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Desk Study, Ground Investigation & Risk Assessment Report

Desk Studies | Risk Assessments | Site Investigations | Geotechnical | Contamination Investigations | Remediation Design and Validation

Site: Queensmere House, 49 Queen's Road,
East Grinstead, RH19 1BG

Client: RH19 Estates

Report Date: 7th November 2024

Project Reference: J15841
(Previous Reference: J13542)

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SUMMARY

The site, which extended to about 0.157ha, comprised a three storey office block building (Queensmere House) that was most recently used for educational purposes. It is proposed to convert this building to residential use, by redeveloping the site, as twenty four flats. Some new building work is proposed. There are to be five residential units at ground level.

Geological records indicated the site to be underlain by the Ardingly Sandstone (Lower Tunbridge Wells Sand Formation), with the Wadhurst Clay shown to the north west site boundary.

A historical Ordnance Survey map search and brief desk study was carried out by others. This indicated that the site has had a history of initial use a cottage hospital, in the 1910s. The current office block building was constructed in the 1980s. Subsequently the site as was used as a church. Most recently it was used as an educational establishment.

A single phase of intrusive investigation was carried out, in 2018 (see STL report ref: J13542).

The soils encountered comprised Made Ground to depths of between 0.8mbgl and 2mbgl; underlain by sands with subordinate bands of clay; to the full depth of the investigation – 3mbgl. Some boreholes refused on sandstone rock, which is not unusual for the Ardingly Sandstone.

Loose sands and gravels were encountered in WLS3. These may be indicative of an infilled gull, associated with cambering; or with the installation of the nearby three chamber drainage interceptor. Further investigation is recommended to determine the lateral extent and the depth of these loose soils.

Groundwater was not encountered during the course of this investigation.

The sulphate content of the fill and natural soil was found to fall within Class DS1. The ACEC classification for the site is AC-1s.

An allowable bearing capacity of 150kPa is recommended, for spread footings, placed in the Lower Tunbridge Wells Sands, at a depth of 1.2mbgl, or deeper.

Suspended floor slabs are recommended, due to the presence of clay and Made Ground at ground level.

Based upon the laboratory testing and the two rounds of soil gas monitoring, there is no evidence of soil or landfill gas contamination at this site.

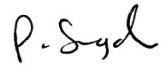
It is suggested that the soil gas monitoring programme should be completed; with four additional rounds being undertaken; particularly as there are now residential units proposed at ground level.

The contamination screening values used are valid at the time of writing but may be subject to change and any such changes will have implications for the assessments based on them. Their validity should be confirmed at the time of site development.

A formal remediation strategy and verification plan should be agreed with the regulatory authorities prior to commencement of any remedial works. This would comprise a watching brief for any undiscovered soil contamination issues that may come to light during the development process.

The site investigation was conducted for others, and this report has been revised, for the sole internal use and reliance of RH19 Estates and their appointed Engineers. This report shall not be relied upon or transferred to any other parties without the express written authorisation of Southern Testing Laboratories Ltd. If an unauthorised third party comes into possession of this report they rely on it at their peril and the authors owe them no duty of care and skill.

The findings and opinions conveyed via this Site Investigation Report are based on information obtained from a variety of sources as detailed within this report, and which Southern Testing Laboratories Ltd believes are reliable. Nevertheless, Southern Testing Laboratories Ltd cannot and does not guarantee the authenticity or reliability of the information it has obtained from others.



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For and on behalf of Southern Testing Laboratories Limited

STL: J15841

7th November 2024

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A INTRODUCTION

1 Authority

Our authority for carrying out this work, comprising an updated report, is contained in an STL project order form, completed by RH19 Estates, dated 30 September 2024.

2 Location

The site is located in the centre of East Grinstead, West Sussex. The approximate National Grid Reference of the site is TQ 39326 38092. The site location is indicated on Figure 1 within Appendix A.

3 Proposed Construction

It is proposed to convert the existing building to residential use, by redeveloping the site with twenty four flats. Some new building work is proposed. There are to be five new residential units at ground level.

For the purposes of the contamination risk assessment, the proposed development land use is classified as **Residential without plant uptake, (CLEA model[1]/C4SL report[2]).** The gas sensitivity of the proposed development is rated as **Moderate (CIRIA C665[3].)**

4 Object

This is a revised Phase 1 Desk Study and Walkover and Phase II preliminary geotechnical and contamination (risk estimation and evaluation) investigation (Tier 1).

The object of the investigation was to assess foundation bearing conditions and other soil parameters relevant to the proposed development, and to assess the likely nature and extent of soil, groundwater and soil gas contamination on the site.

5 Scope

This report presents a review of the previous contamination statement, exploratory hole logs and test results and our interpretation of these data.

As with any site there may be differences in soil conditions between exploratory hole positions.

This report is not an engineering design and the figures and calculations contained in the report should be used by the Engineer, taking note that variations will apply, according to variations in design loading, in techniques used, and in site conditions. Our figures therefore should not supersede the Engineer's design.

[1] Environment Agency Publication SC050021/SR3 'Updated technical background to the CLEA Model' (2009).
[2] SP1010 Development of Category 4 Screening Levels DEFRA (2014)
[3] CIRIA C665 (2006) Assessing risks posed by hazardous ground gases to buildings.

The findings and opinions conveyed via this Site Investigation Report are based on information obtained from a variety of sources as detailed within this report, and which Southern Testing Laboratories Ltd believes are reliable. Nevertheless, Southern Testing Laboratories Ltd cannot and does not guarantee the authenticity or reliability of the information it has obtained from others.

This report has been revised for the sole internal use and reliance of RH19 Estates and their appointed Engineers. This report shall not be relied upon or transferred to any other parties without the express written authorisation of Southern Testing Laboratories Ltd. If an unauthorised third party comes into possession of this report they rely on it at their peril and the authors owe them no duty of care and skill.

The recommendations contained in this report may not be appropriate to alternative development schemes. The contamination screening values used are valid at the time of writing but may be subject to change and any such changes will have implications for the assessments based on them. Their validity should be confirmed at the time of site development.

B DESK STUDY & WALKOVER SURVEY

6 Desk Study

STL were not commissioned to undertake a formal desk study; however, a contamination statement was prepared previously, by others - see report ref: 17166, July 2017, prepared by ATP. Reference was made to the following information sources.

- Landmark "sitecheck assess" report
- Geological Maps
- Hydrogeological/Groundwater Vulnerability maps
- Historical Ordnance Survey Maps
- Environmental Databases
- Environment Agency website
- BRE Radon Atlas[4]

The environmental databases search report compiled for the previous desk study, contained site-specific environmental data drawn from data sets that comprise publicly available information together with data from third parties, some of which is under review. Accordingly, Southern Testing Laboratories Limited does not warrant its accuracy, reliability or completeness.

The full ATP report is included in Appendix G. A summary of the salient features is included in the following sections of this report.

6.1 Geology

The British Geological Survey Map No 303, indicated that the site geology consisted of Ardingly Sandstone (Lower Tunbridge Wells Sand), underlain by Wadhurst Clay. The Wadhurst Clay outcrops in the valley to the north west of the site.

[4] BR 211 (2015) 'Radon: guidance on protective measures for new buildings'

Ardingly Sandstone

The upper member of the Lower Tunbridge Wells Sand consists of a massive cross bedded sandstone called the Ardingly Sandstone. This sandstone is harder than most of the other Wealden strata and has formed numerous bluffs and crags in and around Tunbridge Wells, Uckfield, Ardingly and East Grinstead. It is the source of most of the many short sharp steep hills in the area.

An important feature of the sandstone is that it is subject to "cambering". On and near steep hill slopes cracks and fissures have been formed because of movement in the underlying Wadhurst Clay. These are usually in two directions, parallel to, and at right angles to, the line of the escarpment, and range from a few mm wide, to a metre wide, or more. The fissures are often infilled with silt but are occasionally open (voids). There have been instances of the fissures opening up after soakaways have been installed.

Wadhurst Clay

The Wadhurst Clay is similar to other Wealden Clays and consists of dark grey shale, mudstones, and pale grey silty mudstones with subordinate beds of silt, sandstone, shelly limestone and clay ironstone. A thin band of red shale, coloured by disseminated haematite, usually marks the top of the Wadhurst Clay. Similar colouring is occasionally found beds of stone within the formation.

At the surface the Wadhurst Clay is stiff (high strength) silty plastic clay that becomes rapidly stiffer with depth becoming a weak rock at about 4-6 metres depth.

The clay ironstone was extensively worked up until the early 19th century and old workings are common in many areas, particularly near the junction with the underlying Ashdown Sand. The sides of the larger pits were often left at a steep angle and these are generally found to be unstable. Smaller 'bell pits' were usually infilled and may only be distinguished by a shallow depressions in the ground surface at the present day.

Wadhurst Clay is often found to line the valley bottoms in Tunbridge Wells Sand areas and may be distorted by valley bulging, because of water seepage at the interface between the two series, and because of the pressure from the sandstone escarpments.

Valley bulging is often found where the surrounding relief is high, and under periglacial conditions the large overburden pressures on the valley slopes led to anticlinal structures being developed in the underlying clays along the base of the valley. As a result of the steep dips, these shales are subject to rapid erosion and result in relatively youthful geological features.

6.2 Hydrology and Hydrogeology

Data from the Environment Agency and other information relating to controlled waters is summarised below.

Data		Remarks	Possible Hazard to/from Site Y/N
Aquifer Designation	Superficial Deposits	Not present	N
	Bedrock	Ardingly Sandstone – Secondary A Aquifer - permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers.	Y
Groundwater Vulnerability		Soils of High Leaching Potential - Soil information for urban areas is based on fewer observations than elsewhere. A worst case vulnerability classification is given.	Y
Abstractions		None within 500m radius of site Abstraction wells are shown 0.5km to the east However it should be noted that not all the locations of private domestic water sources are always known to the Environment Agency, therefore others may exist	N N
Source Protection Zones		None associated with the site	N
Surface Water Features		~250m north – pond (static body of water)	N
Marine/Fluvial Flood Risk		The site is not shown either within, or adjacent to an area mapped as being at risk.	N
Surface Water Flood Risk		The site is shown adjacent to an area mapped as being at risk.	Y
Reservoir Flood Risk		The site is not shown either within, or adjacent to an area mapped as being at risk.	N

Sources of on-site contamination appear to be low risk and would not affect controlled water receptors. Sources of contamination in the vicinity of the site are few and also appear to be low risk thus contaminated groundwater is unlikely to migrate beneath the site. Hence the overall hydrogeological risk to or from the site is considered "low".

6.3 Historical Map Search

A historical Ordnance Survey map search and desk study was carried out by others and this indicated that the site has had a history of initial use as farm land, but became developed with a cottage hospital, in the 1910s.

This building became used as a literary and social institute in the 1950s.

The previous building was demolished and current office block building was constructed in the late 1980s. Subsequently the building as was used as a church. Most recently it has been used as an educational establishment.

6.4 Environmental Databases

The following potential sources of contamination were identified in the ATP report and also by research undertaken by STL:

	Distance (m)	Direction	Details	Possible Hazard to site
Historical Industrial Land Uses	On site		Cottage hospital with a laundry	Y
Historical Industrial Land Uses			The site check document identifies 16 possible contaminative land uses within a 250m radius of the site. These include substations and potential presence of tanks.	N
Current Industrial Land Uses	On site		Office building with three chambered drainage interceptor (observed during walkover).	Y
Current Industrial Land Uses	 30 150	 S NE	The site check document identifies 29 possible contaminative land uses within a 250m radius of the site. These include laundries and dry cleaners. Dry cleaners garage All appear to be at a distance not to impact upon the subject site.	 N N
Current and Historical Landfills	200	N	Infilled land around the railway station.	N
Fuel Sites	-	-	None within 250m radius of the site.	N
Pollution Incidents	-	-	None within 250m radius of the site.	N
IPC Part B Authorisations	-	-	None within 250m radius of the site.	N
Hazardous Substances Consents	-	-	None within 250m radius of the site.	N
Sensitive Land Use Designations	-	-	None within 250m radius of the site.	N

Due to the age and distance of potential sources identified, and the redevelopment of the site in the 1980s; off site sources and on site sources appear to be low risk.

6.5 Geological Hazards and Mining Activities

Data from various sources relating to potential geological hazards at the site are summarised below. The Hazard Potentials listed for the BGS data are as presented in the previous contamination statement report, derived from various generic BGS sources, which are not considered as site-specific. It is important that this information is considered in context of the actual site topography, ground conditions encountered during future investigation, and development proposals.

