



Land Science



**CAPITAL WAREHOUSE, CONSORT
WAY, BURGESS HILL, RH15 9TJ
PHASE I CONTAMINATION
ASSESSMENT
PGQ PROPERTY
17TH OCTOBER 2024
LS7961**

Site:	CAPITAL WAREHOUSE, CONSORT WAY, BURGESS HILL, RH15 9TJ	
Title:	PHASE I CONTAMINATION ASSESSMENT	
Project:	PROPOSED WAREHOUSE ON THE SITE OF A PREVIOUSLY BURNED DOWN WAREHOUSE	
Client:	PGQ PROPERTY	
Date:	17 TH OCTOBER 2024	
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1.0 INTRODUCTION

1.1 General

Land Science was instructed to undertake a Phase I Contamination Assessment (“desk study”) in relation to the proposed redevelopment at Capital Warehouse, Consort Way, Burgess Hill, RH15 9JT. The location is shown on Figure 1, which is centred at grid reference TQ 30196 18750.

1.2 Client

The Client for this appointment was PGQ Property. This report may only be used by this named client and their project team for the purposes set out and subject to the report conditions. It was understood that the Client already owned the property, and that this investigation was not a pre-purchase appraisal.

1.3 Area Under Investigation

The area under investigation comprised the area of a previously burned down warehouse. The layout is indicated on Figure 2, and a walkover survey is presented in section 2.0. The area was approximately 0.3 hectares.

1.4 Proposed Development

The proposed development was understood to comprise a new warehouse. Figure 3 illustrates the layout of the proposed redevelopment. The findings of this report may not be valid if the proposed development is altered.

1.5 Previous Investigations

Land Science was not aware of any previous desk studies or ground investigation(s) for this project.

1.6 Geo-Environmental Objectives

A preliminary phase I assessment was carried out, to identify potential sources of contamination, to develop a preliminary Conceptual Site Model (CSM) and to form the basis of a Preliminary Risk Assessment (PRA).

The report was required to assess risks associated with end users, the proposed redevelopment, adjacent land uses, and the wider environment, in the context of the planning regime.

1.7 Standards

Where practicable, the investigation was undertaken in accordance with the following primary standards and guidance:

- Land Contamination Risk Management (LCRM) Environment Agency 2020.
- BS10175:2011+A1:2013, Investigation of Potentially Contaminated Sites.
- National Planning Policy Framework, July 2018.

- Building Regulations Approved Document C: Site preparation and resistance to contaminants and moisture, HM Government, July 2013.
- NHBC Standards Chapter 4.1: Land Quality - Managing Ground Conditions, 2019.

Other technical sources have been cited in respect of specific aspects of the investigation, as referenced throughout the text.

2.0 WALKOVER SURVEY

2.1 General

A walkover survey was carried out in order to provide an assessment of the existing site conditions and to identify potential areas of concern. A record of the inspection is shown in Appendix A, with photographs in Appendix B.

2.2 Site Description

In summary, the area under investigation comprised a previously burned down warehouse site. The site was approximately square-shaped with an area of 0.3ha.

The majority of the site was fenced off with Heras and was vacant. The old building foundation / concrete slab was noted to be present at the surface along with sparse vegetation, including small shrubs ~500mm in height and moss where there were puddles and damp ground. Also located in this area were fragments of plastic membrane protruding out of the ground in and around the old footing.

The previous commercial building had recently been demolished down to the previous slab level and cleared following an extensive fire; no evidence of any ashes or other burnt residues were noted during the site walkover.

There was a concrete path to the west and two concrete plinths used as bases for a water pump to the east and a heavily rusted metal electrical locker with cables to the west. These plinths were raised by ~200mm. There was a concrete ramp located to the east which was raised ~150mm. The asphalt to the north was also slightly raised ~50mm.

The area around the old building footprint was asphalt and was being used for car parking. There was a grass verge with vegetation running alongside the road to the north. The boundaries consisted of metal fencing to the south and west, a road to the west (*Jubilee Road*) and a grass verge with a road (*Consort Way*) directly behind that to the north.

The site was relatively flat, with some drainage grills and concreted maintenance covers across the asphalt area. One main asphalt scar was noted in the northeastern section of the site. A small amount of plastic waste was noted around the south/west perimeters. Beyond the site boundaries was a mature sycamore tree to the west with an electrical substation, and industrial units directly adjacent to the east and southeast.

2.3 Neighbouring Land

The site was surrounded by other warehouses from the industrial estate. These included a glass manufacturer to the east, a frozen dessert company to the north and a sportswear shop to the south.

