



Report on a **PHASE 3 REMEDIATION STRATEGY**

Ref: 26/41814 | Date: April 2026

**43 Belmont Avenue
London
N17 6AX**

Prepared for:
Paul Simon Homes

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1.0 INTRODUCTION

At the request of Paul Simon Homes, a proposed remediation strategy and remedial action plan for 43 Belmont Avenue, London N17 6AX was prepared in connection with a proposed redevelopment at the site.

1.1 Report Objectives

This report comprises a Phase 3 - Remediation Strategy Report to assess the remediation required for the protection of the end-user from the presence of potential contamination within the soils encountered.

Planning permission granted by councils for development of Brownfield land often have conditions attached which require the following site investigation to be undertaken and submitted to the local authority for approval:

1. Phase 1 - Preliminary Risk Assessment
2. Phase 2 - Intrusive Investigation
3. Phase 3 - Remediation Strategy
4. Phase 4 - Validation Report

A Phase 1 - Preliminary Risk Assessment, Phase 2 - Intrusive Investigation and an additional Phase 2 investigation have been commissioned as part of this investigation.

This Phase 3 report must be read in conjunction with the following reports:

- Phase 1 Geo-environmental Preliminary Risk Assessment undertaken by Site Analytical Services Limited, Ref: 24/38289, dated April 2024.
- Report on a Geotechnical Ground Investigation undertaken by Site Analytical Services Limited, Ref: 24/38289-1, dated June 2024.
- Report on a Phase 2 Geo-Environmental Ground Investigation undertaken by Site Analytical Services Limited, Ref: 26/41658, dated April 2026.

This document incorporates the results, discussion and conclusions of this work and comprises and remediation strategy for the development of the site and has been produced in relation to discharging planning conditions 10(e) and 11 contained within the London Borough of Haringey Notice of Planning Permission HGY/2023/0926.

A Phase 4 - Validation Report should be compiled and submitted to the council when the development has been completed.

1.2 Scope of Works

The scope of the investigation was generally agreed with the Client and comprised:

- The identification of a suitable approach to remediation in order to reduce contamination risks to acceptable levels for 'Residential without Home Grown Produce' use.
- Producing a remediation strategy that addresses all relevant pollutant linkages, where appropriate by combining remediation options.
- To satisfy any Condition attached to council planning application stating that a remediation strategy be submitted and agreed with interested parties.
- To define any controls required (legislative, regulatory or otherwise) during the implementation of the Remediation Strategy.
- Recommendations will be provided on further actions that may be required.

The site works were performed in accordance with the methods given in BS 5930+A2:2010 and BS EN ISO 22476-2&3:2005. The work was carried out in accordance with the methodologies detailed in the LCRM: Land Contamination Risk Management Document.

1.3 Report Limitations

The recommendations and comments given in this report are based on the ground conditions encountered in the exploratory holes made during the investigation and the results of the tests made in the field and the laboratory, within the time constraints applied by the project. It must be noted that there may be special conditions prevailing at the site remote from the exploratory hole locations which have not been disclosed by the investigation and which have not been taken into account in the report. No liability can be accepted for any such conditions.

The remediation action plan sets out a combination of investigation and remedial measures which, when considered in the context of the development, will ensure that the final development is suitable for the proposed use.

1.4 Confidentiality, Copyright and Reproduction

This document has been prepared by Site Analytical Services Limited in connection with a contract to supply goods and/or services and is submitted only on the basis of strict confidentiality. The contents must not be disclosed to third parties other than in accordance with the terms of the contract.

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2.0 SITE DETAILS

2.1 Site Location

The site is located to the rear of 43 Belmont Avenue at the junction of two terraces set at angles to each other on Belmont Avenue, at approximate postcode N17 6AX. The terraced properties consist of two-storey Victorian houses.

The site is located in an area of predominantly residential use, with Turnpike Underground Train Station located approximately 555m to the west of the site.

The site is an irregular shape and covers an approximate area of 0.04 Hectares with the general area being under the authority of the London Borough of Haringey.

The National Grid Reference is: TQ 345 964.

A location map is presented below in Figure 1:



Figure 1: Site Location Map

2.2 Current Use of the Site and Surrounding Land Uses

The site most recently contained two shipping containers, a large scaffolding frame, a dilapidated single-storey WC, together with a large, shed building and a partially demolished storage building.

The surrounding areas of the site are primarily residential in all directions, although there are educational buildings in the area. Furthermore, the railway lines linked to Turnpike Lane Station are situated 555 metres to the west of the site.

An existing site plan is presented below in Figure 2:

