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Contaminated Land Phase One Desk Study for Proposed ground floor retail unit & first floor residential dwelling at Dale Inn, 408 Wakefield Road, Denby Dale, Huddersfield, HD8 8RP.

Prepared for:

APD Architecture and Design Ltd,
The Old Police Station,
16 Bridge Lane,
Holmfirth,
HD9 7AN.

August 2024

Revised May 2025

Summary

This report consists of a phase one contaminated land desk study produced in support of a discharge of planning conditions for a mixed ground floor retail and first floor residential building on land to the rear of The Dale Inn, 408, Wakefield Road, Denby Dale, Huddersfield, HD8 8RP.

The report has been revised following further information obtained as a result of a coal risk assessment and intrusive investigation, and the completion of coal remedial works.

Following the site walkover and review of the available information it has been concluded that there is no contamination present on or off site which poses a significant risk of significant harm to the identified receptors and the site is safe and suitable for the intended use.

However, due to the potential risk from associated ground gases it is recommended that ground gas protection measures to a Characteristic Situation 2 level are installed as part of the development.

The report further recommends that a watching brief is maintained throughout the construction of the new dwellings and any signs of potential contamination found are fully investigated, with appropriate remedial action taken as necessary.

Contents

Introduction

Martin Environmental Solutions has been commissioned, to carry out a phase one contaminated land desk study report to support a discharge of planning conditions for a mixed ground floor retail and first floor residential building on land to the rear of The Dale Inn, 408, Wakefield Road, Denby Dale, Huddersfield, HD8 8RP.

Aims and Objectives of the report

The aims and objectives of this report are as follows:

- Assess the likelihood of contamination affecting the site,
- Identify any likely receptors to be affected by the potential contamination,
- Identify the pathways by which the receptors will be exposed to any potential contamination,
- Identify any areas where further investigation will be required.

Scope of works

This report has been written in line with the 'BS 10175: 2011+A2: 2017 Investigation of potentially contaminated sites – Code of Practice' and Land Contamination Risk Management (LCRM).

The scope of this report covers the phase one desk study only. It will look at relevant information on: -

- the history of the site and surrounding area,
- the current use of the site and surrounding area,
- the geology and hydrogeology of the area,

A site walk-over survey has been undertaken in addition to consultations with the existing site owner, to identify any potential contamination issues.

Evaluation of the above information will be used to construct an initial conceptual model as appropriate, with the identification of any additional investigations that may be required.

The Site:

Site Address: Land to the rear of The Dale Inn, 408, Wakefield Road, Denby Dale, Huddersfield, HD8 8RP.

Grid reference: 422680; 48489

An aerial photograph of the site is included in Figure 1.

Current Site use:

The site currently consists of an asphalt carparking area located to the rear and west of the former Dale Inn public house, now, residential apartments, to the west are existing terrace housing fronting onto Wakefield Road which runs to the south of the site and forms the main road running through the town. Further housing exists on the far side of the road. To the north is the access road which terminates to the west at a residential property and to the north into a small housing estate of ~25 properties.

Research

Details of Research

This report has been based on information gathered from a number of reputable sources, covering details:

- on the historic and current use of the site,
- any known waste disposal activities in the area,
- any regulated industrial activities within the vicinity of the site including recorded industrial accidents,
- on the geology, hydrogeology, hydrology of the area,
- identification of any environmentally sensitive sites,
- any natural hazards.

Principle sources of this information have been:

- environmental data from Groundsure Limited
- the Local Planning Authority,
- historic maps (Groundsure Ltd),
- site walk-over survey and discussion with the current owners.

Site History

Information on the historic uses of the site has been obtained from historic mapping information (Appendix 2), and environmental data from Groundsure Limited.