Data Source	Hazard	Hazard Potential to Site	Remarks
BGS	Potential for Collapsible Ground Stability Hazard	Very low	
	Potential for Compressible Ground Stability Hazard	Very low	
	Potential for Ground Dissolution Stability Hazard	Very low	
	Potential for Landslide Ground Stability Hazard	Very low	
	Potential for Running Sand Ground Stability Hazard	Very low	
	Potential for Swelling or Shrinking Clay Ground Stability Hazard	Very low	
	Shallow Mining Hazard	Very low	
ARUP	Mining Instability	Very low	
CSS/KURG*	Underground openings	Very low	0.5m east – wells for water abstraction

**Chelsea Speleological Society/ Kent Underground Research Group*

6.6 Other Sources

Contamination statement prepared by ATP, report ref: 17166, June 2017, Appendix G.

6.7 Radon Risk

According to Envirocheck and the publication 'Radon - Guidance on protective measures for new buildings BRE211 (BRE and HPA, 2007)' the site is not within an area affected by Radon and therefore no special protection measures as regards this gas will be required. See www.ukradon.org for more details.

7 Walkover Survey

A walkover survey was carried out on 4 April 2018.

7.1 General Description and Boundaries

The site comprised a roughly triangular parcel of land, with a three storey office building (Queensmere House), occupying the south eastern side of the site.

7.2 Topography and Drainage

The site sloped from the south east, at Queens Road, downwards to the north west boundary, as it was located on the site of a valley, which influences the topography and the slope of the whole area. The slope of the site was approximately 4˚ to the north west.

The site drained via a surface water drainage system, to a three chamber interceptor, which was located to the north west corner of the site. The foul water drained to the sewerage system beneath Queens Road.

7.3 Vegetation

Salix willow, sycamore, conifer and pine trees were noted to the north west and part of the east boundary. The gardens beyond the north west boundary contained two beech trees. A pine tree was located to the north boundary, near to the entrance.

A small planter, with an external street lamp installation, contained horizontal growing, ornamental conifers was located to the centre of the car parking area.

7.4 Buildings and Land Use on Site and Nearby

To the south of the site was Queen's Road. Opposite the site to the south / south west, there were previously a number of empty two storey residential properties. These houses have now been demolished and the site was being redeveloped as new retail and 129 residential apartments at the time of this investigation. There were also car parks to the south west, servicing the retail and commercial properties to Queens Walk and London Road.

To the east of the site was the vehicular access to the rear and an 1800mm high close board timber fence. The adjacent building to the north side of the site was a single storey building with a pitched roof that served as a social club (Literary and Social Institution). Beyond this was a split level, four storey development of flats.

The western boundary was formed by a close board timber fence. Beyond which are numbers 51-57 Queen's Road, which were four number Victorian terrace dwelling houses. Opposite this was the Mid Sussex Queensway Car Park.

Car parking was located to the rear / north of the site. The whole of this area was hard paved with a tarmacadam finish. There was a small patch of shrubs around a street lighting installation to the centre of the parking area. There was also a vehicle parking under-croft to ground level part of the Queensmere House building.

The site was bounded by 1800mm high close board timber fence, with some overgrown hedging to the sides.

7.5 Photographs

A series of photographs showing the site are in Appendix F.

C PRELIMINARY CONCEPTUAL MODEL

8 Introduction

In the context of this report, the conceptual model summarises the potential pollutant linkages identified for the site and forms the basis of the risk assessment for the site. The preliminary model comprises the potential sources of contamination, receptors that could be harmed and exposure pathways identified from the desk study and walkover survey. These potential linkages form the basis upon which the investigation is designed and reported.

9 Potential Sources of Contamination

The site has had a history of use initially as a cottage hospital with a laundry, and then as a literary institute. This building was demolished and the site was redeveloped with the current office block in the 1980s. It is located within an area of residential and commercial land use.

A small number of potentially contaminative uses have been identified, both on site and in the locality.

Potential contaminants associated with these uses have been compiled from other desk study information (the contamination statement document) and our experience of such sites.

9.1 On Site Sources

The following possible on site sources have been identified.

Source	Potential Contaminants
Made Ground	Soil gas emissions, heavy metals, polycyclic aromatic hydrocarbons (PAH compounds), petroleum hydrocarbons, asbestos containing materials (ACMs)
Cottage hospital with laundry	The hospital is of an age to have not generated high risk contamination issues. Especially as it became used as a "literary institute" in the 1950s
Fabric of previous buildings and current building	Asbestos containing materials (ACMs)
Three chamber interceptor	Polycyclic aromatic hydrocarbons (PAH compounds), fuel hydrocarbons

9.2 Off Site Sources

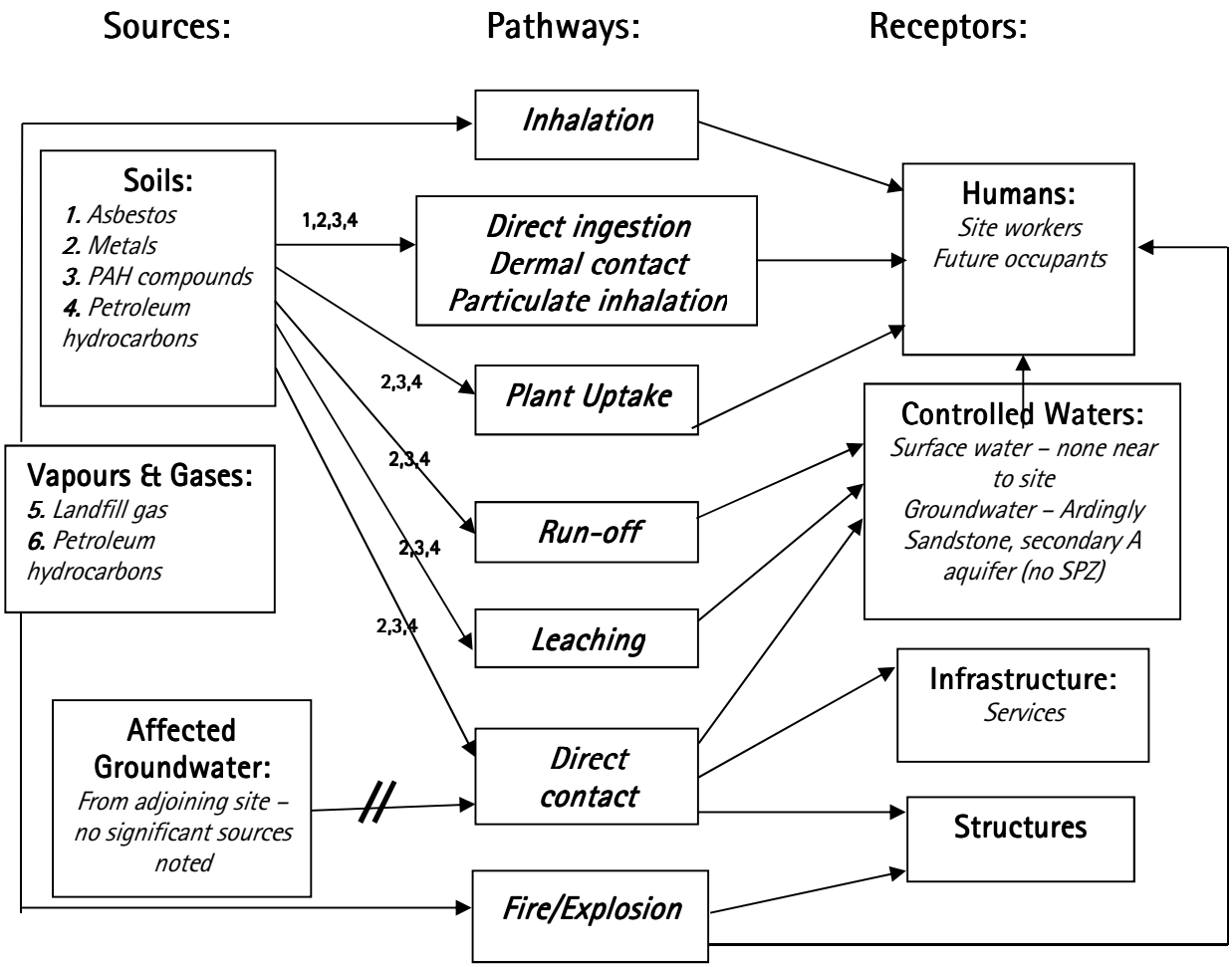
The site may be impacted by contamination migrating from beyond the site boundary. The following potential off-site sources have been identified.

Source	Distance from Site Boundary	Direction	Potential Contaminants	Likely Hazard to Site
Dry cleaners	30	S	VOC	Very low
Garage	150	NE	Petroleum hydrocarbons	Very low
Infilled land	200	N	Soil gas emissions	Negligible

All other off site sources appear to be negligible risk.

10 Pollutant Linkages and Model Summary

The following diagram shows the potential pollutant linkages identified for the site and summarises the preliminary conceptual model:



// Denotes potential pollutant linkage not complete

D SITE INVESTIGATION

11 Method

The strategy adopted for the intrusive investigation comprised the following:

- Four number windowless sample boreholes were drilled using a track mounted windowless sample drilling rig, to a maximum depth of 3.0mbgl.
- Soil gas and groundwater monitoring wells were installed within boreholes WLS1, WLS2 and WLS4.

Exploratory hole locations are shown up Figure 2 in Appendix A.

The presence of the building, the undercroft, blacktop hardstanding and well compacted sub – base restricted the locations where boreholes could be drilled during the fieldwork. Soils within WLS3 were noted to be loose.

12 Weather Conditions

The fieldwork was carried out on 4 April 2018, at which time the weather was generally wet.

13 Soils as Found

The soils encountered are described in detail in the attached exploratory hole logs (Appendix A), but in general comprised a covering of Made Ground, underlain by sands with subordinate bands of clay. The sands became dense and as residual soil weathered rock, with depth. A summary is given below.

Borehole	Depth (mbgl)	Thickness (m)	Soil Type	Description
All	GL-0.15/0.2	0.15/0.2	Blacktop	Blacktop surfacing
WLS2 WLS4	0.15/0.2-0.3/0.4	0.15-0.2	Made Ground	Gravel of crushed concrete (Made Ground
All	0.1/0.4-0.8/1.1	0.4-1.0	Made Ground	Gravel with some sand (Made Ground sub-base)
WLS3 only	1.1-2.0	0.9	Made Ground	Loose brown gravelly SAND. Sand is fine to medium and gravel is fine to coarse subangular to rounded fragments of flint (MADE GROUND)
WLS1 only	0.8-1.0	0.2	Clay	Brown sandy CLAY (reworked)
WLS2 only	1.1-2.0	0.9	Silt	Medium dense dark orangish brown mottled light brown clayey SILT with fine to medium angular sandstone gravel with occasional black iron staining
WLS3	1.1-2.0	0.9	Sand	Loose gravelly SAND (possible Made

Borehole	Depth (mbgl)	Thickness (m)	Soil Type	Description
only				Ground)
WLS3 only	2.0-3.0	1.0	Gravel	Loose becoming medium dense sandy GRAVEL
WLS1 WLS2 WLS4	0.8/1.0-1.2/2.0	1.0-1.2	Sand	Medium dense clayey SAND
WLS2 WLS4	1.2/2.0-2.6/3	>1	Sand	Medium dense gravelly SAND
WLS1 only	2.0-2.8	>1	Sand	Dense clayey SAND

Loose sands and gravels were encountered in WLS3 and these may be indicative of an infilled gull, associated with cambering, or the installation of the nearby three chamber drainage interceptor. Further investigation is recommended to determine the lateral extent and the depth of these loose soils.

13.1 Visual and Olfactory Evidence of Contamination

Evidence of possible contamination in the form of fragments of tarmac aggregate was recorded at the location of all trial holes within the Made Ground.

These occurrences are discussed in Section H.

14 Groundwater Strikes

Groundwater was not struck in the exploratory holes, during the course of this intrusive investigation.

E FIELD TESTING AND SAMPLING

The following in-situ test and sampling methods were employed. Descriptions are given in Appendix B together with the test results.

- Small disturbed soil samples.
- Hand held penetrometer tests.
- SPT.

F GEOTECHNICAL LABORATORY TESTS

The following tests were carried out on selected samples. Test method references and results are given in Appendix C.

- Sulphate and pH.
- Atterberg limits.
- Particle size distribution tests.

