Castledine Environmental

LAND CONTAMINATION SURVEYS

Phase 2 Land Contamination Risk Assessment

for

Erection of a Dormer Bungalow with Associated Parking and Private Garden

at

Former Garage Site Adjacent to No.9 and No.10 Fairacre, Malmesbury Close, Pinner

Date: November 2021

Status:	Final Report
Reference:	3185D P2 AHT - Pinner
Date:	09/11/2021

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Executive Summary

Based on the information contained in this report, it is the opinion of Castledine Environmental that the site represents a **LOW** to **MODERATE** level of risk with respect to the proposed development.

It is recommended that remediation in-line with section(s) 11.0 and 12.0 be planned and carried out on site.

It is recommended that the building on site should be subject to an asbestos survey and removal by appropriately qualified personnel prior to any demolition or redevelopment occurring in order to ensure site works do not cause future contamination of the site.

This report should be submitted to your Local Planning Authority for agreement to allow the Phase 3 Remediation Strategy and Verification Plan to be written.

A watching brief inline with Appendix F should be had during the course of any permitted demolition, site clearance, or construction works for any obvious contamination (e.g. oil spillage in ground, buried waste, possible asbestos containing material) development should stop and Castledine Environmental should be contacted to determine if further assessment or changes to the remediation scheme are required.

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1.0 QUALITY ASSURANCE

Castledine Environmental can confirm that all reasonable efforts have been made to ensure that the information outlined within this report is accurate.

Castledine Environmental would further confirm that due care, attention and technical skill were used in the creation of this report.

For and on behalf of Castledine Environmental.

Kevin Castledine

(Director)

2.0 LIMITATIONS

The conclusions and recommendations made in this report are limited to those based on the findings of the investigation. Where comments are made based on information obtained from third parties, Castledine Environmental assumes that all third-party information is true and correct. No independent action has been undertaken to validate the findings of third parties. The assessments and interpretation have been made in line with legislation and guidelines in force at the time of writing, representing best practice at the time.

This survey has not included asbestos within existing structures, invasive plant species, geotechnical considerations or any elements unconnected with potential ground contamination at the site. If required, such surveys should be undertaken by suitably accredited organisations.

There may be other conditions prevailing at the site which have not been disclosed by this investigation and which have not been taken into account by this report. Responsibility cannot be accepted for conditions not revealed by the investigation.

3.0 INTRODUCTION

Castledine Environmental have been appointed by AHT Developments Ltd to undertake a Phase 2 investigation of land at Former Garage Site, adjacent to No.9 and No.10 Fairacre, Malmesbury Close, Pinner HA5 2NG.

A Phase 1 report was carried out by Castledine Environmental:

- Phase 1 Land Contamination Risk Assessment for Development at Malmesbury Close, Pinner. Produced by Castledine Environmental in June of 2021 and referenced: 3137D

The report is attached as Appendix A.

4.0 SCOPE

Castledine Environmental have prepared this report for the sole use and reliance of AHT Developments Ltd and appointees for the purpose of ensuring compliance with:

- Paragraph(s) 174, 179, 183 & 184 of the National Planning Policy Framework 2021
- part C1 of the building regulations.
- Condition No.13 of the Hillingdon Borough Council planning approval reference 75530/APP/2020/1233 https://planning.hillingdon.gov.uk/OcellaWeb/planningDetails?reference=75530/APP/2020/1233&from=planningSearch

13. (i) The development shall not commence until a scheme to deal with contamination has been submitted to and approved by the Local Planning Authority (LPA). All works which form part of the remediation scheme shall be completed before any part of the development is occupied or brought into use unless the Local Planning Authority dispenses with any such requirement specifically and in writing. The scheme shall include all of the following measures unless the LPA dispenses with any such requirement specifically and in writing:

(a) A desk-top study carried out by a competent person to characterise the site and provide information on the history of the site/surrounding area and to identify

and evaluate all potential sources of contamination and impacts on land and water and all other identified receptors relevant to the site;

b) A site investigation, including where relevant soil, soil gas, surface and groundwater sampling, together with the results of analysis and risk assessment shall be carried out by a suitably qualified and accredited consultant/contractor. The report should also clearly identify all risks, limitations and recommendations for remedial measures to make the site suitable for the proposed use; and

(c) A written method statement providing details of the remediation scheme and how the completion of the remedial works for each phase will be verified shall be agreed in writing with the LPA prior to commencement of each phase, along with the details of a watching brief to address undiscovered contamination. No deviation shall be made from this scheme without the express agreement of the LPA prior to its implementation.

(ii) If during remedial or development works contamination not addressed in the submitted remediation scheme is identified an addendum to the remediation scheme shall be agreed with the LPA prior to implementation; and

(iii) Upon completion of the approved remedial works, this condition will not be discharged until a comprehensive verification report has been submitted to and approved by the LPA. The report shall include the details of the final remediation works and their verification to show that the works for each phase have been carried out in full and in accordance with the approved methodology.

(iv) No contaminated soils or other materials shall be imported to the site. All imported soils for landscaping purposes shall be clean and free of contamination.

Before any part of the development is occupied, all imported soils shall be independently tested for chemical contamination, and the results of this testing shall be submitted and approved in writing by the Local Planning Authority. All soils used for gardens and/or landscaping purposes shall be clean and free of contamination.

REASON: To ensure that risks from land contamination to the future users of the land and neighbouring land are minimised, together with those to controlled waters, property and ecological systems and the development can be carried out safely without unacceptable risks to workers, neighbours and other offsite

receptors in accordance with Policies DMEI 11 and DMEI 12 of the Hillingdon Local Plan: Part 2 - Development Management Policies (January 2020).

This report should be read in conjunction with the report(s) listed in section 3.0

This report may not be used or relied upon by any unauthorised third party, or for any other proposed use than that specified above, without the explicit written agreement of Castledine Environmental.

The report consists of a risk assessment in accordance with BS10175:2011+A2:2017, CLR11 “Model Procedures for the Management of Land Contamination” and LCRM “Land Contamination Risk Management”.

The objectives of the report are:-

- To assess historical activities at the site with respect to their potential impact on the site environment.
- To characterise the environmental setting of the site, identify migration pathways and vulnerable receptors for contamination originating at the site, focusing on potential soil and groundwater liabilities.
- To assess historical and current surrounding land use in relation to known or potential off site contamination issues that may impact on the subject site and
- To develop a preliminary conceptual site model (CSM).

5.0 SITE DESCRIPTION

The site is located in Pinner, Greater London at National Grid Reference: 510084,189312 and is approximately 0.03ha in area.

The site is square in shape and orientated with the corners to the north, east, south and west. The site is located in a predominantly residential area and is directly bounded by neighbouring dwellings and gardens to the north east and south east, an unsurfaced electrical substation with a

footpath beyond to the south west and Malmesbury Close to the north west. The site is accessed off Malmesbury Close.

The site interior comprises a row of garage units and a small forecourt area with a vegetated scrubland area to the rear of the garage units. There are 5 No. garage units arrayed north west to south east along the south western edge of the forecourt. The garage units were seen to be constructed of brick with concrete flooring and unknown composition roofing. No spillages, staining or olfactory evidence of hydrocarbon contamination was noted with the garage units seen. The remainder of site is occupied by a heavily vegetated scrubland area located to the south west and south of the garage units.

No potential sources of contamination were noted on the site walkover. Topographically the site slopes slightly from the north west down to the south east.

6.0 FINDINGS IN PREVIOUS REPORT

The previous Phase 1 Report for the site found that whilst the site was not considered to be significantly contaminated, there is a possibility of contamination arising from the sites historical and contemporary usage. These usages include historical usage outbuildings which were subsequently removed to form an orchard; the subsequent development of the site as a garage block with forecourt following the orchard usage; the placement of an immediately adjacent substation around the same time as the development of the garages; and the sites usage for vehicle storage and the potential for made ground deposits. Accordingly, a Phase 2 Site Investigation was planned and carried out on site.

The Phase 1 Report found no significant sources of potential ground gas or vapour generation,

7.0 CHEMICAL ASSESSMENT CRITERIA

On establishing the presence of pollutant linkages, it is then necessary to assess whether or not any of the linkages are significant, whereby

significant harm is being caused or there is significant possibility of significant harm being caused to human health or the environment. In the absence of any evidence of 'significant harm', the risks will be assessed on the basis of a 'significant possibility of significant harm' being caused. In order to initially assess the risks, appropriate Tier 1 assessment criteria are derived which represent benchmark contamination concentrations with respect to relevant receptors. Concentrations recorded in excess of these levels **may** represent a significant risk to a specific receptor when considered as part of a pollutant linkage.

7.1 HUMAN HEALTH

The Environment Agency, through its Contaminated Land Exposure Assessment (CLEA) framework, published toxicological reports (TOX) and soil guideline values (SGVs).

SGVs are science-based generic assessment criteria that indicate human health risks from long-term exposure to soil contaminants. They are set at levels where there are 'no appreciable' or 'minimal' risks to human health. For each substance, different SGVs are applicable according to land use, for example, whether residential, allotment or commercial. They have been widely seen as over precautionary and offering councils a very weak indication of whether sites represent a "significant possibility of significant harm" (SPOSH) requiring determination under the contaminated land regime.

Following publication of the revised Part IIa Statutory Guidance DEFRA has commissioned the creation of Category 4 Screening levels (C4SL's) They are set at levels where there is a "Low" risk to Human Health (i.e. higher than that of SGV's but still sufficiently low to defiantly not be "Contaminated Land" as defined by section 78A of the Environmental Protection Act 1990 as amended). The C4SL's are calculated using the CLEA model using less conservative exposure and toxicological assumptions than the SGV's. C4SL's have also been calculated for Open Space land use.

LQM in association with the CIEH have produced S4UL's are reproduced with permission; Publication Number S4UL3693

The pathways considered for the standard land uses include:

- Ingestion of soils;
- Ingestion of household dust;
- Ingestion of contaminated vegetables (residential with plant uptake only);
- Ingestion of soil attached to vegetables (residential with plant uptake only);
- Dermal contact with soils;
- Dermal contact with household dust;
- Inhalation of fugitive dusts from soils;
- Inhalation of fugitive household dust;
- Inhalation of vapours in outdoor air; and
- Inhalation of vapours in buildings.

These exposure routes have been evaluated independently of one another to identify the most sensitive exposure route. The SSV adopted for a given land use scenario is the most stringent screening value of all those relevant to the site.

The current proposals are to redevelop the site for a residential use with gardens. It is considered appropriate to compare the chemical testing results to those SGVs/SSVs with the appropriate 'residential with plant uptake' settings. Selected Tier 1 Human Health Assessment Criteria Values are detailed in the following table.

8.0 SITE WORKS AND FINDINGS

8.1 FIELDWORK DATED 27TH OCTOBER 2021

Castledine Environmental attended site on the 27th of October 2021 with the aim of carrying out an intrusive site investigation. The aim of the investigation was to characterise both the ground conditions on site (i.e. any made ground deposits, natural deposits, their depth, extent and composition) and any potential contamination (and it's nature, location and extent). A total of 3 No. machine excavated trial pits were formed across the site (designated TP01, TP02 and TP03) with a single hand-pit formed

in an area of difficult access (and designated TP04/HP01). The area is located in the southern / south western extent of site, in an adjacent garden which is included within the site plan. On the day of the site works, the garages remained on site and as such, access was unable to be formed for the mechanical excavator due to a structurally-key wall located between and adjoined to the onsite garages and the adjacent dwelling. As this area is proposed to be soft-landscaping, a sample was required and as such, a hand pit was formed in this area. The pit locations were placed so as to characterise the site, along with a trial pit and a hand pit being located in areas of proposed soft-landscaping. The trial pits and hand pit were formed to assess the ground conditions and to facilitate the taking of environmental samples for laboratory analysis. Environmental samples were then taken from each locality, surface level made ground deposits, any subsequent, separate or deeper made ground deposits and the underlying natural deposits (where encountered). The samples were then sent to an MCERTS and UKAS accredited laboratory and tested for a standard suite of contaminants (including metals, metalloids, pH, PAH and soil organic matter) along with TPH CWG testing, asbestos and PCBs. Both the encountered ground conditions and the results of the laboratory testing are outline below.

8.2 GROUND CONDITIONS ENCOUNTERED

The ground conditions encountered on site can generally be characterised as a tarmac base overlying concrete, which overlies made ground which is atop natural clay deposits. Natural deposits were not encountered at TP04/HP01 due to the location being hand-excavated due to difficult access issues for the mechanical excavator.

The tarmac base was encountered at TP01, TP02 and TP03 and was 0.07m in thickness at TP01 and TP02 and 0.10m at TP03. At all three locations underlying the tarmac a concrete base was encountered recovered as a light brown, slightly clayey, very sandy Made Ground Gravel. This made ground was noted from 0.07m (TP01 and TP02) and 0.10m to depths of 0.25m, 0.20m and 0.27m, respectively. The gravel was

noted to be angular to subangular, fine to coarse of concrete with brick fragments, rounded pea-gravels of mixed lithologies and chert and sandstone inclusions. Below the concrete at TP01, TP02 and TP03 a further layer of made ground was encountered consisting of a dark brown, slightly gravelly, sandy Clay. This made ground was encountered from beneath the concrete to depths of 0.4m, 0.50m and 0.45m, respectively. The gravel inclusions were noted to be angular to subangular, fine to medium (and coarse in places) of brick, concrete, rounded sandstones and subrounded cherts with relict rootlets in places. At the location of TP03, an additional layer of made ground was encountered from 0.45m to 0.90m depth. This layer comprised a brown, very gravelly, sandy Clay with gravel sized fragments of angular to rounded, fine to coarse fragments of brick, full brick, concrete, rounded sandstone/quartzite with rare wood, roots and charcoal inclusions. Finally, at TP01, TP02 and TP03 beneath made ground there were natural deposits encountered consisting of a light brown mottled grey, silty, slightly sandy, slightly gravelly Clay (with an increase in gravel and sand content at TP03). The gravel inclusions were noted to be rounded to subrounded, fine to medium (coarse at TP03) of mixed lithologies, resembling river gravel deposits. Natural Clay deposits were encountered from beneath made ground deposits at TP01, TP02 and TP03 to confirmed depths of 0.70m, 0.70m and 1.10m, respectively.

At the location of TP04/HP01 - which was hand excavated due to access issues – a dark brown, slightly clayey, slightly gravelly, very sandy Topsoil / Made Ground was encountered to a depth of 0.40m. The inclusions were noted to comprise angular, fine fragments of ceramic, brick, a rare full brick and abundant rootlets. Beneath topsoil here, a dark brown, very clayey, sandy, slightly gravelly Made Ground was encountered to a confirmed depth of 0.55m. This stratum resembles the dark clay deposits found beneath concrete elsewhere on site with the inclusions consisting of angular, fine to medium fragments of brick, rounded sandstone and rootlets.

8.3 SAMPLE RESULTS

Sample results have been compared with generic screening criteria (GAC). Sample results are attached as Appendix E.