Mapping Year	Changes on Site	Changes off Site
1854	The site forms part of the former Dale Inn public house. A building is shown to the northern section of the site	A smithy is located to the west of the site, beyond which open fields until the railway and bridge 240m away. The railway station is located to the northwest with banking along the railway line. Beyond the bridge and to the south of Wakefield Road is the Hartcliffe Mill, a reservoir 410m away and a sandstone quarry 500m away. Approx 450m northwest a shaft is identified with a coal pit 250m to the north. To the east a reservoir is located ~260m away and a Corn Mill, with further reservoirs located in the south over 300m
1891-93	No change	The area has been developed. An old quarry is shown 80m northwest with another 250m north-northwest at the side of East Hill Wood. Next to the railway station 250m from the site is Denby Dale Brick works, residential properties are shown on the opposite side of Wakefield Road. To the east and southeast Springfield Mill and Dearneside Mill are located 120 & 160m away, with two reservoirs shown at 200m to the south and two at 260m to the southeast.
1903-06	No change	No Significant Changes. Bromley works is shown adjacent to the railway line 250m away with a slag heap to the northeast.
1929-33	No Change	The brickworks has expanded and moved closer to the site.
1948-51	No Change	No Significant Changes
1958-60	No Change	No significant changes

1967-71	No Change	A property is shown over the reservoir to the east at Denby Mill
1983-88	No Change	Denby Dale mill is no longer present along with the reservoir 250m east of the site. The kilns at the brick works have been removed, additional housing has been erected in the wider area, some replacing former terrace properties and some of open land.
1993-95	The building on site has been removed by 1995.	The site of the brickworks has been redeveloped into industrial units.
2001-03	No Change	No significant changes
2010	No Change	No significant changes, the Bromley works to the northwest is now a housing estate.
2024	No Change	No significant changes, the housing estate to the north is shown
Aerial photos	No changes shown	The Bromley Industrial estate to the northeast next to the railway line is developed into a housing estate from 2002-15. The housing estate to the north is built between 2018-22 three existing properties were built between 2000-02

Regulatory Information

Relevant information obtained from the Groundsure report (Appendix 1) is summarised below.

Two permitted activities that have been identified within 500m of the site as defined in the Environmental Permitting (England and Wales) Regulations 2016 or previous legislation. The first is 53m northeast of the site at Victoria Mill and is a historic animal feed company. According to company's House the company ceased trading in 2012 and the site was redeveloped into a large care home by 2015 according to aerial photographs. The second site 464m north is a historic bulk cement processing centre.

One pollution incident has been identified in the surrounding area, located 26m southeast of the site no description is given but it had a minor impact on the water environment in June 2003. The site was on the far side of the road with the ground sloping steeply away from the site.

Three discharge consents are reported. The nearest is 232m east at Dearneside Road relating to sewage company storm discharge, 2007-12, 410m southwest at Hartcliffe Mills a trade discharge between 1987-1992, and finally 451m southwest another trade discharge from Hartcliffe Mill 1987-1992. These are likely to be discharges into the River Dearne ~90m to the south of the site. there are therefore unlikely to impact on the development site.

The above identified sites are unlikely to impact on the development site given the age and locations.

No active landfill or other waste site records have been found in the area. A historic landfill record has been identified 158m northwest of the site at Bromley Works. Issued in 1983 to 1999 when it was surrendered, no details of the material accepted are recorded on the purchased information. However, the site has been redeveloped into housing post the Environmental Protection Act 1990 which introduced the contaminated land regime, from 2002.

26 waste exemptions have been identified. The nearest is 29m north of the site at Wood Nook Farm for the burning of waste in the open., next 101m southeast at Springfield Mils burning of waste as a fuel in a small appliance. Four exemptions at Springfield mills (the same unit as above) for the burning of waste as a fuel, treatment of waste wood.

At Westleigh mews 162m west of the aerobic composting, spreading of the waste on non-agricultural land and 172m northeast incineration process. 318m south of the site the aerobic composting of waste, treatment of waste wood and spreading of waste/use of mulch have been applied for. At 315 Wakefield Road, 371m east of the site the storage of waste in secure containers and at the same address, but 400m and 460m east the sorting and de-naturing of controlled drugs.

Given the distances and nature and age of the both sites it is unlikely that the above sites will pose any risk to the development.

