



EnviroSmart Pro

| | |
|-----------------------|--|
| Site address | Land to rear of Shops 25 & 27 Bishop Lane Parish Town Countyshire CW58 3YU |
| Site coordinates | 300000, 350000 |
| Report prepared for | Mr. John Smith Design House Architect Row Plan City CW59 3PB |
| Report reference | SAMPLR1 |
| Report status | Final |
| Date issued | August 2017 |
| Report author | Kathryn Mair Project consultant |
| Report check & review | Andy Singleton Technical Director |

Report summary: contaminated land risks



The purpose of this EnviroSmart report is to provide clear and pragmatic advice regarding the nature and potential significance of contaminated land hazards which may be present at the study site.

As such, potential contaminated land risks have been assessed by considering two key items:

1. The likelihood that **sources of contamination** are present within the sub surface beneath the site. This gives a measure of the potential for contamination to be occurring at the site.
2. The **consequence or severity of any impacts** should contamination be present. The consequence or severity of impact is inferred from the nature of any **potential receptors** (i.e., something that could be adversely affected by a contaminant, such as people, an ecological system, property or a water body) as well as any **relevant pathways** (i.e., a route or means by which a receptor can be exposed to or affected by a contaminant) relating to the site and the surrounding area.

The assessment findings are summarised as follows:

| | | |
|---|-----------------------|--|
| 1. Probability/likelihood of contamination being present at the Site | High likelihood | |
| | Likely | |
| | Low likelihood | |
| | Unlikely | |
| 2. Potential severity/consequence of any impacts | Severe | |
| | Medium | |
| | Mild | |
| | Minor | |
| 3. Overall land quality risks posed by the Site | Very high | |
| | High | |
| | Moderate | |
| | Moderate/low | |
| | Low | |
| | Very low | |

Risk Key

| Very High | High | Moderate | Moderate/Low | Low | Very Low |
|--|---|---|--|---|--|
| There is a high probability that severe harm could arise to a designated receptor from an identified hazard without appropriate remediation action | Harm is likely to arise to a designated receptor from an identified hazard at the site without appropriate remediation action | It is possible that without appropriate remediation action harm could arise to a designated receptor. It is relatively unlikely that any such harm would be severe, and if any harm were to occur it is more likely that such harm would be relatively mild | It is possible that harm could arise to a designated receptor from an identified hazard. It is likely any harm would be mild | It is possible that harm could arise to a designated receptor from an identified hazard. It is likely that, at worst if any harm was realised any effects would be mild | The presence of an identified hazard does not give rise to the potential to cause harm to a receptor |

It is acknowledged that the risk assessment findings are based on documentary sources of information alone. Typically a proportionate programme of intrusive site investigations would be required to fully verify these findings.

Recommendations (for next steps)



| | | |
|---|-----------------------------------|--|
| ✓ | Phase 2 site investigation | Given the nature of the historical land use and therefore the potential for significant contamination to be present at the Site, it is recommended that a proportionate programme of site investigation and monitoring works be undertaken in order to establish the presence or absence of contamination and to enable a quantitative assessment of the associated environmental risks. |
|---|-----------------------------------|--|

GeoSmart would be delighted to provide further information in relation to the above recommendations.

Please contact info@geosmartinfo.co.uk for further advice.

1. Introduction

1.1 Background

The study site (from herein known as 'the Site') is situated at Land to rear of Shops 25 & 27 in Bishop Lane, Parish Town. A location plan of the Site is shown in Section 1.5. A proposed development plan of the Site is shown in Section 1.6.

GeoSmart was commissioned by Mr. John Smith in January 2016 to undertake a Phase 1 Land Quality Assessment for the Site. The report has been requested in order to support a proposed planning application for the Site.

The proposed development is for the demolition of the rear of existing buildings and constructing two residential properties with associated parking space.

The EnviroSmart report has been undertaken by firstly compiling information concerning the Site and the surrounding area, including current and historical land uses, geological records and registered pollution incidents. The information which is gathered is then used to construct a 'conceptual site model', including an understanding of likely contaminant sources, pathways and receptors. Finally, a preliminary assessment of risks posed to identified receptors (i.e., people, buildings or the natural environment) from the anticipated land quality at the Site is performed. The risk assessment methodology is consistent with CIRIA C552 (2001); see Section 3.4 for details.

1.2 Purpose of this report

The purpose of this EnviroSmart report is to provide clear and pragmatic advice regarding the nature and potential significance of contamination hazards which may be present at the Site.

1.3 Report contents

This report is divided into two sections, as described below:

| Section | Content | Purpose |
|--|---|---|
| Section 2: LAND QUALITY ASSESSMENT | A summary of the site history and environmental setting, the findings of the preliminary risk assessment and associated recommendations | To present a clear and concise overview of the land quality issues facing the Site, including recommendations of how to manage any land contamination which may be present |
| Section 3: SUPPORTING INFORMATION | A collection of site specific information on which the land quality assessment is based | To provide detailed information in support of the risk assessment; this section also represents a source of reference data for use in any subsequent site works/assessments |

