) Compute soil infiltration rate

With Granular fill	
Soil infiltration rate (m/s)	N/A

Without granular fill	
Soil infiltration rate (m/s)	N/A

APPENDIX F – MONITORING RESULTS

GAS MONITORING SHEET

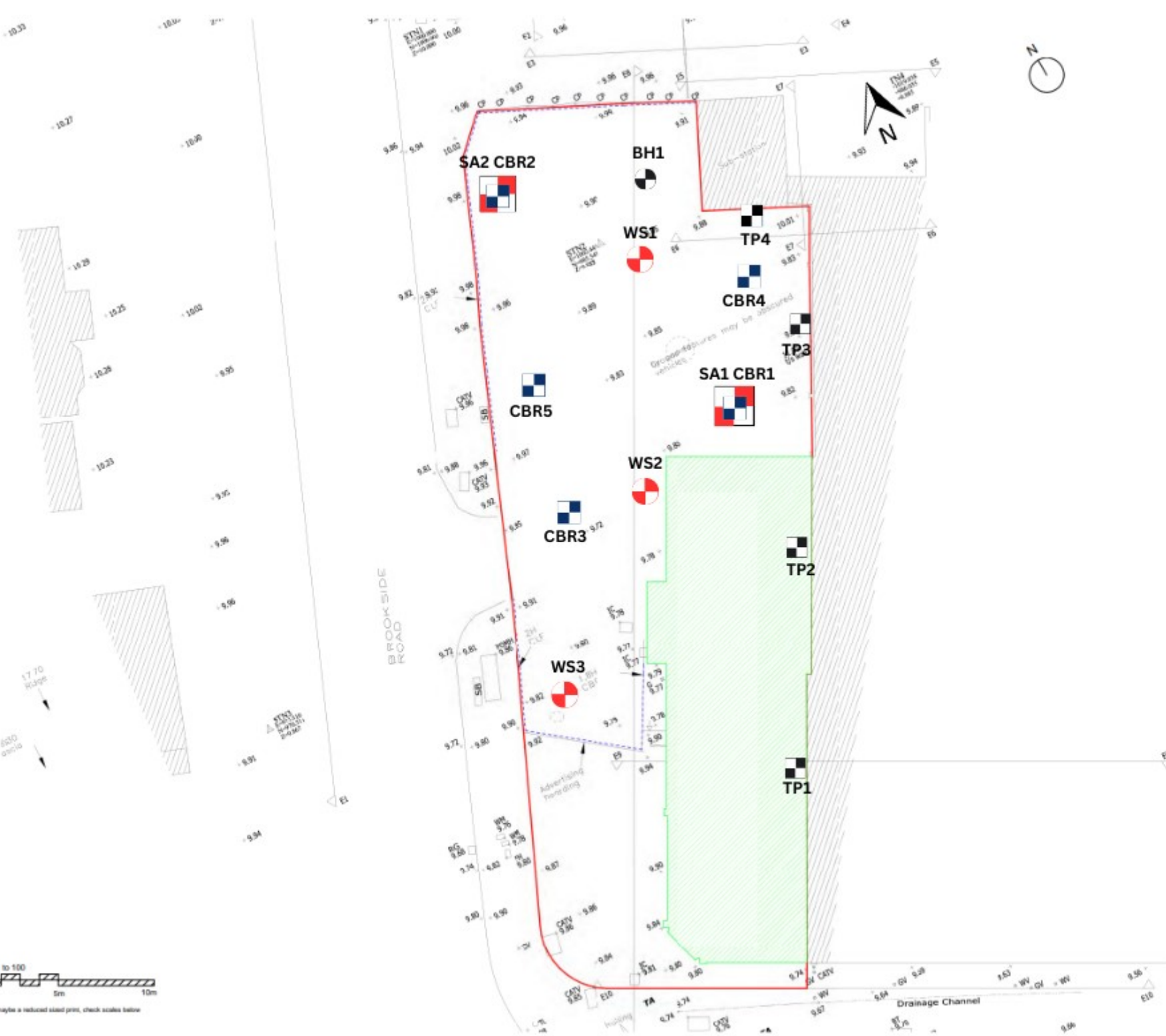


Site: 152-154 Uxbridge Rd, Hayes, UB4 0JH
 Project: P24-425






Max CH4: 0	Max CO2: 0.2	Min O2: 20.2	Max VOC: 0	Max O L/hr
GSV CH4: 0	GSV CO2: 0.0002			

Visit no	Loc.	Date & Time	Op.	Temp °C	Weather	DP	Atmos. Pressure	Water level (mbgl) [Base]		Pipe Proud (m)	CH4			CO2			O2			VOC	H2S	CO	Peak flow (L/hr)		
											seconds	seconds	seconds	seconds	seconds	seconds	seconds	seconds	seconds						
											30	120	St	30	120	St	30	120	St	St					
1	WS3	19/12/2024 10:20	AA	13	Cloudy	0.0	1002	1.26	1.28	-0.11	0.00	0.00	0.00	0.10	0.10	0.10	20.3	20.3	20.3	0.00	0.00	0.00	0.00		
1	WS2	19/12/2024 10:30	AA	13	Cloudy	0.0	1002	3.12	3.14	-0.13	0.00	0.00	0.00	0.10	0.10	0.10	20.5	20.3	20.3	0.00	0.00	0.00	0.00		
1	WS1	19/12/2024 10:40	AA	13	Cloudy	0.0	1002	0.62	1.10	-0.02	0.00	0.00	0.00	0.10	0.10	0.10	20.4	20.3	20.3	0.00	0.00	0.00	0.00		
1	BH1	19/12/2024 10:50	AA	13	Cloudy	0.0	1002	3.18	3.85	-0.14	0.00	0.00	0.00	0.20	0.10	0.10	20.3	20.2	20.2	0.00	0.00	0.00	0.00		

Comments:
 Monitoring undertaken in accordance with BS 8576 : 2013, results provided above are 'raw data'. Flow is taken as the reading after the standpipe is purged, resealed for 10 minutes then re-measured.



Legend

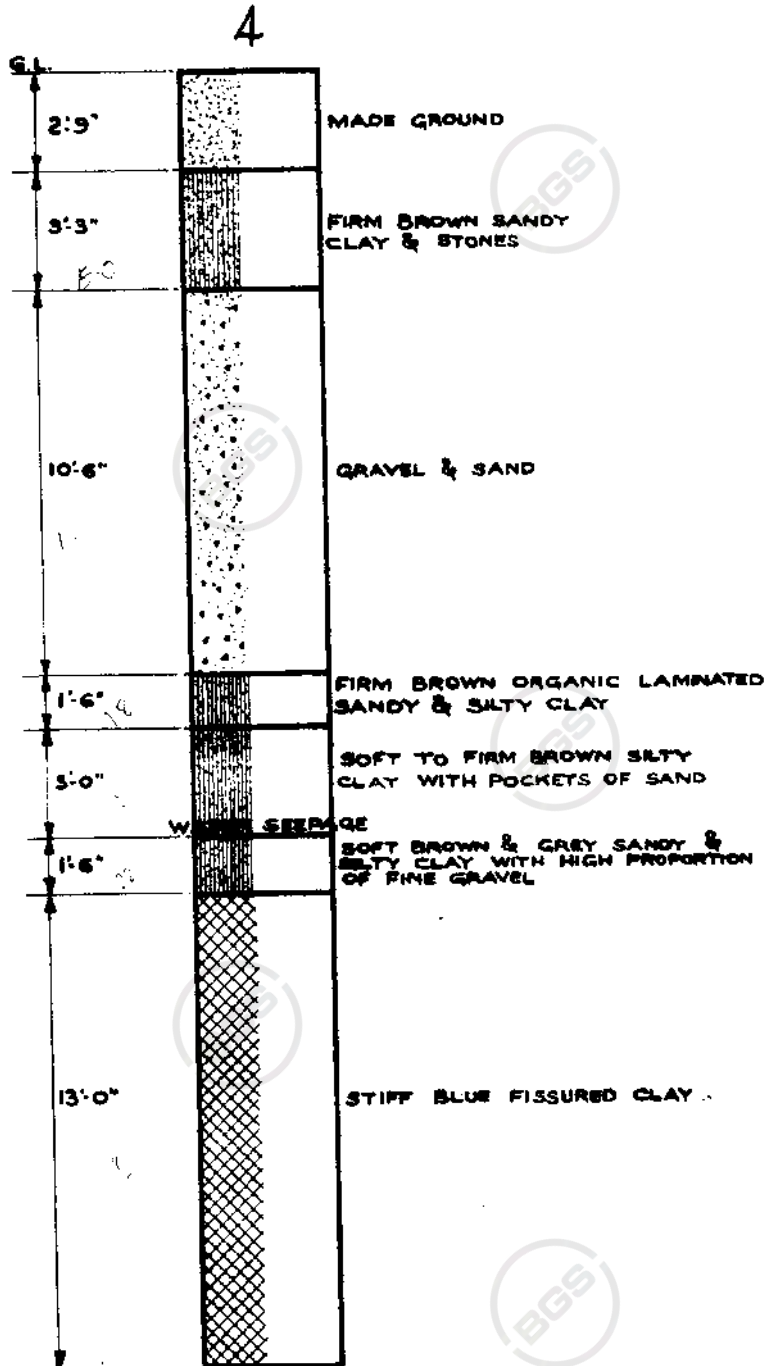
-  : CBR Pit
-  : Soakaway Pit
-  : Foundation Inspection P
-  : Window Sample Borehol
-  : Cable Percussion Boreho

to 100
5m 10m
may be a reduced sized print, check scales below

APPENDIX G – HISTORICAL AND NEARBY BOREHOLE LOGS (BGS)

14

TQ 18 SW / 87
1141 8071



TAKEN FOR 12 STORY OFFICE BLOCKS
DATE:- JUNE 1961
TOTAL DEPTH 35'-6" DIA. 6"
LOCATION UXBRIDGE ROAD AND
SPRINGFIELD ROAD (EAST SIDE)



APPENDIX H -

PHASE 1 CONTAMINATED LAND ASSESSMENT



REPORTS 4 PLANNING
A DIVISION OF BROWN FISHER ENVIRONMENTAL LLP

Head Office
Barley House
Cedar Drive
Snitterfield
Stratford-upon-Avon
Warwickshire
CV37 0LJ

tel: 0845 680 1723
e: enquiries@reports4planning.co.uk

Client:

Kumarasamy Sivakumaran
68 Roth Drive
Hutton
Essex
CM13 2UE

Phase I Land Contamination Assessment

152-154 UXBRIDGE ROAD
LONDON
UB4 0JH

Consultant:

Nick Hillard MSc BSc (Hons)

Consultant in Contaminated Land

Report Ref: 21CLR5516NH

Report Date: 13th December 2021



Executive Summary

Reports 4 Planning has been commissioned by Kumarasamy Sivakumaran to undertake a Phase I Land Contamination Assessment of a site at 152-154 Uxbridge Road, London, UB4 0JH. The report is required to assess potential risks of land contamination associated with the proposed residential redevelopment of the site.

The site currently supports an end of terrace property, with a retail shop at ground floor level, residential accommodation above and a rear yard area, used for access, storage and miscellaneous parking purposes. No obvious evidence of significant contamination or other significant environmental concern was noted during the site reconnaissance. The electrical substation adjacent to the north east corner of the site has been present since at least the early 1970's. However, all electrical infrastructure is housed and contained in a red, fully-enclosed brick-built structure that would limit the unforeseen release of potentially contaminative materials (especially oils) into the subsurface.

The historical evidence indicates that the subject site was developed from greenfield as part of a small terrace of properties in the first half of the twentieth century. This use has continued to the present day. Surrounding land use north of Uxbridge Road has been predominantly residential. Potentially contaminative extractive industry (associated with Brookside Brickworks) and other industrial development of the area south of Uxbridge Road has been recorded. Further to this activity, the Minet Landfill (120m west of the site) was recorded to have received inert waste materials during the late 1980's. Notwithstanding this, underlying superficial ground conditions are of low permeability and previous site investigations at development sites in the immediate vicinity have recorded no elevated ground gas levels.

A motor vehicle garage, incorporating bulk fuel storage facilities, was historically located immediately across Uxbridge Road at Number 27. Intrusive investigation of this site was completed in 2012 prior to the garage redevelopment to a hotel use. No soil-, water- or air-borne contamination was identified at that time.

The underlying ground conditions comprise low permeability Langley Silt. The setting of the site is considered to be of low to moderate environmental sensitivity due to the non-productive nature of the underlying strata, the distance to surface water courses and the residential nature of the proposed development and its surroundings.

The conceptual model of the site demonstrates that potential pollutant linkages are generally of a very low to low risk to human health and to the natural environment during both the construction and post-construction phases of the redevelopment project.

Based on the available information, no significant contamination concerns to impact the proposed workshop development of the site have been identified. No significant pollutant pathways have been identified which may give rise to unacceptable risk at the site.

No further investigation of the site is considered necessary at this stage.

The report is based on the assumption by the author that should instances of previously unreported contamination be found during the proposed works, then appropriate assessment of the risks and proposed remediation scheme will be required. The report is supplied subject to our standard terms and conditions and these should be read alongside the report.

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1.0 INTRODUCTION

Reports 4 Planning has been commissioned by Kumarasamy Sivakumaran to undertake a Phase I Land Contamination Assessment of a site at 152-154 Uxbridge Road, London, UB4 0JH.

A Phase I Land Contamination Assessment incorporating a Preliminary Risk Assessment has been recommended in pre-application advice provided by the London Borough of Hillingdon. In particular, the following issues were highlighted:

- The site is within a 250m buffer zone of a former landfill site;
- Made Ground is likely to be present;
- An electricity substation is adjacent;
- The presence of asbestos-containing materials cannot be discounted.

The Phase I Land Contamination Assessment is required in order to highlight potential risks associated with contamination, if present.

In considering the application the Local Planning Authority has to determine 'whether, as a result of the proposed change of use, taking into account any proposed mitigation, the site will be contaminated land as described in Part 2A of the Environmental Protection Act 1990, and in doing so have regard to the Contaminated Land Statutory Guidance issued by the Secretary of State for the Environment, Food and Rural Affairs in April 2012. The client should also take note and abide by the requirements of the new LCRM regulations which is the latest guidelines issued by Government Environment Agency Published on 08/10/2020.

The purpose of this Phase I Desk study and Preliminary Risk Assessment report is to gather information on the site to develop an initial conceptual site model (CSM) and establish whether or not there are any potentially unacceptable risks posed by either current or historical use of the land or the surrounding area which may affect the proposed development. The assessment has been undertaken in line with CLR 11 Model Procedures for the Management of Land Contamination and BS10175:2011 Investigation of Potentially Contaminated Sites. The consultant who has prepared this report is an environmental risk specialist, with over twenty-five years' experience in environmental liability appraisal, contaminated land assessment, brownfield development and risk assessment. The Preliminary Risk Assessment report was undertaken based on Desk Study findings utilising publicly available data, along with data sourced directly and indirectly from various providers including the Environment Agency, the Local Authority, the British Geological Survey, The Coal Authority and Ordnance Survey. This has allowed characterization of the site with respect to its Geology, Hydrology, Hydrogeology, History and Environmental Setting. The Site Characterisation has been undertaken in general accordance with the procedures of the new LCRM methods as released in October 2020.

Predominantly 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. A Preliminary Environmental Risk Assessment contained in this report has considered all the relevant Receptors, potential Pathways, and Sources of contamination and assessed these for the level of risk posed to the site and future site users.

In accordance with current guidance the information has been used to develop a Conceptual Site Model (CSM) for the site. Pollutant linkages must be present and the consequent linkage must be established in order to determine the requirement and scope of any future geo-environmental investigation.

Reasonable skill and care have been exercised in preparation of this report in accordance with the technical requirements of the brief. Notwithstanding the efforts made by the professional team in undertaking this contamination assessment, it is possible that ground conditions other than that potentially indicated by this report may exist at the site.

2.0 SOURCES OF INFORMATION

This report draws upon many different information sources in order to gain a full understanding of the environmental setting of the site. These are summarized below:

2.1 Internet Sources

- British Geological Survey Borehole Database
- Environment Agency Pollution Inventory Database
- Multi-Agency Geographic Information for the Countryside Database
- 1:50,000 British Geological Survey Digital Map of Great Britain
- www.magic.defra.gov.uk

2.2 Reports

- Groundsure Dataset Report, GS-8359871; and
- Groundsure Historical Maps, GS-8359870.

2.3 London Borough of Hillingdon Information

A review of publicly-available information retained by the London Borough of Hillingdon was integrated into this assessment.

2.4 Site Observations

Site observations have been made during a site reconnaissance on 17th November 2021 and photographic evidence is provided in Appendix A.

3.0 SITE RECONNAISSANCE

3.1 Site Location

The site is located at 152-154 Uxbridge Road, London UB4 0JH and extends to approximately 700 square metres in plan area.

The site is located on the Uxbridge Road at its junction with Brookside Road.

The site is located at Grid Reference 511413, 180816 (TQ 114 808).

Figure 1 and 2- Site Location Plan Small and Large, Figure 3 – Aerial Photograph and Figure 4 - Proposed Site Plans shows the location of the site in relation to its surrounding land uses.

3.2 Site Access

Access to the property is afforded off both Uxbridge Road and Brookside Road.

3.3 Site Description

The site currently supports an end of terrace property fronting onto the northern side of Uxbridge Road, with a retail shop at ground floor level and residential accommodation above. The site forms part of a retail parade (124-154 Uxbridge Road), comprising 8no. retail units. The subject site extends beyond the side elevation of the parade supporting a yard area on the eastern side of Brookside Road.

The retail unit at 152-154 Uxbridge Road is currently occupied by “Home Needs Superstore” selling a wide variety of primarily domestic products. Inspection of the internal areas of the shop revealed no obvious environmental concerns. The majority of the area is taken up by shelving units, with additional storage, toilet and wash basin facilities located to the rear of the premises. The first and second floors of the property support a residential use.

To the side of the property, extending to Brookside Road, is a large advertising hoarding. LPG gas cannisters were noted to be stored in lockable cages to the front and rear of this hoarding.

The rear yard area is used for access, storage and parking of vehicles. 2no. 1100 litres waste eurobins were noted in this area, close to the rear access to the retail unit. At the time of the site reconnaissance, a total of 5no. cars were parked in the yard.

An aerial photograph showing the site is provided as Figure 3 with photographs taken during the site reconnaissance visit provided in Appendix A.

3.3.1 Site Topography

The site is reasonably flat with no discernible changes in topography across the site.

3.3.2 Structures

The property appears to be in a good structural condition with no obvious failings noted.

3.3.3 Surfacing

The site surfacing forms a mixture of concrete hardstanding, tarmac and compacted earth. In the yard areas that were not covered in hardstanding, tyre marks in the soft standing highlighted its recent use for parking vehicles. At the time of the site reconnaissance, some ponding of surface water on the rear yard area was evident. No obvious hydrocarbon sheens

were noted on the surface of this water and no evidence of staining or other environmental concern was noted.

3.3.4 Vegetation

Vegetation is confined to the peripheral areas of the rear yard area where parked vehicles have struggled to access. Vegetation types are typical of disturbed scrub and verge environments – nettle (*Urtica dioica*), bramble (*Rubus fruticosus*), plantain (*Plantago* spp.) etc.

3.3.5 Underground and Aboveground Storage Tanks

No evidence was observed which would suggest that any above or below ground fuel tanks are present on the site.

3.3.6 Raw Material and Chemical Use and Storage

No evidence of potentially harmful raw material or chemical use and/or storage was observed at the site at the time of the survey.

3.3.7 Solid Wastes

No evidence of potentially harmful solid wastes were observed at the site at the time of the survey.

3.3.8 Hazardous and Industrial Waste

No potentially hazardous industrial wastes have been observed. The site does not operate any process which is likely to use or generate hazardous substances.

3.3.9 Air Emissions

No evidence of significant air emission sources was observed. The site is however located in Hillingdon's Air Quality Management Area and the Ossie Garvin Air Quality Focus Area

3.3.10 Wastewater / Sewers

Wastewater from the site building currently enters the municipal drainage network.

3.3.11 Stormwater

Stormwater from the site building appears to be directed to drains beneath the site. The condition of such drains is unknown.

3.3.12 Asbestos Containing Materials (ACM)

No certified asbestos survey was undertaken as part of this assessment. Given the age of the building, the presence of such materials within the building fabric cannot be discounted. Suitable precautionary measures will be required as part of any proposed major refurbishment or demolition.

3.3.13 Polychlorinated Biphenyls (PCBs)

PCBs were historically used as a dielectric filler liquid in some types of transformers, switchgear, capacitors and the starter units in some fluorescent lights and fractional horsepower motors. PCBs are known to harm the environment and can damage health.

An electricity substation is located immediately adjacent to the north eastern corner of the site. This electrical infrastructure is housed in a red, fully-enclosed brick-built structure accessed via the track to the rear of the site. No obvious evidence of significant contamination associated with this adjacent substation was noted.

3.3.14 Ionising Radiation

No evidence of ionising radiation sources was made at the site.

3.3.15 Spills and Releases

In those external areas of the site which were inspected, no significant areas of staining associated with spills and/or releases could be seen.

3.4 Surrounding Land Use

3.4.1 South

The southern boundary of the site is formed by the Uxbridge Road, across which is general industrial, retail park and commercial land use including the 12 storey high Hyatt Hotel.

3.4.2 East

The site is bordered to the east by 148-150 Uxbridge Road, currently occupied by Desi Tadka restaurant.

3.4.3 North

The site is bordered to the north by an electricity substation and an access road running perpendicular to Brookside Road, beyond which are semi-detached residential properties.

3.4.4 West

The site is bordered to the west by Brookside Road and further residential properties.

A selection of photographs is provided in Appendix A.

4.0 CURRENT LAND USES

4.1 Current Site Use

The current property at 152-154 Uxbridge Road forms an end of terrace commercial/residential property with rear extension and service yard.

4.2 Potentially Contaminative Current Surrounding Land Use

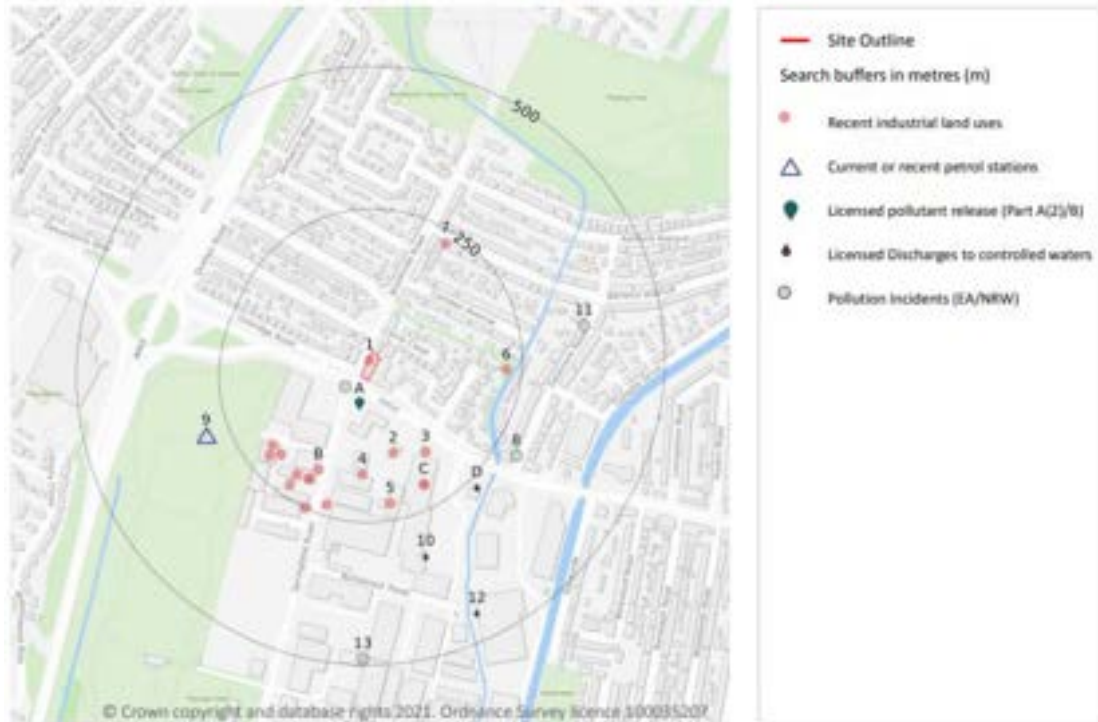


Table 1: Potentially Contaminative Current (and recent) Surrounding Land Use

Reference	Distance m	Company	Activity
1	Adjacent	UKPN	Electricity Substation
A	40m South	Kusum Service Station (no longer present)	Petrol Station
2	135m South	UKPN	Electricity Substation
5	220m South	Unspecified works	Industrial activity
B	240m South West	Panways, STS Distribution Ltd	Distribution and haulage operations

4.3 Petrol and Fuel Sites

There are no records of any current petrol and/or fuel sites within 500m of the site.

4.4 Underground HV Electricity Cables & High Pressure Gas Transmission Pipelines

There are no records of any such feature within 150m of the site.

4.5 Sites Determined as Contaminated Land

There are no records of any sites registered as potentially contaminated under Part 2a of the Environmental Protection Act 1990 within 500m of the subject site.

4.6 Control of Major Accident Hazards

There are no records of any Control of Major Accident Hazards (COMAH) sites at or within 500m of the site.

4.7 Regulated Explosive Sites

There are no records of any sites registered and licensed by the HSE under the Manufacture and Storage of Explosives Regulations 2005 within 500m of the site.

4.8 Hazardous Substance Storage/Usage Sites

There are no records of any sites with consents issued under the Planning (Hazardous Substances) Regulations 2015 at or within 500m of the subject site.

4.9 Historical Licensed Industrial Activities

There are no records of any operators holding historical Integrated Pollution Control (IPC) permits within 500m of the site. This regime has now been superseded.

4.10 Licensed Industrial Activities

There are no records of Part A(1) installation sites at or within 500m of the site.

4.11 Licensed Pollutant Release

There is 1no. record of licensed pollutant releases from processes authorised under Part A(2)/B within a 500m radius of the site. This is associated with the unloading of petrol into storage at Kusum Service Station, 40m south of the site. Although this site is not recorded as a petrol and fuel site (section 4.3), it is evident that bulk fuel storage and venting of tanks to atmosphere during re-filling activity was undertaken. No enforcement activity associated with the operation of this permit was identified and the site has subsequently been subject to intrusive ground investigation (see section 5.5) and redevelopment.

4.12 Radioactive Substance Authorisations

There are no recorded permits relating to the storage, use, accumulation or disposal of radioactive substances within 250m of the site.

5.0 HISTORICAL LAND USES

5.1 Site Observational Evidence

152-154 Uxbridge Road forms a terraced property typical of those constructed during the early part of the twentieth century.

5.2 Historical Maps Assessment

A number of historical maps have been reviewed for the site and reviewed for potential evidence which may indicate potentially contaminative land uses for either the site or surrounding land within 250m of the site. Copies of the pertinent historical maps are provided in Appendix B and are discussed below:

Table 2: Historical Land Use

Map Year (Scale)	Site Use	Surrounding Land Use
1865 (1:2500)	Undeveloped open land.	The following notable features are observed: East: The site appears to be associated with Hayes Gate Farm, with the main buildings 120m from the site. South: The modern-day Uxbridge Road is referred to as High Road. South East: Wagon & Horses Public House evident 120m from the site.
1881 (1:10560)	No significant changes shown.	The following notable changes are observed: South East: A large area east of the Grand Union Canal marked as "Brick Field" extends to approximately 500m from the site.
1896 (1:2500)	No significant changes shown.	No significant changes shown.
1914 (1:2500)	No significant changes shown.	The following notable changes are observed: South West: Brookside Brick Works is now established and excavations and kilns are evident approximately 180m from the site. South: An apparent spoil heap and access track associated with the brick works is shown 200m from the site.
1935 (1:2500)	A small terrace of properties including 152-154 Uxbridge Road has now been constructed. The area to the rear appears to be a yard or garden.	The following notable changes are observed: South West: High Road has now been widened and renamed Uxbridge Road. Railway tracks linking the Brookside Brick Works to the Grand Union Canal are evident 275m from the site. West: A large drying shed and new kiln associated with Brookside Brick Works is shown 220m from the site. North: Brookside Road has been constructed and extensive residential development of the area is apparent.
1940 (1:2500)	No significant changes shown.	The following notable changes are observed: North: Residential development now abuts the site to the rear, with an unmarked structure shown adjacent

		to the site (in the present-day location of the electricity substation). South West: Springfield Road has now been constructed and a large factory manufacturing cardboard cases is present within 100m. South East: A large tyre factory is shown 200m from the site amidst a general industrialisation of the area south of Uxbridge Road.
1961 (1:1250)	No significant changes shown. A small structure is evident on the northern boundary of the site.	The following notable changes are observed: South West: Brookside Brick Works has closed down by this time. South: Further industrial development of the area with numerous works buildings and depots evident along Springfield Road. West: The large drying shed and associated infrastructure have been demolished and removed with the area shown as open land.
1973-74 (1:1250)	The property occupying the site has been extended to the rear.	The following notable changes are observed: North: The structure adjacent to the north is shown as an electricity substation. South West: The large cardboard works/factory is now shown as Academy House. South: The residential housing immediately across Uxbridge Road has been demolished and replaced with Hayes Gate House, with a garage and apparent canopy on the corner with Springfield Road.
1987 (1:1250)	No significant changes shown.	The following notable changes are observed: South West: Academy House has now been demolished and replaced with two large warehouse units corresponding to the present-day configuration of Springfield Road Retail Park.
1993 (1:1250)	No significant changes shown.	No significant changes shown.

The historical mapping shows that the subject site was developed from greenfield as part of a small terrace of properties in the first half of the twentieth century. This use has continued to the present day. Surrounding land use north of Uxbridge Road has been predominantly residential. The electrical substation adjacent to the north east corner of the site has been present since at least the early 1970's.

Potentially contaminative extractive industry (associated with Brookside Brickworks) and other industrial development of the area south of Uxbridge Road, including a garage facility at 27 Uxbridge Road, has been recorded.

5.3 Local Studies Information

Reference has been made to Grace's Guide to British Industrial History: 1914 Who's Who in Business.

EAST ACTON BRICK WORKS & ESTATES CO., Ltd. (THE), Brickmakers, Brookside Brickworks, Southall, Middlesex. Hours of Business: 6 a.m. to 6 p.m.; Saturdays, close at 1 p.m. Established in 1875. Incorporated as a Limited Company in 1888, formed by J. Crowle and G. Wright.

Present Directors: W. H. Rowse (Chairman), A. A. Rowse and R. M. Rowse. Business was transferred from East Acton to Southall in 1900. Premises: Cover about 120 acres. Staff: About 150. Specialities: Hand-made Bricks, Red Facings, Red Moulded Bricks and Building Stocks, &c. Connection: United Kingdom. Telephone: No. 64 Southall. Telegraphic Address: " Brookside Brickworks, Southall." Bankers: Barclay & Co., Ltd. (Southall).

Brookside Brick works. This 19th brick works was using brick earth from local sites. A tramway using locomotives ran from it to the canal side. This was evidenced by historical map of 1935.

5.4 Potentially Contaminative Historical Uses

The following records of potentially contaminative historical land uses within 100m of the site are shown.



There are a large number of potentially contaminative industrial operations recorded within 250m of the subject site (see Appendix B). These are primarily associated with the historical presence of the Brookside Brick Works and subsequent industrial development of the area south of Uxbridge Road. The following represent those that are considered to be of specific relevance to the site:

Table 3: Potentially Contaminative Historical Land Uses

Distance (m)	Direction	Activity	Date
40m	South	Garage	1974 - Present
50m	South west	Factory (cardboard cases) <i>then</i> Works	1940 – 1973
180m	South west	Drying shed associated with Brookside Brick Works	1935 – 1960
200m	South east	Tyre factory <i>then</i> Factory	1935 – 1994

5.4.1 Historical Tank Database

There are 6no. records of historical tanks within 250m of the property. The closest of these were at sites 50m north east of the site in 1914 and 130m south west of the site in 1940. No records relating to tanks on the subject site or within its immediate vicinity were evident.

5.4.2 Historical Energy Features Database

The following records of sites with historical energy features are known within 250m of the property.

Table 4: Historical Energy Features

Distance (m)	Direction	Activity	Date
Adjacent	North east	Electrical Substation	Pre-1974 - Present
190m	South west	Electrical Substation	Pre-1974 - Present
240m	South west	Electrical Substation	Pre-1974 - Present

5.4.3 Historical Petrol and Fuel Sites

There are no records of any historical petrol and/or fuel sites within 250m of the property.

5.4.4 Historical Garage and Motor Vehicle Sites

The following records of historical garage and motor vehicle sites are known within 500m of the property.

Table 5: Historical Garage and Motor Vehicle Sites

Distance (m)	Direction	Activity	Date
40m	South	Garage	Pre-1974 - 2012

5.5 London Borough of Hillingdon Planning Record

Reference has been made to relevant historical information contained on the planning record. Three planning applications relating to advertising hoardings, internally illuminated signs and alterations to the shopfront and internal areas were recorded for 152 Uxbridge Road. These are not considered to be of significant environmental concern.

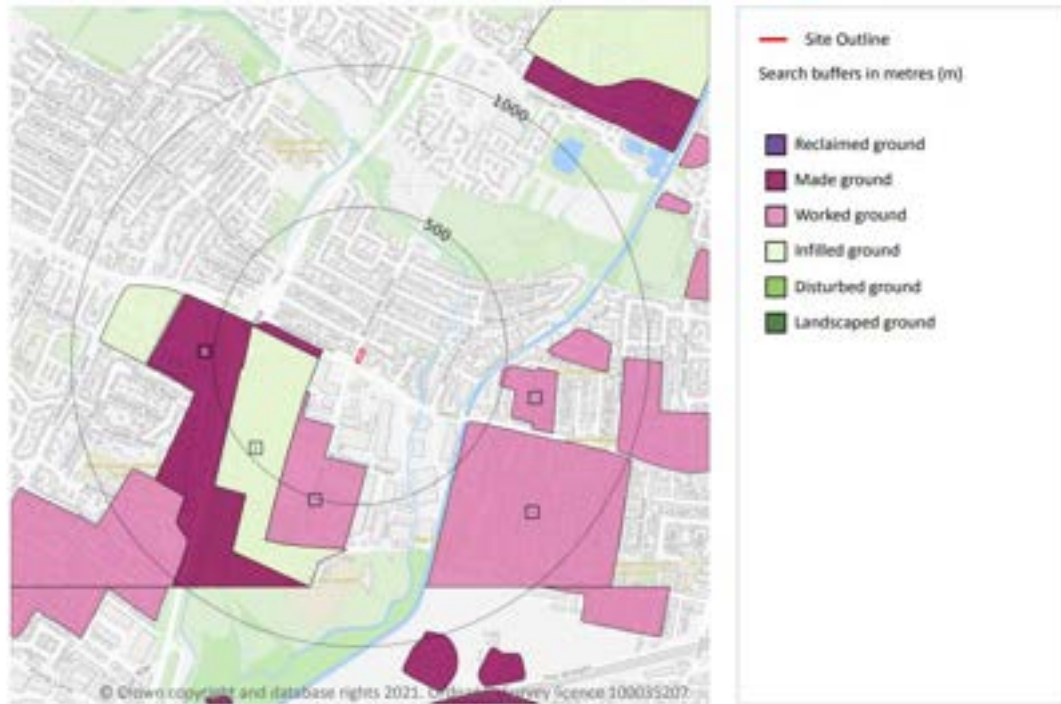
Planning applications relating to sites in the vicinity were also reviewed. Springfield Retail Park which originally contained Wickes and MFI was redeveloped in the early 1980's.

The site immediately across Uxbridge Road (27 Uxbridge Road) was subject to geo-environmental site investigation in October 2012 (Constructive Evaluation Limited: Stage 2: Site Investigation at Heathrow Gate, 27 Uxbridge Road – ref. 12.7302). This involved the progression of 3no. boreholes, the excavation of 4no. trial pits and subsequent soil, groundwater and ground gas analysis. No soil-, water- or air-borne contamination was identified at that time., with the overall risk considered to be negligible to low.

6.0 GEOLOGY

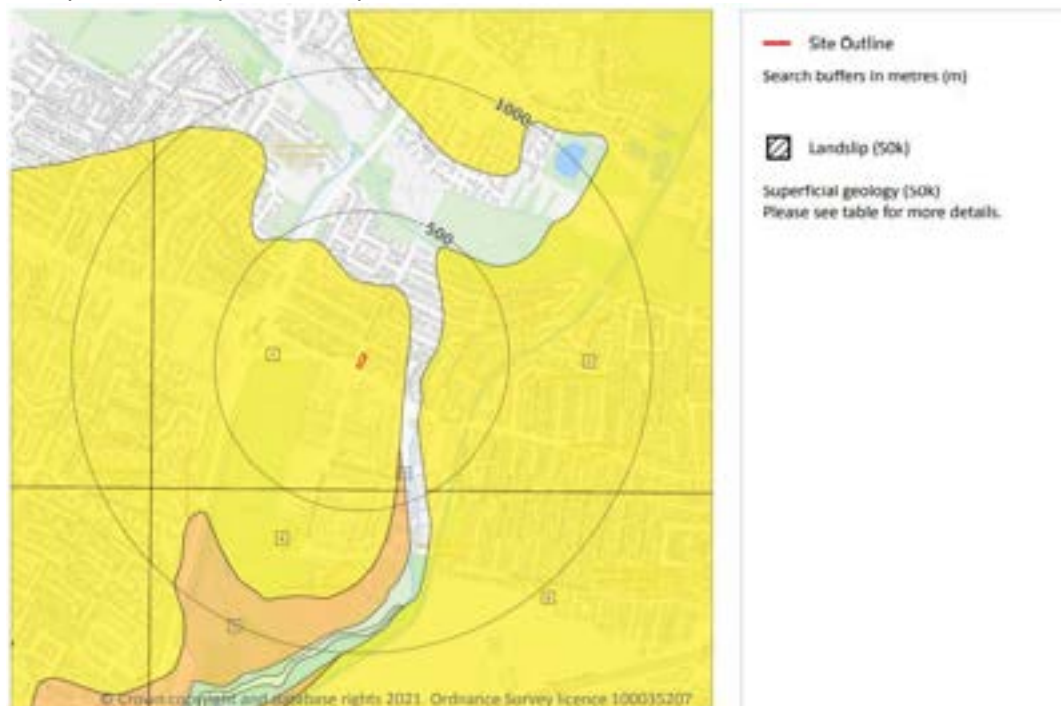
6.1 Artificial and Made Ground

There are no records of artificial and/or made ground shown at the site itself. Made Ground is recorded 120m west of the subject site and infilled ground is associated with the former Brookside Brick Works.



6.2 Superficial and Drift Geology

The British Geological Survey 1:50,000 Geological Map of Great Britain shows the presence of superficial clay and silt strata of the Langley Silt Member. These superficial deposits have a very low to low permeability.



6.3 Solid Geology

The British Geological Survey 1:50,000 Geological Map of Great Britain shows the solid geology beneath the site is the London Clay Formation, consisting of clay, silt and sand. The bedrock has a very low to moderate permeability from intergranular flow.

A BGS Borehole Record progressed 80m south of the site in 1961 recorded approximately 0.8m depth of Made Ground over 1m of firm brown sandy clay and stones which lay over 3m of gravel and sand. This was further underlain by approximately 2m depth of silty clay layers with the London Clay encountered at approximately 7mbgl. Groundwater seepage was encountered just above the London Clay.

6.4 Mining

Information provided by the Coal Authority indicates that the site does not lie in proximity to a coal mining reporting area. There are no records of any underground workings within 1000m of the site.

6.5 Non-coal Mining

Historical surface ground workings have been identified in the site's vicinity from historical mineral planning permissions and BritPits database and historical Ordnance Survey maps of the area. These workings are all associated with the Brookside Brick Works which occupied the area across Uxbridge Road to the south west from the early twentieth century.

6.6 Brine Affected Areas

There are no brine affected areas within 100m of the site.

6.7 Shrink Swell

The maximum shrink swell hazard for the site has been rated by the BGS as very low, with ground conditions predominantly of low plasticity.

6.8 Landslip/Slide

The risk associated with slope instability issues at the site is considered to be very low.

6.9 Soluble Rocks

There is a negligible risk from soluble rocks at the site. Soluble rocks are not thought to be present beneath the site.

6.10 Compressible Ground

The maximum compressible ground hazard for the site has been rated by the BGS as negligible. Compressibility and uneven settlement hazards are unlikely to be present.

6.11 Collapsible Rocks

The maximum collapsible rocks hazard for the site has been rated by the BGS as low.

6.12 Running Sand

There is a negligible potential for running sand problems, with such conditions not thought to occur whatever the position of the water table. No identified constraints to land use have been identified.

6.13 Radon

The Indicative Atlas of Radon in England and Wales as prepared by both the Health Protection Agency and the British Geological Survey shows that the site is not located in a radon area as less than 1% of properties are above the Action Level. No radon protection measures are necessary.

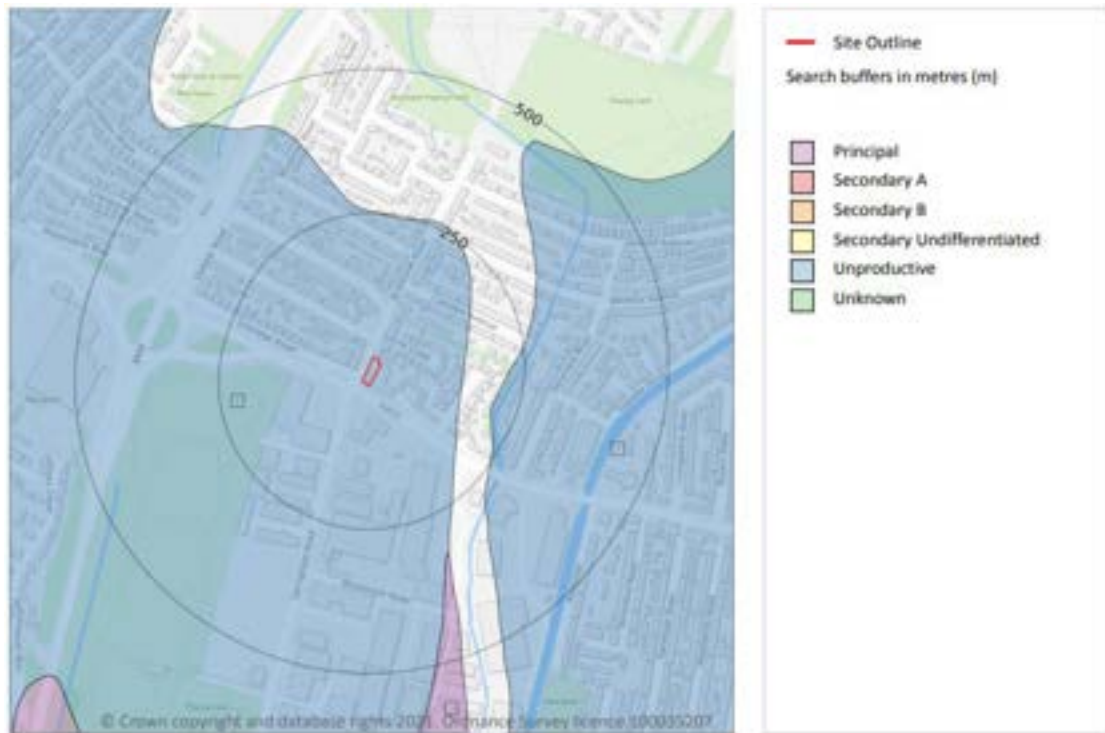
6.14 Background Soil Chemistry

It is recorded by the BGS that on site there is the potential for the following natural contaminants to be present: arsenic 17mg/kg, lead 208mg/kg, cadmium 0.8mg/kg, chromium 101mg/kg, nickel 38mg/kg.

7.0 HYDROGEOLOGY

7.1 Groundwater Vulnerability and Soil Classification

The site is located on superficial Langley Silt deposits which, in common with the London Clay strata beneath, are classified as unproductive. These are rock layers and drift deposits with low permeability that have negligible significance for water supply or base flow to rivers. The strata are unproductive so do not have a permeability classification.



7.2 Groundwater Abstraction Licences

There are no active groundwater abstraction licences issued within 2000m of the site. Two historical licences are recorded at Apexes Works, approximately 1400m south of the site. These were held for evaporative cooling purposes and commenced in the mid 1960's. The other licences were held by Nestle at its coffee factory 1900m south west of the site.