Current potentially contaminative site identified in the area include the following, many are retail units:

A furniture shop 24m southwest of the site

Electricity sub-stations 80m southeast & 177m west

Construction supplies 81m southeast

Retail curtain business 102m southeast

Printing and binding company 107m west

An interior business 132m west

ATS shop 141m west (tools)

Publishing 144 & 146m west

Tools hire 151m west welding business located 18m northwest of the site,

A tool machine shop 161m west

New vehicle sales 161m west

Trye replacement 186m east

'Works' 209m east & 221m southwest

A "tank" 236m east.

These is unlikely to impact on the site.

Historical potentially contaminative land uses have been identified within 250m of the site from the purchased information; most of these have been identified from the historical mapping and include:

Unspecified works 36m northwest of the site between 1967-83

Brick works 40m west from 1933

Smithy 43m west in 1850

A pit 47m west in 1891 – identified as an old quarry and removed from the mapping in 1906

Mill 80m, 101m, 116m, 133m & 150southeast

Brick works 98m southwest 1903-1948

Tanks 120m west between 1933-1967, these were the kilns to the brickworks and not tanks.

A pump 175m east in 1850

Railway sidings 207m west

A refuse heap 236m northwest (now under the housing estate on the former Bromley Works site, identified as a spoil heap the historical mapping.

Geology and Hydrogeology

Information from the British Geology Survey 1:50,000 mapping identifies the bedrock in the area as Pennine Lower Coal Measures Formation - Mudstone, Siltstone and Sandstone, overlaid by Alluvium deposits of Silty Clay. No made ground is recorded on or adjacent to the site. The nearest identified area being under the Bromley Works Housing Estate to the northwest.

Three onsite borehole records are available identifying Shale, Red Clay and Sandstone beneath the site. Coal was identified at a depth of 472 feet being 1 ft deep.

The information obtained on the hydrogeology of the area identifies the site as having a Secondary A aquifer in the bedrock 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.

14 groundwater abstraction licenses have been identified; the majority are historic. The only active site is a borehole located 453m southwest of the site for Hinchcliffe & Sons Ltd.

Eight surface water abstraction licenses are identified, only three of which are active and two relate to the same location 425m southwest at Hintchcliffe & Sons Ltd for general use and cooling water. The third being 604m southwest again at Hinchcliffe & Sons Ltd.

The site is not located within a Source Protection Zone.

The Groundwater vulnerability is described as high in the surface and bedrock layers.

Hydrology

The nearest watercourse is suggested to be on the edge of the site, as no sign of any watercourse was identified this is presumed to be a culvert running from the north passed the site and towards the River Dearne in the south 28m away. Where it heads east.

The site is not within a floodplain, and the risk of flooding is classified as low.

Environmental Sensitivity

The only environmental sensitive sites identified are 11 ancient Woodlands. The nearest being 372m southwest of the site (Munchcliffe and Ward Woods), Hagg Wood 378m south ad then Tanner Wood 458m southeast.

The south and West Yorkshire greenbelt is located 88m Northwest of the site turn south further away.

The property is in an area identified as having less than 1% of properties above the action level of 200 Becquerel's per cubic metre, based on specific property search. Radon protection measures are not required in line with BR211.

No additional natural hazards have been identified & the site has very low/negligible risk of shrink swell, running sand, and compressible ground.

Coal mining activities have been identified 259m north being the Cumberworth Lane historic coal pit, identified as a deep pit, a small pit with only 8 underground workers[1] and open for only a couple of years 1918-22. The site is identified within a coal mining risk area, with potential shallow coal workings.

Coal risk assessment and remedial works

A coal risk assessment has been produced for the site which identified the potential for shallow coal mining/coal seams to be present below the site.

Further intrusive works have been undertaken by Cape Site Services consisting of three boreholes, see attached reported in Appendix 4. The investigations identified sandstone bedrock below clay deposits at 2.8m with shallow coal workings at 8.2m voids were identified in each borehole.

No fugitive ground gases were detected during the drilling operations.

Remedial works in the form of drilling and grouting of the shallow voids has been undertaken, again no ground gases were encountered during this work. The assessment report highlights the potential for associated mine gas to still be present and recommends gas protection measures are included within the design of the building.

