Preliminary Investigation Report

at
Haydon Drive, Pinner, London Borough of Hillingdon HA5 2PW

for
Philip Pank Partnership LLP

Reference: 21724/PIR Rev1.1
February 2025

Control Document

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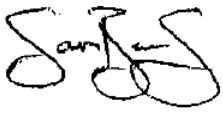

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This is not a valid document for use in the design of the project unless it is titled Final in the document status box.

Current regulations and good practice were used in the preparation of this report. The recommendations given in this report must be reviewed by an appropriately qualified person at the time of preparation of the scheme design to ensure that any recommendations given remain valid in light of changes in regulation and practice, or additional information obtained regarding the site.

Commission

This document comprises the Preliminary Investigation Report (PIR) and incorporates the results, discussion, and conclusions to this desk-based works. General site data is recorded below:

Commission Record	
Client	Philip Pank Partnership LLP
Site Name	Haydon Drive, Pinner, London Borough of Hillingdon HA5 2PW
Grid Reference	TQ 104 894
Soils Limited Quotation Ref	Q29508, dated 4th December 2024
Clients Purchase Order	Q29508, dated 4th December 2024

The record of revision is presented below:

Record Of Revisions		
Revision	**Date**	**Reason**
1.0	January 2025	Original
1.1	February 2025	Minor Adjustment to western boundary

Note: The latest revised document supersedes all previous revisions of the PIR produced by Soils Limited.

Documents associated with this development that must be referred to are given below.

Record Of Associated Documents			
Reference	**Type**	**Date**	**Creator**
24-014	Utilities Report Search	May 2024	Cornerstone

Caveats

Whilst reasonable skill and care has been taken to determine the site history and the environmental setting within the time constraints applied by the project, it should be appreciated that uncertainties may occur owing to the natural variability of soil material within a defined area or as a result of unknowns that are associated with contaminated land assessment in general. The site conditions may be different from that indicated by this Preliminary Investigation, particularly on a site with a history of past development. No responsibility can be accepted should such conditions alter the recommendations made in this report.

Without a drainage survey it is not possible to establish if the surface water drainage is to the main drainage system or soakaways. If there are soakaways on-site, they could act as a potential source. The geology on-site to an extent may determine if soakaways were likely to have been adopted.

Ordinary watercourses (OWs) are defined as rivers (which are not designated as main rivers), streams, ditches, drains, culverts, cuts and sewers (other than public sewers). This includes all OWs that are not mapped. Ordinary watercourse consent (OWC) is required from the Lead Local Flood Authority (LLFA) when changing/adapting/adding to the cross sections of OWs. Installations of any structure or obstruction into an OW that impedes the flow without consent is prohibited by the Land Drainage Act 1991 Section 23.

Failure to remove obstructions may result in legal action by the LLFA with powers under Section 25 of the Land Drainage Act 1991.

Soils Limited suggest surveying the site for OW usually seen in rural areas as boundary ditches in order to avoid potential impacts to residents downstream and prosecution. OWC can be applied for from your LLFA.

This Preliminary Investigation does not include a detailed UXO risk assessment, it does however contain a basic assessment in accordance with CIRIA C681 and C785. In preparing a Preliminary Investigation reference is made to historical maps and web based sources to assess the risk of the site potentially having been impacted by bombing during the World Wars. The data readily available is not necessarily definitive. Certain areas were bombed heavily such as centres of industrial manufacture, airfields, shipyards, docklands, railways sidings and junctions. The assessment is based on the likely area risk, bomb patterns (i.e. lines of recorded bomb impacts with gaps where an impact would be anticipated) and the age of structures on and in close proximity to the site.

Explanations

The Preliminary Investigation Report was undertaken to advise the client on the risk pertaining to the site, with special reference to historic and current potential contaminative activities and processes. This also included the assessment of their impact on current and future sensitive receptors such as human health, controlled waters, ecological features, building structures and services.

During the site walkover observations were made in relation to current activities, evidence of historical activities, sources of potential contamination such as fuel storage tanks, oil drums and chemical storage and evidence of contamination. The walkover also looked for evidence of soil contamination in the form of staining odours and stressed or discoloured vegetation.

To assess the vulnerability of groundwater to contamination, consideration must be given to the leaching characteristics of the overlying soils and the characteristics of the strata in the unsaturated zone. Information on the geological strata such as lithological type and permeability characteristics has been combined with the physical properties of the soil to produce varying degrees of vulnerability.

The object of the historic map study was to report on the evidence of site history and redevelopment of the site and its environs from available County Series and Ordnance Survey Maps dating from the mid to late 19th Century to the present day as downloaded from Landmark Environmental.

The published maps only represent a “snap shot” of the site and its environs at the date of the survey. The detail of the information recorded can vary between epochs, map scale and county areas. It should be noted that changes in land uses, processes or activities may have occurred outside of published epochs and these may not have been recorded on subsequent epochs. Also note that as methods of projection, production and

recording have changed over time, this can result in geo-reference errors that may indicate the established site boundary is off-centre from its true location on older historical maps. Where this is potentially significant it will be noted.