7.3 Licensed Discharges to Controlled Waters

There are no records of any currently licensed discharges to controlled waters within 250m of the site. The closest active discharge is 450m south east of the site at Bullsbrook Road for the miscellaneous discharge of surface water into the River Crane.

7.4 Pollutant Release to Surface Waters (Red List)

There are no records of any licenses issued to sites at or within 500m of the site for a pollutant release to a surface water (Red List).

7.5 Pollutant Release to a Public Sewer

There are no records of any licenses issued to sites at or within 500m of the site for a discharge of special category effluent to the public sewer.

7.6 List 1 and List 2 Dangerous Substances

There are no records of any discharges of dangerous substances as identified on List 1 and List 2 of European Directive E 2006/11/EC, and regulated under the Environmental Damage (Prevention and Remediation) Regulations 2015 within 500m of the site.

7.7 Pollution Incidents

There are 4no. records of pollution incidents for sites within 500m of the property. The closest of these occurred in 2001 and involved the release of contaminated water at a site 30m south west of the subject site. A Category 3 (minor) impact was recorded and is considered unlikely to have significantly affected the subject site. Other incidents occurred in 2003, are over 250m from the subject site and considered unlikely to have affected the subject site.

7.8 Pollution Inventory Substances

There are no records of any pollution inventory (substances) including reporting on annual emission of certain regulated substances to air, controlled waters and land at or within 500m of the site.

7.9 Pollution Inventory Waste Transfers

There are no records of pollution inventory (waste transfers) including includes reporting on annual transfers and recovery/disposal of controlled wastes from a site. A reporting threshold for each waste type is also included. Where releases fall below the reporting threshold, no value will be given.

7.10 Pollution Inventory Radioactive Waste

The pollution inventory (radioactive wastes) includes reporting on annual releases of radioactive substances from sites. There are no such records within 500m of the site.

7.11 Source Protection Zones

There are no source protection zones within 500m of the site.

8.0 HYDROLOGY

8.1 Surface Waters

The closest surface watercourse to the site is the Yeading Brook which runs in a southerly direction, approximately 220m east of the site. The Grand Union Canal (Paddington Branch) lies a further 200m east.



The Yeading Brook joins up with the River Crane just south of Minet Country Park and eventually joins the River Thames at Isleworth, 7.5km south east of the subject site.

8.2 Surface Water Abstraction Licences

There are no active surface water abstraction licenses recorded for sites within 2,000m of the site.

8.3 Potable Water Abstraction Licences

There are no active potable water abstraction licenses recorded for sites within 2,000m of the site.

8.4 Flooding

8.4.1 Risk of Flooding from Rivers and Seas (RoFRaS)

The Environment Agency identify areas of land at risk of flooding, when the presence of flood defences are ignored. The river and coastal flooding maps show that the site is not located within an identified flood risk area.

8.4.2 Historical Flood Events

There is 1no. record of an historical flooding event within 250m of the site. This record relates to an incident of local drainage / surface water flooding in 1977, approximately 200m east of the subject site.

8.4.3 Surface Water Flooding

There is reported to be a 1 in 100 year likelihood of surface water flooding between 0.1 – 0.3m at the site.

8.4.4 Groundwater Flooding

There is a low risk of groundwater flooding at the site.

8.4.5 Flood Defences

There are no records of areas benefitting from flood defences within 250m of the subject site. Similarly, there are reportedly no areas that act as flood storage within 250m of the site.

9.0 WASTE

9.1 Landfill Sites



There are no records of active or recently closed landfill sites subject to Environment Agency regulation within 500m of the site.

London Borough of Hillingdon and Environment Agency historical records reveal the previous presence of the Minet Landfill 120m west of the site. This site was reportedly active between May 1986 and July 1989, with Wimpey Construction UK Ltd recorded as the licence holder depositing exclusively inert materials in the former brickwork excavations.

9.2 Waste Sites

There is 1no. licensed waste site under Environment Agency regulation within 500m of the subject site. This licence is held by Southern Electric at Hayes Depot (140m south of the site) for the storage of electrical insulating oils. There are a further 2no. records of active or recently closed licensed waste sites within 500m of the subject site, as identified in Local authority planning records. These both relate to an absorbent hygiene product recycling facility 300m south east of the subject site on the opposite side of Yeading Brook.

There are no records within 500m of the site where a waste exception is in place.

9.3 Pollution Inventory Substances

There are no records of any substances recorded on the pollution inventory for any site at or within 500m of the site.

9.4 Pollution Inventory Radioactive Waste

There are no records of any radioactive substances recorded for any site at or within 500m of the site.

10.0 DESIGNATED ENVIRONMENTALLY SENSITIVE SITES

In assessing the location of any Designated Environmentally Sensitive Sites the Local Plan has been consulted (online) as well as other electronic databases (www.magic.co.uk). The following designated environmentally sensitive sites are located within 250m of the sites:



10.1 Nationally Designated Sites

There are no designated Sites of Special Scientific Interest (SSSI), Special Areas of Conservation (SAC), Special Protection Areas (SPA), National Nature Reserves (NNR) or similarly designated sites within 2000m of the subject site.

10.2 Local Nature Reserves

Ten Acres Wood and Meadows (part of Yeading Woods LNR) is located 1500m north west of the subject site.

10.3 Other Ecological Receptors (Source Magic / DEFRA)

Minet Country Park (120m west of the site) is a 36 hectare park featuring a playground, visitor centre and ponds. The site was acquired by the London Borough of Hillingdon in the mid 1960's from the Minet family who had owned the site as part of the Coldharbour Estate from at least 1766.

10.4 Cultural Designations

There are no records of listed buildings, conservation areas or other designated features of cultural interest within the site's vicinity.

11.0 CONCEPTUAL SITE MODEL

The model assessment has been made on the understanding that the site is used for **Residential Purposes**. Those potential pathways which may give rise to unacceptable contaminative risk under this scheme have been brought forward and form part of the Model as discussed below.

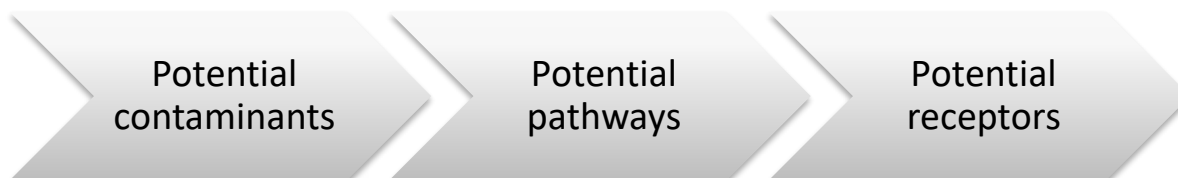


Table 6: Conceptual Site Model

Consideration of Potential Contaminants:	
On-Site Contaminants	<ul style="list-style-type: none"> ▪ No significant on-site contamination sources associated with the site's history have been identified. Similarly, no obvious current evidence of contamination was noted. ▪ Made Ground beneath the yard area is considered unlikely to contain significant contaminative material.
Off-Site Contaminants	<ul style="list-style-type: none"> ▪ The adjacent electrical substation has been present since at least the early 1970's but all electrical infrastructure is housed in a red, fully-enclosed brick-built structure, with no obvious evidence of significant contamination noted. ▪ The general vicinity of the site has been exposed to potentially contaminative extractive industry associated with Brookside Brickworks. ▪ The site of the former Minet Landfill, which was operational in the late 1980's is located 120m west of the site, but records indicate that it received inert waste materials only. Underlying superficial ground conditions are of low permeability and previous site investigations at development sites in the immediate vicinity have recorded no elevated ground gas levels. ▪ A former garage immediately across Uxbridge Road was subject to site investigation prior to its redevelopment in the 2012 to support a hotel use and was assessed as negligible to low risk.

Consideration of Potential Receptors:	
Controlled Waters	<ul style="list-style-type: none"> ▪ The underlying superficial and bedrock strata are non-productive. ▪ The Yeading Brook flows approximately 200m east of the site, but the superficial Langley Silt is of very low to low permeability.
Human Health	<ul style="list-style-type: none"> ▪ Future residential site occupiers but most areas will be hard landscaped and imported topsoil will be used in amenity areas. ▪ Construction workers primarily those involved in groundworks excavation. ▪ Neighbouring residents subject to disturbed vapours and dusts arising from on-site development.
Other	<ul style="list-style-type: none"> ▪ Existing and new underground service infrastructure. ▪ Faunal visitors to the site in the future

Potential contaminant pathways and pollutant linkages:	
On-Site Contaminants	<ul style="list-style-type: none">No significant pollutant linkages have been identified.
Off-Site Contaminants	<ul style="list-style-type: none">No significant pollutant linkages associated with off-site sources of contamination have been identified.

Other Considerations:	
Geotechnical foundation design	<ul style="list-style-type: none">Foundations for the new residential buildings will need to be founded on competent strata.
Waste acceptance criteria	<ul style="list-style-type: none">Surplus spoil excavated from the site will need to be classified (WAC tested) prior to off-site disposal.
Percolation Testing	<ul style="list-style-type: none">Future percolation testing to confirm infiltration rates for surface water drainage from the site would be beneficial.

12.0 PRELIMINARY ENVIRONMENTAL RISK ASSESSMENT

12.1 Introduction

The current contaminated land regime is explained in Part IIA of the Environmental Protection Act 1990 and was introduced on the 1st April 2000 in England. Also, this assessment has been completed taking into account the advice and guidance contained in the NPPF and particularly paragraphs 109 (fourth and fifth bullet points) and the new LCRM regulations which is the latest guidelines issued by Government Environment Agency Published on 08/10/2020. In general, the purpose of these aspects of the legislation is to achieve the identification of contaminated land and the remediation of contaminated land to ensure the such land poses no significant risk to human health and/or the environment.

Contaminated Land is defined as:

‘any land which appears to the local authority in whose area it is situated, to be in such a condition, by reason or 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 water is being or is likely to be caused.’

For land to be classified as contaminated land a relevant Pollutant Linkage must be identified. A Pollutant Linkage will only be present where the Source-Pathway-Receptor factors are all present and where they are not all present, no risk assessment is possible.

Statutory Definitions	
Contaminant Source (Hazard)	A substance which is in, on or under the land and which has the potential to cause harm or cause pollution of controlled waters
Receptor (Target)	A living organism or group of organisms, an ecological system or property, controlled waters which are or could be polluted by a contaminant
Pathway (Route)	One or more routes or means which either allows the contaminant to cause significant harm to that receptor, or that there is a significant possibility of such harm being caused to the receptor, or that pollution of controlled waters is being or likely to be caused.

A Preliminary Environmental Risk Assessment involves assessing the likely probability and consequence of a Pollutant Linkage and determining a consequent level of risk.

The term ‘risk’ is widely used in different contexts and situation but a prescriptive definition is provided by the Guidelines for Environmental Risk Assessment and Management (DEFRA et al, 2000):

Risk is a combination of the probability, or frequency, of occurrence of a defined hazard and the magnitude of the consequence of the occurrence’.

A hazard is defined as ‘a property or situation that in particular circumstance could lead to harm’.

The risk category for a particular scenario can be assessed in terms of the consequences and probability of an occurrence which can be defined as follows (Ref: CIRIA C552):

Classification of a Consequence

Classification	Definition
Severe	1 – short term (acute) risk to human health likely to result in significant harm 2 – short term risk to controlled waters 3 – catastrophic damage to buildings / structures 4 – short term risk to an ecosystem or organism within the particular ecosystem.
Medium	1 – chronic damage to human health (long term risk) 2 – pollution of a sensitive water resource 3 – a significant change in an ecosystem or organism within the ecosystem
Mild	1 – pollution of non-sensitive water resources 2 – significant damage to buildings / structures
Minor	1 – harm (not necessarily significant) which may result in financial loss; 2 – non permanent health effects to humans (easily prevented by PPE for example) 3 – easily repairable effects of structural (building damage).

Classification of a Probability

Classification	Definition
High Likelihood	1 – there is a complete pollution linkage and an event appears very likely to occur in the short term and is inevitable in the long term 2 – evidence of harm to the receptor
Likely	1 – there is a complete pollution linkage which means that it is probable that an event will occur 2 – the event is not inevitable but possible in the short term and likely in the long term
Low Likelihood	1 – there is a complete pollution linkage and circumstance are possible under which an event could occur 2 – it is not certain that an event will occur in the long term, and it is less likely to occur in the short term
Unlikely	1 – there is a complete pollution linkage but circumstance are such that is improbable that an event would occur even in the long term.

The consequences of a risk and the probability of an event taking place can be assessed and the likely risk category can be determined as follows:

		Consequence			
		Severe	Medium	Mild	Minor
Probability	High	Very High	High	Medium	Medium / Low
	Likely	High	Medium	Medium / Low	Low
	Low	Medium	Medium / Low	Low	Very Low
	Unlikely	Medium / Low	Low	Very Low	Very Low

High Risk – there is a high probability that severe harm could risk a receptor, or there is evidence that a receptor is being harmed. The risk is realised is likely to result in liability and/or significant harm, and urgent investigation or remediation will be required.

Medium Risk - it is probable that harm will arise to a receptor. However it is relatively unlikely that such harm would be severe, or if harm does occur then the harm is likely to be relatively mild. Investigation will be required to determine the liability, and some remedial works may be required in the long term.

Low Risk – it is possible that harm may arise to a receptor, but it is likely that the harm would be mild.

Very Low Risk – There is a very low risk of harm to the receptor. In the event of harm being realised the harm is not likely to be severe.

12.2 Potential Sources

The current and historical use of the site and its surroundings has been carefully assessed. All potential risks have been determined and assessed as part of this study.

The risk of contaminant source material located on site is low. The site appears to have only been used for residential, retail and ancillary parking purposes since its development from greenfield in the early twentieth century. Natural levels of contamination are expected from records (BGS) to be very low. No solid or liquid contaminative sources are expected historically.

A number of off-site sources are also recorded in the vicinity of the site, including the adjacent electricity substation, industrial works south of Uxbridge Road and the historical presence of Brookside Brickworks.

12.3 Potential Pathways

Exposure pathways link any contamination to the receptor. All or any of the following potential pathways may apply:

Future Site Workers, including Construction Workers

<i>Oral Pathway (W-O)</i>	Indoor /outdoor ingestion of dust Indoor/outdoor ingestion of soil Indoor/outdoor ingestion of Flora/Fauna Ingestion of tainted mains water
<i>Inhalation Pathway (W-I)</i>	Indoor/outdoor inhalation of fugitive dust Indoor/outdoor inhalation of soil vapour
<i>Dermal Pathway (W-D)</i>	Indoor/Outdoor exposure to soil through dermal contact

Future Site Users, Occasional Visitors and Neighbouring Residents including Children

<i>Oral Pathway (O-O)</i>	Indoor ingestion of dust (post construction) Outdoor ingestion of soil (post construction) Indoor/outdoor ingestion of Flora/Fauna
<i>Inhalation Pathway (O-I)</i>	Outdoor inhalation of fugitive dust Indoor inhalation of fugitive dust (post construction) Outdoor inhalation of soil vapour Indoor inhalation of soil vapour (post construction)
<i>Dermal Pathway (O-D)</i>	Outdoor exposure to soil through dermal contact Indoor exposure to soil dust through dermal contact

Flora (potential new on-site or off-site flora affected by potential contamination on the site, or migrating onto or from the site).

<i>Plant Uptake (Fl-PU)</i>	General uptake of contaminants by plants growing in the vicinity of, or on, the site
<u>Fauna (on-site or off-site affected by potential contamination on the site, or migrating from the site)</u>	
<i>Oral Pathway (Fa-OP)</i>	Consumption of contaminated Flora located on site
<u>Water Resources</u>	
<i>Surface Water Mobilisation (SWM)</i>	Surface water run-off from site, migrating off site Also infiltration into the site from site.
<i>Groundwater Mobilisation (Leaching Potential) (GWM)</i>	Percolation and mobilisation of contaminants within the soil into waters held locally within pore space beneath the site.

12.4 Potential Receptors

The following potential receptors have been identified for the site:

Human Receptors (H)	Site workers (W), child/adult future site users (H), neighbours (N),
Flora and Fauna (FL, FA)	Future, on and off-site Fauna and Flora
Water Resources (SW, GW)	Unproductive superficial aquifer, unproductive bedrock aquifer
Site Infrastructure (SI)	Existing and future foundations and drainage services
Ecological Designations (E):	Site vegetation
Buildings and Services (BS):	Site and neighbouring buildings
Archaeological (A):	Designations in vicinity of the site if applicable
Cultural (C):	Designations in vicinity of the site if applicable

Under the proposals the site is to be developed for residential purposes. The Critical Human Receptor for this site will be a **young female child who may reside at the site.**

12.5 Qualitative Risk Assessment

A qualitative risk assessment has been undertaken to provide an initial assessment of the potential risks caused by contaminant sources identified during this assessment to construction workers, future users of the site, building structures and the aquatic environment. **The assessment has been made on the understanding that the site is used for long term residential use.**

Table 7: Risk Assessment

Hazard Identification			Hazard Assessment		Risk Estimation			Risk Evaluation
Sources	Location	Potential Contaminants	Pathway	Receptor	Magnitude of Consequence	Probability Occurrence	Risk Appraisal	Rationale
Historical and current use of the site Residential, retail and parking use	On site	Made Ground	W-O, W-I, W-D, O-O, O-I, O-D, FLPU, FaOP, SWM	H, SW, FL, FA	Mild	Low	Low	<ul style="list-style-type: none"> - Historical evidence highlights exclusive residential and retail use of site - No significantly contaminative source associated with recent use - No obvious potentially contaminative historical uses of the site - No further assessment required.
Historical use of surrounding land Electrical Substation	Adjacent to north east	Inorganic and organic contaminants (metals, hydrocarbons, solvents)	W-O, W-I, W-D, O-O, O-I, O-D, FLPU, FaOP, SWM	H, SW, FL, FA	Mild	Low	Low	<ul style="list-style-type: none"> - Long-term presence of adjacent electrical substation (since at least the early 1970's) - All electrical infrastructure housed and contained in a red, fully-enclosed brick-built structure - No obvious evidence of significant contamination noted. - No further assessment required.
Historical use of surrounding land Brookside Brickworks and then filling	120m south west	Ground gas	W-I, O-I	H, BS	Minor	Low	Very Low	<ul style="list-style-type: none"> - Exclusively inert nature of fill materials identified in one recorded landfill location (Minet Landfill) - Underlying superficial ground conditions are of low permeability - Previous site investigations at development sites in the immediate vicinity have recorded no elevated ground gas levels. - No further assessment required.
Historical use of surrounding land Garage	40m south	Organic contaminants (hydrocarbons, solvents)	W-I, O-I, GWM	H, GW, SI, BS	Minor	Unlikely	Very Low	<ul style="list-style-type: none"> - Current hotel use (Hyatt Place). - Intrusive site investigation completed prior to the garage redevelopment in 2012 - No soil-, water- or air-borne contamination identified. - Following SI, risk assessed as negligible to low risk. - No further assessment required.

13.0 CONCLUSIONS AND RECOMMENDATIONS

13.1 Conclusions

The site currently supports an end of terrace property, with a retail shop at ground floor level, residential accommodation above and a rear yard area, used for access, storage and miscellaneous parking purposes. No obvious evidence of significant contamination or other significant environmental concern was noted during the site reconnaissance.

The historical mapping shows that the subject site was developed from greenfield as part of a small terrace of properties in the first half of the twentieth century. This use has continued to the present day. Surrounding land use north of Uxbridge Road has been predominantly residential.

The electrical substation adjacent to the north east corner of the site has been present since at least the early 1970's. However, all electrical infrastructure is housed and contained in a red, fully-enclosed brick-built structure that would limit the unforeseen release of potentially contaminative materials (especially oils) into the subsurface.

Potentially contaminative extractive industry (associated with Brookside Brickworks) and other industrial development of the area south of Uxbridge Road has been recorded. Further to this activity, the Minet Landfill (120m west of the site) was recorded to have received inert waste materials during the late 1980's. Notwithstanding this, underlying superficial ground conditions are of low permeability and previous site investigations at development sites in the immediate vicinity have recorded no elevated ground gas levels.

A motor vehicle garage, incorporating bulk fuel storage facilities, was historically located immediately across Uxbridge Road at Number 27. Intrusive investigation of this site was completed in 2012 prior to the garage redevelopment to a hotel use. No soil-, water- or air-borne contamination was identified.

The underlying ground conditions comprise low permeability Langley Silt. The setting of the site is considered to be of low to moderate environmental sensitivity due to the non-productive nature of the underlying strata, the distance to surface water courses and the residential nature of the proposed development and its surroundings.

The conceptual model of the site demonstrates that potential pollutant linkages are generally of a very low to low risk to human health and to the natural environment during both the construction and post-construction phases of the redevelopment project.

Based on the available information, no significant contamination concerns to impact the proposed development of the site have been identified. No significant pollutant pathways, linking on- or off-site contaminant sources to potential receptors, have been identified.

13.2 Recommendations

No further investigation of the site is considered necessary at this stage. The report is based on the assumption by the author that should instances of previously unreported contamination be found during the proposed works, then appropriate assessment of the risks and proposed remediation scheme will be required.

The report is supplied subject to our standard terms and conditions and these should be read alongside the report.

FIGURES



FIGURE 1

SITE LOCATION PLAN
SMALL SCALE

152-154 UXBRIDGE ROAD
LONDON
UB4 0JH



FIGURE 2

SITE PLAN
LARGE SCALE

152-154 UXBRIDGE ROAD
LONDON
UB4 0JH



FIGURE 3

SITE AERIAL PHOTOGRAPH

152-154 UXBRIDGE ROAD
LONDON
UB4 0JH



FIGURE 4
PROPOSED SITE LAYOUT PLAN

152-154 UXBRIDGE ROAD
LONDON
UB4 0JH

APPENDICES

APPENDIX A
SITE PHOTOGRAPHS



Photograph 1: View of site from Uxbridge Road



Photograph 2: View to front of 152-154 Uxbridge Road



Photograph 3: View of side of property showing gas cylinder storage



Photograph 4: View of access area to rear of advertising hoarding



Photograph 5: View to rear of site from rear access road off Brookside Road



Photograph 6: View of rear yard area showing electricity substation



Photograph 7: View of shop service entrance and yard area



Photograph 8: View to rear of shop extension



Photograph 9: View of electricity substation showing enclosed brick structure



Photograph 10: View of internal rear shop area

APPENDIX B
DATA REPORT

152-154 UXBRIDGE ROAD, HAYES, UB4 0JH

Order Details

Date: 25/11/2021
Your ref: CLR5519
Our Ref: GS-8359871
Client: Brown Fisher Environmental LLP

Site Details

Location: 511413 180816
Area: 0.07 ha
Authority: [London Borough of Hillingdon](#)



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Summary of findings

p. 2

Aerial image

p. 8

OS MasterMap site plan

p.13

groundsure.com/insightuserguide

Contact us with any questions at:

info@groundsure.com

08444 159 000

Summary of findings

Page	Section	Past land use	On site	0-50m	50-250m	250-500m	500-2000m
14	1.1	<u>Historical industrial land uses</u>	0	9	18	45	-
17	1.2	<u>Historical tanks</u>	0	1	6	19	-
19	1.3	<u>Historical energy features</u>	1	0	2	19	-
20	1.4	Historical petrol stations	0	0	0	0	-
20	1.5	<u>Historical garages</u>	0	4	0	0	-
21	1.6	Historical military land	0	0	0	0	-
Page	Section	Past land use - un-grouped	On site	0-50m	50-250m	250-500m	500-2000m
22	2.1	<u>Historical industrial land uses</u>	0	12	25	58	-
26	2.2	<u>Historical tanks</u>	0	1	7	27	-
28	2.3	<u>Historical energy features</u>	6	0	9	30	-
29	2.4	Historical petrol stations	0	0	0	0	-
30	2.5	<u>Historical garages</u>	0	6	0	0	-
Page	Section	Waste and landfill	On site	0-50m	50-250m	250-500m	500-2000m
31	3.1	Active or recent landfill	0	0	0	0	-
31	3.2	Historical landfill (BGS records)	0	0	0	0	-
32	3.3	<u>Historical landfill (LA/mapping records)</u>	0	0	2	0	-
32	3.4	<u>Historical landfill (EA/NRW records)</u>	0	0	1	0	-
32	3.5	<u>Historical waste sites</u>	0	0	0	2	-
33	3.6	<u>Licensed waste sites</u>	0	0	2	0	-
34	3.7	Waste exemptions	0	0	0	0	-
Page	Section	Current industrial land use	On site	0-50m	50-250m	250-500m	500-2000m
35	4.1	<u>Recent industrial land uses</u>	1	0	18	-	-
37	4.2	<u>Current or recent petrol stations</u>	0	0	0	1	-
37	4.3	Electricity cables	0	0	0	0	-
37	4.4	Gas pipelines	0	0	0	0	-
37	4.5	Sites determined as Contaminated Land	0	0	0	0	-



37	4.6	Control of Major Accident Hazards (COMAH)	0	0	0	0	-
38	4.7	Regulated explosive sites	0	0	0	0	-
38	4.8	Hazardous substance storage/usage	0	0	0	0	-
38	4.9	Historical licensed industrial activities (IPC)	0	0	0	0	-
38	4.10	Licensed industrial activities (Part A(1))	0	0	0	0	-
38	4.11	<u>Licensed pollutant release (Part A(2)/B)</u>	0	1	0	0	-
39	4.12	Radioactive Substance Authorisations	0	0	0	0	-
39	4.13	<u>Licensed Discharges to controlled waters</u>	0	0	0	4	-
40	4.14	Pollutant release to surface waters (Red List)	0	0	0	0	-
40	4.15	Pollutant release to public sewer	0	0	0	0	-
40	4.16	List 1 Dangerous Substances	0	0	0	0	-
40	4.17	List 2 Dangerous Substances	0	0	0	0	-
41	4.18	<u>Pollution Incidents (EA/NRW)</u>	0	1	0	3	-
41	4.19	Pollution inventory substances	0	0	0	0	-
42	4.20	Pollution inventory waste transfers	0	0	0	0	-
42	4.21	Pollution inventory radioactive waste	0	0	0	0	-
Page	Section	Hydrogeology	On site	0-50m	50-250m	250-500m	500-2000m
43	5.1	<u>Superficial aquifer</u>	Identified (within 500m)				
45	5.2	<u>Bedrock aquifer</u>	Identified (within 500m)				
46	5.3	<u>Groundwater vulnerability</u>	Identified (within 50m)				
47	5.4	Groundwater vulnerability- soluble rock risk	None (within 0m)				
47	5.5	<u>Groundwater vulnerability- local information</u>	Identified (within 0m)				
48	5.6	<u>Groundwater abstractions</u>	0	0	0	0	5
50	5.7	Surface water abstractions	0	0	0	0	0
50	5.8	Potable abstractions	0	0	0	0	0
50	5.9	Source Protection Zones	0	0	0	0	-
50	5.10	Source Protection Zones (confined aquifer)	0	0	0	0	-
Page	Section	Hydrology	On site	0-50m	50-250m	250-500m	500-2000m
51	6.1	<u>Water Network (OS MasterMap)</u>	0	0	1	-	-



52	6.2	<u>Surface water features</u>	0	0	1	-	-
52	6.3	<u>WFD Surface water body catchments</u>	1	-	-	-	-
52	6.4	<u>WFD Surface water bodies</u>	0	0	1	-	-
53	6.5	<u>WFD Groundwater bodies</u>	1	-	-	-	-
Page	Section	River and coastal flooding	On site	0-50m	50-250m	250-500m	500-2000m
54	7.1	Risk of flooding from rivers and the sea	None (within 50m)				
55	7.2	<u>Historical Flood Events</u>	0	0	1	-	-
55	7.3	Flood Defences	0	0	0	-	-
55	7.4	Areas Benefiting from Flood Defences	0	0	0	-	-
55	7.5	Flood Storage Areas	0	0	0	-	-
56	7.6	Flood Zone 2	None (within 50m)				
56	7.7	Flood Zone 3	None (within 50m)				
Page	Section	Surface water flooding					
57	8.1	<u>Surface water flooding</u>	1 in 30 year, 0.1m - 0.3m (within 50m)				
Page	Section	Groundwater flooding					
59	9.1	<u>Groundwater flooding</u>	Low (within 50m)				
Page	Section	Environmental designations	On site	0-50m	50-250m	250-500m	500-2000m
60	10.1	Sites of Special Scientific Interest (SSSI)	0	0	0	0	0
61	10.2	Conserved wetland sites (Ramsar sites)	0	0	0	0	0
61	10.3	Special Areas of Conservation (SAC)	0	0	0	0	0
61	10.4	Special Protection Areas (SPA)	0	0	0	0	0
61	10.5	National Nature Reserves (NNR)	0	0	0	0	0
62	10.6	<u>Local Nature Reserves (LNR)</u>	0	0	0	0	1
62	10.7	Designated Ancient Woodland	0	0	0	0	0
62	10.8	Biosphere Reserves	0	0	0	0	0
62	10.9	Forest Parks	0	0	0	0	0
63	10.10	Marine Conservation Zones	0	0	0	0	0
63	10.11	<u>Green Belt</u>	0	0	1	1	10
63	10.12	Proposed Ramsar sites	0	0	0	0	0



64	10.13	Possible Special Areas of Conservation (pSAC)	0	0	0	0	0
64	10.14	Potential Special Protection Areas (pSPA)	0	0	0	0	0
64	10.15	Nitrate Sensitive Areas	0	0	0	0	0
64	10.16	Nitrate Vulnerable Zones	0	0	0	0	0
65	10.17	<u>SSSI Impact Risk Zones</u>	1	-	-	-	-
66	10.18	SSSI Units	0	0	0	0	0

Page	Section	Visual and cultural designations	On site	0-50m	50-250m	250-500m	500-2000m
67	11.1	World Heritage Sites	0	0	0	-	-
67	11.2	Area of Outstanding Natural Beauty	0	0	0	-	-
67	11.3	National Parks	0	0	0	-	-
67	11.4	Listed Buildings	0	0	0	-	-
68	11.5	Conservation Areas	0	0	0	-	-
68	11.6	Scheduled Ancient Monuments	0	0	0	-	-
68	11.7	Registered Parks and Gardens	0	0	0	-	-

Page	Section	Agricultural designations	On site	0-50m	50-250m	250-500m	500-2000m
69	12.1	<u>Agricultural Land Classification</u>	Urban (within 250m)				
70	12.2	Open Access Land	0	0	0	-	-
70	12.3	Tree Felling Licences	0	0	0	-	-
70	12.4	<u>Environmental Stewardship Schemes</u>	0	0	1	-	-
70	12.5	Countryside Stewardship Schemes	0	0	0	-	-

Page	Section	Habitat designations	On site	0-50m	50-250m	250-500m	500-2000m
71	13.1	Priority Habitat Inventory	0	0	0	-	-
71	13.2	Habitat Networks	0	0	0	-	-
71	13.3	Open Mosaic Habitat	0	0	0	-	-
71	13.4	Limestone Pavement Orders	0	0	0	-	-

Page	Section	Geology 1:10,000 scale	On site	0-50m	50-250m	250-500m	500-2000m
72	14.1	<u>10k Availability</u>	Identified (within 500m)				
73	14.2	<u>Artificial and made ground (10k)</u>	0	0	3	2	-
75	14.3	<u>Superficial geology (10k)</u>	1	0	1	1	-



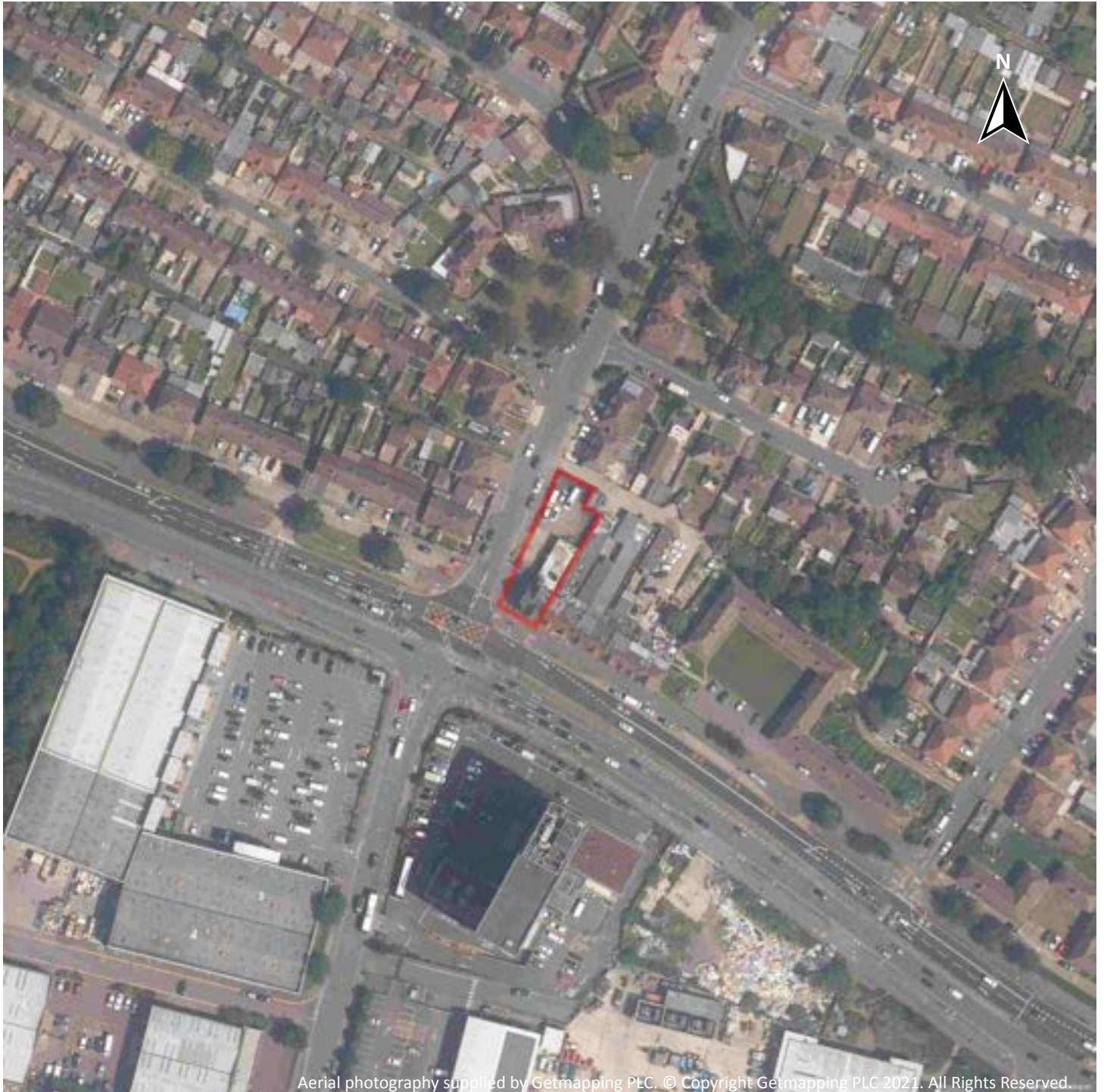
76	14.4	Landslip (10k)	0	0	0	0	-
77	14.5	<u>Bedrock geology (10k)</u>	1	0	0	0	-
78	14.6	Bedrock faults and other linear features (10k)	0	0	0	0	-
Page	Section	Geology 1:50,000 scale	On site	0-50m	50-250m	250-500m	500-2000m
79	15.1	<u>50k Availability</u>	Identified (within 500m)				
80	15.2	<u>Artificial and made ground (50k)</u>	0	0	3	4	-
81	15.3	Artificial ground permeability (50k)	0	0	-	-	-
82	15.4	<u>Superficial geology (50k)</u>	1	0	1	4	-
83	15.5	<u>Superficial permeability (50k)</u>	Identified (within 50m)				
83	15.6	Landslip (50k)	0	0	0	0	-
83	15.7	Landslip permeability (50k)	None (within 50m)				
84	15.8	<u>Bedrock geology (50k)</u>	1	0	0	1	-
85	15.9	<u>Bedrock permeability (50k)</u>	Identified (within 50m)				
85	15.10	Bedrock faults and other linear features (50k)	0	0	0	0	-
Page	Section	Boreholes	On site	0-50m	50-250m	250-500m	500-2000m
86	16.1	<u>BGS Boreholes</u>	0	0	1	-	-
Page	Section	Natural ground subsidence					
87	17.1	<u>Shrink swell clays</u>	Very low (within 50m)				
88	17.2	<u>Running sands</u>	Negligible (within 50m)				
89	17.3	<u>Compressible deposits</u>	Negligible (within 50m)				
90	17.4	<u>Collapsible deposits</u>	Low (within 50m)				
91	17.5	<u>Landslides</u>	Very low (within 50m)				
92	17.6	<u>Ground dissolution of soluble rocks</u>	Negligible (within 50m)				
Page	Section	Mining, ground workings and natural cavities	On site	0-50m	50-250m	250-500m	500-2000m
93	18.1	Natural cavities	0	0	0	0	-
94	18.2	<u>BritPits</u>	0	0	2	9	-
96	18.3	<u>Surface ground workings</u>	0	5	13	-	-
97	18.4	Underground workings	0	0	0	0	0
97	18.5	<u>Historical Mineral Planning Areas</u>	0	0	1	0	-



97	18.6	Non-coal mining	0	0	0	0	0
97	18.7	Mining cavities	0	0	0	0	0
98	18.8	JPB mining areas	None (within 0m)				
98	18.9	Coal mining	None (within 0m)				
98	18.10	Brine areas	None (within 0m)				
98	18.11	Gypsum areas	None (within 0m)				
98	18.12	Tin mining	None (within 0m)				
99	18.13	Clay mining	None (within 0m)				
Page	Section	Radon					
100	19.1	Radon	Less than 1% (within 0m)				
Page	Section	Soil chemistry	On site	0-50m	50-250m	250-500m	500-2000m
101	20.1	BGS Estimated Background Soil Chemistry	1	0	-	-	-
101	20.2	BGS Estimated Urban Soil Chemistry	4	0	-	-	-
102	20.3	BGS Measured Urban Soil Chemistry	0	0	-	-	-
Page	Section	Railway infrastructure and projects	On site	0-50m	50-250m	250-500m	500-2000m
103	21.1	Underground railways (London)	0	0	0	-	-
103	21.2	Underground railways (Non-London)	0	0	0	-	-
104	21.3	Railway tunnels	0	0	0	-	-
104	21.4	Historical railway and tunnel features	0	0	9	-	-
104	21.5	Royal Mail tunnels	0	0	0	-	-
105	21.6	Historical railways	0	0	0	-	-
105	21.7	Railways	0	0	0	-	-
105	21.8	Crossrail 1	0	0	0	0	-
105	21.9	Crossrail 2	0	0	0	0	-
105	21.10	HS2	0	0	0	0	-