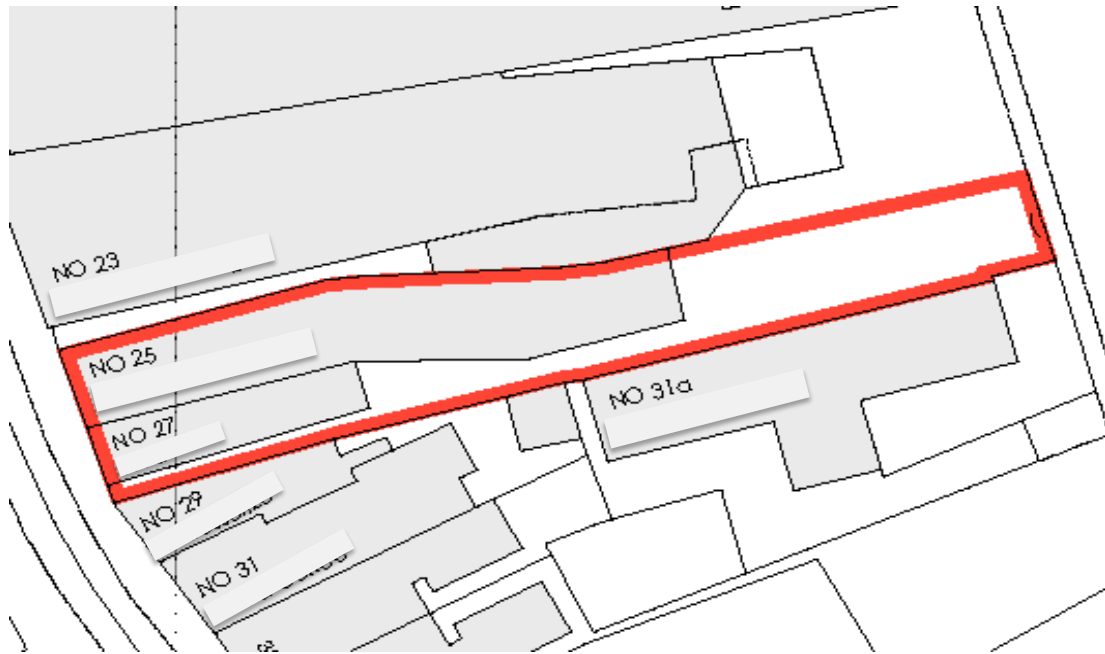
1.4 Report limitations

It is noted that the findings presented in this report are largely based on information supplied by third parties. Whilst we assume that all information is representative of past and present conditions we can offer no guarantee as to its validity.

This report excludes consideration of potential hazards arising from any activities at the Site other than normal use and occupancy for the intended land uses. Hazards associated with any other activities have not been assessed and must be subject to a specific risk assessment by the parties responsible for those activities.

1. Introduction

1.5 Site location plan



1. Introduction

1.6 Proposed site development plan




2. Land quality assessment



2.1 Site details

| | | | |
|---------------|--|---------------------|-------------------|
| Site name: | Land to rear of Shops 25 & 27 | Current land cover: | 100% hardstanding |
| Current use: | Active commercial/industrial development | | |
| Proposed use: | Residential | Site area: | 0.05 ha |




2.2 Conceptual understanding (potential sources of contamination)

|  Site history <i>(historical land use taken within 250m radius of the Site boundary)</i> | Date | Description of land use | POTENTIAL SOURCES OF CONTAMINATION | Source description | PROBABILITY OF CONTAMINATION LIKELY |
|--|--|--|---|---|--|
| | 1898 | The Site is developed at this time with one large narrow structure located on the north western boundary with a smaller structure adjoining to the south western boundary. Two small outbuildings are present to the centre of the Site. | | POTENTIAL SOURCES OF CONTAMINATION | |
| 1921 | Further development on-Site. Two small structures are now located along the southern boundary of the Site. | | | | |
| 1939 | The small structures to the southern boundary are no longer present. A further small structure is now present adjacent to the northern boundary. The land c. 230m to the south east is now used as a saw mill, while the area c. 70m to the east is mapped as a council yard. | | | | |
| 1968 | The Site now has one long narrow structure constructed along the northern boundary and one smaller narrow structure adjoining to the south western boundary. | | | | |
| 1975 | No change on-Site. A large structure is located c. 70m east, on the land of the previously marked as a council yard, now labelled as a car park. The saw mill is no longer mapped at this time. The land c.220 m to the east is being used as vehicle repair workshop and builders yard. | | | | |
| 2000 | Aerial imagery shows no change to the Site. | | | | |
| 2005 | Aerial imagery shows no change to the Site. The surrounding area is undergoing major development. The previously mentioned car park, vehicle repair workshop and builders yard are all demolished at this time. | | | | |
| 2010 | Aerial imagery shows no change to the Site. A large structure has been constructed c. 70m to the east of the Site, aerial imagery shows the building as mixed residential and retail use. | | | | |
| 2013 | Aerial imagery shows that no change has occurred on Site (see environmental data report in Section 3.3 for image). | | | | |