[1] https://pdmhs.co.uk/docs/1896mines/East%20and%20West%20riding%20coal.html

Site Walkover

A site walkover was undertaken on the 25th July 2024 and confirmed much of what had already been identified from the information obtained on the site. The photographs in Appendix 3 provide some indication of the current layout and condition of the site.

The site is accessed by foot from the south and by road from the north, it consists of an asphalt rectangular area used as car parking for the converted Dale Inn which lies to the east.

Some vegetation is present in the form of weeds to the edges and within the historic wall surrounding the site to the west and south.

No signs of contamination, discoloration or olfactory evidence, dead or dying vegetation were seen during the walkover.

The current owners are unaware of any issues on site which could have led to contamination.

Additional Information

A recent Phase II investigation has been undertaken for the development of the houses to the north of the site, as part of this investigation ground gas monitoring was undertaken following the identification of a potential source being the spoil heap to the northwest (closer to that site that the current development) and the infilled reservoirs within 250m to the east (at the same separation distance). The findings of the report indicated no excessive level of ground gas and no flow was found. As such this site was classified as Characteristic Situation 1 and NHBC Green. As such no gas protection measures were required.

Given the location of the potential sources of ground gas in relation to this site it is reasonable to consider the previous results are representative of the development site and as such no gas protection measures will be required for this development.

Conclusions

Potential Contaminants

Following a review of the information gathered on the history of the site and the surrounding area and following the site walkover, no contamination has been identified on or off site that is likely to pose a significant possibility of significant harm to the identified receptors.

The exception to the above is the presence of shallow coal workings at 8.2m depth and historic landfill to the northwest. Further investigations undertaken at the development of the north of the site and closer to the landfill site and investigations and remedial works on site in relation to the shallow coal workings have not identified any associated ground gases.

Receptors and Pathways

Potential receptors which may be affected by any unknown contamination on site will include:

- Construction workers who are likely to be affected by any potential contamination as they will initially be working in the ground and are likely to be the ones who unearth any potential contaminants.
- Future users of the site, including residents, staff and visitors to the site. For the purpose of evaluating any effects from any contamination found during any intrusive investigation future users/visitors to the site should be regarded as the 0-6-year-old female child.
- Any building on site e.g., foundations which may be attacked by any contaminants in the ground or services.
- The underlying groundwater which may be contaminated by migrating pollutants present on the site. There is also the potential for further pollution of the groundwater or the watercourse from disturbing any potential contaminants on site.

The pathways by which these receptors may be exposed to any unforeseen potential contamination will include:

Construction workers

- Inhalation, of gases or vapours released during ground work or fine particles.

- Ingestion of the contaminants, principally from cross contamination with contaminated soil and inadequate hand washing before smoking and eating.
- Absorption through the skin following contact with contaminated soil.

Future users and visitors

- Inhalations of gas/vapours or fibres, particularly if these are allowed to enter the new structures through the ground and build up in an enclosed area.
- Ingestion of contaminants, through the ingestion of contaminated soil from the garden area via direct contact, e.g., playing in the garden.
- Absorption of contaminants from dermal contact with contaminated soil.

Buildings

Contaminants on site have the potential to affect the foundations to the new building or the services supplying it.

Watercourses

As discussed above, if they exist on site, there is a potential for any contaminants to migrate through the ground into the groundwater and aquifer or via run-off into the watercourse.

Neighbouring sites

If present on site contaminates have the potential to migrate to neighbouring sites through ground water or air blown transfer.

Conceptual Model

The table represents a basic conceptual model. It highlights the potential sources of pollutants identified from the gathered information, and potential pathways in which any contaminants could reach the identified receptors.