2.4 Geo-Environmental Conditions

The walkover survey did not identify any areas of particular concern regarding the geo-environmental condition of the site. No significant evidence of tanks, chemical storage, staining or sheens, built up ground, contaminative land uses etc. were noted. However, it is known that there was a substantial fire on the site in 2023 and associated contaminants / sources may not be present on the surface.

2.5 Geotechnical Conditions

The walkover survey did not identify any areas of particular concern regarding the geotechnical condition of the site. No significant evidence of underground structures, ground instability, subsidence, wet areas, significant earthworks, etc. were noted, with the exception of:

- A mature tree was noted in close vicinity of the proposed warehouse located along the existing metal fence line growing through the metal rails to a height estimated at around 10-12m.

3.0 DESK STUDY

3.1 General

A desk study was carried out to inform the preliminary conceptual understanding of the site and its setting, and to identify potential aspects of concern, in the context of the stated report objectives.

3.2 Historical Mapping

Various historical records were reviewed to assess potential historical land uses and activities that may impact on ground conditions at the site.

A set of historical ordnance survey maps was obtained from Envirocheck and a copy is presented in Appendix C. The following key features were noted:

On site:

- The earliest map dated 1878 showed the site comprised parts of several fields with a stream crossing from the southeast corner along the southern part of the site and exiting the site in the northwest corner, with trees across part of the site.
- The map dated 1910 showed the site to be part of a boating lake with a dam located to the west of the site. The 1937, 1955, 1959, 1964, 1974 mapping is consistent with this.
- The 1977 mapping showed the lake to be infilled and the 1981 mapping showed the site to have been developed with a warehouse in the southern half. The 1991 mapping showed the site as part of "*Victoria Industrial Estate*". The site remained the same until the known fire in 2023, when the site was cleared.

Off site:

- The earliest map dated 1878 showed the site to be surrounded by open fields. A sand pit ~300m northwest and a clay pit ~300m northeast of the site.
- The following map dated 1897 showed the previous sand pit to have been replaced by a clay pit. The previous clay pit was shown as old and there was a new clay pit ~100m northeast.
- The map dated 1910 showed a lake (later boating lake) ~150m long and an outdoor leisure area located ~200m to the east with a running track, a pavilion and gardens. By 1937 several more buildings had been constructed in the outdoor leisure area. A brick works was located from ~50m north of the site.
- The map dated 1955 showed the old clay pit as a pond. The brick works had been cleared to rough pasture and the previous outdoor leisure area had been redeveloped into an engineering works.
- The map dated 1959 showed an industrial "*works*" area located at the old brick works. The 1964 mapping showed further industrial "*works*" developed ~200m to the northeast of the site where the previous pond was and ~150m southeast of the site. A residential estate was located from ~150m north of the site.
- The 1974 mapping showed a vast increase in industrial works from 20m to the north. A training centre was located from 30m northwest. The 1981 mapping showed further industrial works from ~150m south and from ~60m southwest. An electrical substation was present adjacent the site's western border.
- The remaining maps showed some further industrial warehouses surrounding the site.

3.3 Internet Search

The previous commercial usage at site before the fire was as the Capital Hair and Beauty Distribution Centre and included the storage and distribution of hair and beauty products, including supplies of flammable products such as hairspray.

3.4 Aerial Imagery

The historical map set included aerial photographs dated 1999. The imagery showed the previous warehouse to be in use and still standing. Using Google Earth Pro the previous warehouse was present in 2022. However, the following image from 2023 showed the warehouse to have been burned down and cleared.

3.5 Current Industrial Land Use Data

The desk study included a search of contemporary land use records from various databases. Such land uses may impact on the condition of the site and the vicinity. The following significant land use information was identified:

Discharge Consents within 100m of site:

- On site, Pambarns Ltd
- Off site 10m northeast, Fremantle – Sussex Ltd
- Off site 24m west, East Sussex County Council

These were all for the discharge of other matter – surface water into freshwater stream/river. The discharge consents were dated between 1966 to 1974 and are therefore no longer seen as being a significant source of contamination.

Registered Waste Transfer Sites:

Offsite 238m south, Schering Warehouse Ltd, licence issued in 1992 and since surrendered. Authorised waste included agricultural chemical and pharmaceutical waste.