Any distances quoted for features remote from the site have been scaled from the maps and are only approximate. Where dates have been noted in brackets, these are the actual dates applicable to the map editions and may not reflect the date of the original survey it is based on. The information reported might not represent all pertinent information that could be obtained. The interpretation of the maps and/or other data commented on in this report is subjective.

As part of the review of the historical plans, only features considered to have or to have had a potential contaminative impact on the site and usually within a notional 250m radius are discussed. The north point and approximate extent of the site are indicated on each figure.

Dataset survey is undertaken, and the extent of the search has initially been limited to a radius of 250m as it is considered that sources of contamination beyond 250m are unlikely to impact on the site.

The BGS soil chemistry for environmental assessments dataset coverage, was developed from BGS G-BASE and Imperial College Wolfson Atlas data. It contains estimated ambient As, Cd, Cr, Ni and Pb background concentrations for rural topsoils across Great Britain. It also contains the locations and measured concentrations (mg kg-1) of As, Cd, Cr, Cu, Ni, Pb, Sn and Zn in urban topsoil samples, collected from geochemical surveys in 23 major urban centres.

In accordance with CIRIA C681 and C785 a review has been undertaken of the historic maps and the Zetica UXO risk website which indicated that the site was in an area of moderate bombing density and may have been subject to bombing, shelling or has had a military use.

Legislation and Liability

The primary legislative mechanism for contaminated land management in the UK is Part 2A of the Environmental Protection Act, 2021 (EPA). Part 2A was introduced into the EPA under Section 57 of the Environment Act 1995 to help deal with the substantial legacy of land contamination. The legislation provides powers in relation to the identification, remediation and apportionment of liability for contaminated land. Part 2A applies where there is unacceptable risk, assessed on the basis of the current use and the relevant circumstances of the land. It is not directed to assessing risks in relation to a future use of the land that would require a specific grant of planning permission.

Under Part IIA of the Environment Act 2021, Local Authorities are required to identify contaminated land and serve on every person who is an appropriate person a remediation notice setting out what is to be done by way of remediation and the period within which it must be done.

If the person who caused, or knowingly permitted, the contaminating substance cannot be found, the owner and/or, occupier for the time being, of the property can be the appropriate person.

Under the legislation, Contaminated Land is defined as: -

"Land which is in such a condition by reason of substances in, on or under the land that significant harm is being caused or that there is a significant possibility of such harm being caused or that pollution of controlled waters is being, or is likely to be caused."

Where the Act defines harm as:

"harm to the health of living organisms or other interference with the ecological systems of which they form a part and, in the case of man, includes harm to his property."

and pollution of controlled waters is defined as: -

"the entry into controlled waters of any poisonous, noxious or polluting matter or any solid waste matter."

In addition, The Radioactive Contaminated Land (Modification of Enactments) (England) Regulations 2006 introduced the supplementary definition of harm to include: lasting exposure to any person resulting from the after-effects of a radiological emergency, past practice or past work activity.

With regard to contaminated waters, the Environment Act 1995 amends the Water Resources Act 1991 and provides the Environment Agency with the power to force clean-up of historical contamination by issuing a Works Notice, with remediation paid for by the responsible parties.

The Groundwater Regulations (1998) stated that entry of List 1 substances into groundwater must be prevented, and List II substances must be controlled.

Limitations and Disclaimers

This Preliminary Investigation Report relates to the site located at Haydon Drive, Pinner, London Borough of Hillingdon HA5 2PW and was prepared for the sole benefit of the Client for the brief described in the Commission of this report.

The contents, recommendations and advice given in the report are subject to the Terms and Conditions given in the Soils Limited Quotation and the subsequent Clients Purchase Order.

Soils Limited disclaims any responsibility to the Client and others in respect of any matters outside the scope of the above.

This report has been prepared by Soils Limited, with all reasonable skill, care and diligence within the terms of the contract with the Client, incorporation of our General

Conditions of Contract of Business and taking into account the resources devoted to us by agreement with the Client.

The report is personal and confidential to the Client and Soils Limited accept no responsibility of whatever nature to third parties to whom this report, or any part thereof, is made known. Any such party relies on the report wholly at its own risk.

The Client may not assign the benefit of the report or any part to any third party without the written consent of Soils Limited.

The ground is a product of continuing natural and artificial processes. As a result, the ground will exhibit a variety of characteristics that vary from place to place across a site, and also with time. Whilst a ground investigation will mitigate to a greater or lesser degree against the resulting risk from variation, the risks cannot be eliminated.

The investigation, interpretations, and recommendations given in this report were prepared for the sole benefit of the client in accordance with their brief. As such these do not necessarily address all aspects of ground behaviour at the site.

Current regulations and good practice were used in the preparation of this report. An appropriately qualified person must review the recommendations given in this report at the time of preparation of the scheme design to ensure that any recommendations given remain valid in light of changes in regulation and practice, or additional information obtained regarding the site.

There may be other sources of information not included in those listed that hold data relevant to the Preliminary Investigation Report undertaken at the site that could materially affect the conclusions made in this report.

It should be noted that a detailed survey of the possible presence or absence of invasive species, such as Japanese Knotweed, is outside of the scope of investigation.