Metals and Semi Metals - Residential with Plant Uptake (1% SOM):

Determinant	Units	Accreditation	S4UL	Highest Value	Location of Highest value	Exceedance? Y/N
Arsenic	(mg/kg)	MCERTS	37	18	TP01 0.30m	N
Cadmium	(mg/kg)	MCERTS	11	0.5	TP03 & HP01/TP04	N
Chromium (total)	(mg/kg)	UKAS	910	109	TP03 0.60m	N
Copper	(mg/kg)	MCERTS	2400	79	HP01/TP04 0.10m	N
Lead	(mg/kg)	MCERTS	200	324, 364, 214	TP01 0.30m, TP03 0.60m & HP01/TP04 0.10m	Y
Mercury	(mg/kg)	UKAS	1.2	<0.5	All	N
Nickel	(mg/kg)	MCERTS	180	31	TP01 0.60m	N
Zinc	(mg/kg)	MCERTS	3700	196	HP01/TP04 0.10m	N
Total Phenols	(mg/kg)	MCERTS	280	0.7	HP01/TP04 0.10m	N
Chromium (Hexavalent)	(mg/kg)	U	6	<1	All	N
pH	pH units	MCERTS	N/a	7.0 – 11.1	HP01/TP04 0.10m – TP02 0.15m	N/a
Asbestos	-	-	-	None Detected	All Tested	N

Non-Metals - Residential with Plant Uptake (1% SOM):

Determinant	Units	Accreditation	S4UL	Highest Value	Location of Highest value	Exceedance? Y/N
Acenaphthene	(mg/kg)	UKAS	210	<0.02	All	N
Acenaphthylene	(mg/kg)	UKAS	170	0.03	HP01/TP04	N
Anthracene	(mg/kg)	MCERTS	2400	0.16	HP01/TP04	N
Benzo(a)anthracene	(mg/kg)	MCERTS	7.2	0.75	HP01/TP04	N
Benzo(a)pyrene	(mg/kg)	MCERTS	2.2	0.76	HP01/TP04	N
Benzo(b)fluoranthene	(mg/kg)	MCERTS	2.6	1.18	HP01/TP04	N
Benzo (g, h, i) perylene	(mg/kg)	MCERTS	320	0.65	HP01/TP04	N
Benzo (k) fluoranthene	(mg/kg)	MCERTS	77	0.41	HP01/TP04	N
Chrysene	(mg/kg)	MCERTS	15	0.77	HP01/TP04	N
Dibenzo (a,h) anthracene	(mg/kg)	MCERTS	0.24	0.14	HP01/TP04	N
Fluoranthene	(mg/kg)	MCERTS	280	1.34	HP01/TP04	N
Fluorene	(mg/kg)	MCERTS	170	0.03	HP01/TP04	N
Indeno (1, 2, 3,-cd) pyrene	(mg/kg)	MCERTS	27	0.75	HP01/TP04	N
Naphthalene	(mg/kg)	MCERTS	2.3	0.02	HP01/TP04	N
Phenanthrene	(mg/kg)	MCERTS	95	0.56	HP01/TP04	N
Pyrene	(mg/kg)	MCERTS	620	1.11	HP01/TP04	N
Total PAH (Sum of USEPA 16)	(mg/kg)	UKAS	NC	8.69	HP01/TP04	-

Petroleum Hydrocarbons Ali-Aro Split – Residential with Plant Uptake (1% SOM):

Determinant	S4UL (mg/kg)	Highest Value (mg/kg)	Location of Highest value	Exceedance? Y/N
Aliphatic				
EC 5-6	42	<0.1	All tested	N
EC >6-8	100	<0.1	All tested	N
EC >8-10	27	<0.1	All tested	N
EC >10-12	130	<4	All tested	N
EC >12-16	1100	<4	All tested	N
EC >16-35	65000	<4	All tested	N
EC >35-44	65000	17 / 11	TP01 0.30m / TP03 0.30m	N
Aromatic				
EC 5-7 (Benzene)	70	<0.01	All tested	N
EC >7-8 (Toluene)	130	<0.01	All tested	N
EC >8-10	34	<0.01	All tested	N
EC >10-12	74	<1	All tested	N
EC >12-16	140	<1	All tested	N
EC >16-21	260	<1	All tested	N
EC >21-35	1100	2	TP01 0.30m	N

8.4 ANALYSIS OF RESULTS

Laboratory analysis has identified 3 No. exceedances of Lead GAC of 200mg/kg by 324mg/kg, 364mg/kg and 214mg/kg at the locations of TP01 at 0.30m depth, TP03 at 0.06m depth and HP01/TP04 at 0.10m depth. No further metals, metalloids, PAH or TPH CWG exceedances noted nor asbestos, phenol or PCB's detected (all PCB recordings were below laboratory threshold limit).

TABLE 1 SUMMARY OF SIGNIFICANT POLLUTION LINKAGES

Contaminant	Pathway	Receptor	Probability of Pollutant Linkage	Consequence	Risk	Possible Mitigation
Contaminated Soils	Direct Ingestion & Direct Contact	Site Workers	Li	Md	M	Site workers to wear appropriate PPE for health and safety reasons
Contaminated Soils	Inhalation of Dust	Site Workers	Li	Md	M	
Contaminated Soils	Direct Ingestion & Direct Contact	End Users	Li	Md	M	Due to the identified exceedances of lead along with the lack of suitable materials for soft-landscaping on site, it is recommended that areas of soft-landscaping be remediated by way of civil engineering methods (excavate and replace).
Contaminated Soils	Inhalation of Dust	End Users	Li	Md	M	
Contaminated Soils	Direct Ingestion	Flora and Fauna	Li	Md	M	
Contaminated Soils	Vertical and lateral migration	Controlled Waters	Ul	Md	L	
Contaminated Soils	Direct contact	Services	Ul	Md	L	
Ground Gases (Methane and CO_2)	Vertical and lateral migration	End Users & Building Envelope	Ul	Md	L	Previous investigation identified no significant sources of potential ground gas or vapour generation.
Volatile and Semi-volatile Organic Compounds	Vertical and lateral migration	End Users & Building Envelope	Ul	Md	L	
Radon	Vertical and lateral migration	End Users & Building Envelope	Ul	Md	L	Site is not in a Radon Affected Area.

KEY: Probability of pollutant linkage Hi = Highly likely, Li = Likely, Lw = Low Likelihood, Ul = Unlikely
Consequence Sv = Severe, Md = Medium, Mi = Mild, Mr = Minor,
Overall Risk VH = Very High, H = High, M = Moderate, M/L = Moderate/Low, L = Low, VL = Very Low

Based on the preliminary CSM for the site, an environmental risk assessment has been undertaken. A simple matrix can provide a consistent basis for decision making. It should be used with caution, recognising the over-simplification that it will normally represent. The probability and consequences are defined according to parameters relevant to the situation; the boundaries of risk acceptability (and tolerability, where relevant) indicated on the matrix provided in Table 2, can be tailored to the factors influencing the significance of the risk. Individual situations are mapped onto the matrix to provide a ready and consistent indication of their acceptability or tolerability.

TABLE 2 RISK CLASSIFICATION MATRIX

		Consequence			
		Severe (Sv)	Medium (Md)	Mild (Mi)	Minor (Mr)
Probability	High (Hi)	Very high risk	High risk	Moderate Risk	Moderate/ Low Risk
	Likely (Li)	High risk	Moderate Risk	Moderate/ Low Risk	Low Risk
	Low Likelihood (Lw)	Moderate Risk	Moderate/ Low Risk	Low Risk	Very Low Risk
	Unlikely (Ul)	Moderate/ Low Risk	Low Risk	Very Low Risk	Very Low Risk

Source: CIRIA Report C552, Contaminated Land Risk Assessment. A Guide to Good Practice, 2001

These attributes are evaluated qualitatively against individual hazard assessments to determine the likelihood of a given hazard occurring. The risk evaluations for each plausible pollutant linkage are given in the last three columns of Table 1.

TABLE 3 CLASSIFICATION OF RISK

Very high risk (Vh)	There is a high probability that severe harm could arise to a designated receptor from an identified hazard, OR, there is evidence that severe harm to a designated receptor is currently happening. This risk, if realised, is likely to result in a substantial liability. Urgent investigation (if not undertaken already) and remediation are likely to be required.
High risk (Hi)	Harm is likely to arise to a designated receptor from an identified hazard. Realisation of the risk is likely to present a substantial liability. Urgent investigation (if not undertaken already) is required and remedial works may be necessary in the short-term and are likely over the longer term.
Moderate risk (Md)	It is possible that harm could arise to a designated receptor from an identified hazard. However, it is either relatively unlikely that any such harm would be severe, or if any harm were to occur it is more likely that the harm would be relatively mild. Investigation (if not already undertaken) is normally required to clarify the risk and to determine the potential liability. Some remedial works may be required in the longer-term.
Low risk (Lw)	It is possible that harm could arise to a designated receptor from an identified hazard, but it is likely that this harm, if realised, would at worst normally be mild.
Very low risk (Vl)	There is a low possibility that harm could arise to a receptor. In the event of such harm being realised it is not likely to be severe.

Source: CIRIA Report C552, Contaminated Land Risk Assessment. A Guide to Good Practice, 2001

9.0 REVISED ENVIRONMENTAL RISK ASSESSMENT

Based on the information contained in this report, it is the opinion of Castledine Environmental that the site represents a **LOW** to **MODERATE** level of risk with respect to the proposed development.

It is recommended that remediation in-line with section(s) 11.0 and 12.0 be planned and carried out on site.

It is recommended that the building on site should be subject to an asbestos survey and removal by appropriately qualified personnel prior to any demolition or redevelopment occurring in order to ensure site works do not cause future contamination of the site.

This report should be submitted to your Local Planning Authority for agreement to allow the Phase 3 Remediation Strategy and Verification Plan to be written.

10.0 SUMMARY OF RISKS

10.1.1 SOIL CONTAMINATION

A previous Phase 1 Report for the site found that while the site was not considered to be significantly contaminated, its historical usage and subsequent development and usage as a domestic garage may have introduced some contaminants into shallow site soils. Laboratory testing carried out as part of the Phase 2 Intrusive Site Investigation has identified exceedances of Lead in areas of proposed soft-landscaping (at TP01 at 0.10m depth and TP03 at 0.60m depth). As such, due to the identified lead exceedances along with the lack of suitable material presently on site for the proposed soft-landscaping areas, it is recommended that soft-landscaping be remediated.

10.1.2 GROUND GASSES AND VAPOURS

The previous Phase 1 Investigation for the site found no significant sources of potential ground gas or vapour generation. Laboratory testing has identified no significant sources of hazardous ground vapours.

11.0 REMEDIATION OPTIONS APPRAISAL

As identified above, areas of soft-landscaping on site have been identified as containing lead contamination. As such, it is recommended that remediation be planned and undertaken on site. Remediation activities are the activities by which the site is made safe and fit for its intended use.

There are a range of remediation techniques and processes such as on-site and off-site processes and in-situ and ex-situ methods (i.e. within the ground or within excavated materials). These methods can be further subdivided into **civil engineering methods** (i.e. excavation, removal, filling or capping systems); **physical processes** which exploit physical differences between contaminants and soils; **biological processes** which exploit microbial activity to reduce, destroy or immobilise contaminants; **chemical processes** which involves using a range of known chemical reactions (such as oxidation and reduction reactions) to fix, mobilise, destroy or neutralise contaminants; **thermal processes** in which the contaminants are heated to incineration or vitrification; and **solidification or**

stabilisation methods which involves the addition of agents to facilitate a phase change.

Castledine Environmental will always try to utilise environmentally friendly, sustainable solutions whilst meeting the demands of our clients. Often, we will endeavour to use site-won materials and on-site processes to facilitate remediation. However, no two sites or range of contaminants are ever one-hundred-percent the same and as such, there is no catch-all remediation option. Additionally, a number of the processes mentioned above are used in combination with one another, use heavy repurposed mineral or composting plant machinery or are in the early stages of research and development (i.e. certain species of willow and poplar and their respective capabilities in the uptake of heavy metals). As such, Castledine Environmental will always compare and contrast the respective remediation options with each and every individual site, so as to best recommend sensible, client focussed solutions to contaminated land issues.

12.0 OPTIONS APPRISAL RECOMMENDATIONS

As referenced above, there are various options available in relation to remediation of potentially contaminated sites. In light of the identified site conditions (lead contamination exceedances in areas of proposed soft-landscaping along with lack of present materials suitable for said soft-landscaping areas) it is recommended that remediation by way of civil engineering methods be planned and implemented as part of the site development.

This should take the form of the excavation of areas of proposed soft-landscaping to sufficient depth to allow the emplacement of a minimum of 600mm of certified clean materials. The materials must be pre-approved by the Local Planning Authority prior to being brought to site, to avoid the importation of contaminated materials. The remaining areas of site located beneath hardstanding and building footprint can remain in-situ, as the relevant pollutant linkage here will be severed.

When this report has been agreed with your Local Planning Authority, a Phase 3 Remediation Strategy and Verification Plan would need to be produced.

13.0 FURTHER ENVIRONMENTAL INVESTIGATION

It is not envisaged that further testing will be required.

14.0 REFERENCES

14.1 LEGISLATION AND REGULATIONS

14.1.1 ACTS

[1]. Environmental Protection Act 1990, Part IIA: inserted by Environment Act 1995, Section 57. See Environment Act 1995 for text of Part IIA.

14.1.2 PLANNING REGULATIONS

[2]. The Town and Country Planning (Environmental Impact Assessment) (England and Wales) Regulations 1999 SI1999/No.293

[3]. The Town and Country Planning (Environmental Impact Assessment) (England and Wales) (Amendment) Regulations 2000 SI2000/No.2867

14.1.3 CONTAMINATED LAND REGULATIONS

[4]. The Contaminated Land (England) Regulations 2000. SI2000/No.227

[5]. The Contaminated Land (England) (Amendment) Regulations 2001 SI2001/No.663

[6]. The Contaminated Land (England) Regulations 2006 SI2006/No.1380

14.2 STATUTORY GUIDANCE

[7]. Department of Environment, Food and Rural Affairs. 2012. *Environmental Protection Act 1990: Part 2A Contaminated Land Statutory Guidance.* Department of Environment, Food and Rural Affairs

[8]. Communities and local Government, 2012: National Planning Policy Framework.

14.3 BRITISH STANDARDS

[9]. BS 5930:2015 Code of practice for site investigations

[10]. BS 10175:2011+A2:2017 Investigation of potentially contaminated sites - Code of practice

[11]. BS 8485:2015+A1:2019 BS 8485 - 2015 - Code of practice for the design of protective measures for methane and carbon dioxide ground gases for new buildings

[12]. BS 8576:2013 Guidance on investigations for ground gas. Permanent gases and Volatile Organic Compounds (VOCs)

14.4 NON STATUTORY TECHNICAL GUIDANCE

14.4.1 ENVIRONMENT AGENCY

[13]. Cassella Stranger, 2002. Model Procedures for the Management of Contaminated Land, Contaminated Land Report (CLR) 11, Department for Environment, Food, and Rural Affairs.