Pathway	Description	Identified sources	Receptor at risk	Probability	Consequence	Risk
1	Run off and seepage into groundwater from any spillages	-	Watercourse/ Environment	Unlikely	Mild	Very Low
2	Migration of gases into the building.	Infilled land off site. Shallow coal workings	Future users	Low Likelihood	Medium	Moderate/low risk
3	Inhalation of gases/ vapours outside	-	Construction workers/future users	Low Likelihood	Mild	Low
4	Inhalation of fine particles	-	Construction workers/future users	Low	Medium	low
5	Direct ingestion of contaminated soil	-	Construction workers	Low	Medium	low
6	In-direct ingestion of contaminated soil	-	Future users	Low	Medium	low
7	Absorption via direct dermal contact with contaminated soil	-	Construction workers/future users	Low	Mild	Very low

		CONSEQUENCE			
		Severe	Medium	Mild	Minor
PROBABILITY	High Likelihood	Very High Risk	High Risk	Moderate Risk	Moderate / Low Risk
	Likely	High Risk	Moderate Risk	Moderate / Low Risk	Low Risk
	Low Likelihood	Moderate Risk	Moderate / Low Risk	Low Risk	Very low Risk
	Unlikely	Moderate / Low Risk	Low Risk	Very low Risk	Very low Risk

Recommendations

As a result of the investigation into the historical use of the site and surrounding area no sources of contamination have been identified on or off site which present a significant possibility of significant harm to the any of the identified receptors, the site is therefore considered to be suitable for the intended use.

However, given the potential risk of ground gas, particularly from the underlying coal workings it is recommended that ground gas protection measures to a Characteristic Situation 2 standard are included within the development of the site. Ground gas protection measures should be suitably validated on installation.

It is further recommended that a watching brief is maintained throughout the construction of the new building and any signs of potential contamination found are fully investigated, with appropriate remedial action taken as necessary and the local planning authority informed of the findings.

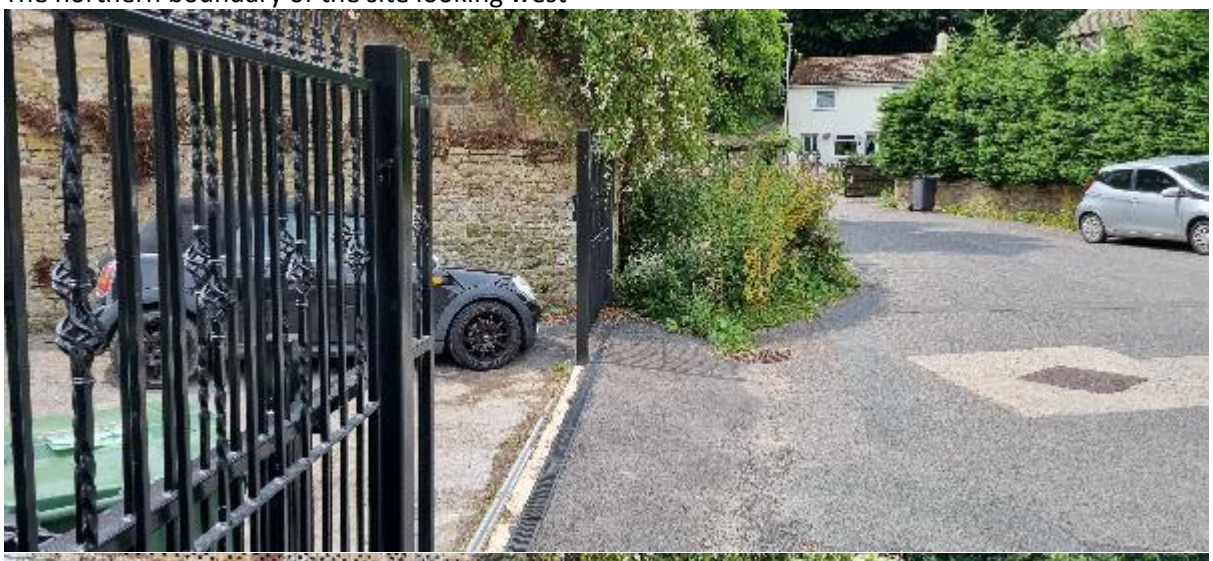
Figure 1 – Aerial Photograph

Appendix 1 – Groundsure Data

Appendix 2 – Historical Mapping

Appendix 3 – Site Walkover Photographs

The northern boundary of the site looking west



Looking across the site from northeast corner to southwest corner

Eastern boundary looking south

Southern boundary looking west

Photo from Dale Inn flat access looking towards northwest corner

south west corner

southern boundary looking east

western boundary looking north, then south


YR15 OBD

Appendix 4 – Coal Mining Risk Assessment

Appendix 5– Conceptual Model Risk Assessment

A Preliminary Risk Assessment is usually undertaken as part of a desk study, outlines potential risks posed by potential contamination to all receptors by defining plausible "pollution linkages" and developing a preliminary conceptual model (PCM).