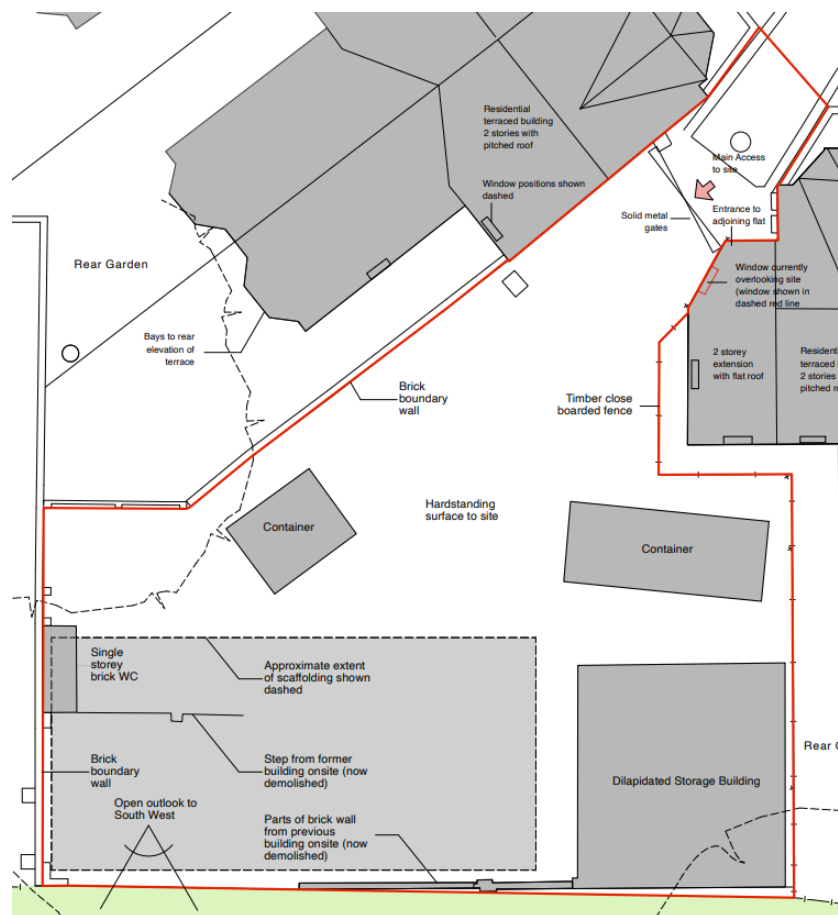


Figure 2: Existing Site Plan

2.3 Published Geology

The Geological Survey of Great Britain (England and Wales) covering the area indicates the site to be underlain by the London Clay Formation.

2.4 Previous Investigations

Three previous reports have been prepared for the site.

- Phase 1 Geo-environmental Preliminary Risk Assessment undertaken by Site Analytical Services Limited, Ref: 24/38289, dated April 2024.
- Report on a Geotechnical Ground Investigation undertaken by Site Analytical Services Limited, Ref: 24/38289-1, dated June 2024.
- Report on a Phase 2 Geo-Environmental Ground Investigation undertaken by Site Analytical Services Limited, Ref: 26/41658, dated April 2026.

2.5 Proposed Development

At the time of reporting (April 2026), the proposed works include the redevelopment of the site to provide 5 apartments consisting of three one-bedroom flats and two, two-bedroom flats with cycle and bin storage and associated landscaped areas.

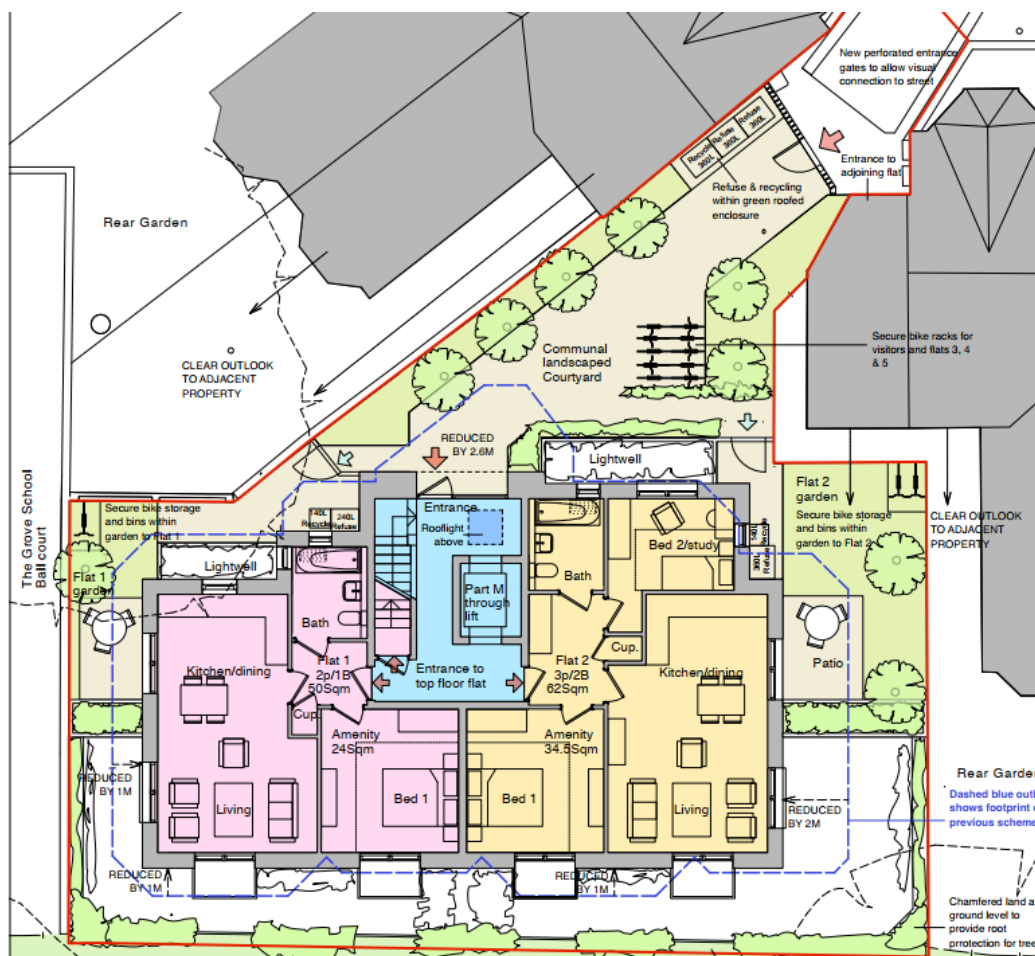


Figure 3: Proposed Development Plan (Ground Floor)

3.0 REVIEW OF PREVIOUS REPORTS

3.1 Phase 1 Geo-environmental Preliminary Risk Assessment by Site Analytical Services Limited, Ref: 24/38289, dated April 2024

Historical map information indicates that the site comprised of undeveloped land prior 1863, with the surrounding areas of the site are predominantly undeveloped land in all directions, with slight residential use south-west of the site. Between 1913-1914, a large structure west of the site with an additional two structures, one small structure adjacent and one large structure immediately bounded south of the site was constructed in 1935. In 1991, an additional structure was immediately bounded south of the site, until all three structures were demolished and no longer visible on the historic maps currently.