Contemporary Trade Directories:

Location	Address	Classification	Status
0m SW	Flow Serve Flow Control Ltd, Consort Way, Burgess Hill,	Valve Manufacturers & Suppliers	Inactive
12m NE	Yummy Lollies, Unit F Consort Way, Consort Way, Burgess Hill,	Food Products - Manufacturers	Active
19m SE	Doubledot, Ltd Unit 7, Sovereign Business Park, Albert Drive, Burgess Hill,	Printers	Active
30m NE	Novellini, 2, Consort Way, Burgess Hill,	Bathroom Fixtures - Manufacturers	Inactive
37m S	M &W, Unit 3, Regent Business Centre, Jubilee Road, Burgess Hill,	Engineering Services	Inactive
37m S	Powerdoor, Unit 3, Regent Business Centre, Jubilee Road, Burgess Hill,	Automation Systems & Equipment	Inactive
36m N	Consort Frozen Foods Ltd, Consort Way, Burgess Hill	Ice Cream Manufacturers & Suppliers	Active

Location	Address	Classification	Status
39 NE	Central Services South Ltd, Unit 2, Consort Way, Burgess Hill,	Road Haulage Services	Inactive
42m NE	South London Valve & Fitting Co Ltd, Unit 2, Regent Business Centre, Jubilee Road,	Valve Manufacturers & Suppliers	Inactive
44m W	Newman Thomson, 1 Jubilee Road,	Printers	Inactive
50m SE	Cells4life, Unit 2 Oak House, 4 Woodlands Office Park, Albert Drive	Laboratories	Inactive

Commercial Services:

- Off site 60m north, Mr MOT at Teknol House, Victoria Road – Repair and Servicing
- Off site 81m north, Autowise Tyre & Auto Centres Ltd - Repair and Servicing

Whilst other records were identified, these were unlikely to be significant in terms of this project due to a combination of their size, distance from the site, and the intervening geology and hydrogeology.

Pollution Incidents:

Location	Type	Dates	Records	Pollutant
15m E	Substantiated Pollution Incident Register	19 th June 2023	Incident reference: 2162213 Category 2- significant water impact	Contaminated water, firefighting runoff
21m W		13 th August 2018	Incident reference: 1643421 Category 2- significant water impact	Pollutant- Oils - unknown
24m S	Pollution Incident to controlled waters	18 th November 1992	Location: Pookbourne Stream, Consort Way, Burgess Hill Incident reference: 537 Category 3 – Minor Incident	Oils - Waste Oil
29m S		15 th March 1994	Location: Ditch, Rear of Victoria Road, Burgess Hill Incident reference: P00602 Category 3 – Minor Incident	Oils - Sewage Fungus in Stream; Food Industry
30m NE		20 th June 1996	Location: Jubilee Road, Burgess Hill Incident reference: 596164 Category 3 – Minor Incident	Oils - Oils - Unknown

3.6 Ground Conditions

A preliminary ground model was derived for the site by based on a combination of various sources including published maps, borehole records, previous investigations, and the site history. In summary, the following potential ground model was identified:

Strata	Approximate Depth (mbgl)	Summary Description
Made Ground	> 1.00	Before being developed into the previous commercial unit the site formed the western end of a boating lake that was infilled. The BGS has identified it as being an area of infilled Made Ground.

Strata	Approximate Depth (mbgl)	Summary Description
Superficial	-	None recorded.
Weald Clay Formation	>60	Dark grey thinly-bedded mudstones (shales) and mudstones with subordinate siltstones, fine- to medium-grained sandstones, including calcareous sandstone (e.g. Horsham Stone Member), shelly limestones (the so called "Paludina Limestones") and clay ironstones.

In addition, groundwater was anticipated as perched water within granular soils upon cohesive soil or buried structures within the Made Ground.

Groundwater was not expected below any Made Ground/ Topsoil.

The historic stream may be culverted across the site – a section goes underground in the northwest and the stream appears again 200m to the southeast of the site.

A deposit of Alluvium and Head Deposits were noted off site to the northwest and may be present on site as they follow the route of the historical stream that flowed across the site.

3.7 Geological Hazards

The desk study included searches of geological hazards. None of the hazards were rated as moderate or above, considered the screening threshold for further investigation.

A search of various databases for coal mining, mining, brine compensation, and natural cavities was carried-out. No relevant features were identified.

3.8 Environmental Setting

The site lies in the following groundwater setting:

- Bedrock aquifer: The Weald Clay Formation strata was classified as an unproductive Strata - Low permeability strata that have negligible significance for water supply or river base flow.
- Source protection zone: The site does not lie within a groundwater Source Protection Zone.
- Flooding from Rivers and Sea: Zone 1 Low Probability - Land having a less than 1 in 1,000 annual probability of river or sea flooding. However, adjacent to the northwest there are Zones 2 and 3 due to the stream: Zone 2 Medium Probability - Land having between a 1 in 100 and 1 in 1,000 annual probability of river flooding; or land having between a 1 in 200 and 1 in 1,000 annual probability of sea flooding. Zone 3 either high probability or part of the functional floodplain. High probability refers to Land having a 1 in 100 or greater annual probability of river flooding; or Land having a 1 in 200 or greater annual probability of sea flooding. The functional floodplain comprises the zone where water has to flow or be stored in times of flood, identified by local planning authorities. The two zones may not always be distinguished on mapping.
- Surface water flooding on site: Medium risk - each year this area has a chance of flooding of between 1% and 3.3%. Flooding from surface water is difficult to predict as rainfall location and volume are difficult to forecast. In addition, local features can greatly affect the chance and severity of flooding.