Ownership of land brings with it onerous legal liabilities in respect of harm to the environment. “Contaminated Land” is defined in Section 57 of the Environment Act 2021.

Where a contaminative use is identified in the Preliminary Investigation Report this does not determine whether contamination has actually occurred, or if it has the degree to which it may have taken place. An intrusive investigation(s) and analysis is required to establish the nature and degree of any contamination present.

All works are undertaken in the context of, and in compliance with, BS10175+A2 2017 and LCRM (EA 2021) and all other pertinent planning, standards, documentation and guidance appropriate to the site at the time of production which may include, but are not necessarily limited to, documents provided by BS/CEN/ISO, NHBC, AGS, CIEH, CIRIA, SoBRA and CLAIRE.

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remains with Soils Limited. License is for the sole use of the client and may not be assigned, transferred or given to a third party. This license is only valid once we have been paid in full for this engagement. In the event of non-payment for our services, we reserve the right to retract the license for all project data, preventing their use and any reliance upon such data by the client or any other third party. We may also contact parties other than the client to notify them of this retraction.

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Section 1 Site Conditions and Proposed Development

1.1 Site Walkover

A site walkover was undertaken in January 2025, by Soils Limited. The notes of the site walkover are presented in Table 1.1 and Table 1.2.

Table 1.1 Site Walkover Record (On-site)

Use of Site	Site was used as residential terraced bungalows
Structures	Four rows of east-west aligned terrace bungalows in the centre of the site and two rows of residential garages
Site Topography	Western area to the edge of the westernmost bungalows is flat and level. Remaining site area dips down towards the east at c.4˚
Site Covering	Tarmacadam roads and footpaths. Concrete paving pathways to the bungalows. Predominantly grass-covered soft landscaping
Vegetation	Mainly small hedges and shrubs. Few semi-mature trees along the northern site boundary
Potential Contamination Sources	Residential garages
Odour	None
Drainage	Drainage Covers noted on site

Table 1.2 Site Walkover Record (Off-site)

Use of Land	North: Residential use and a substation 1m from the site boundary East: Residential with a school beyond South: Residential West: Residential
Area Topography	Undulating with base of the valley to the east. General topography was primarily dipping down c.2˚ to the southeast
Vegetation	Mature trees and shrubs
Potential Contamination Sources	Substation

1.2 Site Drainage

Via surface drainage, which are anticipated to be connected to the mains system. Confirmation via a drainage survey.

1.3 Site Photographs

The site photographs have been included within Appendix F.

1.4 Proposed Development

The proposed development consists of the demolition of the existing 16 properties, to create 21 new houses, comprising 15 four bedroom houses and six three bedroom houses, each with its own private garden. There will be a total of 31 car parking spaces and two cycle spaces for each dwelling.

The plans also include a new children's play area and a public open space as well as planting of new trees and shrubs.

In compiling this report reliance was placed on drawing M10029 APL006 prepared by Hunters and dated November 2024. The recommendations provided within this report are made exclusively in relation to the scheme outlined above and must not be applied to any other scheme without further consultation with Soils Limited. Soils Limited must be notified about any change or deviation from the scheme outlined.

The proposed development plan has been provided in Appendix A.

Section 2 Geology, Hydrogeology, Hydrology and Radon

2.1 Anticipated Geology

The 1:50,000 BGS Geology map showed the site to be situated on the Lambeth Group and the overlying London Clay Formation with no overlying superficial deposits.

The London Clay Formation covers the north west section of the site.

2.1.1 Lambeth Group

The Lambeth Group (formerly the Woolwich and Reading Beds) occurs in the London and Hampshire Basins, where it directly overlies the Chalk or Thanet Sand Formation, and is succeeded by the Harwich and London Clay Formations. Although generally less than 50 metres thick, it's lithological variability and position beneath much of London has concerned tunnelling engineers since the early 19th century.

The relationship between the different depositional environments is seen in central and south-east London, where deposits of fine-grained sand, flint gravel beds, mottled clay, shell beds and altered beds form a complex interdigitating sequence, which is divided into three formations, the Woolwich and the Reading Formation, depending on the local succession, both overlying the Upnor Formation.

Vertically and laterally variable sequences mainly of clay, some silty or sandy, with some sands and gravels, minor limestones and lignites and occasional sandstone and conglomerate.

The top of the Lambeth Group is marked by the eroded or interburrowed surface at the base of the overlying Thames Group. The uppermost part of the Lambeth Group can be the Reading Formation or the Woolwich Formation, depending on the local succession, or the Upnor Formation, depending on the depth of pre-Thames Group erosion. The Lambeth Group is overlain by sands, silts, clays or gravel beds of the Harwich Formation, depending on the local sequences, or gravelly sandy clays at the base of the London Clay Formation.

The base of the Lambeth Group is taken at the base of the Upnor Formation. In the Hampshire Basin and the west of the London Basin, the Lambeth Group overlies the Chalk Group. In the centre and east of the London Basin it overlies the Thanet Formation, and in Suffolk the Ormesby Clay Member of the Lista Formation.