Recent aerial photograph

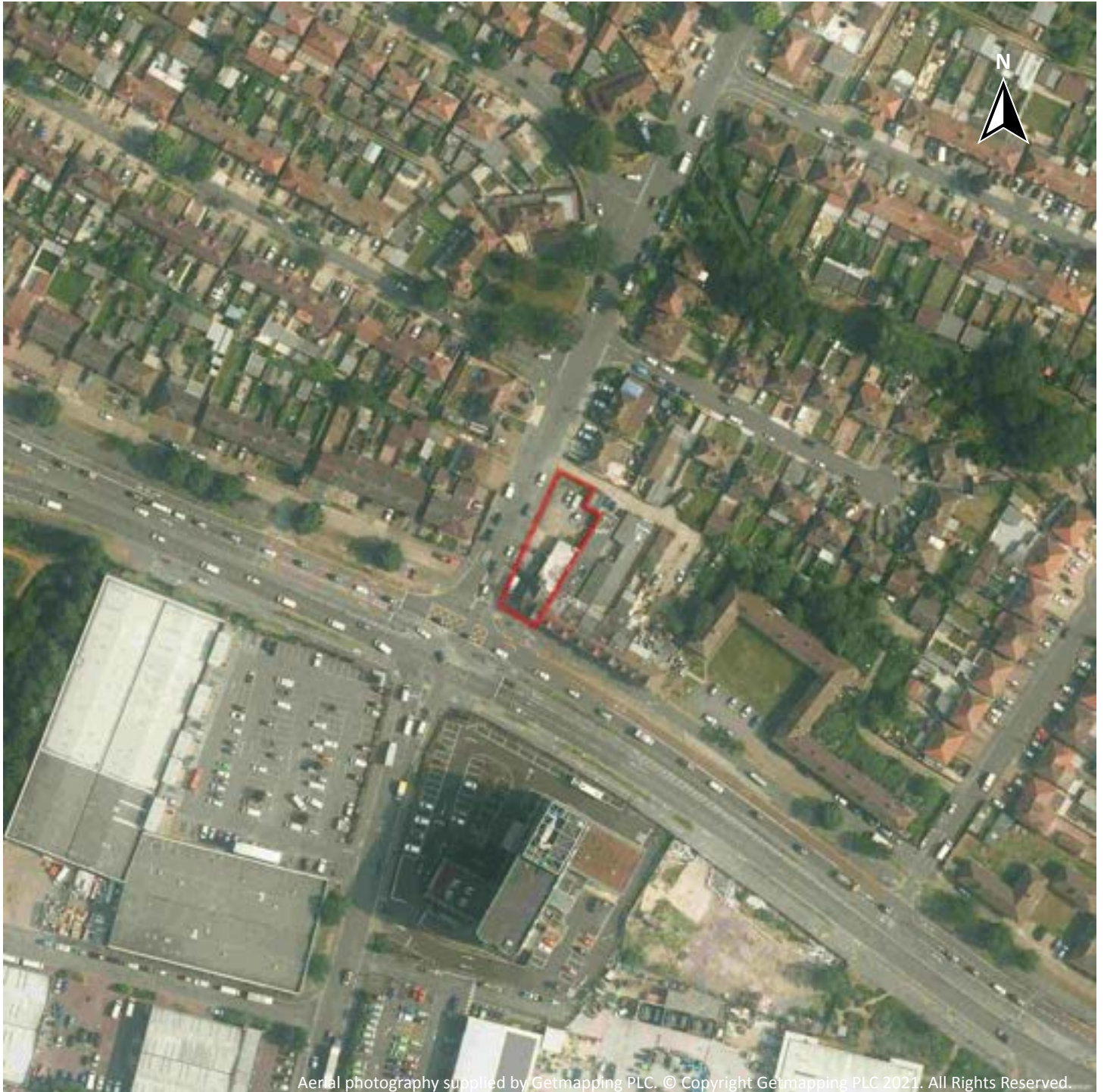


Capture Date: 29/06/2019

Site Area: 0.07ha



Recent site history - 2017 aerial photograph

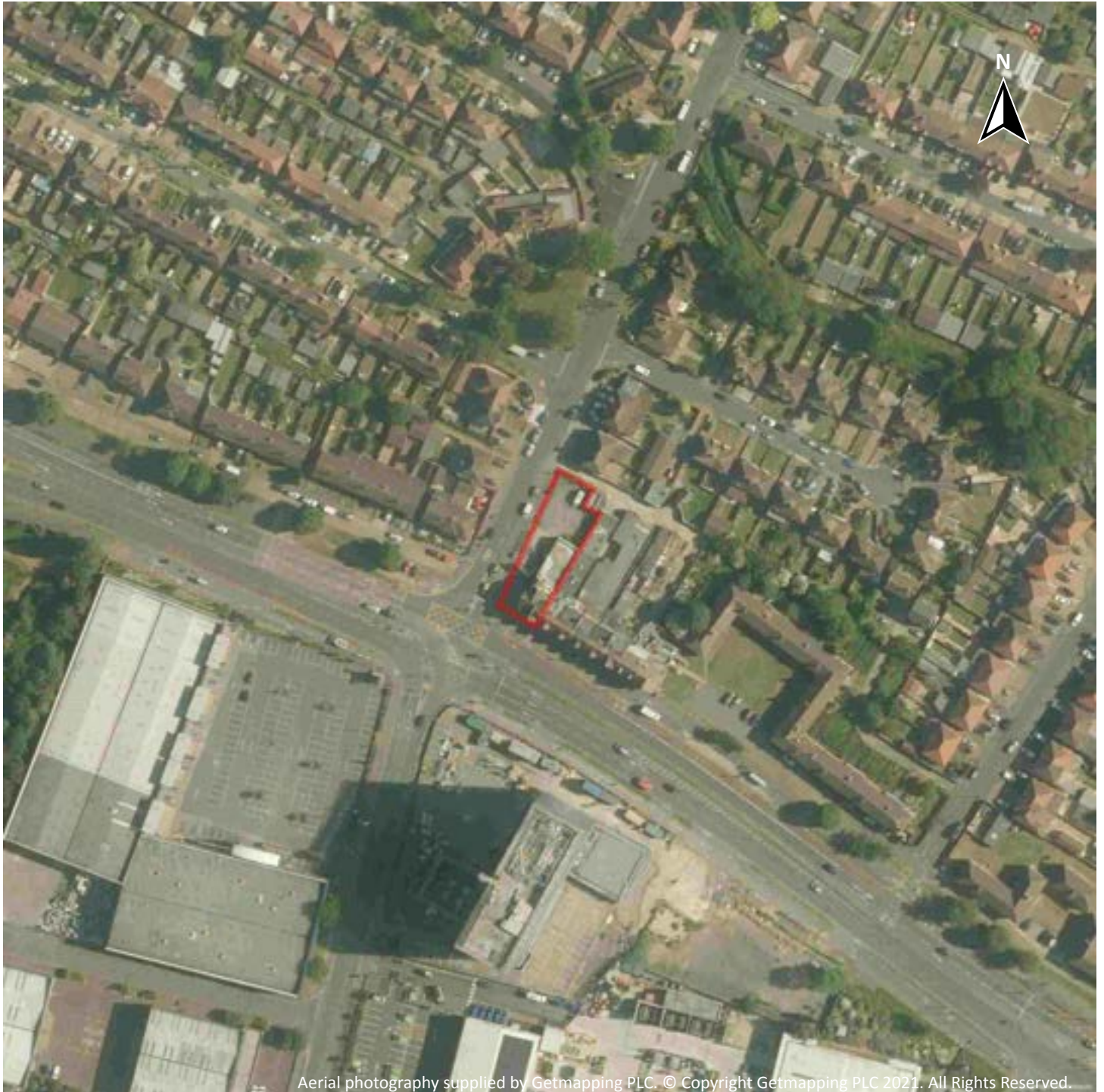


Capture Date: 21/06/2017

Site Area: 0.07ha



Recent site history - 2015 aerial photograph



Capture Date: 07/06/2015

Site Area: 0.07ha



Recent site history - 2013 aerial photograph

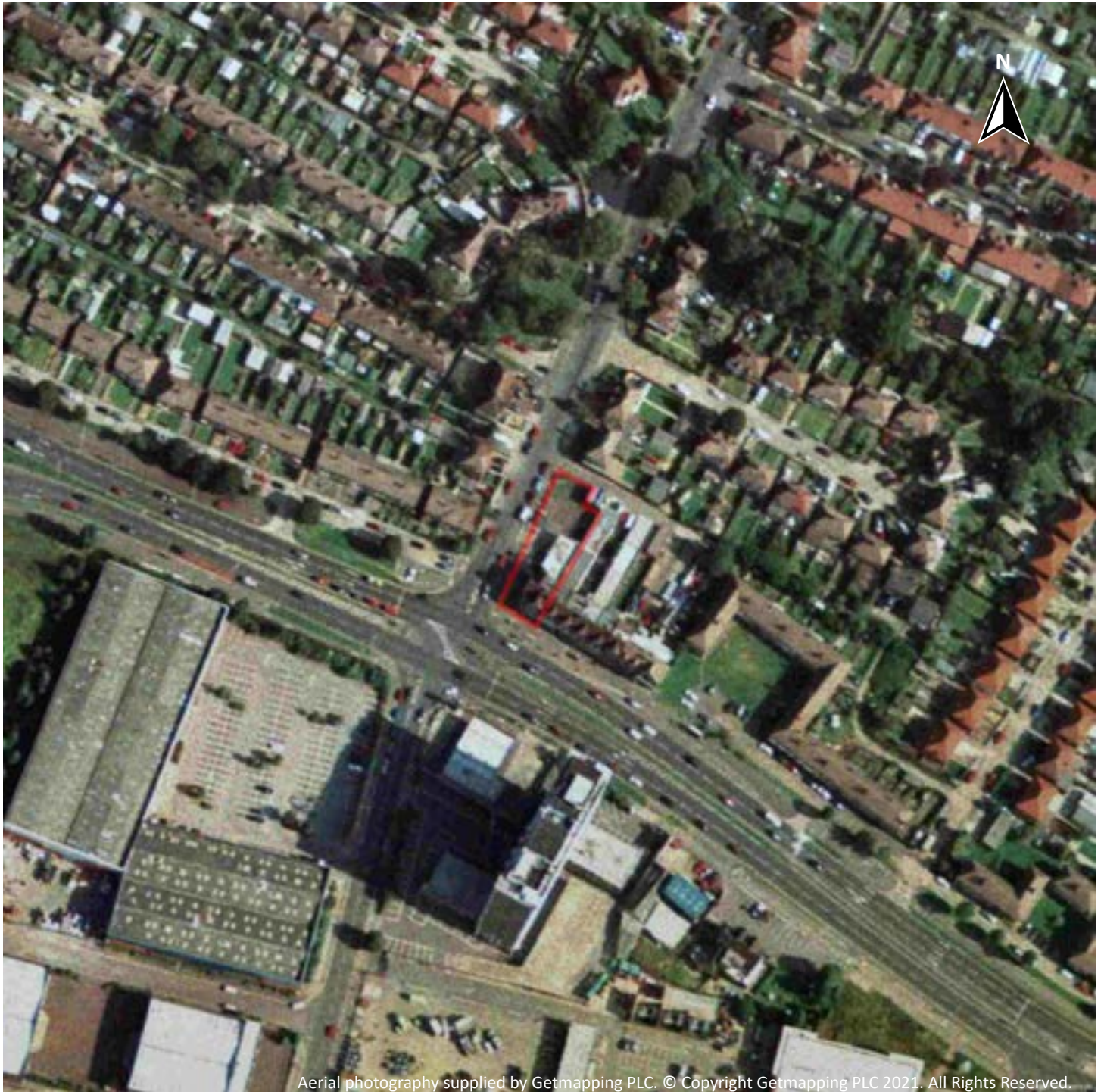


Capture Date: 20/04/2013

Site Area: 0.07ha



Recent site history - 1999 aerial photograph



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Capture Date: 29/08/1999

Site Area: 0.07ha



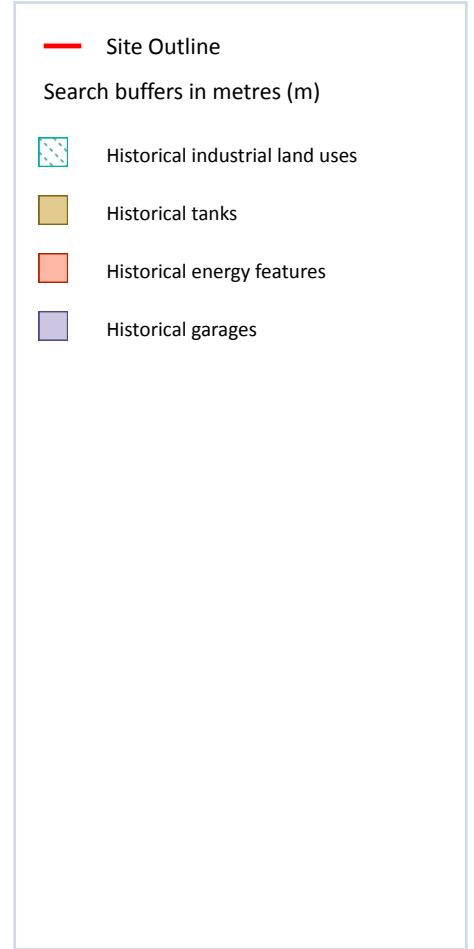
OS MasterMap site plan



Site Area: 0.07ha



1 Past land use



1.1 Historical industrial land uses

Records within 500m

72

Potentially contaminative land use features digitised from historical Ordnance Survey mapping at 1:10,000 and 1:10,560 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use map on **page 14**

ID	Location	Land use	Dates present	Group ID
A	19m SW	Brick Works	1938	2244546

ID	Location	Land use	Dates present	Group ID
C	36m SW	Unspecified Works	1973 - 1983	2208570
A	37m SW	Brick Works	1935	2246052
D	41m SW	Unspecified Works	1966	2252226
D	41m SW	Unspecified Factory	1959	2263062
E	43m SW	Brick Works	1920	2209940
D	43m SW	Unspecified Works	1973 - 1983	2186685
2	45m SW	Brick Works	1938	2232534
D	47m SW	Unspecified Warehouses	1994	2142525
F	100m W	Unspecified Works	1959	2278734
4	112m S	Unspecified Depot	1966	2211949
C	113m S	Unspecified Depot	1994	2262687
E	134m SW	Brick Works	1913	2197177
G	154m SE	Unspecified Factory	1959	2150962
G	154m SE	Unspecified Factories	1966 - 1994	2170688
6	155m SE	Tyre Factory	1935	2164750
H	168m S	Tramway Sidings	1913 - 1920	2226214
E	169m SW	Unspecified Pit	1913 - 1920	2260873
C	181m S	Refuse Heap	1920	2158684
D	188m SW	Unspecified Factory	1994	2250070
F	190m W	Drying Shed	1935 - 1938	2186217
F	191m W	Drying Shed	1938	2205363
H	225m S	Bakery	1959	2140550
H	225m S	Unspecified Depot	1966	2209017
D	230m SW	Railway Sidings	1938	2226092
H	240m SW	Railway Sidings	1935	2187701
E	242m SW	Railway Sidings	1920	2220873
H	261m S	Refuse Heap	1920	2158683
J	269m W	Refuse Heap	1938	2283063



ID	Location	Land use	Dates present	Group ID
J	270m W	Refuse Heap	1938	2189668
J	271m W	Refuse Heap	1935	2239140
K	274m SE	Unspecified Works	1966	2289332
K	280m SE	Unspecified Works	1959	2173322
K	285m SE	Unspecified Warehouse	1973 - 1983	2215647
K	285m SE	Unspecified Warehouse	1994	2170867
L	297m W	Unspecified Ground Workings	1935 - 1938	2210188
M	318m SW	Engine House	1938	2210736
M	322m SW	Engine House	1935 - 1938	2195060
E	329m SW	Unspecified Heap	1920	2136404
L	335m SW	Refuse Heap	1935	2232147
L	335m SW	Refuse Heap	1938	2273386
O	339m SE	Unspecified Depot	1959	2275818
P	339m SE	Unspecified Depot	1973 - 1994	2269172
L	340m SW	Refuse Heap	1938	2288425
K	342m SE	Unspecified Store	1994	2140470
Q	345m S	Engine House	1913	2158310
R	352m S	Unspecified Works	1959	2253345
R	352m S	Unspecified Works	1966 - 1983	2294036
S	354m S	Unspecified Commercial/Industrial	1994	2130845
Q	355m S	Engine House	1920	2158309
O	355m SE	Unspecified Wharf	1920	2172994
S	373m S	Unspecified Depot	1973 - 1983	2173105
O	396m SE	Timber Yard	1935	2130553
O	396m SE	Unspecified Wharf	1913	2174573
L	397m SW	Refuse Heap	1959	2196795
10	402m W	Unspecified Ground Workings	1959	2133598
K	403m SE	Unspecified Wharf	1938	2282862



ID	Location	Land use	Dates present	Group ID
K	416m SE	Unspecified Wharf	1913	2278386
K	424m S	Railway Sidings	1938	2213455
K	426m SE	Unspecified Wharf	1935 - 1938	2272836
K	427m S	Railway Sidings	1938	2264313
12	428m SE	Unspecified Wharf	1935	2157249
K	429m SE	Unspecified Mill	1966	2140628
K	437m SE	Unspecified Wharf	1920	2261760
V	440m E	Brick Works	1913 - 1920	2255928
V	451m E	Railway Sidings	1920	2254846
W	465m SE	Brick Field	1865	2181079
X	471m E	Refuse Heap	1920	2158685
X	473m E	Gravel Pit	1913	2138949
W	477m SE	Brick Field	1882	2240717
K	484m SE	Tramway Sidings	1920	2151128
K	493m SE	Unspecified Wharf	1913	2174637

This data is sourced from Ordnance Survey / Groundsure.

1.2 Historical tanks

Records within 500m

26

Tank features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original ungrouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use map on **page 14**

ID	Location	Land use	Dates present	Group ID
3	47m NE	Unspecified Tank	1914	363611
D	131m SW	Unspecified Tank	1940	363618
5	136m W	Unspecified Tank	1940	363612



ID	Location	Land use	Dates present	Group ID
7	165m SE	Tanks	1974	375960
D	174m SW	Tanks	1974	375957
D	188m SW	Unspecified Tank	1940	363616
D	193m SW	Unspecified Tank	1960 - 1961	394555
D	252m SW	Unspecified Tank	1974 - 1995	405995
N	360m S	Unspecified Tank	1973	401598
N	360m S	Unspecified Tank	1988	381959
N	360m S	Unspecified Tank	1990	386744
T	419m S	Unspecified Tank	1973	400002
T	419m S	Unspecified Tank	1988 - 1990	409306
T	424m S	Tanks	1973	375959
K	436m SE	Tanks	1973	376061
T	450m S	Unspecified Tank	1973	363619
K	458m SE	Unspecified Tank	1973 - 1990	390641
R	459m S	Tanks	1960	398763
R	459m S	Tanks	1976	380934
R	459m S	Tanks	1961	402181
R	461m S	Unspecified Tank	1960	393689
R	461m S	Unspecified Tank	1976	385829
R	461m S	Unspecified Tank	1961	405416
S	485m S	Tanks	1976	375958
S	495m S	Unspecified Tank	1989	363622
S	496m S	Tanks	1976	375956

This data is sourced from Ordnance Survey / Groundsure.



1.3 Historical energy features

Records within 500m	22
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Energy features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original ungrouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use map on **page 14**

ID	Location	Land use	Dates present	Group ID
1	On site	Electricity Substation	1974 - 1995	279204
8	194m SW	Electricity Substation	1974 - 1995	259150
I	241m SW	Electricity Substation	1991 - 1995	268352
I	256m SW	Electricity Substation	1974 - 1986	274575
N	331m S	Electricity Substation	1976 - 1989	258411
N	338m S	Electricity Substation	1973	256770
N	338m S	Electricity Substation	1976	256771
N	339m S	Electricity Substation	1989	256595
N	341m S	Electricity Substation	1988	254029
N	341m S	Electricity Substation	1990	254032
O	345m SE	Electricity Substation	1973 - 1999	268177
P	356m E	Electricity Substation	1973 - 1991	290193
K	358m SE	Electricity Substation	1973	243991
9	361m NW	Electricity Substation	1993	274751
K	370m SE	Electricity Substation	1991	243990
P	387m E	Electricity Substation	1999	244006
K	389m SE	Electricity Substation	1988 - 1990	270546
K	392m SE	Electricity Substation	1973	288955
11	416m N	Electricity Substation	1993	270954
T	435m S	Electricity Substation	1990	243989
U	436m E	Electricity Substation	1991 - 1999	277330



ID	Location	Land use	Dates present	Group ID
U	437m E	Electricity Substation	1973	292092

This data is sourced from Ordnance Survey / Groundsure.

1.4 Historical petrol stations

Records within 500m

0

Petrol stations digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original ungrouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

This data is sourced from Ordnance Survey / Groundsure.

1.5 Historical garages

Records within 500m

4

Garages digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original ungrouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use map on **page 14**

ID	Location	Land use	Dates present	Group ID
B	33m SW	Garage	1986	82788
B	34m SW	Garage	1993 - 1995	83709
B	34m SW	Garage	1974	77005
B	35m SW	Garage	1991	77271

This data is sourced from Ordnance Survey / Groundsure.



1.6 Historical military land

Records within 500m

0

Areas of military land digitised from multiple sources including the National Archives, local records, MOD records and verified other sources, intelligently grouped into contiguous features.

This data is sourced from Ordnance Survey / Groundsure / other sources.



2 Past land use - un-grouped



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- Site Outline
- Search buffers in metres (m)
- Historical industrial land uses
- Historical tanks
- Historical energy features
- Historical garages

2.1 Historical industrial land uses

Records within 500m

95

Potentially contaminative land use features digitised from historical Ordnance Survey mapping at 1:10,000 and 10,560 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use - un-grouped map on **page 22**

ID	Location	Land Use	Date	Group ID
B	19m SW	Brick Works	1938	2244546
D	36m SW	Unspecified Works	1983	2208570
D	36m SW	Unspecified Works	1973	2208570

ID	Location	Land Use	Date	Group ID
B	37m SW	Brick Works	1935	2246052
E	41m SW	Unspecified Factory	1959	2263062
E	41m SW	Unspecified Works	1966	2252226
F	43m SW	Brick Works	1920	2209940
E	43m SW	Unspecified Works	1983	2186685
E	43m SW	Unspecified Works	1973	2186685
G	45m SW	Brick Works	1938	2232534
G	45m SW	Brick Works	1938	2232534
E	47m SW	Unspecified Warehouses	1994	2142525
H	100m W	Unspecified Works	1959	2278734
1	112m S	Unspecified Depot	1966	2211949
D	113m S	Unspecified Depot	1994	2262687
F	134m SW	Brick Works	1913	2197177
I	154m SE	Unspecified Factories	1994	2170688
I	154m SE	Unspecified Factories	1983	2170688
I	154m SE	Unspecified Factories	1973	2170688
I	154m SE	Unspecified Factory	1959	2150962
I	154m SE	Unspecified Factories	1966	2170688
3	155m SE	Tyre Factory	1935	2164750
J	168m S	Tramway Sidings	1913	2226214
F	169m SW	Unspecified Pit	1913	2260873
J	174m S	Tramway Sidings	1920	2226214
F	175m SW	Unspecified Pit	1920	2260873
D	181m S	Refuse Heap	1920	2158684
E	188m SW	Unspecified Factory	1994	2250070
H	190m W	Drying Shed	1935	2186217
H	190m W	Drying Shed	1938	2186217
H	191m W	Drying Shed	1938	2205363



ID	Location	Land Use	Date	Group ID
J	225m S	Bakery	1959	2140550
J	225m S	Unspecified Depot	1966	2209017
E	230m SW	Railway Sidings	1938	2226092
E	233m SW	Railway Sidings	1938	2226092
J	240m SW	Railway Sidings	1935	2187701
F	242m SW	Railway Sidings	1920	2220873
J	261m S	Refuse Heap	1920	2158683
L	269m W	Refuse Heap	1938	2283063
L	269m W	Refuse Heap	1938	2283063
L	270m W	Refuse Heap	1938	2189668
L	271m W	Refuse Heap	1935	2239140
M	274m SE	Unspecified Works	1966	2289332
M	280m SE	Unspecified Works	1959	2173322
M	285m SE	Unspecified Warehouse	1983	2215647
M	285m SE	Unspecified Warehouse	1973	2215647
M	285m SE	Unspecified Warehouse	1994	2170867
N	297m W	Unspecified Ground Workings	1935	2210188
N	299m W	Unspecified Ground Workings	1938	2210188
O	318m SW	Engine House	1938	2210736
O	322m SW	Engine House	1938	2195060
O	323m SW	Engine House	1935	2195060
F	329m SW	Unspecified Heap	1920	2136404
N	335m SW	Refuse Heap	1935	2232147
N	335m SW	Refuse Heap	1938	2273386
Q	339m SE	Unspecified Depot	1959	2275818
R	339m SE	Unspecified Depot	1994	2269172
R	339m SE	Unspecified Depot	1983	2269172
R	339m SE	Unspecified Depot	1973	2269172



ID	Location	Land Use	Date	Group ID
N	340m SW	Refuse Heap	1938	2288425
N	340m SW	Refuse Heap	1938	2288425
M	342m SE	Unspecified Store	1994	2140470
S	345m S	Engine House	1913	2158310
T	352m S	Unspecified Works	1983	2294036
T	352m S	Unspecified Works	1973	2294036
T	352m S	Unspecified Works	1959	2253345
T	352m S	Unspecified Works	1966	2294036
U	354m S	Unspecified Commercial/Industrial	1994	2130845
S	355m S	Engine House	1920	2158309
Q	355m SE	Unspecified Wharf	1920	2172994
U	373m S	Unspecified Depot	1983	2173105
U	373m S	Unspecified Depot	1973	2173105
Q	396m SE	Timber Yard	1935	2130553
Q	396m SE	Unspecified Wharf	1913	2174573
N	397m SW	Refuse Heap	1959	2196795
5	402m W	Unspecified Ground Workings	1959	2133598
M	403m SE	Unspecified Wharf	1938	2282862
M	416m SE	Unspecified Wharf	1913	2278386
M	424m S	Railway Sidings	1938	2213455
M	426m SE	Unspecified Wharf	1938	2272836
M	426m SE	Unspecified Wharf	1938	2272836
M	427m S	Railway Sidings	1938	2264313
6	428m SE	Unspecified Wharf	1935	2157249
M	429m SE	Unspecified Mill	1966	2140628
M	430m SE	Unspecified Wharf	1935	2272836
M	437m SE	Unspecified Wharf	1920	2261760
Z	440m E	Brick Works	1920	2255928



ID	Location	Land Use	Date	Group ID
Z	451m E	Railway Sidings	1920	2254846
AA	465m SE	Brick Field	1865	2181079
AB	471m E	Refuse Heap	1920	2158685
AB	473m E	Gravel Pit	1913	2138949
AA	477m SE	Brick Field	1882	2240717
Z	482m E	Brick Works	1913	2255928
M	484m SE	Tramway Sidings	1920	2151128
M	493m SE	Unspecified Wharf	1913	2174637

This data is sourced from Ordnance Survey / Groundsure.

2.2 Historical tanks

Records within 500m

35

Tank features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use - un-grouped map on **page 22**

ID	Location	Land Use	Date	Group ID
A	47m NE	Unspecified Tank	1914	363611
E	131m SW	Unspecified Tank	1940	363618
2	136m W	Unspecified Tank	1940	363612
4	165m SE	Tanks	1974	375960
E	174m SW	Tanks	1974	375957
E	188m SW	Unspecified Tank	1940	363616
E	193m SW	Unspecified Tank	1960	394555
E	194m SW	Unspecified Tank	1961	394555
E	252m SW	Unspecified Tank	1986	405995
E	252m SW	Unspecified Tank	1986	405995
E	252m SW	Unspecified Tank	1993	405995
E	252m SW	Unspecified Tank	1995	405995



ID	Location	Land Use	Date	Group ID
E	253m SW	Unspecified Tank	1991	405995
E	253m SW	Unspecified Tank	1974	405995
P	360m S	Unspecified Tank	1973	401598
P	360m S	Unspecified Tank	1988	381959
P	360m S	Unspecified Tank	1990	386744
X	419m S	Unspecified Tank	1973	400002
X	419m S	Unspecified Tank	1988	409306
X	419m S	Unspecified Tank	1990	409306
X	424m S	Tanks	1973	375959
M	436m SE	Tanks	1973	376061
X	450m S	Unspecified Tank	1973	363619
M	458m SE	Unspecified Tank	1988	390641
M	458m SE	Unspecified Tank	1990	390641
M	458m SE	Unspecified Tank	1973	390641
T	459m S	Tanks	1960	398763
T	459m S	Tanks	1976	380934
T	459m S	Tanks	1961	402181
T	461m S	Unspecified Tank	1960	393689
T	461m S	Unspecified Tank	1976	385829
T	461m S	Unspecified Tank	1961	405416
U	485m S	Tanks	1976	375958
U	495m S	Unspecified Tank	1989	363622
U	496m S	Tanks	1976	375956

This data is sourced from Ordnance Survey / Groundsure.



2.3 Historical energy features

Records within 500m

45

Energy features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use - un-grouped map on **page 22**

ID	Location	Land Use	Date	Group ID
A	On site	Electricity Substation	1974	279204
A	On site	Electricity Substation	1993	279204
A	On site	Electricity Substation	1986	279204
A	On site	Electricity Substation	1986	279204
A	On site	Electricity Substation	1995	279204
A	On site	Electricity Substation	1991	279204
K	194m SW	Electricity Substation	1986	259150
K	194m SW	Electricity Substation	1986	259150
K	195m SW	Electricity Substation	1974	259150
K	195m SW	Electricity Substation	1993	259150
K	195m SW	Electricity Substation	1995	259150
K	195m SW	Electricity Substation	1991	259150
K	241m SW	Electricity Substation	1991	268352
K	241m SW	Electricity Substation	1993	268352
K	241m SW	Electricity Substation	1995	268352
K	256m SW	Electricity Substation	1986	274575
K	256m SW	Electricity Substation	1986	274575
K	257m SW	Electricity Substation	1974	274575
P	331m S	Electricity Substation	1976	258411
P	332m S	Electricity Substation	1989	258411
P	338m S	Electricity Substation	1976	256771
P	339m S	Electricity Substation	1989	256595
P	341m S	Electricity Substation	1973	256770



ID	Location	Land Use	Date	Group ID
P	341m S	Electricity Substation	1988	254029
P	341m S	Electricity Substation	1990	254032
Q	345m SE	Electricity Substation	1973	268177
Q	345m SE	Electricity Substation	1999	268177
Q	345m SE	Electricity Substation	1991	268177
R	356m E	Electricity Substation	1991	290193
R	357m E	Electricity Substation	1973	290193
M	358m SE	Electricity Substation	1973	243991
V	361m NW	Electricity Substation	1993	274751
V	361m NW	Electricity Substation	1993	274751
M	370m SE	Electricity Substation	1991	243990
R	387m E	Electricity Substation	1999	244006
M	389m SE	Electricity Substation	1988	270546
M	389m SE	Electricity Substation	1990	270546
M	392m SE	Electricity Substation	1973	288955
M	395m SE	Electricity Substation	1973	288955
W	416m N	Electricity Substation	1993	270954
W	416m N	Electricity Substation	1993	270954
X	435m S	Electricity Substation	1990	243989
Y	436m E	Electricity Substation	1999	277330
Y	436m E	Electricity Substation	1991	277330
Y	437m E	Electricity Substation	1973	292092

This data is sourced from Ordnance Survey / Groundsure.

2.4 Historical petrol stations

Records within 500m

0

Petrol stations digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.



This data is sourced from Ordnance Survey / Groundsure.

2.5 Historical garages

Records within 500m

6

Garages digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use - un-grouped map on **page 22**





ID	Location	Land Use	Date	Group ID
C	33m SW	Garage	1986	82788
C	33m SW	Garage	1986	82788
C	34m SW	Garage	1995	83709
C	34m SW	Garage	1993	83709
C	34m SW	Garage	1974	77005
C	35m SW	Garage	1991	77271

This data is sourced from Ordnance Survey / Groundsure.



3 Waste and landfill



- Site Outline
- Search buffers in metres (m)
-  Historical landfill (EA/NRW)
-  Historical landfill (LA/OS)
-  Historical waste sites
-  Licensed waste sites

3.1 Active or recent landfill

Records within 500m

0

Active or recently closed landfill sites under Environment Agency/Natural Resources Wales regulation.

This data is sourced from the Environment Agency and Natural Resources Wales.

3.2 Historical landfill (BGS records)

Records within 500m

0

Landfill sites identified on a survey carried out on behalf of the DoE in 1973. These sites may have been closed or operational at this time.

This data is sourced from the British Geological Survey.

3.3 Historical landfill (LA/mapping records)

Records within 500m	2
----------------------------	----------

Landfill sites identified from Local Authority records and high detail historical mapping.

Features are displayed on the Waste and landfill map on **page 31**

ID	Location	Site address	Source	Data type
1	122m W	Minet	London Borough of Hillingdon	Polygon
A	122m W	Minet	Environmental Agency (via London Borough of Hillingdon)	Polygon

This data is sourced from the Ordnance Survey/Groundsure and Local Authority records.

3.4 Historical landfill (EA/NRW records)

Records within 500m	1
----------------------------	----------

Known historical (closed) landfill sites (e.g. sites where there is no PPC permit or waste management licence currently in force). This includes sites that existed before the waste licensing regime and sites that have been licensed in the past but where a licence has been revoked, ceased to exist or surrendered and a certificate of completion has been issued.

Features are displayed on the Waste and landfill map on **page 31**

ID	Location	Details		
A	125m W	Site Address: Minet Site D, Avondale Drive, Minet Estate Licence Holder Address: -	Waste Licence: Yes Site Reference: DL228, 8HI053, HIL062 Waste Type: Inert Environmental Permitting Regulations (Waste) Reference: - Licence Issue: 25/03/1986 Licence Surrender: 24/07/1989	Operator: - Licence Holder: Wimpey Construction UK Limited First Recorded 31/05/1986 Last Recorded: 24/07/1989

This data is sourced from the Environment Agency and Natural Resources Wales.

3.5 Historical waste sites

Records within 500m	2
----------------------------	----------

Waste site records derived from Local Authority planning records and high detail historical mapping.

Features are displayed on the Waste and landfill map on **page 31**

ID	Location	Address	Further Details	Date
2	288m SE	Site Address: 1 - 3 Uxbridge Road, HayesHillingdonUB4 0JN	Type of Site: Absorbent Hygiene Products (ahp) Recycling Facility Unit (Conversion) Planning application reference: 1911/APP/2016/1472 Description: Scheme comprises change of use of unit 4 to absorbent hygiene products (ahp) recycling facility and associated alterations to the external elevations, addition of an exhaust stack, storage tanks and substation. Data source: Historic Planning Application Data Type: Point	-
3	367m SE	Site Address: Unit 4, 1 Uxbridge Road, Hayes, Hillingdon, UB4 0JN	Type of Site: Recycling Facility (Conversion) Planning application reference: 1911/APP/2015/3211 Description: Scheme comprises change of use of unit 4 to absorbent hygiene products (ahp) recycling facility. Data source: Historic Planning Application Data Type: Point	-

This data is sourced from Ordnance Survey/Groundsure and Local Authority records.

3.6 Licensed waste sites

Records within 500m	2
----------------------------	----------

Active or recently closed waste sites under Environment Agency/Natural Resources Wales regulation.

Features are displayed on the Waste and landfill map on **page 31**

ID	Location	Details		
B	140m S	Site Name: Hayes Depot Site Address: Elystan Business Centre, Springfield Road, Hayes, Middlesex, UB4 0UP Correspondence Address: -	Type of Site: Storage of electrical insulating oils Size: 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: SEP010 EPR reference: EA/EPR/CB3000CU/V002 Operator: Southern Electric Power Distribution Plc Waste Management licence No: 401723 Annual Tonnage: 0	Issue Date: 11/05/2015 Effective Date: - Modified: 06/10/2017 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified

ID	Location	Details		
B	142m S	Site Name: Hayes Depot Site Address: Elystan Business Centre, Springfield Road, Hayes, UB4 0UP Correspondence Address: -	Type of Site: Storage of electrical insulating oils Size: 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: SEP010 EPR reference: EA/EPR/CB3000CU/A001 Operator: Southern Electric Power Distribution P L C Waste Management licence No: 401723 Annual Tonnage: 0	Issue Date: 11/05/2015 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued

This data is sourced from the Environment Agency and Natural Resources Wales.

3.7 Waste exemptions

Records within 500m	0
----------------------------	----------

Activities involving the storage, treatment, use or disposal of waste that are exempt from needing a permit. Exemptions have specific limits and conditions that must be adhered to.

This data is sourced from the Environment Agency and Natural Resources Wales.

4 Current industrial land use



- Site Outline
- Search buffers in metres (m)
- Recent industrial land uses
- △ Current or recent petrol stations
- ◆ Licensed pollutant release (Part A(2)/B)
- ◆ Licensed Discharges to controlled waters
- Pollution Incidents (EA/NRW)

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4.1 Recent industrial land uses

Records within 250m

19

Current potentially contaminative industrial sites.

Features are displayed on the Current industrial land use map on **page 35**

ID	Location	Company	Address	Activity	Category
1	On site	Electricity Sub Station	Greater London, UB4	Electrical Features	Infrastructure and Facilities
2	135m S	Electricity Sub Stations	Greater London, UB4	Electrical Features	Infrastructure and Facilities
3	161m SE	Electricity Sub Station	Greater London, UB4	Electrical Features	Infrastructure and Facilities

ID	Location	Company	Address	Activity	Category
4	166m S	Mast	Greater London, UB4	Telecommunications Features	Infrastructure and Facilities
B	180m SW	Electricity Sub Station	Greater London, UB4	Electrical Features	Infrastructure and Facilities
B	197m SW	Elystan Business Centre	Greater London, UB4	Business Parks and Industrial Estates	Industrial Features
B	197m SW	Panways	Unit 2 Elystan Business Centre, Springfield Road, Hayes, Greater London, UB4 0UG	Distribution and Haulage	Transport, Storage and Delivery
B	202m SW	Safetech Systems Ltd	Safetech House 1 Hexagon Business Centre, Springfield Road, Hayes, Greater London, UB4 0TH	Electronic Equipment	Industrial Products
B	202m SW	S T S Distribution Ltd	Safetech House 1 Hexagon Business Centre, Springfield Road, Hayes, Greater London, UB4 0TH	Distribution and Haulage	Transport, Storage and Delivery
B	207m SW	Polish Village Bread Ltd	Springfield Road, Hayes, Greater London, UB4 0JT	Baking and Confectionery	Foodstuffs
C	208m SE	webuyanyca r.com	1-3 Hayes Bridge Retail Park, Uxbridge Road, Hayes, Greater London, UB4 0RH	Secondhand Vehicles	Motoring
C	208m SE	Bensons for Beds	1-3 Hayes Bridge Retail Park, Uxbridge Road, Hayes, Greater London, UB4 0RH	Beds and Bedding	Consumer Products
B	212m SW	Euro Car Parts	Unit 3 Elystan Business Centre, Springfield Road, Hayes, Greater London, UB4 0UP	Vehicle Parts and Accessories	Motoring
5	220m S	Works	Greater London, UB4	Unspecified Works Or Factories	Industrial Features
6	223m E	Outfall	Greater London, UB4	Waste Storage, Processing and Disposal	Infrastructure and Facilities
B	228m SW	Business Centre	Greater London, UB4	Business Parks and Industrial Estates	Industrial Features
7	228m NE	Electricity Sub Station	Greater London, UB4	Electrical Features	Infrastructure and Facilities
B	230m S	Electricity Sub Station	Greater London, UB4	Electrical Features	Infrastructure and Facilities
B	249m SW	Electricity Sub Station	Greater London, UB4	Electrical Features	Infrastructure and Facilities

This data is sourced from Ordnance Survey.



4.2 Current or recent petrol stations

Records within 500m

1

Open, closed, under development and obsolete petrol stations.

Features are displayed on the Current industrial land use map on **page 35**

ID	Location	Company	Address	LPG	Status
9	292m W	OBSOLETE	29, Uxbridge Road, Southall, Outer London, UB1 3DD	Not Applicable	Obsolete

This data is sourced from Experian.

4.3 Electricity cables

Records within 500m

0

High voltage underground electricity transmission cables.

This data is sourced from National Grid.

4.4 Gas pipelines

Records within 500m

0

High pressure underground gas transmission pipelines.

This data is sourced from National Grid.

4.5 Sites determined as Contaminated Land

Records within 500m

0

Contaminated Land Register of sites designated under Part 2a of the Environmental Protection Act 1990.

This data is sourced from Local Authority records.

4.6 Control of Major Accident Hazards (COMAH)

Records within 500m

0

Control of Major Accident Hazards (COMAH) sites. This data includes upper and lower tier sites, and includes a historical archive of COMAH sites and Notification of Installations Handling Hazardous Substances (NIHHS) records.

This data is sourced from the Health and Safety Executive.



4.7 Regulated explosive sites

Records within 500m

0

Sites registered and licensed by the Health and Safety Executive under the Manufacture and Storage of Explosives Regulations 2005 (MSER). The last update to this data was in April 2011.

This data is sourced from the Health and Safety Executive.

4.8 Hazardous substance storage/usage

Records within 500m

0

Consents granted for a site to hold certain quantities of hazardous substances at or above defined limits in accordance with the Planning (Hazardous Substances) Regulations 2015.

This data is sourced from Local Authority records.

4.9 Historical licensed industrial activities (IPC)

Records within 500m

0

Integrated Pollution Control (IPC) records of substance releases to air, land and water. This data represents a historical archive as the IPC regime has been superseded.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.10 Licensed industrial activities (Part A(1))

Records within 500m

0

Records of Part A(1) installations regulated under the Environmental Permitting (England and Wales) Regulations 2016 for the release of substances to the environment.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.11 Licensed pollutant release (Part A(2)/B)

Records within 500m

1

Records of Part A(2) and Part B installations regulated under the Environmental Permitting (England and Wales) Regulations 2016 for the release of substances to the environment.

Features are displayed on the Current industrial land use map on **page 35**

ID	Location	Address	Details	
A	44m S	Kusum Service Station, 33 Uxbridge Road, Hayes	Process: Unloading of Petrol into Storage at Service Stations Status: Historical Permit Permit Type: Part B	Enforcement: No Enforcement Notified Date of enforcement: No Enforcement Notified Comment: No Enforcement Notified

This data is sourced from Local Authority records.

4.12 Radioactive Substance Authorisations

Records within 500m	0
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Records of the storage, use, accumulation and disposal of radioactive substances regulated under the Radioactive Substances Act 1993.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.13 Licensed Discharges to controlled waters

Records within 500m	4
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Discharges of treated or untreated effluent to controlled waters under the Water Resources Act 1991.

Features are displayed on the Current industrial land use map on **page 35**

ID	Location	Address	Details	
D	268m SE	Delamore Road, Hayes, Delamore Road, Hayes	Effluent Type: SEWAGE DISCHARGES - PUMPING STATION - WATER COMPANY Permit Number: TEMP.0827 Permit Version: 1 Receiving Water: WILLOW TREE BALANCING LAKE	Status: TEMPORARY CONSENTS (WATER ACT 1989, SECTION 113) Issue date: 02/11/1989 Effective Date: 02/11/1989 Revocation Date: 02/09/2010
D	268m SE	Delamore Road, Hayes, Delamore Road, Hayes	Effluent Type: SEWAGE DISCHARGES - PUMPING STATION - WATER COMPANY Permit Number: TEMP.0827 Permit Version: 2 Receiving Water: Willow Tree Balancing Lake	Status: REVOKED UNDER EPR 2010 Issue date: 03/09/2010 Effective Date: 03/09/2010 Revocation Date: 19/08/2014
10	325m S	SITE B DEVELOPMENT, BULLSBROOK ROAD, SITE B DEVELOPMENT BULLSBROOK R, OAD HAYES LONDON	Effluent Type: MISCELLANEOUS DISCHARGES - SURFACE WATER Permit Number: CNTW.0083 Permit Version: 1 Receiving Water: RIVER CRANE	Status: TRANSFERRED FROM WATER ACT 1989 Issue date: 09/10/1989 Effective Date: 09/10/1989 Revocation Date: 17/02/2003



ID	Location	Address	Details	
12	451m SE	BULLSBROOK ROAD, HAYES, MIDDLESEX, BULLSBROOK ROAD HAYES MIDDLESE, X	Effluent Type: MISCELLANEOUS DISCHARGES - SURFACE WATER Permit Number: CTWC.3603 Permit Version: 1 Receiving Water: RIVER CRANE	Status: TRANSFERRED FROM COPA 1974 Issue date: 04/08/1989 Effective Date: 04/08/1989 Revocation Date: -

This data is sourced from the Environment Agency and Natural Resources Wales.

4.14 Pollutant release to surface waters (Red List)

Records within 500m **0**

Discharges of specified substances under the Environmental Protection (Prescribed Processes and Substances) Regulations 1991.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.15 Pollutant release to public sewer

Records within 500m **0**

Discharges of Special Category Effluents to the public sewer.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.16 List 1 Dangerous Substances

Records within 500m **0**

Discharges of substances identified on List I of European Directive E 2006/11/EC, and regulated under the Environmental Damage (Prevention and Remediation) Regulations 2015.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.17 List 2 Dangerous Substances

Records within 500m **0**

Discharges of substances identified on List II of European Directive E 2006/11/EC, and regulated under the Environmental Damage (Prevention and Remediation) Regulations 2015.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.18 Pollution Incidents (EA/NRW)

Records within 500m

4

Records of substantiated pollution incidents. Since 2006 this data has only included category 1 (major) and 2 (significant) pollution incidents.

Features are displayed on the Current industrial land use map on **page 35**

ID	Location	Details	
A	33m SW	Incident Date: 04/10/2001 Incident Identification: 34657 Pollutant: Contaminated Water Pollutant Description: Other Contaminated Water	Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
8	291m SE	Incident Date: 02/09/2003 Incident Identification: 186744 Pollutant: Inert Materials and Wastes Pollutant Description: Construction and Demolition Materials and Wastes	Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 3 (Minor)
11	363m E	Incident Date: 06/06/2003 Incident Identification: 163848 Pollutant: Inert Materials and Wastes Pollutant Description: Other Inert Material or Waste	Water Impact: Category 4 (No Impact) Land Impact: Category 1 (Major) Air Impact: Category 4 (No Impact)
13	489m S	Incident Date: 28/04/2003 Incident Identification: 154345 Pollutant: Specific Waste Materials Pollutant Description: Household Waste	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)

This data is sourced from the Environment Agency and Natural Resources Wales.

4.19 Pollution inventory substances

Records within 500m

0

The pollution inventory (substances) includes reporting on annual emissions of certain regulated substances to air, controlled waters and land. A reporting threshold for each substance is also included. Where emissions fall below the reporting threshold, no value will be given. The data is given for the most recent complete year available.

This data is sourced from the Environment Agency and the Scottish Environment Protection Agency.



4.20 Pollution inventory waste transfers

Records within 500m

0

The pollution inventory (waste transfers) includes reporting on annual transfers and recovery/disposal of controlled wastes from a site. A reporting threshold for each waste type is also included. Where releases fall below the reporting threshold, no value will be given. The data is given for the most recent complete year available.

This data is sourced from the Environment Agency and the Scottish Environment Protection Agency.

4.21 Pollution inventory radioactive waste

Records within 500m

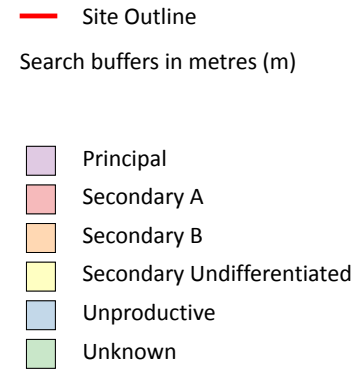
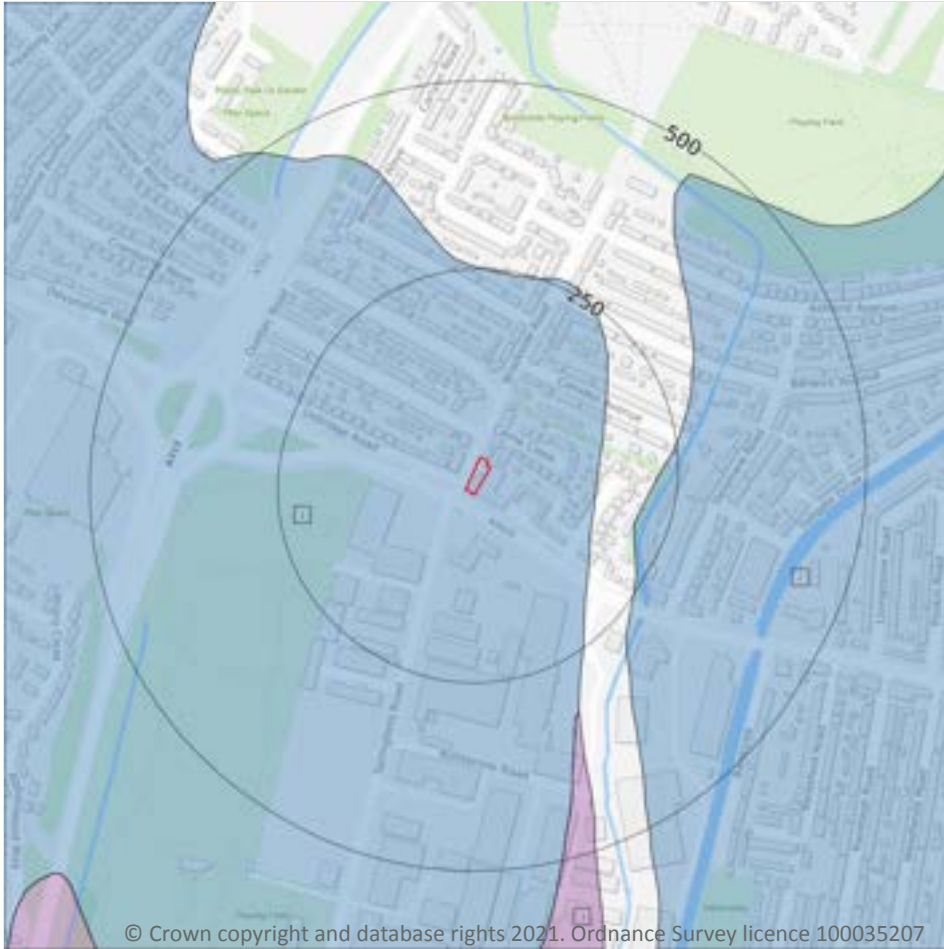
0

The pollution inventory (radioactive wastes) includes reporting on annual releases of radioactive substances from a site, including the means of release. Where releases fall below the reporting threshold, no value will be given. The data is given for the most recent complete year available.