2. Land quality assessment



| 2.2 Conceptual understanding (potential sources of contamination) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|--|------------------|---|---|---------|----------------------|---|----|------------------------------------|---|----|--|---|---------|--|---|--------|--|---|----|---|---|---------|---|---|----|----------------------------------|---|----|---|--|
|  <p>Current land use</p> | <p>The Site is currently used for retail use and car parking</p> <p>There are no known buried storage tanks at the Site.</p> <p>There is no known bulk fuel or chemical storage on Site.</p> <p>Additional information concerning the current Site condition is presented in Section 2.5 (site walkover information).</p> | POTENTIAL SOURCES OF CONTAMINATION | <p>Given the Site's current use, there is potential for localised contamination relating to the following:</p> <p>Vehicle parking at the Site may result in leakage of small quantities of engine oil, fuel, antifreeze, etc.</p> <p>LOW LIKELIHOOD</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  <p>Neighbouring land uses <i>(see environmental data report in Section 3.3 for full listing)</i></p> | <p>One or more potentially contaminative land uses are located within the vicinity of the Site, including:</p> <p>Water pumping station c.10 m south east</p> <p>General construction supplies c.55 m west</p> <p>Dry cleaners c. 75 m to the north</p> <p>Medical equipment, supplies and pharmaceuticals company c.90 m north</p> <p>Published goods company c.100 m north - published goods</p> <p>Electricity Sub Station c.110 m south, c.185 m north and c. 245 m east</p> <p>Industrial products company c.120 m north</p> <p>Colours, chemicals and water softeners and supplies c.120 m north</p> <p>Travelling cranes and gantries c.170 m north</p> <p>Pesticides distributor c.230 m</p> <p>Works c.240 m - unspecified works or factories</p> <table border="1"> <thead> <tr> <th>Nr</th> <th>Nearest distance</th> <th>Land use / permitted activity / authorisation</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>c.475 m</td> <td>Petrol or fuel sites</td> </tr> <tr> <td>0</td> <td>NA</td> <td>High pressure oil or gas pipelines</td> </tr> <tr> <td>0</td> <td>NA</td> <td>Records of IPC or IPPC Authorised Activities</td> </tr> <tr> <td>1</td> <td>c.450 m</td> <td>Red List / List 1 / List 2 Dangerous Substance Inventory Sites</td> </tr> <tr> <td>3</td> <td>c.70 m</td> <td>Part A(2) and Part B Activities and Enforcements</td> </tr> <tr> <td>0</td> <td>NA</td> <td>Records of Category 3 or 4 Radioactive Substance Licences</td> </tr> <tr> <td>5</td> <td>c.265 m</td> <td>Records of Licensed Discharge Consents.</td> </tr> <tr> <td>0</td> <td>NA</td> <td>COMAH and NIHHS registered sites</td> </tr> <tr> <td>0</td> <td>NA</td> <td>Sites determined as Contaminated Land under Part IIA of the Environmental Protection Act 1990</td> </tr> </tbody> </table> | | Nr | Nearest distance | Land use / permitted activity / authorisation | 1 | c.475 m | Petrol or fuel sites | 0 | NA | High pressure oil or gas pipelines | 0 | NA | Records of IPC or IPPC Authorised Activities | 1 | c.450 m | Red List / List 1 / List 2 Dangerous Substance Inventory Sites | 3 | c.70 m | Part A(2) and Part B Activities and Enforcements | 0 | NA | Records of Category 3 or 4 Radioactive Substance Licences | 5 | c.265 m | Records of Licensed Discharge Consents. | 0 | NA | COMAH and NIHHS registered sites | 0 | NA | Sites determined as Contaminated Land under Part IIA of the Environmental Protection Act 1990 | <p>The potentially contaminative land uses/activities identified in close vicinity of the Site may pose a contamination hazard to the Site should relevant contaminant pathways exist.</p> <p>It is however recognised that no land uses are/have been present within the immediate vicinity of the Site which are likely to pose a significant contamination risk.</p> <p>LOW LIKELIHOOD</p> |
| Nr | Nearest distance | Land use / permitted activity / authorisation | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | c.475 m | Petrol or fuel sites | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0 | NA | High pressure oil or gas pipelines | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0 | NA | Records of IPC or IPPC Authorised Activities | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | c.450 m | Red List / List 1 / List 2 Dangerous Substance Inventory Sites | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | c.70 m | Part A(2) and Part B Activities and Enforcements | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0 | NA | Records of Category 3 or 4 Radioactive Substance Licences | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | c.265 m | Records of Licensed Discharge Consents. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0 | NA | COMAH and NIHHS registered sites | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0 | NA | Sites determined as Contaminated Land under Part IIA of the Environmental Protection Act 1990 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

2. Land quality assessment

| 2.2 Conceptual understanding (potential sources of contamination) | | | | | | | | | | |
|---|---|---|---|---|---|---|---|--|---|-----------------|
|  <p>EA recorded pollution incidents</p> | <p>One or more Environment Agency pollution incidents have been recorded within 250 m of the Site. These include:</p> <p>An incident occurred in 2001 c. 165 m to the north east of the Site. This included a spillage of an unidentified pollutant. No impacts to land, water or air were recorded.</p> <p>An incident occurred in 2003 c. 190 m to the south east of the Site. This included a spillage of an unidentified pollutant. Minor impacts to water were recorded.</p> <p>An incident occurred in 2002 c. 240 m to the north east of the Site. This included a spillage of contaminated water. Minor impacts to land were recorded.</p> <p>One or more National Incidents have been recorded within 250 m of the Site. These include:</p> <p>An incident occurred in 2000 c.165 m to the southeast of the Site. The contaminant type is unknown. Significant impacts to water were recorded.</p> | POTENTIAL SOURCES OF CONTAMINATION | <p>Given the scale, timing, location and nature of the recorded incidents these past events do not appear to pose a significant contamination hazard to the Site.</p> | UNLIKELY | | | | | | |
|  <p>Landfills / waste sites <i>(taken within 500m radius of the Site boundary, see environmental data report in Section 3.3 for full listing)</i></p> | <p>There are no Environment Agency listed historical landfills located within 500 m of the Site.</p> <p>There are no Environment Agency listed operational landfills located within 500 m of the Site.</p> <p>There are no Local Authority listed historical landfills located within 500 m of the Site.</p> <p>The following other waste sites are registered within 500 m of the Site:</p> <table border="0"> <tr> <td style="padding-right: 20px;">0</td> <td>Records of operational waste treatment, transfer or disposal sites.</td> </tr> <tr> <td>2</td> <td>Records of non-operational waste treatment, transfer or disposal sites.</td> </tr> <tr> <td>0</td> <td>Records of Environment Agency waste sites.</td> </tr> </table> | | 0 | Records of operational waste treatment, transfer or disposal sites. | 2 | Records of non-operational waste treatment, transfer or disposal sites. | 0 | Records of Environment Agency waste sites. | <p>Given the absence of any historical or operational landfills within close proximity of the Site no associated contamination hazards have been identified.</p> <p>The local waste management site (c. 315 m to the SE) is not thought to represent a significant source of contamination which may impact on the Site given the relative distance to the Site and the regulated nature of current activities.</p> | UNLIKELY |
| 0 | Records of operational waste treatment, transfer or disposal sites. | | | | | | | | | |
| 2 | Records of non-operational waste treatment, transfer or disposal sites. | | | | | | | | | |
| 0 | Records of Environment Agency waste sites. | | | | | | | | | |
|  <p>Radon</p> | <p>According to current UK radon mapping the Site lies in an area where 0 to 1 % of homes are at or above the UK radon action level (200 Bq/m3).</p> | <p>0 to 1 % of homes are at or above the UK radon action level (200 Bq/m3).</p> | UNLIKELY | | | | | | | |