G DISCUSSION OF GEOTECHNICAL TEST RESULTS AND RECOMMENDATIONS

15 Soil Classification and Properties

Soil Type	Depth (mbgl)	Compressibility	VCP	Permeability	Frost Susceptible	CBR	Remarks
Made Ground	GL to 0.4/1.1	N/A	Variable	Variable	Yes	Poor	Not suitable for foundations
Clay (WLS1)	0.8 to 1.0	Low	Low	Low	Yes	Poor	Not suitable for foundations
Loose sand	0.4-1.1->3	Moderate	Negligible	Fair	No	Fair	Not suitable for foundations
Medium dense sand	1.2->30	Low	Negligible	Fair	No	Good	Suitable for foundations

16 Swelling and Shrinkage

Plasticity index testing carried out on one sample from the clay soils gave plasticity index of 10%, classifying the clays as low plasticity (CL). Using the modified PI of 8.8%; the corresponding NHBC Volume Change Potential was rated as negligible. Given the thickness of this layer, and the negligible volume change potential, swelling and shrinkage precautions are not considered necessary for this development.

However, if during development, clay soils are encountered, they should be assessed for volume change potential.

17 Groundwater Levels

Groundwater was not struck in the exploratory holes during the course of this intrusive investigation; nor was groundwater seepage noted during subsequent rounds of monitoring.

Groundwater levels vary considerably from season to season and year to year, often rising close to the ground surface in wet or winter weather, and falling in periods of drought. Long-term monitoring from boreholes or standpipes would be required to assess the ground water regime and this was not possible during the course of this site investigation.

18 Sulphates and Acidity

The recorded pH values are in the range 7.9 to 12, which is near neutral to alkaline.

The Design Sulphate Class is DS 1. Groundwater should be assumed to be immobile. The ACEC site classification is AC – 1s.

19 Bearing Capacity

We recommend that foundations be taken through the Made Ground and superficial deposits, to bear on the sands and gravels of the Lower Tunbridge Wells Sand (weathered Ardingly Sandstone).

An allowable bearing pressure of 150kPa is recommended, for spread footings, within the Tunbridge Wells Sand at a depth of about 1.2mbgl.

Whilst the risk of cambering is low, a careful inspection of all foundation excavations is essential, as there is a risk of the occurrence of loosely infilled gulls, associated with cambering. Probing of foundations is recommended, to confirm competent strata are present.

20 Floor Slabs

Suspended floor slabs are recommended, due to the presence of clay and Made Ground.

The exception to this is to the north western part of the site, where loose sands and gravels were encountered in WLS3.

If development is proposed in this area, additional investigation would be required to determine the lateral extent of these loose soils.

21 Settlement

This should be within acceptable limits, based on the recommendations given above.

22 Excavations and Trenching

Statutory support will be required in all excavations where men must work. Great care will be required in fill, or where the soil is loose or soft, and subject to collapse. Excavations in these soils may therefore be susceptible to collapse. Close support will be necessary in these excavations and shuttering will be required.

An allowance should be made for breaking out rock in deep trenches and excavating through hard strata.

Allowance should be made for limited dewatering of excavations, during winter months, should perched groundwater be encountered.

H LAND QUALITY

23 Analytical Framework

There is no single methodology that covers all the various aspects of the assessment of potentially contaminated land and groundwater. Therefore, the analytical framework adopted for this investigation is made up of a number of procedures, which are outlined below. All of these are based on a Risk Assessment methodology centred on the identification and analysis of Source – Pathway – Receptor linkages.

The CLEA model[5] provides a methodology for quantitative assessment of the long term risks posed to human health by exposure to contaminated soils. Toxicological data is used to calculate a Soil Guideline Value (SGV) for an individual contaminant, based on the proposed site use; these represent minimal risk concentrations and may be used as screening values.

In the absence of any published SGVs for certain substances, Southern Testing have derived or adopted Tier 1 screening values for initial assessment of the soil, based on available current UK guidance including the LQM/CIEH[6] S4UL's and CL:AIRE[7] generic assessment criteria. In addition, in March 2014, DEFRA[8] published the results of a research programme to develop screening values to assist decision making under Part 2A of the Environmental Protection Act. Category 4 screening levels were published for 6 substances, with reference to human health risk only. This guidance includes revisions of the CLEA exposure parameters, presenting parameters for public open space land use scenarios, and also of the toxicological approach. The screening levels represent a low risk scenario, based on a 'Low Level of Toxicological Concern' rather than the 'Minimal Risk' of CLEA, and the analytical results of this investigation may be considered relative to these levels.

The values used are valid at the time of writing but may be subject to change and any such changes will have implications for the assessments based upon them. Their validity should be confirmed at the time of site development.

Site-specific assessments are undertaken wherever possible and/or applicable.

CLEA requires a statistical treatment of the test results to take into account the normal variations in concentration of potential contaminants in the soil and allow comparisons to be made with published guidance.

Ground gases are assessed in accordance with the guidance given in CIRIA report C665.

[5] Environment Agency Publication SC050021/SR3 'Updated technical background to the CLEA Model' (2009).
[6] The LQM/CIEH S4ULs for Human Health Risk Assessment. (2014).
[7] The EIC/AGS/CL:AIRE Soil Generic Assessment Criteria for Human Health Risk Assessment (2009).
[8] SP1010 Development of Category 4 Screening Levels foe Assessment of Land Affected by Contamination. DEFRA, 2014.

24 Site Investigation – Soil

24.1 Sampling Regime

The number of sample locations was limited to one day on site and was partly targeted at potential sources of contamination, such as the drainage interceptor (WLS03) and partly to provide general coverage.

Access was restricted by the presence of buildings, hard standing and buried services.

24.2 Testing

The potential for contamination by Made Ground was identified in the preliminary conceptual model and observations made on site and, therefore, the following tests were selected.

Test Suite	Number of Samples	Soil Tested
STL Key Contaminant Suite	7	3 Made Ground 4 Natural ground
Asbestos Identification	7	3 Made Ground 4 Natural ground
Total extractable petroleum hydrocarbons	5	3 Made Ground 2 Natural ground
Banded petroleum hydrocarbons	1	1 Made Ground

The test results are presented in full in Appendix D. A summary and discussion of the significance of the results and identified contamination sources is given below.

24.3 Test Results and Identified Contamination Sources

24.3.1 General Contaminants

The results of the key contaminant tests have been analysed in accordance with the CLEA methodology. The samples have been grouped into two populations, comprising made ground and natural soil. For each parameter in each population the sample mean is calculated and compared to a Tier 1 screening value. If the sample mean exceeds the screening value, the soil may be regarded as contaminated and further assessment may be required. If neither the sample mean nor any single value exceeds the screening value, the soil may be regarded as not contaminated, though further confirmatory assessment may be required. Where any single parameter value exceeds the screening value but the sample mean does not, further statistical analysis may be applied to that parameter if the available data is suitable. Such analysis would include an assessment of the Normality of the distribution of the data, consideration of the presence of outliers, and the calculation of a UCL estimate of the mean.

Summary data is presented in the tables below and the laboratory analysis is included in Appendix D. The screening values and source notes are presented in Table 1 "Tier 1 Screening Values" at the front of Appendix D.

Soil Type: Made Ground

Contaminants	Units	No of Samples Tested	Range	Sample Mean	Residential without Homegrown Produce Consumption Tier 1 Screening Value
Arsenic (As)	mg/kg	3	5-17	9.6	40
Cadmium (Cd)	mg/kg	3	<0.2-0.5	0.3	85
Total Chromium (Cr)	mg/kg	3	13-19	15	910
Hexavalent Chromium (CrVI)	mg/kg	3	<4	4	6
Lead (Pb)	mg/kg	3	4.7-14	8.7	310
Mercury (Hg)	mg/kg	3	<0.3	0.3	9.2-15
Selenium (Se)	mg/kg	3	<1	1	430
Nickel (Ni)	mg/kg	3	8.1-16	11	180
Copper (Cu)	mg/kg	3	8.6-16	12	7,100
Zinc (Zn)	mg/kg	3	27-47	35	40,000
Phenol	mg/kg	3	1	1	440-1200
Benzo[a]pyrene	mg/kg	3	<0.05-0.45	0.18	2.6
Naphthalene	mg/kg	3	<0.05	0.05	2.3-13
Total Cyanide (CN)	mg/kg	3	1	1	-
Acidity (pH value)	-	3	10.1-11.7	11	-
Soil Organic Matter	%	3	0.2-0.8	0.47	-

Based upon the three samples of Made Ground that were analysed; no results of concern were noted within the Made Ground, when compared to the STL Tier 1 screening values for a residential land use without consumption of home grown produce.

The pH values within the Made Ground were somewhat alkaline in nature.

Soil Type: Natural Ground

Contaminants	Units	No of Samples Tested	Range	Sample Mean	Residential without Homegrown Produce Consumption Tier 1 Screening Value
Arsenic (As)	mg/kg	4	5.6-12	9.4	40
Cadmium (Cd)	mg/kg	4	<0.2-0.3	0.23	85
Total Chromium (Cr)	mg/kg	4	16-21	19	910
Hexavalent Chromium (CrVI)	mg/kg	4	<4	4	6
Lead (Pb)	mg/kg	4	8.9-67	39	310
Mercury (Hg)	mg/kg	4	<0.3-8.6	2.4	9.2-15
Selenium (Se)	mg/kg	4	<1	1	430
Nickel (Ni)	mg/kg	4	11-20	15	180
Copper (Cu)	mg/kg	4	10-39	21	7,100
Zinc (Zn)	mg/kg	4	25-58	40	40,000
Phenol	mg/kg	4	<1	1	440-1200
Benzo[a]pyrene	mg/kg	4	<0.05-0.64	0.33	2.6
Naphthalene	mg/kg	4	<0.05	0.05	2.3-13
Total Cyanide (CN)	mg/kg	4	<1	1	-
Acidity (pH value)	-	4	8.2-8.9	8.5	-
Soil Organic Matter	%	4	0.2-1.2	0.7	-

Based upon the four soil samples analysed; no results of concern were noted within the natural ground, when compared to the STL Tier 1 screening values for a residential land use without consumption of home grown produce.

24.3.2 Asbestos

No asbestos containing materials were detected in the samples analysed and none were observed in the exploratory holes.

However, it should be noted that the exploratory holes are of small diameter and the investigation was constrained by site usage, thus the samples obtained may not reflect the full composition of the soils on the site. Therefore, there is always the potential for pockets of asbestos or for asbestos containing materials to be present, which have not been detected in the sampling.

It is also our experience that asbestos containing materials are quite often encountered in buried pockets and beneath slabs (sometimes adhering to the concrete) on older sites. It is, therefore, advised that further examination is carried out in trial pits, when suitable access is available.

24.3.3 Organic Contaminants

The following table summarises the results of the analysis for petroleum hydrocarbons:

Hydrocarbon substance or Fraction	Measured Concentration in mg/kg *(µg/kg)*					
	WLS1 @ 0.2	WLS2 @ 0.3	WLS3 @ 0.4	WLS3 @ 1.3	WLS4 @ 0.4	WLS4 @ 0.8
>EC8-EC10	-	<10	-	-	-	-
>EC10-EC12	-	<1	-	-	-	-
>EC12-EC16	-	<10	-	-	-	-
>EC16-EC21	-	<10	-	-	-	-
>EC21-EC40	-	510	-	-	-	-
>EC10-EC40	390	-	72	100	730	200

* Aliphatic and Aromatic compounds

No results of concern were noted.

25 Site Investigation – Gas

25.1 Gas Sources

The desk study identified two potential gas sources comprising Made Ground beneath the site and potentially present beneath adjoining areas of land.

These types of sources are characterised as being of Very Low to Low generation potential, after Wilson and Haines (2005)[9].

Potential exposure pathways include inhalation of indoor gas vapours that would enter the areas of new building via construction joints, cracks, openings in suspended timber or concrete floors, gaps around service ducts and cavity walls. Gas vapours would then accumulate within the new building. Inhalation of outdoor gas vapours by site end users is also possible.

25.2 Sampling Strategy

The number and spacing of the gas monitoring wells was based on a targeted investigation of the (potential gas sources on site/potential migration pathways for the identified off-site source/s) and to provide general coverage for the proposed development.

Monitoring wells were installed at roughly 25m centres, in accordance with the recommendations given in CIRIA C665.

[9] Wilson, S and Haines, S. 2005. Site investigation and monitoring for ground gas assessment – back to basics. Land Contamination & Reclamation 13, 3, 211-222.

25.3 Monitoring Programme and Results

The sensitivity of the proposed development is rated as Moderate and, therefore, six sets of gas readings should be undertaken over a period of six months (CIRIA C665, Table 5.5). However, in this instance, two rounds have been carried out.

The results of the monitoring programme are given in full, in Appendix E, and are summarised below.