14.4.2 CIRIA PUBLICATIONS

[14]. Wilson, S., Oliver, S., Mallett, H., Hutchings, H., and Card, G.. 2007, *C 665 Assessing risks posed by hazardous ground gases to buildings* London: Construction Industry Research and Information Association

14.4.3 CL:AIRE

[15]. Card G, Wilson S, Mortimer S. 2012. *A Pragmatic Approach to Ground Gas Risk Assessment. CL:AIRE Research Bulletin RB17*. CL:AIRE, London, UK. ISSN 2047- 6450 (Online)

15.0 APPENDICES

APPENDIX A PHASE 1 REPORT

APPENDIX B **TRIAL PIT PHOTOGRAPHS**

Castledine Environmental
LAND CONTAMINATION SURVEYS

Trial Pit Photographs

Address: Former Garage Site, Malmesbury Cl. Pinner

Client: AHT Developments Ltd

Photo No.1: TP01 located centrally and adjacent to the south eastern boundary of site

Photo No.2: TP01 pit sides and base (excavated through tarmac and concrete base)

Castledine Environmental
LAND CONTAMINATION SURVEYS

Trial Pit Photographs

Address: Former Garage Site, Malmesbury Cl. Pinner

Client: AHT Developments Ltd

Photo No.3: TP02 located in the eastern extent of site

Photo No.4: TP02 pit sides and base (excavated through tarmac and concrete base)

Castledine Environmental
LAND CONTAMINATION SURVEYS

Trial Pit Photographs

Address: Former Garage Site, Malmesbury Cl. Pinner

Client: AHT Developments Ltd

Photo No.5: TP03 located in the north western extent of site in an area of proposed soft-landscaping

Photo No.6: TP03 pit sides and base (excavated through tarmac and concrete base)

Castledine Environmental
LAND CONTAMINATION SURVEYS

Trial Pit Photographs

Address: Former Garage Site, Malmesbury Cl. Pinner

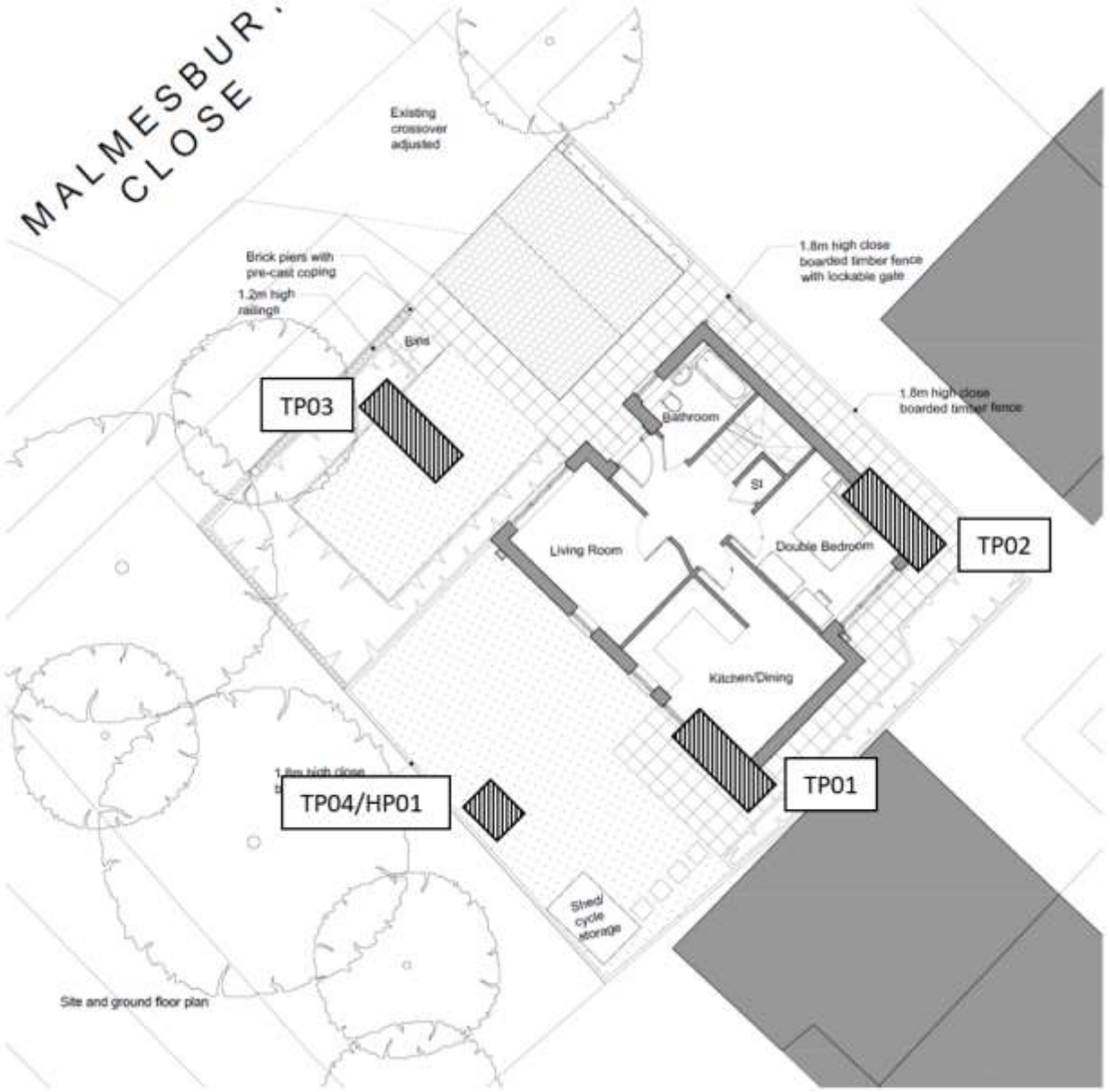
Client: AHT Developments Ltd

Photo No.7: TP04 located in the south western extent of site in area of proposed soft-landscaping and current garden area

Photo No.8: TP04 pit sides and base excavated in a garden area through topsoil and adjacent to substation compound

Castledine Environmental, 4 Wymeswold Road, Hoton, Loughborough, Leicestershire. LE12 5SN
Telephone: 01509 880399 **Mobile:** 07779 305682 admin@castledine.co

APPENDIX C **TRIAL PIT LOCATION PLAN**



APPENDIX D TRIAL PIT LOGS

Project.	Malmesbury Close, Pinner HA5 2NG	Trial Pit
		TP01
Client.	AHT Developments Ltd	Date
		27/10/2021
Method.		Project Reference.
Machine Excavated		3185D

Groundwater	Depth (m)	Description of Strata	Legend	Samples		
				Type	Depth (m)	
					From	To
	0.07m	MADE GROUND: Tarmac Base				
	0.25m	Light brown slightly clayey, very sandy, very gravelly MADE GROUND (concrete base) with gravel sized fragments of angular to subangular, fine to coarse of concrete, pea gravels of mixed lithologies and rounded sandstones, sand is coarse.				
	0.44m	Dark brown very clayey, slightly gravelly, sandy MADE GROUND with gravel sized fragments of angular to subangular, fine to coarse of brick, concrete, rounded sandstone, subrounded chert and rare rootlets.		ES	0.30m	0.35m
	0.7m	Light brown mottled grey silty, slightly sandy, slightly gravelly CLAY, gravel is subangular to rounded, fine to medium of chert and sandstone with rare relict roots.		ES	0.60m	0.65m

Remarks	Key		
	Logged By	Scale	Sheet
	DW	Not to Scale	1 of 1

Castledine Environmental
LAND CONTAMINATION SURVEYS

Project.	Malmesbury Close, Pinner HA5 2NG	Trial Pit
		TP02
Client.	AHT Developments Ltd	Date
		27/10/2021
Method.		Project Reference.
Machine Excavated		3185D

Groundwater	Depth (m)	Description of Strata	Legend	Samples		
				Type	Depth (m)	
					From	To
	0.07m	MADE GROUND: Tarmac Base				
	0.2m	Light brown slightly clayey, very sandy, very gravelly MADE GROUND (concrete base) with gravel sized fragments of angular to subangular, fine to coarse of concrete, pea gravels of mixed lithologies and rounded sandstone.		ES	0.15m	0.20m
	0.5m	Dark brown very clayey, slightly gravelly, sandy MADE GROUND with gravel sized fragments of angular to subangular, fine to medium of brick, concrete, sandstone and rare relict roots.				
	0.7m	Light brown mottled grey silty, slightly sandy, slightly gravelly CLAY, gravel is subangular to rounded, fine to medium of chert, flint and sandstone.				

Remarks	Key		
	Logged By	Scale	Sheet
	DW	Not to Scale	1 of 1

Castledine Environmental
LAND CONTAMINATION SURVEYS

Project.	Malmesbury Close, Pinner HA5 2NG	Trial Pit
		TP03
Client.	AHT Developments Ltd	Date
		27/10/2021
Method.		Project Reference.
Machine Excavated		3185D

Groundwater	Depth (m)	Description of Strata	Legend	Samples		
				Type	Depth (m)	
					From	To
	0.1m	MADE GROUND: Tarmac Base				
	0.27m	Light brown slightly clayey, very sandy, very gravelly MADE GROUND (concrete base) with gravel sized fragments of angular to subangular, fine to coarse of concrete, pea gravels of mixed lithologies and rounded sandstones.				
	0.45m	Dark brown clayey, very gravelly, sandy MADE GROUND with gravel sized fragments of angular to subrounded, fine to coarse of concrete, brick, chert, rounded pea gravel of mixed lithologies, sandstone and rare roots.		ES	0.30m	0.35m
	0.9m	Brown very clayey, very gravelly, sandy MADE GROUND with gravel sized fragments of angular to rounded, fine to coarse of brick, full brick, concrete, rounded sandstone / quartzite, rare wood, roots and charcoal.		ES	0.60m	0.65m
	1.1m	Light brown mottled grey silty, sandy, gravelly CLAY, sand is coarse, gravel is subrounded to rounded of mixed lithologies (resembles river gravels).				

Remarks	Key		
	Logged By	Scale	Sheet
		Not to Scale	1 of 1

Castledine Environmental
LAND CONTAMINATION SURVEYS

Project.	Malmesbury Close, Pinner HA5 2NG	Trial Pit
		TP04 / HP01
Client.	AHT Developments Ltd	Date
		27/10/2021
Method.		Project Reference.
Hand Excavated		3185D

Groundwater	Depth (m)	Description of Strata	Legend	Samples		
				Type	Depth (m)	
					From	To
	0.4m	Dark brown slightly clayey, slightly gravelly, very sandy TOPSOIL / MADE GROUND with gravel sized fragments of angular, fine of ceramic, brick, rare full brick and abundant rootlets.		ES	0.1m	0.15m
	0.55m	Dark brown very clayey, sandy, slightly gravelly MADE GROUND with gravel sized fragments of angular, fine to medium of brick, rounded sandstone and rare rootlets.				

Remarks	Key		
	Logged By	Scale	Sheet
Access difficult for excavator, hand excavated.		Not to Scale	1 of 1

Castledine Environmental
LAND CONTAMINATION SURVEYS

APPENDIX E TEST RESULTS

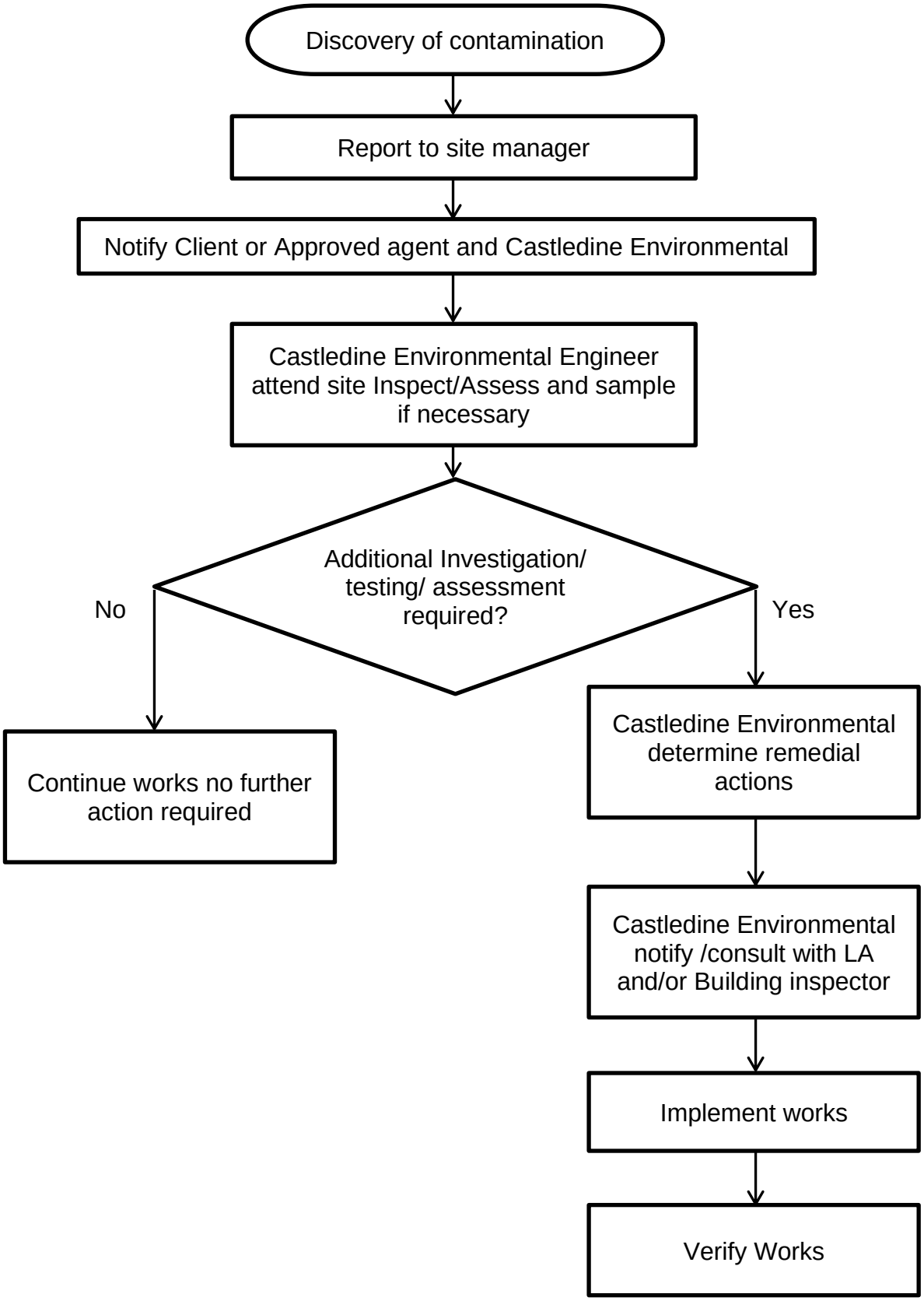
APPENDIX F WATCHING BRIEF

It remains possible that previously unexpected soil conditions may be encountered during the construction process. Examples may include oily pockets within the soil, potential for asbestos containing materials, black ashy materials, soils exhibiting strong odours, brightly coloured materials, and former demolition materials.