A Railway Line and Electrical Sub-stations were evident within 250m of the site.

Bedrock Geology: London Clay (Unproductive)

The closest surface water feature is a Pond in Lordship Recreation Ground located 590m to the north-east of the site.

There are no recorded historical landfill sites located within 1 kilometre of the site.

There are no sensitive sites within 250m of the site.

On Site: Made Ground

Off Site: No significant off-site sources of potential contamination identified

Feature/Source	Pathway	Receptor	Hazard (Potential Consequence)	Likelihood of Contaminant Linkage	Risk Assessment	Justification /Further Action
On-Site: Made Ground	Direct soil and dust ingestion Dermal contact Inhalation of dust, vapours, and ground gases	Construction workers	Medium Acute and chronic toxicity, carcinogenic impact Fire and explosion	<i>Likely</i>	<i>Moderate Risk</i>	Significant redevelopment is planned. As such, groundwork would be involved in the construction process. Considering the site history and the unknown usage of the past structures on-site, it is likely that significant contamination will be present. A good standard of site health and safety will be required during construction should be sufficient to protect workers. Further investigation is required.
	Dermal contact Inhalation of dust, vapours, and ground gases	Future users – open landscaped areas & gardens.	Medium Acute and chronic toxicity, carcinogenic impact	<i>Likely</i>	<i>Moderate Risk</i>	The proposed development will include the redevelopment of site to provide 5 apartments consisting of three one-bedroom flats and two, two-bedroom flats with cycle and bin storage and associated landscaped areas. Considering the site history and the unknown usage of the past structures on-site, it is likely that significant contamination will be present. Further investigation is required.
	Inhalation of vapours Inhalation of ground gases	Future residential users – within the building footprint	Medium Acute and chronic toxicity, carcinogenic impact Fire and explosion	<i>Likely</i>	<i>Moderate Risk</i>	Historically the site has comprised undeveloped land, then storage on-site. Due to the unknown use of the storage, it is likely that significant contamination will be present. Further investigation is required.
	Inhalation of dust, vapours	Off-site receptors / neighbouring residents and property	Mild Acute and chronic toxicity, carcinogenic impact	<i>Likely</i>	<i>Moderate/ Low Risk</i>	The site is set in an area of residential use. Due to the site history, there are significant risks considered present. Further investigation is required.



Feature/Source	Pathway	Receptor	Hazard (Potential Consequence)	Likelihood of Contaminant Linkage	Risk Assessment	Justification /Further Action
	Surface water run-off	Surface water	Mild Water pollution	<i>Low Likelihood</i>	<i>Low Risk</i>	The site and the immediate area are residential use. Due to the surface flood map, there is no risk across the site and low risk in close proximity, therefore surface run off would not be expected. No additional consideration is needed.
	Direct Contact	Built materials and services	Medium Degradation	<i>Likely</i>	<i>Moderate Risk</i>	Due to the history of the site significant contamination on-site site is expected. Further investigation is required.
	Migration through Groundwater	Unproductive Aquifer	Medium	<i>Likely</i>	<i>Moderate Risk</i>	The site is situated in an area of a Unproductive Aquifer. Due to the history of the site, contamination through groundwater flows is expected. Further investigation is required.

Off Site:

No significant off – site sources that may pose a potential risk to the site have been identified.

Table A: Phase 1 Conceptual Site Model

3.2 Report on a Geotechnical Ground Investigation by Site Analytical Services Limited, Ref: 24/38289-1, dated June 2024.

For the geotechnical ground investigation the following works were undertaken: -

- The drilling of one rotary percussive borehole to a depth of 20.00m below ground level (Borehole 1).
- The installation of a groundwater monitoring standpipe to a depth of 9.00m depth in Borehole 1, together with two return monitoring visits.
- The excavation by hand of five trial pits, to 1.50m maximum depth to expose existing foundations on-site (Trial Pits 1 to 5 inclusive).
- Sampling and in-situ testing as appropriate to the ground conditions encountered in the borehole and trial pits.
- Laboratory testing to determine the engineering properties of the soils encountered in the exploratory holes.
- Interpretative reporting on foundation options for the proposed building and infrastructure.

The approximate locations of the exploratory holes are illustrated on the site sketch plan, Figure 4 below.