This data is sourced from the Environment Agency and the Scottish Environment Protection Agency.



5 Hydrogeology - Superficial aquifer



5.1 Superficial aquifer

Records within 500m

3

Aquifer status of groundwater held within superficial geology.

Features are displayed on the Hydrogeology map on **page 43**

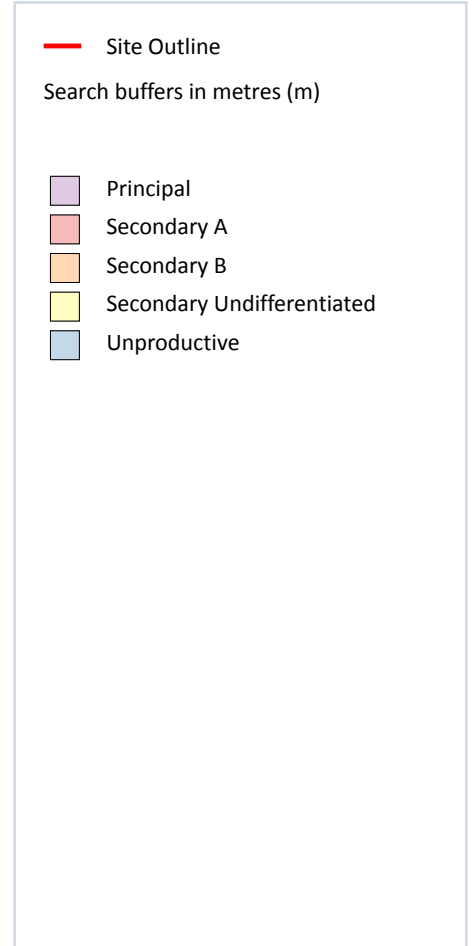
ID	Location	Designation	Description
1	On site	Unproductive	These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow
2	205m E	Unproductive	These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow

ID	Location	Designation	Description
3	321m SE	Principal	Geology of high intergranular and/or fracture permeability, usually providing a high level of water storage and may support water supply/river base flow on a strategic scale. Generally principal aquifers were previously major aquifers

This data is sourced from the British Geological Survey, the Environment Agency and Natural Resources Wales.



Bedrock aquifer



5.2 Bedrock aquifer

Records within 500m

1

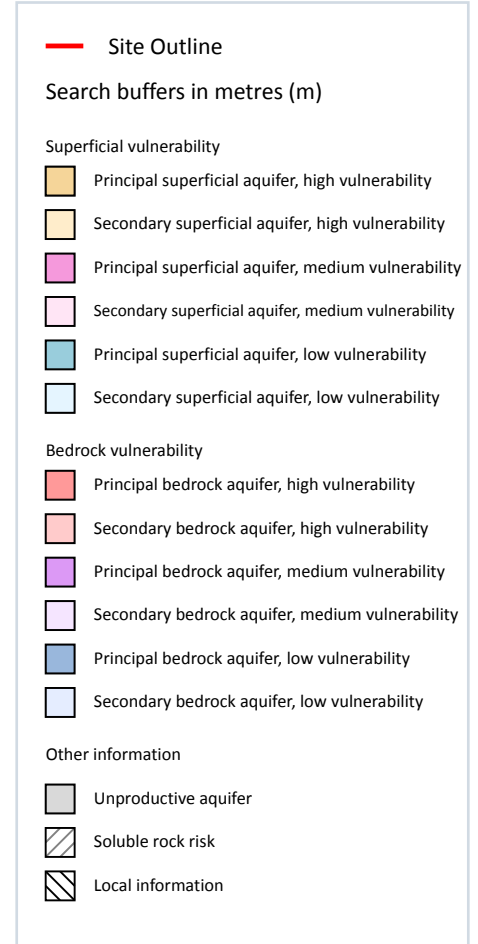
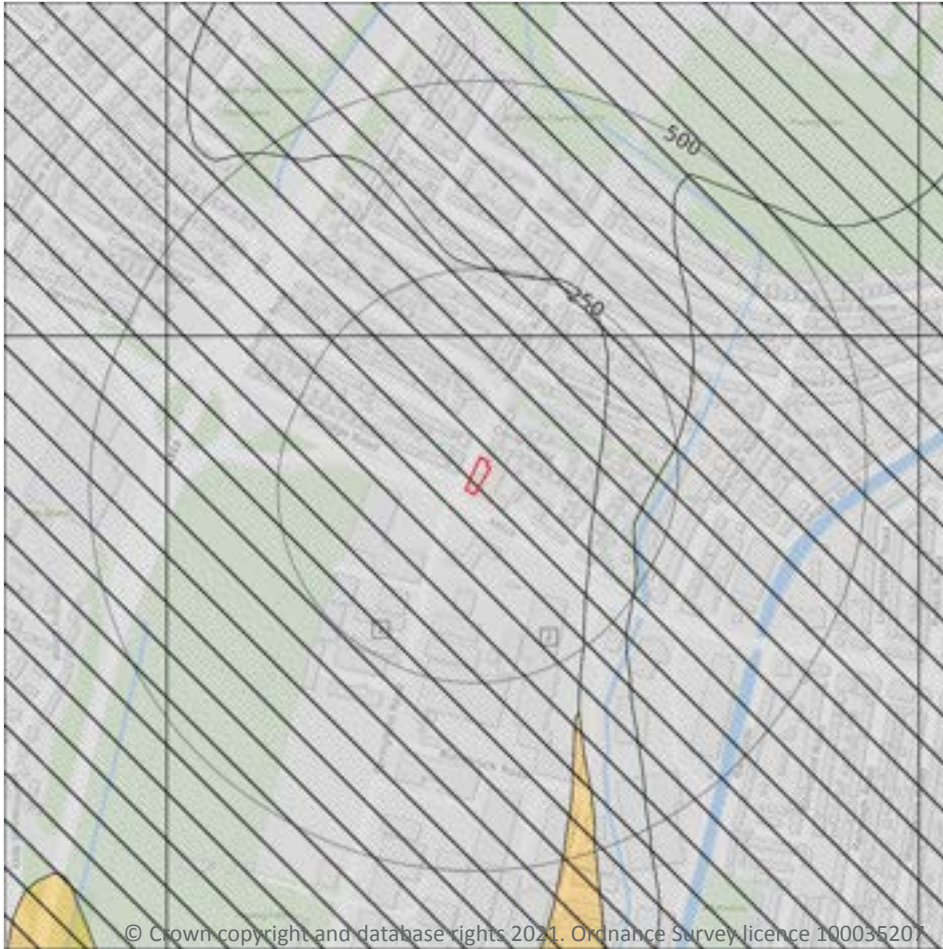
Aquifer status of groundwater held within bedrock geology.

Features are displayed on the Bedrock aquifer map on **page 45**

ID	Location	Designation	Description
1	On site	Unproductive	These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow

This data is sourced from the British Geological Survey, the Environment Agency and Natural Resources Wales.

Groundwater vulnerability



5.3 Groundwater vulnerability

Records within 50m

1

An assessment of the vulnerability of groundwater to a pollutant discharged at ground level based on the hydrological, geological, hydrogeological and soil properties within a one kilometre square grid. Groundwater vulnerability is described as High, Medium or Low as follows:

- High - Areas able to easily transmit pollution to groundwater. They are likely to be characterised by high leaching soils and the absence of low permeability superficial deposits.
- Medium - Intermediate between high and low vulnerability.
- Low - Areas that provide the greatest protection from pollution. They are likely to be characterised by low leaching soils and/or the presence of superficial deposits characterised by a low permeability.

Features are displayed on the Groundwater vulnerability map on **page 46**

ID	Location	Summary	Soil / surface	Superficial geology	Bedrock geology
1	On site	Summary Classification: Unproductive aquifer (may have productive aquifer beneath) Combined classification: Unproductive Bedrock Aquifer, Unproductive Superficial Aquifer	Leaching class: High Infiltration value: >70% Dilution value: 300-550mm/year	Vulnerability: Unproductive Aquifer type: Unproductive Thickness: 3-10m Patchiness value: >90% Recharge potential: High	Vulnerability: Unproductive Aquifer type: Unproductive Flow mechanism: Mixed

This data is sourced from the British Geological Survey, the Environment Agency and Natural Resources Wales.

5.4 Groundwater vulnerability- soluble rock risk

Records on site	0
------------------------	----------

This dataset identifies areas where solution features that enable rapid movement of a pollutant may be present within a 1km grid square.

This data is sourced from the British Geological Survey and the Environment Agency.

5.5 Groundwater vulnerability- local information

Records on site	1
------------------------	----------

This dataset identifies areas where additional local information affecting vulnerability is held by the Environment Agency. Further information can be obtained by contacting the Environment Agency local Area groundwater team through the Environment Agency National Customer Call Centre on 03798 506 506 or by email on enquiries@environment-agency.gov.uk.

ID	Summary	Additional information
2	Highly vulnerable Principal superficial aquifer present in river terrace gravels	Principal superficial aquifer in river terrace gravels with only a thin cover of low permeability silts and/or alluvium (shown as unproductive)

This data is sourced from the British Geological Survey and the Environment Agency.

Abstractions and Source Protection Zones



5.6 Groundwater abstractions

Records within 2000m

5

Licensed groundwater abstractions for sites extracting more than 20 cubic metres of water a day and includes active and historical records. The data may be for a single abstraction point, between two points (line data) or a larger area.

Features are displayed on the Abstractions and Source Protection Zones map on **page 48**

ID	Location	Details	
-	1413m S	Status: Historical Licence No: 28/39/36/0010 Details: Non-Evaporative Cooling Direct Source: THAMES GROUNDWATER Point: APEXES WORKS, SCOTTS ROAD, SOUTHALL-BOREHOLE A Data Type: Point Name: CHANCERYGATE GROUP LIMITED Easting: 511150 Northing: 179400	Annual Volume (m ³): 40914 Max Daily Volume (m ³): 114 Original Application No: - Original Start Date: 09/05/1966 Expiry Date: - Issue No: 102 Version Start Date: 09/12/2005 Version End Date: -
-	1448m S	Status: Historical Licence No: 28/39/36/0010 Details: Non-Evaporative Cooling Direct Source: THAMES GROUNDWATER Point: BOREHOLE AT APEXES WORKS, SCOTTS ROAD, SOUTHALL Data Type: Point Name: USC EUROPE UK LTD Easting: 511000 Northing: 179400	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 09/05/1966 Expiry Date: - Issue No: 100 Version Start Date: 11/09/1996 Version End Date: -
-	1917m SW	Status: Historical Licence No: TH/039/0036/011 Details: Boiler Feed Direct Source: THAMES GROUNDWATER Point: NESTLE COFFEE FACTORY-BOREHOLE Data Type: Point Name: NESTLE UK LIMITED Easting: 510238 Northing: 179269	Annual Volume (m ³): 473040 Max Daily Volume (m ³): 1296 Original Application No: - Original Start Date: 01/04/2013 Expiry Date: 31/03/2025 Issue No: 2 Version Start Date: 12/06/2014 Version End Date: -
-	1917m SW	Status: Historical Licence No: TH/039/0036/011 Details: Evaporative Cooling Direct Source: THAMES GROUNDWATER Point: NESTLE COFFEE FACTORY-BOREHOLE Data Type: Point Name: NESTLE UK LIMITED Easting: 510238 Northing: 179269	Annual Volume (m ³): 473040 Max Daily Volume (m ³): 1296 Original Application No: - Original Start Date: 01/04/2013 Expiry Date: 31/03/2025 Issue No: 2 Version Start Date: 12/06/2014 Version End Date: -
-	1929m SW	Status: Historical Licence No: 28/39/36/0072 Details: Evaporative Cooling Direct Source: THAMES GROUNDWATER Point: NESTLE COFFEE FACTORY-BOREHOLE Data Type: Point Name: NESTLE UK LIMITED Easting: 510230 Northing: 179260	Annual Volume (m ³): 609984 Max Daily Volume (m ³): 1728 Original Application No: - Original Start Date: 12/08/2005 Expiry Date: 31/03/2013 Issue No: 1 Version Start Date: 12/08/2005 Version End Date: -



This data is sourced from the Environment Agency and Natural Resources Wales.

5.7 Surface water abstractions

Records within 2000m

0

Licensed surface water abstractions for sites extracting more than 20 cubic metres of water a day and includes active and historical records. The data may be for a single abstraction point, a stretch of watercourse or a larger area.

This data is sourced from the Environment Agency and Natural Resources Wales.

5.8 Potable abstractions

Records within 2000m

0

Licensed potable water abstractions for sites extracting more than 20 cubic metres of water a day and includes active and historical records. The data may be for a single abstraction point, a stretch of watercourse or a larger area.

This data is sourced from the Environment Agency and Natural Resources Wales.

5.9 Source Protection Zones

Records within 500m

0

Source Protection Zones define the sensitivity of an area around a potable abstraction site to contamination.

This data is sourced from the Environment Agency and Natural Resources Wales.

5.10 Source Protection Zones (confined aquifer)

Records within 500m

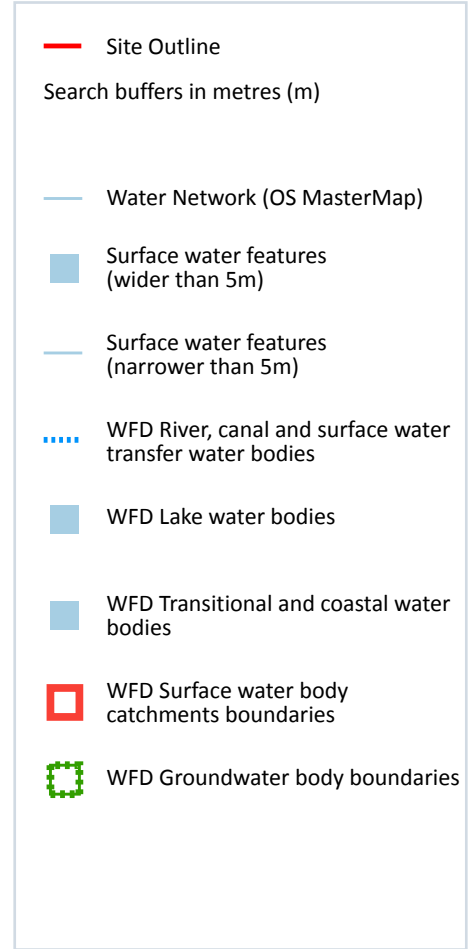
0

Source Protection Zones in the confined aquifer define the sensitivity around a deep groundwater abstraction to contamination. A confined aquifer would normally be protected from contamination by overlying geology and is only considered a sensitive resource if deep excavation/drilling is taking place.

This data is sourced from the Environment Agency and Natural Resources Wales.



6 Hydrology



6.1 Water Network (OS MasterMap)

Records within 250m

1

Detailed water network of Great Britain showing the flow and precise central course of every river, stream, lake and canal.

Features are displayed on the Hydrology map on **page 51**

ID	Location	Type of water feature	Ground level	Permanence	Name
5	218m E	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Yeading Brook

This data is sourced from the Ordnance Survey.

6.2 Surface water features

Records within 250m

1

Covering rivers, streams and lakes (some overlap with OS MasterMap Water Network data in previous section) but additionally covers smaller features such as ponds. Rivers and streams narrower than 5m are represented as a single line. Lakes, ponds and rivers or streams wider than 5m are represented as polygons.

Features are displayed on the Hydrology map on **page 51**

This data is sourced from the Ordnance Survey.

6.3 WFD Surface water body catchments

Records on site

1

The Water Framework Directive is an EU-led framework for the protection of inland surface waters, estuaries, coastal waters and groundwater through river basin-level management planning. In terms of surface water, these basins are broken down into smaller units known as management, operational and water body catchments.

Features are displayed on the Hydrology map on **page 51**

ID	Location	Type	Water body catchment	Water body ID	Operational catchment	Management catchment
2	On site	River WB catchment	Yeading Brook	GB106039023051	Crane Rivers and Lakes	London

This data is sourced from the Environment Agency and Natural Resources Wales.

6.4 WFD Surface water bodies

Records identified

1

Surface water bodies under the Directive may be rivers, lakes, estuary or coastal. To achieve the purpose of the Directive, environmental objectives have been set and are reported on for each water body. The progress towards delivery of the objectives is then reported on by the relevant competent authorities at the end of each six-year cycle. The river water body directly associated with the catchment listed in the previous section is detailed below, along with any lake, canal, coastal or artificial water body within 250m of the site. Click on the water body ID in the table to visit the EA Catchment Explorer to find out more about each water body listed.

Features are displayed on the Hydrology map on **page 51**

ID	Location	Type	Name	Water body ID	Overall rating	Chemical rating	Ecological rating	Year
4	218m E	River	Yeading Brook	GB106039023051	Moderate	Good	Moderate	2016



This data is sourced from the Environment Agency and Natural Resources Wales.

6.5 WFD Groundwater bodies

Records on site

1

Groundwater bodies are also covered by the Directive and the same regime of objectives and reporting detailed in the previous section is in place. Click on the water body ID in the table to visit the EA Catchment Explorer to find out more about each groundwater body listed.

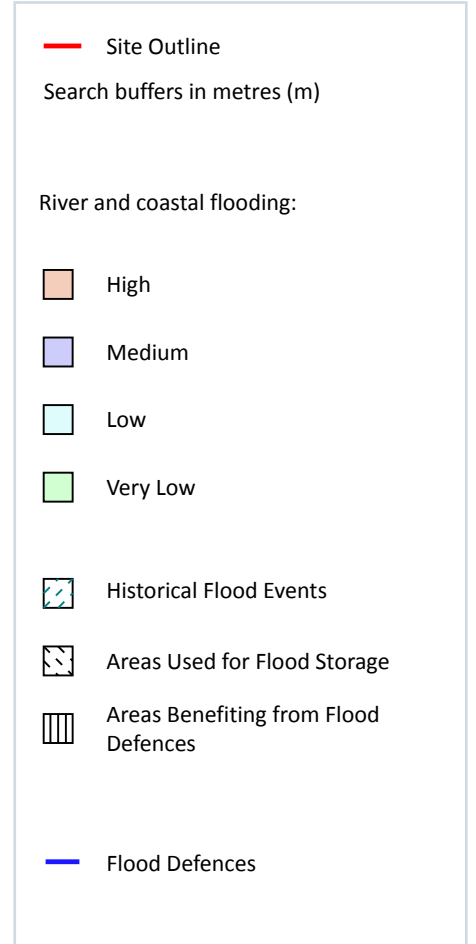
Features are displayed on the Hydrology map on **page 51**

ID	Location	Name	Water body ID	Overall rating	Chemical rating	Quantitative	Year
1	On site	Lower Thames Gravels	<u>GB40603G000300</u>	Good	Good	Good	2015

This data is sourced from the Environment Agency and Natural Resources Wales.



7 River and coastal flooding



7.1 Risk of flooding from rivers and the sea

Records within 50m

0

The chance of flooding from rivers and/or the sea in any given year, based on cells of 50m within the Risk of Flooding from Rivers and Sea (RoFRaS)/Flood Risk Assessment Wales (FRAW) models. Each cell is allocated one of four flood risk categories, taking into account flood defences and their condition. The risk categories for RoFRaS for rivers and the sea and FRAW for rivers are; Very low (less than 1 in 1000 chance in any given year), Low (less than 1 in 100 but greater than or equal to 1 in 1000 chance), Medium (less than 1 in 30 but greater than or equal to 1 in 100 chance) or High (greater than or equal to 1 in 30 chance). The risk categories for FRAW for the sea are; Very low (less than 1 in 1000 chance in any given year), Low (less than 1 in 200 but greater than or equal to 1 in 1000 chance), Medium (less than 1 in 30 but greater than or equal to 1 in 200 chance) or High (greater than or equal to 1 in 30 chance).

This data is sourced from the Environment Agency and Natural Resources Wales.

7.2 Historical Flood Events

Records within 250m

1

Records of historic flooding from rivers, the sea, groundwater and surface water. Records began in 1946 when predecessor bodies started collecting detailed information about flooding incidents, although limited details may be included on flooding incidents prior to this date. Takes into account the presence of defences, structures, and other infrastructure where they existed at the time of flooding, and includes flood extents that may have been affected by overtopping, breaches or blockages.

Features are displayed on the River and coastal flooding map on **page 54**

ID	Location	Event name	Date of flood	Flood source	Flood cause	Type of flood
A	204m E	06augustsummer1977	1977-01-01 1977-12-12	Other	Local drainage/surface water	No data

This data is sourced from the Environment Agency and Natural Resources Wales.

7.3 Flood Defences

Records within 250m

0

Records of flood defences owned, managed or inspected by the Environment Agency and Natural Resources Wales. Flood defences can be structures, buildings or parts of buildings. Typically these are earth banks, stone and concrete walls, or sheet-piling that is used to prevent or control the extent of flooding.

This data is sourced from the Environment Agency and Natural Resources Wales.

7.4 Areas Benefiting from Flood Defences

Records within 250m

0

Areas that would benefit from the presence of flood defences in a 1 in 100 (1%) chance of flooding each year from rivers or 1 in 200 (0.5%) chance of flooding each year from the sea.

This data is sourced from the Environment Agency and Natural Resources Wales.

7.5 Flood Storage Areas

Records within 250m

0

Areas that act as a balancing reservoir, storage basin or balancing pond to attenuate an incoming flood peak to a flow level that can be accepted by the downstream channel or to delay the timing of a flood peak so that its volume is discharged over a longer period.

This data is sourced from the Environment Agency and Natural Resources Wales.



River and coastal flooding - Flood Zones

7.6 Flood Zone 2

Records within 50m

0

Areas of land at risk of flooding, when the presence of flood defences are ignored. Covering land between Flood Zone 3 (see next section) and the extent of the flooding from rivers or the sea with a 1 in 1000 (0.1%) chance of flooding each year.

This data is sourced from the Environment Agency and Natural Resources Wales.

7.7 Flood Zone 3

Records within 50m

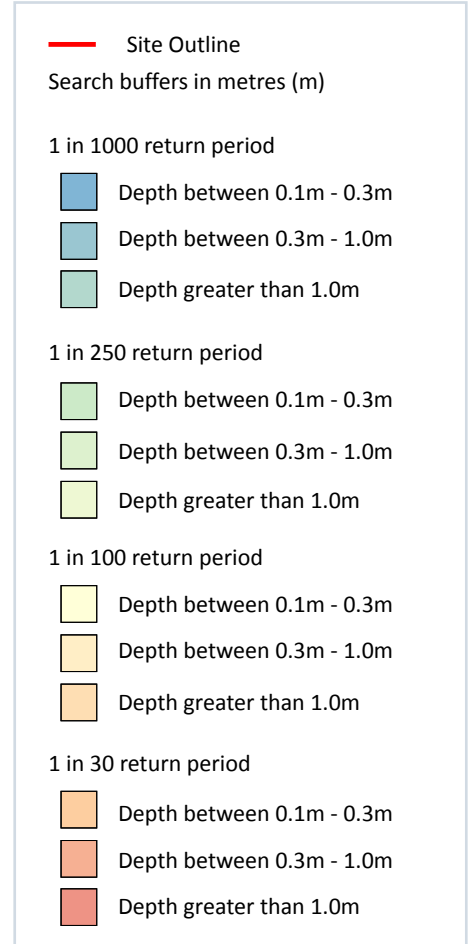
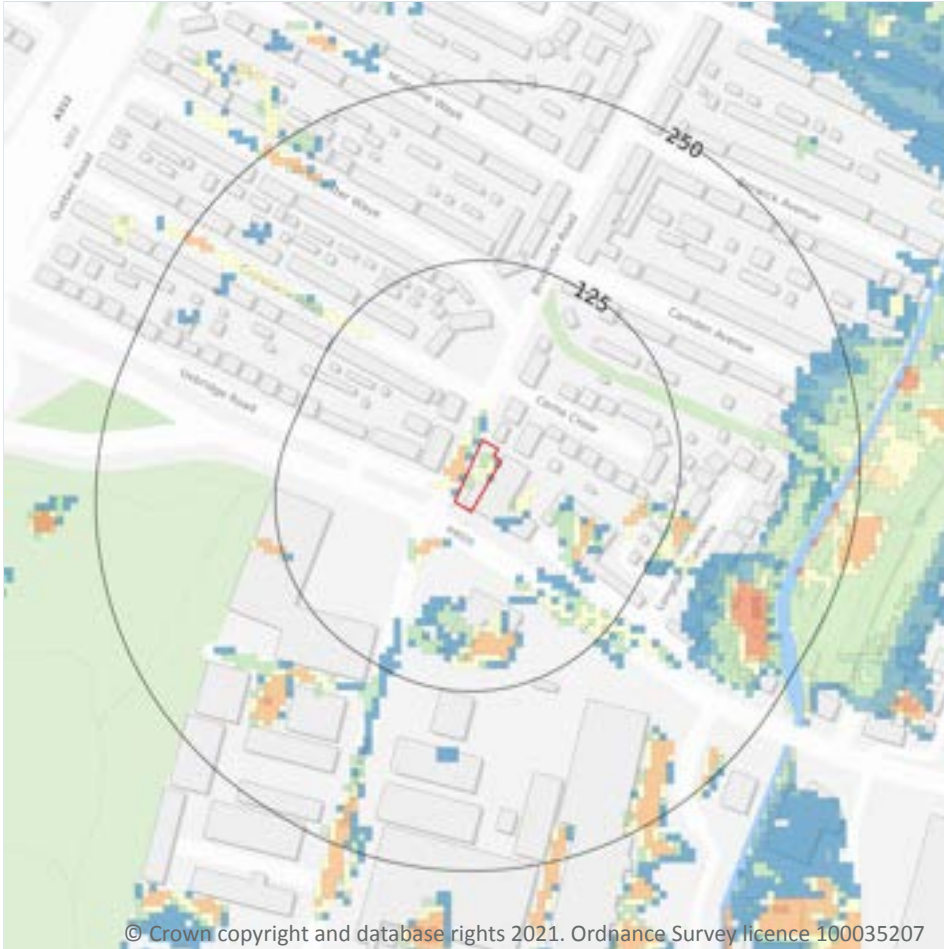
0

Areas of land at risk of flooding, when the presence of flood defences are ignored. Covering land with a 1 in 100 (1%) or greater chance of flooding each year from rivers or a 1 in 200 (0.5%) or greater chance of flooding each year from the sea.

This data is sourced from the Environment Agency and Natural Resources Wales.



8 Surface water flooding



8.1 Surface water flooding

Highest risk on site

1 in 100 year, 0.1m - 0.3m

Highest risk within 50m

1 in 30 year, 0.1m - 0.3m

Ambiental Risk Analytics surface water (pluvial) FloodMap identifies areas likely to flood as a result of extreme rainfall events, i.e. land naturally vulnerable to surface water ponding or flooding. This data set was produced by simulating 1 in 30 year, 1 in 100 year, 1 in 250 year and 1 in 1,000 year rainfall events. Modern urban drainage systems are typically built to cope with rainfall events between 1 in 20 and 1 in 30 years, though some older ones may flood in a 1 in 5 year rainfall event.

Features are displayed on the Surface water flooding map on **page 57**

The data shown on the map and in the table above shows the highest likelihood of flood events happening at the site. Lower likelihood events may have greater flood depths and hence a greater potential impact on a site.

The table below shows the maximum flood depths for a range of return periods for the site.

Return period	Maximum modelled depth
1 in 1000 year	Between 0.1m and 0.3m
1 in 250 year	Between 0.1m and 0.3m
1 in 100 year	Between 0.1m and 0.3m
1 in 30 year	Between 0.05m and 0.1m

This data is sourced from Ambiental Risk Analytics.



9 Groundwater flooding



9.1 Groundwater flooding

Highest risk on site

Low

Highest risk within 50m

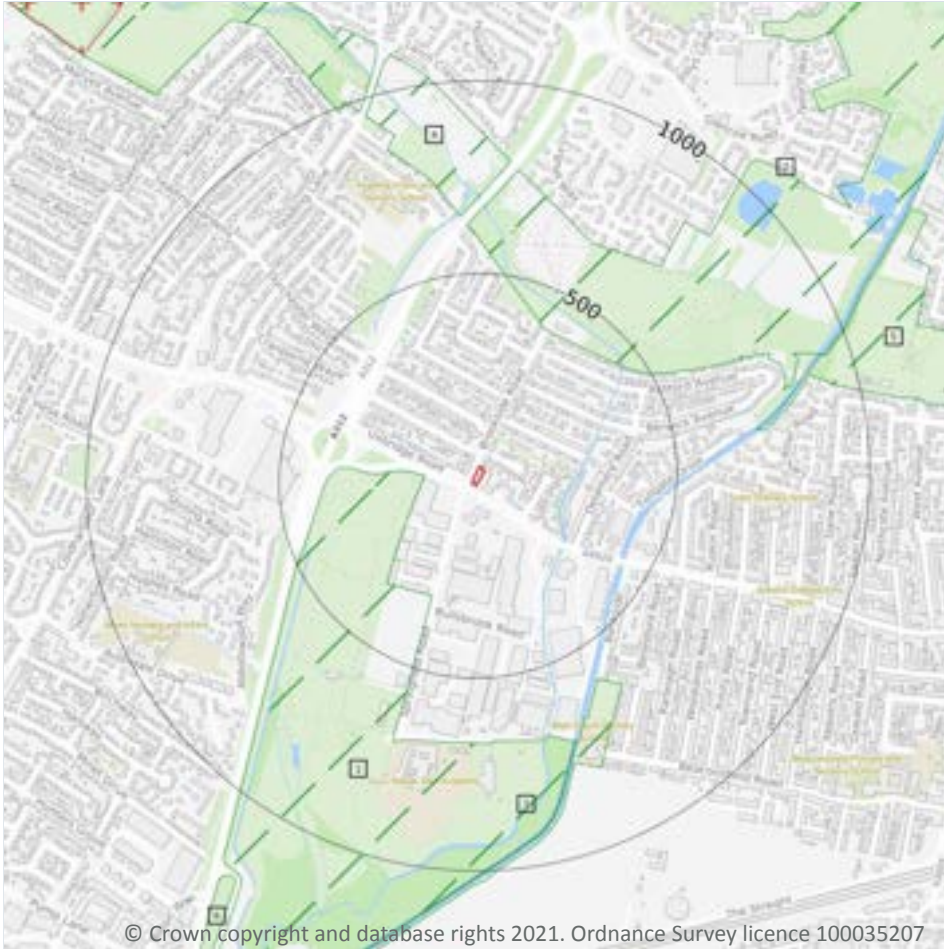
Low

Groundwater flooding is caused by unusually high groundwater levels. It occurs when the water table rises above the ground surface or within underground structures such as basements or cellars. Groundwater flooding tends to exhibit a longer duration than surface water flooding, possibly lasting for weeks or months, and as a result it can cause significant damage to property. This risk assessment is based on a 1 in 100 year return period and a 5m Digital Terrain Model (DTM).

Features are displayed on the Groundwater flooding map on **page 59**

This data is sourced from Ambient Risk Analytics.

10 Environmental designations



- Site Outline
- Search buffers in metres (m)
- + Local Nature Reserves (LNR)
- Green Belt

10.1 Sites of Special Scientific Interest (SSSI)

Records within 2000m

0

Sites providing statutory protection for the best examples of UK flora, fauna, or geological or physiographical features. Originally notified under the National Parks and Access to the Countryside Act 1949, SSSIs were re-notified under the Wildlife and Countryside Act 1981. Improved provisions for the protection and management of SSSIs were introduced by the Countryside and Rights of Way Act 2000 (in England and Wales) and (in Scotland) by the Nature Conservation (Scotland) Act 2004 and the Wildlife and Natural Environment (Scotland) Act 2010.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.2 Conserved wetland sites (Ramsar sites)

Records within 2000m

0

Ramsar sites are designated under the Convention on Wetlands of International Importance, agreed in Ramsar, Iran, in 1971. They cover all aspects of wetland conservation and wise use, recognizing wetlands as ecosystems that are extremely important for biodiversity conservation in general and for the well-being of human communities. These sites cover a broad definition of wetland; marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, and even some marine areas.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.3 Special Areas of Conservation (SAC)

Records within 2000m

0

Areas which have been identified as best representing the range and variety within the European Union of habitats and (non-bird) species listed on Annexes I and II to the Directive. SACs are designated under the EC Habitats Directive.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.4 Special Protection Areas (SPA)

Records within 2000m

0

Sites classified by the UK Government under the EC Birds Directive, SPAs are areas of the most important habitat for rare (listed on Annex I to the Directive) and migratory birds within the European Union.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.5 National Nature Reserves (NNR)

Records within 2000m

0

Sites containing examples of some of the most important natural and semi-natural terrestrial and coastal ecosystems in Great Britain. They are managed to conserve their habitats, provide special opportunities for scientific study or to provide public recreation compatible with natural heritage interests.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.



10.6 Local Nature Reserves (LNR)

Records within 2000m

1

Sites managed for nature conservation, and to provide opportunities for research and education, or simply enjoying and having contact with nature. They are declared by local authorities under the National Parks and Access to the Countryside Act 1949 after consultation with the relevant statutory nature conservation agency.

Features are displayed on the Environmental designations map on **page 60**

ID	Location	Name	Data source
A	1483m NW	Yeading Meadows (mapped boundary not verified)	Natural England

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.7 Designated Ancient Woodland

Records within 2000m

0

Ancient woodlands are classified as areas which have been wooded continuously since at least 1600 AD. This includes semi-natural woodland and plantations on ancient woodland sites. 'Wooded continuously' does not mean there is or has previously been continuous tree cover across the whole site, and not all trees within the woodland have to be old.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.8 Biosphere Reserves

Records within 2000m

0

Biosphere Reserves are internationally recognised by UNESCO as sites of excellence to balance conservation and socioeconomic development between nature and people. They are recognised under the Man and the Biosphere (MAB) Programme with the aim of promoting sustainable development founded on the work of the local community.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.9 Forest Parks

Records within 2000m

0

These are areas managed by the Forestry Commission designated on the basis of recreational, conservation or scenic interest.

This data is sourced from the Forestry Commission.



10.10 Marine Conservation Zones

Records within 2000m	0
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A type of marine nature reserve in UK waters established under the Marine and Coastal Access Act (2009). They are designated with the aim to protect nationally important, rare or threatened habitats and species.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.11 Green Belt

Records within 2000m	12
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Areas designated to prevent urban sprawl by keeping land permanently open.

Features are displayed on the Environmental designations map on **page 60**

ID	Location	Name	Local Authority name
1	124m W	London	Hillingdon
2	394m NE	London	Hillingdon
3	592m SE	London	Ealing
4	651m N	London	Hillingdon
5	714m E	London	Ealing
A	970m N	London	Hillingdon
6	1195m SW	London	Hillingdon
7	1484m NE	London	Ealing
-	1795m NE	London	Ealing
-	1880m SW	London	Hounslow
-	1904m W	London	Hillingdon
-	1997m W	London	Hillingdon

This data is sourced from the Ministry of Housing, Communities and Local Government.

10.12 Proposed Ramsar sites

Records within 2000m	0
-----------------------------	----------

Ramsar sites are areas listed as a Wetland of International Importance under the Convention on Wetlands of International Importance especially as Waterfowl Habitat (the Ramsar Convention) 1971. The sites here supplied have a status of 'Proposed' having been identified for potential adoption under the framework.



This data is sourced from Natural England.

10.13 Possible Special Areas of Conservation (pSAC)

Records within 2000m

0

Special Areas of Conservation are areas which have been identified as best representing the range and variety within the European Union of habitats and (non-bird) species listed on Annexes I and II to the Directive. SACs are designated under the EC Habitats Directive. Those sites supplied here are those with a status of 'Possible' having been identified for potential adoption under the framework.

This data is sourced from Natural England and Natural Resources Wales.

10.14 Potential Special Protection Areas (pSPA)

Records within 2000m

0

Special Protection Areas (SPAs) are areas designated (or 'classified') under the European Union Wild Birds Directive for the protection of nationally and internationally important populations of wild birds. Those sites supplied here are those with a status of 'Potential' having been identified for potential adoption under the framework.

This data is sourced from Natural England.

10.15 Nitrate Sensitive Areas

Records within 2000m

0

Areas where nitrate concentrations in drinking water sources exceeded or was at risk of exceeding the limit of 50 mg/l set by the 1980 EC Drinking Water Directive. Voluntary agricultural measures as a means of reducing the levels of nitrate were introduced by DEFRA as MAFF, with payments being made to farmers who complied. The scheme was started as a pilot in 1990 in ten areas, later implemented within 32 areas. The scheme was closed to further new entrants in 1998, although existing agreements continued for their full term. All Nitrate Sensitive Areas fell within the areas designated as Nitrate Vulnerable Zones (NVZs) in 1996 under the EC Nitrate Directive (91/676/EEC).

This data is sourced from Natural England.

10.16 Nitrate Vulnerable Zones

Records within 2000m

0

Areas at risk from agricultural nitrate pollution designated under the EC Nitrate Directive (91/676/EEC). These are areas of land that drain into waters polluted by nitrates. Farmers operating within these areas have to follow mandatory rules to tackle nitrate loss from agriculture.

This data is sourced from Natural England and Natural Resources Wales.



SSSI Impact Zones and Units



- Site Outline
- Search buffers in metres (m)
- SSSI Impact Risk Zones
- SSSI Units
- Not recorded
- Favourable
- Unfavourable - Recovering
- Unfavourable - No change
- Unfavourable - Declining
- Partially destroyed
- Destroyed

10.17 SSSI Impact Risk Zones

Records on site

1

Developed to allow rapid initial assessment of the potential risks to SSSIs posed by development proposals. They define zones around each SSSI which reflect the particular sensitivities of the features for which it is notified and indicate the types of development proposal which could potentially have adverse impacts.

Features are displayed on the SSSI Impact Zones and Units map on **page 65**

ID	Location	Type of developments requiring consultation
1	On site	<p>Infrastructure - Airports, helipads and other aviation proposals.</p> <p>Air pollution - Livestock & poultry units with floorspace > 500m², slurry lagoons > 4000m².</p> <p>Combustion - General combustion processes >50MW energy input. Incl: energy from waste incineration, other incineration, landfill gas generation plant, pyrolysis/gasification, anaerobic digestion, sewage treatment works, other incineration/ combustion</p> <p>Discharges - Any discharge of water or liquid waste of more than 20m³/day to ground (ie to seep away) or to surface water, such as a beck or stream (NB This does not include discharges to mains sewer which are unlikely to pose a risk at this location)</p>

This data is sourced from Natural England.

10.18 SSSI Units

Records within 2000m	0
-----------------------------	----------

Divisions of SSSIs used to record management and condition details. Units are the smallest areas for which Natural England gives a condition assessment, however, the size of units varies greatly depending on the types of management and the conservation interest.

This data is sourced from Natural England and Natural Resources Wales.

11 Visual and cultural designations

11.1 World Heritage Sites

Records within 250m

0

Sites designated for their globally important cultural or natural interest requiring appropriate management and protection measures. World Heritage Sites are designated to meet the UK's commitments under the World Heritage Convention.

This data is sourced from Historic England, Cadw and Historic Environment Scotland.

11.2 Area of Outstanding Natural Beauty

Records within 250m

0

Areas of Outstanding Natural Beauty (AONB) are conservation areas, chosen because they represent 18% of the finest countryside. Each AONB has been designated for special attention because of the quality of their flora, fauna, historical and cultural associations, and/or scenic views. The National Parks and Access to the Countryside Act of 1949 created AONBs and the Countryside and Rights of Way Act, 2000 added further regulation and protection. There are likely to be restrictions to some developments within these areas.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

11.3 National Parks

Records within 250m

0

In England and Wales, the purpose of National Parks is to conserve and enhance landscapes within the countryside whilst promoting public enjoyment of them and having regard for the social and economic well-being of those living within them. In Scotland National Parks have the additional purpose of promoting the sustainable use of the natural resources of the area and the sustainable social and economic development of its communities. The National Parks and Access to the Countryside Act 1949 established the National Park designation in England and Wales, and The National Parks (Scotland) Act 2000 in Scotland.

This data is sourced from Natural England, Natural Resources Wales and the Scottish Government.

11.4 Listed Buildings

Records within 250m

0

Buildings listed for their special architectural or historical interest. Building control in the form of 'listed building consent' is required in order to make any changes to that building which might affect its special interest. Listed buildings are graded to indicate their relative importance, however building controls apply to all buildings equally, irrespective of their grade, and apply to the interior and exterior of the building in its entirety, together with any curtilage structures.



This data is sourced from Historic England, Cadw and Historic Environment Scotland.

11.5 Conservation Areas

Records within 250m

0

Local planning authorities are obliged to designate as conservation areas any parts of their own area that are of special architectural or historic interest, the character and appearance of which it is desirable to preserve or enhance. Designation of a conservation area gives broader protection than the listing of individual buildings. All the features within the area, listed or otherwise, are recognised as part of its character. Conservation area designation is the means of recognising the importance of all factors and of ensuring that planning decisions address the quality of the landscape in its broadest sense.

This data is sourced from Historic England, Cadw and Historic Environment Scotland.

11.6 Scheduled Ancient Monuments

Records within 250m

0

A scheduled monument is an historic building or site that is included in the Schedule of Monuments kept by the Secretary of State for Digital, Culture, Media and Sport. The regime is set out in the Ancient Monuments and Archaeological Areas Act 1979. The Schedule of Monuments has c.20,000 entries and includes sites such as Roman remains, burial mounds, castles, bridges, earthworks, the remains of deserted villages and industrial sites. Monuments are not graded, but all are, by definition, considered to be of national importance.

This data is sourced from Historic England, Cadw and Historic Environment Scotland.

11.7 Registered Parks and Gardens

Records within 250m

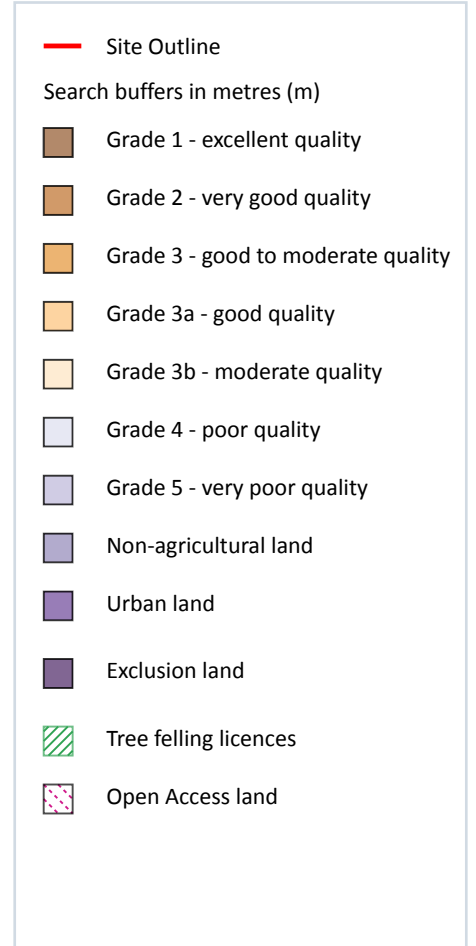
0

Parks and gardens assessed to be of particular interest and of special historic interest. The emphasis being on 'designed' landscapes, rather than on planting or botanical importance. Registration is a 'material consideration' in the planning process, meaning that planning authorities must consider the impact of any proposed development on the special character of the landscape.

This data is sourced from Historic England, Cadw and Historic Environment Scotland.



12 Agricultural designations



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12.1 Agricultural Land Classification

Records within 250m

1

Classification of the quality of agricultural land taking into consideration multiple factors including climate, physical geography and soil properties. It should be noted that the categories for the grading of agricultural land are not consistent across England, Wales and Scotland.

Features are displayed on the Agricultural designations map on **page 69**

ID	Location	Classification	Description
1	On site	Urban	-

This data is sourced from Natural England.