Should previously undiscovered contamination be encountered during the demolition/construction of the new buildings the following course of action should be adhered to:

1. The ground workers should report any suspected contamination immediately to the Client's site supervisor. The supervisor should contact the Client or their appointed agent who will in turn contact Castledine Environmental to request an engineer to visit the site to assess the extent of the 'contamination'.
2. Castledine Environmental shall make records of their inspection, and pass details of these to the Local Authority.
3. Where the conditions revealed differ from those previously anticipated, the Castledine Environmental shall take samples as deemed appropriate to be dispatched for appropriate chemical testing.
4. Depending on the results of the testing either:
    a. no further work will be required;
    b. a further detailed risk assessment will be required; and/or
    c. Localised specific remedial measures will be necessary. Appraisal criteria will vary depending on the nature of the assessment.
5. The results of any such testing will be sent to the Local Authority Pollution Control Section, Local Authority development control section, and the appointed building inspector. If remediation is required, the LA/Building inspector will be informed of the date and time of the proposed works.

6. Remediation will be undertaken in accordance with a method statement submitted for approval. The works shall be supervised where necessary by Castledine Environmental who shall provide a Verification Report for the Local Authorities.
7. A copy of the discovery strategy should be lodged on site and provisions made to ensure that all workers are made aware of their responsibility to observe, report and act on any potentially suspicious or contaminated materials they may encounter.


Discovery of contamination
Report to site manager
Notify Client or Approved agent and Castledine Environmental
Castledine Environmental Engineer attend site Inspect/Assess and sample if necessary
Additional Investigation/ testing/ assessment required?
No
Yes
Continue works no further action required
Castledine Environmental determine remedial actions
Castledine Environmental notify /consult with LA and/or Building inspector
Implement works
Verify Works

Groundsure
LOCATION INTELLIGENCE

Enviro
Insight

NEW GARAGE SITE AT MALMESBURY CLOSE, PINNER, HA5 2NG

Order Details

Date: 12/05/2021

Your ref: 3137_AHT_Developments_

Our Ref: GS-7847211

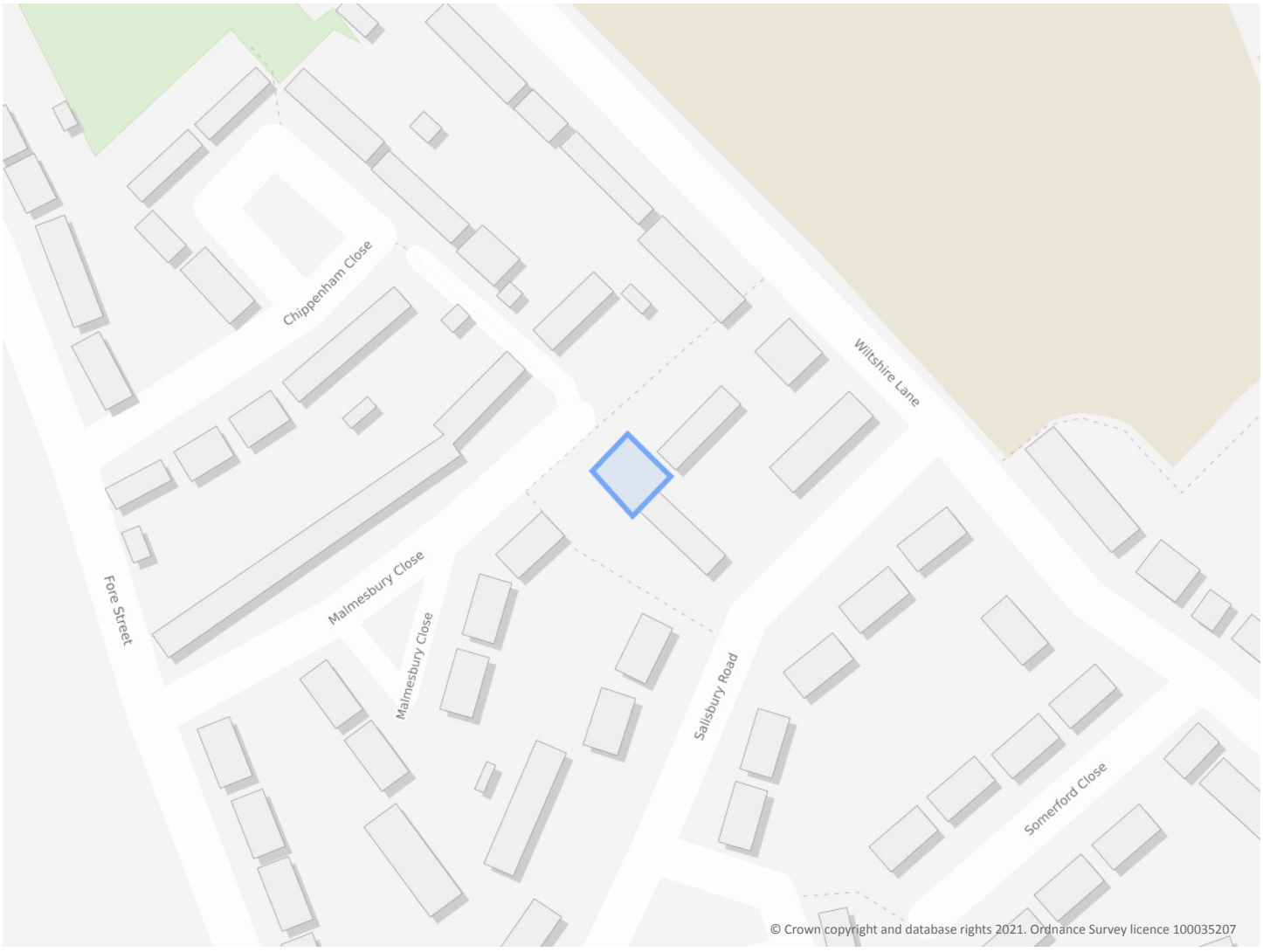
Client: Castledine Environmental Ltd

Site Details

Location: 510084 189312

Area: 0.03 ha

Authority: London Borough of Hillingdon



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
11	1.1	Historical industrial land uses	0	0	2	4	-
12	1.2	Historical tanks	0	0	0	2	-
12	1.3	Historical energy features	1	2	3	10	-
13	1.4	Historical petrol stations	0	0	0	0	-
14	1.5	Historical garages	0	0	0	0	-
14	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
15	2.1	Historical industrial land uses	0	0	3	5	-
16	2.2	Historical tanks	0	0	0	2	-
16	2.3	Historical energy features	1	3	8	23	-
18	2.4	Historical petrol stations	0	0	0	0	-
18	2.5	Historical garages	0	0	0	0	-
Page	Section	Waste and landfill	On site	0-50m	50-250m	250-500m	500-2000m
19	3.1	Active or recent landfill	0	0	0	0	-
19	3.2	Historical landfill (BGS records)	0	0	0	0	-
20	3.3	Historical landfill (LA/mapping records)	0	0	0	0	-
20	3.4	Historical landfill (EA/NRW records)	0	0	0	0	-
20	3.5	Historical waste sites	0	0	0	0	-
20	3.6	Licensed waste sites	0	0	0	0	-
20	3.7	Waste exemptions	0	0	4	4	-
Page	Section	Current industrial land use	On site	0-50m	50-250m	250-500m	500-2000m
22	4.1	Recent industrial land uses	0	1	2	-	-
23	4.2	Current or recent petrol stations	0	0	0	0	-
23	4.3	Electricity cables	0	0	0	0	-
23	4.4	Gas pipelines	0	0	0	0	-
23	4.5	Sites determined as Contaminated Land	0	0	0	0	-

23	4.6	Control of Major Accident Hazards (COMAH)	0	0	0	0	-
24	4.7	Regulated explosive sites	0	0	0	0	-
24	4.8	Hazardous substance storage/usage	0	0	0	0	-
24	4.9	Historical licensed industrial activities (IPC)	0	0	0	0	-
24	4.10	Licensed industrial activities (Part A(1))	0	0	0	0	-
24	4.11	Licensed pollutant release (Part A(2)/B)	0	0	0	0	-
25	4.12	Radioactive Substance Authorisations	0	0	0	0	-
25	4.13	Licensed Discharges to controlled waters	0	0	0	0	-
25	4.14	Pollutant release to surface waters (Red List)	0	0	0	0	-
25	4.15	Pollutant release to public sewer	0	0	0	0	-
25	4.16	List 1 Dangerous Substances	0	0	0	0	-
26	4.17	List 2 Dangerous Substances	0	0	0	0	-
26	**4.18**	**Pollution Incidents (EA/NRW)**	0	0	0	1	-
26	4.19	Pollution inventory substances	0	0	0	0	-
26	4.20	Pollution inventory waste transfers	0	0	0	0	-
27	4.21	Pollution inventory radioactive waste	0	0	0	0	-

Page	Section	Geology (basic)	
28	5.1	Superficial geology (625k)	None (within 500m)
28	**5.2**	**Bedrock geology (625k)**	Identified (within 500m)

Page	Section	Hydrogeology	On site	0-50m	50-250m	250-500m	500-2000m
29	6.1	Superficial aquifer	None (within 500m)				
30	**6.2**	**Bedrock aquifer**	Identified (within 500m)				
32	**6.3**	**Groundwater vulnerability**	Identified (within 50m)				
33	6.4	Groundwater vulnerability- soluble rock risk	None (within 0m)				
33	6.5	Groundwater vulnerability- local information	None (within 0m)				
34	**6.6**	**Groundwater abstractions**	0	0	0	0	2
35	6.7	Surface water abstractions	0	0	0	0	0
35	**6.8**	**Potable abstractions**	0	0	0	0	2
36	**6.9**	**Source Protection Zones**	2	0	0	1	-

36	6.10	Source Protection Zones (confined aquifer)	0	0	0	0	-
Page	Section	Hydrology	On site	0-50m	50-250m	250-500m	500-2000m
37	**7.1**	**Water Network (OS MasterMap)**	0	0	3	-	-
38	**7.2**	**Surface water features**	0	0	3	-	-
38	**7.3**	**WFD Surface water body catchments**	1	-	-	-	-
39	**7.4**	**WFD Surface water bodies**	0	0	0	-	-
39	7.5	WFD Groundwater bodies	0	-	-	-	-
Page	Section	River and coastal flooding	On site	0-50m	50-250m	250-500m	500-2000m
40	8.1	Risk of Flooding from Rivers and Sea (RoFRaS)	None (within 50m)				
40	8.2	Historical Flood Events	0	0	0	-	-
40	8.3	Flood Defences	0	0	0	-	-
40	8.4	Areas Benefiting from Flood Defences	0	0	0	-	-
41	8.5	Flood Storage Areas	0	0	0	-	-
42	8.6	Flood Zone 2	None (within 50m)				
42	8.7	Flood Zone 3	None (within 50m)				
Page	Section	Surface water flooding					
43	**9.1**	**Surface water flooding**	1 in 30 year, 0.3m - 1.0m (within 50m)				
Page	Section	Groundwater flooding					
45	**10.1**	**Groundwater flooding**	Low (within 50m)				
Page	Section	Environmental designations	On site	0-50m	50-250m	250-500m	500-2000m
46	**11.1**	**Sites of Special Scientific Interest (SSSI)**	0	0	1	0	2
47	11.2	Conserved wetland sites (Ramsar sites)	0	0	0	0	0
47	11.3	Special Areas of Conservation (SAC)	0	0	0	0	0
47	11.4	Special Protection Areas (SPA)	0	0	0	0	0
47	**11.5**	**National Nature Reserves (NNR)**	0	0	1	0	2
48	**11.6**	**Local Nature Reserves (LNR)**	0	0	0	0	1
48	**11.7**	**Designated Ancient Woodland**	0	0	1	0	2
49	11.8	Biosphere Reserves	0	0	0	0	0
49	11.9	Forest Parks	0	0	0	0	0

49	11.10	Marine Conservation Zones	0	0	0	0	0
49	**11.11**	**Green Belt**	0	0	1	1	3
50	11.12	Proposed Ramsar sites	0	0	0	0	0
50	11.13	Possible Special Areas of Conservation (pSAC)	0	0	0	0	0
50	11.14	Potential Special Protection Areas (pSPA)	0	0	0	0	0
50	11.15	Nitrate Sensitive Areas	0	0	0	0	0
51	11.16	Nitrate Vulnerable Zones	0	0	0	0	0
52	**11.17**	**SSSI Impact Risk Zones**	1	-	-	-	-
53	**11.18**	**SSSI Units**	0	0	1	1	3

Page	Section	Visual and cultural designations	On site	0-50m	50-250m	250-500m	500-2000m
56	12.1	World Heritage Sites	0	0	0	-	-
57	12.2	Area of Outstanding Natural Beauty	0	0	0	-	-
57	12.3	National Parks	0	0	0	-	-
57	**12.4**	**Listed Buildings**	0	0	1	-	-
58	12.5	Conservation Areas	0	0	0	-	-
58	12.6	Scheduled Ancient Monuments	0	0	0	-	-
58	12.7	Registered Parks and Gardens	0	0	0	-	-

Page	Section	Agricultural designations	On site	0-50m	50-250m	250-500m	500-2000m
59	**13.1**	**Agricultural Land Classification**	Urban (within 250m)				
60	13.2	Open Access Land	0	0	0	-	-
60	13.3	Tree Felling Licences	0	0	0	-	-
60	**13.4**	**Environmental Stewardship Schemes**	0	0	1	-	-
60	13.5	Countryside Stewardship Schemes	0	0	0	-	-

Page	Section	Habitat designations	On site	0-50m	50-250m	250-500m	500-2000m
61	**14.1**	**Priority Habitat Inventory**	0	0	5	-	-
62	14.2	Habitat Networks	0	0	0	-	-
62	14.3	Open Mosaic Habitat	0	0	0	-	-
62	14.4	Limestone Pavement Orders	0	0	0	-	-