2.1.2 London Clay Formation

The London Clay Formation comprises stiff grey fissured clay, weathering to brown near surface. Concretions of argillaceous limestone in nodular form (Claystones) occur throughout the formation. Crystals of gypsum (Selenite) are often found within the weathered part of the London Clay, and precautions against sulphate attack to concrete are sometimes required.

The upper boundary member of the London Clay Formation is known as the Claygate Member and marks the transition between the deep water, predominantly clay

environment and succeeding shallow-water, sand environment of the Bagshot Formation.

The lower boundary is generally marked by a thin bed of well-rounded flint gravel and/or a glauconitic horizon. The formation overlies the Harwich Formation or where the Harwich Formation is absent the Lambeth Group.

In the north London area, the upper part of the London Clay Formation has been disturbed by periglacial action and may contain pockets of sand and gravel.

2.2 Hydrogeology

Table 2.1 presents the hydrological data that is relevant to the site.

Table 2.1 Hydrogeological Assessment

Hydrogeological Data		Comment
On-Site Aquifer	Bedrock	Secondary A Aquifer for Lambeth Group and Unproductive Strata for London Clay
Groundwater Vulnerability		Medium Vulnerability
Source Protection Zones (SPZ)		Total Catchment (Zone 3) relating to the underlying Chalk at depth
Abstraction	Potable	None within 1000m
	Non-potable	None within 1000m
Sensitive Land Uses		Nitrate Vulnerable Zone – On Site Area of adopted Green Belt – 70m East
Surface Water Features		71m NE – unnamed stream
Flood Risk from Rivers or Seas		No risk of flooding on site, flooding without defences 64m E
Flood Risk from Surface Water		No risk on site. Low-1000 year return
Flood Risk from Groundwater		No flood risk from groundwater

Note(s): [1]Secondary A are 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. Unproductive Strata are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow

Any works or development which has the potential to have an impact on surface water, aquifer or groundwater quality must be approved by the Environment Agency prior to implementation.

2.3 Hydrology

The approximate elevation of the site was ~55m Above Ordnance Datum (AOD). The anticipated surface water and groundwater flow direction is given in Table 2.2.

Table 2.2 Hydrological Assessment

Type	Direction	Notes
Surface water	SE	Anticipated to flow to the southeast with the overlying topography
Groundwater	SE	Anticipated to flow to the southeast with the overlying topography

2.4 Radon Gas

The site is not located in a radon affected area. Therefore, protective measures will not be needed as less than 1% of homes are above the action level.

Section 3 Site History

3.1 Historic Map Study

The historic maps referred to are appended to this report (Appendix B).

Table 3.1 Historic Development of the Site

Site History	Date Range	
	From	To
The site was noted to be part of a farmer's field.	1864[1]	1876
No change noted.	1876	1948-1950
16 houses were built on site and formed part of 'Haydon Drive'. There was a footpath in a west to north-east direction cutting through the northern boundary of site.	1948-1950	1959-1965
No change noted.	1599-1965	2024[2]

Note(s): [1]earliest map available [2]recent map

Table 3.2 Historic Off-site Development

Off-site Development	Date Range	
	From	To
1m west from site there was a road in a southeast – northwest direction named 'Joel Street'. There was a farm with a pond 120m south. Unnamed ponds, two 70m southwest and 140m west. The area surrounding the site consisted of farmland. Ivy Farm was 200m southwest, Joel Street Farm was 150m north with a pond and an orchard, and an unnamed building 20m north.	1864[1]	1876
The farm where the unnamed pond was 120m south was named Haydon Hall Farm.	1876	1896
The pond 140m west was infilled, five houses were built 200m south from site. Joel Street Farm's pond 150m north was infilled and the orchard was felled. Haydon Hall Farm's pond was infilled.	1896	1932-1935
Small side streets were built off Joel Street: Middleton drive 100m north, Haydon Hall Drive 40m south and Gladsdale Drive 200m south, there were no houses on the streets. The other ponds were infilled. Ivy Farm was demolished.	1932-1935	1938
Middleton Drive had extended to the south and was 15m north from site. Houses were built along the street. Another housing estate was being developed 200m east.	1938	1948-1950
Haydon Hall Drive was renamed Haydon Drive and it had been extended towards the north and west with houses. Houses were built along Joel Street.	1948-1950	1959-1965
Haydon Hill Farm was replaced by a housing estate. Electric substations were built 1m north from site and 110m south from site.	1959-1965	1974
More houses were built along the west of Joel Street, as well as another substation 80m west.	1974	1991
No Change noted.	1991	2024[2]

Note(s): [1]earliest map available [2]recent map

Table 3.3 Potential Sources of Pollution Indicated from Historic Maps

Source	Direction	Distance (m)	Date Range	
			From	To
Joel Street Farm	N	150	1864	2024

Source	Direction	Distance (m)	Date Range	
			From	To
Infilled Pond	S	120	1864	1938
Pond(s)	W	60	1864	1938
	W	60	1864	1938
Pond	W	140	1864	1932-1935
Haydon Hall Farm	S	120	1864	1959-1965
Substation(s)	N	1	1974	2024
	S	110	1974	2024
	W	80	1991	2024
Ivy Farm	SW	200	1864	1938

3.2 Bomb damage and the potential for Unexploded Ordnance

Based on the assessment of the historical maps and using the risk map from Zetica UXO, a specialist UXO risk assessment in not necessary to determine the risk to the proposed development. The map is presented in Appendix G.