Borehole Gas Monitoring Results Summary				
Monitoring Well	WLS01	WLS02	WLS04	
Response Zone/Stratum (mbgl)	1 – 3 sand	1-3 sand	1-3 sand	
Evidence of contamination	None noted	None noted	None noted	
No. of monitoring events	2	2	2	
Methane % range	<0.1	<0.1	<0.1	
Carbon Dioxide % range	<0.1	<0.1	<0.1	
Oxygen % range	20.4-20.5	20.2-20.4	20.4	
Flow rate l/hr range	<0.1	<0.1	<0.1	
BH Pressure range mb	0	0	0	
Water level mbgl	dry	dry	dry	
Atmospheric pressure during monitoring mb	1003	1003	1003	

Levels of methane and carbon dioxide that would be considered above natural background levels were not noted during the two monitoring visits.

25.4 Identified Gas Regime

The maximum peak flow rate observed was <0.1 ℓ/h.

A steady flow rate of 0.1 ℓ/h, in combination with the maximum gas concentration of 0.1%, would give a gas screening value (GSV) of 0.0001ℓ/hr, which is characteristic of CS1 (Characteristic Situation), where gas emissions would be classified as being of low risk; or NHBC green, where gas emissions would be classified as being of low risk.

On this preliminary basis, soil gas protection measures should not be required for this development.

Best practice indicates that six monitoring visits, over a period of three months is required. Further monitoring, comprising four additional rounds, would needed to confirm this preliminary classification; particularly as there are now residential units at ground level.

26 Summary of Identified Contamination

No results of concern were noted for this site, therefore, on the basis of the work undertaken to date, there appear to be no issues relating to contamination.

27 Risk Evaluation

The object of the risk evaluation is to assess the pollution linkages for specific contaminant groups considered in the conceptual model, identify any unacceptable risks and, therefore establish whether there is a need for further investigation and/or remedial action.

The risks are considered in the context of the specific development proposals for the site and, therefore, the conclusions may not be appropriate for alternative schemes.

27.1 Revised Conceptual Model

The preliminary site model has been refined in light of the findings of this investigation and is summarised below.

Metals	*Petroleum Hydrocarbons*	*PAH Compounds*	*Landfill Gas*	*Asbestos*	**PATHWAYS**	**RECEPTORS**
N	N	N	n/a	N	Ingestion and inhalation of contaminated soil and dust	Human Health
N	N	N	n/a	n/a	Dermal contact with contaminated soil and dust	
N	N	N	P	n/a	Inhalation of vapours or gases	
N	N	N	n/a	n/a	Uptake into edible fruit and vegetables	
N	N	N	n/a	n/a	Surface water run-off into surface water features	Water Environment
N	N	N	n/a	n/a	Migration through ground into surface water or groundwater	
N	N	N	n/a	n/a	Off-site migration of contaminated groundwater	
N	N	N	n/a	n/a	Vegetation on site growing in contaminated soil	Flora and Fauna
N	N	N	n/a	n/a	Aquatic life in affected waters	
N	N	N	n/a	n/a	Contact with contaminated soil	Building materials/ buried services
N	N	N	N	n/a	Fire or explosion	

Key:

Y	Pollutant linkage likely
N	Pollutant linkage not likely
P	Pollutant linkage possible
n/a	Pathway not applicable to contaminant

Potential pollutant linkages were identified for possible soil gas emissions; due to there being two rounds of monitoring undertaken and that there are now residential units proposed at ground level.

27.2 Relevant Pollutant Linkages

Based upon the work undertaken to date, no Relevant Pollutant Linkages for which remedial action will be required have been identified in the revised conceptual model.

28 Discussion and Conclusions

Loose sands and gravels were encountered in WLS3 and these may be indicative of an infilled gull, associated with cambering, or the installation of the nearby three chamber drainage interceptor. Further investigation is recommended to determine the lateral extent and the depth of these loose soils.

It is suggested that the soil gas monitoring programme be completed, by undertaking four additional rounds of soil gas monitoring; particularly as there are now residential units proposed at ground level.

As with any site, areas of contamination not identified during site investigation works may come to light in the course of redevelopment. Accordingly, a discovery strategy must be in place during the redevelopment to ensure that any hitherto unknown contamination is identified and dealt with in an appropriate manner. Depending on the nature of any such contamination, it may prove necessary to reassess the remedial strategy for the site.

A formal remediation strategy and verification plan should be agreed with the regulatory authorities prior to commencement of any remedial works. This would comprise a watching brief, as above.

29 General Guidance

No significant contamination was identified at the site; hence the following is given for information only:

Allowance should be made for verification of any remedial works by suitably experienced personnel.

It may be that specific local requirements apply to this site, of which we are not aware at this time.

In general terms, the workforce and general public should be protected from contact with contaminated material. There is a range of relevant documents published by the Health and Safety Executive, and organisations such as CIRIA, and the BRE.

Some soils will require removal from site and disposal to suitably licensed landfills. Different guidelines and charges will apply to different waste classification. As waste producers, the Developer holds responsibilities under the various governing regulations. The chemical analyses appended to this report should be forwarded to tip operators for their own assessment, to confirm classification of the soils for offsite disposal, and whether they can accept the material. Waste Acceptance Criteria (WAC) testing may be requested for confirmation of the material's classification.

It is suggested that the soil gas monitoring programme should be completed; with four additional rounds being undertaken.

All hazardous and non-hazardous soils leaving site will need to be pre-treated. Waste minimisation by selective excavation is a recognised form of pre-treatment.

It should be noted that organic contaminants present in the soils could affect plastic underground service pipes (such as the types used by water and gas supply companies). It is recommended that guidance be sought from the relevant companies regarding any proposed plant in the affected area.

Many water supply companies now require higher specification pipe on contaminated sites, even following remediation.

APPENDIX A

Site Plans and Exploratory Hole Logs

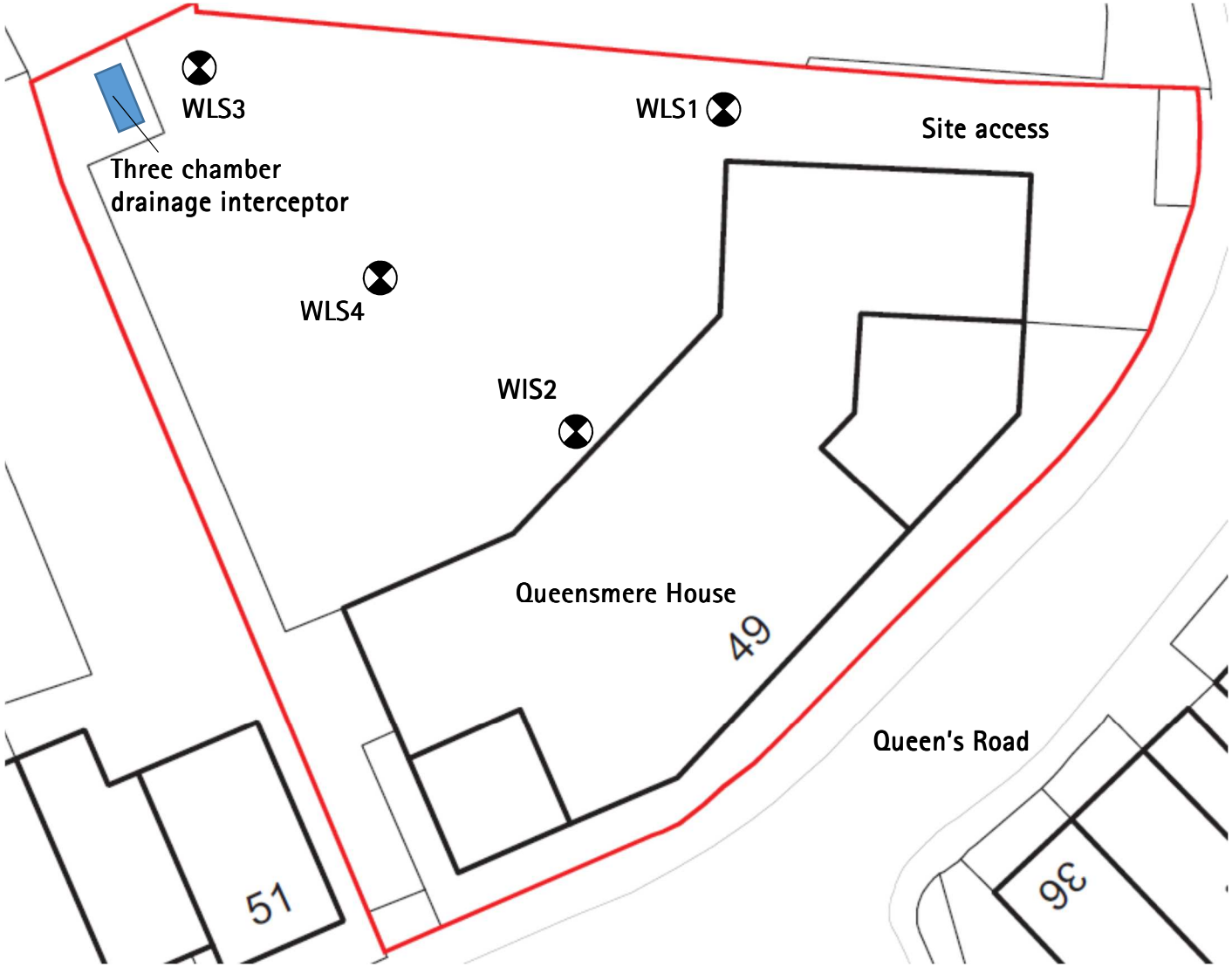
NB: Contains Ordnance Survey Data © Crown copyright and database right 2024.

Site:	Queensmere House, 49 Queens Road, East Grinstead, RH19 1BG	STL: J15841	Fig No: 1
Date:	15th October 2024	Site Location Plan	

Southern Testing

Southern Testing: Keeble House, Stuart Way, East Grinstead, West Sussex RH19 4QA
ST Consult: Twigden Barns, Brixworth Road, Creaton, Northampton NN6 8NN

ST Consult



Windowless sample borehole

NB: Positions of Boreholes are only indicative.

Site: Queensmere House, 49 Queen's Road, East Grinstead, RH19 1BG	STL: J15841	Fig No: 2
Date: 7th November 2024	Trial Hole Location Plan – Not to Scale	

Southern Testing

Southern Testing: Keeble House, Stuart Way, East Grinstead, West Sussex RH19 4QA
ST Consult: Twigden Barns, Brixworth Road, Creaton, Northampton NN6 8NN

ST Consult

DO NOT SCALE
REPORT ERRORS AND OMISSIONS TO THE ARCHITECT
CHECK ALL DIMENSIONS BEFORE FABRICATION

REVISION		DRAWN	CHK'D	DATE
A	Re-design of lower ground floor units WIP	WJB	WJB	18/09/24

Lower Ground Floor Plan

Accommodation Schedule

	1B1P	1b2p	2B3P	2B4P	Total
L Ground	1	3	2	-	6
Ground	2	4	1	-	7
First	1	4	1	1	7
Second	-	4	1	-	5
TOTAL	4	15	5	1	25
	76%		24%		

0 2m 4m 6m 8m 10m 12m 14m 16m 18m 20m

Planning Pre-App

CONTRACT
Queensmere House
49 Queens Road
East Grinstead, RH19 1BG

SCALE 1:100@A1/1:200@A3
DATE July 2024
DRAWN MR
CHECKED WJB

TITLE
Proposed Plan Layouts

DRAWING No 24152_PA04
REVISION A

Architects + Building Surveyors
Brook House Coventry Road Ilford Essex IG1 4QR
T 020 8532 4141 F 020 8532 4140

Key to Exploratory Hole Logs

General

All soil & rock descriptions in general accordance with BS5930, BS EN ISO 14688 and BS EN ISO 14689
The Geology Code is only provided where positive identification of the sampled strata has been made.