Recent aerial photograph

Capture Date: 29/06/2019

Site Area: 0.03ha

Recent site history - 2015 aerial photograph

Capture Date: 20/04/2015

Site Area: 0.03ha

Recent site history - 2013 aerial photograph

Capture Date: 28/04/2013

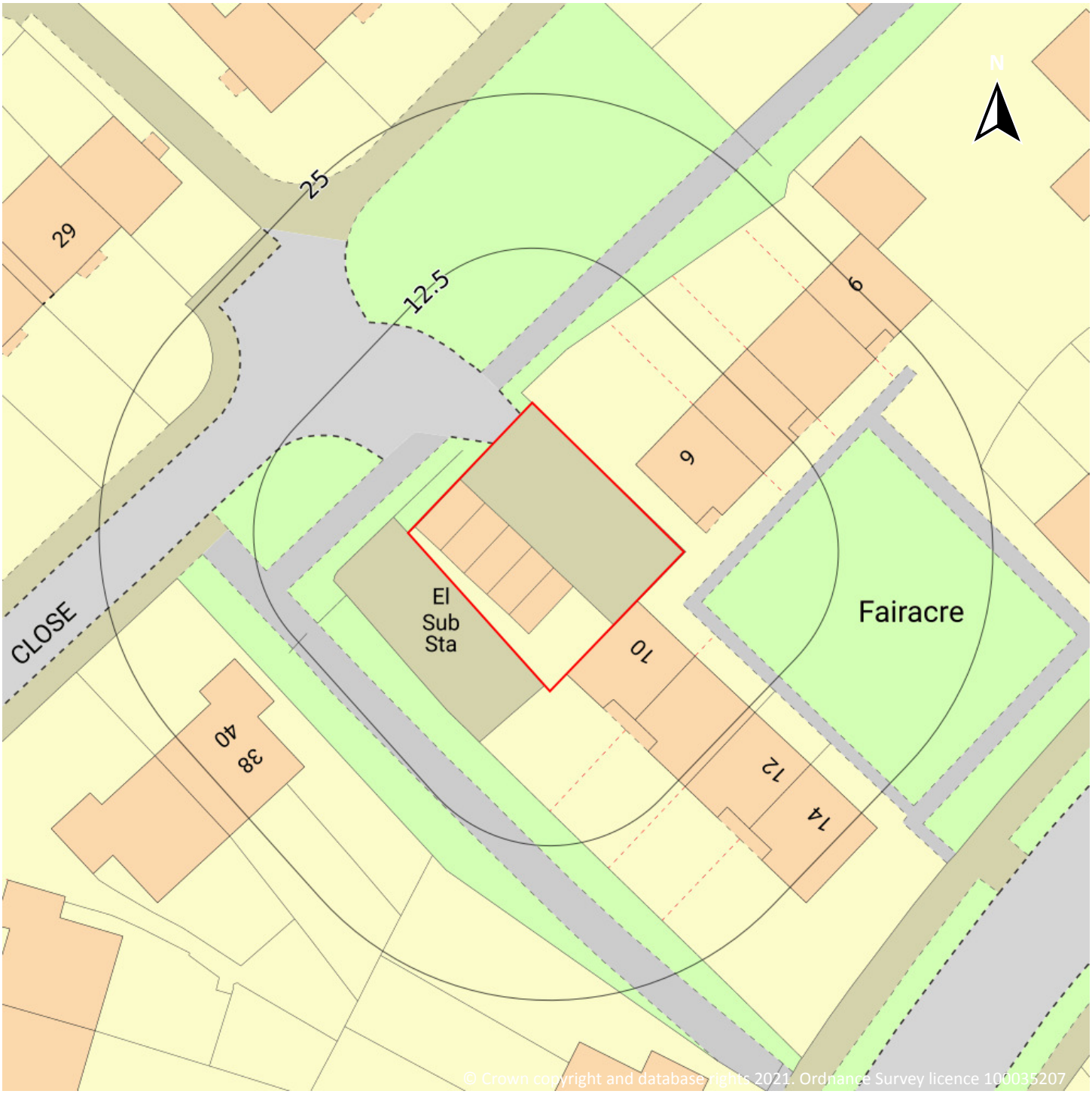
Site Area: 0.03ha

Recent site history - 1999 aerial photograph

Capture Date: 29/08/1999

Site Area: 0.03ha

OS MasterMap site plan



Site Area: 0.03ha

1 Past land use

Site Outline

Search buffers in metres (m)

Historical industrial land uses

Historical tanks

Historical energy features

1.1 Historical industrial land uses

Records within 500m	6

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 11**

ID	Location	Land use	Dates present	Group ID
1	113m N	Unspecified Heap	1966	2136315

ID	Location	Land use	Dates present	Group ID
2	144m W	Nurseries	1973 - 1987	2273876
E	427m SE	Unspecified Heap	1897	2136314
E	427m SE	Ice House	1911	2142804
G	486m NW	Orthopaedic Hospital	1969	2151632
G	499m NW	Unspecified Commercial/Industrial	1973 - 1987	2255205

This data is sourced from Ordnance Survey / Groundsure.

1.2 Historical tanks

Records within 500m	**2**

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 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 11**

ID	Location	Land use	Dates present	Group ID
5	279m E	Unspecified Tank	1980	363957
E	435m SE	Unspecified Tank	1959	363958

This data is sourced from Ordnance Survey / Groundsure.

1.3 Historical energy features

Records within 500m	**16**

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 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 11**

ID	Location	Land use	Dates present	Group ID
A	**On site**	**Electricity Substation**	**1991**	**259025**

ID	Location	Land use	Dates present	Group ID
A	0m SW	Electricity Transformer	1969	250584
A	0m SW	Electricity Substation	1980	270107
B	214m NE	Electricity Substation	1980	278785
B	215m NE	Electricity Substation	1991	257932
3	247m E	Electricity Transformer	1969 - 1991	280093
4	260m NW	Electricity Substation	1992	244264
C	372m NE	Electricity Transformer	1969 - 1980	264537
C	373m NE	Electricity Substation	1991	244265
D	379m E	Electricity Transformer	1969 - 1980	277669
D	379m E	Electricity Transformer	1974 - 1991	285134
6	430m NW	Electricity Substation	1976 - 1991	271636
7	467m S	Electricity Substation	1974 - 1991	265338
F	468m S	Electricity Substation	1987	257119
F	468m S	Electricity Substation	1991	282673
8	482m SE	Electricity Substation	1974 - 1991	267574

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 un-grouped 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	0

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 un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

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

Site Outline

Search buffers in metres (m)

Historical industrial land uses

Historical tanks

Historical energy features

2.1 Historical industrial land uses

Records within 500m	8

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 15**

ID	Location	Land Use	Date	Group ID
1	113m N	Unspecified Heap	1966	2136315
B	144m W	Nurseries	1987	2273876
B	144m W	Nurseries	1973	2273876

ID	Location	Land Use	Date	Group ID
G	427m SE	Ice House	1911	2142804
G	427m SE	Unspecified Heap	1897	2136314
L	486m NW	Orthopaedic Hospital	1969	2151632
L	499m NW	Unspecified Commercial/Industrial	1987	2255205
L	499m NW	Unspecified Commercial/Industrial	1973	2255205

This data is sourced from Ordnance Survey / Groundsure.

2.2 Historical tanks

Records within 500m **2**

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 15**

ID	Location	Land Use	Date	Group ID
3	279m E	Unspecified Tank	1980	363957
G	435m SE	Unspecified Tank	1959	363958

This data is sourced from Ordnance Survey / Groundsure.

2.3 Historical energy features

Records within 500m **35**

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 15**

ID	Location	Land Use	Date	Group ID
A	**On site**	**Electricity Substation**	**1991**	**259025**
A	0m SW	Electricity Transformer	1969	250584
A	0m SW	Electricity Substation	1980	270107
A	0m SW	Electricity Substation	1980	270107

ID	Location	Land Use	Date	Group ID
C	214m NE	Electricity Substation	1980	278785
C	214m NE	Electricity Substation	1980	278785
C	215m NE	Electricity Substation	1991	257932
D	247m E	Electricity Transformer	1980	280093
D	247m E	Electricity Transformer	1980	280093
D	248m E	Electricity Transformer	1969	280093
D	248m E	Electricity Transformer	1974	280093
D	248m E	Electricity Transformer	1991	280093
2	260m NW	Electricity Substation	1992	244264
E	372m NE	Electricity Transformer	1980	264537
E	372m NE	Electricity Transformer	1980	264537
E	373m NE	Electricity Transformer	1969	264537
E	373m NE	Electricity Substation	1991	244265
F	379m E	Electricity Transformer	1980	277669
F	379m E	Electricity Transformer	1980	277669
F	379m E	Electricity Transformer	1974	285134
F	379m E	Electricity Transformer	1991	285134
F	379m E	Electricity Transformer	1969	277669
H	430m NW	Electricity Substation	1991	271636
H	430m NW	Electricity Substation	1976	271636
I	467m S	Electricity Substation	1987	265338
I	468m S	Electricity Substation	1974	265338
J	468m S	Electricity Substation	1987	257119
I	468m S	Electricity Substation	1991	265338
I	468m S	Electricity Substation	1991	265338
J	468m S	Electricity Substation	1991	282673
J	468m S	Electricity Substation	1991	282673
K	482m SE	Electricity Substation	1987	267574

ID	Location	Land Use	Date	Group ID
K	484m SE	Electricity Substation	1991	267574
K	484m SE	Electricity Substation	1991	267574
K	484m SE	Electricity Substation	1974	267574

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	**0**

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'.

This data is sourced from Ordnance Survey / Groundsure.

3 Waste and landfill

Site Outline

Search buffers in metres (m)

Waste exemptions

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	0

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

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

3.4 Historical landfill (EA/NRW records)

Records within 500m	0

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.

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

3.5 Historical waste sites

Records within 500m	0

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

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

3.6 Licensed waste sites

Records within 500m	0

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

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

3.7 Waste exemptions

Records within 500m	8

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.

Features are displayed on the Waste and landfill map on **page 19**

ID	Location	Site	Reference	Category	Sub-Category	Description
A	148m S	Carters Pharmacy 41 Salisbury Road Pinner Middlesex HA5 2NJ	EPR/GE5988GE/A001	Storing waste exemption	Non-Agricultural Waste Only	Storage of waste in secure containers

ID	Location	Site	Reference	Category	Sub-Category	Description
A	150m S	41, SALISBURY ROAD, PINNER, HA5 2NJ	WEX214034	Storing waste exemption	Not on a farm	Storage of waste in secure containers
A	150m S	41, SALISBURY ROAD, PINNER, HA5 2NJ	WEX069708	Storing waste exemption	Not on a farm	Storage of waste in secure containers
1	242m W	FORE STREET, PINNER, HA5 2ND	WEX161877	Disposing of waste exemption	On a Farm	Burning waste in the open
B	370m NW	LAND OPPOSITE 176-184, Fore Street, Pinner, HA5 2ND	WEX100682	Storing waste exemption	Not on a farm	Storage of waste in a secure place
B	370m NW	LAND OPPOSITE 176-184, Fore Street, Pinner, HA5 2ND	WEX100682	Treating waste exemption	Not on a farm	Sorting mixed waste
B	370m NW	LAND OPPOSITE 176-184, Fore Street, Pinner, HA5 2ND	WEX100682	Treating waste exemption	Not on a farm	Recovery of scrap metal
B	370m NW	LAND OPPOSITE 176-184, Fore Street, Pinner, HA5 2ND	WEX100682	Using waste exemption	Not on a farm	Use of waste in construction

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

Pollution Incidents (EA/NRW)

4.1 Recent industrial land uses

Records within 250m	3

Current potentially contaminative industrial sites.

Features are displayed on the Current industrial land use map on **page 22**

ID	Location	Company	Address	Activity	Category
1	2m SW	Electricity Sub Station	Greater London, HA5	Electrical Features	Infrastructure and Facilities
2	146m SW	J M E Flooring	140a, Fore Street, Pinner, Greater London, HA5 2NQ	Construction Completion Services	Construction Services
3	219m NE	Electricity Sub Station	Greater London, HA5	Electrical Features	Infrastructure and Facilities

This data is sourced from Ordnance Survey.

4.2 Current or recent petrol stations

Records within 500m	0

Open, closed, under development and obsolete petrol stations.

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	0

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.

This data is sourced from Local Authority records.

4.12 Radioactive Substance Authorisations

Records within 500m	0

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	0

Discharges of treated or untreated effluent to controlled waters under the Water Resources Act 1991.

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	1

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 22**

ID	Location	Details	
4	267m S	Incident Date: 25/09/2002 Incident Identification: 110543 Pollutant: Specific Waste Materials Pollutant Description: Other Specific Waste Material	Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) 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 Geology (basic)

5.1 Superficial geology (625k)

Records within 500m	0

Generalised geology data based on BGS's published poster maps of the UK (North and South). Superficial related themes digitised from 1977 first edition Quaternary map (North and South).

This data is sourced from the British Geological Survey.

5.2 Bedrock geology (625k)

Records within 500m	2

Generalised geology data based on BGS's published poster maps of the UK (North and South). Bedrock related themes created through generalisation of 1:50,000 data.

Location	Lex code	Description	Rock type
On site	**THAM-CLSSG**	**THAMES GROUP**	**CLAY, SILT, SAND AND GRAVEL**
15m NE	LMBE-CLSSG	LAMBETH GROUP	CLAY, SILT, SAND AND GRAVEL

This data is sourced from the British Geological Survey.

6 Hydrogeology - Superficial aquifer

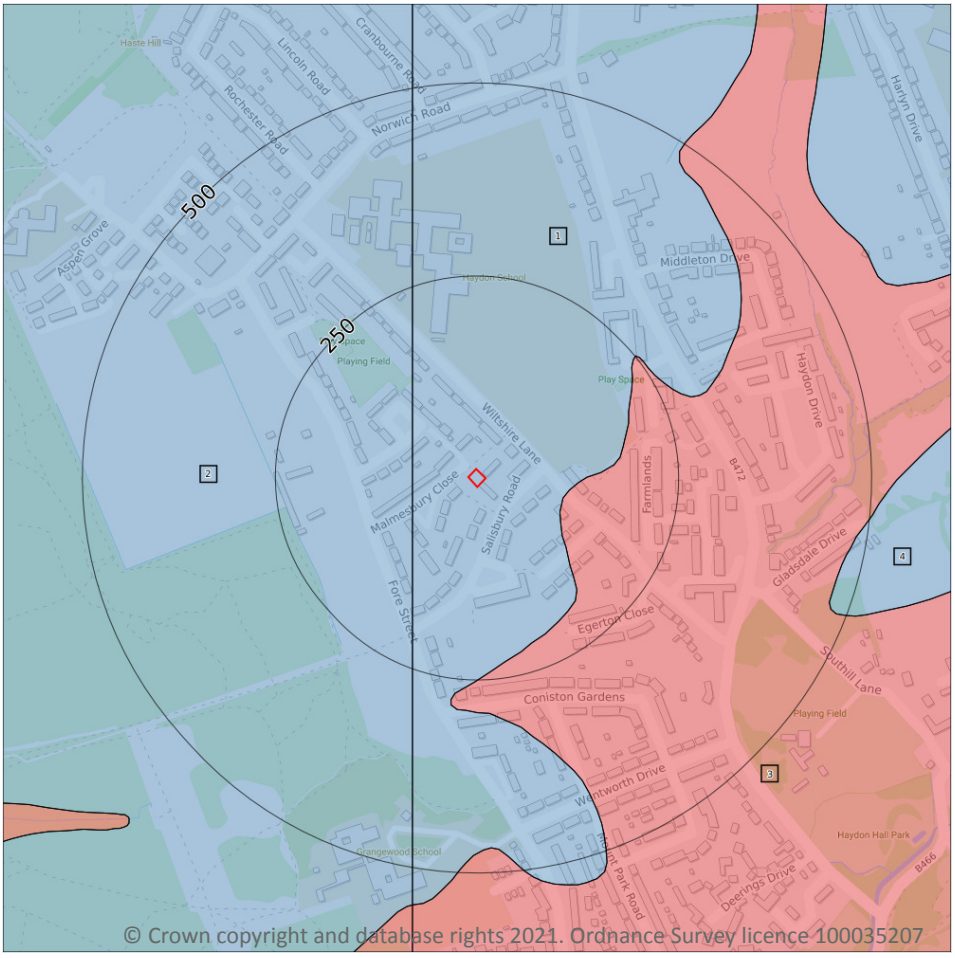
6.1 Superficial aquifer

Records within 500m	0

Aquifer status of groundwater held within superficial geology.