2. Land quality assessment

2.3 Conceptual understanding (environmental sensitivity / potential severity of impacts)

| | | POTENTIAL RECEPTORS | | POTENTIAL SEVERITY OF IMPACT | |
|---|--|---|----------------------|--|--------------------|
|  <p>Geology and Groundwater (see the environmental data report in Section 3.3 for full details)</p> | <p>British Geological Survey mapping indicates that the underlying superficial geology consists of Head (which comprises clay, silt, sand and gravel) and is classified as a Secondary Aquifer (Undifferentiated). Alluvium (which comprises clay, silt, sand and gravel) and Glaciofluvial Deposits (which comprise sand and gravel) are mapped within 50 m of the Site and may extend beneath the Site. Both formations are classified as Secondary (A) Aquifers.</p> <p>British Geological Survey mapping indicates that the bedrock geology consists of Lewes Nodular Chalk Formation and Seaford Chalk Formation, which comprises of chalk and is classified as a Principal Aquifer. The Thanet Sand Formation and Lambeth Group which comprises clay, silt and sand is mapped within 50 m of the Site and may extend beneath the Site. This formation is classified as a Secondary (A) Aquifer.</p> <p>The Site lies within a 'potential for groundwater flooding of property situated below ground level' groundwater flood risk susceptibility area based on the underlying geological conditions. The British Geological Survey confidence rating for this susceptibility classification is 'high'.</p> <p>The Site lies within an inner Source Protection Zone (SPZ).</p> <p>The following groundwater abstraction licences are held within 1 km of the Site: One potable water abstraction located c. 65 m south of the Site.</p> | <p>A Secondary (Undifferentiated) Aquifer is assigned in cases where it has not been possible to attribute either category A or B to a rock type. In most cases, this means that the layer in question has previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type.</p> <p>A Secondary (A) Aquifer comprises permeable layers capable of supporting water supply at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers.</p> <p>A Principal Aquifer comprises rock or drift deposits that have high permeability - meaning they usually provide a high level of water storage. They may support strategic water supply and/or river base flow.</p> <p>Based on the susceptibility of the Site to groundwater flooding, a groundwater flood risk assessment should be considered for the Site.</p> <p>The depth to groundwater beneath the Site is unknown.</p> <p>The presence of one or more groundwater abstraction licences within close proximity of the Site indicates a reasonable groundwater resource potential.</p> | <p>SEVERE</p> | <p>POTENTIAL SEVERITY OF IMPACT</p> | |
|  <p>Geohazards</p> | <p>The Site does not lie within a 'Coal Mining Reporting Area'.</p> <p>There are no brine affected areas within 75 m of the Site.</p> <p>Artificial ground / Made Ground is anticipated on Site.</p> <p>The following natural hazards are present at or within 50 m of the Site: Compressible ground deposits</p> | <p>The Site does not lie within an identified coal mining area and is therefore unlikely to be affected by related ground stability or mine gas issues.</p> <p>The Site does not lie within an area of former brine working and is therefore unlikely to be affected by related ground stability issues.</p> <p>The Site has moderate hazard rating for compressible ground deposits at or within 50 m of the Site, as such consideration should be given to this hazard as part of the redevelopment plans.</p> | | | <p>MILD</p> |

2. Land quality assessment



| 2.3 Conceptual understanding (environmental sensitivity / potential severity of impacts) | | | | |
|---|--|----------------------------|--|----------------|
|  <p>Surface water <i>(see the environmental data report in Section 3.3 for full details)</i></p> | <p>The nearest water features are a culvert on-Site and the River Stort, a primary watercourse located c.110 m south east.</p> <p>The Site does not lie within a 1 in 1000 (Zone 2) year flood risk zone.</p> <p>The following surface water abstraction licences are held within 1 km of the Site:</p> <p>One transfer between sources abstraction located c.290 m north of the Site.</p> | POTENTIAL RECEPTORS | <p>The relatively close proximity of the identified surface water feature(s) suggests that a potential linkage could occur if any contamination were present on Site. Mobile contamination may potentially enter nearby water features via any shallow groundwater or possibly via preferential flow pathways such as buried services.</p> | MEDIUM |
|  <p>Environmental designations <i>(see the environmental data report in Section 3.3 for full details)</i></p> | <p>There are no environmentally sensitive areas within 500 m of the Site.</p> | | <p>No relevant environmentally designated sites/receptors have been identified.</p> | NO RISK |
|  <p>Human receptors</p> | <p>Proposed residents/users of the Site plus neighbouring residences.</p> | | <p>Human receptors are proposed to be present on Site.</p> | SEVERE |

POTENTIAL SEVERITY OF IMPACT

2. Land quality assessment



| 2.4 Regulator perspective | | |
|---------------------------|---|------------------------------|
| Consultation date | 20th January 2016 | High Sussex District Council |
| GeoSmart consultant | Kathryn Mair | Andrew Andrews |
| Consultation outcome | The Council is aware that there may be Made Ground on Site and given the sensitive nature of the controlled waters within the vicinity of the Site it is considered that the Site may present a contamination risk. | |

2. Land quality assessment



| 2.5 Site inspection (see photographs in section 3.2) | | | |
|--|--|-------------------------|--|
| Inspection date | 20th January 2016 | General site condition | Good |
| Envirep consultant | Kathryn Mair | Site contact (position) | - |
| Topography | The Site slopes up from the road in the east to the high street in the west (by 2-3m). The development area of Site has approximately a 1m rise from east to west. | Ground cover | Car park comprises compact crushed concrete gravel with 2m wide 7m long concrete pad adjacent to the eastern access road. A concrete path is present along a walkway starting 1m east of the Shop 25 storage building. Asphalt along walkway 3m from high street to the east end of Shop 27. Only 1 mature cherry tree on north boundary 6m from road (3m high) and occasional weeds next to fence. |
| Current site land use | Retail shops to west of the Site and car parking to the east of the Site. | On-Site structures | Excluding the retail shops present on-Site, there are no structures present in the car parking area. A single storey brick (4-6 m in height), flat roofed building of 'Shoe Zone' store (to be demolished) is present and a 6m high brick constructed 'Riva' shop has overhead link to southern building. |
| Visual / olfactory evidence of contamination | No visual or olfactory evidence of any on site contamination was observed during the site walkover | On site drainage | There is a grill-type cover to an underlying sewer (3m to invert) with flow direction from the northern end of the car park, 18m from road and 3m from northern boundary. There are a series of five metal covers running along walkway with one in the car park on-Site 4m east of concrete and 4m north of cafe wall. |
| Bulk storage tanks (fuel and chemical storage) | No direct evidence of any bulk fuel or chemical storage was observed during the site walkover | Invasive species | No direct evidence of any invasive species was observed during the site walkover |