Sampling

ES	Environmental Sample (taken in appropriate sampling container)
D	Disturbed Sample
B	Bulk Sample
LB	Large Bulk for Earthworks testing
C	Core Sample
U	Undisturbed Sample (number of blows indicated in results column)
SPTLS	SPT Liner Sampler
P	Piston Sample
W	Water Sample

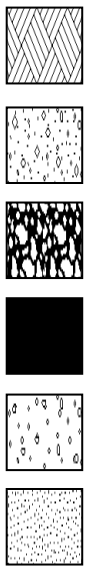
Insitu Tests

SPT	Standard Penetration Test in accordance with BS EN ISO 22476-3
SPT (C)	Cone Penetration Test in accordance with BS EN ISO 22476-3
PT	Penetration Test - STL documented equivalent SPT N Value
PPT	Perth Penetration Test - STL in house documented method (N Value)
UCS (⊥)	Unconfined Compressive Strength measure by hand penetrometer (kN/m^2)
IVN	Hand Vane (kPa)
PID	Photo Ionisation Detector Results (ppm)
MEXE	Mexecone CBR Result

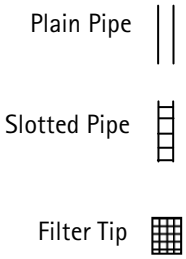
Drilling Records

Depth to standing water level	▼
Depth to water strike	▽
TCR	Total Core Recovery (%)
SCR	Solid Core Recovery (%)
RQD	Rock Quality Index (%)
FI	Fracture Index

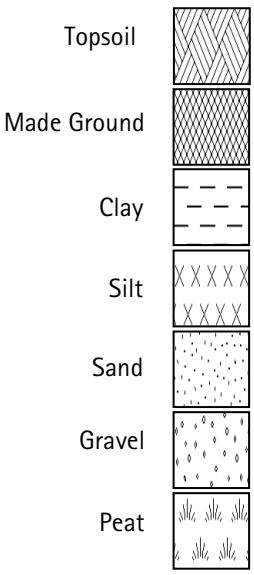
Backfill Symbols



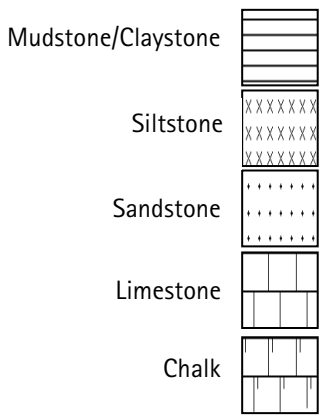
Pipe Symbols



Principal Soil Types



Principal Rock Types



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Start - End Date	Project ID:	Hole Type:	WLS01
04/04/2018	J13542	WLS	Sheet 1 of 1

Project Name:	Queensmere House	Remarks:	Co-ordinates:	Level:	Logger:
					GS
Location:	49 Queens Road, East Grinstead, RH19 1BG	No groundwater encountered			
Client:					

Well	Water Strikes	Samples and Insitu Testing: Depth (m bgl)	Type	Results	Level (m AOD)	Thickness (m)	Legend	Depth (m bgl)	Stratum Description
						(0.10)		0.10	Blacktop tarmac (MADE GROUND)
		0.20	ES						Buff brown sandy Gravel. Gravel is fine to coarse subrounded to angular fragments of flint, concrete, tarmac and aggregate (MADE GROUND)
						(0.70)			
								0.80	
		0.90	D			(0.20)			Soft dark greenish brown sandy CLAY
		0.90	ES					1.00	
		1.00	SPT(S)	N=10 (2,2/3,2,2,3)					Medium dense buff brown patched orange brown clayey gravelly fine SAND. Gravel is fine to medium weak sandstone
		1.20	ES						
		1.50	D			(1.00)			*Light grey mottling*
		1.80	D						*Fine to coarse subangular fragments of sandstone*
		2.00	SPT(S)	N=30 (1,4/4,8,9,9)				2.00	Dense becoming cemented light greyish brown clayey SAND. Sand is well compacted almost as rock
		2.20	D						
						(0.80)			
		2.80	D					2.80	End of borehole at 2.800m

Hole Details		Casing Details		Waterstrike (m bgl)						Standing/Chiselling (m bgl)			
Depth (m bgl)	Dia. (mm)	Depth (m bgl)	Dia. (mm)	Date	Depth Strike	Depth Casing	Depth Sealed	Rose to:	Time (mins)	From	To	Time	Remarks

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Start - End Date	Project ID:	Hole Type:	WLS02
04/04/2018	J13542	WLS	Sheet 1 of 1

Project Name:	Queensmere House	Remarks:	Co-ordinates:	Level:	Logger:
					GS
Location:	49 Queens Road, East Grinstead, RH19 1BG	No groundwater encountered			
Client:					

Well	Water Strikes	Samples and Insitu Testing: Depth (m bgl)	Type	Results	Level (m AOD)	Thickness (m)	Legend	Depth (m bgl)	Stratum Description
						(0.20)		0.20	Blacktop tarmac (MADE GROUND)
		0.30	ES			(0.20)		0.40	Concrete crush fill material (MADE GROUND)
		0.50	ES			(0.40)		0.80	Greyish brown sandy GRAVEL. Gravel is fine to coarse subangular to rounded fragments of flint (MADE GROUND)
		0.80	ES						
		0.90	D			(0.30)		1.10	Medium dense orangish brown slightly clayey gravelly SAND. Sand is fine to medium and gravel is fine to coarse subrounded to subangular fragments of flint (MADE GROUND)
		1.00	SPT(S)	N=23 (5,5/6,7,5,5)					
		1.20	D						Medium dense dark orangish brown mottled light brown clayey SILT with fine to medium angular sandstone gravel with occasional black ironstaining
		1.20	ES						*Becomes stiff*
		1.60	D			(0.90)			*Gravels of fine to coarse angular fragments of sandstone*
		2.00	SPT(S)	N=30 (7,7/8,7,7,8)				2.00	
		2.10	D						Medium dense light greyish biege gravelly SAND. Sand is fine to coarse angular fragments of sandstone
		2.50	SPT(S)	77 (26,25/77 for 225mm)		(0.60)		2.60	End of borehole at 2.600m

Hole Details		Casing Details		Waterstrike (m bgl)						Standing/Chiselling (m bgl)			
Depth (m bgl)	Dia. (mm)	Depth (m bgl)	Dia. (mm)	Date	Depth Strike	Depth Casing	Depth Sealed	Rose to:	Time (mins)	From	To	Time	Remarks

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Start - End Date	Project ID:	Hole Type:	WLS03
04/04/2018	J13542	WLS	Sheet 1 of 1

Project Name:	Queensmere House	Remarks:	Co-ordinates:	Level:	Logger:
					GS
Location:	49 Queens Road, East Grinstead, RH19 1BG	Hole collapsed to 1.5m bgl due to gravels and backfilled. No groundwater encountered			
Client:					

Well	Water Strikes	Samples and Insitu Testing: Depth (m bgl)	Type	Results	Level (m AOD)	Thickness (m)	Legend	Depth (m bgl)	Stratum Description
						(0.15)		0.15	Blacktop tarmac (MADE GROUND)
						(0.15)		0.30	Concrete crush fill material (MADE GROUND)
		0.40	ES						Buff brown sandy Gravel. Gravel is fine to coarse subrounded to angular fragments of flint, concrete, tarmac and aggregate (MADE GROUND)
						(0.80)			
		0.80	ES						
		1.00	D						
		1.00	SPT(S)	N=6 (2,2/2,2,1,1)				1.10	
		1.30	ES						Loose brown gravelly SAND. Sand is fine to medium and gravel is fine to coarse subangular to rounded fragments of flint (MADE GROUND)
		1.50	D						
						(0.90)			
		1.70	ES						*Becomes clayey*
		2.00	SPT(S)	N=9 (1,1/2,2,2,3)				2.00	Loose to medium dense brown to grey slightly sandy GRAVEL. Gravel is fine to cobble subangular to rounded sandstone
									Non recovery due to slippage of core within liner
						(1.00)			
								3.00	End of borehole at 3.000m

Hole Details		Casing Details		Waterstrike (m bgl)						Standing/Chiselling (m bgl)			
Depth (m bgl)	Dia. (mm)	Depth (m bgl)	Dia. (mm)	Date	Depth Strike	Depth Casing	Depth Sealed	Rose to:	Time (mins)	From	To	Time	Remarks

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Start - End Date	Project ID:	Hole Type:	WLS04
04/04/2018	J13542	WLS	Sheet 1 of 1

Project Name:	Queensmere House	Remarks:	Co-ordinates:	Level:	Logger:
					GS
Location:	49 Queens Road, East Grinstead, RH19 1BG	No groundwater encountered			
Client:					

Well	Water Strikes	Samples and Insitu Testing: Depth (m bgl)	Type	Results	Level (m AOD)	Thickness (m)	Legend	Depth (m bgl)	Stratum Description
						(0.15)		0.15	Blacktop tarmac (MADE GROUND)
						(0.15)		0.30	Concrete crush fill material (MADE GROUND)
		0.40	ES			(0.40)			Buff brown sandy Gravel. Gravel is fine to coarse subrounded to angular fragments of flint, concrete, tarmac and aggregate (MADE GROUND)
		0.80	ES			(0.20)		0.70	Dark grey clayey sandy GRAVEL. Gravel is fine to coarse subangular to subrounded flint (MADE GROUND)
		1.00	D			(0.30)		0.90	Brown clayey SAND
		1.00	ES						
		1.00	SPT(S)	N=15 (1,3/3,4,4,4)				1.20	Medium dense becoming very dense light grey gravelly SAND. Sand is fine to medium and gravel is fine to coarse angular fragments of sandstone
		1.30	D						*Becomes buff brown*
		1.30	ES						
		1.60	D						
		2.00	SPT(S)	72 (5,6/72 for 225mm)		(1.80)			
		2.50	D						
		3.00	SPT(S)	15 (12,8/15 for 75mm)				3.00	End of borehole at 3.000m

1 2 3 4 5

Hole Details		Casing Details		Waterstrike (m bgl)						Standing/Chiselling (m bgl)			
Depth (m bgl)	Dia. (mm)	Depth (m bgl)	Dia. (mm)	Date	Depth Strike	Depth Casing	Depth Sealed	Rose to:	Time (mins)	From	To	Time	Remarks

APPENDIX B

Field Sampling and in-situ Test Methods & Results

Field Sampling and in-situ Test Methods

Disturbed Samples

Disturbed samples were taken from the trial holes at intervals and stored in sealed glass jars and polythene bags, as appropriate.

Undisturbed U100 Samples

Undisturbed U100 samples were taken in the clay soils at appropriate intervals. These samples are taken in a 100 mm diameter, 450 mm long, thin-walled steel tube, and are sealed with paraffin wax and tightly fitting end caps for transporting to the laboratory.

Standard Penetration Test

The Standard Penetration (SPT) Test is specified in BS EN ISO 22476-3:2005+A1:2011. In this test, a 51mm diameter open-ended tube is driven into the ground by a 63.5 kg hammer falling freely through 760 mm. The tube is seated by driving to a penetration of 150mm, or by 25 standard blows, whichever occurs first. It is then driven for a maximum of a further 300mm and the number of blows is termed the penetration resistance (N). If 300mm penetration cannot be achieved in 50 blows (100 blows in soft rock), the test drive is terminated.

When testing in gravels, a conical end piece is attached to the tube. The test is then called an SPT(C).

This test provides an indirect method of assessing the properties of cohesionless soils, and the following table (after Terzaghi and Peck) gives the approximate condition:-

Number Blows (N)	Density
0 - 4	Very Loose
4 – 10	Loose
10 – 30	Medium Dense
30 – 50	Dense
Over 50	Very Dense

Clay

An approximate value for the shear strength of clay may be obtained using Stroud (1974), which paper indicates that the cohesive strength is a function of plasticity and SPT 'N' value. The relation is:

C_u = f_i x N kPa

C_u = undrained shear strength

f_i = factor related to plasticity index and ranging from 4 to more than 6

The SPT test is not generally accepted as giving a reliable indication of the strength of cohesive soils but it does give a guide; often the following table:-

Number Blows (N)	Soil Strength
Less than 2	Very Soft (Very Low Strength)
2 – 5	Soft (Low Strength)
5 – 10	Firm (Medium Strength)
10 – 15	Stiff (High Strength)
15 – 30	Very Stiff (Very High Strength)

Perth Penetrometer Test

Perth Penetrometer tests were carried out. The Perth Penetrometer is a device used for measuring the relative density of sands. It consists of a 16 mm diameter hardened steel probe, which is driven into the soil by successive blows of a 9 kg weight, which freely falls over a distance of 600 mm. The number of blows required for each 50 mm of penetration is recorded, and the test is continued for a depth of 450 mm, according to soil type. Useful information can be obtained by carrying the test past the standard depth, and 2,000 mm and 3,000 mm extensions are used to probe the depth of loose fill or other soil, or to make an estimate of the strength of soils or rock in an auger hole or in the base of an unsupported test pit.