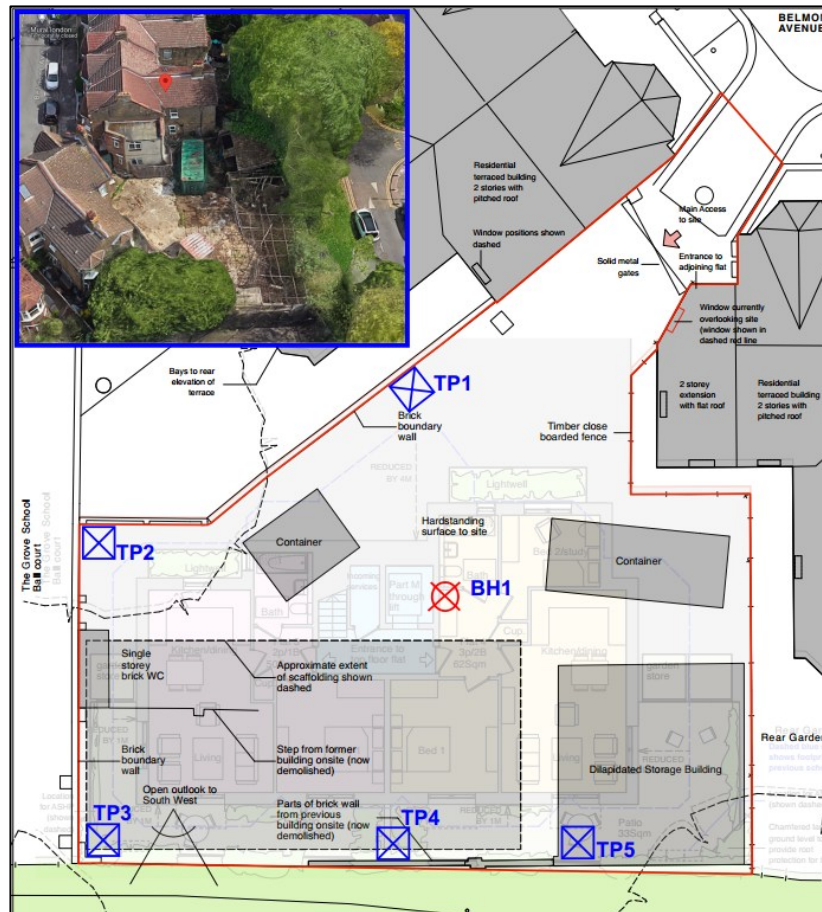


Figure 4: Site Investigation Plan (Geotechnical)

The borehole and trial pits revealed ground conditions that were generally consistent with the geological records and known history of the area and comprised Made Ground up to 0.94m in thickness resting on the London Clay Formation.

Groundwater was not encountered in any of the trial pits, however water was encountered in Borehole 1 as a slight seepage at 0.70m depth and at a depth of 1.07m below ground level in Borehole 1 after a period of approximately four weeks.

Given the presence of a non-aquifer below the site, it is likely that the groundwater recorded within these soils relates to perched water within the Made Ground and is recharged via intermittent seepages from surface water associated with weather conditions rather than any large-scale subterranean groundwater flow.

3.3 Report on a Phase 2 Geo-Environmental Ground Investigation by Site Analytical Services Limited, Ref: 26/41658, dated April 2026.

For the Phase 2 ground investigation the following works were undertaken: -

- The excavation by hand of six trial pits to 1.00m maximum depth, to obtain samples for laboratory testing (Trial Pits A to F inclusive).
- Sampling and in-situ testing as appropriate to the ground conditions encountered in the trial pits.
- Laboratory testing to determine the chemical properties of the soils encountered in the exploratory holes.
- A study into the possibility of the presence of toxic substances in the soil, together with limited comment on any remediation required.

Due to the presence of the London Clay Formation and also no significant thickness of Made Ground was identified in the geotechnical investigation, it was determined that no ground gas monitoring was necessary.

The locations of the exploratory holes are shown on the Phase 2 site investigation plan (Figure 5) below:



During the investigation there was no obvious evidence of contamination either visually or olfactory and no visual evidence of asbestos containing materials. However, comparison of the measured concentrations of the contaminants of concern to their respective screening values indicated that Beryllium, Lead and several Polyaromatic Hydrocarbon (PAH) species were exceeded in a number of samples.

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3.3.1 Conceptual Site Model

In accordance with current UK guidance on contaminated land risk assessment (LCRM and BS10175), the following Conceptual Site Model has been generated to summarise the primary sources, receptors and migration and exposure pathways present on the site and to aid in the decision-making process.

For an environmental risk to exist there has to be a source of contamination, receptor or receptors at risk from the contamination and one or more pathways which links the two. Such contaminant – pathway – receptor relationships are termed pollutant linkages.

The subject site has been assessed within the source – pathway – receptor methodology as described above in the framework of a conceptual site model. A conceptual site model can be defined as a testable representation of environmental processes on a site and its vicinity. Its purpose is to identify potential contaminants, pathways and receptors with a view to, initially identifying potential and eventually, quantifying significant pollutant linkages. It should highlight any limitation and uncertainties present in the risk assessment and be able to communicate the results of the risk assessment to all stakeholders.

Table B presents the revised site conceptual model showing residual pollutant linkages.

Potential Contaminants / Source	Pathway	Receptor	Site specific settings	Risk Classification: (Phase 2)	Action Required
BERYLLIUM, LEAD, PAHS	Inhalation, ingestion and dermal contact.	Human Health Residents	Residential without home grown produce	Medium	Remedial action required
BERYLLIUM, LEAD, PAHS	Inhalation, ingestion and dermal contact	Human Health Workers	Construction workers should follow regulation on health and safety during development (HSE, 1991).	Medium	Remedial action required
BERYLLIUM, LEAD, PAHS	Negligible groundwater flow	Deep groundwater	Limited Made Ground, impermeable natural ground	Low	No specific remedial action required
ZINC, COPPER	Uptake (root and stomata), ingestion, inhalation and dermal absorption by animal)	Proposed planting	Planting in soft landscaping	Low	No specific remedial action required, topsoil will need to be imported for areas of soft landscaping.

Table B: Phase 2 Conceptual Site Model

4.0 REMEDIATION OPTION APPRAISAL

Plausible pollutant linkages remain at site and further actions are necessary to ensure the protection of sensitive receptors. This can be achieved by either:

- Removal or treatment the source of pollutants;
- Removal or modification of the pathways;
- Removal of or modification of the behaviour of receptors.

The remediation strategy is to render ground conditions at the site 'suitable for use' from an environmental risk perspective taking into account the proposed redevelopment of the site.

The purpose of the strategy is to describe a framework for the treatment of contamination that can be developed by the designers of the development to give the most practical and cost-effective treatment for the proposed scheme and render ground conditions at the site 'suitable for use' from an environmental risk perspective. It should be considered in conjunction with an overall development plan of the site and is specific to the area set by the brief for the investigation.