Section 4 Environmental Records and Consultation

4.1 Dataset Information

A copy of the report is appended to this report in Appendix C and summarised in Table 4.1, Table 4.2 and Table 4.3.

Table 4.1 Environmental Significance of Data within 500m

Source	Direction	Distance (m)
Contaminated Land Register Entries and Notices	None	None
Discharge Consents	None	None
Integrated Pollution Prevention and Control	None	None
Local Authority Pollution Prevention and Controls	None	None
Local Authority Pollution Prevention and Control Enforcements	None	None
Nearest Surface Water Feature	NE	71[1]
Pollution Incidents to Controlled Waters (Significant Incidents only)	None	None
Prosecutions Relating to Authorized Processes	None	None
Registered Radioactive Substances	None	None
Substantiated Pollution Incident Register	None	None
Nearest Potable Abstraction Point	None	None
Nearest Non-Potable Abstraction Point	None	None
Water Industry Act Referrals	None	None
Source Protection Zones	On Site[2]	-
Extreme Flooding from Rivers or Sea Without Defences	E[3]	64
Flooding from Rivers or Sea Without Defences	E[3]	64
Areas Benefiting from Flood Defences	None	None
Flood Water Storage Areas	None	None
Flood Defences	None	None
BGS Recorded Landfill Sites	None	None
Historical Landfill Sites	None	None
Licensed Waste Management Facilities	None	None
Local Authority Recorded Landfill Sites	None	None
Potentially Infilled Land (Non-Water)	None	None
Potentially Infilled Land (Water)	SW[4]	71
Registered Landfill Sites	None	None
Registered Waste Transfer Sites	None	None
Registered Waste Treatment or Disposal Sites	None	None
Control of Major Accident Hazards Sites (COMAH)	None	None
Notification of Installations Handling Hazardous Substances	None	None
Planning Hazardous Substance Consents	None	None

Note(s): [1]Stream [2] SPZ III relating to the underlying chalk [3]Flooding from the stream located 71m NE [4]Pond

The contemporary trades listed in Table 4.2 are only those considered to be viable potential sources of contamination that could impact the site.

Table 4.2 Contemporary Trade Directory

Contemporary Trade Directory within 250m	Direction	Distance (m)	Status
Nano Vibronix	NE	27	Inactive
Correct Impression	N	142	Inactive

Table 4.3 Geological Hazards

Source	Nearest Distance from Site/Type
Coal Mining Affected Areas	None within 500m
Mining Instability	None within 500m
Natural and Mining Cavities	None within 500m
Potential for Collapsible Ground Stability Hazards	Very Low – On site
Potential for Compressible Ground Stability Hazards	No hazard
Potential for Ground Dissolution Stability Hazards	No Hazard
Potential for Landslide Ground Stability Hazards	Very Low – On site
Potential for Running Sand Ground Stability Hazards	Very Low – On site
Potential for Shrinking or Swelling Ground Stability Hazards	Moderate – On site[1]

Note(s): 1relating to the London Clay Formation

4.2 Site Sensitivity Maps

No other significant potential sources of contamination were shown on the Landmark Envirocheck Site Sensitivity Maps, which have not been listed in Table 4.1, Table 4.2 and Table 4.3, and copies of which are appended to this report (Appendix C).

4.3 Regulatory Enquires

As part of the Preliminary Investigation Report the local authority was contacted and asked to provide any information on potential risks pertaining the site.

At the time of writing (January 2025) the Local Authority are yet to respond.

4.4 Soil Geochemistry

The results of this survey are contoured on the Landmark Environmental check report (Appendix D). The results of the local soil chemistry are presented in Table 4.4.

Table 4.4 Soil Geochemistry

Determinant	Indicated Soil Geochemistry (mg kg^{-1})
Arsenic	15-25
Cadmium	<1.8
Chromium	60-90
Lead	150-300
Nickel	15-30

According to the human health risk assessment for a residential with home grown produce end-use, Lead is potentially in exceedance.

Section 5 Data Collection Summary

5.1 General

Table 5.1 summarises the site Environs, which include geology, hydrogeology, the risk from radon and potential risk from flooding.

Table 5.1 Site Environs

Environs	Summary
Geology	The Lambeth Group and the London Clay Formation with no overlying superficial deposits.
Hydrogeology	The Lambeth Group is classed as a Secondary A aquifer and could support shallow groundwater. The London Clay Formation is classed as Unproductive Strata
Source Protection Zone (SPZ)	Zone III total catchment in the underlying chalk at depth
Surface Water Flow	Anticipated to flow to the southeast with the overlying topography
Groundwater Flow	Anticipated to flow to the southeast with the overlying topography
Radon	No radon risk
Flooding	No flood risk on site
Geological Hazard	Moderate Potential for Shrinking or Swelling Ground Stability Hazard
Local Authority Response	Awaiting Response
Soil Chemistry	Lead levels were identified as a potential hazard
Ecological	Nitrate Vulnerable Zone – On Site Area of adopted Green Belt – 70m East

Table 5.2 provides a summary of potential on-site and off-site contamination sources identified during the study of the historic maps, the Landmark Envirocheck Dataset Report and the Site Walkover.