The energy input per square metre is roughly the same as the energy input from the Standard Penetration Test (SPT), and the blow counts recorded in sand are roughly the same as SPT blow counts (but this relationship does not hold for coarse soils). The SPT test is a similar type of test except that much heavier driving weights (63.5 kg) are used. The relative density relationship given for the SPT test is:

Number of Blows (N)	Density
0 - 4	Very Loose
4 - 10	Loose
10 - 30	Medium Dense
30 - 50	Dense
Over 50	Very Dense

APPENDIX C

Geotechnical Laboratory Test References & Results

Southern Testing | ST Consult

Atterberg and Moisture Content Summary

BS1377-2 cl.3.2, 3.3, 4.2, 4.3 & BS EN ISO 17892-1

AGS

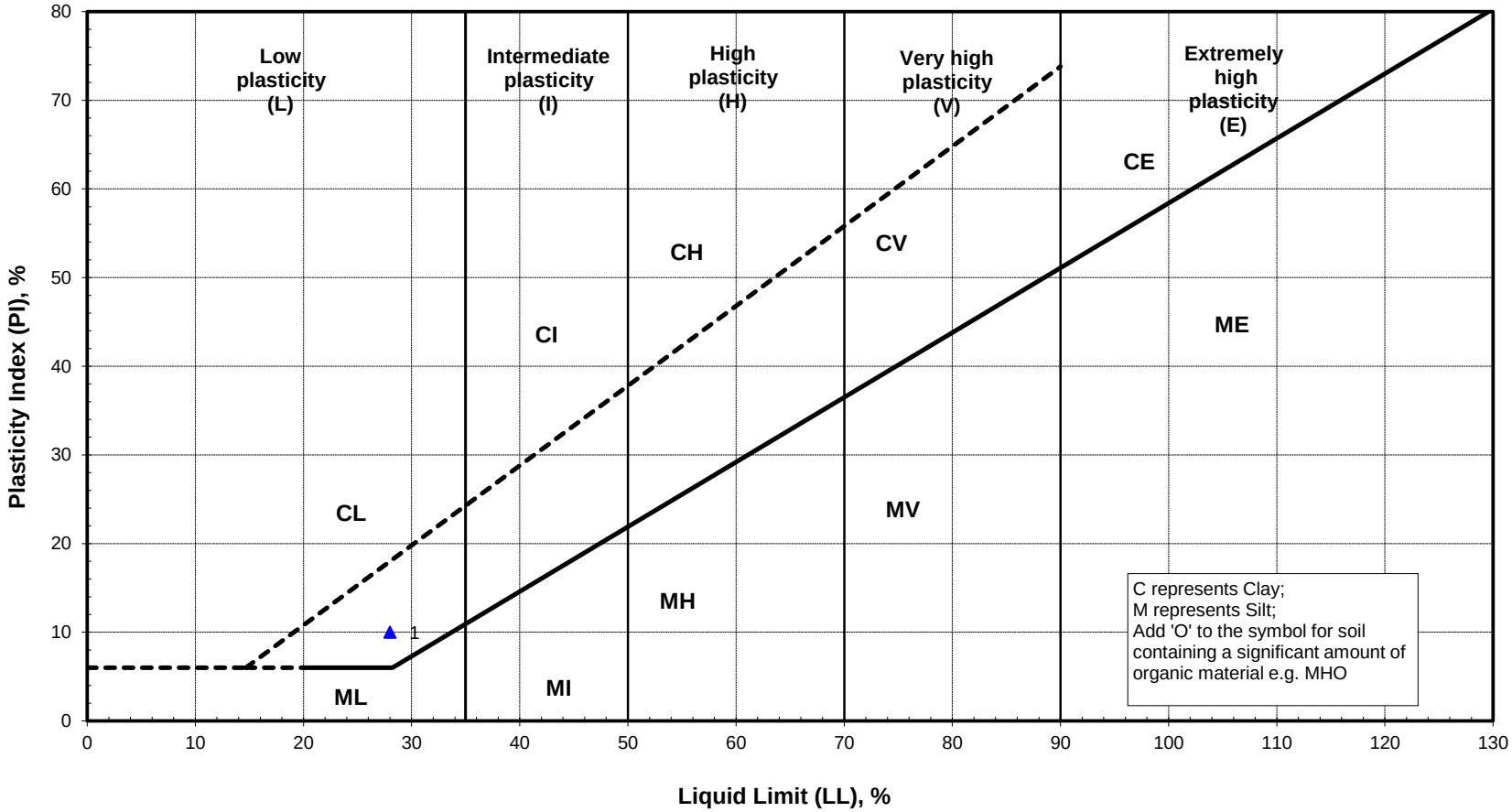
Project Name		*Queensmere House, 49 Queens Road, East Grinstead*					**Project Number**		***J13542***	
Client		*Queensmere House Ltd*			**PE**	*ER*	**Date Issued**		*27-Apr-18*	
Location	Depth m	Sample Type	Visual Description	Comments	Natural MC %	Liquid Limit %	Plastic Limit %	Plasticity Index	Classi-fication	Passing 425 micron %
WLS01	0.90	D	*Very stiff green grey sandy slightly gravelly CLAY. Gravel consists of fine flat subangular siltstone.*	*Sample passed through 425µm sieve*	*18*	*28*	*18*	*10*	*CL*	*88*

Plasticity Chart for Atterberg Limit Tests

Project Name	*Queensmere House, 49 Queens Road, East Grinstead*			**Project Number**	*J13542*
Client Name	*Queensmere House Ltd*	**PE**	*ER*	**Date Issued**	*27-Apr-18*

Key

No.	TH No.	Depth
1	WLS01	0.90



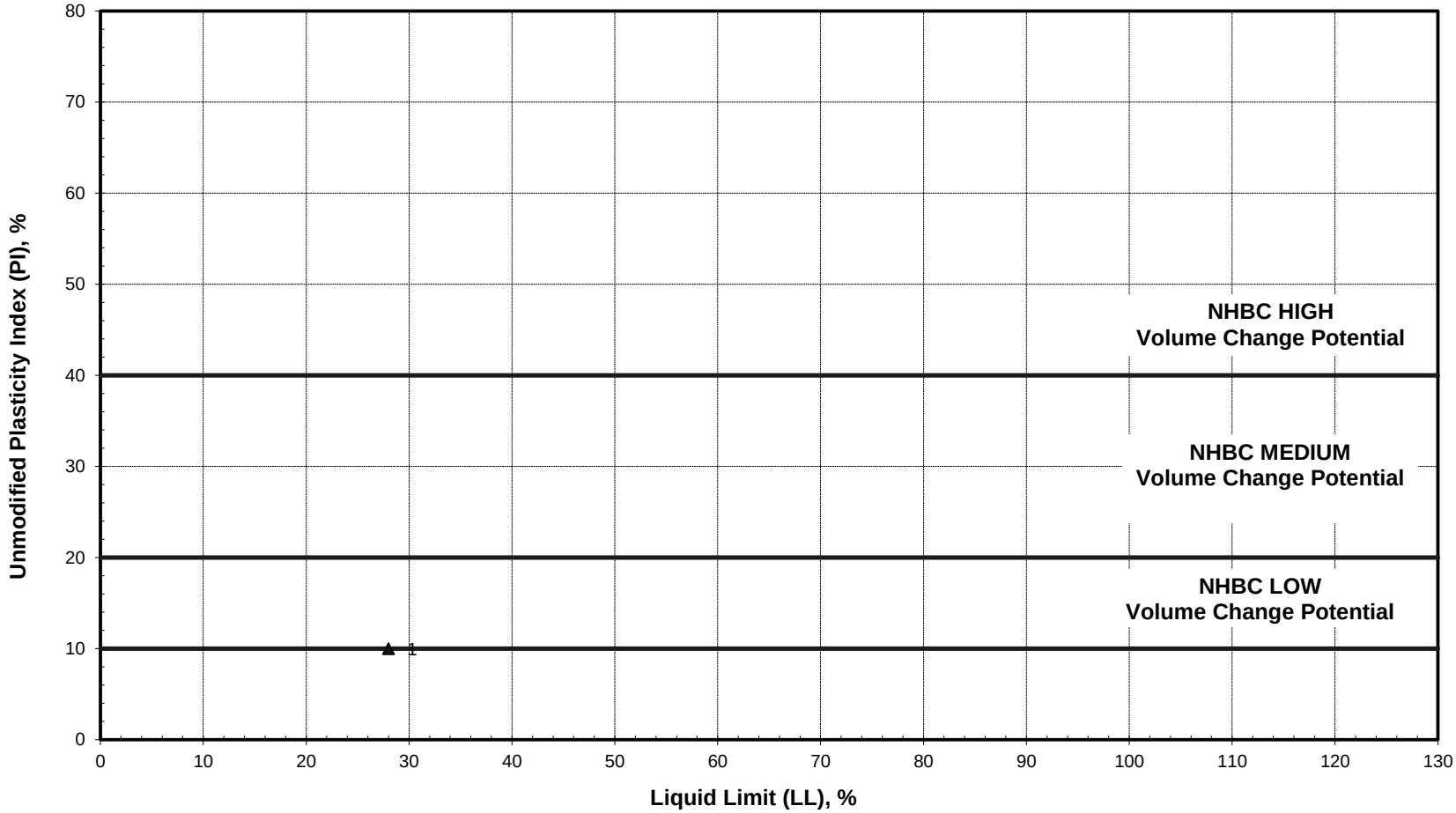
Liquid Limit		**Plastic Limit**		**Plasticity Index**	
Maximum Value	28	Maximum Value	18	Maximum Value	10
Minimum Value	28	Minimum Value	18	Minimum Value	10
Average Value	28	Average Value	18	Average Value	10

NHBC Classification for Volume Change Potential

Project Name	*Queensmere House, 49 Queens Road, East Grinstead*			**Project Number**	*J13542*
Client Name	*Queensmere House Ltd*	**PE**	*ER*	**Date Issued**	*27-Apr-18*

Key

No.	TH No.	Depth
1	WLS01	0.90



Liquid Limit		**Plastic Limit**		**Unmodified Plasticity Index**	
Maximum Value	28	Maximum Value	18	Maximum Value	10
Minimum Value	28	Minimum Value	18	Minimum Value	10
Average Value	28	Average Value	18	Average Value	10

Southern Testing | ST Consult

PARTICLE SIZE DISTRIBUTION REPORT

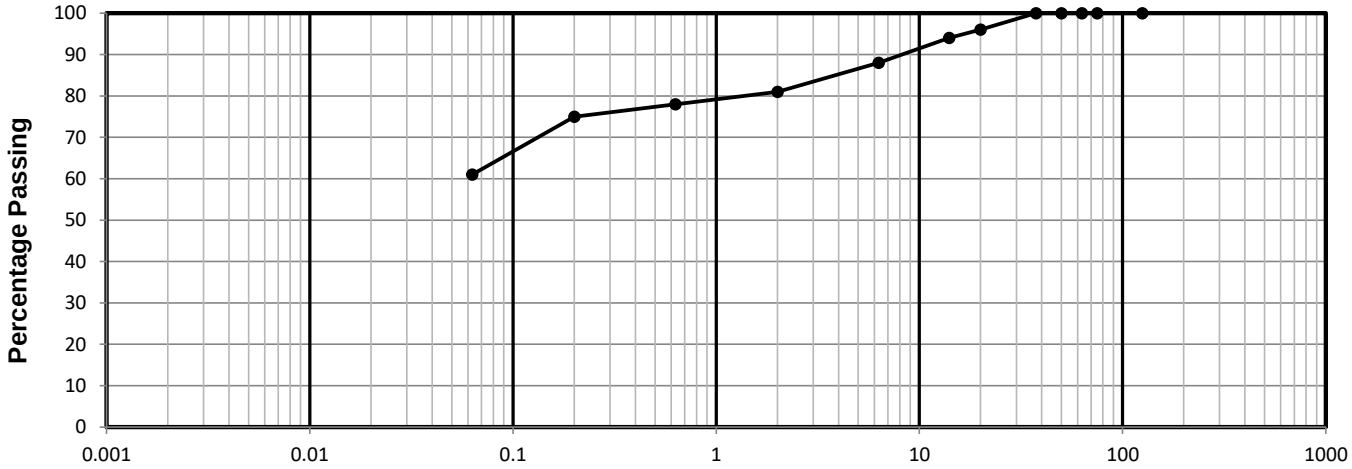
To BS1377-2 cl. 9.2-9.5

AGS

Project Name	*Queensmere House, 49 Queens Road, East Grinstead*			**Project Number**	***J13542***
Client Name	*Queensmere House Ltd*	**PE**	*ER*	**Date Issued**	*27-Apr-18*

Particle Size	% Passing
125mm	100
75mm	100
63mm	100
50mm	100
37.5mm	100
20mm	96
14mm	94
6.3mm	88
2mm	81
630µm	78
200µm	75
63µm	61

Particle Size Distribution Chart



CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES
	SILT			SAND			GRAVEL			
	61			20			19			0

Visual Description of Sample:

Yellow brown and light grey slightly sandy slightly gravelly CLAY. Gravel consists of fine to coarse subangular and angular sandstone.