4.1 Potential Remediation Methods and Options

Contaminated soils treatments on-site or off-site are presented in the table below:

Technology Type	Examples	Medium	Linkage	Suitability	Comments	Relevance
Biological	Bioventing	Soil	Source removal	Hydrocarbons	Reduce contaminants levels by increasing ventilation. Off-site gas monitoring needed.	Not suitable for the contaminants
	Microbial or Phytoremediation	Soil	Source removal	Hydrocarbons	Biodegradation by micro-organism. Effectiveness can reduce soil conditions (e.g. pH).	Not suitable for the contaminants
	Biodegradation	Soil	Source removal	Hydrocarbons	Excavation and piling of contaminated soils to increase the activity of aerobic micro-organisms. Treatability testing is useful to determine the biodegradability of contaminants and appropriate oxygen and nutrient loading.	Not suitable for the contaminants

Technology Type	Examples	Medium	Linkage	Suitability	Comments	Relevance
Chemical	In-situ oxidation	Soil	Pathway interruption	Organic chemicals	Handling of large quantities of hazardous substance and may not be appropriate for small quantities of soils.	Not suitable for the contaminants
	In-situ reduction	Soil	Pathway interruption	Hazardous chemicals	Handling of large quantities of hazardous substance and may not be appropriate for small quantities of soils.	Not suitable for the contaminants or size of site
Civil Engineering	Capping	Soil	Pathway interruption	Various	This is not a treatment but fixes the contaminant, therefore breaking the pathways to the receptors.	Suitable
	Vertical barriers	Free product, water, vapour	Pathway interruption	Various	Involves large amount of heavy construction. Also contains the contaminants.	Not suitable for the site
	Excavation and offsite disposal	Soil, Free product, water, vapour	Source removal	Various	The cost of disposal and treatment are a significant factor to consider.	Suitable
Physical	Soil washing	Soil, Free product	Source removal	Hydrocarbons and metals	Contaminated soils are excavated, then washed free of contaminants. Not suitable for a mixture of contaminants or for small volumes of soils	Not suitable for the size of site
	Membrane	Vapour	Pathway interruption	Vapour	Breaks pathways of contaminants, and/or vapour.	Not suitable for the contaminants
	Soil vapour extraction	Vapour	Source removal	Chlorinated solvents and hydrocarbons	Exhaust air from in- situ soil vapour extraction system may require treatment to eliminate possible harm to the environment as a whole.	Not suitable for the contaminants
Thermal	Thermal desorption	Soil, Free product	Source removal	Organics	Not suitable for metals. Air emission need regulating therefore cost for permitting.	Not suitable for the contaminants
	In situ vitrification	Soil, Free product	Source removal	Organics	Limited application for metals	Not relevant - cost
	Incineration	Soil, Free product	Source removal	Waste	Not a treatment as such. More an alternative to landfill	Not relevant - cost

Table C: Contaminated soils treatments

5.0 SITE SPECIFIC REMEDIATION REQUIREMENTS

The findings of the original and supplementary site investigations have demonstrated that in the context of a proposed residential use of the site, the contaminants of concern with respect to end-user protection were Beryllium, Lead and several Polyaromatic Hydrocarbon (PAH) species on-site.

The remedial objective should sever any source-pathway-receptor pollutant linkages that must be established within a Conceptual Site Model. Once this has been achieved, by whatever means, there can theoretically be no risk. The remediation objective for the site is to ensure site clean-up removes any unacceptable contamination risk to human health including visitors to the site, construction workers on-site, service and maintenance workers and site neighbours and the wider public.

The preceding assessment was achieved using a risk-based approach that considered the circumstances of the site, such as its location and intended use, the sources of contamination, engineering considerations and the need to ensure suitable amenities for any development.

5.1 Remediation Requirement for Beryllium, Lead and several Polyaromatic Hydrocarbon (PAH) Containing Soils

The proposed development plan is for the construction of 5 apartments consisting of three one-bedroom flats and two, two-bedroom flats with cycle and bin storage and associated landscaped areas. It is considered that remediation is required to address the levels of Beryllium, Lead and several Polyaromatic Hydrocarbon (PAH) species on-site within the proposed areas of soft landscaping.

The requirement is to break the source – pathway – receptor linkage on-site via one of several scenarios as presented below;

Remediation Option A - Excavation of Contaminated Soils (Civil Engineering - Excavation and off-site disposal)

The proposal is that all contaminated material i.e. Made Ground, from soft landscaped areas be removed and transported to a licenced off-site disposal facility. Some pre-treatment of the contaminated material may be needed in order to meet land disposal restrictions.

Remediation Option B - Engineering Capping system (Civil Engineering - Capping option)

An engineering capping system could be introduced on-site. This would involve excavation of the Made Ground to a depth of 600mm below proposed ground level, or to the natural clay soil, whichever is reached first. Where the base of the excavation is still within Made Ground, this should be marked by a geotextile membrane with a 600mm layer of topsoil on top. If natural soils are encountered the topsoil can be placed directly on these soils.

Alternatively landscaped areas can be constructed with total hard cover to cut the pollutant linkage.

Areas covered by buildings and roadways already cut the pollutant linkage.

6.0 RECOMMENDED REMEDIATION STRATEGY

Based on the results of chemical testing, the following recommendations can be made for the site.

- If the soils are to be excavated for disposal, the waste soils must be managed according to appropriate and published guidelines.
- Health and Safety Executive procedures must be followed during all construction and excavation works to protect human health from contaminated soils.

6.1 Proposed Remedial Strategy

The proposed risk management / remedial strategy to be adopted at the site is one of managing the pathway between the source of contamination and the critical receptors on-site.

Remediation Action (Beryllium, Lead and several Polyaromatic Hydrocarbon (PAH))

Remediation Option B - Engineering Capping system (Civil Engineering - Capping option)

In areas of permanent hardstanding such as the building footprint and roadways etc., the development itself would adequately break exposure pathways to human health and therefore further remedial measures are not required in these areas.