- Groundwater flooding on site: Potential for flooding at ground surface.
- Nearest surface water feature: 16m northwest (stream).
- BGS recorded Unknown Filled Ground 1962 (pond, marsh, river, stream, dock etc.) 0m south.
- BGS recorded mineral site – 120m northeast.
- Nitrate Vulnerable Zone: on site – Adur East surface water.

3.9 Radon Gas

The requirement for Radon Protection Measures (RPM) has been assessed in accordance with BRE 211:2015. Public Health England and the BGS estimate the potential for radon and the requirement for Radon Protection Measures on site as follows:

- Radon probability: Not at risk - less than 1% of homes are estimated by PHE to exceed the threshold for Radon gas in residential dwellings.
- Radon Protection Measures (RPM): No Radon protection is required for new dwellings or extensions constructed at this location.
- Commercial premises: On the basis that exposure limits for residential properties are more stringent than workspaces, it is concluded that no protection measures would be required for a commercial development at this site.

3.10 UXO Risk Assessment

Free online maps suggest the risk from UXO might be Low. As such, no further assessment is considered necessary at this stage.

4.0 CONCEPTUAL SITE MODEL (CSM)

4.1 Source-Pathway-Receptor (SPR) Model

The assessment of potential contamination risks follows a Source-Pathway-Receptor (SPR) approach, following established guidance and best practice. The principle of primary and secondary sources has been adopted:

- A **primary source** for instance a leaking tank or drainage, industrial activity, buried fill materials, etc, identified as part of the desk study and site walkover.
- A **secondary source** is the environmental media (or phases) in which any resulting contamination may occur, being soils, ground gases, volatile vapours, and groundwater:

Secondary source	Summary
Soil	Soils (Made Ground) contaminated with materials such as ash, clinker, bitumen, refuse, wastes, asbestos, etc [Endogenic] or soils contaminated by discharges, spillage, drainage, run-off, migration etc of contaminants from diffuse or point sources [Anthropogenic].
Ground water	Mobile contaminants entering groundwater, being either perched water (impermeable horizons such as clays or buried structures) or as a water table (more persistent water bodies within productive strata).
Volatile vapours	Volatile or semi-volatile compounds generating vapours which exist in a gas phase and may be generated from soils, groundwater or directly from storage such as underground tanks.
Ground gases	Ground gases occurring from a variety of natural and man-made sources, principally from the decomposition of waste materials, organic matter, organic contaminants. Examples include landfill sites, alluvium, and mine workings etc.

4.2 Qualitative Risk Assessment Framework

A qualitative estimate of risk associated with the identified source-pathway-receptor linkages has been made. Each source, pathway and receptor in each linkage is given a rating from 0-5, and the overall rating for the linkage is expressed as a multiple of the three numbers. The overall risk ratings are concluded in the next chapter (Preliminary Risk Assessment).

Rating	Source	Pathway	Receptor	SPR Linkage
Unlikely	0	0	0	0
Very Low	1	1	1	1-3
Low	2	2	2	4-17
Moderate	3	3	3	18-48
High	4	4	4	49-100
Very high	5	5	5	100+

The scoring is based on professional judgement and qualitative assessment of various factors:

Source - Whether it is on-site or off-site, the distance from the site, the age and time period, the history and evolution, whether it has been redeveloped and when, the overall magnitude or extent, any existing data or observations. Sources are identified from the conceptual site model.

Pathway - Proximity and relationship to the associated receptor, frequency, the ground conditions, flow directions, migration pathways. Pathways may vary between each source and each receptor.

Receptor - Direct or indirect effects, human health or non-human receptor, age classes, exposure duration and frequency, types of activity, materials, existing evidence of harm, quality of the receptor and significance of any harm. This will depend on any existing or proposed site uses.

Potential sources and Receptors are identified first, before identifying whether any active realistic pathways exist between them.

4.3 Primary Sources

Potential sources of contamination were identified and rated as follows:

Primary sources	Soils	Ground Water	Vapours	Ground Gases
Made Ground >1m - widespread (on site)	High	Moderate	Unlikely	Moderate
Commercial use with hair and beauty products manufacturer with electrical substation (on site)	High	Moderate	Moderate	Unlikely
Previous fire damage of onsite building and use of fire water (on site)	High	High	Moderate	Unlikely
Commercial sites surrounding site (off site)	Low	High	Moderate	Unlikely
OVERALL RATING	High	High	Moderate	Moderate

Made Ground may be present on site due to previous construction and the historic infilling of land prior to this. These materials may contain a wide range of potential contaminants including metals, non-metals, organic contaminants and asbestos. The likelihood of soil contamination is therefore rated to be High. Contaminants may be mobile and leach out into ground water, this has been rated as Moderate. The age and composition of Made Ground was such that the potential for significant generation of organic vapours was Unlikely. The depth of Made Ground was anticipated to be greater than 1.00m due to the historic lake being infilled and therefore was likely to be a significant source of ground gases.