Comments:

Particle Density (Assumed) Mg/m³	**N/A**
Coefficient of Uniformity	

Test Methods:

Wet & Dry Grading BS1377-2
cl.9.2 & 9.3 & BS EN ISO 17892-4

Location	WLS01
Depth (m)	1.50
Sample Type	D

Tested By	STL Lab
Checked By	GeorginaB

Southern Testing | ST Consult

PARTICLE SIZE DISTRIBUTION REPORT

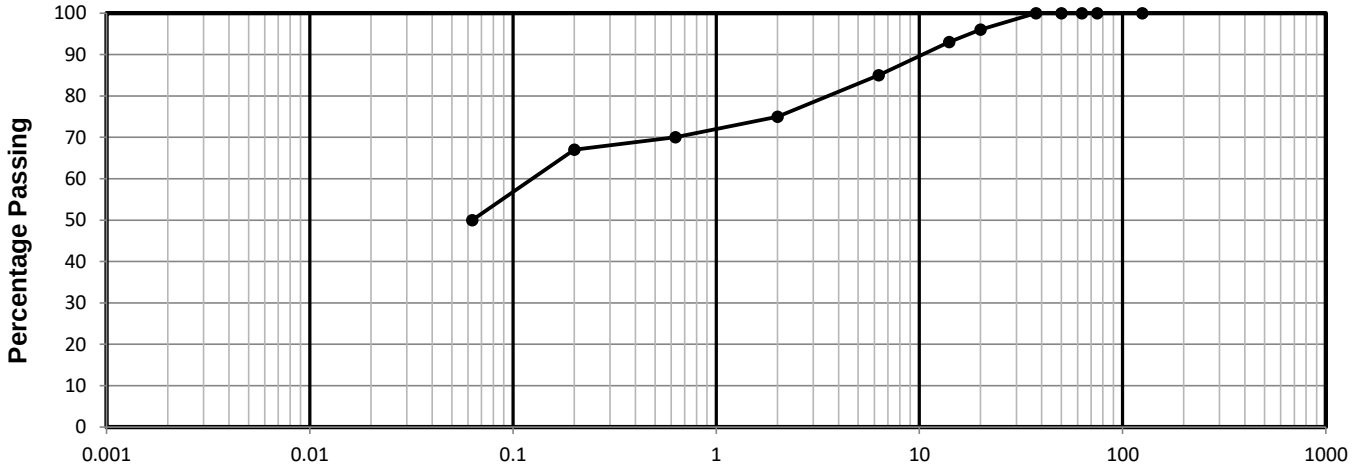
To BS1377-2 cl. 9.2-9.5

AGS

Project Name	*Queensmere House, 49 Queens Road, East Grinstead*			**Project Number**	***J13542***
Client Name	*Queensmere House Ltd*	**PE**	*ER*	**Date Issued**	*27-Apr-18*

Particle Size	% Passing
125mm	100
75mm	100
63mm	100
50mm	100
37.5mm	100
20mm	96
14mm	93
6.3mm	85
2mm	75
630µm	70
200µm	67
63µm	50

Particle Size Distribution Chart



CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES
	SILT			SAND			GRAVEL			
50				25			25			0

Visual Description of Sample:

Light brown patched orange brown very clayey/silty very gravelly fine to coarse SAND. Gravel consists of fine to coarse subangular and angular sandstone.

Particle Density (Assumed) Mg/m³	**N/A**
Coefficient of Uniformity	

Location	WLS02
Depth (m)	1.20
Sample Type	D

Comments:

Test Methods:

Wet & Dry Grading BS1377-2
cl.9.2 & 9.3 & BS EN ISO 17892-4

Tested By	STL Lab
Checked By	GeorginaB

Southern Testing | ST Consult

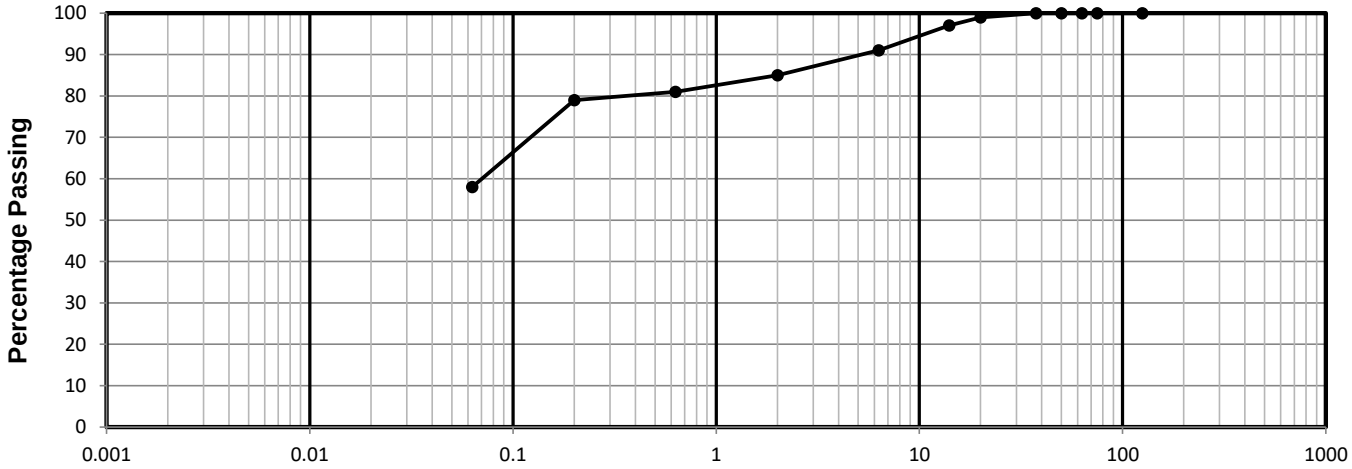
PARTICLE SIZE DISTRIBUTION REPORT

To BS1377-2 cl. 9.2-9.5

Project Name	*Queensmere House, 49 Queens Road, East Grinstead*			**Project Number**	***J13542***
Client Name	*Queensmere House Ltd*	**PE**	*ER*	**Date Issued**	*27-Apr-18*

Particle Size	% Passing
125mm	100
75mm	100
63mm	100
50mm	100
37.5mm	100
20mm	99
14mm	97
6.3mm	91
2mm	85
630µm	81
200µm	79
63µm	58

Particle Size Distribution Chart



CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES
	SILT			SAND			GRAVEL			
	58			27			15			0

Visual Description of Sample:

Buff very clayey/silty gravelly fine SAND. Gravel consists of fine and medium subangular and angular sandstone.

Comments:

Particle Density (Assumed) Mg/m³	**N/A**
Coefficient of Uniformity	

Test Methods:

Wet & Dry Grading BS1377-2
cl.9.2 & 9.3 & BS EN ISO 17892-4

Location	WLS02
Depth (m)	1.60
Sample Type	D

Tested By	STL Lab
Checked By	GeorginaB

Southern Testing | ST Consult

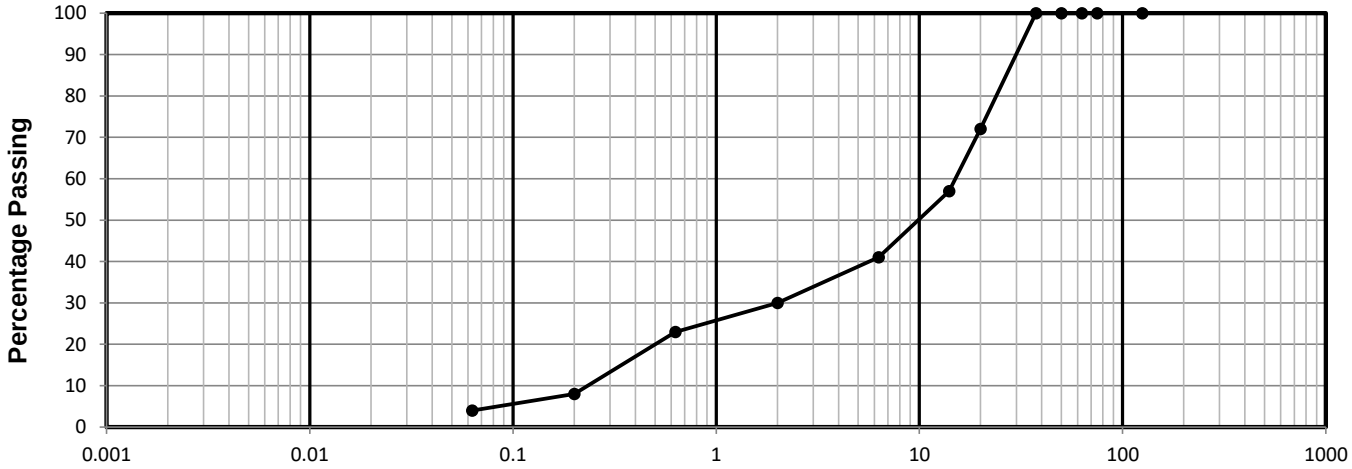
PARTICLE SIZE DISTRIBUTION REPORT

To BS1377-2 cl. 9.2-9.5

Project Name	*Queensmere House, 49 Queens Road, East Grinstead*			**Project Number**	***J13542***
Client Name	*Queensmere House Ltd*	**PE**	*ER*	**Date Issued**	*27-Apr-18*

Particle Size	% Passing
125mm	100
75mm	100
63mm	100
50mm	100
37.5mm	100
20mm	72
14mm	57
6.3mm	41
2mm	30
630µm	23
200µm	8
63µm	4

Particle Size Distribution Chart



CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES
	SILT			SAND			GRAVEL			
	4			26			70			0

Visual Description of Sample:

Grey brown slightly clayey/silty very sandy fine to coarse subangular and subrounded flint GRAVEL.

Particle Density (Assumed) Mg/m³	**N/A**
Coefficient of Uniformity	**64.5**

Test Methods:

Wet & Dry Grading BS1377-2
cl.9.2 & 9.3 & BS EN ISO 17892-4

Location	WLS03
Depth (m)	1.00
Sample Type	D

Comments:

Tested By	STL Lab
Checked By	GeorginaB

Southern Testing | ST Consult

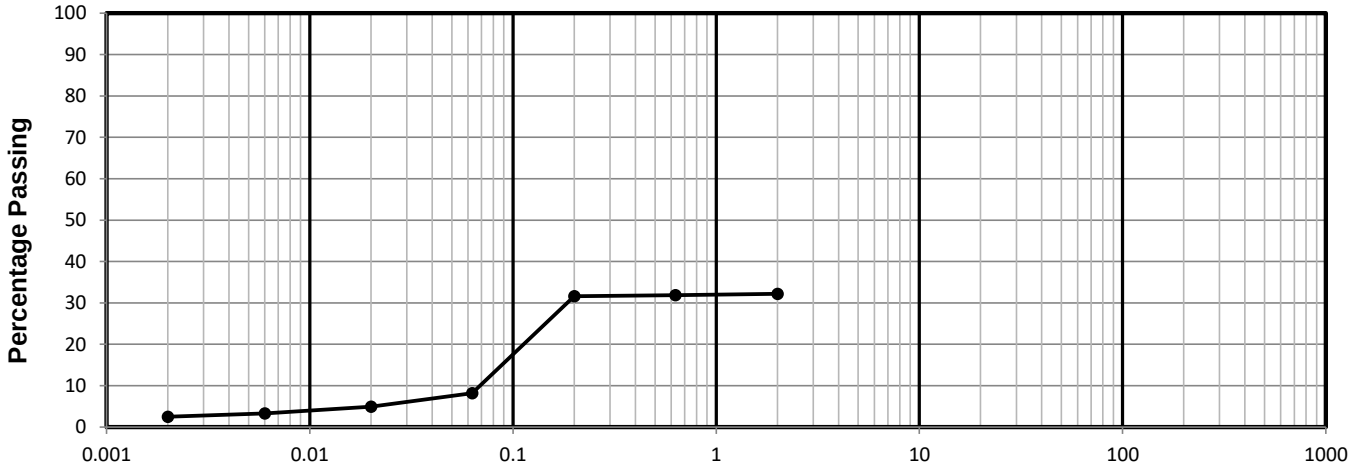
PARTICLE SIZE DISTRIBUTION REPORT

To BS1377-2 cl. 9.2-9.5

Project Name	*Queensmere House, 49 Queens Road, East Grinstead*			**Project Number**	***J13542***
Client Name	*Queensmere House Ltd*	**PE**	*ER*	**Date Issued**	*27-Apr-18*

Particle Size	% Passing
2mm	32
630µm	32
200µm	32
63µm	8
20µm	5
6µm	3
2µm	3

Particle Size Distribution Chart



CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES
	SILT			SAND			GRAVEL			
3	6			24			68			

Sedimentation pre-treatment: None

Visual Description of Sample:

Light brown very sandy fine and medium subangular sandstone GRAVEL.