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

Bedrock aquifer



6.2 Bedrock aquifer

Records within 500m	4

Aquifer status of groundwater held within bedrock geology.

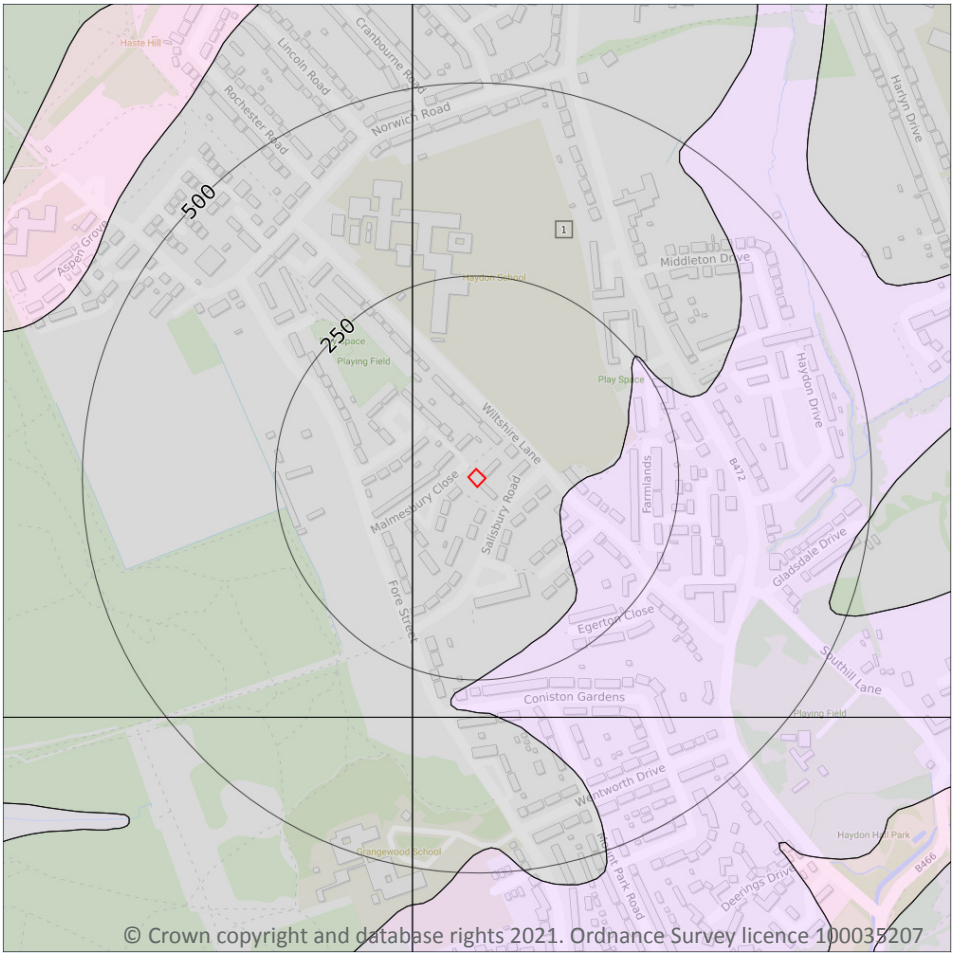
Features are displayed on the Bedrock aquifer map on **page 30**

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	73m W	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	103m E	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers
4	473m E	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



6.3 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 32**

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, No Superficial Aquifer**	**Leaching class: Low Infiltration value: 40-70% Dilution value: 300-550mm/year**	**Vulnerability: - Aquifer type: - Thickness: <3m Patchiness value: <90% Recharge potential: No Data**	**Vulnerability: Unproductive Aquifer type: Unproductive Flow mechanism: Mixed**

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

6.4 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.

6.5 Groundwater vulnerability- local information

Records on site	0

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.

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

Abstractions and Source Protection Zones

- Site Outline

Search buffers in metres (m)

- Source Protection Zone 1 — Inner catchment
- Source Protection Zone 2 — Outer catchment
- Source Protection Zone 3 — Total catchment
- Source Protection Zone 4 — Zone of Special Interest
- Source Protection Zone 1c — Inner catchment - confined aquifer
- Source Protection Zone 2c — Outer catchment - confined aquifer
- Source Protection Zone 3c — Total catchment - confined aquifer
- Drinking water abstraction licences
- Drinking water abstraction licences — Polygon features
- Drinking water abstraction licences — Linear features
- Groundwater abstraction licence (point)
- Groundwater abstraction licence (area)
- Groundwater abstraction licence (linear)
- Surface Water Abstractions (point)
- Surface Water Abstractions (area)
- Surface Water Abstractions (linear)

6.6 Groundwater abstractions

Records within 2000m	2

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 34**

ID	Location	Details	
-	1312m NW	Status: Active Licence No: 28/39/28/0336 Details: Potable Water Supply - Direct Direct Source: THAMES GROUNDWATER Point: POORS FIELD PUMPING STATION Data Type: Point Name: Affinity Water Limited Easting: 508900 Northing: 189900	Annual Volume (m^3): 43,260,641 Max Daily Volume (m^3): 286,404 Original Application No: - Original Start Date: 12/06/1967 Expiry Date: - Issue No: 102 Version Start Date: 14/11/2012 Version End Date: -
-	1576m W	Status: Active Licence No: 28/39/28/0336 Details: Potable Water Supply - Direct Direct Source: THAMES GROUNDWATER Point: RUISLIP PUMPING STATION Data Type: Point Name: Affinity Water Limited Easting: 508500 Northing: 189200	Annual Volume (m^3): 43,260,641 Max Daily Volume (m^3): 286,404 Original Application No: - Original Start Date: 12/06/1967 Expiry Date: - Issue No: 102 Version Start Date: 14/11/2012 Version End Date: -

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

6.7 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.

6.8 Potable abstractions

Records within 2000m	2

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.

Features are displayed on the Abstractions and Source Protection Zones map on **page 34**

ID	Location	Details	
-	1312m NW	Status: Active Licence No: 28/39/28/0336 Details: Potable Water Supply - Direct Direct Source: THAMES GROUNDWATER Point: POORS FIELD PUMPING STATION Data Type: Point Name: Affinity Water Limited Easting: 508900 Northing: 189900	Annual Volume (m^3): 43,260,641 Max Daily Volume (m^3): 286,404 Original Application No: - Original Start Date: 12/06/1967 Expiry Date: - Issue No: 102 Version Start Date: 14/11/2012 Version End Date: -
-	1576m W	Status: Active Licence No: 28/39/28/0336 Details: Potable Water Supply - Direct Direct Source: THAMES GROUNDWATER Point: RUISLIP PUMPING STATION Data Type: Point Name: Affinity Water Limited Easting: 508500 Northing: 189200	Annual Volume (m^3): 43,260,641 Max Daily Volume (m^3): 286,404 Original Application No: - Original Start Date: 12/06/1967 Expiry Date: - Issue No: 102 Version Start Date: 14/11/2012 Version End Date: -

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

6.9 Source Protection Zones

Records within 500m	**3**

Source Protection Zones define the sensitivity of an area around a potable abstraction site to contamination.

Features are displayed on the Abstractions and Source Protection Zones map on **page 34**

ID	Location	Type	Description
1	**On site**	**2**	**Outer catchment**
2	**On site**	**2**	**Outer catchment**
3	370m E	3	Total catchment

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

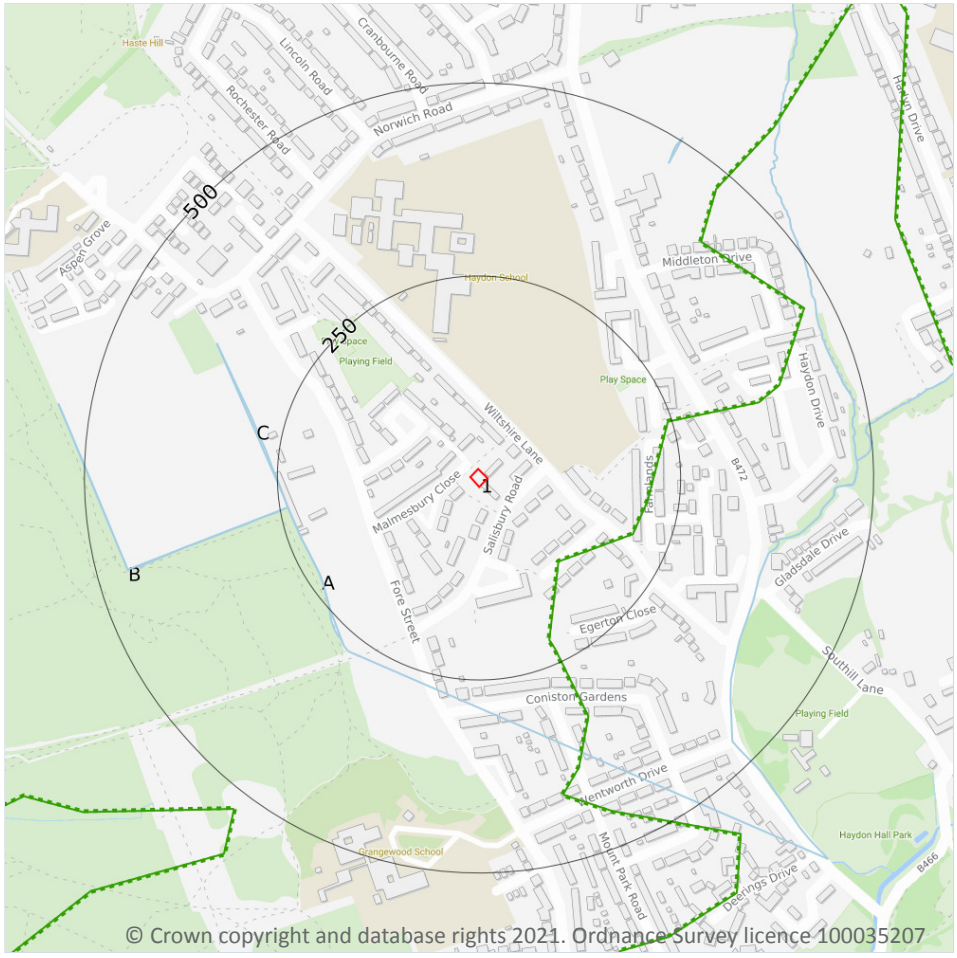
6.10 Source Protection Zones (confined aquifer)

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.

7 Hydrology



Site Outline

Search buffers in metres (m)

Water Network (OS MasterMap)

Surface water features (wider than 5m)

Surface water features (narrower than 5m)

WFD River, canal and surface water transfer water bodies

WFD Lake water bodies

WFD Transitional and coastal water bodies

WFD Surface water body catchments boundaries

WFD Groundwater body boundaries

7.1 Water Network (OS MasterMap)

Records within 250m	**3**

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 37**

ID	Location	Type of water feature	Ground level	Permanence	Name
A	230m SW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-

ID	Location	Type of water feature	Ground level	Permanence	Name
B	239m W	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
C	239m W	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-

This data is sourced from the Ordnance Survey.

7.2 Surface water features

Records within 250m	**3**

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 37**

This data is sourced from the Ordnance Survey.

7.3 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 37**

ID	Location	Type	Water body catchment	Water body ID	Operational catchment	Management catchment
1	**On site**	**River WB catchment**	**Pinn**	**GB106039023070**	**Colne**	**Colne**

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

7.4 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 37**

ID	Location	Type	Name	Water body ID	Overall rating	Chemical rating	Ecological rating	Year
-	735m SE	River	Pinn	GB106039023070	Moderate	Good	Moderate	2016

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

7.5 WFD Groundwater bodies

Records on site	0

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.

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

8 River and coastal flooding

8.1 Risk of Flooding from Rivers and Sea (RoFRaS)

Records within 50m	0

The chance of flooding from rivers and/or the sea in any given year, based on cells of 50m. Each cell is allocated one of four flood risk categories, taking into account flood defences and their condition; 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).

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

8.2 Historical Flood Events

Records within 250m	0

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.

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

8.3 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.

8.4 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.

8.5 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

8.6 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.

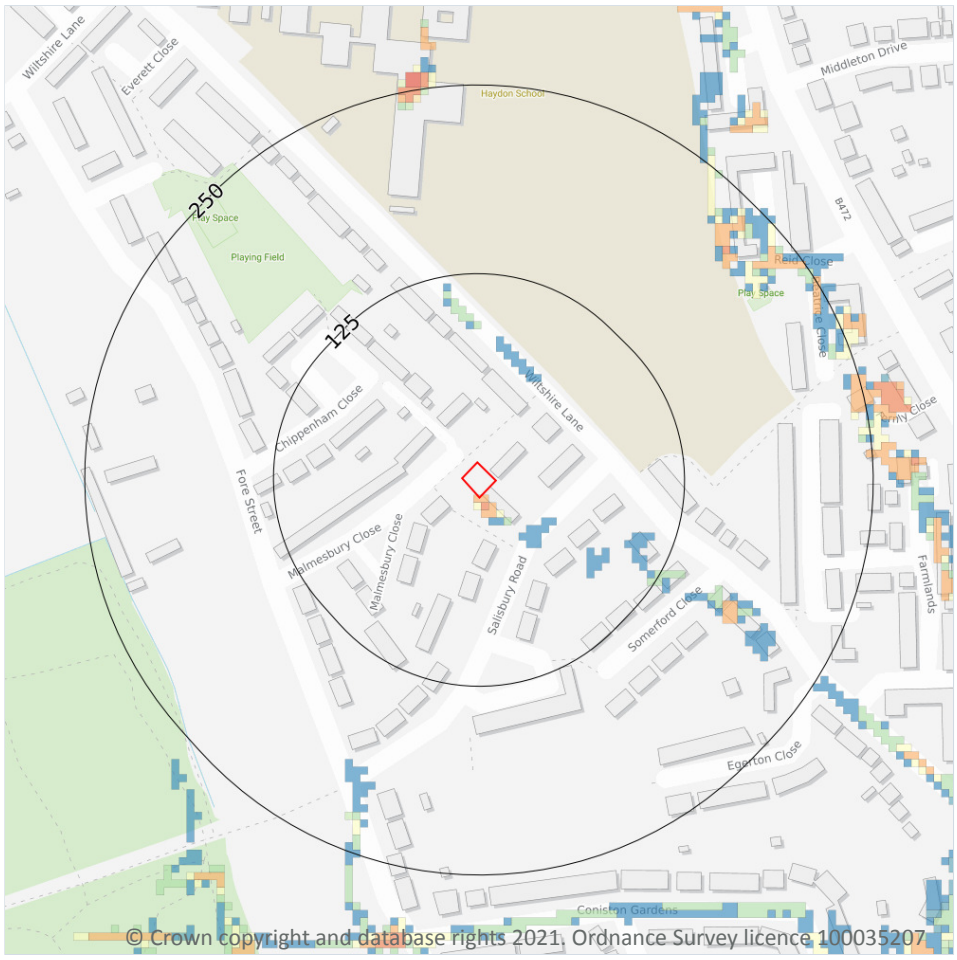
8.7 Flood Zone 3

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.