The previous use of the site was as a commercial unit for hair and beauty products including hairspray with an electrical substation. The warehouse (dated ~1981) and these materials may contain a wide range of potential contaminants including metals, non-metals, organic contaminants and asbestos. The likelihood of soil contamination is therefore rated to be High. Contaminants may be mobile and leach out into ground water, this has been rated as Moderate. The composition of Made Ground was such that the potential for significant generation of organic vapours was Moderate. The potential for significant generation of ground gases was Unlikely.

There was a fire in June 2023 that burned down the previous warehouse with a record of contaminated water being a substantial pollution incident. The run-off water may contain a wide range of potential contaminants including metals, non-metals and organic contaminants. The

likelihood of soil contamination is therefore rated to be High. Contaminants may be mobile and leach out into ground water, this has been rated as High. The age and composition of Made Ground was such that the potential for significant generation of organic vapours was Moderate and source of ground gases Unlikely.

Surrounding the site (off site) were commercial warehouses including manufacturers of food and bathroom fixtures, engineering services, printers and haulage companies. Repair and servicing stations were present from 60m north. The likelihood of soil contamination is therefore rated to be Low. Contaminants may be mobile and leach out into ground water, this has been rated as High. The age and composition of Made Ground was such that the potential for significant generation of organic vapours was Moderate and source of ground gases Unlikely.

4.4 Potential Receptors

The following potential receptors associated with the site and the proposed development have been considered in this report:

Receptor	Rating	Justification
End Users	High	Occupants of the proposed redevelopment. The proposed development comprised an industrial warehouse.
Adjacent Land	Low	Sensitive land uses identified locally. The site was surrounded by industrial warehouses in all directions.
Soft Landscaping	Unlikely	No soft landscaping was proposed, with the site essentially covered with hardstandings.
Structural Concrete	Moderate	New foundations etc. cast in contact with the ground. The development was anticipated to include shallow foundations.
Water Supply Pipework	Moderate	Water supplies may be damaged or tainted when mains are laid in contaminated ground. New potable water mains are expected to be laid.
Groundwater	Unlikely	The site overlies strata classified as Unproductive Strata and is negligibly permeable therefore unlikely to be used for potable or commercial abstractions.
Surface Water	Moderate	Surface water in lakes and rivers etc. The nearest surface water feature is a stream located 16m northwest, which had contaminative run-off from the firefighting.

4.5 Receptors Excluded

The following potential receptors were excluded from the assessment as they are covered by other legislative controls and are outside the remit of this report.

- Ecological receptors such as statutory protected species or wildlife areas. An assessment of such risks was outside the scope of this report.
- Site workers such as those involved in construction work or future maintenance. Any risks posed to site workers would be controlled through Health & Safety legislation, including the CDM and COSHH regulations etc.

5.0 PRELIMINARY RISK ASSESSMENT (PRA)

5.1 SPR Linkages and Risk Ratings

The source-pathway-receptor linkages identified are summarised below:

Soils	Pathways	Rating	Receptor	Rating	Overall Rating
High	Dermal contact with soil and soil-borne dust	Low	End Users	High	Moderate
High	Ingestion of soil and soil-borne dust	Low	End Users	High	Moderate
High	Inhalation of soil-borne dust	Moderate	End Users	High	High
High	Consumption of homegrown produce	Unlikely	End Users	High	Unlikely
High	Inhalation of soil-borne dust	Moderate	Adjacent Land	Low	Moderate
High	Plant uptake, phytotoxic effects	Unlikely	Planting	Unlikely	Unlikely
High	Chemical attack	High	Concrete	Moderate	High
High	Chemical attack	High	Pipework	Moderate	High
High	Leaching-out, migration to water table	High	Groundwater	Unlikely	Unlikely
High	Leaching-out, migration to water bodies	High	Surface Water	Moderate	High

Ground Water	Pathways	Rating	Receptor	Rating	Overall Rating
High	Direct contact	Unlikely	End Users	High	Unlikely
High	Direct contact	Unlikely	Adjacent Land	Low	Unlikely
High	Plant uptake, phytotoxic effects	Very Low	Planting	Unlikely	Unlikely
High	Chemical attack	High	Concrete	Moderate	High
High	Chemical attack	Moderate	Pipework	Moderate	Moderate
High	Migration to Controlled Water receptor	Low	Groundwater	Unlikely	Unlikely
High	Lateral migration to water bodies	Moderate	Surface Water	Moderate	Moderate