Table 5.2 Summary of Potential Contamination Sources

Contaminative Source	Direction	Distance (m)	Date Range		Data Source
			From	To	
On-Site					
Parked cars	0	0	1948-1950	2025	GE/SW
Lead	0	0	-	-	GC
Residential Garages	0	0	-	2025	SW
Off-Site					
Joel Street Farm	N	150	1864	2024	GE/HM/DS
Infilled Pond	S	120	1864	1938	HM/DS
Infilled Pond	W	60	1864	1938	HM/DS
Infilled Pond	W	60	1864	1938	HM/DS
Infilled Pond	W	140	1864	1932-1935	HM/DS
Haydon Hall Farm	S	120	1864	1959-1965	HM/DS
Substation	N	1	1974	2024	HM/GE/DS
Substation	S	110	1974	2024	HM/GE/DS
Substation	W	80	1991	2024	HM/GE/DS
Ivy Farm	SW	200	1864	1938	HM/DS
Nano Vibronix	NE	27	Inactive		DS
Correct Impression	N	142	Inactive		DS

Note(s): SW – Site walkover, HM – Historic Maps, DS – Datasheet, GC – Geochemistry, GE Google Earth

Section 6 Preliminary Conceptual Site Model

6.1 Sources and Pathways of Contamination

The Landmark Site Specific Envirocheck Report and Site Walkover have been used to identify potential contaminative sources. These sources have been presented in Table 5.2. An assessment of the likely pathways and the likelihood of each contaminative source that was considered a risk has been presented in Sections 6.2 to 6.4.

6.2 Potential Pathways

A review of the potential pathways on and off the site has been undertaken based on the site, ground conditions, hydrology and scientific knowledge of the behaviour of the contaminants in the ground. The pathways applicable to the site and the proposed development have been marked in Table 6.1.

Table 6.1 Applicable Pathways

Pathway	Present	Comment
Inhalation of dust	✓	Site works/off site users
Inhalation of vapour/gases	✓	Site works/off site users
Ingestion and absorption via direct contact	✓	Site works/off site users
Migration via surface runoff	✓	Site works/off site users
Migration in solution via groundwater	✓	Potential Migration through the Lambeth Group
Migration of gases via permeable soils	✓	
Direct contact with construction material	✓	Site works
Services and utilities	✓	Site works

6.3 Potential Sources of On-site Contamination.

The sources are presented in Table 6.2.

Table 6.2 On-site Potential Contamination Sources

Source	Likely	Reasoning
Parked cars	✓	Oil/Fuel Spills
Lead	✓	Lead exceedances in the soil
Residential Garages	✓	Oil/Fuel Spills

6.4 Potential Off-site Sources of Contamination

These sources have been presented in given in Table 6.3.

Table 6.3 Off-site Potential Contamination Sources

Source	Direction	Distance (m)	Likely	Reasoning
Joel Street Farm	N	150		Distance from site

Source	Direction	Distance (m)	Likely	Reasoning
Pond	S	120		Infilled over 80 years ago
Pond(s)	W	60		Infilled over 80 years ago
	W	60		
	W	140		
Haydon Hall Farn	S	120		Down hydraulic gradient
Substation	N	1	✓	Proximity to site
Substation(s)	S	110		PCBs are generally immobile so unlikely to impact the site
	W	80		
Ivy Farm	SW	200		Distance from site
Nano Vibronix	NE	27		Inactive
Correct Impression	N	142		

6.5 Potential Contaminants

Table 6.4 presents the range of possible contaminants associated with the onsite and off-site activities and sources identified following a review of historical maps and datasets.

Table 6.4 Potential Contaminants

Potential Contaminative Sources	Contaminants / Chemical Properties
Parked cars	Metals, Semi-metals and non-metals, PAHs, TPHs, Asbestos, pH, PCBs
Residential garages	
Substation	
Farm	

6.6 Potential Exposure Receptors

The assessment for potential receptors is presented in Table 6.5.

Table 6.5 Potential Receptors

Potential Receptor		Present
Human Health	Future users of the site (End Users)	✓
	Construction workers on-site (Site Workers)	✓
	Service and maintenance workers (Site Maintenance)	✓
	Site neighbours and wider public (Off-site Users)	✓
Groundwater / Controlled Waters	Surface Water	✓
	Shallow Aquifer	✓
	Deep Aquifer	
Buildings & Materials	Buildings and Confined Spaces	✓
	Buried Structures	✓
	Buried Services	✓
Ecosystems	Flora and fauna	✓

6.7 Preliminary Conceptual Site Model and Risk Assessment

A preliminary risk assessment has been undertaken based on the proposed development. The assessment has been based on the likelihood of the presence of a

pollutant linkage.