9 Surface water flooding



Site Outline
Search buffers in metres (m)

1 in 1000 return period
- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

1 in 250 return period
- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

1 in 100 return period
- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

1 in 30 return period
- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

9.1 Surface water flooding

Highest risk on site	**1 in 30 year, 0.1m - 0.3m**
Highest risk within 50m	**1 in 30 year, 0.3m - 1.0m**

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 43**

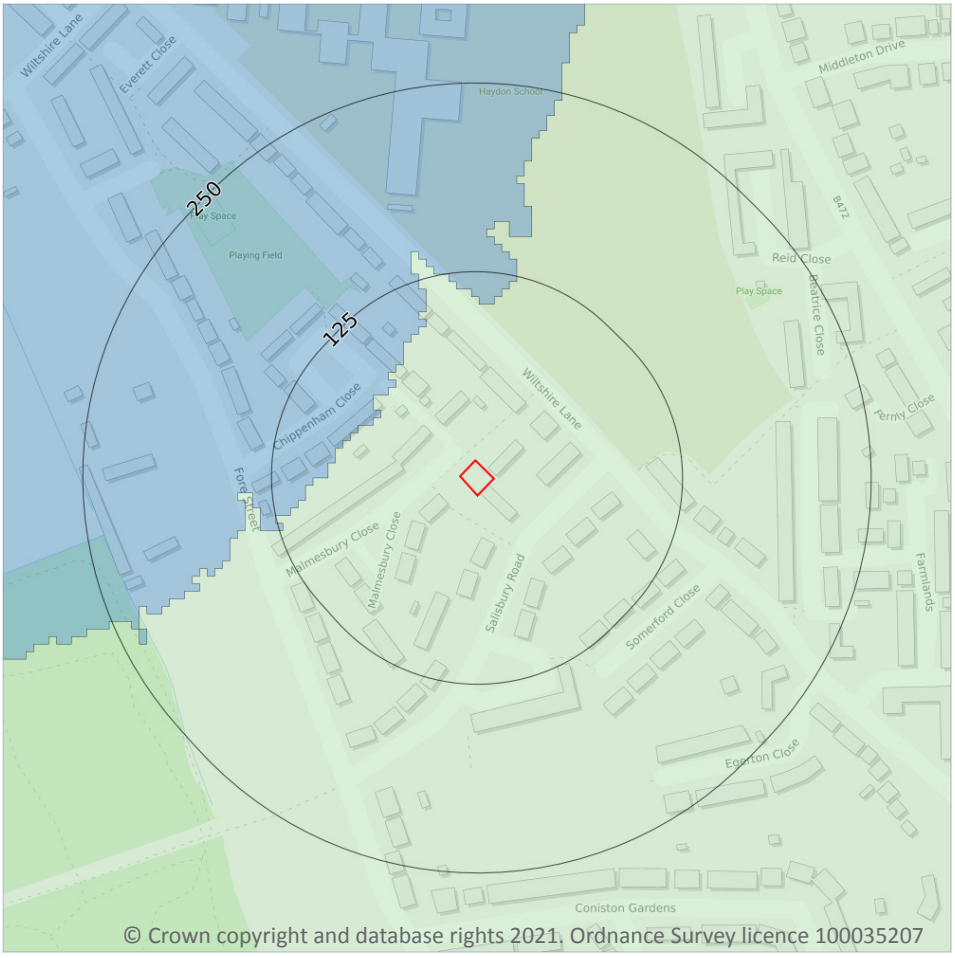
The data shown on the map and in the table above shows the highest likelihood of flood events happening at the site. Lower likelihood events may have greater flood depths and hence a greater potential impact on a site.

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 0.1m and 0.3m

This data is sourced from Ambiental Risk Analytics.

10 Groundwater flooding



Site Outline

Search buffers in metres (m)

- High
- Moderate - High
- Moderate
- Low
- Negligible

10.1 Groundwater flooding

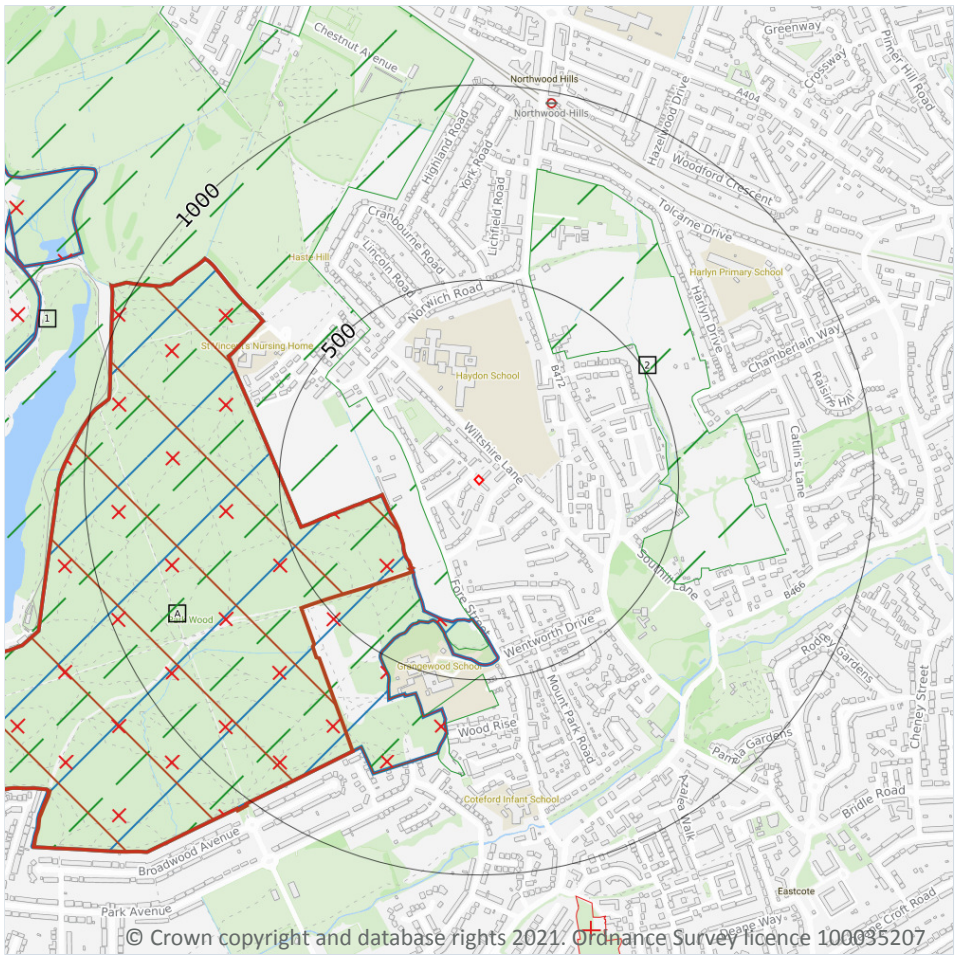
Highest risk on site	**Low**
Highest risk within 50m	**Low**

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 45**

This data is sourced from Ambiental Risk Analytics.

11 Environmental designations



Site Outline

Search buffers in metres (m)

- Sites of Special Scientific Interest (SSSI)
- National Nature Reserves (NNR)
- Local Nature Reserves (LNR)
- Designated Ancient Woodland
- Green Belt

11.1 Sites of Special Scientific Interest (SSSI)

Records within 2000m	3

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.

Features are displayed on the Environmental designations map on **page 46**

ID	Location	Name	Data source
A	232m SW	Ruislip Woods	Natural England

ID	Location	Name	Data source
B	1161m NW	Ruislip Woods	Natural England
-	1841m W	Ruislip Woods	Natural England

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

11.2 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.

11.3 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.

11.4 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.

11.5 National Nature Reserves (NNR)

Records within 2000m	3

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.

Features are displayed on the Environmental designations map on **page 46**

ID	Location	Name	Data source
A	232m SW	Ruislip Woods	Natural England
B	1161m NW	Ruislip Woods	Natural England
-	1841m W	Ruislip Woods	Natural England

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

11.6 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 46**

ID	Location	Name	Data source
3	1083m S	Ruislip	Natural England

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

11.7 Designated Ancient Woodland

Records within 2000m	**3**

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.

Features are displayed on the Environmental designations map on **page 46**

ID	Location	Name	Woodland Type
A	231m SW	Park Wood	Ancient & Semi-Natural Woodland
-	1461m W	Unknown	Ancient & Semi-Natural Woodland
-	1874m W	Mad Bess Wood	Ancient & Semi-Natural Woodland

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

11.8 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.

11.9 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.

11.10 Marine Conservation Zones

Records within 2000m	0

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.

11.11 Green Belt

Records within 2000m	5

Areas designated to prevent urban sprawl by keeping land permanently open.

Features are displayed on the Environmental designations map on **page 46**

ID	Location	Name	Local Authority name
1	147m W	London	Hillingdon
2	365m NE	London	Hillingdon
-	1710m W	London	Hillingdon
-	1775m NE	London	Harrow
-	1842m N	London	Hillingdon

This data is sourced from the Ministry of Housing, Communities and Local Government.

11.12 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.

11.13 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.

11.14 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.

11.15 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.

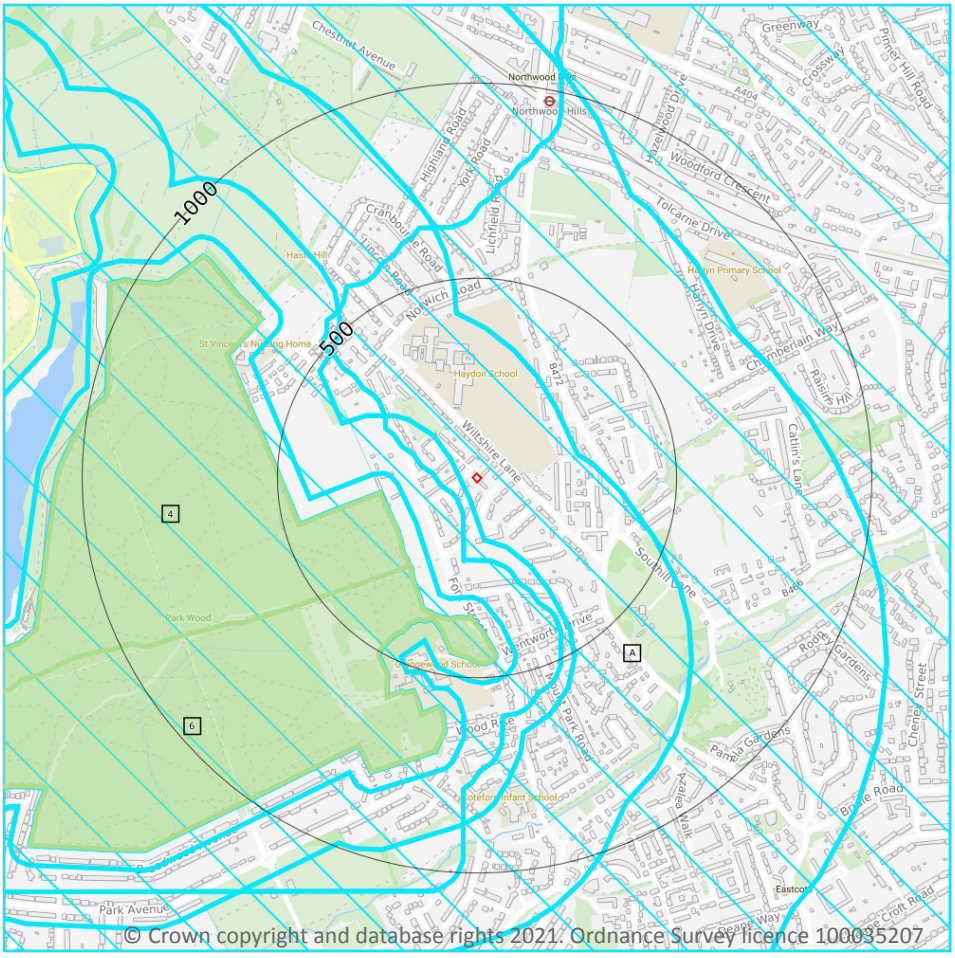
11.16 Nitrate Vulnerable Zones

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



11.17 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 52**

ID	Location	Type of developments requiring consultation
A	**On site**	**Infrastructure - Pipelines, pylons and overhead cables. Any transport proposal including road, rail and by water (excluding routine maintenance). Airports, helipads and other aviation proposals** **Minerals, Oil and Gas - Planning applications for quarries, including: new proposals, Review of Minerals Permissions (ROMP), extensions, variations to conditions etc. Oil & gas exploration/extraction.** **Residential - Residential development of 100 units or more.** **Rural residential - Any residential development of 50 or more houses outside existing settlements/urban areas.** **Air pollution - Any development that could cause AIR POLLUTION (incl: industrial/commercial processes, livestock & poultry units, slurry lagoons/manure stores).** **Combustion - All general combustion processes. Incl: energy from waste incineration, other incineration, landfill gas generation plant, pyrolysis/gasification, anaerobic digestion, sewage treatment works, other incineration/ combustion.** **Waste - Mechanical and biological waste treatment, inert landfill, non-hazardous landfill, hazardous landfill, household civic amenity recycling facilities construction, demolition and excavation waste, other waste management** **Composting - Any composting proposal. Incl: open windrow composting, in-vessel composting, anaerobic digestion, other waste management.** **Water supply - Large infrastructure such as warehousing / industry where net additional gross internal floorspace is > 1,000m² or any development needing its own water supply**

This data is sourced from Natural England.

11.18 SSSI Units

Records within 2000m	**5**

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.