2. Land quality assessment



| 2.5 Site inspection (see photographs in section 3.2) | | | | |
|--|--|--|--|--|
| Neighbouring land uses | North | Clothing store and flats with car park to east | Off-site contaminant sources | No visual or olfactory evidence of any off site contamination was observed during the site walkover. |
| | South | Cafe to south east and retail shops and residences to south west | | |
| | East | Road and multi-storey car park | | |
| | West | High street and shops | | |
| Local water features | No evidence of any surface water features was observed within the immediate vicinity of the site during the site walkover. No visual evidence of the culvert running adjacent to the Site. | | Distance to nearest residential property | The nearest residential accommodation is currently located directly adjacent to the Site. |
| Comments | | | | |



2. Land quality assessment

| 2.6 Preliminary Risk Assessment | | | | | | | | | |
|---------------------------------|---|---|------|---|---------------|-----------------------|--------------------------|---|---|
| Nr | Sources | Pathways | TYPE | Receptors | Consequence | Probability | Risk classification | Comments | |
| On-Site sources | | | | | | | | | |
| 1 | Potential for inorganic and low volatility organic contaminants to be present within the subsurface soils | Dermal contact, soil & soil dust ingestion, inhalation of soil dust | HH | Current/future site occupants | MEDIUM | UNLIKELY | LOW RISK | Given the proposed presence of hard standing across the entire Site, routine exposure to any sub surface contamination is considered unlikely. | |
| 2 | | Consumption of home grown produce | HH | Current/future site occupants | MEDIUM | UNLIKELY | LOW RISK | | |
| 3 | | Ingress into water supply pipework and subsequent water ingestion | HH | Current/future site occupants | MEDIUM | UNLIKELY | LOW RISK | | Reflects likely absence of gross contamination |
| 4 | | Building materials in direct contact with aggressive ground | PROP | Current/future site buildings | MILD | UNLIKELY | VERY LOW RISK | | Significantly aggressive ground is not anticipated on-Site. |
| 5 | | Dissolution into pore water/shallow groundwater and subsequent migration | CW | Head Secondary (Undifferentiated) Aquifer | MEDIUM | LOW LIKELIHOOD | MODERATE/LOW RISK | The risk classification reflects the local groundwater sensitivity (high resource value) and the presence of a groundwater abstraction licence (associated with the underlying Principal Aquifer) located within 100 m of the Site. | |
| 6 | | Dissolution into pore water/shallow groundwater and subsequent migration | CW | Alluvium and Glaciofluvial Deposits (Secondary (A) Aquifers) | MEDIUM | LOW LIKELIHOOD | MODERATE/LOW RISK | | |
| 7 | | Dissolution into pore water/shallow groundwater and subsequent migration | CW | Lewes Nodular Chalk Formation and Seaford Chalk Formation (a Principal Aquifer) | SEVERE | LOW LIKELIHOOD | MODERATE RISK | | |
| 8 | | Dissolution into pore water/shallow groundwater and subsequent migration | CW | Thanet Sand Formation and Lambeth Group (a Secondary (A) Aquifer) | MEDIUM | LOW LIKELIHOOD | MODERATE/LOW RISK | | |
| 9 | | Dissolution into pore water/shallow groundwater and subsequent lateral migration | CW | Culvert on-Site and the River Stort. | MEDIUM | UNLIKELY | LOW RISK | | The risk classification reflects the culverted nature of the water feature on-Site and the reasonable distance to the nearest surface water feature |
| 10 | | Dissolution into aqueous phase and preferential migration via drainage structures | CW | Culvert on-Site and the River Stort. | MEDIUM | UNLIKELY | LOW RISK | | |



2. Land quality assessment

| 2.6 Preliminary Risk Assessment | | | | | | | | |
|---------------------------------|---|---|------|---|---------------|-----------------------|--------------------------|---|
| Nr | Sources | Pathways | TYPE | Receptors | Consequence | Probability | Risk classification | Comments |
| 11 | Potential for volatile organic contaminants to be present within the subsurface soils | Dermal contact, ingestion & inhalation of soils & soil dust | HH | Current/future site occupants | MEDIUM | UNLIKELY | LOW RISK | Given the proposed presence of hard standing across the entire Site, routine exposure to any sub surface contamination is considered unlikely. |
| 12 | | Consumption of home grown produce | HH | Current/future site occupants | MEDIUM | UNLIKELY | LOW RISK | |
| 13 | | Ingress into water supply pipework and subsequent water ingestion | HH | Current/future site occupants | MEDIUM | UNLIKELY | LOW RISK | |
| 14 | | Migration of vapours to surface; inhalation indoors | HH | Current/future site occupants | MEDIUM | LOW LIKELIHOOD | MODERATE/LOW RISK | It is likely that the source mass associated with any volatile contaminants that were originally present on-Site may have been significantly reduced due to the effects of volatilisation and degradation |
| 15 | | Migration of vapours to surface; inhalation outdoors | HH | Current/future site occupants | MILD | LOW LIKELIHOOD | LOW RISK | |
| 16 | | Building materials in direct contact with aggressive ground | PROP | Current/future site buildings | MILD | UNLIKELY | VERY LOW RISK | Significantly aggressive ground is not anticipated on-Site. |
| 17 | | Dissolution into pore water/shallow groundwater and subsequent migration | CW | Head Secondary (Undifferentiated) Aquifer | MEDIUM | LOW LIKELIHOOD | MODERATE/LOW RISK | The risk classification reflects the local groundwater sensitivity (high resource value) and the presence of a groundwater abstraction licence (associated with the underlying Principal Aquifer) located within 100 m of the Site. |
| 18 | | Dissolution into pore water/shallow groundwater and subsequent migration | CW | Alluvium and Glaciofluvial Deposits (Secondary (A) Aquifers) | SEVERE | LOW LIKELIHOOD | MODERATE RISK | |
| 19 | | Dissolution into pore water/shallow groundwater and subsequent migration | CW | Lewes Nodular Chalk Formation and Seaford Chalk Formation (a Principal Aquifer) | MEDIUM | LOW LIKELIHOOD | MODERATE/LOW RISK | |
| 20 | | Dissolution into pore water/shallow groundwater and subsequent migration | CW | Thanet Sand Formation and Lambeth Group (a Secondary (A) Aquifer) | MEDIUM | LOW LIKELIHOOD | MODERATE/LOW RISK | |
| 21 | | Dissolution into pore water/shallow groundwater and subsequent migration | CW | Culvert on-Site and the River Stort. | MEDIUM | UNLIKELY | LOW RISK | |
| 22 | | Dissolution into aqueous phase and preferential migration via drainage structures | CW | Culvert on-Site and the River Stort. | MEDIUM | UNLIKELY | LOW RISK | The risk classification reflects the culverted nature of the water feature on-Site and the reasonable distance to the nearest surface water feature |