In areas of soft landscaping and gardens contaminated material from soft landscaped areas be removed to and transported to a licenced off-site disposal facility. Some pre-treatment of the contaminated material may be needed in order to meet land disposal restrictions.

Unless natural ground is encountered first, the Made Ground should be excavated to a depth of 0.60m. The excavated material should be replaced with topsoil with a geotextile membrane placed between the topsoil and any Made Ground remaining.

Based on the current proposed development plans the remediation areas are shown in 'red' on Figure 6 below. Should the proposed layout change, particularly with respect to gardens and soft landscaping, the plan will need to be updated:

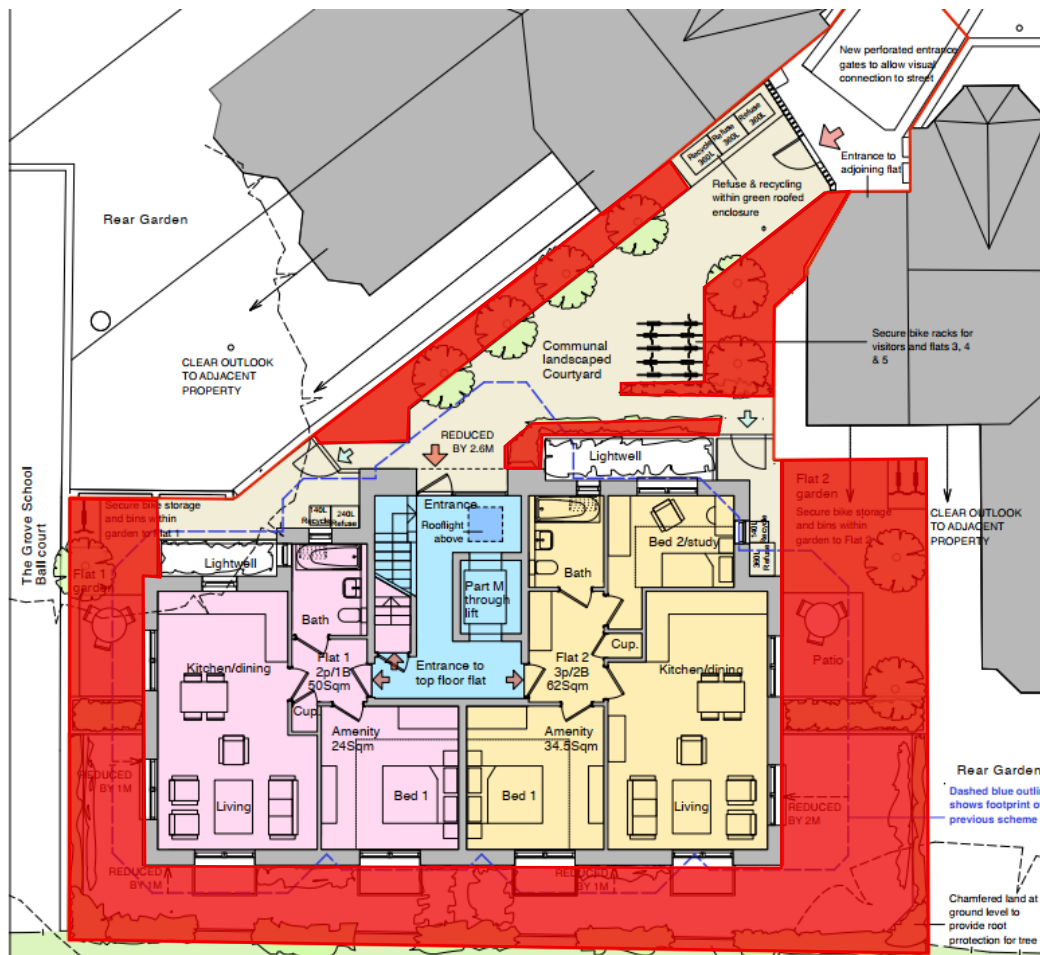


Figure 6: Remediation Areas (in red) based on Proposed Development

7.0 SUMMARY OF REMEDIATION MEASURES

The following table summarises the measures that are to be included as part of this remediation action plan. Where measures are included as part of the action plan, reference should be made to the indicated section of this report.

Measure	Description	Measure to be included as part of remedial action plan?	Section reference
Development details and enabling works	Details of the development and enabling and foundation works that will take place.	Yes	Section 7.1
Watching brief	The watching brief that will be kept by different parties during the course of the development.	Yes	Section 7.2
Staff training/ briefs	Training and staff briefs that will be provided to all staff working on-site.	Yes	Section 7.3
Discovery strategy	The discovery strategy that will be kept during the development.	Yes	Section 7.4
Further investigation work	Additional investigation work that will be undertaken during the course of development.	No	Section 7.5
Cover system	Details of the cover system that will be installed in hard surfaced areas of the site.	Yes	Section 7.6
Chemical quality of imported/site sourced soils and fills	Details of sampling and analyses that will be provided for soils and fills used at the site.	Yes	Section 7.7
Building materials and potable water pipe	Details on proposed water pipe installation.	Yes	Section 7.8
Waste management information	Information relating to the import and export of materials classified as wastes.	Yes	Section 7.9

Table D: Remediation measures

7.1 Development Details Enabling Works

The proposed site layout is dependent upon the demolition and clearance of the existing structures on the site. The proposed remedial excavations could be included as part of these enabling works.

7.2 Watching Brief

During the course of the development, it will be the responsibility of the on-site manager to ensure watching briefs are kept. A watching brief consists of a record of:

- Any observations of contamination made during the course of development by any member of site staff, contractor or visitor.
- A photographic record of the key stages of development and key occurrences, including any contamination found during the course of the development, the formation levels of excavations, any reduced level dig/mass excavation, formation of landscaped areas, etc.