A pollutant linkage is the relationship between a contaminant source, a pathway and a receptor. Unless all three elements of a pollutant linkage are present, a risk is not considered to exist. Each of the three elements has been considered within Table 6.1 to Table 6.5. The preliminary conceptual site model and risk assessment is presented in Table 6.6. The classification tables on which the level of risk has been determined have been modified from 'Contaminated land risk assessment: A guide to good practice, 2001, CIRIA C552' and are presented in Appendix H.

Table 6.6 Preliminary Conceptual Site Model and Risk Assessment Methodology

Source (Table 6.2 & Table 6.3)	Potential Contaminant (Table 6.4)	Exposure Pathway (Table 6.1)	Receptor (Table 6.5)	Initial Assessment from Preliminary Investigation Report Information			Comments	Proposed Investigation
				Severity	Probability	Risk		
On Site Parked Cars Geochemistry Lead Garages	Metals, Semi-metals and non-metals, PAHs, Asbestos	Inhalation of dust	Site Workers/Site Maintenance	Mild	Unlikely	Very Low	Site Located on the Lambeth Group which is a Secondary A Aquifer and could support shallow groundwater. London Clay is classed as unproductive strata which has negligible significance for water supply or river base flow	Phase II ground investigation to confirm the ground conditions present and chemical testing prior to undertaking a generic quantitative risk assessment.
			End Users	Mild	Low	Low		
			Off-site Users	Minor	Unlikely	Very Low		
	PAHs, TPHs	Inhalation of vapour/gases (including Radon)	Site Workers/Site Maintenance End Users	Mild	Unlikely	Very Low		
			Off-site Users	Minor	Unlikely	Very low		
	Metals, Semi-metals and non-metals, PAHs, TPHs, pH	Ingestion and absorption via direct contact	Site Workers/Site Maintenance	Medium	Unlikely	Low		
			End Users	Mild	Unlikely	Very Low		
	Metals, Semi-metals and non-metals, PAHs, TPHs, pH	Migration via surface runoff	Surface Water	Mild	Low	Low		
		Migration in solution via groundwater	Surface Water	Mild	Low	Low		
			Shallow Aquifer	Mild	Low	Low		
		Direct contact with construction material	Buried Structures Buried Services	Minor	Low	Very Low		
	PAHs, TPHs	Migration of gases via permeable soils	Site Workers/Site Maintenance End Users	Mild	Unlikely	Very Low		
			Off-site Users Building and Confined Spaces	Minor	Unlikely	Very low		
Electric Sub-Station Contaminative processes.	Metals, Semi-metals and non-metals, PAHs, TPHs, PCBs	Inhalation of dust	Site Workers/Site Maintenance	Mild	Unlikely	Very Low	Contamination from electric sub-stations such as transformer oils are likely to be heavy-end hydrocarbons and PCBs, which are very immobile. Any contamination associated with the electric sub-station would be localised.	
			End Users	Mild	Unlikely	Very Low		
	PAHs, TPHs, PCBs	Inhalation of Vapour/gases	Site Workers/Site Maintenance End Users Off-site Users	Mild	Unlikely	Very Low		
	Metals, Semi-metals and non-metals, PAHs, TPHs, PCBs	Ingestion and absorption via direct contact	Site Workers/Site Maintenance	Medium	Unlikely	Low		
			End Users	Mild	Unlikely	Very Low		
		Direct contact with construction material	Buried Structures Site Workers	Mild	Low	Low		
Off Site Farm	Metals, Semi-metals and non-metals, PAHs, Asbestos	Inhalation of dust	Site Workers/Site Maintenance	Mild	Unlikely	Very Low		
			End Users	Mild	Unlikely			
	PAHs, TPHs	Inhalation of Vapour/gases (including Radon)	Site Workers/Site Maintenance	Minor	Unlikely	Very Low		
			End Users	Minor	Unlikely			
	Metals, Semi-metals and non-metals, PAHs, TPHs, pH	Ingestion and absorption via direct contact	Site Workers/Site Maintenance	Minor	Unlikely	Very Low		
			End Users	Minor	Unlikely			
	Metals, Semi-metals and non-metals, PAHs, TPHs, pH	Migration via surface runoff	Surface Water	Mild	Low	Low		
		Migration in solution via groundwater	Surface Water	Mild	Low			
			Shallow Aquifer	Mild	Low			
		Direct contact with construction material	Buried structures	Mild	Unlikely	Very Low		
			Buried Services	Mild	Unlikely			
	PAHs, TPHs	Migration of gases via permeable soils	Site Workers/Site Maintenance	Mild	Unlikely	Very Low		
			End Users	Mild	Unlikely			
			Building and confined spaces	Mild	Unlikely			

Section 7 Recommendations

7.1 General

Based on the information obtained during the compilation of this Preliminary Investigation and the preliminary conceptual site model, a potential for a **very low to low** risk of contamination has been identified.

7.2 UXO

The risk map from Zetica UXO shows a very low risk of unexploded ordnance, therefore no further assessment is necessary. The map has been presented in Appendix G

7.3 Proposed Further Site Works

The general requirements for further environmental investigation are presented in Table 7.1.