2. Land quality assessment

| 2.6 Preliminary Risk Assessment | | | | | | | | |
|---------------------------------|---|--|------|---|---------------|-----------------------|--------------------------|---|
| Nr | Sources | Pathways | TYPE | Receptors | Consequence | Probability | Risk classification | Comments |
| 23 | Potential for asbestos containing materials within the subsurface soils | Liberation of sub surface ACMs and inhalation of asbestos fibres | HH | Occupants of on site buildings | MEDIUM | UNLIKELY | LOW RISK | Given the assumed presence of Made Ground beneath the Site asbestos containing material may be present within the near surface soils. However, given the proposed presence of hard standing across the entire Site, routine exposure to any sub surface contamination is considered unlikely. |
| 24 | Potential for dissolved phase contaminants to be present within shallow groundwater | Lateral and vertical groundwater movement via natural or artificial flow paths | CW | Head Secondary (Undifferentiated) Aquifer | MEDIUM | LOW LIKELIHOOD | MODERATE/LOW RISK | The risk classification reflects the local groundwater sensitivity (high resource value) and the presence of a groundwater abstraction licence (associated with the underlying Principal Aquifer) located within 100 m of the Site. |
| 25 | | Lateral and vertical groundwater movement via natural or artificial flow paths | CW | Alluvium and Glaciofluvial Deposits (Secondary (A) Aquifers) | MEDIUM | LOW LIKELIHOOD | MODERATE/LOW RISK | |
| 26 | | Lateral and vertical groundwater movement via natural or artificial flow paths | CW | Lewes Nodular Chalk Formation and Seaford Chalk Formation (a Principal Aquifer) | SEVERE | LOW LIKELIHOOD | MODERATE RISK | |
| 27 | | Lateral and vertical groundwater movement via natural or artificial flow paths | CW | Thanet Sand Formation and Lambeth Group (a Secondary (A) Aquifer) | MEDIUM | LOW LIKELIHOOD | MODERATE/LOW RISK | |
| 28 | | Lateral and vertical groundwater movement via natural or artificial flow paths | CW | Culvert on-Site and the River Stort. | MEDIUM | UNLIKELY | LOW RISK | |
| 29 | Potential for elevated methane to be present within the subsurface soils | Lateral and vertical migration into on site buildings; potential to cause an explosion | HH | On site properties and their occupants | MEDIUM | UNLIKELY | LOW RISK | Given the likely presence of Made Ground beneath the Site there is potential for gas generation associated with this material, however the gas production potential is considered to be limited. |
| 30 | | Lateral migration towards off site buildings; potential to cause an explosion | HH | Off site properties and their occupants | MEDIUM | UNLIKELY | LOW RISK | |
| 31 | Potential for elevated carbon dioxide to be present within the subsurface soils | Lateral and vertical migration into on site buildings; potential to cause asphyxiation | HH | Occupants of on site buildings | MEDIUM | UNLIKELY | LOW RISK | |
| 32 | | Lateral migration towards off site buildings; potential to cause asphyxiation | HH | Occupants of off site buildings | MEDIUM | UNLIKELY | LOW RISK | |
| 33 | Potential for radon within the subsurface | Lateral migration towards on site buildings; potential to cause long term health effects | HH | Occupants of onsite buildings | MEDIUM | UNLIKELY | LOW RISK | |
| OVERALL RISK RATING | | | | | | | MODERATE RISK | |



2. Land quality assessment



| 2.7 Preliminary Geotechnical Assessment | |
|---|---|
| General ground conditions | <p>The published geology indicated that the Site may be underlain by Head and/or Alluvium followed by alluvial gravels and the White Chalk. Borehole data published by the BGS from within 100m of the Site indicates that the Alluvium including significant thicknesses of peat may extend to between 5m and 6m below ground level. Surrounding borehole logs also identify possible former buried channels possibly associated with the nearby River Stort.</p> <p>Groundwater is likely to be encountered at relatively shallow depths below the Site and may be tidally influenced by the River Thames (albeit to a modest degree at this location).</p> |
| Foundations and excavations | <p>Actual depths to competent strata are not known and need to be determined by ground investigation. Made Ground deposits should be considered unsuitable as founding strata.</p> <p>The presence of Alluvium and potential for peat/organic deposits to a depth of up to 6m indicates that shallow foundations are unlikely to be feasible at the Site. It is therefore recommended that suitable allowances are made for deeper piled foundations founding within the underlying alluvial gravels or competent White Chalk (depending on the proposed loads). It is anticipated that River Terrace Deposits may be a suitable founding stratum depending on loadings.</p> <p>The presence of shallow groundwater will also need to be considered with regards to foundation design and management of water which may flow into excavations for services.</p> |
| Floor slabs and pavements | <p>Based on the proposed development, it is assumed that typical block and beam floor construction will be adopted. Based on the ground conditions, ground bearing floor slabs are not recommended.</p> <p>Due to the presence of compressible material and potential for organic deposits, a thick pavement construction is likely to be required. Design California Bearing Ratios should be obtained from a programme of geotechnical testing as part of and following a suitable ground investigation.</p> |
| Obstructions | <p>Given the history of the Site and proposed demolition, it is anticipated that localised buried obstructions may be encountered within the sub-surface. The removal of all buried obstructions will need to be factored into the development works to ensure this does not pose any constraints to foundation design. Any resultant voids would require backfilling with suitable material in accordance with an earthworks specification.</p> |
| Trees | <p>The Site currently contains a single tree towards the eastern boundary. It is not known if this is to be retained or if any additional landscaping is proposed as part of the development. Therefore, at this stage, any foundation solution adopted will need to consider the NHBC Standard associated with building within the Sphere of Influence of Trees.</p> <p>Should the existing tree be removed, allowance for removal of well-established roots and replacement with suitably compacted engineering fill should be allowed for in order to avoid differential settlement in these areas.</p> |