Vapours	Pathways	Rating	Receptor	Rating	Overall Rating
Moderate	Inhalation, ignition	High	End Users	High	High
Moderate	Inhalation, ignition	High	Adjacent Land	Low	Moderate
Moderate	Root asphyxiation, phytotoxic effects	High	Planting	Unlikely	Unlikely
Moderate	Not a significant hazard	-	Concrete	Moderate	Unlikely
Moderate	Chemical attack	High	Pipework	Moderate	Moderate
Moderate	Not a significant hazard	-	Groundwater	Unlikely	Unlikely
Moderate	Not a significant hazard	-	Surface Water	Moderate	Unlikely

Ground Gases	Pathways	Rating	Receptor	Rating	Overall Rating
Moderate	Inhalation, ignition	High	End Users	High	High
Moderate	Inhalation, ignition	Low	Adjacent Land	Low	Low

Moderate	Root asphyxiation, phytotoxic effects	Low	Planting	Unlikely	Unlikely
Moderate	Not a significant hazard	-	Concrete	Moderate	Unlikely
Moderate	Not a significant hazard	-	Pipework	Moderate	Unlikely
Moderate	Not a significant hazard	-	Groundwater	Unlikely	Unlikely
Moderate	Not a significant hazard	-	Surface Water	Moderate	Unlikely

5.2 Other Factors

The following other areas of possible concern were identified, but were outside the geo-environmental risk assessment:

Site managers are responsible for the safety of persons in their employ under a variety of instruments including the CDM regulations and Health & Safety at Work Act. In terms of working on contaminated sites, guidance can be sought from the CIRIA publication entitled "A Guide for Safe Working on Contaminated Sites". Any work in confined spaces should only be carried out following appropriate risk assessment. Detailed risk assessment for workers is outside the scope of this report.

Unexpected soil conditions may be encountered during the process of site demolition and construction. Examples may include oily pockets within the soil, pockets of cement boarding or fibrous materials within the soil, black ashy materials, soils exhibiting strong odours, brightly coloured materials, and former structures or brickwork. Should previously undiscovered contamination be encountered during construction by the ground worker's, this should be reported to the Geo-Environmental Consultant immediately in order that any necessary inspection may be made. All site workers should be made aware of their responsibility to observe, report, and act on any potentially suspicious or contaminated materials they may encounter.

6.0 SUMMARY PHASE I ASSESSMENT

6.1 Qualitative Ratings

Overall, the level of risk ranged between Unlikely and High. Consequently, a **High** level of risk has been assigned to the site in respect of the proposed development. This is primarily due to the chemicals associated with the previous use of the site and recent fire / use of firewater.

6.2 Recommendations

It would be necessary to undertake basic ground investigation works, which may include;

- To establish if/where the culverted stream flows under the site.
- Shallow boreholes, to assess the composition and depth of any Made Ground and any field evidence of contamination into the underlying soils.
- Installation of monitoring wells where any Made Ground is found to be over 1m thick, if there is the presence of any hydrocarbon impacted soils or presence of any substantial organic matter associated with the former stream / lake.
- Selected samples (including materials bearing field evidence of contamination) should be sent for laboratory analysis. The main analytical suite is identified below.
- Targeting areas including the former fire damaged building, location of former electrical substation, areas of existing / proposed soft landscaping.
- Soil samples should be screened for vapours using a Photoionisation Detector (PID).
- Monitoring for ground gases; three preliminary return visits at different weather/pressure conditions to record levels of common ground gases (carbon dioxide, methane, oxygen, VOC's) gas flow rates, and water levels.

The analytical suite, based on the known site history and walkover survey, should include:

- General parameters: Acidity (pH), fraction of organic carbon.
- Metals; Arsenic, Cadmium, Chromium (total), Lead, Mercury, Selenium, Boron, Copper, Nickel and Zinc.
- Non metals: water soluble Sulphate, Sulphide, total Cyanide.
- Targeted organic parameters; TPH, BTEX, Speciated PAHs, PCBs, VOCs and SVOCs, scheduled based on PID screening and field evidence etc.
- Firefighting chemicals: fire retardants that may contain polyfluoroalkyl substances (PFAS).
- Visual asbestos screening of all Made Ground samples. Where possible asbestos fibres or ACMs are identified, these should be examined under a microscope to determine type.

Further positions may be required, additional samples analysed or additional determinands added to the analysis, as appropriate, based on any field evidence of possible contamination encountered.

In addition, the requirement for Waste Acceptance Criteria (WAC) testing should be considered to categorise soils in terms of disposal.