12.2 Open Access Land

Records within 250m

0

The Countryside and Rights of Way Act 2000 (CROW Act) gives a public right of access to land without having to use paths. Access land includes mountains, moors, heaths and downs that are privately owned. It also includes common land registered with the local council and some land around the England Coast Path. Generally permitted activities on access land are walking, running, watching wildlife and climbing.

This data is sourced from Natural England and Natural Resources Wales.

12.3 Tree Felling Licences

Records within 250m

0

Felling Licence Application (FLA) areas approved by Forestry Commission England. Anyone wishing to fell trees must ensure that a licence or permission under a grant scheme has been issued by the Forestry Commission before any felling is carried out or that one of the exceptions apply.

This data is sourced from the Forestry Commission.

12.4 Environmental Stewardship Schemes

Records within 250m

1

Environmental Stewardship covers a range of schemes that provide financial incentives to farmers, foresters and land managers to look after and improve the environment. The schemes identified may be historical schemes that have now expired, or may still be active.

Location	Reference	Scheme	Start Date	End date
197m SW	AG00423417	Higher Level Stewardship	01/12/2013	30/11/2023

This data is sourced from Natural England.

12.5 Countryside Stewardship Schemes

Records within 250m

0

Countryside Stewardship covers a range of schemes that provide financial incentives to farmers, foresters and land managers to look after and improve the environment. Main objectives are to improve the farmed environment for wildlife and to reduce diffuse water pollution.

This data is sourced from Natural England.



13 Habitat designations

13.1 Priority Habitat Inventory

Records within 250m	0
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Habitats of principal importance as named under Natural Environment and Rural Communities Act (2006) Section 41.

This data is sourced from Natural England.

13.2 Habitat Networks

Records within 250m	0
---------------------	---

Habitat networks for 18 priority habitat networks (based primarily, but not exclusively, on the priority habitat inventory) and areas suitable for the expansion of networks through restoration and habitat creation.

This data is sourced from Natural England.

13.3 Open Mosaic Habitat

Records within 250m	0
---------------------	---

Sites verified as Open Mosaic Habitat. Mosaic habitats are brownfield sites that are identified under the UK Biodiversity Action Plan as a priority habitat due to the habitat variation within a single site, supporting an array of invertebrates.

This data is sourced from Natural England.

13.4 Limestone Pavement Orders

Records within 250m	0
---------------------	---

Limestone pavements are outcrops of limestone where the surface has been worn away by natural means over millennia. These rocks have the appearance of paving blocks, hence their name. Not only do they have geological interest, they also provide valuable habitats for wildlife. These habitats are threatened due to their removal for use in gardens and water features. Many limestone pavements have been designated as SSSIs which affords them some protection. In addition, Section 34 of the Wildlife and Countryside Act 1981 gave them additional protection via the creation of Limestone Pavement Orders, which made it a criminal offence to remove any part of the outcrop. The associated Limestone Pavement Priority Habitat is part of the UK Biodiversity Action Plan priority habitat in England.

This data is sourced from Natural England.



14 Geology 1:10,000 scale - Availability



- Site Outline
- Search buffers in metres (m)
- Full coverage
- Partial coverage
- No coverage

14.1 10k Availability

Records within 500m

1

An indication on the coverage of 1:10,000 scale geology data for the site, the most detailed dataset provided by the British Geological Survey. Either 'Full', 'Partial' or 'No coverage' for each geological theme.

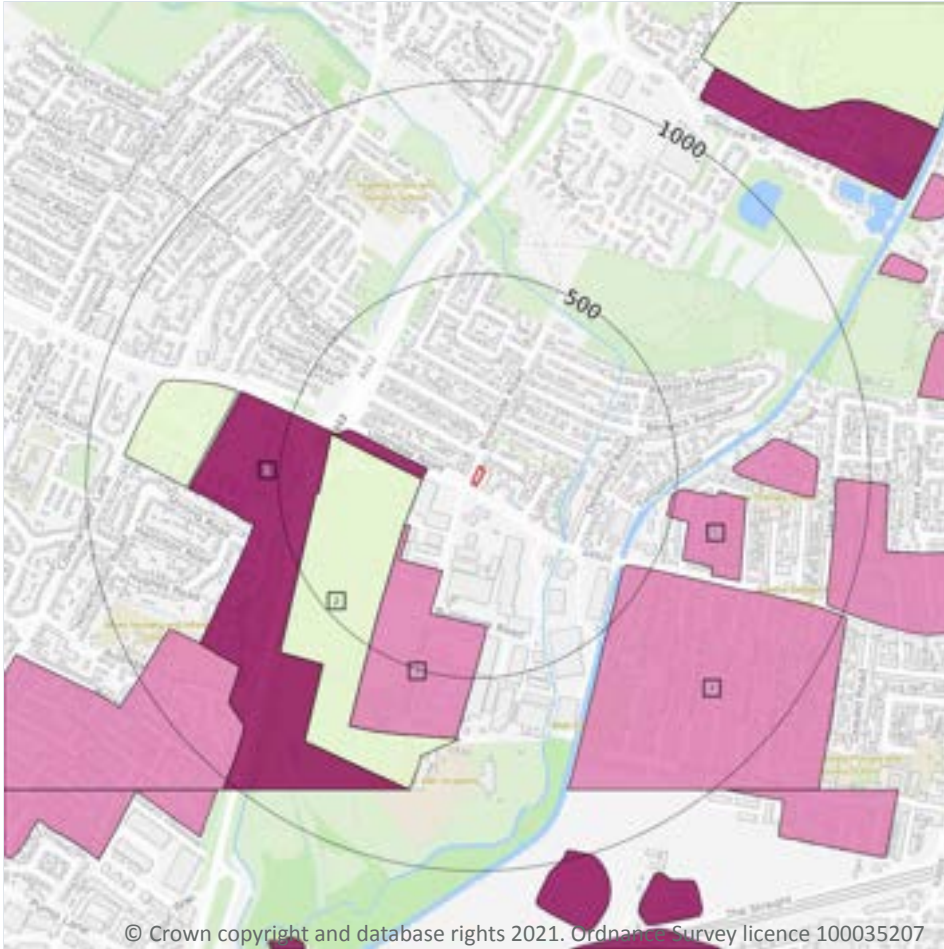
Features are displayed on the Geology 1:10,000 scale - Availability map on **page 72**

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	On site	Full	Full	Full	No coverage	TQ18SW

This data is sourced from the British Geological Survey.



Geology 1:10,000 scale - Artificial and made ground



— Site Outline
Search buffers in metres (m)

- Reclaimed ground
- Made ground
- Worked ground
- Infilled ground
- Disturbed ground
- Landscaped ground

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14.2 Artificial and made ground (10k)

Records within 500m

5

Details of made, worked, infilled, disturbed and landscaped ground at 1:10,000 scale. Artificial ground can be associated with potentially contaminated material, unpredictable engineering conditions and instability.

Features are displayed on the Geology 1:10,000 scale - Artificial and made ground map on **page 73**

ID	Location	LEX Code	Description	Rock description
1	120m W	MGR-UKNOWN	Made Ground (Undivided)	Unknown/unclassified Entry
2	129m W	WMGR-UKNOWN	Infilled Ground	Unknown/unclassified Entry
3	195m SW	WGR-UKNOWN	Worked Ground (Undivided)	Unknown/unclassified Entry
4	438m SE	WGR-UKNOWN	Worked Ground (Undivided)	Unknown/unclassified Entry

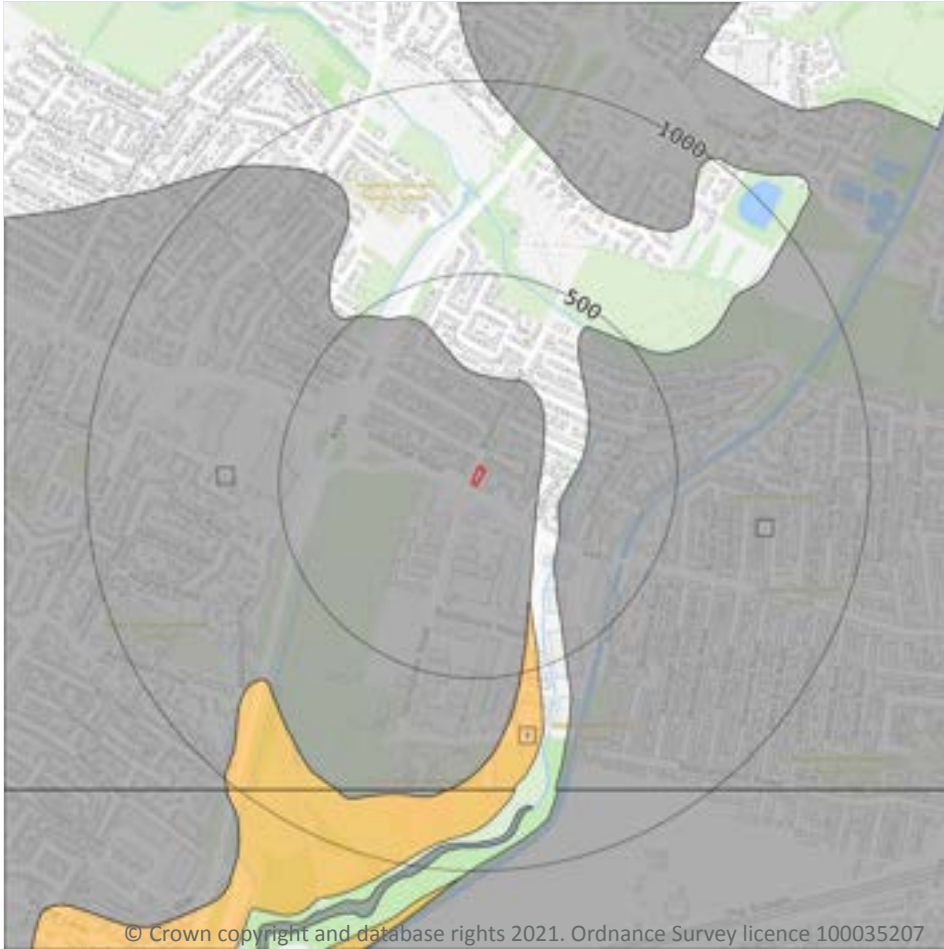


ID	Location	LEX Code	Description	Rock description
5	488m E	WGR-UNKNOWN	Worked Ground (Undivided)	Unknown/unclassified Entry

This data is sourced from the British Geological Survey.



Geology 1:10,000 scale - Superficial



- Site Outline
- Search buffers in metres (m)
- Landslip (10k)
- Superficial geology (10k)
Please see table for more details.

14.3 Superficial geology (10k)

Records within 500m

3

Superficial geological deposits at 1:10,000 scale. Also known as 'drift', these are the youngest geological deposits, formed during the Quaternary. They rest on older deposits or rocks referred to as bedrock.

Features are displayed on the Geology 1:10,000 scale - Superficial map on **page 75**

ID	Location	LEX Code	Description	Rock description
1	On site	LASI-Z	Langley Silt Member - Silt (unlithified Deposits Coding Scheme)	Silt
2	211m SE	LASI-Z	Langley Silt Member - Silt (unlithified Deposits Coding Scheme)	Silt
3	333m SE	LHGR-XSV	Lynch Hill Gravel Member - Sand And Gravel	Sand And Gravel

This data is sourced from the British Geological Survey.

14.4 Landslip (10k)

Records within 500m

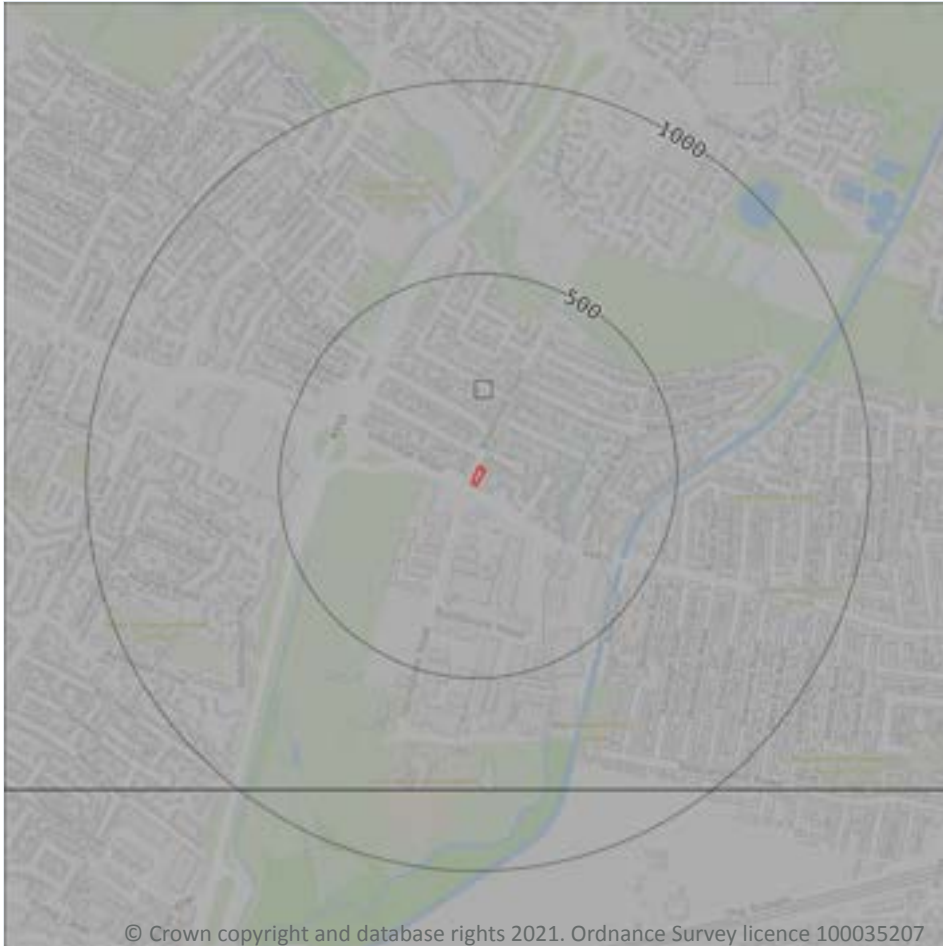
0

Mass movement deposits on BGS geological maps at 1:10,000 scale. Primarily superficial deposits that have moved down slope under gravity to form landslips. These affect bedrock, other superficial deposits and artificial ground.

This data is sourced from the British Geological Survey.



Geology 1:10,000 scale - Bedrock



- Site Outline
- Search buffers in metres (m)
- Bedrock faults and other linear features (10k)
- Bedrock geology (10k)
Please see table for more details.

14.5 Bedrock geology (10k)

Records within 500m

1

Bedrock geology at 1:10,000 scale. The main mass of rocks forming the Earth and present everywhere, whether exposed at the surface in outcrops or concealed beneath superficial deposits or water.

Features are displayed on the Geology 1:10,000 scale - Bedrock map on **page 77**

ID	Location	LEX Code	Description	Rock age
1	On site	LC-CLAY	London Clay Formation - Clay	Eocene Epoch

This data is sourced from the British Geological Survey.

14.6 Bedrock faults and other linear features (10k)

Records within 500m

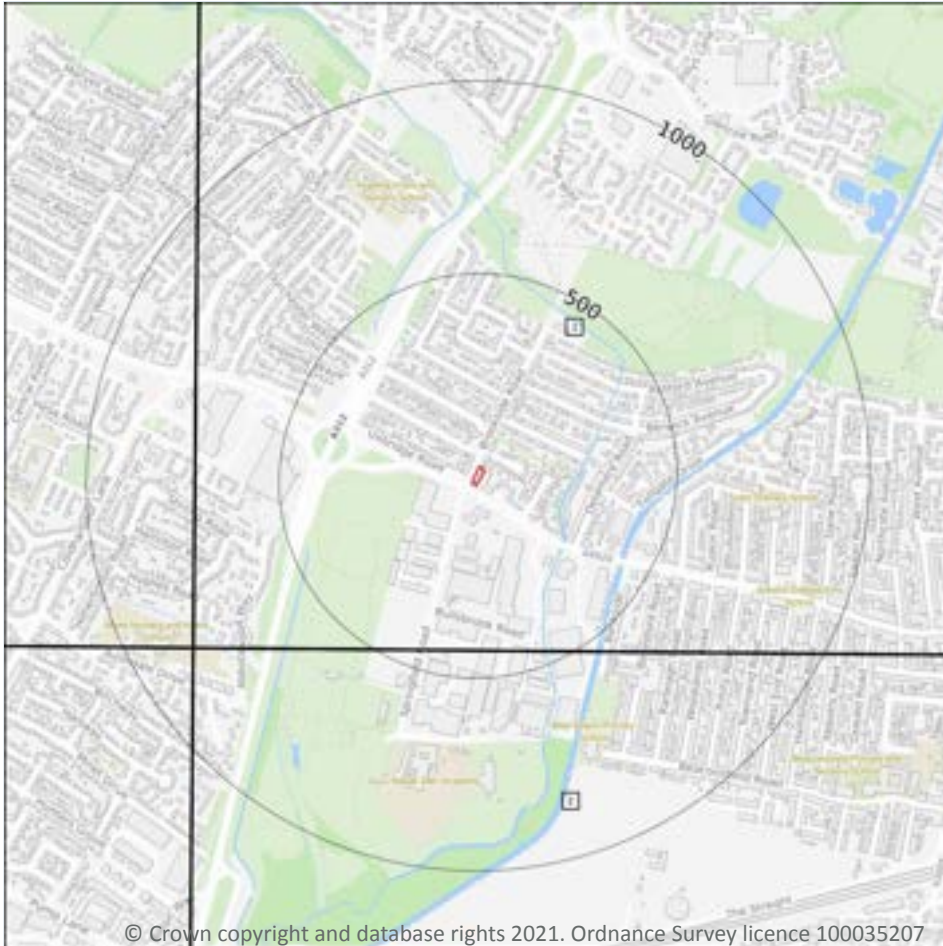
0

Linear features at the ground or bedrock surface at 1:10,000 scale of six main types; rock, fault, fold axis, mineral vein, alteration area or landform. Features are either observed or inferred, and relate primarily to bedrock.

This data is sourced from the British Geological Survey.



15 Geology 1:50,000 scale - Availability



- Site Outline
- Search buffers in metres (m)

- Geological map tile

15.1 50k Availability

Records within 500m

2

An indication on the coverage of 1:50,000 scale geology data for the site. Either 'Full' or 'No coverage' for each geological theme.

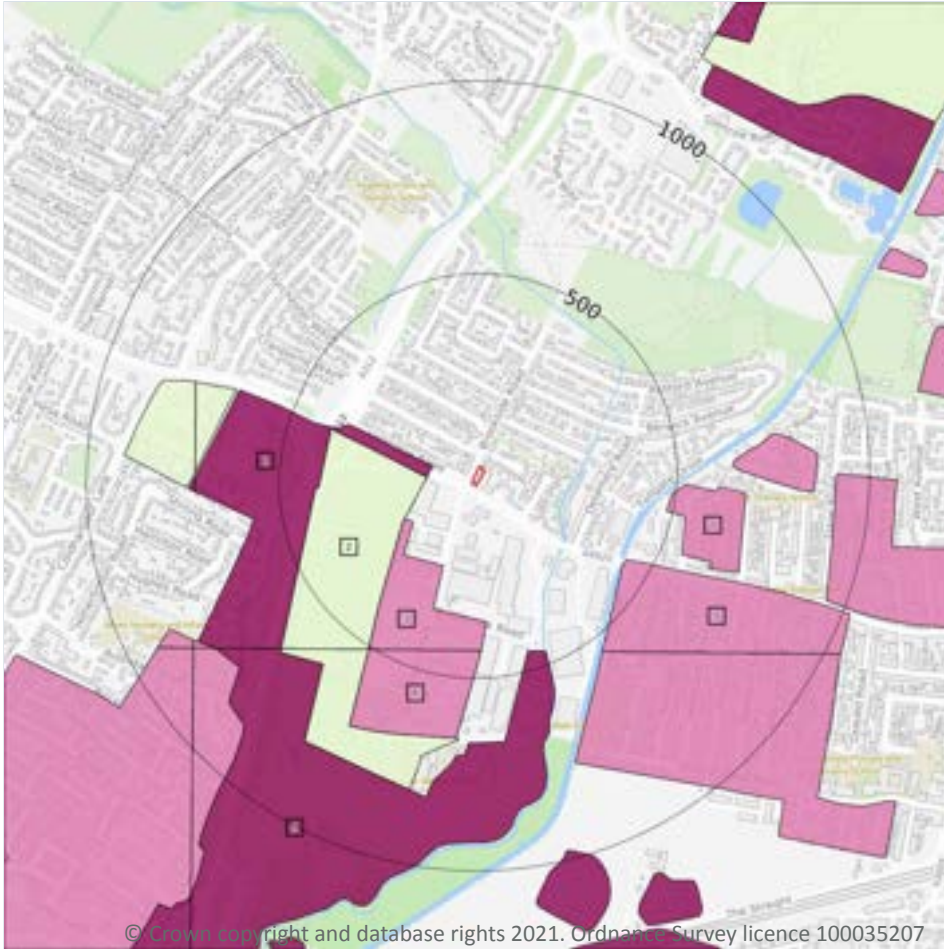
Features are displayed on the Geology 1:50,000 scale - Availability map on **page 79**

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	On site	Full	Full	Full	Full	EW256_north_london_v4
2	428m S	Full	Full	Full	Full	EW270_south_london_v4

This data is sourced from the British Geological Survey.



Geology 1:50,000 scale - Artificial and made ground



— Site Outline
Search buffers in metres (m)

- Made ground
- Worked ground
- Infilled ground
- Disturbed ground
- Landscaped ground

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15.2 Artificial and made ground (50k)

Records within 500m

7

Details of made, worked, infilled, disturbed and landscaped ground at 1:50,000 scale. Artificial ground can be associated with potentially contaminated material, unpredictable engineering conditions and instability.

Features are displayed on the Geology 1:50,000 scale - Artificial and made ground map on **page 80**

ID	Location	LEX Code	Description	Rock description
1	112m NW	MGR-ARTDP	MADE GROUND (UNDIVIDED)	ARTIFICIAL DEPOSIT
2	117m W	WMGR-ARTDP	INFILLED GROUND	ARTIFICIAL DEPOSIT
3	182m SW	WGR-VOID	WORKED GROUND (UNDIVIDED)	VOID
4	428m S	WGR-VOID	WORKED GROUND (UNDIVIDED)	VOID

ID	Location	LEX Code	Description	Rock description
5	431m SE	WGR-VOID	WORKED GROUND (UNDIVIDED)	VOID
6	450m S	MGR-ARTDP	MADE GROUND (UNDIVIDED)	ARTIFICIAL DEPOSIT
7	484m E	WGR-VOID	WORKED GROUND (UNDIVIDED)	VOID

This data is sourced from the British Geological Survey.

15.3 Artificial ground permeability (50k)

Records within 50m

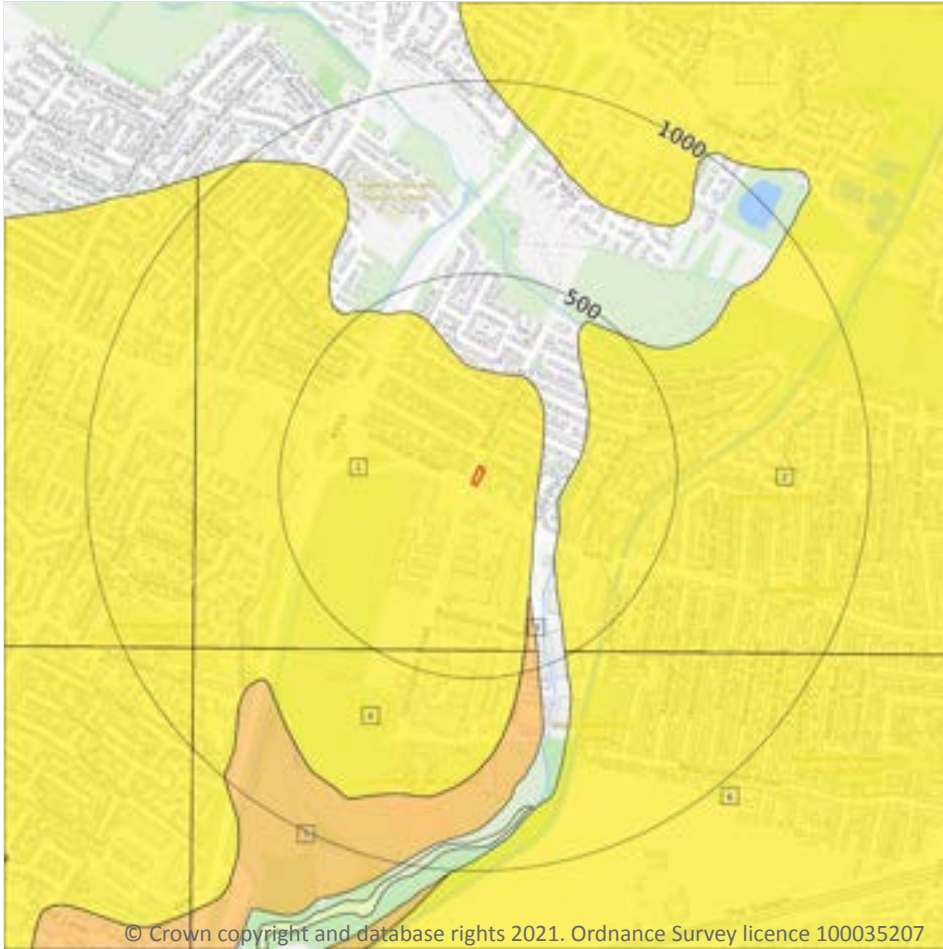
0

A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of any artificial deposits (the zone between the land surface and the water table).

This data is sourced from the British Geological Survey.



Geology 1:50,000 scale - Superficial



- Site Outline
- Search buffers in metres (m)
- Landslip (50k)
- Superficial geology (50k)
Please see table for more details.

15.4 Superficial geology (50k)

Records within 500m

6

Superficial geological deposits at 1:50,000 scale. Also known as 'drift', these are the youngest geological deposits, formed during the Quaternary. They rest on older deposits or rocks referred to as bedrock.

Features are displayed on the Geology 1:50,000 scale - Superficial map on **page 82**

ID	Location	LEX Code	Description	Rock description
1	On site	LASI-XCZ	LANGLEY SILT MEMBER	CLAY AND SILT
2	205m E	LASI-XCZ	LANGLEY SILT MEMBER	CLAY AND SILT
3	321m SE	LHGR-XSV	LYNCH HILL GRAVEL MEMBER	SAND AND GRAVEL
4	428m S	LASI-XCZ	LANGLEY SILT MEMBER	CLAY AND SILT

ID	Location	LEX Code	Description	Rock description
5	447m S	LHGR-XSV	LYNCH HILL GRAVEL MEMBER	SAND AND GRAVEL
6	488m SE	LASI-XCZ	LANGLEY SILT MEMBER	CLAY AND SILT

This data is sourced from the British Geological Survey.

15.5 Superficial permeability (50k)

Records within 50m **1**

A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of any superficial deposits (the zone between the land surface and the water table).

Location	Flow type	Maximum permeability	Minimum permeability
On site	Mixed	Low	Very Low

This data is sourced from the British Geological Survey.

15.6 Landslip (50k)

Records within 500m **0**

Mass movement deposits on BGS geological maps at 1:50,000 scale. Primarily superficial deposits that have moved down slope under gravity to form landslips. These affect bedrock, other superficial deposits and artificial ground.

This data is sourced from the British Geological Survey.

15.7 Landslip permeability (50k)

Records within 50m **0**

A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of any landslip deposits (the zone between the land surface and the water table).

This data is sourced from the British Geological Survey.

Geology 1:50,000 scale - Bedrock



- Site Outline
- Search buffers in metres (m)
- Bedrock faults and other linear features (50k)
- Bedrock geology (50k)
Please see table for more details.

15.8 Bedrock geology (50k)

Records within 500m

2

Bedrock geology at 1:50,000 scale. The main mass of rocks forming the Earth and present everywhere, whether exposed at the surface in outcrops or concealed beneath superficial deposits or water.

Features are displayed on the Geology 1:50,000 scale - Bedrock map on **page 84**

ID	Location	LEX Code	Description	Rock age
1	On site	LC-XCZS	LONDON CLAY FORMATION - CLAY, SILT AND SAND	YPRESIAN
2	428m S	LC-XCZ	LONDON CLAY FORMATION - CLAY AND SILT	YPRESIAN

This data is sourced from the British Geological Survey.

15.9 Bedrock permeability (50k)

Records within 50m

1

A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of bedrock (the zone between the land surface and the water table).

Location	Flow type	Maximum permeability	Minimum permeability
On site	Mixed	Moderate	Very Low

This data is sourced from the British Geological Survey.

15.10 Bedrock faults and other linear features (50k)

Records within 500m

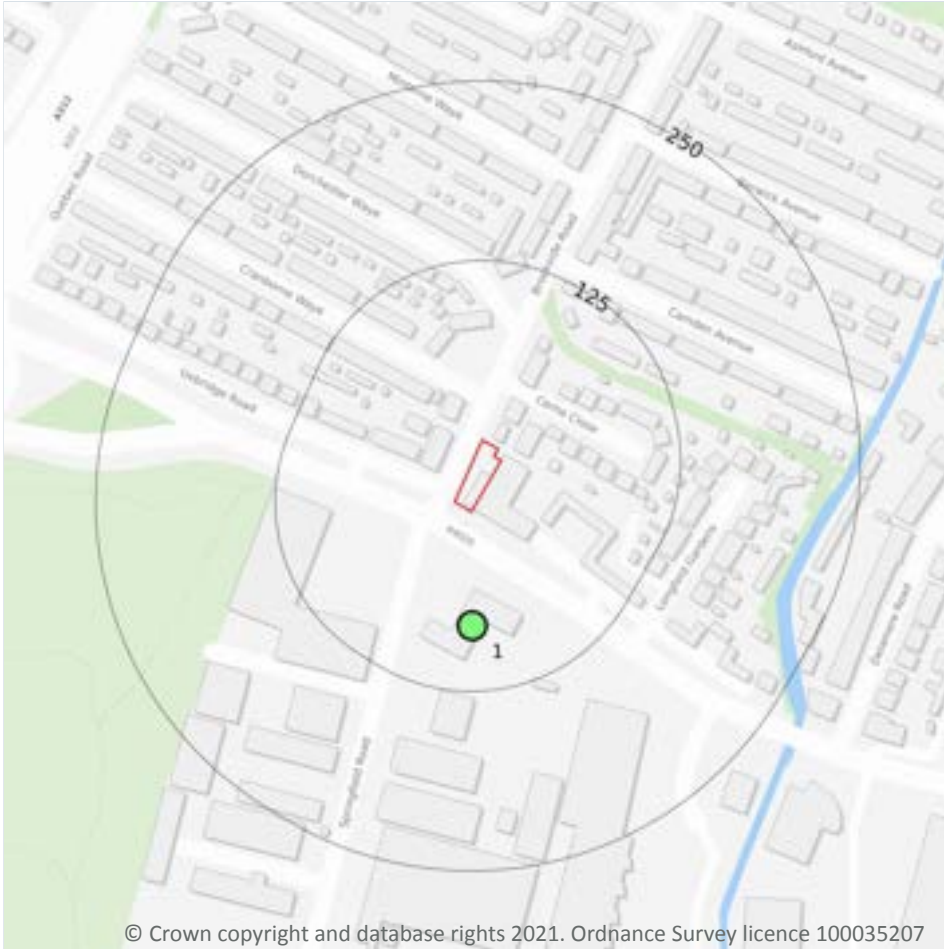
0

Linear features at the ground or bedrock surface at 1:50,000 scale of six main types; rock, fault, fold axis, mineral vein, alteration area or landform. Features are either observed or inferred, and relate primarily to bedrock.

This data is sourced from the British Geological Survey.



16 Boreholes



— Site Outline

Search buffers in metres (m)

- Confidential
- 0 - 10m
- 10 - 30m
- 30m+
- Unknown

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16.1 BGS Boreholes

Records within 250m

1

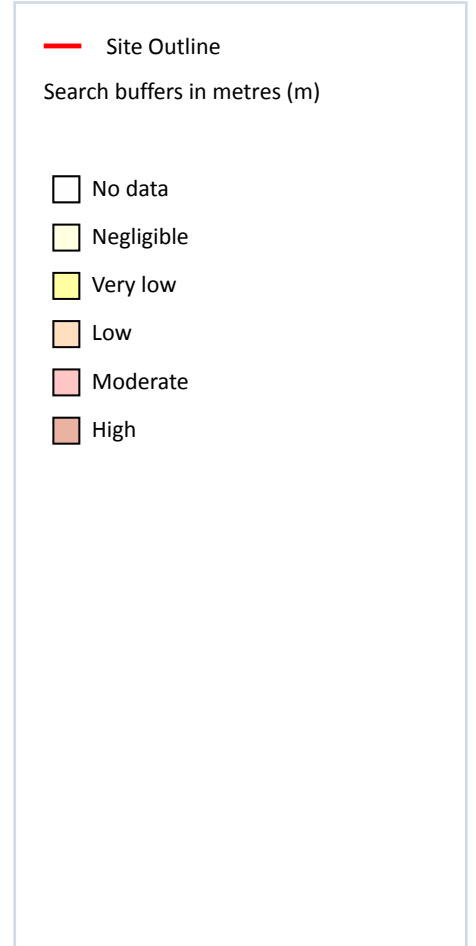
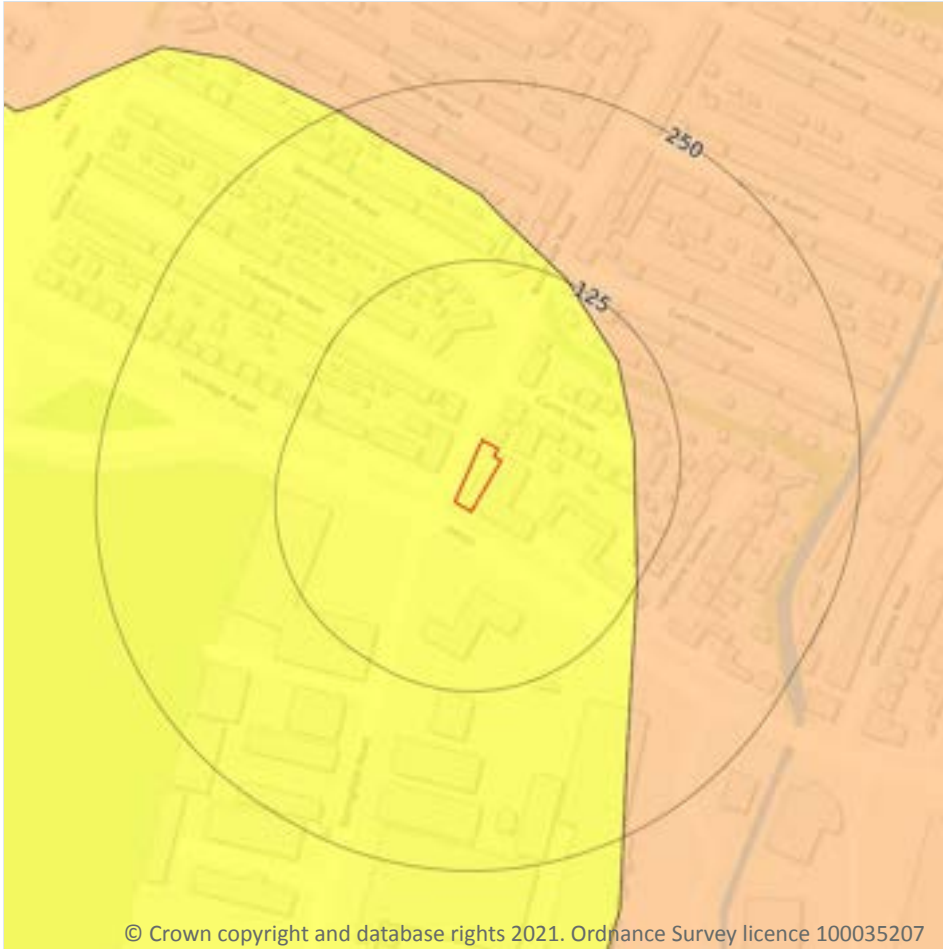
The Single Onshore Boreholes Index (SOBI); an index of over one million records of boreholes, shafts and wells from all forms of drilling and site investigation work held by the British Geological Survey. Covering onshore and nearshore boreholes dating back to at least 1790 and ranging from one to several thousand metres deep.

Features are displayed on the Boreholes map on **page 86**

ID	Location	Grid reference	Name	Length	Confidential	Web link
1	79m S	511410 180710	HAYES NO.4 HAYES & HARLINGTON	10.85	N	581999

This data is sourced from the British Geological Survey.

17 Natural ground subsidence - Shrink swell clays



17.1 Shrink swell clays

Records within 50m

1

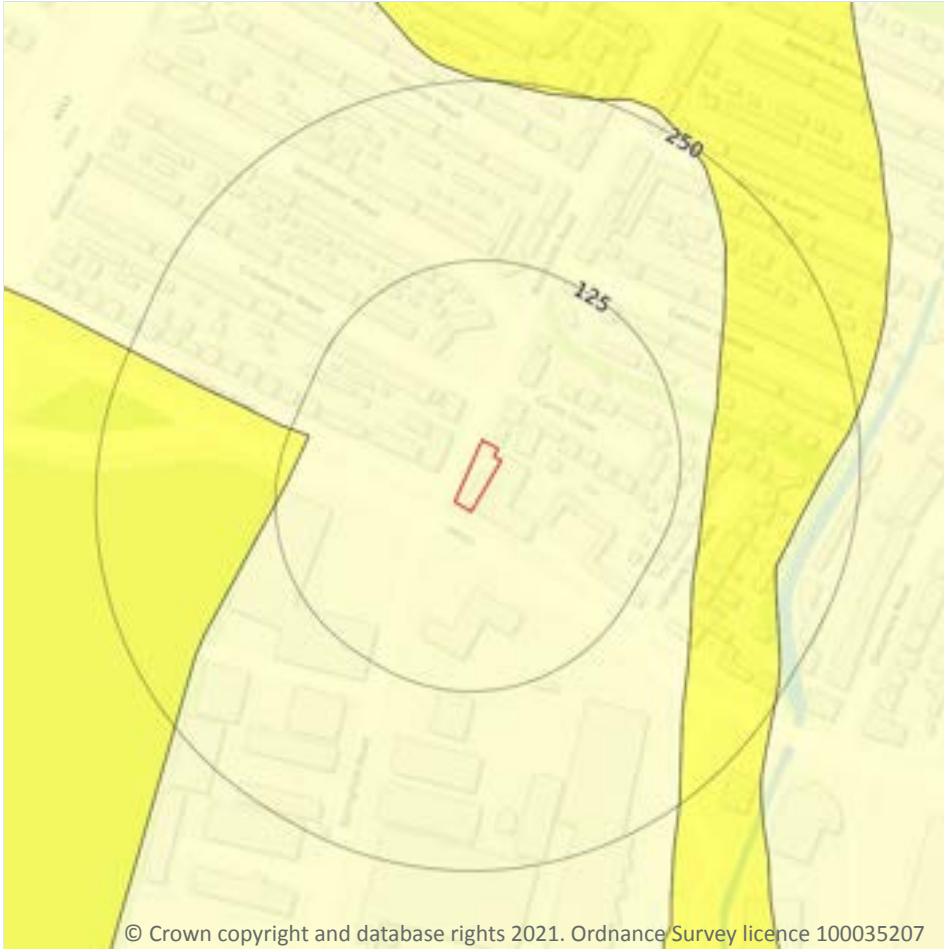
The potential hazard presented by soils that absorb water when wet (making them swell), and lose water as they dry (making them shrink). This shrink-swell behaviour is controlled by the type and amount of clay in the soil, and by seasonal changes in the soil moisture content (related to rainfall and local drainage).

Features are displayed on the Natural ground subsidence - Shrink swell clays map on **page 87**

Location	Hazard rating	Details
On site	Very low	Ground conditions predominantly low plasticity.

This data is sourced from the British Geological Survey.

Natural ground subsidence - Running sands



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17.2 Running sands

Records within 50m

1

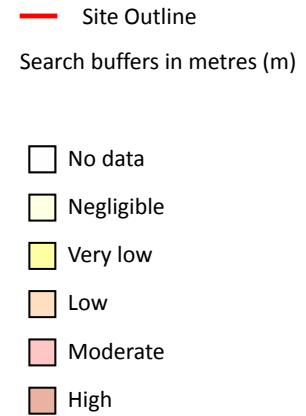
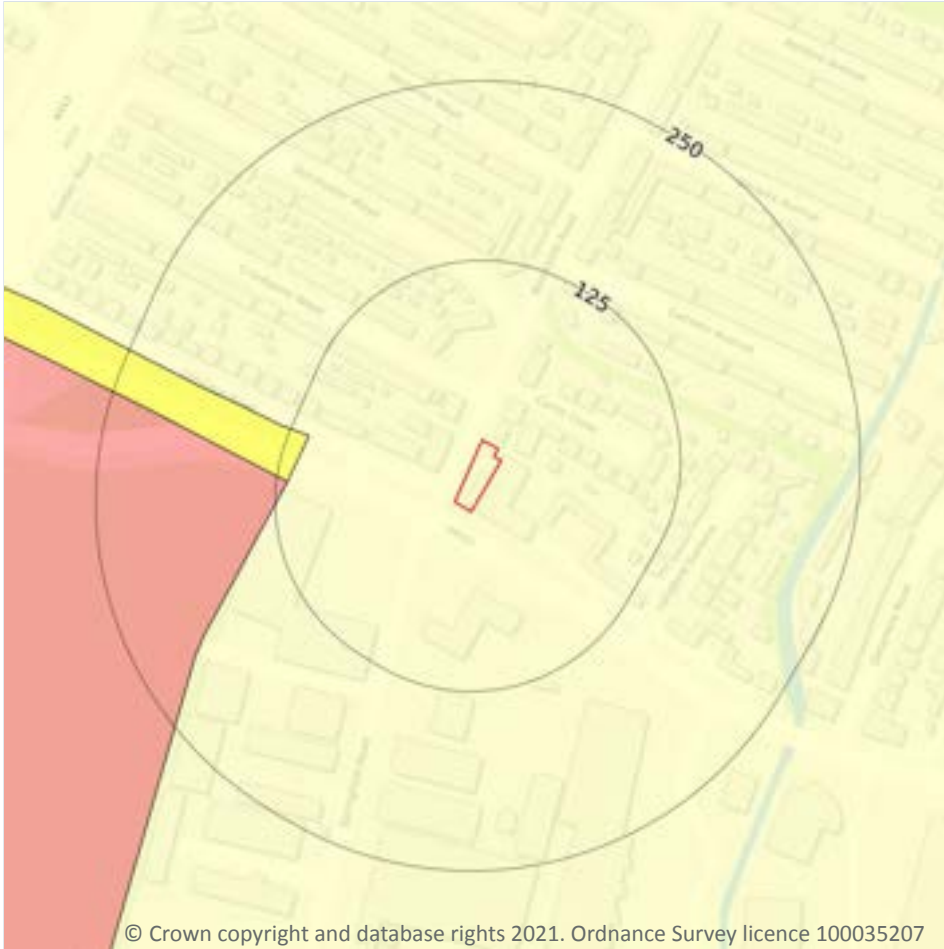
The potential hazard presented by rocks that can contain loosely-packed sandy layers that can become fluidised by water flowing through them. Such sands can 'run', removing support from overlying buildings and causing potential damage.

Features are displayed on the Natural ground subsidence - Running sands map on **page 88**

Location	Hazard rating	Details
On site	Negligible	Running sand conditions are not thought to occur whatever the position of the water table. No identified constraints on lands use due to running conditions.

This data is sourced from the British Geological Survey.