2. Land quality assessment

| 2.8 Next steps | | | |
|----------------|--|---|---|
| ✓ | Phase 2 intrusive investigation |  | <p>Given the uncertain nature of the historical land use (albeit including a number of commercial/industrial uses across many decades) there is the potential for significant contamination to be present at the Site. Coupled with the sensitive proposed end use and the sensitive groundwater setting, it is recommended that a proportionate programme of site investigation works be undertaken in order to establish the presence or absence of contamination, to enable a quantitative assessment of the associated environmental risks and to establish the depth to competent strata for founding.</p> <p>Further advice:</p> <p>Please contact kathryn.mair@geosmartinfo.co.uk for further information regarding the need for a Phase 2 investigation.</p> <p>For information on reputable site investigation companies, enquiries can be made directly to your local authority or via www.endsdirectory.com</p> |
| ✓ | FloodSmart report |  | <p>Given that the Site is located within a surface water flood risk area we recommend that a FloodSmart report is undertaken; our FloodSmart reports consider potential flooding to proposed developments from all possible sources including fluvial, coastal, pluvial and groundwater pathways. We are also able to assess the impact of the development on local drainage and determine specific Sustainable Drainage Systems (SuDS) options through our SuDSmart reports.</p> <p>Please contact info@geosmartinfo.co.uk for further information and a site specific quotation.</p> |

3. Supporting information

The following supporting information is contained in this section:

| Section | Content |
|---------|---|
| 3.1 | Referenced materials used in the Phase 1 reporting |
| 3.2 | Site photographs |
| 3.3 | Published environmental data records (Centremaps EnviroInsight report Land to rear of Shops 1 & 2, Bishop Lane, Parish Town, CountyshireHertfordshire, CW58 3YU. REF: CMAPS-CM-12345678910-212121) including: <ul style="list-style-type: none">• Aerial photographs and site map• Environmental permits, incidents and registers• Landfill and other waste sites• Current land use information• Geology• Hydrogeology and hydrology• Flooding• Designated environmentally sensitive sites• Other environmental factors |
| 3.4 | Risk assessment methodology |

Disclaimer

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3. Supporting information

Important consumer protection information

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Tel: 01 743 276150

Email: info@geosmartinfo.co.uk

GeoSmart Information Ltd is registered with the Property Codes Compliance Board (PCCB) as a subscriber to the Search Code. The PCCB independently monitors how registered search firms maintain compliance with the Code.

The Search Code

- provides protection for homebuyers, sellers, estate agents, conveyancers and mortgage lenders who rely on the information included in property search reports undertaken by subscribers on residential and commercial property within the United Kingdom
- sets out minimum standards which firms compiling and selling search reports have to meet
- promotes the best practice and quality standards within the industry for the benefit of consumers and property professionals
- enables consumers and property professionals to have confidence in firms which subscribe to the code, their products and services.
- By giving you this information, the search firm is confirming that they keep to the principles of the Code. This provides important protection for you.

The Code's core principles

Firms which subscribe to the Search Code will:

- display the Search Code logo prominently on their search reports
- act with integrity and carry out work with due skill, care and diligence
- at all times maintain adequate and appropriate insurance to protect consumers
- conduct business in an honest, fair and professional manner
- handle complaints speedily and fairly
- ensure that products and services comply with industry registration rules and standards and relevant laws
- monitor their compliance with the Code

Complaints

If you have a query or complaint about your search, you should raise it directly with the search firm, and if appropriate ask for any complaint to be considered under their formal internal complaints procedure. If you remain dissatisfied with the firm's final response, after your complaint has been formally considered, or if the firm has exceeded the response timescales, you may refer your complaint for consideration under The Property Ombudsman scheme (TPOs). The Ombudsman can award compensation of up to £5,000 to you if he finds that you have suffered actual loss as a result of your search provider failing to keep to the Code.

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

TPOs contact details:

The Property Ombudsman scheme

Milford House

43-55 Milford Street

Salisbury

Wiltshire SP1 2BP

Tel: 01722 333306

Fax: 01722 332296

Email: admin@tpos.co.uk

You can get more information about the PCCB from www.propertycodes.org.uk.

Please ask your search provider if you would like a copy of the search code

3. Supporting information

Important consumer protection information

GeoSmart Information Limited is registered with the Property Codes Compliance Board as a subscriber to the Search Code. A key commitment under the Code is that firms will handle any complaints both speedily and fairly.

If you want to make a complaint, we will:

- Acknowledge it within 5 working days of receipt.
- Normally deal with it fully and provide a final response, in writing, within 20 working days of receipt.
- Keep you informed by letter, telephone or e-mail, as you prefer, if we need more time.
- Provide a final response, in writing, at the latest within 40 working days of receipt.
- Liaise, at your request, with anyone acting formally on your behalf.