The purpose of this model is to define all possible complete pollution linkages, where the requisite source – pathway – target elements are present, and these elements being defined as:

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

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

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

The absence of one or more of each component (source, pathway, receptor) would prevent a pollutant linkage being established and there would be no significant environmental risk.

Consequence of Risk

CLASSIFICATION	DEFINITION	EXAMPLES
Severe	Highly elevated concentrations likely to result in "significant harm" to human health as defined by the EPA 1990, Part 2A, if exposure occurs. Equivalent to EA Category 1 pollution incident including persistent and/or extensive effects on water quality; leading to closure of a potable abstraction point; major impact on amenity value or major damage to agriculture or commerce. Short term risk of pollution of sensitive (H1/H2) water resource. Major damage to aquatic or other ecosystems, which is likely to result in a substantial adverse change in its functioning or harm to a species of special interest that endangers the long-term maintenance of the population. A short-term risk to a particular ecosystem, or organism forming part of such ecosystem. Catastrophic damage to crops, buildings or property.	Significant harm to humans is defined in circular 01/2006 as death, disease, serious injury, genetic mutation, birth defects or the impairment of reproductive functions. Major fish kill in surface water from large spillage of contaminants from site. Highly elevated concentrations of List I and II substances present in groundwater close to small potable abstraction (high sensitivity). Explosion, causing building collapse (can also equate to immediate human health risk if buildings are occupied).
Medium	Elevated concentrations which could result in "significant harm" or "significant possibility of significant harm" to human health as defined by the EPA 1990, Part 2A if exposure occurs. Equivalent to EA Category 2 pollution incident including significant effect on water quality; notification required to abstractors; reduction in amenity value or significant damage to agriculture or commerce. Pollution of a highly sensitive (H1/H2) water resource. Significant damage/change to aquatic or other ecosystems, which may result in a substantial adverse change in its functioning or harm to a species of special interest that may endanger the long-term maintenance of the population. Significant damage to crops, buildings or property.	Significant harm to humans is defined in circular 01/2006 as death, disease, serious injury, genetic mutation, birth defects or the impairment of reproductive functions. Damage to building rendering it unsafe to occupy e.g. foundation damage resulting in instability. Ingress of contaminants through plastic potable water pipes.
Mild	Exposure to human health unlikely to lead to "significant harm". Equivalent to EA Category 3 pollution incident including minimal or short-lived effect on water quality; marginal effect on amenity value, agriculture or commerce. Pollution of moderately sensitive (M1/M2) water resources. Minor or short-lived damage to aquatic or other ecosystems, which is unlikely to result in a substantial adverse change in its functioning or harm to a species of special interest that would endanger the long-term maintenance of the population.	Exposure could lead to slight short-term effects (e.g. mild skin rash). Surface spalling of concrete.

	Significant damage to crops, buildings, structures and services ("significant harm" as defined in Circular 1/2006).	
Minor	No measurable effect on humans. Equivalent to insubstantial pollution incident with no observed effect on water quality or ecosystems. Repairable effects of damage to buildings, structures and services. Pollution of low sensitive (L1/L2) water resource. Harm, although not necessarily significant harm, which may result in a financial loss, or expenditure to resolve. Non-permanent health effects to human health (easily prevented by means such as personal protective clothing etc). Easily repairable effects of damage to buildings, structures and services.	The loss of plants in a landscaping scheme. Discoloration of concrete.