Table 7.1 Proposed Further Environmental Investigation

Proposed Works	General Purpose	Required
Investigatory Holes	To collect sufficient samples for a robust assessment	✓
Laboratory Testing	To quantify the risks identified in the Conceptual Site Model	✓
Risk Assessment	Assess pollutant linkages based on current contaminated land guidance and screening criteria's	✓
Borehole well installation	To allow for continued groundwater and/or gas monitoring	No[1]
Remediation	If the site-specific risk assessment reveals that the site was contaminated	TBC
Validation & Verification	To validate and verify the remedial objectives based on the site-specific risk assessment	TBC

Note(s): TBC – To be confirmed. [1] Unless additional sources are identified during intrusive investigation.

7.4 Discovery Strategy

There may be areas of contamination not identified during the investigation. Such occurrences may also be discovered during the demolition and construction phases for the redevelopment of the site.

List of Figures

List of Appendices

Figure 1 – Site Location Map

Job Number 21724	**Project** Haydon Drive, Pinner, London Borough of Hillingdon HA5 2PW
Client Philip Pank Partnership LLP	**Date** February 2025

Appendix A Proposed Development Plans

Site Area: 1.43 acres / 0.58ha

KEY:

- Application boundary

- Adjoining land in ownership of applicant

Application Site Address:

Haydon Drive,
Eastcote,
Pinner, HA5 2PW

N

0 10m 20m 50m 100m

Scale 1:1250@A4

project name: HAYDON DRIVE, PINNER

drawing reference: SITE LOCATION PLAN

date: FEBRUARY 2025

sheet:

drawn: WN

scale: 1:1250

checked: JW

job number: M10029

drawing number: APL001

revision: A

status: PLANNING

cad ref: M10029_APL001_A_Site Location Plan_Haydon Drive_1-1250@A4.dwg

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KEY

Haydon Drive
Block A1: Units 01-05
Block A2: Units 06-11
Block B: Units 12-14
Block C: Units 15-17

Joel Street
Block D: Units 18-21

CHAPEL MAIN LANE
JOEL STREET
HAYDON DRIVE
Silvester House

CHILDREN'S PLAY AREA
31 car parking spaces
Access to rear garden
Turning head
Existing footpath (right of way)
Existing hedge outside application boundary
Existing timber fence retained. Proposed new 2m high timber close board fencing inside application boundary only
Existing gate
Access to rear garden
Proposed new 2m high timber close board fencing inside application boundary
Existing footpath
Car parking bays
Existing footpath
Gate relocated for access to rear garden of 33-39 Haydon Drive
Proposed retaining wall inside application boundary
Tree height: 16.9m
Tree height: 14m
Tree height: 15.9m
Tree height: 9.12m
Tree height: 7.27m
10.6m
13.5m
35.6m
1.0m

PROPOSED SITE PLAN - 1:200@A0

0 1m 5m 10m 20m
1:200 @A0

SITE LOCATION PLAN 1:1250@A0

N

Application Site Address:

Haydon Drive
Pinner
Hillingdon
HA5 2PW

Site Area: 1.24 acres / 0.50ha

- Application Boundary

LEGEND:

Boundary Treatment

Existing timber fence
1.8m-2m high timber closeboard fencing

Existing brick wall
1.8m-2m high red brick wall

Proposed rear garden fence
2m high timber closeboard fencing with trellis

Proposed front garden fence
300-600mm high brick dwarf wall with 865mm high metal railing

Proposed retaining wall
450mm high brick dwarf wall

Soft Surfaces & Vegetation

Existing tree, retained

Existing tree, removed

Proposed Tree
Mixed species tree planting (predominantly native)

Proposed Small Tree
Fastigiate tree or large shrub (native species)

Wildflower Meadow
Species rich mix of grasses and wildflowers

Open Space
Species rich mown grass (biodiverse mix)

Grass Areas
Turf to BS3969:1996 General Purpose

Native Shrub Planting

Native Hedge Planting

Hard Surfaces

Children's Play Area
Impact absorbing, play grade bark chips, flush with timber edging

Vehicular Surface
Herringbone driveway block paving, colour: grey
Flush with concrete edging

Shared surface / Pedestrian Crossing
Herringbone permeable block paving, colour: bracken

Parking Bay
Herringbone permeable block paving, colour: grey
Bay dimensions: 2400 x 4800mm

Pedestrian Footpath
Resin bound gravel, flush with metal edging, buff finish

Garden Footpath & Shed
Hoggin path with timber edging; 6'x4' garden shed

Patio
Natural Stone slab paving, 450 x 450mm

Raised Deck
Anti-slip composite decking boards

Bin store and cycle store
Depth: 900mm

Revision
A 02.2025

DRAFT

project name: HAYDON DRIVE, PINNER
drawing reference: PROPOSED RESIDENTIAL SCHEME
SITE PLAN
date: FEBRUARY 2025
sheet:
drawn: WN
scale: 1:200@A0
checked: JW
job number: M10029
drawing number: APL006
revision: A
status: PLANNING
cad ref: M10029_APL006_Proposed Site Plan_Haydon Drive_1-200@A0.dwg

Use figured dimensions only. All levels and dimensions to be checked on site. Any discrepancies to be brought to junction with all other relevant drawings and specifications. Hunters is a trading name of Hunter & Partners Limited. © Hunter & Partners Limited. All rights reserved.

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