The Code's core principles

Firms which subscribe to the Search Code will:

- display the Search Code logo prominently on their search reports
- act with integrity and carry out work with due skill, care and diligence
- at all times maintain adequate and appropriate insurance to protect consumers
- conduct business in an honest, fair and professional manner
- handle complaints speedily and fairly
- ensure that products and services comply with industry registration rules and standards and relevant laws
- monitor their compliance with the Code

If you are not satisfied with our final response, or if we exceed the response timescales, you may refer the complaint to The Property Ombudsman scheme (TPOs): Tel: 01722 333306, E-mail: admin@tpos.co.uk.

We will co-operate fully with the Ombudsman during an investigation and comply with his final decision.

Complaints should be sent to:

Lisa Davies
Operations Manager

GeoSmart Information Limited
New Zealand House
160 Abbey Foregate
Shrewsbury
SY2 6FD

Tel: 01743 276150
lisadavies@geosmartinfo.co.uk

3. Supporting information

3.1 References

The following references were used to inform the conceptual site model and preliminary risk assessment:

British Standards Institute, 2011. Investigation of potentially contaminated sites – code of practice. ISO 10175:2011.

CIRIA, 2001. Contaminated land risk assessment. A guide to good practice. Publication C552. CIRIA London. ISBN 0-86017-552 9

Groundsure, 2016. Centremaps EnviroInsight report Land to rear of Shops 1 & 2, Bishop Lane, Parish Town, CountyshireHertfordshire, CW58 3YU. REF: CMAPS-CM-12345678910-212121

Environment Agency, 2015. What's in my backyard? (<http://www.environment-agency.gov.uk/homeandleisure/37793.aspx>).

Health Protection Agency, 2000. Spring 2000 Newsletter featuring; Radon: Guidance on Protective Measures for New Dwellings (BR 211).

3. Supporting information

3.2 Site photographs

Photograph 1: Walkway running along the southern boundary of the Site



Photograph 2: Sewer cover present adjacent to northern boundary



Photograph 3: View of entrance to Shop 25 storage area





3. Supporting information

3.3 Environmental data report

Readily available environmental information relating to the Site and its surrounding area has been provided by Groundsure.

Data report would be appended here

3. Supporting information

3.4 Risk assessment methodology

The method of risk evaluation adopted in this document is consistent with CIRIA C552 (2001). Hence, risk is considered to be a function of both the probability (likelihood) of contamination occurring at the study site and also the potential severity (consequence) of the environmental impacts associated with this contamination.

The classification system used to define contaminant probability, consequence and risk is described in the following tables.

Table A: Classification of probability

| Classification | Definition |
|------------------------|--|
| High likelihood | There is a contaminant linkage and an event that appears either very likely in the short term and almost inevitable over the long term, or there is evidence at the receptor of harm or pollution. |
| Likely | There is a contaminant 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. |
| Low likelihood | There is a contaminant linkage and circumstances are possible under which an event could occur. However, it is by no means certain that even over a longer period such event would take place, and is less likely in the shorter term. |
| Unlikely | There is contaminant linkage but circumstances are such that it is improbable that an event would occur even in the long term. |

Table B: Classification of consequence

| Classification | Receptor | Definition | Examples |
|----------------|-------------------|--|--|
| Severe | Humans | Short-term (acute) risk to human health likely to result in "significant harm" as defined in the CTL Statutory Guidance | High concentrations of cyanide on the surface of an informal recreation area |
| | Controlled waters | Short-term risk of pollution (note: Water Resources Act contains no scope for considering significance of pollution) of sensitive water resource | Major spillage of contaminants from site into controlled water |
| | Property | Catastrophic damage to buildings/property | Explosion, causing building collapse (can also equate to an acute human health risk if buildings are occupied) |
| | Ecology | A short-term risk to a particular ecosystem, or organism forming part of such eco-system | Potentially long term derogation of a designated site or protected species |
| Medium | Humans | Chronic damage to human health ("significant harm" as defined in the CTL Statutory Guidance) | Concentrations of a contaminant from a residential site exceed the site-specific assessment criteria |
| | Controlled waters | Pollution of sensitive water resources (note: Water Resources Act contains no scope for considering significance of pollution) | Leaching of contaminants from a site to a principal or secondary aquifer |
| | Property | Significant damage to crops, buildings, structures and services | Damage to building rendering it unsafe to occupy (e.g. foundation damage resulting in instability) |
| | Ecology | A significant change in a particular ecosystem | Death of a species within a designated nature reserve |

3. Supporting information



Table B: Classification of consequence (continued)

| Classification | Receptor | Definition | Examples |
|----------------|-------------------|--|--|
| Mild | Humans | Contamination present although unlikely to constitute a significant chronic health risk | Concentrations of a contaminant from a public access site moderately exceed the generic assessment criteria |
| | Controlled waters | Pollution of non-water resources | Pollution of non-classified groundwater |
| | Property | Damage to sensitive buildings/structures/services | Aggressive ground conditions leading to potential for long term degradation of buried concrete |
| | Ecology | Damage to the environment | Localised damage to aquatic habitat causing temporary relocation of certain species |
| Minor | Humans | Non-permanent health effects to human health (easily prevented by means such as personal protective clothing, etc.) | The presence of contaminants at such concentrations that protective equipment is required during site works |
| | Controlled waters | Potential minor release of contamination to local water features | Short term or low volume release of potentially polluting material to a secondary surface water course of low existing quality |
| | Property | Easily reparable effects of damage to buildings, structures and services. Harm which may result in a financial loss, or expenditure to resolve | The loss of plants in a landscaping scheme. Discolouration of concrete |
| | Ecology | Short term, localised damage may occur; consequences are spatially and temporally limited | Short term or localised disruption to in situ flora or fauna; no lasting effects |

Table C: Risk classification (comparison of consequence and probability)

| | | Consequence (severity) | | | |
|-------------|-----------------|------------------------|-------------------|-------------------|---------------|
| | | Severe | Medium | Mild | Minor |
| Probability | High likelihood | Very high risk | High risk | Moderate risk | 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 |

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