Examples of observations that should be recorded as part of a watching brief are included within the Discovery Strategy.

Area of site	Works to be observed	Person to observe works
Building foundations	Removal of Made Ground	Site Manager -
Drainage Construction	Removal of Made Ground	Site Manager -

Table E: Watching Brief

Upon completion of associated works, a written and signed statement will be obtained by the following parties:

- Ground works contractor(s) upon completion of foundations and ground works
- On-site manager upon completion of groundworks and landscaping work
- Environmental Consultant upon completion of groundworks and landscaping works

The written statement must clearly state whether or not evidence of contamination was identified during the course of the development and the action that was taken.

7.3 Staff Training/Brief

All site staff, site contractors and, where significant contamination is expected site visitors, will be briefed on the potential presence of land, water or airborne contamination before commencing work on the site. Apart from any standard Health & Safety practices this will include the following information:

- Health & Safety considerations.
- The type of land, water or airborne contamination expected at the development site based on previous use and available site investigation information.
- Any particular areas of the site which are likely to be affected.
- Staff responsibilities under the discovery strategy.

Examples of observations that should be recorded as part of a watching brief are included within the Discovery Strategy.

The on-site manager will need to provide written confirmation that site staff were briefed about contaminated land in line with these recommendations.

7.4 Discovery Strategy

The discovery strategy sets out the actions that must be taken if contamination is encountered during the course of a development.

A significant observation includes any observation of contamination. Examples of the types of observations that would be considered significant are set out in the following table.

Evidence	Description
Visual	• Fuel or oil like substances mixed in with or smeared on the soil or floating on perched, groundwater or surface waters. • Waste materials (refuse, barrels, industrial wastes, ash, tar, etc.) buried at specific location or across the site. • Marked variation in colour. For example, red, orange, yellow, green, light or dark blue, etc. may indicate contamination from a variety of contaminants. • Soils including large amounts of ash and clinker where such contamination of soils wasn't expected.
Odours	• Fuel, oil and chemical type odours • Unusual odours such as sweet odours or fishy odours
Wellbeing	• Light headedness and/or nausea when in excavations, at the working face of an excavation, when visual or olfactory evidence of contamination exists, etc. • Burning of nasal passages, throat, lungs or skin • Blistering or reddening of skin due to contact with soil

Table F: Discovery Strategy

Note: The examples provided in this table are not exhaustive.

The following table sets out the actions that must be taken if significant or suspected land, water or air contamination is observed by site staff, contractors or visitors.

Person observing contamination	To be reported to:	Action to be taken
Site visitor	Must report observations to the site manager	Report to site manager who should immediately investigate and follow the actions below.
Contractor	Must report observations to the site manager	Stop work and where possible and safe make area safe and secure area before reporting to site manager
On-site manager	Must report observations to their direct manager, the appointed Environmental Consultant, the Planning Authority and Contaminated Land Officer	Stop work and where possible and safe make area safe and secure area before reporting to others
Environmental Consultant	Must report observations to the site manager, the Planning Authority and Contaminated Land Officer	Advise that work stops and where possible that the area is made safe before reporting to others

Table G: Discovery Strategy 2

Regardless of who has observed the suspected contamination the following actions must be taken by the developer:

- All development shall cease in the affected area;
- The Planning Authority and Pollution Regulatory Team must be contacted within 2 working days or sooner if the contamination poses a significant risk to health;
- Any additional or unforeseen contamination shall be dealt with as agreed with the Contaminated Land Officer, and;
- Where development has ceased in the affected area, it shall only recommence upon written notification of the Planning Authority or Contaminated Land Officer

The following table identifies other organisations that may need to be contacted in an emergency or where pollution of controlled waters or nuisance is occurring.

Occurrence	Description	Contact
Risk to the public	If at any point residents, the public or others may be at risk as a result of contamination found during the course of investigation, remediation or development works.	- Contact the emergency services if there is a risk to life - Contaminated Land Officer/Planning Authority - Health & Safety Executive
Nuisance to residents/the public	If a nuisance has been or is likely to be caused to nearby residents, the public and others – for example odours, dust, noise, vibration, etc.	Pollution Control Team at the Local Council (and other Councils where necessary)
Pollution of controlled waters	If any surface, culverted or groundwater has been polluted – for example slurry, contaminated soil/water or a chemical spillage entering a river or canal.	- Environment Agency - Planning Authority and Contaminated Land Officer at the Local Council
Pollution of adjoining land	If land outside the boundary of the development site is polluted from site activities – for example slurry, contaminated soil/water or a chemical spillage.	- The owner of the land - Planning Authority and Contaminated Land Officer at the Local Council

Table H: Discovery Strategy 3

7.5 Further Investigation Work

Further investigation work may need to be undertaken during the course of development as a result of:

- Access restrictions during the initial phase of investigation
- New evidence of sources of contamination becoming available
- Limitations with the initial phase of investigation work

Allowing further investigation work to take place during the course of development minimises delays to development work, enables better access to and often provides better opportunities to fully investigate parts of a site.

The following table sets out further investigation work that must be undertaken during the course of the development.

Item	Description	When work to be undertaken	When results to be presented
None	NA	NA	NA

Table I: Further Investigation Work

The results of all further investigation work will be included within the final verification report for the development.

7.6 Cover System

In all areas of proposed hard landscaping, the construction of the hard ground will act as a cover system for any potentially contaminated soils. The hard landscaping should comprise of a hard surface layer with granular sub-base material.

7.7 Chemical Quality of Imported/Site Sourced Soils and Fills

Soils could be imported to the site for the construction/remediation of soft landscaped areas on-site.

Imported materials, especially topsoil, will require suitable validation certificates to demonstrate that they are suitable for use within the development. The information required includes chemical testing information that confirm suitability of the material to be used on-site, and confirmation of the source of the site of origin.