Probability of Risk Occurring

CLASSIFICATION	DEFINITION	EXAMPLES
High Likelihood	There is pollutant linkage and an event would appear very likely in the short-term and almost inevitable over the long-term, or there is evidence at the receptor of harm or pollution.	a) Elevated concentrations of toxic contaminants are present in soils in the top 0.5m in a residential garden. b) Ground/groundwater contamination could be present from chemical works, containing a number of USTs, having been in operation on the same site for over 50 years.
Likely	There is pollutant linkage and all the elements are present and in the right place which means that it is probable that an event will occur. Circumstances are such that an event is not inevitable, but possible in the short-term and likely over the long-term.	a) Elevated concentrations of toxic contaminants are present in soils at depths of 0.5-1.0m in a residential garden, or the top 0.5m in public open space. b) Ground/groundwater contamination could be present from an industrial site containing a UST present between 1970 and 1990. The tank is known to be single skin. There is no evidence of leakage although there are no records of integrity tests.
Low Likelihood	There is pollutant linkage and circumstances are possible under which an event could occur. However, it is by no means certain that even over a long period such an event would take place, and is less likely in the shorter term.	a) Elevated concentrations of toxic contaminants are present in soils at depths >1m in a residential garden, or 0.5-1.0m in public open space. b) Ground/groundwater contamination could be present on a light industrial unit constructed in the 1990s containing a UST in operation over the last 10 years – the tank is double skinned but there is no integrity testing or evidence of leakage.
Unlikely	There is pollutant linkage but circumstances are such that it is improbable that an event would occur even in the very long-term.	a) Elevated concentrations of toxic contaminants are present below hardstanding. b) Light industrial unit <10 yrs old containing a double skinned UST with annual integrity testing results available.

Calculation of Risk

		CONSEQUENCE			
		Severe	Medium	Mild	Minor
PROBABILITY	High Likelihood	Very High Risk	High Risk	Moderate Risk	Moderate / Low Risk
	Likely	High Risk	Moderate Risk	Moderate / Low Risk	Low Risk
	Low Likelihood	Moderate Risk	Moderate / Low Risk	Low Risk	Very low Risk
	Unlikely	Moderate / Low Risk	Low Risk	Very low Risk	Very low Risk

Appendix 5 Report limitations and exclusions

Basis of Risk Assessment

The methods used follow a risk-based approach with the potential risk assessed using the 'Source – pathway – receptor pollution linkage concept.

Limitations and Exceptions of this Report

This report was undertaken for at the request of APD Architecture and Design and as such should not be entrusted to any third party without written permission of ***Martin Environmental Solutions***. No other third parties may rely upon or reproduce the contents of this report without the written permission of ***Martin Environmental Solutions***. If any unauthorised third party comes into possession of this report, they rely on it at their own risk and the authors do not owe them any duty of care or skill.

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

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

This report is prepared and written in the context of the purposes stated above and should not be used in a different context. Furthermore, new information, improved practices and legislation may necessitate an alteration to this report in whole or in part after its submission.

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

All of the comments and opinions contained in this report, including any conclusions, are based on the information obtained by ***Martin Environmental Solutions***. The conclusions

drawn by ***Martin Environmental Solutions*** could therefore differ if the information obtained is found to be misrepresentative, inaccurate, or misleading. ***Martin Environmental Solutions*** reserves the right to amend their conclusions and recommendations in the light of further information that may become available.

The report should be read in its entirety, including all associated drawings and appendices.

Martin Environmental Solutions cannot be held responsible for any misinterpretations arising from the use of extracts that are taken out of context.

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

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

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Any risks identified in a Phase I Desk Study Report are perceived risks. Actual risks can only be assessed following a physical investigation of the site.

The findings of this report are based on finite information obtained from research and consultations. Martin Environmental Solutions cannot guarantee the reliability of all such information and the searches should not be considered exhaustive. The findings of the report may need to be reviewed as any future exploratory investigations progress and in the event that additional archive information becomes available.

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

Arboricultural Survey and advice on arboricultural issues are considered to be outside the scope of this report except for their effect on the foundations to the proposed buildings.

Where identification of any species is made, especially invasive plants such as Japanese Knotweed, Himalayan Balsam or Giant Hogweed, this should only be considered as a preliminary assessment and subject to confirmation by a professional Arboriculturist. Martin Environmental Solutions takes no responsibility for failing to identify, or the incorrect identification of, any tree or plant species on site.

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

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