Features are displayed on the SSSI Impact Zones and Units map on **page 52**

ID: 4
Location: 232m SW
SSSI name: Ruislip Woods
Unit name: Park Wood
Broad habitat: Broadleaved, Mixed And Yew Woodland - Lowland
Condition: Favourable
Reportable features:

Feature name	Feature condition	Date of assessment
Invert. assemblage A1 arboreal canopy	Favourable	01/10/2010
Invert. assemblage A2 wood decay	Favourable	01/10/2010
Lowland mixed deciduous woodland	Favourable	01/10/2010

ID: 6
Location: 274m SW
SSSI name: Ruislip Woods
Unit name: Park Wood South
Broad habitat: Broadleaved, Mixed And Yew Woodland - Lowland
Condition: Favourable
Reportable features:

Feature name	Feature condition	Date of assessment
Invert. assemblage A1 arboreal canopy	Favourable	01/10/2010
Invert. assemblage A2 wood decay	Favourable	01/10/2010
Lowland mixed deciduous woodland	Favourable	01/10/2010

ID: 14
Location: 1161m NW
SSSI name: Ruislip Woods
Unit name: Poor`s Field
Broad habitat: Acid Grassland - Lowland
Condition: Unfavourable - Recovering
Reportable features:

Feature name	Feature condition	Date of assessment
Invert. assemblage F2 grassland & scrub matrix	Favourable	20/06/2013
Lowland dry acid grassland (U1e)	Unfavourable - Recovering	20/06/2013

ID: -
Location: 1403m W
SSSI name: Ruislip Woods
Unit name: Copse Wood
Broad habitat: Broadleaved, Mixed And Yew Woodland - Lowland
Condition: Favourable
Reportable features:

Feature name	Feature condition	Date of assessment
Invert. assemblage A1 arboreal canopy	Favourable	01/10/2010
Invert. assemblage A2 wood decay	Favourable	01/10/2010
Lowland mixed deciduous woodland	Favourable	01/10/2010

ID: -
Location: 1841m W
SSSI name: Ruislip Woods
Unit name: Mad Bess Woods
Broad habitat: Broadleaved, Mixed And Yew Woodland - Lowland
Condition: Favourable
Reportable features:

Feature name	Feature condition	Date of assessment
Invert. assemblage A1 arboreal canopy	Favourable	01/10/2010
Invert. assemblage A2 wood decay	Favourable	01/10/2010
Lowland mixed deciduous woodland	Favourable	01/10/2010

This data is sourced from Natural England and Natural Resources Wales.

12 Visual and cultural designations

Site Outline

Search buffers in metres (m)

Listed buildings

Conservation areas

Conservation areas - no data

National Parks

Areas of Outstanding Natural Beauty

Registered parks and gardens

Scheduled Monuments

World Heritage Sites

12.1 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.

12.2 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.

12.3 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.

12.4 Listed Buildings

Records within 250m	1

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.

Features are displayed on the Visual and cultural designations map on **page 56**

ID	Location	Name	Grade	Reference Number	Listed date
1	224m SE	Cherry Cottage Ivy Farmhouse, Northwood Hills, Hillingdon, London,CHERRY COTTAGE	II	1284848	06/09/1974

This data is sourced from Historic England, Cadw and Historic Environment Scotland.

12.5 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.

12.6 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.

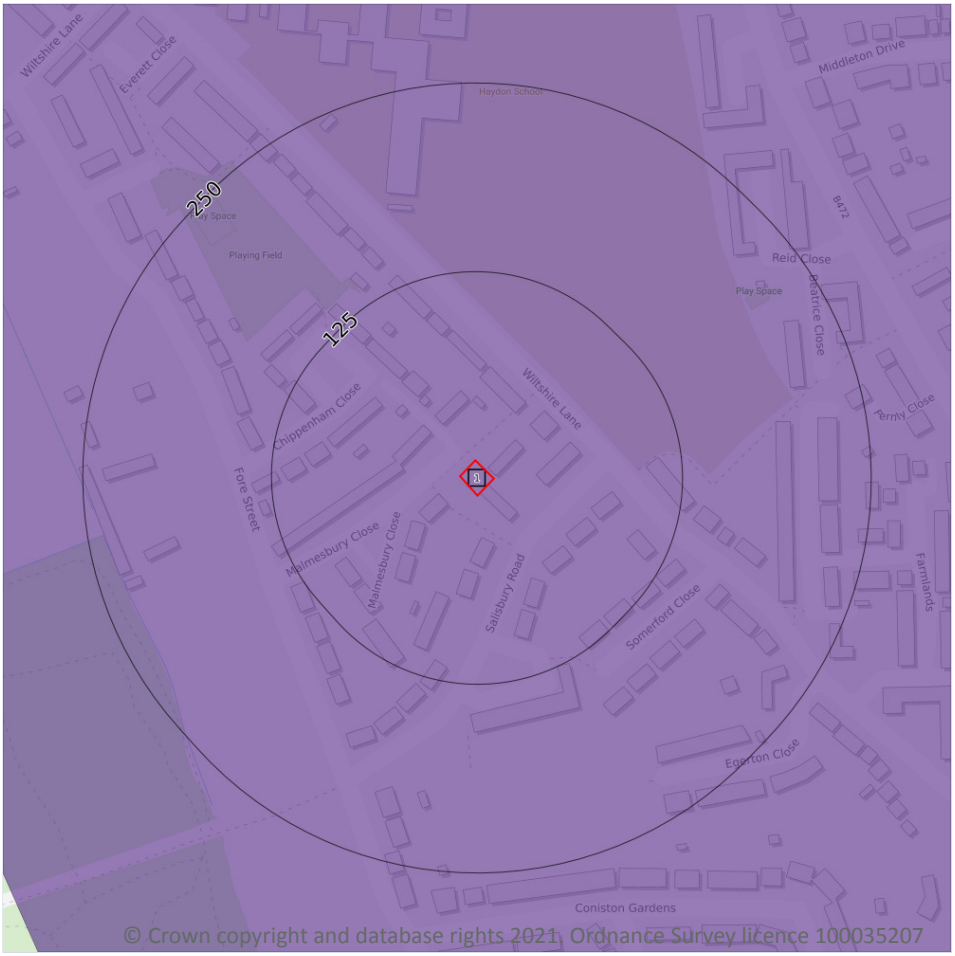
12.7 Registered Parks and Gardens

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.

13 Agricultural designations



Site Outline

Search buffers in metres (m)

- Grade 1 - excellent quality
- Grade 2 - very good quality
- Grade 3 - good to moderate quality
- Grade 3a - good quality
- Grade 3b - moderate quality
- Grade 4 - poor quality
- Grade 5 - very poor quality
- Non-agricultural land
- Urban land
- Exclusion land
- Tree felling licences
- Open Access land

13.1 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 59**

ID	Location	Classification	Description
1	**On site**	**Urban**	-

This data is sourced from Natural England.

13.2 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.

13.3 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.

13.4 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
217m S	AG00423417	Higher Level Stewardship	01/12/2013	30/11/2023

This data is sourced from Natural England.

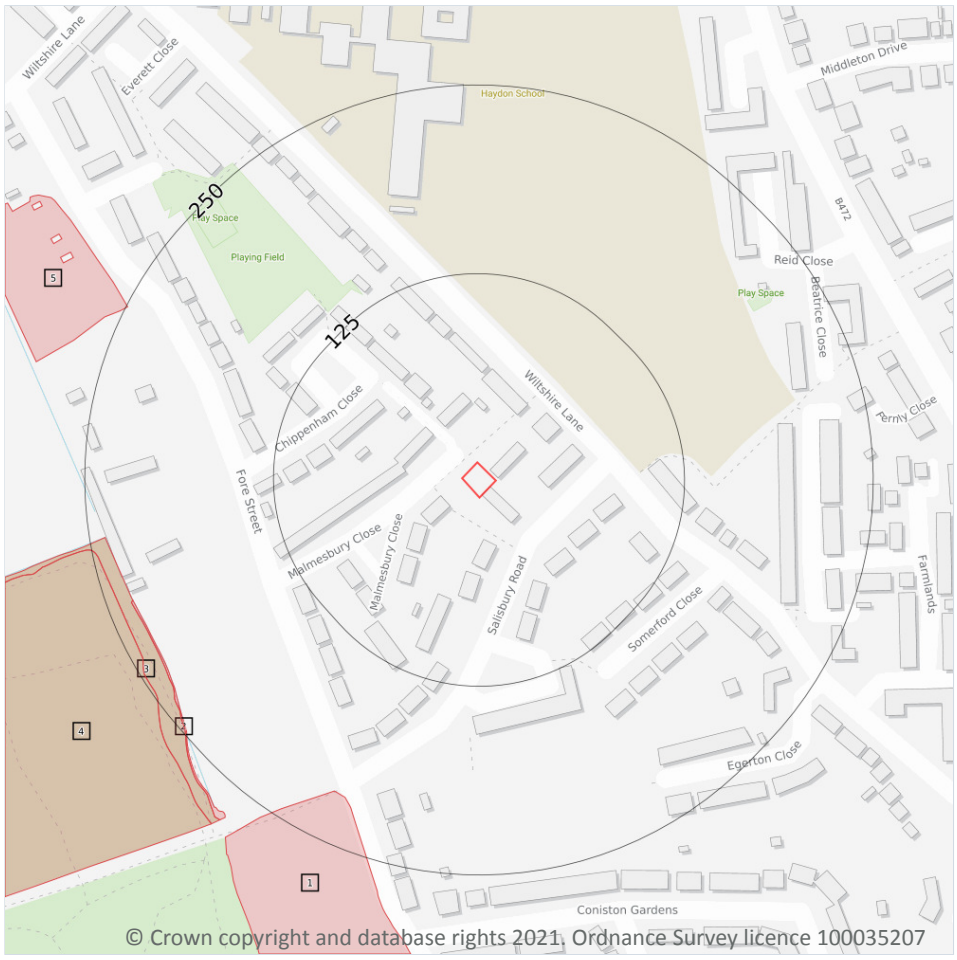
13.5 Countryside Stewardship Schemes

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.

14 Habitat designations



Site Outline

Search buffers in metres (m)

- Priority Habitat Inventory
- Open Mosaic Habitat
- Limestone Pavement Orders

Habitat Networks

- Primary Habitat
- Restorable Habitat
- Associated Habitats
- Habitat Restoration-Creation
- Network Enhancement Zone 1
- Network Enhancement Zone 2

14.1 Priority Habitat Inventory

Records within 250m	5

Habitats of principal importance as named under Natural Environment and Rural Communities Act (2006) Section 41.

Features are displayed on the Habitat designations map on **page 61**

ID	Location	Main Habitat	Other habitats
1	217m SW	Good quality semi-improved grassland	Main habitat: GQSIG (FEP + HLS)
2	231m SW	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
3	232m SW	Deciduous woodland	Main habitat: DWOOD (INV > 50%, ENSIS L1); Additional: LFENS (INV 50%)

ID	Location	Main Habitat	Other habitats
4	242m SW	Deciduous woodland	Main habitat: DWOOD (INV > 50%, ENSIS L1); Additional: LFENS (INV 50%)
5	249m NW	Traditional orchard	Main habitat: TORCH (INV > 50%)

This data is sourced from Natural England.

14.2 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.

14.3 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.

14.4 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.

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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Groundsure
LOCATION INTELLIGENCE

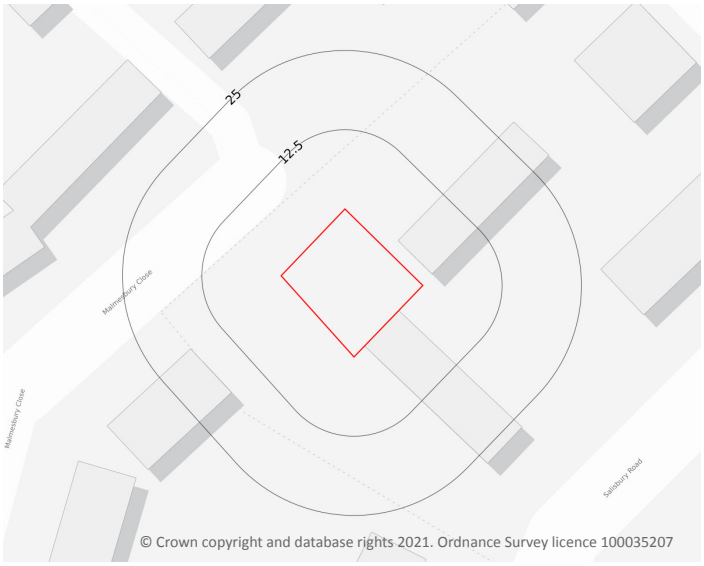
Radon Check

NEW GARAGE SITE AT MALMESBURY CLOSE, PINNER, HA5 2NG

Professional opinion

PASS

Site plan



Search results

Not in a radon affected area

Local levels of radon are considered normal.

The percentage of homes estimated to be affected by radon in your local area is less than 1%.

Useful contacts

Public Health England / UKRadon
Public information access office, Public Health England, Wellington House, 133-155 Waterloo Road, London, SE1 8UG
https://www.ukradon.org/

UK Radon Association
http://www.radonassociation.co.uk/

Overview of findings and recommendations

Radon

No further action is recommended based on the identified local levels of radon.

It should be noted that although this report uses the best available data this assessment is an estimation and is not based upon measurements. It is possible to find high radon levels in properties anywhere in the country, even in lower risk areas, as radon is everywhere in varying concentrations.

Conveyancing Information Executive and our terms & conditions

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If you remain dissatisfied with the firm's final response, after your complaint has been formally considered, or if the firm has exceeded the response timescales, you may refer your complaint for consideration under The Property Ombudsman scheme (TPOs). The Ombudsman can award up to £5,000 to you if the Ombudsman finds that you have suffered actual financial loss and/or aggravation, distress or inconvenience as a result of your search provider failing to keep to the Standards.

Please note that all queries or complaints regarding your search should be directed to your search provider in the first instance, not to TPOs.

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- acknowledge it within 5 working days of receipt
- normally deal with it fully and provide a final response, in writing, within 20 working days of receipt
- liaise, at your request, with anyone acting formally on your behalf

Complaints should be sent to:
Operations Director, Groundsure Ltd, Sovereign House, Church Street, Brighton, BN1 1UJ. Tel: 08444 159 000. Email: info@groundsure.com If you are not satisfied with our final response, or if we exceed the response timescales, you may refer the complaint to The Property Ombudsman scheme (TPOs): Tel: 01722 333306, E-mail: admin@tpos.co.uk We will co-operate fully with the Ombudsman during an investigation and comply with their final decision.

Groundsure's Terms and Conditions can be viewed online at this link: https://www.groundsure.com/terms-and-conditions-jan-2020/

Important consumer protection information

All of the advice and reports that Groundsure produces are covered by a comprehensive Remediation Contribution policy to ensure customers are protected, see https://www.groundsure.com/remediation for full details.

Data providers

Groundsure works with respected data providers to bring you the most relevant and accurate information in your Radon Check report. To find out who they are and their areas of expertise see https://www.groundsure.com/sources-reference.