- Details of the source and supplier of the soil(s) must be supplied to the Local Authority.
- Soils must not be contaminated with materials such as plastics, metals, asbestos, glass, tarmac etc.
- For soil from a single source, it will be necessary to take a minimum of two random samples for every 15m³. For small quantities of soils, a minimum of three samples will be required in total. Where large quantities of soil from a single source are involved, it may be possible to reduce the frequency of sampling - however, this must have been previously agreed with the Local Authority.
- Analysis of these soil samples must take place in independent UKAS/MCERTS accredited laboratories. The Local Authority will not accept sampling or analysis certificates which have been submitted by the supplier of the soils.
- The analytical suite must include a minimum of heavy metals, speciated PAH, total TPH, asbestos screening and pH value. Analysis of additional substances may be required by the Local Authority depending on source: e.g. a pesticide suite for soils from agricultural sources. Analysis must be recent and clearly relate to the actual soils to be imported – a clear chain of custody is required.
- Screening criteria will be in accordance with GACs, C4SL's for residential with plant uptake, and CIEH S4ULS Generic Screening Criteria for residential with plant uptake.

- Non virgin fills e.g. crushed concrete should be checked visually for asbestos and screened using UKAS accredited method for asbestos. Only material assessed as 'No asbestos detected' by the testing laboratory is acceptable.
- The Local Authority must approve the results of the analysis before the soils are placed on the site.
- If not for immediate use, 'clean' soils must be segregated.
- Further sampling may be required following placement.

The results must be supplied to / collated by a suitably qualified environmental consultant for compilation within a site completion report, which is to be submitted to the Local Authority upon completion of the development.

7.8 Building Materials And Potable Water Pipe

If at any point in the future, it be intended to install new water supply pipes within the Made Ground then consideration to the pipe materials used and/or the trench construction in accordance with UKWIR (2010) and the WATER UK HBF guide. Based upon the analysis undertaken, the concentrations of TPH returned by samples of Made Ground may be suitable for the use of standard PE pipe materials at the site however, it is recommended that this is checked with the relevant water supplier.

7.9 Waste Management Information

Soil may be required to be removed from the site as part of the remediation strategy. Under such circumstances the material will be defined as waste and all the necessary regulatory steps must be adhered to under this scenario.

Excavated material must be classified in accordance with Environment Agency protocols for disposal at an appropriately licenced disposal facility.

Both Producers and Waste Management companies must ensure compliance with the Waste Acceptance Criteria (WAC) prior to landfill in Hazardous, stable non-reactive cells and inert sites. These regulations govern the operation of landfill in England and Wales. Basic characterisation is the responsibility of the waste producer and compliance checking is generally the responsibility of the landfill operator. Therefore, landfill operators will be unlikely to accept waste that does not meet the Waste Acceptance Criteria for their class of site.

8.0 OTHER CONSIDERATIONS

8.1 Excavated Materials Intended for Re-Use

Where possible any natural materials excavated on-site for foundation purposes should be re-used in order to reduce the volumes of material reporting to landfill.

8.2 Workforce Duty of Care

Site worker exposure is acute in nature, i.e. high-level exposure over a short time span. Appropriate Health and Safety procedures and provision of appropriate PPE should mitigate such risks.

The site should be securely fenced at all times to prevent unauthorised access. Washing facilities should be provided and eating restricted to mess huts.

8.3 Validation Reporting

Verification is based on an assessment of remediation performance to demonstrate that the risk associated with contamination has been reduced to meet remediation objectives and that the site is rendered suitable for use after development has been completed. This is a regular requirement under the planning process.

A verification report should be provided as soon as all groundworks at the site are completed and foundations / surface coverings are down.

Verification details of the completed development, any agreed remedial measures completed, materials imported onto or off the site with waste management and/or appropriate analysis to demonstrate chemical suitability/absence of asbestos, written statements clearly identifying whether or not any contamination was identified at the site during works will be provided.

Information for the validation report relating to work undertaken is to be supplied during the course of the works, including the following:

- Details of disposal of hazardous materials during demolition and site preparation
- Details of total disposal quantities and final disposal fates for waste soil
- Copies of relevant waste management/disposal licences or PC Permits, as applicable;
- Copies of registered waste carrier certificates
- Records of any consents, permits authorisation and/or licences held or obtained by the Contractor (and subcontractors) relevant to the Works
- Validation sample records.

Import and backfill records, including the following, as applicable:

- Chemical and geotechnical data for site derived fill materials and topsoil.
- Chemical and geotechnical data for imported fill materials and topsoil.
- Imported fill summary records.
- Waste disposal records, including the following, as applicable.
- Soils disposal summary and daily disposal records.
- Liquid waste disposal summary.
- Hazardous waste disposal summary.
- Waste consignment notes.
- Tip tickets for each waste disposal facility use.
- Liquid waste transfer notes.

As built drawings showing placement of imported fill and topsoil and thicknesses should be available if possible.

Clear conclusions regarding the suitability for use of the site, the likelihood of residual contamination being present beneath the site, the likelihood of residual contamination impacting upon site and off-site uses/environment (including groundwater), the likelihood of off-site contamination impacting significantly upon the site in the future and any other relevant information shall be provided.

9.0 LIST OF FIGURES AND TABLES

Figure 1: Site Location Map

Figure 2: Existing Site Plan

Figure 3: Proposed Development Plan (Ground Floor)

Figure 4: Site Investigation Plan (Geotechnical)

Figure 5: Site Investigation Plan (Phase 2)

Figure 6: Remediation Areas (in red) based on Proposed Development

Table A: Phase 1 Conceptual Site Model

Table B: Phase 2 Conceptual Site Model

Table C: Contaminated soils treatments

Table D: Remediation measures

Table E: Watching brief

Table F– H: Discovery strategy

Table I: Further investigation work