It would be prudent to confirm the scope of ground investigation works with the Local Authority and other stakeholders before carrying out these works.

REFERENCES

A number of technical references have been referred to in the preparation of this document, including:

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- Highways England 2009. Interim Advice Note 73/06 revision 1: Design Guidance for Road Pavement foundations (draft HD25).
- BRE Design Guide 365. Soakaway design ("DG365").
- Radon: Guidance on protective measures for new buildings, BRE Report BR 211, 2015 2ND edition.
- Groundwater protection: Principles and practice (GP3) August 2013 Version 1.1.
- Revised EU Waste Framework Directive 2008 2008/98/EC [transposed into English law under The Waste (England and Wales) Regulations 2011].
- European Community (EC) Directive 1999/31/EC [transposed into English law under the Landfill (England and Wales) Regulations 2002].
- Defining Waste Recovery - Permanent Deposit of Waste on Land, EPA13 v1.0, EA 2010.
- The definition of waste: Development Industry Code of Practice, v2, CL:AIRE 2011.
- Guidance on the classification and assessment of waste Technical Guidance WM3 ("WM3") EA publication (1st edition 2015).

REPORT CONDITIONS

The Client

This report may also be used only by the client named in section 1 and their appointed project team for the purpose of design, obtaining planning, building regulations approval, and in connection with finance. This report must not be used by any other persons or for other purposes without express written agreement of Land Science.

General

Land Science takes all reasonable professional care in preparation of this report, using current standards and industry practice. However, the evaluation of ground conditions depends on an interpretation and extrapolation of the conditions revealed by a limited data set. The level of risk is related to the extent of investigation and no site is ever free of risk. The client should understand their risks and liabilities. We accept no liability whatsoever in respect of:

- The scope, extent or design of an investigation.
- Any conditions not directly revealed by the investigation.
- Published standards or methodologies used or adopted in this report.
- The opinion of any other party including any regulator, authority or stakeholder.
- Any dispute, claim or consequential loss arising from any findings of this report.
- Third party information and data.

This report relates solely to ground-related matters as set out in the objectives and makes no representation on other matters such as ecology, arboriculture, invasive plant species, the condition of buildings and structures, hazardous building materials such as insulation or asbestos, the locations of boundaries, unexploded ordnance, and or planning constraints etc. Further reports should be commissioned in this respect as appropriate.

Regulators and Approvals

This (and any other) report should be submitted to relevant authorities for their own assessments and to provide their approval or comments accordingly. This should be in good time before commencing on site in case additional work is to be carried out.

Standards, technical guidance and regulatory positions change over time and which may therefore affect the findings and recommendations made in this report; this should be verified by the client prior to any critical project milestones. Where this information is used in design, the designer should verify that the information is appropriate and has been used correctly.

Variations with time

The report relates to conditions revealed at the time of the investigation and any monitoring visits. Some parameters may vary over time or seasonally; groundwater levels, ground gas compositions, or concentrations of contaminants are particularly variable in this respect. Further monitoring or verification should be considered as appropriate.