Natural ground subsidence - Compressible deposits



17.3 Compressible deposits

Records within 50m

1

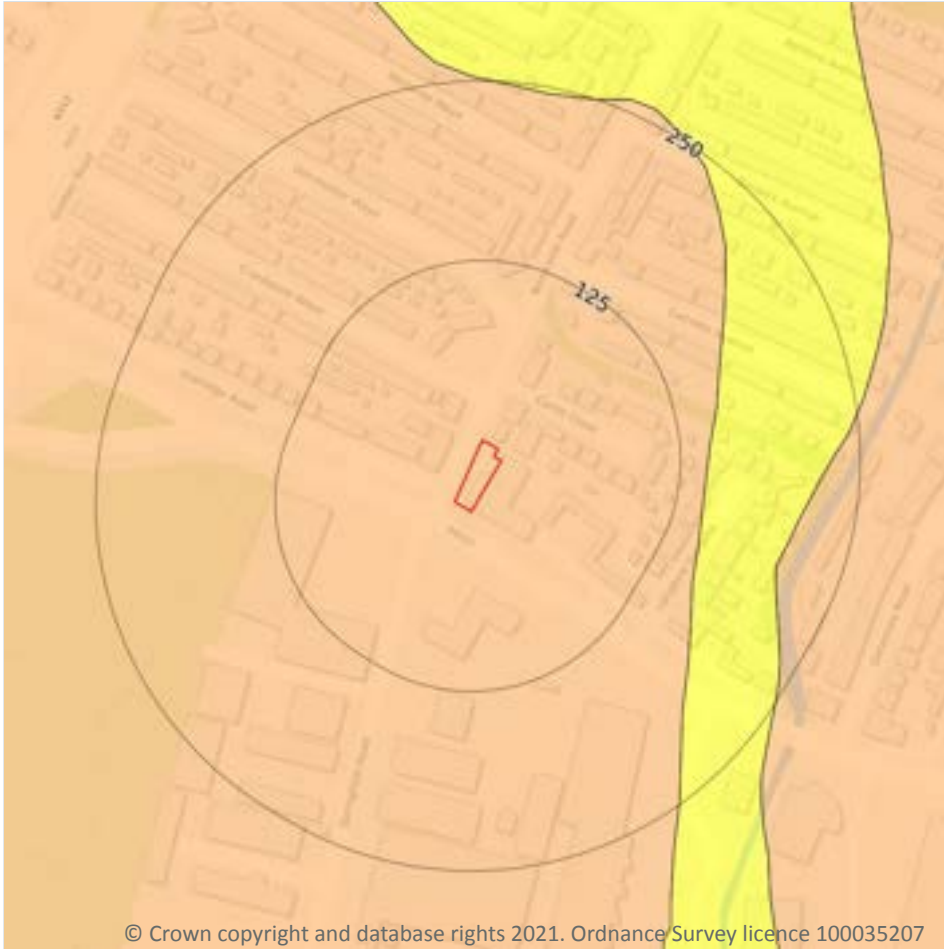
The potential hazard presented by types of ground that may contain layers of very soft materials like clay or peat and may compress if loaded by overlying structures, or if the groundwater level changes, potentially resulting in depression of the ground and disturbance of foundations.

Features are displayed on the Natural ground subsidence - Compressible deposits map on **page 89**

Location	Hazard rating	Details
On site	Negligible	Compressible strata are not thought to occur.

This data is sourced from the British Geological Survey.

Natural ground subsidence - Collapsible deposits



— Site Outline
Search buffers in metres (m)

- No data
- Negligible
- Very low
- Low
- Moderate
- High

17.4 Collapsible deposits

Records within 50m

1

The potential hazard presented by natural deposits that could collapse when a load (such as a building) is placed on them or they become saturated with water.

Features are displayed on the Natural ground subsidence - Collapsible deposits map on **page 90**

Location	Hazard rating	Details
On site	Low	Deposits with potential to collapse when loaded and saturated are possibly present in places.

This data is sourced from the British Geological Survey.

Natural ground subsidence - Landslides



— Site Outline
Search buffers in metres (m)

- No data
- Negligible
- Very low
- Low
- Moderate
- High

17.5 Landslides

Records within 50m

1

The potential for landsliding (slope instability) to be a hazard assessed using 1:50,000 scale digital maps of superficial and bedrock deposits, combined with information from the BGS National Landslide Database and scientific and engineering reports.

Features are displayed on the Natural ground subsidence - Landslides map on **page 91**

Location	Hazard rating	Details
On site	Very low	Slope instability problems are not likely to occur but consideration to potential problems of adjacent areas impacting on the site should always be considered.

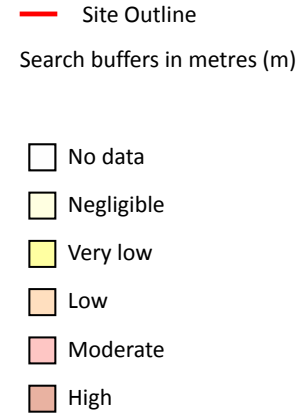
This data is sourced from the British Geological Survey.



Natural ground subsidence - Ground dissolution of soluble rocks



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17.6 Ground dissolution of soluble rocks

Records within 50m

1

The potential hazard presented by ground dissolution, which occurs when water passing through soluble rocks produces underground cavities and cave systems. These cavities reduce support to the ground above and can cause localised collapse of the overlying rocks and deposits.

Features are displayed on the Natural ground subsidence - Ground dissolution of soluble rocks map on **page 92**

Location	Hazard rating	Details
On site	Negligible	Soluble rocks are either not thought to be present within the ground, or not prone to dissolution. Dissolution features are unlikely to be present.

This data is sourced from the British Geological Survey.

18 Mining, ground workings and natural cavities



- Site Outline
- Search buffers in metres (m)
- Natural cavities (Area)
- Natural cavities (Point)
- BritPits
- Surface ground workings
- Underground workings
- Historical Mineral Planning Areas
- Mining Cavities
- Non Coal Mining
- Sporadic underground mining of restricted extent possible
- Localised small scale underground mining possible
- Small scale mining possible
- Underground mining known or likely within or in close proximity
- Underground mining known within or in very close proximity

18.1 Natural cavities

Records within 500m

0

Industry recognised national database of natural cavities. Sinkholes and caves are formed by the dissolution of soluble rock, such as chalk and limestone, gulls and fissures by cambering. Ground instability can result from movement of loose material contained within these cavities, often triggered by water.

This data is sourced from Stantec UK Ltd.

18.2 BritPits

Records within 500m

11

BritPits (an abbreviation of British Pits) is a database maintained by the British Geological Survey of currently active and closed surface and underground mineral workings. Details of major mineral handling sites, such as wharfs and rail depots are also held in the database.

Features are displayed on the Mining, ground workings and natural cavities map on **page 93**

ID	Location	Details	Description
3	206m W	Name: Brookside Brick Works Address: Hayes Town, HAYES, Middlesex Commodity: Clay & Shale Status: Ceased	Type: A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site Status description: Site which, at date of entry, has ceased to extract minerals. May be considered as Closed by operator. May be considered to have Active, Dormant or Expired planning permissions by Mineral Planning Authority
4	243m SW	Name: Brookside Brick Works Address: Hayes Town, HAYES, Middlesex Commodity: Clay & Shale Status: Ceased	Type: A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site Status description: Site which, at date of entry, has ceased to extract minerals. May be considered as Closed by operator. May be considered to have Active, Dormant or Expired planning permissions by Mineral Planning Authority
A	251m SW	Name: Brookside Brick Works Address: Hayes Town, HAYES, Middlesex Commodity: Clay & Shale Status: Ceased	Type: A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site Status description: Site which, at date of entry, has ceased to extract minerals. May be considered as Closed by operator. May be considered to have Active, Dormant or Expired planning permissions by Mineral Planning Authority
B	302m SW	Name: Brookside Brick Works Address: Hayes Town, HAYES, Middlesex Commodity: Clay & Shale Status: Ceased	Type: A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site Status description: Site which, at date of entry, has ceased to extract minerals. May be considered as Closed by operator. May be considered to have Active, Dormant or Expired planning permissions by Mineral Planning Authority
6	325m W	Name: Brookside Brick Works Address: Hayes Town, HAYES, Middlesex Commodity: Clay & Shale Status: Ceased	Type: A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site Status description: Site which, at date of entry, has ceased to extract minerals. May be considered as Closed by operator. May be considered to have Active, Dormant or Expired planning permissions by Mineral Planning Authority



ID	Location	Details	Description
C	333m SW	Name: Brookside Brick Works Address: Hayes Town, HAYES, Middlesex Commodity: Clay & Shale Status: Ceased	Type: A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site Status description: Site which, at date of entry, has ceased to extract minerals. May be considered as Closed by operator. May be considered to have Active, Dormant or Expired planning permissions by Mineral Planning Authority
D	341m W	Name: Brookside Brick Works Address: Hayes Town, HAYES, Middlesex Commodity: Clay & Shale Status: Ceased	Type: A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site Status description: Site which, at date of entry, has ceased to extract minerals. May be considered as Closed by operator. May be considered to have Active, Dormant or Expired planning permissions by Mineral Planning Authority
7	389m S	Name: Brookside Brick Works Address: Hayes Town, HAYES, Middlesex Commodity: Clay & Shale Status: Ceased	Type: A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site Status description: Site which, at date of entry, has ceased to extract minerals. May be considered as Closed by operator. May be considered to have Active, Dormant or Expired planning permissions by Mineral Planning Authority
B	403m SW	Name: Brookside Brick Works Address: Hayes Town, HAYES, Middlesex Commodity: Clay & Shale Status: Ceased	Type: A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site Status description: Site which, at date of entry, has ceased to extract minerals. May be considered as Closed by operator. May be considered to have Active, Dormant or Expired planning permissions by Mineral Planning Authority
G	410m SW	Name: Brookside Brick Works Address: Hayes Town, HAYES, Middlesex Commodity: Clay & Shale Status: Ceased	Type: A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site Status description: Site which, at date of entry, has ceased to extract minerals. May be considered as Closed by operator. May be considered to have Active, Dormant or Expired planning permissions by Mineral Planning Authority
10	422m SW	Name: Brookside Brick Works Address: Hayes Town, HAYES, Middlesex Commodity: Clay & Shale Status: Ceased	Type: A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site Status description: Site which, at date of entry, has ceased to extract minerals. May be considered as Closed by operator. May be considered to have Active, Dormant or Expired planning permissions by Mineral Planning Authority

This data is sourced from the British Geological Survey.



18.3 Surface ground workings

Records within 250m

18

Historical land uses identified from Ordnance Survey mapping that involved ground excavation at the surface. These features may or may not have been subsequently backfilled.

Features are displayed on the Mining, ground workings and natural cavities map on **page 93**

ID	Location	Land Use	Year of mapping	Mapping scale
A	19m SW	Brick Works	1938	1:10560
A	37m SW	Brick Works	1935	1:10560
B	43m SW	Brick Works	1920	1:10560
C	45m SW	Brick Works	1938	1:10560
C	45m SW	Brick Works	1938	1:10560
E	75m NE	Canal Feeder	1920	1:10560
1	77m NE	Canal Feeder	1897	1:10560
E	82m NE	Canal Feeder	1935	1:10560
B	134m SW	Brick Works	1913	1:10560
F	167m E	Pond	1897	1:10560
F	167m E	Pond	1865	1:10560
F	167m E	Pond	1913	1:10560
F	167m E	Pond	1894	1:10560
F	168m E	Pond	1920	1:10560
B	169m SW	Unspecified Pit	1913	1:10560
B	175m SW	Unspecified Pit	1920	1:10560
F	176m E	Pond	1882	1:10560
2	181m S	Refuse Heap	1920	1:10560

This is data is sourced from Ordnance Survey/Groundsure.



18.4 Underground workings

Records within 1000m

0

Historical land uses identified from Ordnance Survey mapping that indicate the presence of underground workings e.g. mine shafts.

This is data is sourced from Ordnance Survey/Groundsure.

18.5 Historical Mineral Planning Areas

Records within 500m

1

Boundaries of mineral planning permissions for England and Wales. This data was collated between the 1940s (and retrospectively to the 1930s) and the mid 1980s. The data includes permitted, withdrawn and refused permissions.

Features are displayed on the Mining, ground workings and natural cavities map on **page 93**

ID	Location	Site Name	Mineral	Type	Planning Status	Planning Status Date
D	71m SW	Brookside Brickworks	Brick clay	Surface mineral working	Refused	Not available

This data is sourced from the British Geological Survey.

18.6 Non-coal mining

Records within 1000m

0

The potential for historical non-coal mining to have affected an area. The assessment is drawn from expert knowledge and literature in addition to the digital geological map of Britain. Mineral commodities may be divided into seven general categories - vein minerals, chalk, oil shale, building stone, bedded ores, evaporites and 'other' commodities (including ball clay, jet, black marble, graphite and chert).

This data is sourced from the British Geological Survey.

18.7 Mining cavities

Records within 1000m

0

Industry recognised national database of mining cavities. Degraded mines may result in hazardous subsidence (crown holes). Climatic conditions and water escape can also trigger subsidence over mine entrances and workings.

This data is sourced from Stantec UK Ltd.



18.8 JPB mining areas

Records on site	0
------------------------	----------

Areas which could be affected by former coal and other mining. This data includes some mine plans unavailable to the Coal Authority.

This data is sourced from Johnson Poole and Bloomer.

18.9 Coal mining

Records on site	0
------------------------	----------

Areas which could be affected by past, current or future coal mining.

This data is sourced from the Coal Authority.

18.10 Brine areas

Records on site	0
------------------------	----------

The Cheshire Brine Compensation District indicates areas that may be affected by salt and brine extraction in Cheshire and where compensation would be available where damage from this mining has occurred. Damage from salt and brine mining can still occur outside this district, but no compensation will be available.

This data is sourced from the Cheshire Brine Subsidence Compensation Board.

18.11 Gypsum areas

Records on site	0
------------------------	----------

Generalised areas that may be affected by gypsum extraction.

This data is sourced from British Gypsum.

18.12 Tin mining

Records on site	0
------------------------	----------

Generalised areas that may be affected by historical tin mining.

This data is sourced from Groundsure.



18.13 Clay mining

Records on site

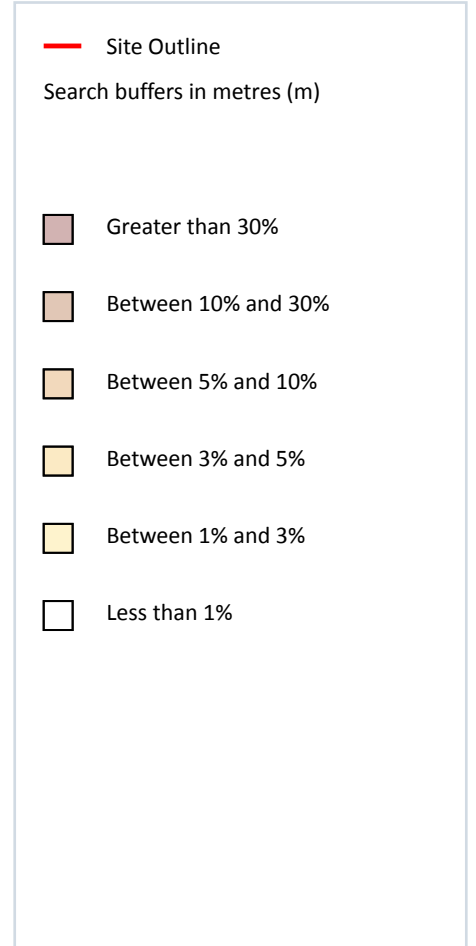
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Generalised areas that may be affected by kaolin and ball clay extraction.

This data is sourced from the Kaolin and Ball Clay Association (UK).



19 Radon



19.1 Radon

Records on site

1

Estimated percentage of dwellings exceeding the Radon Action Level. This data is the highest resolution radon dataset available for the UK and is produced to a 75m level of accuracy to allow for geological data accuracy and a 'residential property' buffer. The findings of this section should supersede any estimations derived from the Indicative Atlas of Radon in Great Britain. The data was derived from both geological assessments and long term measurements of radon in more than 479,000 households.

Features are displayed on the Radon map on **page 100**

Location	Estimated properties affected	Radon Protection Measures required
On site	Less than 1%	None**

This data is sourced from the British Geological Survey and Public Health England.



20 Soil chemistry

20.1 BGS Estimated Background Soil Chemistry

Records within 50m

1

The estimated values provide the likely background concentration of the potentially harmful elements Arsenic, Cadmium, Chromium, Lead and Nickel in topsoil. The values are estimated primarily from rural topsoil data collected at a sample density of approximately 1 per 2 km². In areas where rural soil samples are not available, estimation is based on stream sediment data collected from small streams at a sampling density of 1 per 2.5 km²; this is the case for most of Scotland, Wales and southern England. The stream sediment data are converted to soil-equivalent concentrations prior to the estimation.

Location	Arsenic	Bioaccessible Arsenic	Lead	Bioaccessible Lead	Cadmium	Chromium	Nickel
On site	No data	No data	No data	No data	No data	No data	No data

This data is sourced from the British Geological Survey.

20.2 BGS Estimated Urban Soil Chemistry

Records within 50m

4

Estimated topsoil chemistry of Arsenic, Cadmium, Chromium, Copper, Nickel, Lead, Tin and Zinc and bioaccessible Arsenic and Lead in 23 urban centres across Great Britain. These estimates are derived from interpolation of the measured urban topsoil data referred to above and provide information across each city between the measured sample locations (4 per km²).

Location	Arsenic (mg/kg)	Bioaccessible Arsenic (mg/kg)	Lead (mg/kg)	Bioaccessible Lead (mg/kg)	Cadmium (mg/kg)	Chromium (mg/kg)	Copper (mg/kg)	Nickel (mg/kg)	Tin (mg/kg)
On site	16	2.8	205	141	0.8	89	69	32	14
On site	17	3	201	138	0.8	96	73	36	16
On site	17	3	208	143	0.8	95	70	36	16
On site	17	3	188	129	0.8	101	69	38	14

This data is sourced from the British Geological Survey.



20.3 BGS Measured Urban Soil Chemistry

Records within 50m

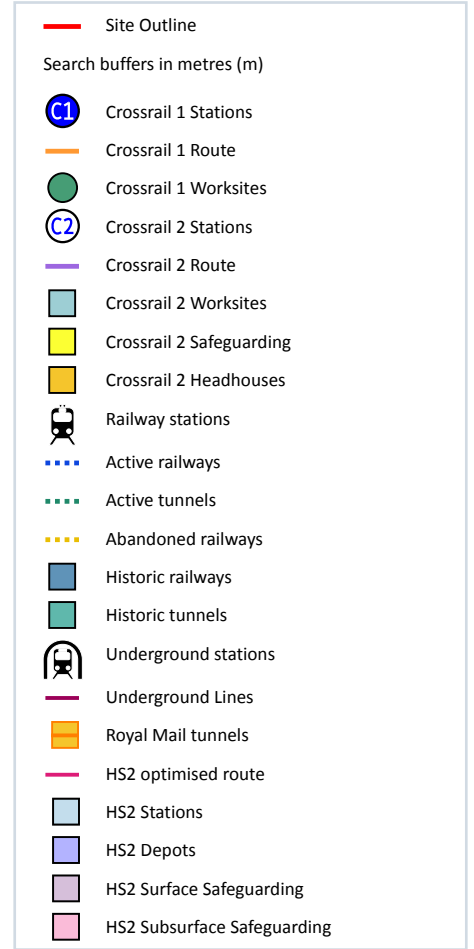
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The locations and measured total concentrations (mg/kg) of Arsenic, Cadmium, Chromium, Copper, Nickel, Lead, Tin and Zinc in urban topsoil samples from 23 urban centres across Great Britain. These are collected at a sample density of 4 per km².

This data is sourced from the British Geological Survey.



21 Railway infrastructure and projects



21.1 Underground railways (London)

Records within 250m

0

Details of all active London Underground lines, including approximate tunnel roof depth and operational hours.

This data is sourced from publicly available information by Groundsure.

21.2 Underground railways (Non-London)

Records within 250m

0

Details of the Merseyrail system, the Tyne and Wear Metro and the Glasgow Subway. Not all parts of all systems are located underground. The data contains location information only and does not include a depth assessment.

This data is sourced from publicly available information by Groundsure.

21.3 Railway tunnels

Records within 250m

0

Railway tunnels taken from contemporary Ordnance Survey mapping.

This data is sourced from the Ordnance Survey.

21.4 Historical railway and tunnel features

Records within 250m

9

Railways and tunnels digitised from historical Ordnance Survey mapping as scales of 1:1,250, 1:2,500, 1:10,000 and 1:10,560.

Features are displayed on the Railway infrastructure and projects map on **page 103**

Location	Land Use	Year of mapping	Mapping scale
168m S	Tramway Sidings	1913	10560
174m S	Tramway Sidings	1920	10560
184m S	Tramway Sidings	1914	2500
230m SW	Railway Sidings	1938	10560
233m SW	Railway Sidings	1938	10560
240m SW	Railway Sidings	1935	10560
241m SW	Tramway Sidings	1935	2500
242m SW	Railway Sidings	1920	10560
246m SW	Railway Sidings	1914	2500

This data is sourced from Ordnance Survey/Groundsure.

21.5 Royal Mail tunnels

Records within 250m

0

The Post Office Railway, otherwise known as the Mail Rail, is an underground railway running through Central London from Paddington Head District Sorting Office to Whitechapel Eastern Head Sorting Office. The line is 10.5km long. The data includes details of the full extent of the tunnels, the depth of the tunnel, and the depth to track level.

This data is sourced from Groundsure/the Postal Museum.



21.6 Historical railways

Records within 250m

0

Former railway lines, including dismantled lines, abandoned lines, disused lines, historic railways and razed lines.

This data is sourced from OpenStreetMap.

21.7 Railways

Records within 250m

0

Currently existing railway lines, including standard railways, narrow gauge, funicular, trams and light railways.

This data is sourced from Ordnance Survey and OpenStreetMap.

21.8 Crossrail 1

Records within 500m

0

The Crossrail railway project links 41 stations over 100 kilometres from Reading and Heathrow in the west, through underground sections in central London, to Shenfield and Abbey Wood in the east.

This data is sourced from publicly available information by Groundsure.

21.9 Crossrail 2

Records within 500m

0

Crossrail 2 is a proposed railway linking the national rail networks in Surrey and Hertfordshire via an underground tunnel through London.

This data is sourced from publicly available information by Groundsure.

21.10 HS2

Records within 500m

0

HS2 is a proposed high speed rail network running from London to Manchester and Leeds via Birmingham. Main civils construction on Phase 1 (London to Birmingham) of the project began in 2019, and it is currently anticipated that this phase will be fully operational by 2026. Construction on Phase 2a (Birmingham to Crewe) is anticipated to commence in 2021, with the service fully operational by 2027. Construction on Phase 2b (Crewe to Manchester and Birmingham to Leeds) is scheduled to begin in 2023 and be operational by 2033.

This data is sourced from HS2 Ltd.



Data providers

Groundsure works with respected data providers to bring you the most relevant and accurate information. To find out who they are and their areas of expertise see <https://www.groundsure.com/sources-reference>.

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APPENDIX C

HISTORICAL MAPPING

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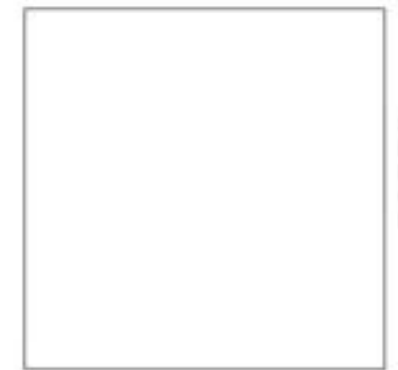
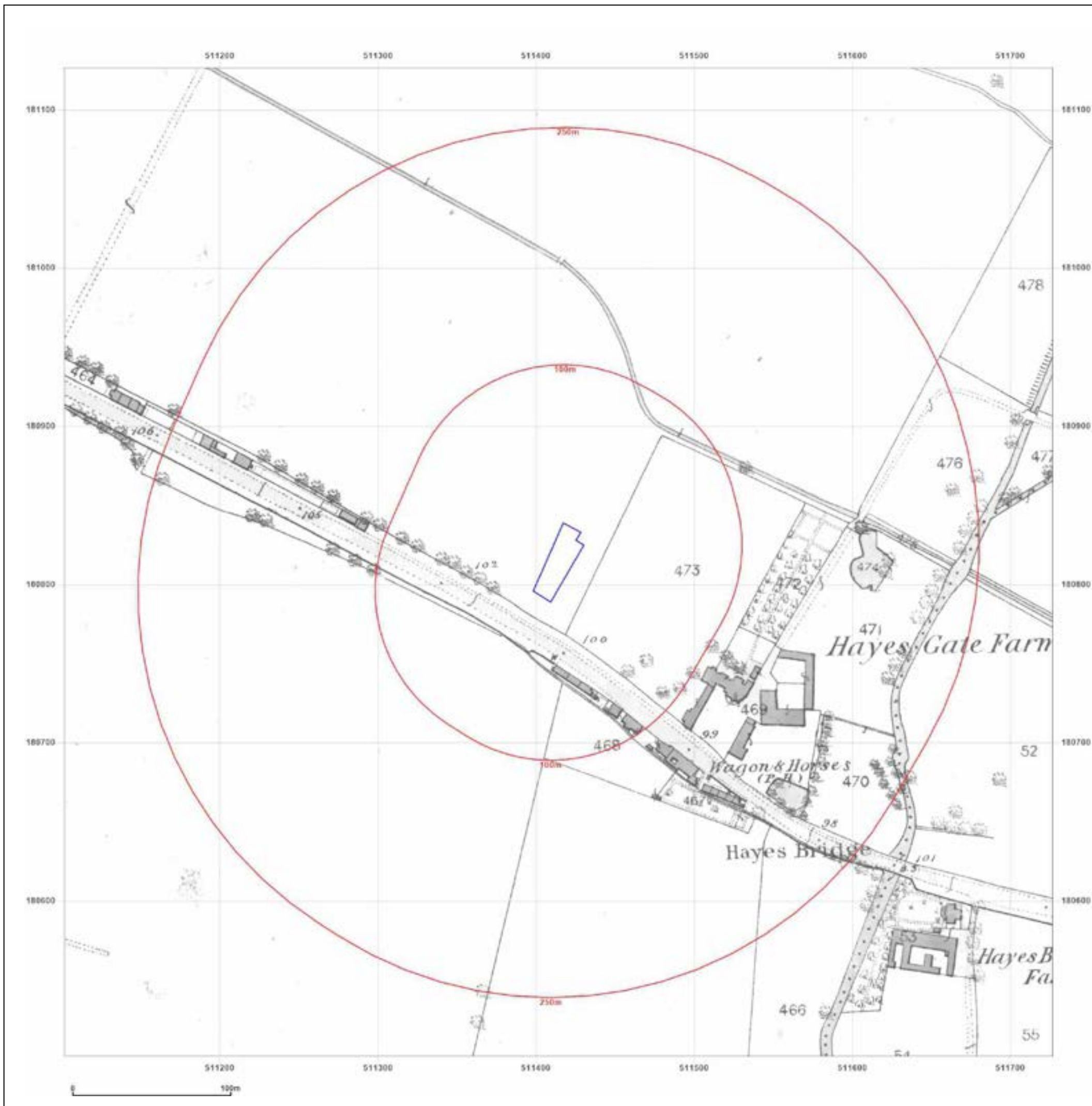
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Map date: 1 5

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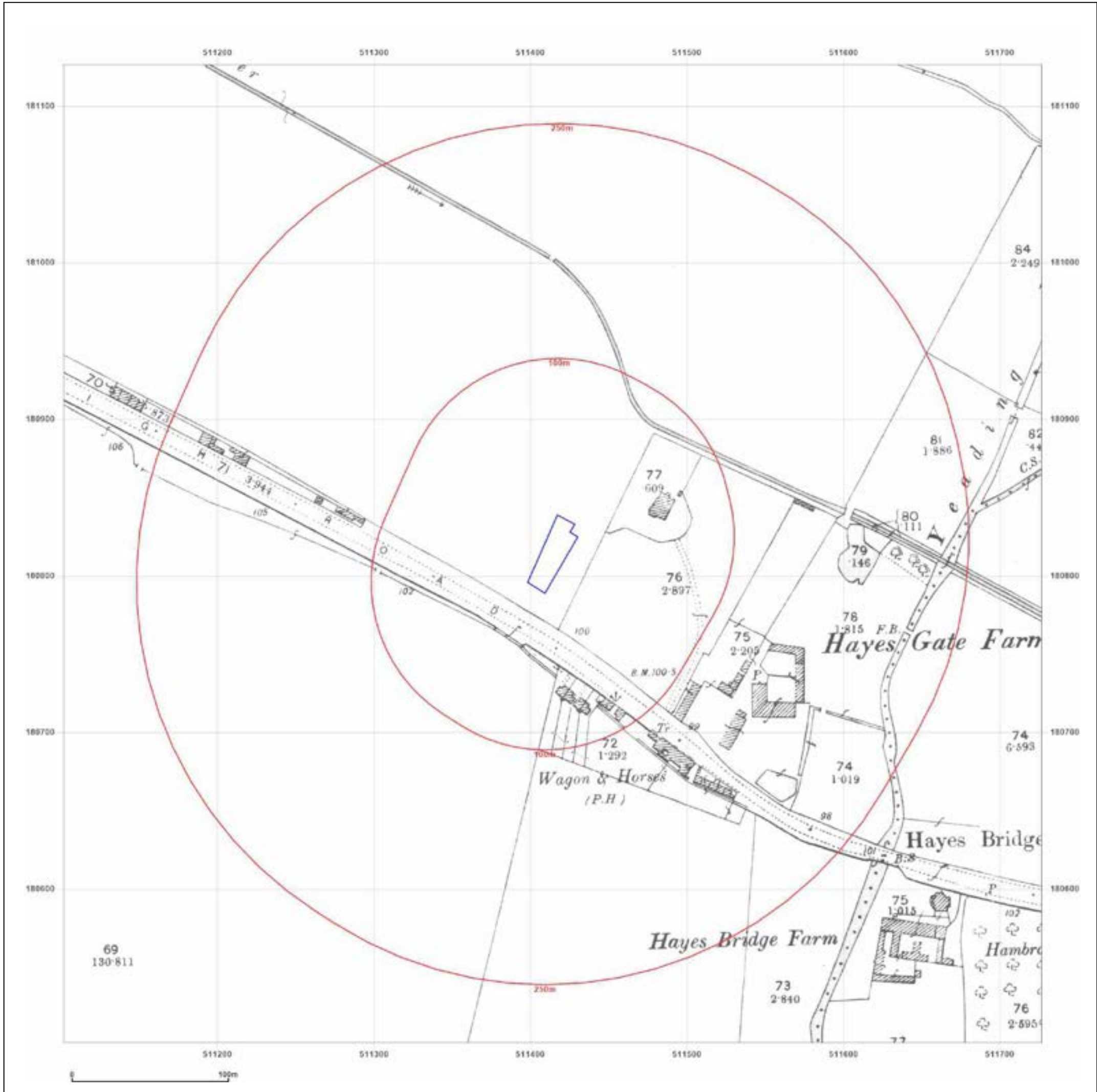
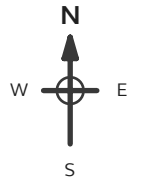
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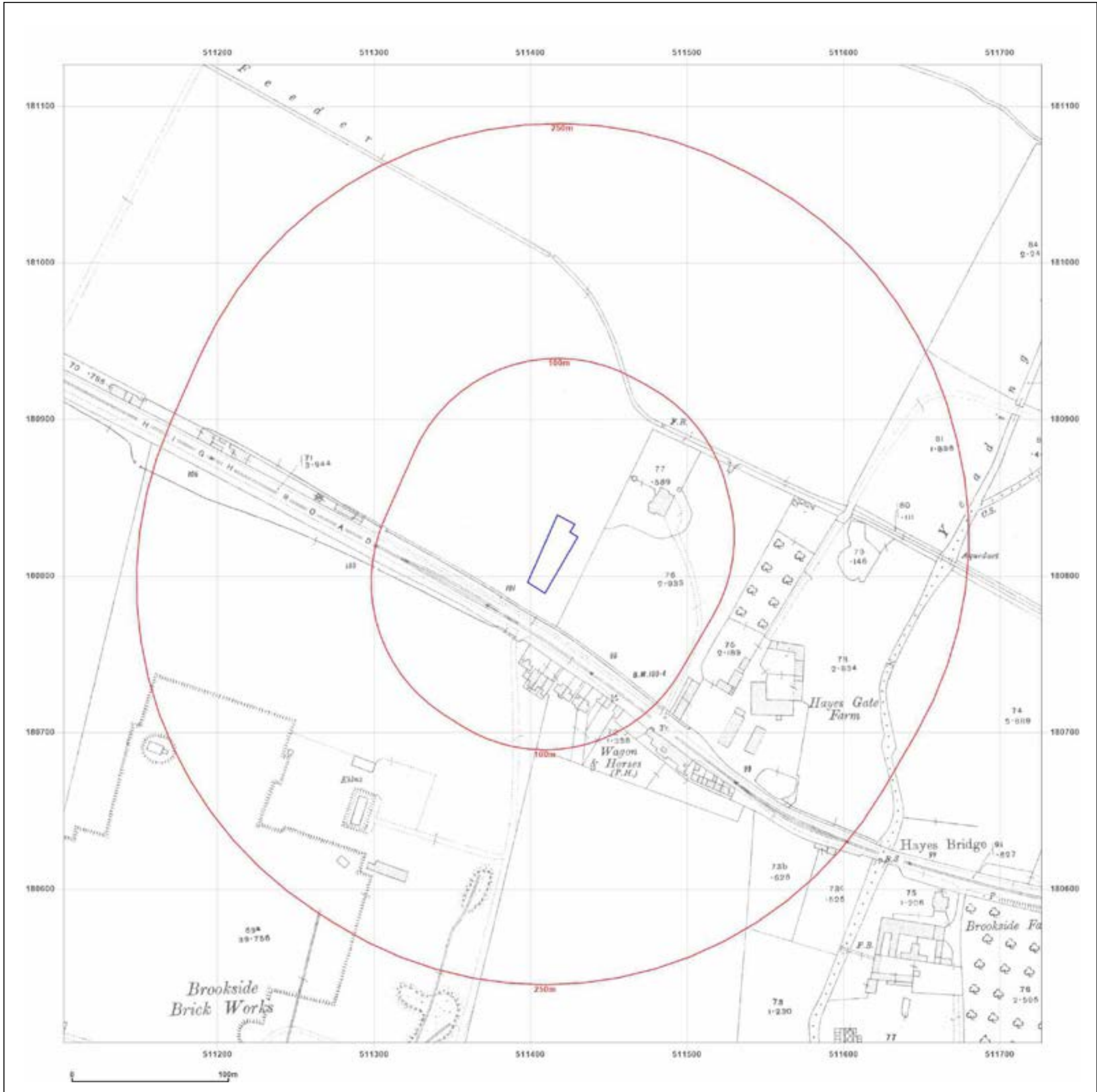
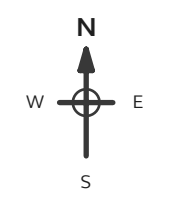
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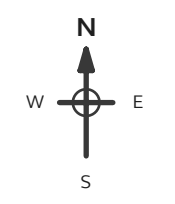
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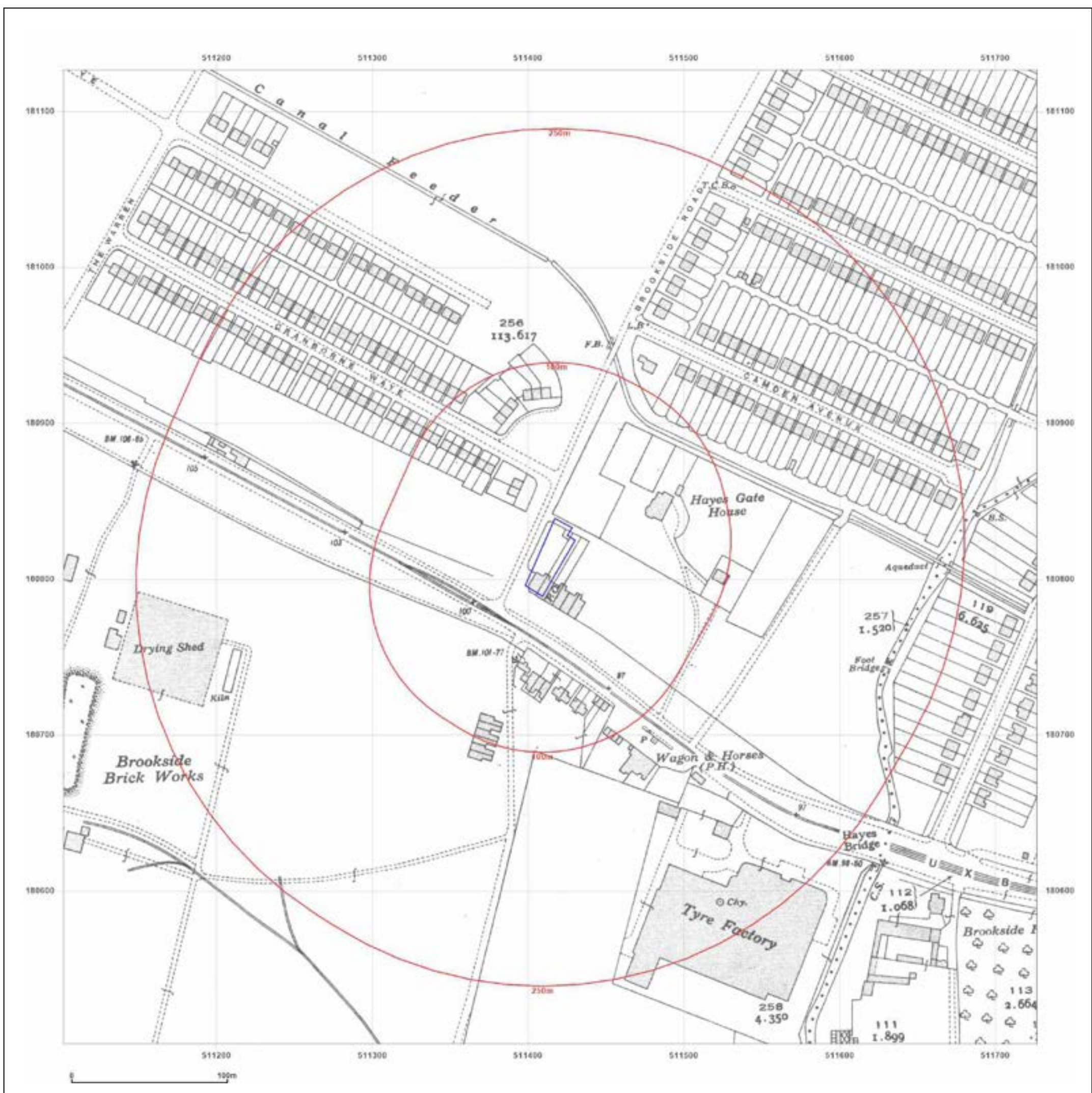


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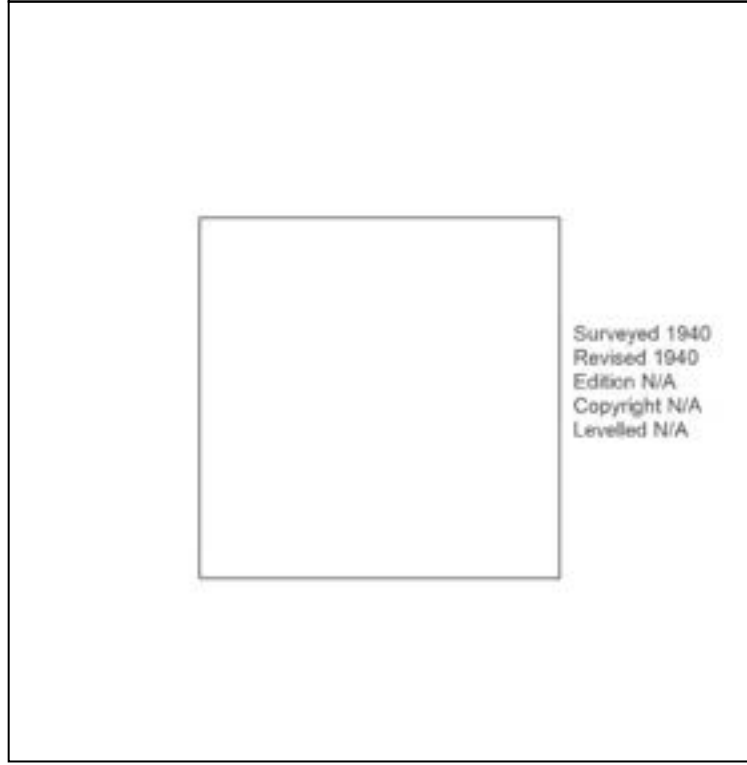
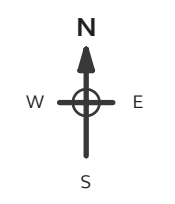
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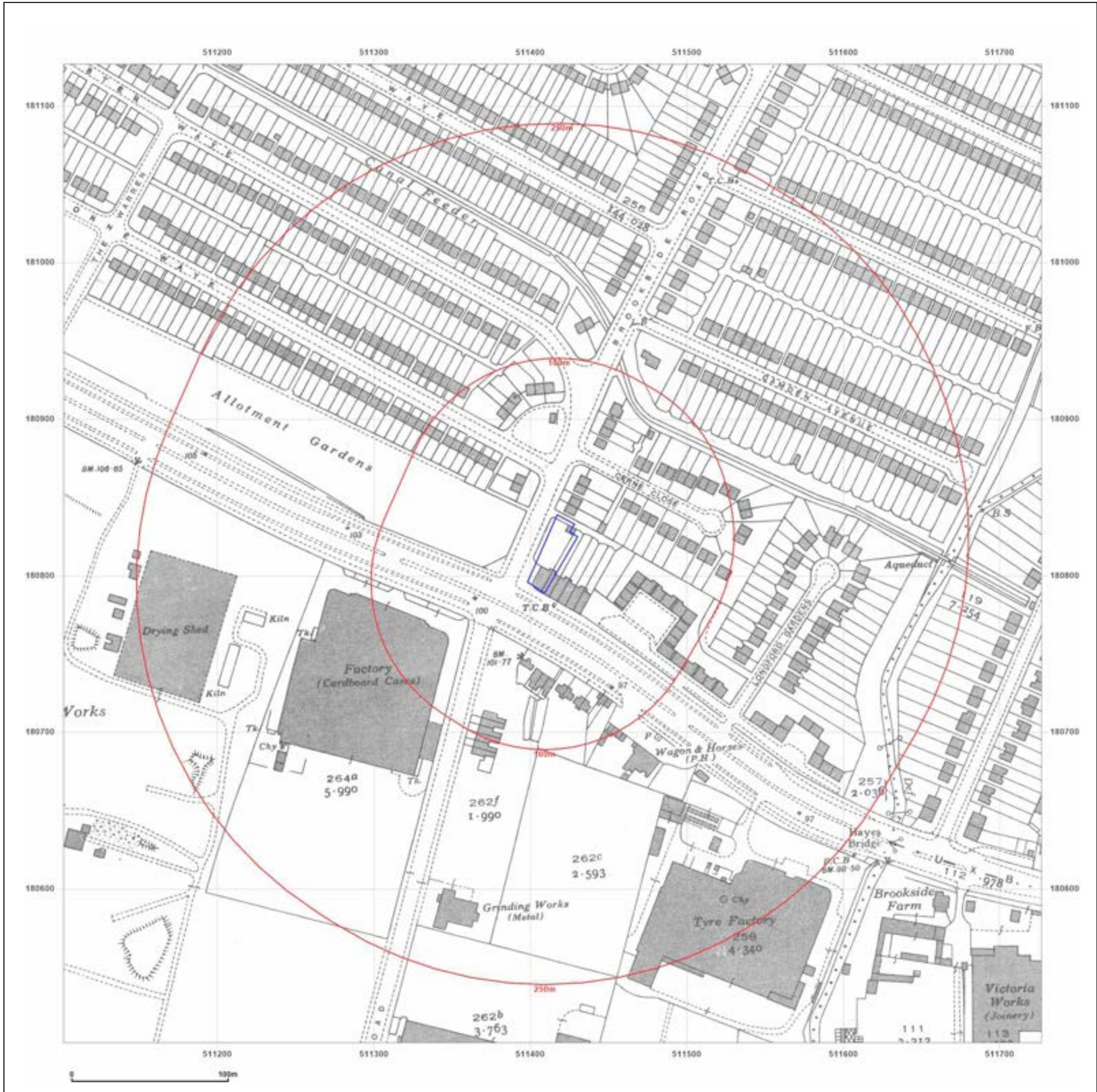


