



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.
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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

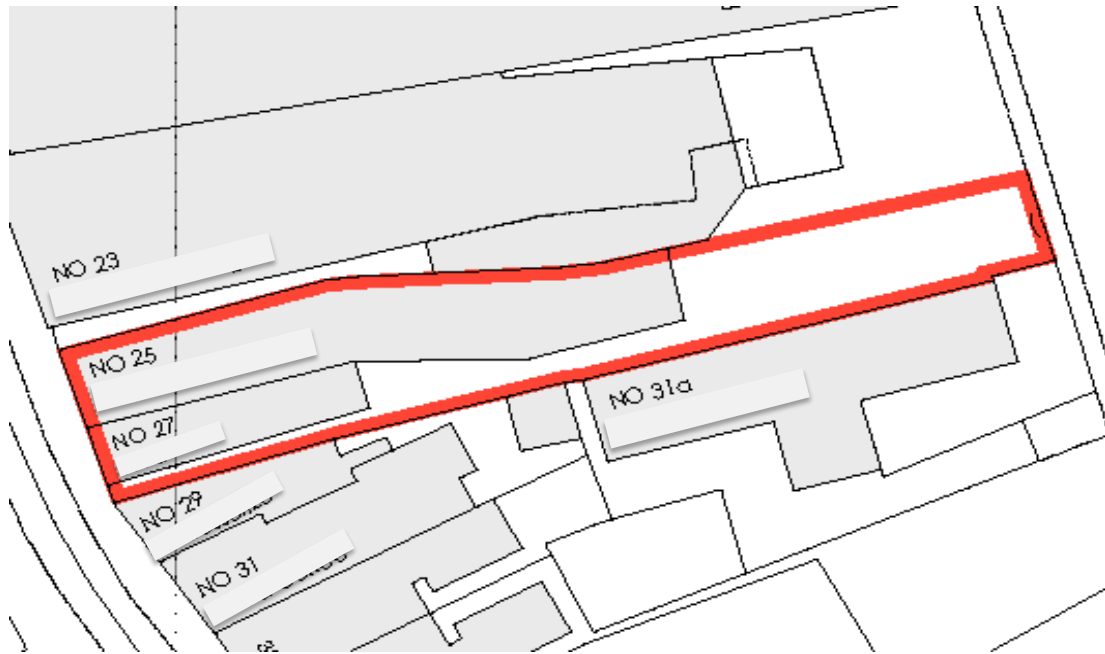
1.4 Report limitations

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" data-bbox="367 1023 1066 1479"> <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																															
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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>	<p>UNLIKELY</p>	PROBABILITY OF CONTAMINATION						
 <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" data-bbox="367 1036 1071 1177"> <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>	<p>UNLIKELY</p>
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>	<p>UNLIKELY</p>								




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>	SEVERE	POTENTIAL SEVERITY OF IMPACT	
 <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>	MILD		

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

This report has been prepared by GeoSmart in its professional capacity as soil and groundwater specialists, with reasonable skill, care and diligence within the agreed scope and terms of contract and taking account of the manpower and resources devoted to it by agreement with its client, and is provided by GeoSmart solely for the internal use of its client.

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3. Supporting information

Important consumer protection information

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Email: info@geosmartinfo.co.uk

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The Search Code

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- 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
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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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