GLOSSARY OF TERMS

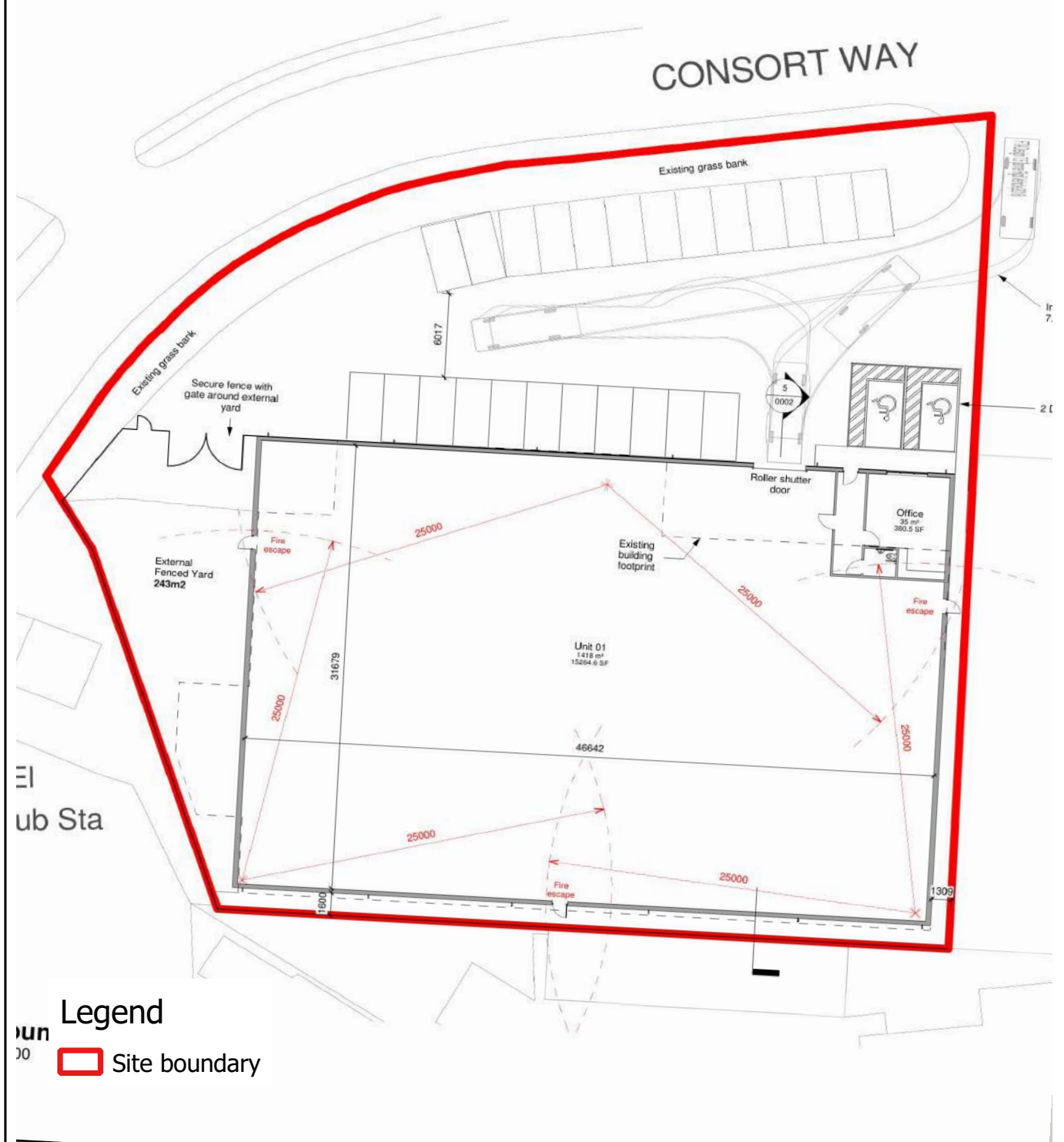
ACM	Asbestos Containing Material
BGS	British Geological Survey
BRE	Building Research Establishment
BS	British Standard
C4SL	Category 4 Screening Level
CBR	California Bearing Ratio
CDM	Construction Design and Management regulations
CIRIA	Construction Industry Research and Information Association
CL:AIRE	Contaminated Land: Applications in Real Environments
CLEA	Contaminated Land Exposure Assessment model
CSM	Conceptual Site Model
EA	Environment Agency
EQS	Environmental Quality Standards
FOC	Fraction of Organic Carbon
GAC	Generic Assessment Criterion
GQRA	Generic Quantitative Risk Assessment
mbgl	Meters Below Ground Level
NHBC	National House Building Council
mOD	Metres above Ordnance Datum
PAH's	Polycyclic Aromatic Hydrocarbons
PHE	Public Health England
PID	Photo-Ionisation Detector
PQRA	Preliminary Quantitative Risk Assessment
PSD	Particle Size Distribution Test
RMS	Remediation Method Statement
S4UL	Suitable for Use Level
SOM	Soil Organic Matter
SPZ	Source Protection Zone
SPT	Standard Penetration Test
SSSI	Sites of Special Scientific Interest
ST-WEL	Short Term Workplace Exposure Limit
SVOC's	Semi-Volatile Organic Compounds
TPH	Total Petroleum Hydrocarbons
TRRL / TRL	Transport Road Research Laboratory
TWA-WEL	Time Weighted Average Workplace Exposure Limit
UK HBF	United Kingdom House Building Federation
VOC's	Volatile Organic Compounds
WAC	Waste Acceptance Criteria



	Title: Site Location			Reference: LS7961
	Project: Capital Warehouse, Consort Way, Burgess Hill			Figure: 1
	Client: PGQ Property			Date: 08/10/2024
	Prepared by: ON	Checked by: JM	Version: 01	Sheet: 1 of 1



	Title: Existing layout			Reference: LS7961
	Project: Capital Warehouse, Consort Way, Burgess Hill			Figure: 2
	Client: PGQ Property			Date: 08/10/2024
	Prepared by: ON	Checked by: JM	Version: 01	Sheet: 1 of 1



			Title: Proposed Development Layout		Reference: LS7961	
			Project: Capital Warehouse, Consort Way, Burgess Hill		Figure: 3	
			Client: PGQ Property		Date: 08/10/2024	
			Prepared by: ON	Checked by: JM	Version: 01	Sheet: 1 of 1