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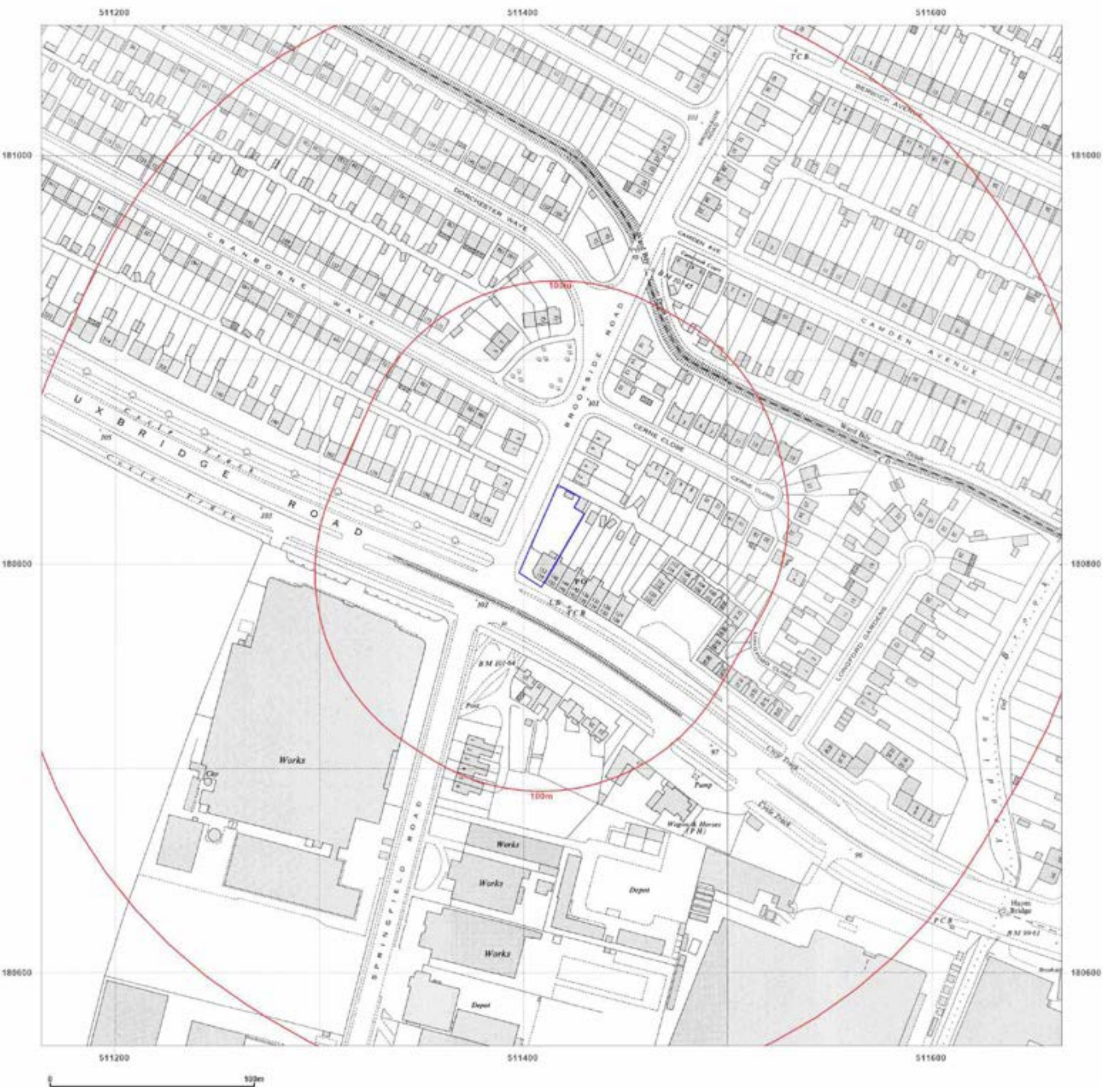
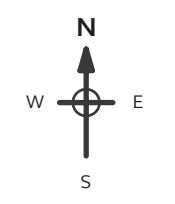
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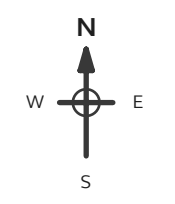
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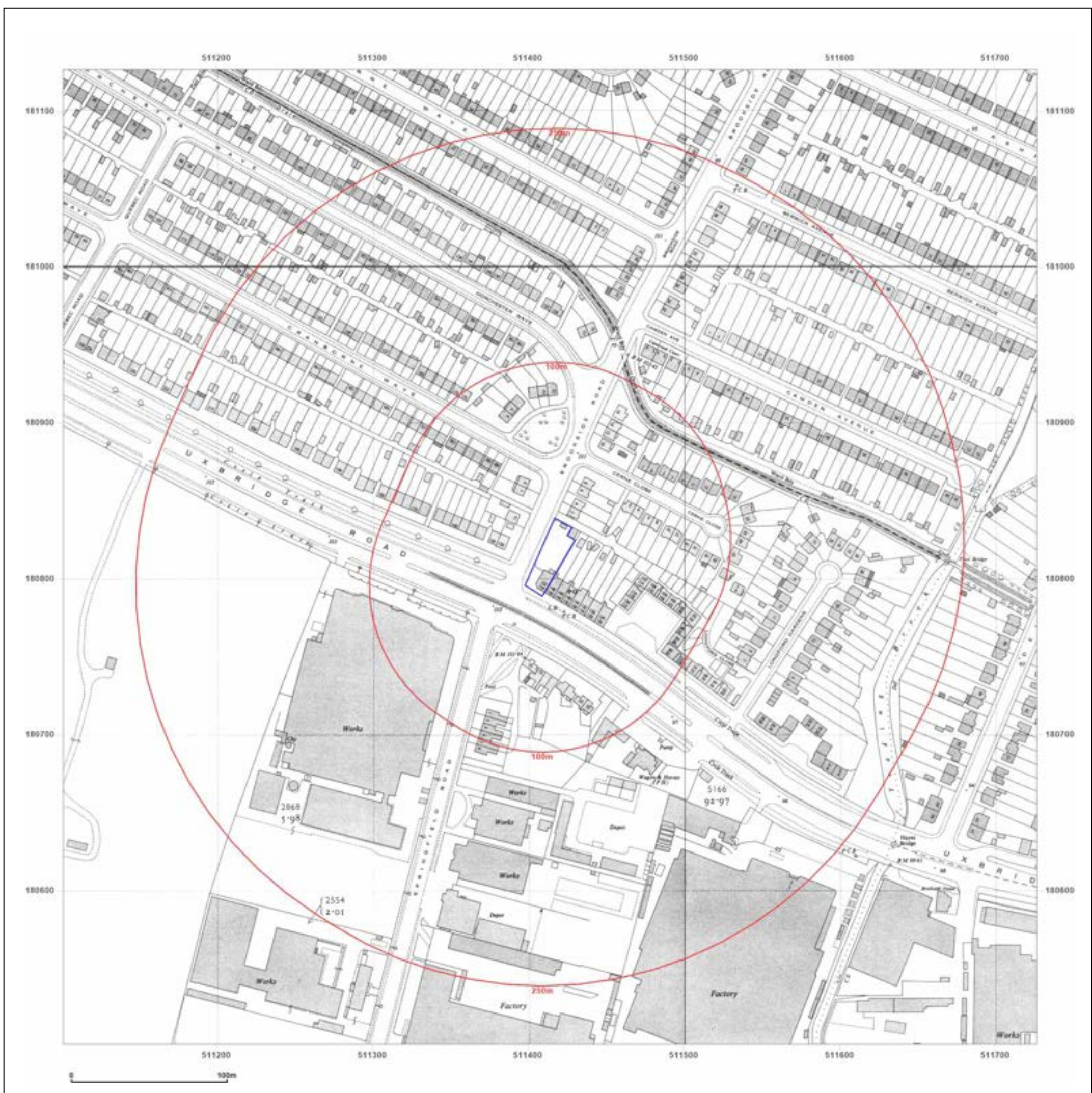


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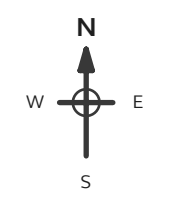
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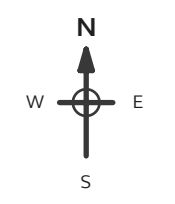
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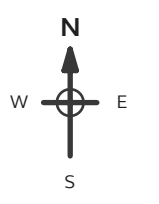
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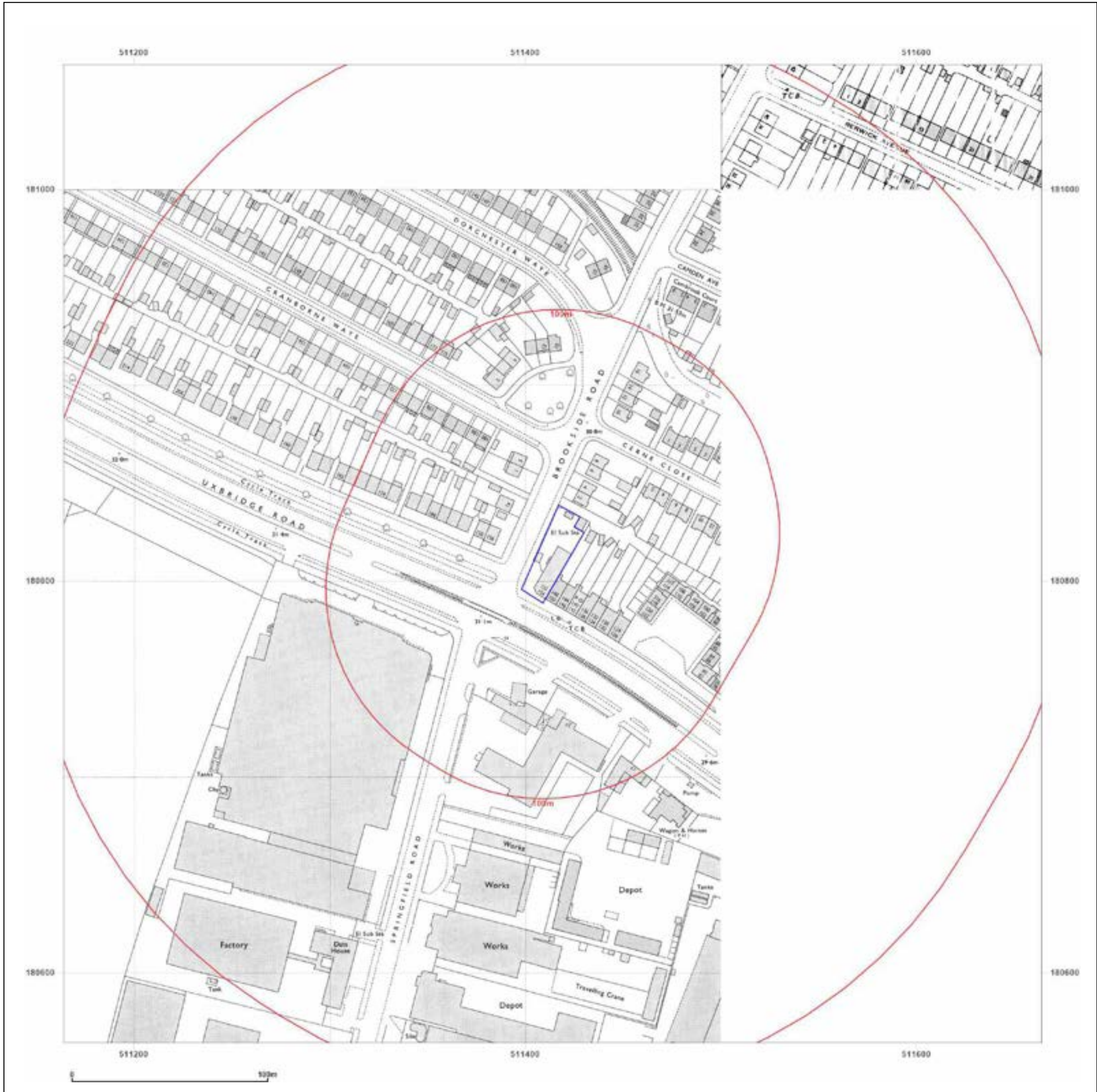


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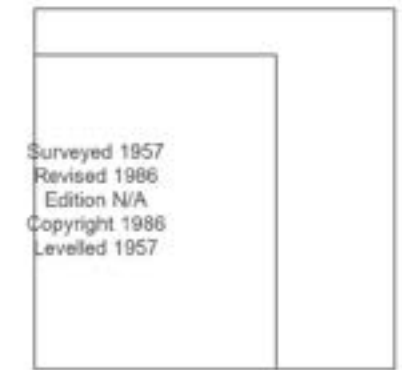
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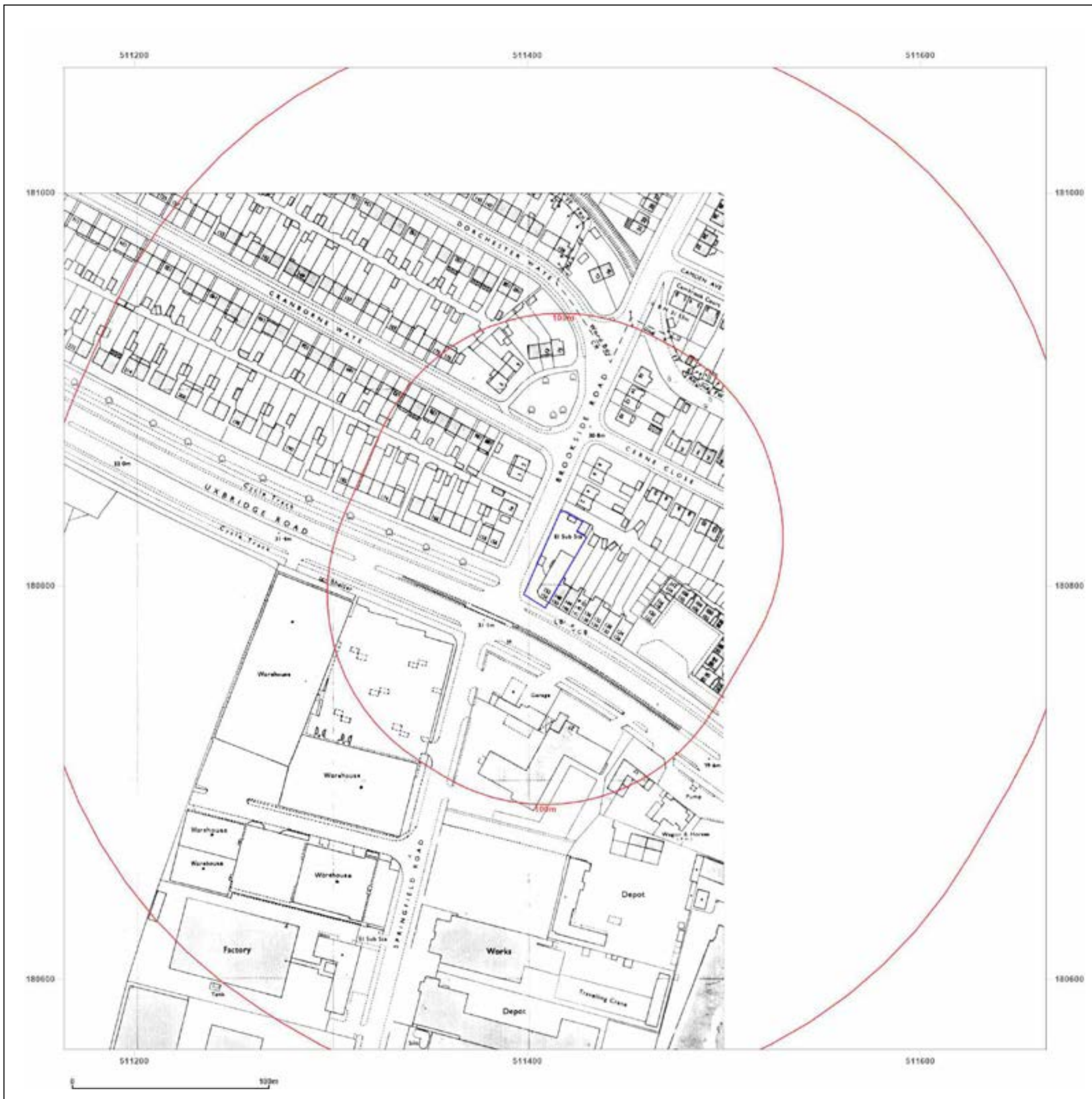


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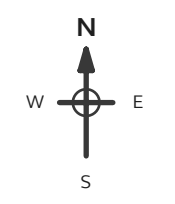
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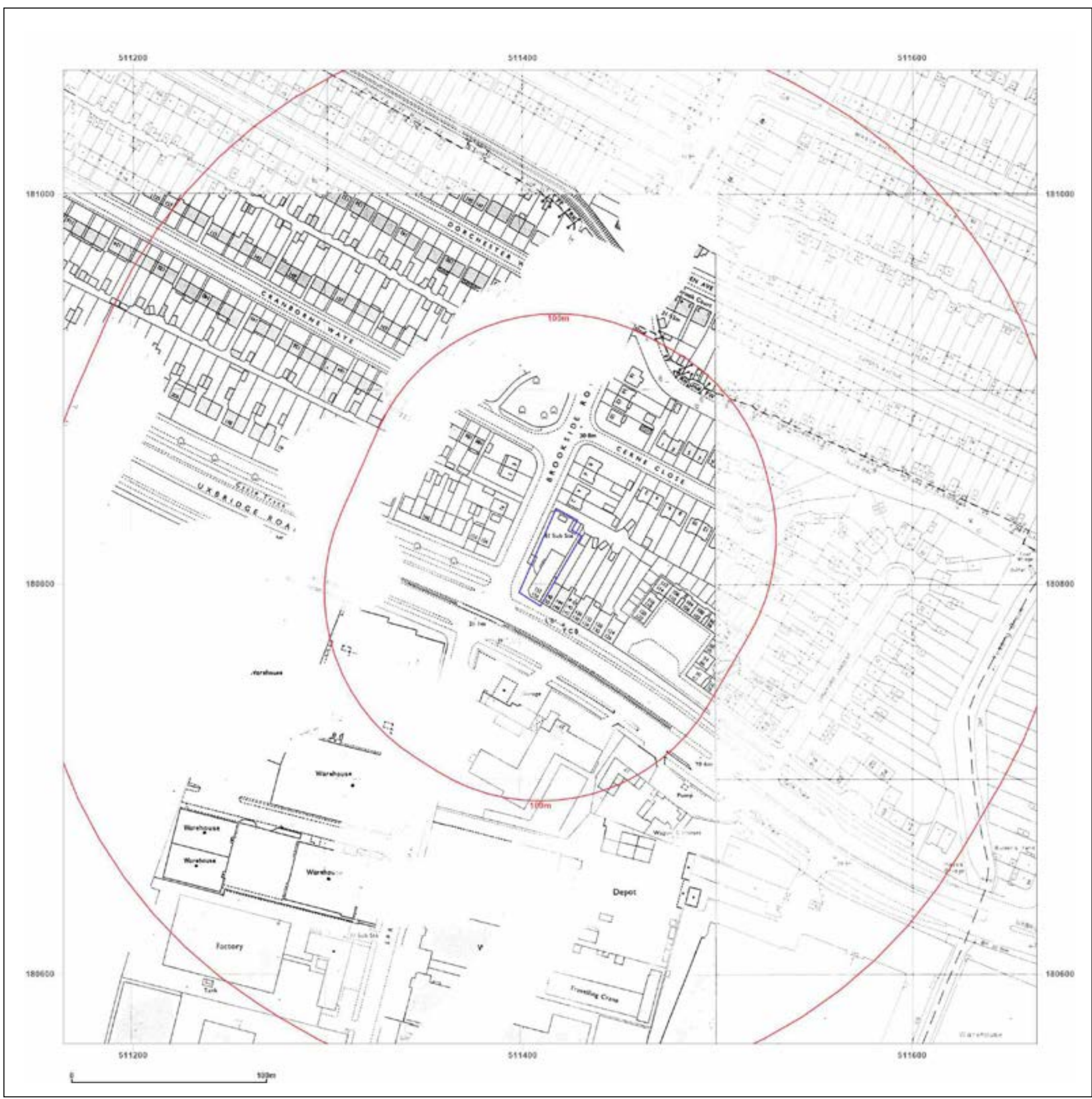


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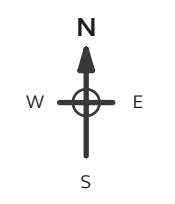
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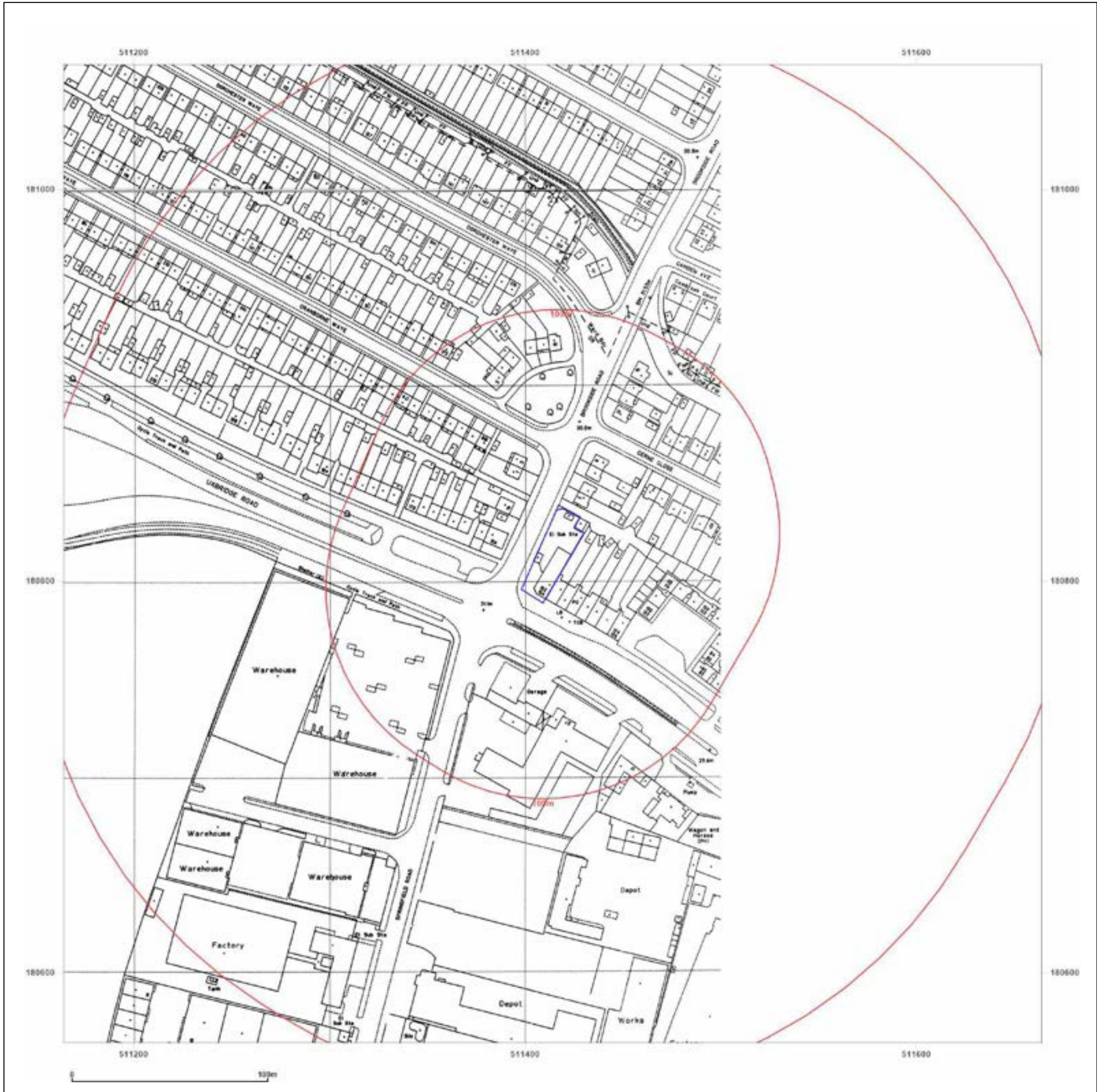


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HAYES, UB4 OJH

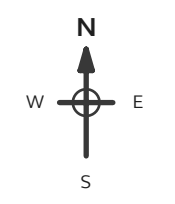
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Report Ref: GS-8359870
Grid Ref: 511414, 180814

Map Name: National Grid

Map date: 1991-1995

Scale: 1:1,250

Printed at: 1:2,000



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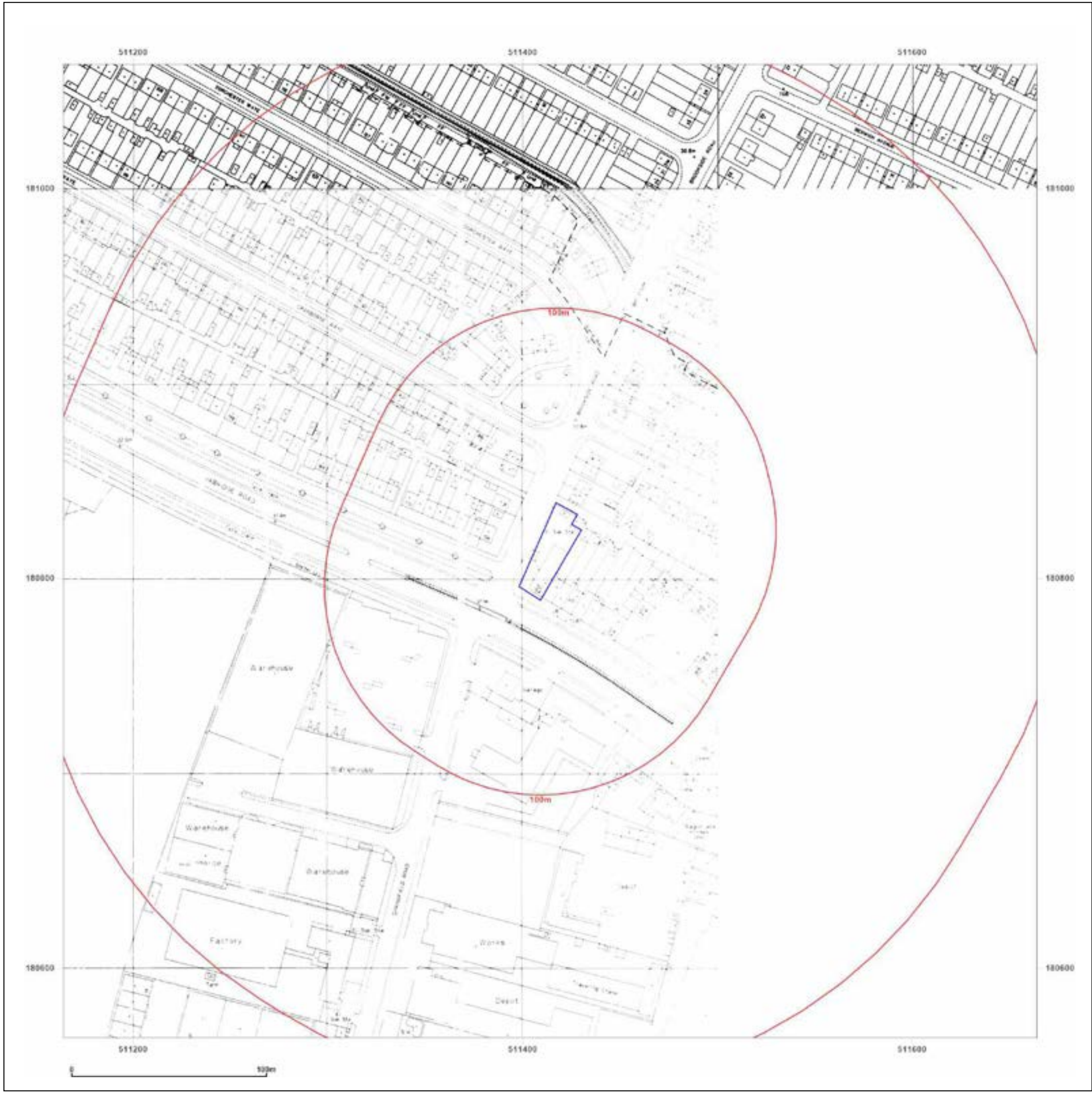


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Site Details:

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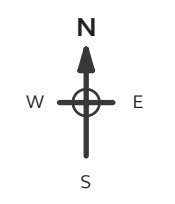
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Grid Ref: 511414, 180814

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Printed at: 1:2,000



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Surveyed N/A Revised N/A Edition N/A Copyright 1993 Levelled N/A	Surveyed N/A Revised N/A Edition N/A Copyright 1995 Levelled N/A

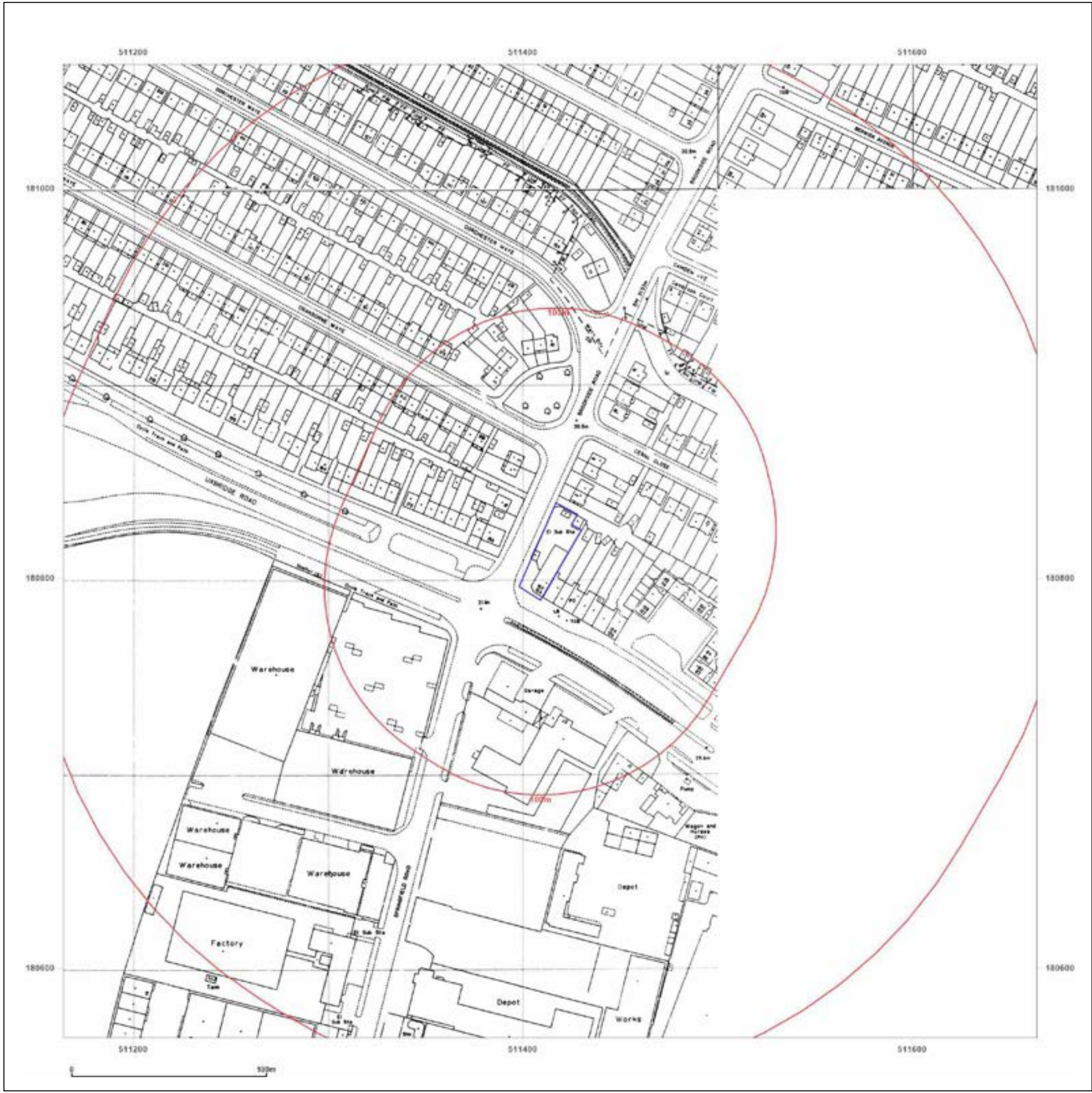


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Site Details:

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HAYES, UB4 OJH

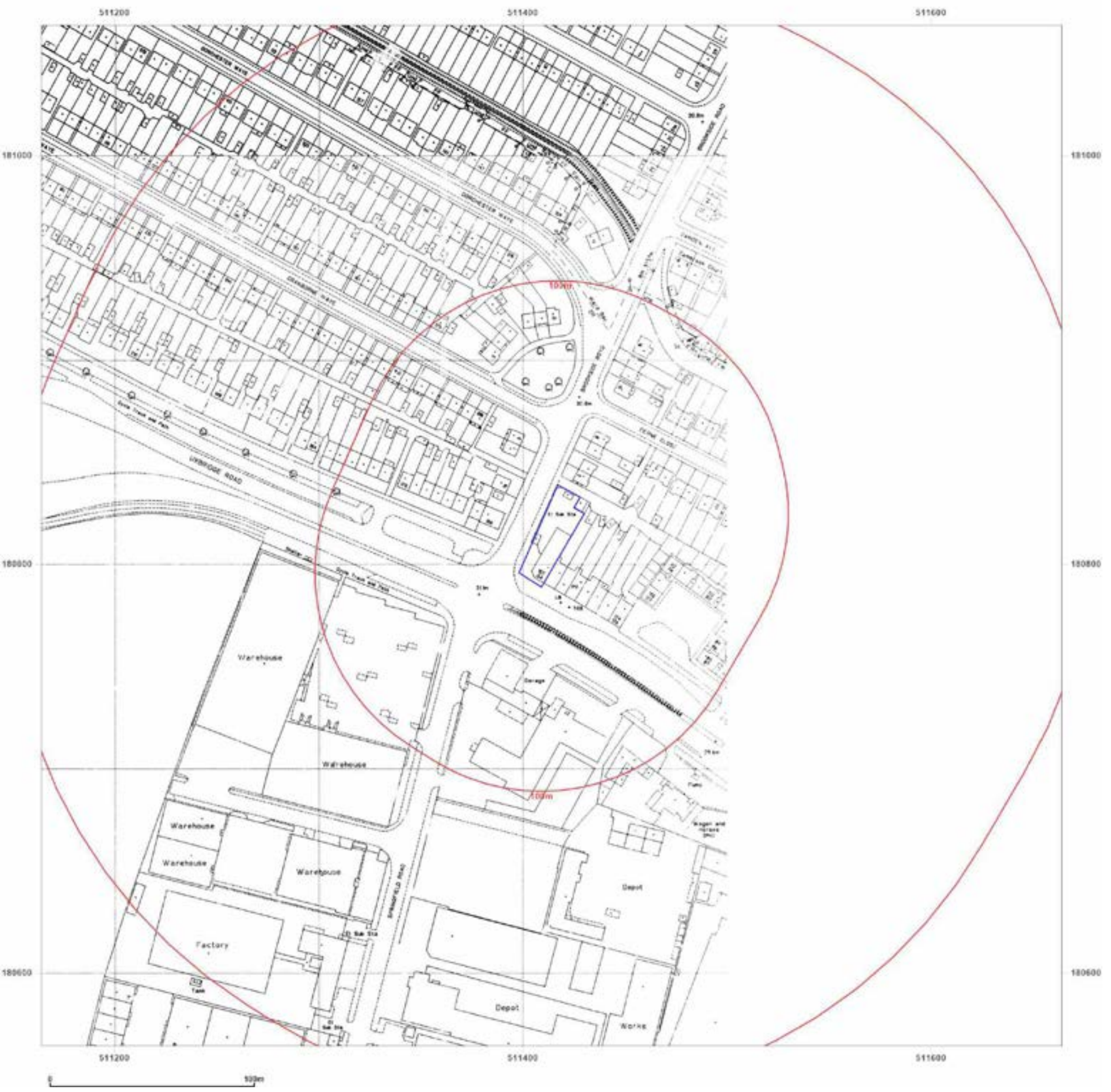
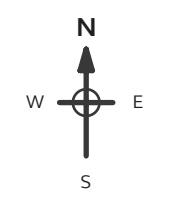
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Map Name: National Grid

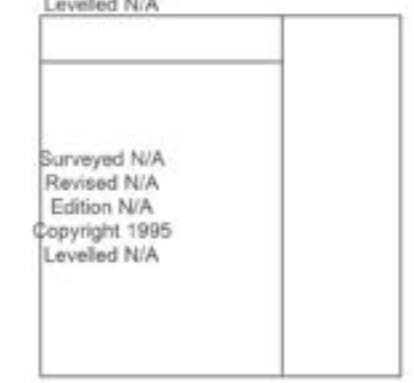
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Scale: 1:1,250

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Site Details:

152-154 UXBRIDGE ROAD,
HAYES, UB4 0JH

Client Ref: CLR5519
Report Ref: GS-8359870
Grid Ref: 511414, 180814

Map Name: National Grid

Map date: 1995

Scale: 1:1,250

Printed at: 1:2,000

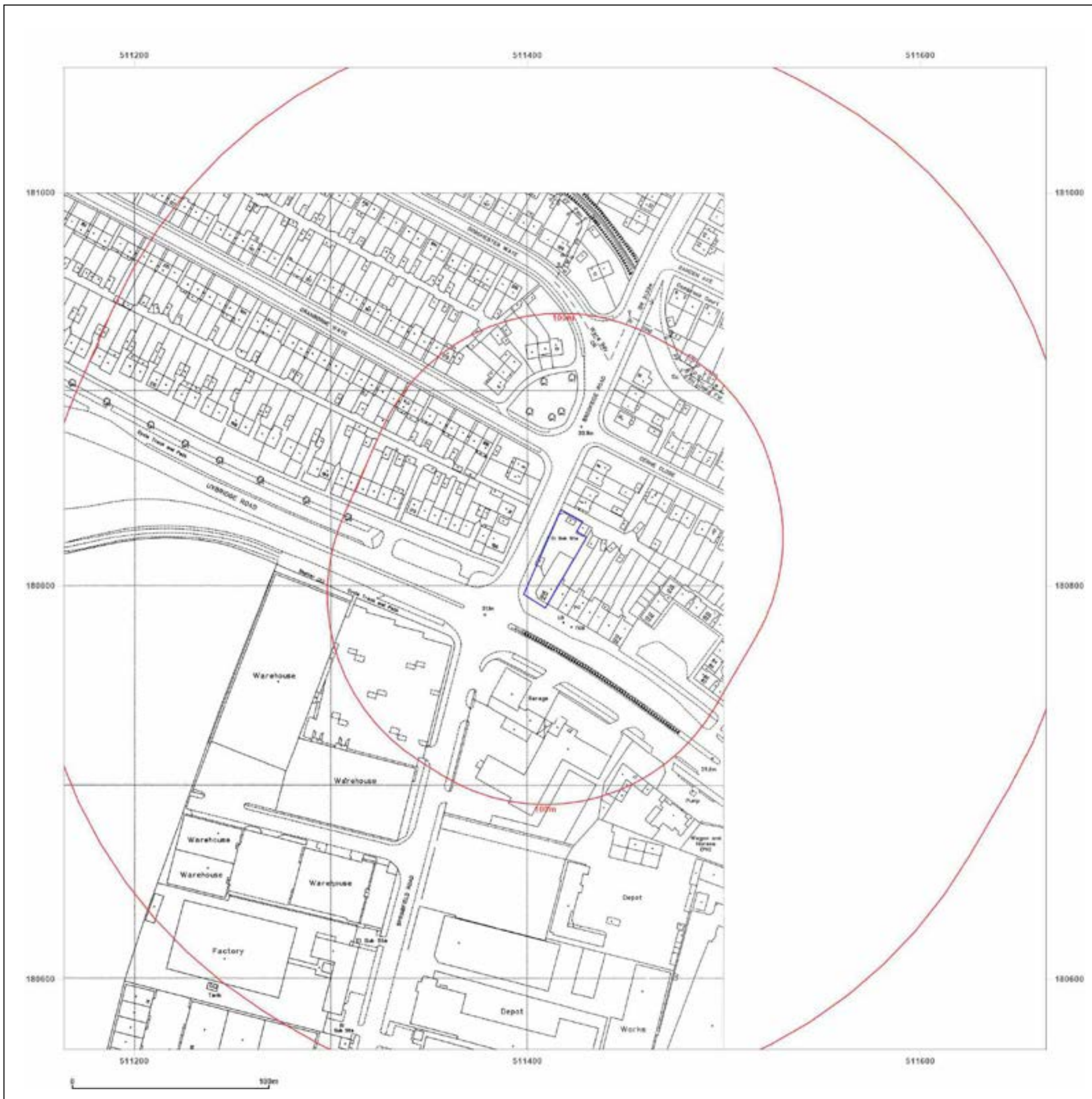


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Site Details:

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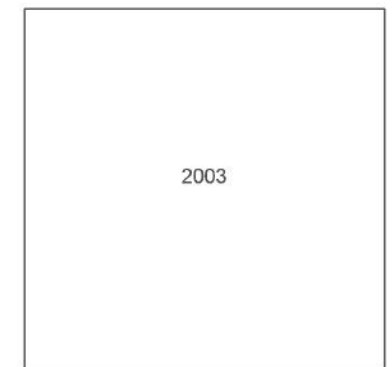
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Report Ref: GS-8359870
Grid Ref: 511414, 180814

Map Name: LandLine

Map date: 3

Scale: 1:1,250

Printed at: 1:1,250



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APPENDIX I - ASBESTOS



Views of asbestos containing materials found on site within the existing, on-site, 1-2No. storey building.



HOME COUNTIES ASBESTOS
QUALITY - SIMPLICITY - COMPLIANCE

ASBESTOS DEMOLITION SURVEY

Prepared For:

MS4 Architects LLP

Our Ref:

HCA05477

Location:

152-154 Uxbridge Road, Hayes, Hillingdon, London, UB4 0JH

Surveyed On: 16th December 2024 **Report Issue Date:** 30th December 2024 **Version:** 1

Lead Consultant: Danny Webber **Quality Assured By:** Jon Little

Home Counties Asbestos Ltd

info@hcasbestos.com

Northern Office - 0333 577 8131 | Southern Office - 0333 577 8189

Unit 2, Hillside Farm, Great Amwell, Ware, Hertfordshire, SG12 9SH



24561

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1. KNOWN SITE HISTORY

Inspection date	Inspection/activity carried out by	Inspection/activity	Next inspection due date
16/12/2024	Home Counties Asbestos Ltd	Asbestos Demolition Survey	16/12/2025

Inspection reports that Home Counties Asbestos Ltd are aware of are listed above. it is important to be mindful that other inspection reports may exist.

2. EXECUTIVE SUMMARY

On 16th December 2024 an Asbestos Demolition Survey was carried out at 152-154 Uxbridge Road, Hayes, Hillingdon, London, UB4 0JH. This visit was commissioned by MS4 Architects LLP.

The scope of the Asbestos Demolition Survey was strictly limited to the proposed demolition works as verbally outlined by the client. Written confirmation of the proposed demolition works was not provided.

The Building Asbestos Register and Management Plan (page 11) provides detailed information as to how asbestos containing material(s) should be managed. As an Asbestos Demolition Survey has been instructed all management recommendations are defaulted to 'remove', 'prior to demolition'. All employees and contractors at the premises must use the Asbestos Register and Management Plan (page 11) as a reference to minimise the risk of exposure to asbestos.

For the purposes of identifying the locations of any samples taken, and all confirmed or presumed asbestos containing materials, all separate rooms included within the scope of the Asbestos Demolition Survey have been assigned consecutive numerical references. Refer to the Sample and Asbestos Location Plan(s) (page 29) for further information.

Despite an Asbestos Demolition Survey being far more intrusive than an Asbestos Management Survey, employees and contractors must be advised that they may still encounter unidentified asbestos containing material(s) in non-accessible areas. Any such areas are detailed in Limitations of the Asbestos Demolition Survey; Standard Limitations of the Asbestos Demolition Survey.

An Asbestos Demolition Survey is intended to locate, as far as reasonably practicable, all asbestos containing material(s) within the relevant part(s) of the premises undergoing demolition. There are inherent limits to what can be achieved by consultants using hand tools when investigating the fabric of the premises, particularly where solid construction is encountered. As such it must be acknowledged that the findings of this report cannot be considered definitive. Home Counties Asbestos Ltd cannot accept liability for any additional costs associated with the removal of unidentified asbestos containing material(s).

Home Counties Asbestos Ltd were instructed to carry out the Asbestos Demolition Survey whilst the site was operational. As such the Asbestos Demolition Survey was carried out with the safety of the occupant(s) in mind. This has therefore potentially compromised the Asbestos Demolition Survey, as some areas likely to be affected by the proposed demolition works may not have been fully exposed and inspected. Consequently, this Asbestos Demolition Survey may be regarded as insufficient. Details of any such areas that we feel have not been adequately exposed are described in Limitations of the Asbestos Demolition Survey; Site-Specific Limitations of the Asbestos Demolition Survey. To fully comply with the requirements of the Control of Asbestos Regulations 2012, further inspections may be required once the site is vacant.

2.1. SIGN OFF

Quality Control

Jon Little

30th December 2024



2.2. SUMMARY OF ASBESTOS CONTAINING MATERIALS

These suspected materials were assessed as **asbestos-containing**.

UIR, Building, Floor, Room	Location	Material	Material Score	Recommendation	Page
19, Ground floor, G.01 to G.05 (inclusive)	Floor (two layers)	Beige floor tiles and bitumen adhesive	4 Very Low	Remove	(page 12)

UIR: Unique Inspection Reference

2.3. SUMMARY OF LOCATIONS OR ITEMS OF LIMITED ACCESS

These locations or items could not be fully accessed during the survey. Asbestos should be presumed to be present until a further assessment can be undertaken. Note that the survey scope may exclude other areas - see Variations to Scope (page 6).

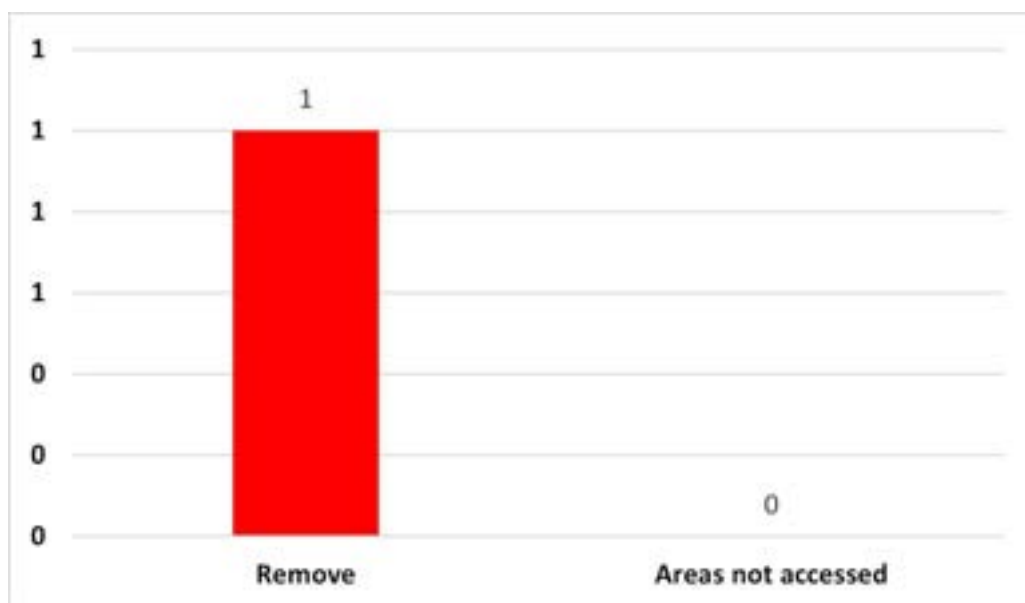
UIR, Building, Floor, Room	Reason for No/Limited Access	Photo 1	Photo 2	Page
All locations and items were fully accessed.				

UIR: Unique Inspection Reference

2.4. SUMMARY OF ASBESTOS MANAGEMENT RECOMMENDATIONS

Remove: 1 Prior to demolition: 1

Areas not accessed: 0 Access and inspect: 0



3. SCOPE OF CLIENT INSTRUCTION

It is understood that an Asbestos Demolition Survey and resultant report is required to provide an up-to-date Asbestos Register and Management Plan (page 11) for all confirmed and presumed asbestos containing material(s).

Home Counties Asbestos Ltd will check the condition, quantity, location and extent of all suspected asbestos containing material(s) sampled or presumed during the Asbestos Demolition Survey.

The scope of client instruction extended to the following areas:

- Second floor; loft space, bedrooms, staircase.
- First floor; kitchen, toilet, bathroom, lounges, staircase, hallway, flat roof.
- Ground floor; store room, toilet facilities, office, shop front and rear.
- External areas; all safely accessible surfaces.

Any areas that fell outside the scope of client instruction were not inspected.

3.1. VARIATIONS TO SCOPE

All areas included within the scope of client instruction were accessed and inspected within the standard limitations of a Home Counties Asbestos Ltd inspection.

4. CLIENT AND PROPERTY INFORMATION

CLIENT

MS4 Architects LLP

CLIENT INSTRUCTION RECEIVED FROM

Michael Simpson, Architect (Partner)

CLIENT ADDRESS

Abbey House, 282 Farnborough Road, Farnborough, Hampshire, GU14 7NA

ASBESTOS DEMOLITION SURVEY SITE ADDRESS

152-154 Uxbridge Road, Hayes, Hillingdon, London, UB4 0JH

GENERAL BUILDING DESCRIPTION

An early 1900's, three storey, brick built domestic dwelling located above a commercial shop unit

SITE CONTACT

Shop keeper

5. SURVEY LIMITATIONS

5.1. STANDARD LIMITATIONS

Live electrics and plant will not be accessed or inspected unless the client arranges safe and isolated access.

Any floor, wall or ceiling surfaces that are obscured by fixed display units and shelving. This is particularly relevant in retail outlets and office accommodation.

Any sealed roof and/or ceiling voids where access is not practicable. Suspended ceilings tiles are typically lifted on a one per room basis, unless the room is too large in which several points of access will be made. Consequently, it is possible that isolated asbestos containing materials may not be identified during the survey.

Inside any security safes where access is not possible or allowed.

Inside structural voids behind/above/below surface materials. This is particularly relevant where the client has requested a sympathetic survey, minimising damage to building structure; and also, where metal and/or glass face panels are encountered, as these can rarely be removed safely/easily using standard surveying hand tools. Where a sympathetic survey has been instructed, it remains the clients' responsibility to ensure that further destructive investigations are instructed prior to demolition.

Internal materials within fire doors, door frames, window frames and beneath window sills. Destructive techniques would have to be employed to locate asbestos containing material(s) within these areas.

It is possible that asbestos containing residues and debris from previous asbestos removal operations may remain undetected as it is not reasonably practicable to inspect all surfaces. Examples of this include thermal insulation residues to pipework installations and asbestos insulating board debris within structural voids. Where it is known that asbestos containing material(s) has/have been removed in the past, it is recommended that suitable control measures are implemented.

Subterranean service runs, ducts and voids were not accessed during the asbestos survey. Upon excavation of the site any such areas will need to be inspected in conjunction with specialist contractors.

Suspected asbestos containing material(s) will be sampled during the survey, or if access is not possible, presumed to contain asbestos. The possibility of additional asbestos containing material(s) being present behind, above or below such suspect materials must be considered.

The internal workings of any electrical, mechanical or heating equipment and machinery, including any associated electrical cabling, pipework and associated pipework elements such as flanges and valves. Upon the dismantling or decommissioning of any such equipment, further inspections can be made in conjunction with specialist contractors.

Where a non-homogenous material has been sampled and it is NAD (No Asbestos Detected), other areas not sampled may still contain asbestos.

On sites where asbestos containing debris has been identified externally, it is probable that further concealed asbestos containing debris remains undetected within undergrowth, and/or underneath the surface.

Within floor voids and/or underneath fixed floor coverings/floorboards.

Within solid structural framework and solid floor/ceiling slabs. Specialist heavy-duty equipment will be required to investigate such areas.

The following must be acknowledged:

The extent of the Asbestos Demolition Survey included only those areas affected by the proposed demolition works confirmed by the client to Home Counties Asbestos Ltd, be that in writing or verbally. No other areas have been considered or inspected.

5.2. SITE-SPECIFIC LIMITATIONS

All rooms were accessed and inspected within the scope of client instruction. Regardless of this, the standard limitations (page 8) of the Asbestos Demolition Survey still apply.

Please note that the Asbestos Demolition Survey was completed as sympathetically as possible as the site was occupied and still in use. It is therefore recommended that prior to demolition work commencing, further and more destructive investigations are instructed.

6. MATERIAL REGISTERS

The following registers contain location, material type, quantity, accessibility and risk assessment information pertaining to all confirmed and/or presumed asbestos containing material(s) and confirmed non-asbestos containing material(s), identified during the Asbestos Management Survey.

Individual tabulated records may carry the following acronyms. It is important they are acknowledged and understood:

NS	No Sample was taken from the material. This may be because of the hardness of the material or the difficulty in procuring a sample due to access or health and safety considerations.
P	'P' signifies that the consultant has been unable to sample a material and has Presumed it to contain asbestos. This conclusion is reached by default, as there is insufficient evidence to suggest that a material does not contain asbestos. In such cases the type of asbestos defaults to either crocidolite (blue) or chrysotile (white) dependant on the material type.
SP	'SP' signifies that the consultant has been unable to sample a material and has Strongly Presumed it to contain asbestos. This conclusion is reached where there is a strong presumption that the material does contain asbestos based on consultant knowledge and experience. Again, in such cases the type of asbestos defaults to either crocidolite (blue) or chrysotile (white) dependant on the material type.
VI	A material may not be sampled if it is Visually Identical to one sampled previously. Where the letters 'VI' are used the number that follows is that of the sample to which the material is visually identical.
NA	Where it has not been possible to access and inspect a specific room or area (Not Accessed), asbestos containing material(s) will be presumed to be present. This will remain the default position until proven otherwise.

Accessibility of asbestos containing material is defined as:

Easy	The asbestos containing material is exposed and can be touched without the use of any access equipment.
Medium	The asbestos containing material is enclosed and/or stepladders are required to touch the asbestos containing material.
Difficult	Destructive techniques and/or specialist access equipment such as a MEWP are required to touch the asbestos containing material.

The results of the Asbestos Demolition Survey now follow.

6.1. ASBESTOS REGISTER AND MANAGEMENT PLAN

Asbestos containing material(s) information now follows two-fold:

- Firstly; a summary table detailing sample numeration, the floor and room(s) in which the asbestos containing material has been identified along with the specific location(s) therefrom, the asbestos containing material type, the quantity of, the overall risk posed (taking into account both the material and priority risk assessments), the accessibility of the asbestos containing material, and finally the current basic management recommendation (based on the observations made during the site inspection).
- Secondly; individual data sheets which supplement the above information with the floor plan reference colour used, photography, a full breakdown of the material and priority risk assessment algorithms applied and the resultant total risk assessment score, the priority assigned to the management recommendation made and additional comments as required.

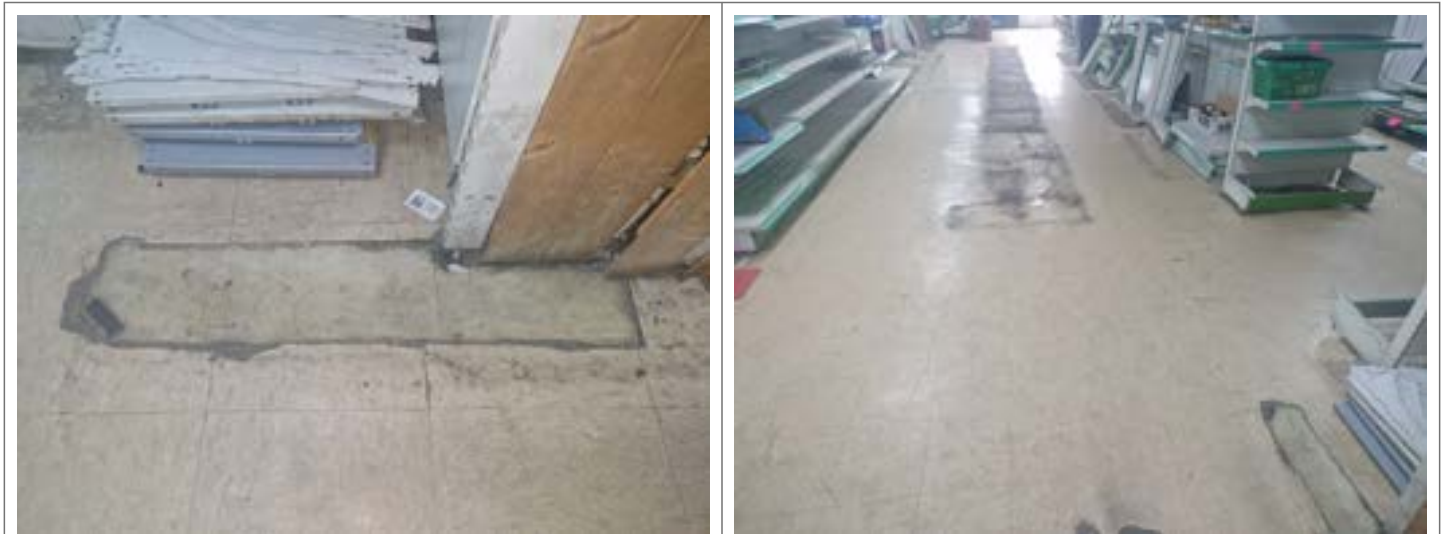
Please note that any articles of concrete, stone, brick, cinder block, mortar, metal, plastic, glass, timber, plywood, chipboard, plasterboard, plaster skim, MMMF or any other material known to be free of asbestos fibres are not normally reported.

6.1.1. Asbestos Register > Summary Table

UIR, Building, Floor, Room	Location	Material	Strategy	Extent	Material Score	Recommendation	Page
19, Ground floor, G.01 to G.05 (inclusive)	Floor (two layers)	Beige floor tiles and bitumen adhesive	Sampled	175 sq. m.	4 Very Low	Remove	(page 12)

UIR: Unique Inspection Reference

Unique Inspection Reference	19	Floor Plan Key	Light Blue
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Building, Floor, Room	Ground floor, G.01 to G.05 (inclusive)	Location	Floor (two layers)
Material	Beige floor tiles and bitumen adhesive	Extent	175 sq. m.
Strategy	Sampled	Fibre Type	Chrysotile

Material Assessment	
Product Type (1-3)	1
Extent of Damage (0-3)	1
Surface Treatment (0-3)	1
Asbestos Type (1-3)	1
Material Score/Risk Rating	4 / Very Low
Accessibility of the Asbestos Containing Material	Easy

Recommendation	Remove	Priority	Prior to demolition
Additional Comments			

6.2. NON-ACCESSED AREAS REGISTER

All rooms were accessed and inspected within the scope of client instruction. Regardless of this, the standard limitations (page 8) of the Asbestos Demolition Survey still apply.

6.2.1. Non-Accessed Areas > Summary Table

UIR, Building, Floor, Room	Reason for No/Limited Access	Recommendation	Page
Nothing to show.			

UIR: Unique Inspection Reference

6.3. NON-ASBESTOS CONTAINING MATERIALS REGISTER

Non-asbestos containing material(s) information now follows two-fold:

- Firstly; a summary table detailing sample numeration, the floor and room(s) in which the non-asbestos containing material has been identified along with the specific location(s) therefrom and the quantity of.
- Secondly; individual data sheets which supplement the above information with photography and additional comments as required.

Please note that any articles of concrete, stone, brick, cinder block, mortar, metal, plastic, glass, timber, plywood, chipboard, plasterboard, plaster skim, MMMF or any other material known to be free of asbestos fibres are not normally reported.



6.3.1. Non-Asbestos Containing Materials > Summary Table

UIR, Building, Floor, Room	Location	Material	Page
1, Second floor, roof void, RV.01	Lining to the former water tank area	Bituminous felt	(page 16)
2, Second floor, 2.01	Applied to the lath and plaster ceiling	Textured coating	(page 16)
3, Second floor, 2.03	Applied to the lath and plaster ceiling	Textured coating	(page 17)
4, Second floor, 2.04	Applied to the lath and plaster ceiling	Textured coating	(page 17)
5, Second floor, staircase, ST.01	Applied to the lath and plaster ceiling	Textured coating	(page 18)
6, First floor, 1.01	Panel lining the boiler cupboard door	Insulating board	(page 18)
7, First floor, 1.01	Floor levelling boards beneath the ceramic floor tiles	Insulating board	(page 19)
8, First floor, 1.02	Applied to the lath and plaster ceiling, above the plastic cladding	Textured coating	(page 19)
9 VI 7, First floor, 1.02	Floor levelling boards beneath the ceramic floor tiles	Insulating board	(page 20)
10 VI 8, First floor, 1.03	Applied to the lath and plaster ceiling, above the plastic cladding	Textured coating	(page 20)
11 VI 7, First floor, 1.03	Floor levelling boards beneath the ceramic floor tiles	Insulating board	(page 21)
12, First floor, 1.04	Applied to the lath and plaster ceiling	Textured coating	(page 21)
13, First floor, 1.05	Applied to the lath and plaster ceiling	Textured coating	(page 22)
14, First floor, staircase, ST.01	Applied to the lath and plaster ceiling	Textured coating	(page 22)
15, First floor, 1.06	Applied to the lath and plaster ceiling	Textured coating	(page 23)

table continued from previous page...

UIR, Building, Floor, Room	Location	Material	Page
16, First floor, 1.06	Applied to the masonry walls	Textured coating	(page 23)
17, Ground floor, G.01	Seals to the light fitting casings	Putty	(page 24)
18, Ground floor, G.01 to G.05 (inclusive)	Ceiling covering, above the suspended ceiling	Paper lining	(page 24)
20, Second floor, external	Fascia panels to the pitched roofs	Cement sheeting	(page 25)
21 VI 17, First floor, external	Seals to the light fitting casings	Putty	(page 25)

UIR: Unique Inspection Reference



Unique Inspection Reference		1		No Asbestos Detected	
					
Building, Floor, Room	Second floor, roof void, RV.01	Location	Lining to the former water tank area		
Material	Bituminous felt	Extent	10 sq. m.		
Strategy	Sampled	Fibre Type	NADIS		
Additional Comments					



Unique Inspection Reference		2		No Asbestos Detected	
					
Building, Floor, Room	Second floor, 2.01	Location	Applied to the lath and plaster ceiling		
Material	Textured coating	Extent	16 sq. m.		
Strategy	Sampled	Fibre Type	NADIS		
Additional Comments					

Unique Inspection Reference		3		No Asbestos Detected	
					
Building, Floor, Room	Second floor, 2.03	Location	Applied to the lath and plaster ceiling		
Material	Textured coating	Extent	8 sq. m.		
Strategy	Sampled	Fibre Type	NADIS		
Additional Comments					



Unique Inspection Reference		4		No Asbestos Detected	
					
Building, Floor, Room	Second floor, 2.04	Location	Applied to the lath and plaster ceiling		
Material	Textured coating	Extent	24 sq. m.		
Strategy	Sampled	Fibre Type	NADIS		
Additional Comments					

Unique Inspection Reference		5		No Asbestos Detected	
					
Building, Floor, Room	Second floor, staircase, ST.01	Location	Applied to the lath and plaster ceiling		
Material	Textured coating	Extent	12 sq. m.		
Strategy	Sampled	Fibre Type	NADIS		
Additional Comments					



Unique Inspection Reference		6		No Asbestos Detected	
					
Building, Floor, Room	First floor, 1.01	Location	Panel lining the boiler cupboard door		
Material	Insulating board	Extent	2 sq. m.		
Strategy	Sampled	Fibre Type	NADIS		
Additional Comments					

Unique Inspection Reference		7		No Asbestos Detected	
					
Building, Floor, Room	First floor, 1.01	Location	Floor levelling boards beneath the ceramic floor tiles		
Material	Insulating board	Extent	24 sq. m.		
Strategy	Sampled	Fibre Type	NADIS		
Additional Comments					

Unique Inspection Reference		8		No Asbestos Detected	
					
Building, Floor, Room	First floor, 1.02	Location	Applied to the lath and plaster ceiling, above the plastic cladding		
Material	Textured coating	Extent	2 sq. m.		
Strategy	Sampled	Fibre Type	NADIS		
Additional Comments					

Unique Inspection Reference		9 VI 7		No Asbestos Detected	
					
Building, Floor, Room	First floor, 1.02	Location	Floor levelling boards beneath the ceramic floor tiles		
Material	Insulating board	Extent	2 sq. m.		
Strategy	Visually Identical	Fibre Type	NADIS		
Additional Comments					



Unique Inspection Reference		10 VI 8		No Asbestos Detected	
					
Building, Floor, Room	First floor, 1.03	Location	Applied to the lath and plaster ceiling, above the plastic cladding		
Material	Textured coating	Extent	6 sq. m.		
Strategy	Visually Identical	Fibre Type	NADIS		
Additional Comments					

Unique Inspection Reference		11 VI 7		No Asbestos Detected	
					
Building, Floor, Room	First floor, 1.03	Location	Floor levelling boards beneath the ceramic floor tiles		
Material	Insulating board	Extent	6 sq. m.		
Strategy	Visually Identical	Fibre Type	NADIS		
Additional Comments					


Unique Inspection Reference		12		No Asbestos Detected	
					
Building, Floor, Room	First floor, 1.04	Location	Applied to the lath and plaster ceiling		
Material	Textured coating	Extent	10 sq. m.		
Strategy	Sampled	Fibre Type	NADIS		
Additional Comments					



Unique Inspection Reference		13		No Asbestos Detected	
					
Building, Floor, Room	First floor, 1.05	Location	Applied to the lath and plaster ceiling		
Material	Textured coating	Extent	20 sq. m.		
Strategy	Sampled	Fibre Type	NADIS		
Additional Comments					

Unique Inspection Reference		14		No Asbestos Detected	
					
Building, Floor, Room	First floor, staircase, ST.01	Location	Applied to the lath and plaster ceiling		
Material	Textured coating	Extent	12 sq. m.		
Strategy	Sampled	Fibre Type	NADIS		
Additional Comments					



Unique Inspection Reference		15		No Asbestos Detected	
					
Building, Floor, Room	First floor, 1.06	Location	Applied to the lath and plaster ceiling		
Material	Textured coating	Extent	8 sq. m.		
Strategy	Sampled	Fibre Type	NADIS		
Additional Comments					

Unique Inspection Reference		16		No Asbestos Detected	
					
Building, Floor, Room	First floor, 1.06	Location	Applied to the masonry walls		
Material	Textured coating	Extent	16 sq. m.		
Strategy	Sampled	Fibre Type	NADIS		
Additional Comments					

Unique Inspection Reference		17		No Asbestos Detected	
					
Building, Floor, Room	Ground floor, G.01	Location	Seals to the light fitting casings		
Material	Putty	Extent	2 units		
Strategy	Sampled	Fibre Type	NADIS		
Additional Comments					

Unique Inspection Reference		18		No Asbestos Detected	
					
Building, Floor, Room	Ground floor, G.01 to G.05 (inclusive)	Location	Ceiling covering, above the suspended ceiling		
Material	Paper lining	Extent	175 sq. m.		
Strategy	Sampled	Fibre Type	NADIS		
Additional Comments					

Unique Inspection Reference		20		No Asbestos Detected	
					
Building, Floor, Room	Second floor, external	Location	Fascia panels to the pitched roofs		
Material	Cement sheeting	Extent	20 sq. m.		
Strategy	Sampled	Fibre Type	NADIS		
Additional Comments					

Unique Inspection Reference		21 VI 17		No Asbestos Detected	
					
Building, Floor, Room	First floor, external	Location	Seals to the light fitting casings		
Material	Putty	Extent	2 units		
Strategy	Visually Identical	Fibre Type	NADIS		
Additional Comments	These light fittings are positioned above the flat entrance door and external access staircase.				

7. RISK ASSESSMENT

The risk level of asbestos containing materials is assessed focusing purely on the material itself.

This assessment provides a total material assessment score which dictates whether the asbestos containing material is deemed to pose a very low, low, medium or high risk.

Please find overleaf tables detailing the criteria dictating these risk assessments.

7.1. MATERIAL RISK ASSESSMENT

Where ACMs have been identified or presumed, a material score is calculated in accordance with HSG 264 (Asbestos: The Survey Guide). The value assigned to each of the four sample variables is added together to give a total material score between 2 and 12.

Score Examples

Score	Examples
Product Type	1 Asbestos reinforced plastics, composites, resins, mastics, putties, felts, bitumen, floor tiles, textured coatings, cement.
	2 Asbestos insulating board, millboard, textiles, ropes, gaskets, paper and cardboard.
	3 Asbestos loose fill, sprayed coating and insulation.
Extent of Damage	0 Good condition, no visible damage at all, completely sealed or enclosed.
	1 Low damage, a few scratches, surface marks or some visible unsealed areas.
	2 Medium damage, visible cracking or breakage.
	3 High damage resulting in hanging or loose asbestos debris.
Surface Treatment	0 Asbestos reinforced plastics, composites, resins, mastics, felts, floor tiles and linoleum (if not paper backed).
	1 Enclosed sprays and lagging, sealed asbestos insulating board (with exposed face encapsulated or enclosed), encapsulated or enclosed textiles, cement products, textured coatings, completely concealed gaskets.
	2 Exposed or partially exposed asbestos insulating board, exposed textiles, paper, cardboard, encapsulated or enclosed sprayed coatings and insulation, exposed gaskets.
	3 Unsealed sprayed coating and insulation.
Asbestos Type	1 Chrysotile (white) asbestos.
	2 Amosite (brown) asbestos, and asbestiform anthophyllite, tremolite or actinolite.
	3 Crocidolite (blue) asbestos.

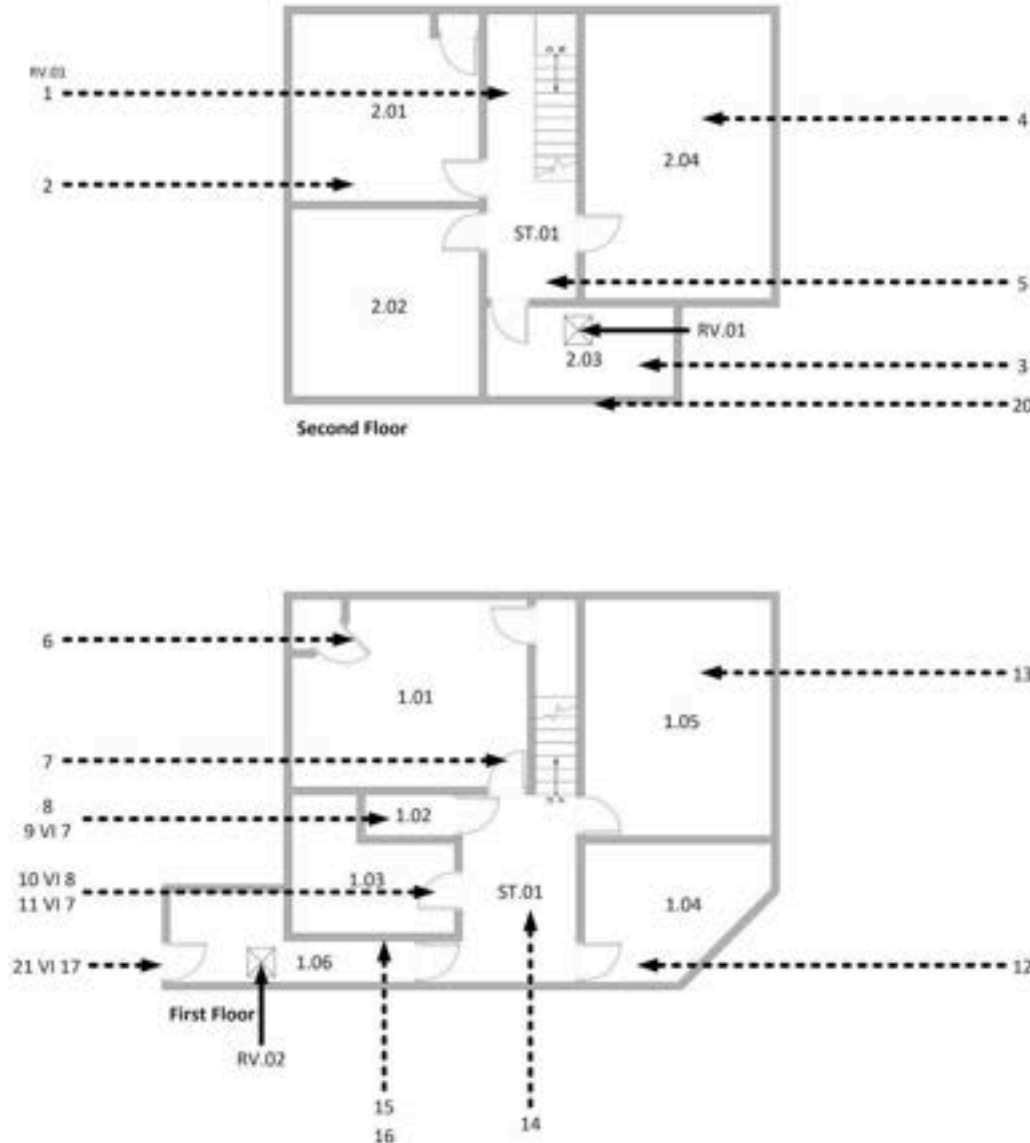
The total material score determines the potential for a material to release asbestos fibres, and can be categorised into the following risk levels:

Material Score	Risk Level Posed
2-4	Very Low
5-6	Low
7-9	Medium
10 or more	High

8. SAMPLE AND ASBESTOS LOCATION PLANS

Floor plans now follow depicting all sample locations and also the extent of any confirmed and/or presumed asbestos containing material(s).

Second and First Floors



Colour Key HCAQM5008-Rev5-030124
Sample Points and Asbestos Locations

		Loose Asbestos, Asbestos Containing Debris
		Sprayed Coating
		Thermal Insulation
		Asbestos Insulating Board, Millboard
		Paper, Bituminous Felt, Compressed/Woven Fibre Gasket
		Textile Products
		Cement Products
		Floor/Roof Tiles, Composites, Bitumen, Textured Coating, Putty, Mastic
		Non-Accessed Areas

All unique inspection references containing asbestos, or presumed (P)/strongly presumed (SP) to contain asbestos are indicated with bold italic underlined text – ***x***

All unique inspection references not containing asbestos are indicated by standard text - x

Room numbers - B.01, G.01, 1.01, 2.01, ST.01

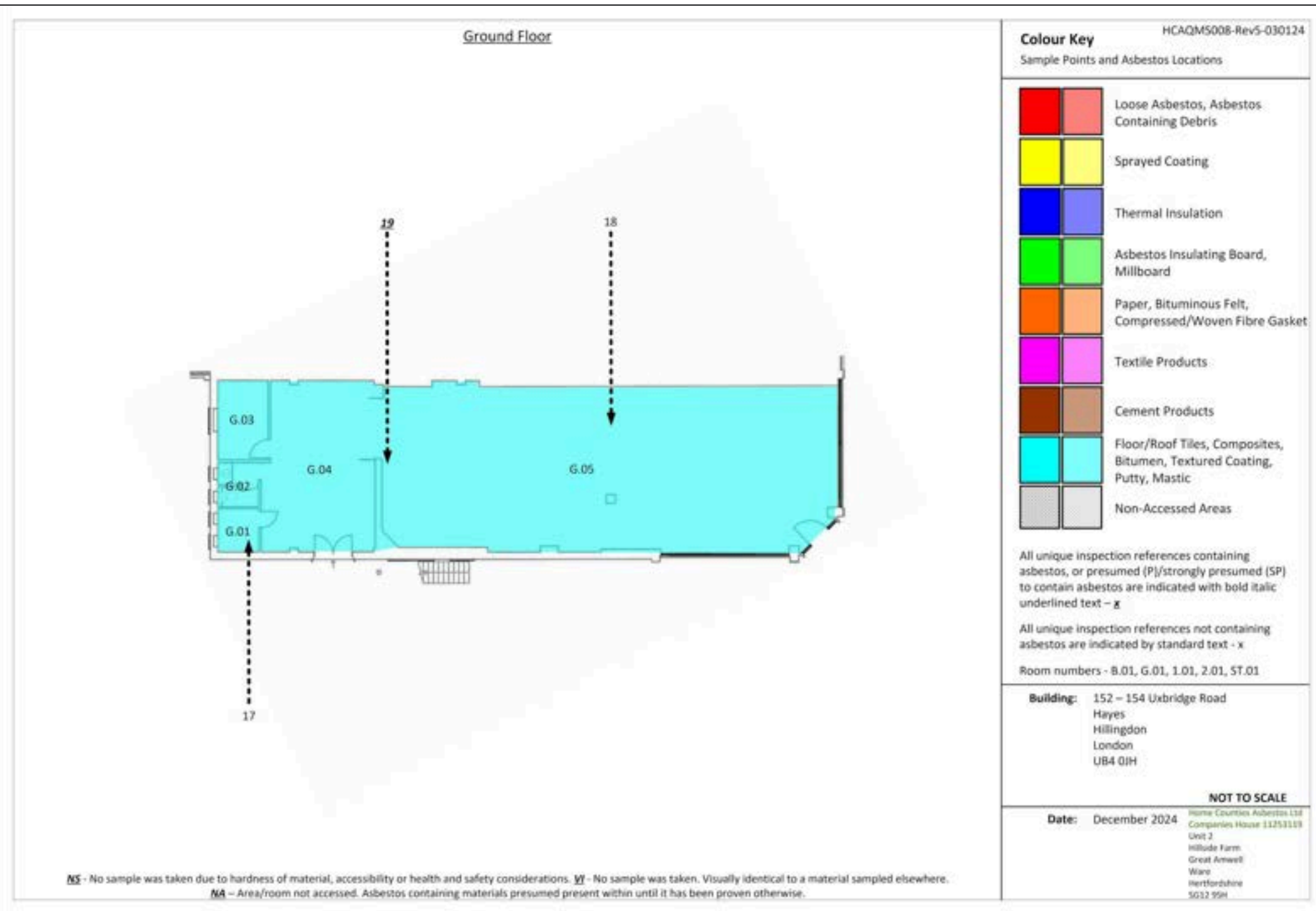
Building: 152 – 154 Uxbridge Road
Hayes
Hillingdon
London
UB4 0JH

NOT TO SCALE

Date: December 2024

Home Counties Asbestos Ltd
Companies House 11253119
Unit 2
Hillside Farm
Great Amwell
Ware
Hertfordshire
SG12 9SH

NS - No sample was taken due to hardness of material, accessibility or health and safety considerations. **VI** - No sample was taken. Visually identical to a material sampled elsewhere.
NA - Area/room not accessed. Asbestos containing materials presumed present within until it has been proven otherwise.



9. SAMPLE ANALYSIS CERTIFICATION

Sample analysis certification now follows. This has been reproduced in full.



Certificate of Bulk Analysis | Scopus Asbestos Compliance Ltd



10483

Certificate of Bulk Analysis

Customer: Home Counties Asbestos Ltd
Customer Address: Unit 2, Hillside Farm, Great Amwell, Ware, Hertfordshire, SG12 9SH
Site Address: 152-154 Uxbridge Road, Hayes, Hillingdon, London, UB4 0JH
Client Reference: HCA05477

Project Number: P-57183
Samples Received On: 18/12/2024
Samples Taken By: Client
No of Samples: 17
Date of Analysis: 23/12/2024

Sample No.	Client Sample No.	Sample Location	Sample Details	Asbestos Type(s) Present	Analysts Name
S001	001	-	Bituminous Product	NAD	Varsha Kamireddy
S002	002	-	Textured Coating	NAD	Varsha Kamireddy
S003	003	-	Textured Coating	NAD	Varsha Kamireddy
S004	004	-	Textured Coating	NAD	Varsha Kamireddy
S005	005	-	Textured Coating	NAD	Varsha Kamireddy
S006	006	-	Insulating Board	NAD	Varsha Kamireddy
S007	007	-	Insulating Board	NAD	Varsha Kamireddy
S008	008	-	Textured Coating	NAD	Varsha Kamireddy
S009	012	-	Textured Coating	NAD	Varsha Kamireddy
S010	013	-	Textured Coating	NAD	Varsha Kamireddy
S011	014	-	Textured Coating	NAD	Varsha Kamireddy
S012	015	-	Textured Coating	NAD	Varsha Kamireddy
S013	016	-	Textured Coating	NAD	Varsha Kamireddy
S014	017	-	Putty	NAD	Varsha Kamireddy
S015	018	-	Paper Product	NAD	Varsha Kamireddy
S016	019	-	Floor - Thermoplastic Tiles and Adhesive	Chrysotile	Varsha Kamireddy
S017	020	-	Cement Product	NAD	Varsha Kamireddy



Certificate of Bulk Analysis | Scopus Asbestos Compliance Ltd



10483

Key: NAD = No Asbestos Detected

Authorised Signatory:		Name / Position:	Varsha Kamireddy/Deputy Quality Manager	Date of Issue:	24/12/2024
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Statement of Certification

This is to certify that analysis has been carried out to determine the presence of asbestos fibres using Polarised Light Microscopy and Dispersion Staining Techniques. The method used is UKAS accredited and in accordance with Scopus Asbestos Compliance in house current method/procedure and the HSG 248 Asbestos: The Analysts' Guide. The samples were analysed as received.

This Certificate may not be reproduced other than in full, except with the prior written approval of the issuing laboratory. Sample description, material type, notes, opinions and interpretations expressed herein are outside the scope of UKAS Accreditation.

When the Test Certificate indicates sample(s) taken by the customer, the following disclaimers apply: Scopus Asbestos Compliance cannot accept responsibility for the accuracy of the information (i.e., site address, actual sample location, sample description and material type) provided by the customer or whether sample(s) taken were representative of the material sampled. Scopus Asbestos Compliance is not responsible for the accuracy or competence of the sampling by third parties and can therefore not be held responsible for any interpretation of the results shown.

All analysed samples shall be retained within the laboratory for 6 months from the date of analysis. All reports and records for the analysis shall be retained for a minimum of 6 Years from the date of analysis.

Project No.	P-57183	Version No.	9, October 2024	Issue No.	1	Site Name:	152-154 Uxbridge Road
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HOME COUNTIES ASBESTOS

QUALITY - SIMPLICITY - COMPLIANCE

Services Provided by Home Counties Asbestos Ltd:

Asbestos Reinspections
Asbestos Management Surveys
Asbestos Refurbishment Surveys
Asbestos Demolition Surveys
Asbestos Management Plans
Ad Hoc Asbestos Sampling
Ad Hoc Asbestos Consultancy
Asbestos Awareness Training
Asbestos Remediation Project Coordination
Asbestos Air Testing in Partnership with UKAS Accredited Analysis Bodies
Asbestos Removal in Partnership with HSE Licensed Asbestos Removal Contractors
Non-Licensed Asbestos Removal
Lead in Paint Surveys

Home Counties Asbestos Ltd
Companies House 11253119

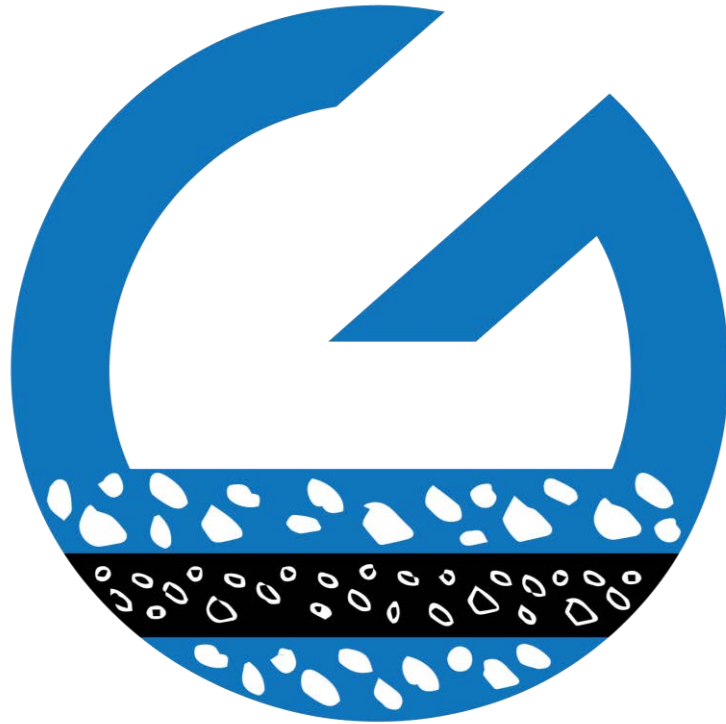
Unit 2
Hillside Farm
Great Amwell
Ware
Hertfordshire
SG12 9SH

North 0333 577 8131
South 0333 577 8189

Email info@hcasbestos.com
Web homecountiesasbestos.co.uk

APPENDIX J - CHEMICAL GACs

RESIDENTIAL WITH HOMEGROWN PRODUCE (RwHP) - SOM 1%							
Determinand	Unit	GAC	Concentration			Number of Tests	Number of Exceedences
			Investigation by Geofirma				
			WS3 0.6 m	BH1 1.3 m	SA2 0.3 m		
Metals							
Arsenic (aqua regia extractable)	mg/kg	32.0	28.0	26.0	13.0	3	0
Cadmium (aqua regia extractable)	mg/kg	10.0	< 0.2	< 0.2	< 0.2	3	0
Chromium (hexavalent)	mg/kg	4.3	< 1.8	< 1.8	< 1.8	3	0
Chromium (aqua regia extractable)	mg/kg	627.0	57.0	46.0	39.0	3	0
Copper (aqua regia extractable)	mg/kg	2330.0	29.0	25.0	20.0	3	0
Lead (aqua regia extractable)	mg/kg	200.0	18.0	16.0	42.0	3	0
Mercury (aqua regia extractable)	mg/kg	40.0	< 0.3	< 0.3	< 0.3	3	0
Nickel (aqua regia extractable)	mg/kg	130.0	35.0	33.0	21.0	3	0
Zinc (aqua regia extractable)	mg/kg	3700.0	68.0	77.0	88.0	3	0
Inorganics							
Total Cyanide	mg/kg	4.6	< 1.0	< 1.0	< 1.0	3	0
Miscellaneous							
Stones Content	%	-	< 0.1	< 0.1	< 0.1	3	-
Moisture Content	%	-	17.0	13.0	17.0	3	-
Phenols							
Total Monohydric Phenols	mg/kg	280.0	< 0.80	22.2	18.5	3	0
Polyaromatic hydrocarbons							
Naphthalene	mg/kg	1.50	< 0.05	0.06	< 0.05	3	0
Acenaphthylene	mg/kg	170.0	< 0.05	< 0.05	< 0.05	3	0
Acenaphthene	mg/kg	210.0	< 0.05	0.43	0.28	3	0
Fluorene	mg/kg	160.0	< 0.05	0.54	0.34	3	0
Phenanthrene	mg/kg	92.0	< 0.05	3.6	2.3	3	0
Anthracene	mg/kg	2300.0	< 0.05	0.52	0.48	3	0
Fluoranthene	mg/kg	260.0	< 0.05	4.6	3.9	3	0
Pyrene	mg/kg	560.0	< 0.05	3.8	3.2	3	0
Benzo(a)anthracene	mg/kg	3.1	< 0.05	1.4	1.4	3	0
Chrysene	mg/kg	6	< 0.05	1.7	1.6	3	0
Benzo(b)fluoranthene	mg/kg	2.6	< 0.05	2	1.6	3	0
Benzo(k)fluoranthene	mg/kg	8.5	< 0.05	0.6	0.79	3	0
Benzo(a)pyrene	mg/kg	2.20	< 0.05	1.5	1.5	3	0
Indeno(1,2,3-cd)pyrene	mg/kg	3.2	< 0.05	0.68	0.64	3	0
Dibenz(a,h)anthracene	mg/kg	0.24	< 0.05	0.11	< 0.05	3	0
Benzo(ghi)perylene	mg/kg	44	< 0.05	0.79	0.72	3	0
Total TPH C10 - C40							
>C10-C40	mg/kg	-	170.0	< 10	400.0	3	-
VOCs							
MTBE	µg/kg	-	< 5.0	< 5.0	< 5.0	3	0
Benzene	µg/kg	0.087	< 5.0	< 5.0	< 5.0	3	0
Toluene	µg/kg	130	< 5.0	< 5.0	< 5.0	3	0
Ethylbenzene	µg/kg	47	< 5.0	< 5.0	< 5.0	3	0
p & m-Xylene	µg/kg	56	< 8.0	< 8.0	< 8.0	3	0
o-Xylene	µg/kg	60	< 5.0	< 5.0	< 5.0	3	0
Asbestos							
Asbestos in Soil Detected/Not Detected	mg/kg		Not-detected	Not-detected	Not-detected	9	-
Classification	mg/kg		-	-	-	9	-
Asbestos % by hand picking/weighing	%		-	-	-	9	5



Geofirma
Cardinal Point
Park Road
Rickmansworth
WD3 1RE