Particle Density (Assumed) Mg/m³	**2.65**
Coefficient of Uniformity	

Test Methods:

Sedimentation by Pipette BS1377-2 cl. 9.4 & BS EN ISO 17892-4

Comments:

Location	WLS04
Depth (m)	1.30
Sample Type	D

Tested By	STL Lab
Checked By	GeorginaB

Southern Testing | ST Consult

PARTICLE SIZE DISTRIBUTION REPORT

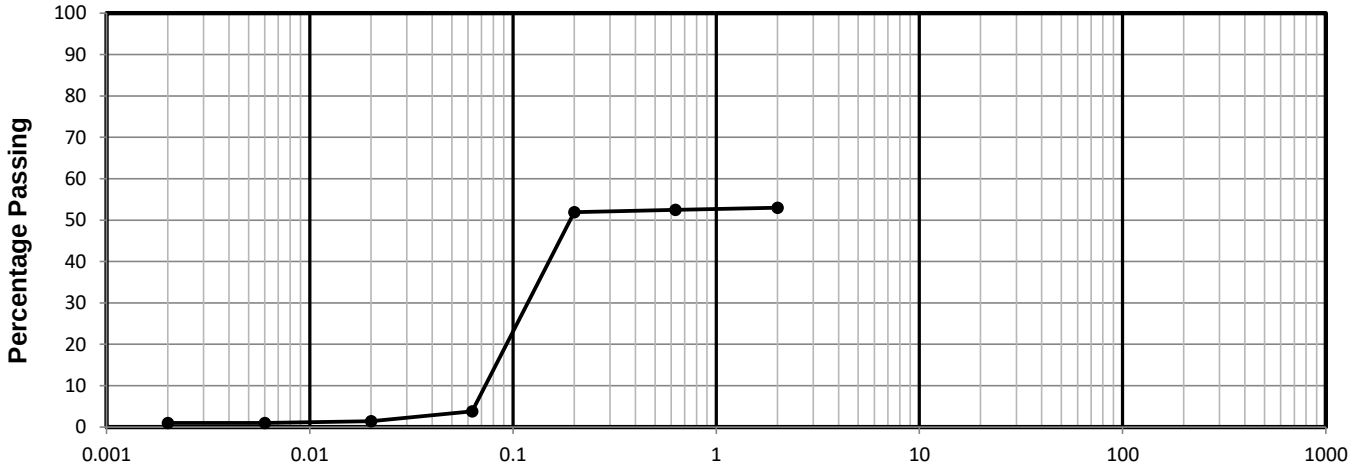
To BS1377-2 cl. 9.2-9.5

AGS

Project Name	*Queensmere House, 49 Queens Road, East Grinstead*			**Project Number**	***J13542***
Client Name	*Queensmere House Ltd*	**PE**	*ER*	**Date Issued**	*27-Apr-18*

Particle Size	% Passing
2mm	53
630µm	53
200µm	52
63µm	4
20µm	1
6µm	1
2µm	1

Particle Size Distribution Chart



CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES
	SILT			SAND			GRAVEL			
1	3			49			47			

Sedimentation pre-treatment: None

Visual Description of Sample:

Buff very gravelly fine SAND. Gravel consists of fine and medium subangular sandstone.

Particle Density (Assumed) Mg/m³	**2.65**
Coefficient of Uniformity	

Test Methods:

Sedimentation by Pipette BS1377-2 cl. 9.4 & BS EN ISO 17892-4

Location	WLS04
Depth (m)	1.60
Sample Type	D

Comments:

Tested By	STL Lab
Checked By	GeorginaB

Southern Testing | ST Consult

CHEMICAL & ELECTROCHEMICAL TESTING SUMMARY

To BS1377-3 cl 5.6 & 9.5

AGS

Project Name		*Queensmere House, 49 Queens Road, East Grinstead*					**Project Number**		***J13542***	
Client		*Queensmere House Ltd*			**PE**	*ER*	**Date Issued**		*27-Apr-18*	
TH No.	Depth m	Sample Type	Visual Description	Comments	Passing 2mm %	pH Value	Soil Sulphate 2:1 Water Extract		Groundwater Sulphate	
							g/l SO_3	BRE mg/l SO_4	g/l SO_3	BRE mg/l SO_4
WLS01	0.90	ES		*Insufficient Sample*						
WLS02	0.50	ES	*Buff sandy fine and medium subangular to rounded flint GRAVEL.*		*22*	*12.0*	*0.25*	*298*		
WLS03	1.00	D	*Grey brown slightly clayey/silty very sandy fine to coarse subangular and subrounded flint GRAVEL.*		*24*	*9.3*	*0.06*	*77*		
WLS04	1.00	D	*Firm dark brown slightly gravelly CLAY. Gravel consists of fine subangular sandstone.*		*83*	*7.9*	*0.08*	*96*		

APPENDIX D

Contamination Laboratory Test Results

Table 1 - Tier 1 Screening Values

Contaminant	Units	Proposed Land Use					
		Residential with homegrown produce consumption	Residential without homegrown produce consumption	Open Space* (Residential)	Open Space* (Park)	Allotments	Commercial / Industrial
Arsenic (As) [2]	mg/kg	37	40	79	170	43	640
Cadmium (Cd) [2]	mg/kg	11	85	120	555	1.9	190
Trivalent Chromium (CrIII) [2]	mg/kg	910	910	1,500	33,000	18,000	8600
Hexavalent Chromium (CrVI) [2]	mg/kg	6	6	7.7	220	1.8	33
Lead (Pb) [3]	mg/kg	200	310	630	1300	80	2330
Mercury (Hg) [1,2,7]	mg/kg	7.6-11	9.2-15	40	68-71	6.0	29-320
Selenium (Se) [2]	mg/kg	250	430	1,100	1,800	88	12,000
Nickel (Ni) [2,4]	mg/kg	130	180	230	800	53	980
Copper (Cu) [2,4]	mg/kg	2,400	7,100	12,000	44,000	520	68,000
Zinc (Zn) [2,4]	mg/kg	3,700	40,000	81,000	170,000	620	730,000
Phenol [1,2]	mg/kg	120-380	440-1200	440-1300	440-1300	23-83	440-1300
Benzo[a]pyrene [1,5]	mg/kg	1.7-2.4	2.6	4.9	10	0.67-2.7	36
Naphthalene [1,2]	mg/kg	2.3-13	2.3-13	77-430^{+}	77-430^{+}	4.1-24	77-430^{+}
Total Cyanide (CN) [6]	mg/kg	/	/	/	/	/	/
Free Cyanide [6]	mg/kg	/	/	/	/	/	/
Complex Cyanides [6]	mg/kg	/	/	/	/	/	/
Thiocyanate [6]	mg/kg	/	/	/	/	/	/

Notes:

***** Open Space levels calculated on the basis of the exposure modelling developed in the C4SL research.

+ Screening values constrained to saturation limit. Higher values may be acceptable on a site specific basis.

[1] Where ranges of values are given for organic contaminants the screening value is dependant on the Soil $^{+}$Organic Matter.

[2] LQM/CIEH S4UL (2014). Copyright Land Quality Management Ltd reproduced with permission; Publication Number S4UL 3116. All rights reserved.

[3] C4SL (DEFRA 2014).

[4] Copper, Zinc and Nickel may have phototoxic effects at the given concentrations. Alternative criteria should be adopted for importation of Topsoil or other soils for cultivation. BS3882:2015 and BS8601:2013 suggest values of 200 to 300mg/kg for Zn, 100 to 200mg/kg for Cu, and 60 to 110mg/kg for Ni, for topsoil and subsoil, depending on pH.

[5] Based on the Surrogate Marker approach and modelled using the modified exposure parameters of C4SL but retaining 'minimal risk' HCV.

[6] Screening criteria derived on a site specific basis if test results indicate.

[7] S4UL for Methyl Mercury, higher concentrations may be tolerable if inorganic mercury is the only species present. Lower concentrations apply for elemental Mercury.

These screening values are valid at the time of writing but may be subject to change and any such changes will have implications for the assessments based on them. Their validity should be confirmed at the time of site development.

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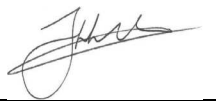
Analytical Report Number : 18-81635

Project / Site name:	Queensmere House, 49 Queens Road, East Grinstead	**Samples received on:**	10/04/2018
Your job number:	J13542	**Samples instructed on:**	10/04/2018
Your order number:	J13542-1	**Analysis completed by:**	18/04/2018
Report Issue Number:	1	**Report issued on:**	19/04/2018
Samples Analysed:	8 soil samples		

Signed: 

Jordan Hill
Reporting Manager
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting

Excel copies of reports are only valid when accompanied by this PDF certificate.

Analytical Report Number: 18-81635

Project / Site name: Queensmere House, 49 Queens Road, East Grinstead
Your Order No: J13542-1

Lab Sample Number				940014	940015	940016	940017	940018
Sample Reference				WLS01	WLS01	WLS02	WLS02	WLS03
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.20	1.20	0.30	0.80	0.40
Date Sampled				04/04/2018	04/04/2018	04/04/2018	04/04/2018	04/04/2018
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	4.3	12	3.9	13	3.3
Total mass of sample received	kg	0.001	NONE	1.4	1.1	1.4	1.1	1.4
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	-	Not-detected	Not-detected
General Inorganics								
pH - Automated	pH Units	N/A	MCERTS	11.7	8.2	-	8.2	10.1
Total Cyanide	mg/kg	1	MCERTS	< 1	< 1	-	< 1	< 1
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.076	0.053	-	0.042	0.15
Sulphide	mg/kg	1	MCERTS	5.7	1.5	-	11	< 1.0
Organic Matter	%	0.1	MCERTS	0.4	0.9	-	0.2	0.2
Total Phenols								
Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	-	< 1.0	< 1.0
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	0.65	< 0.05	-	< 0.05	< 0.05
Anthracene	mg/kg	0.05	MCERTS	0.18	< 0.05	-	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	1.2	< 0.05	-	< 0.05	< 0.05
Pyrene	mg/kg	0.05	MCERTS	1.3	< 0.05	-	< 0.05	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.60	< 0.05	-	< 0.05	< 0.05
Chrysene	mg/kg	0.05	MCERTS	0.52	< 0.05	-	< 0.05	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	0.59	< 0.05	-	< 0.05	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	0.27	< 0.05	-	< 0.05	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.45	< 0.05	-	< 0.05	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.22	< 0.05	-	< 0.05	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.26	< 0.05	-	< 0.05	< 0.05
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	6.18	< 0.80	-	< 0.80	< 0.80
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	6.8	9.0	-	5.6	17
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	-	< 0.2	0.5
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	< 4.0	-	< 4.0	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	14	21	-	19	19
Copper (aqua regia extractable)	mg/kg	1	MCERTS	12	20	-	10	16
Lead (aqua regia extractable)	mg/kg	1	MCERTS	14	30	-	8.9	7.4
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	-	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	9.7	15	-	11	16
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	-	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	27	38	-	25	47

Analytical Report Number: 18-81635

Project / Site name: Queensmere House, 49 Queens Road, East Grinstead
Your Order No: J13542-1

Lab Sample Number				940014	940015	940016	940017	940018
Sample Reference				WLS01	WLS01	WLS02	WLS02	WLS03
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.20	1.20	0.30	0.80	0.40
Date Sampled				04/04/2018	04/04/2018	04/04/2018	04/04/2018	04/04/2018
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Petroleum Hydrocarbons								
Petroleum Range Organics (C6 - C10)	mg/kg	0.1	ISO 17025	-	-	< 0.1	-	-
TPH C10 - C40	mg/kg	10	MCERTS	390	-	-	-	72
TPH2 (C6 - C10)	mg/kg	0.1	MCERTS	< 0.1	-	-	-	< 0.1
TPH C6 - C40	mg/kg	10	NONE	390	-	-	-	72
TPH Texas (C8 - C10)	mg/kg	10	MCERTS	-	-	< 10	-	-
TPH Texas (C10 - C12)	mg/kg	1	MCERTS	-	-	< 1.0	-	-
TPH Texas (C12 - C16)	mg/kg	10	MCERTS	-	-	< 10	-	-
TPH Texas (C16 - C21)	mg/kg	10	MCERTS	-	-	< 10	-	-
TPH Texas (C21 - C40)	mg/kg	10	MCERTS	-	-	510	-	-
TPH Texas (C6 - C40)	mg/kg	10	NONE	-	-	510	-	-

Analytical Report Number: 18-81635

Project / Site name: Queensmere House, 49 Queens Road, East Grinstea
Your Order No: J13542-1

Lab Sample Number				940019	940020	940021		
Sample Reference				WLS03	WLS04	WLS04		
Sample Number				None Supplied	None Supplied	None Supplied		
Depth (m)				1.30	0.40	0.80		
Date Sampled				04/04/2018	04/04/2018	04/04/2018		
Time Taken				None Supplied	None Supplied	None Supplied		
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1		
Moisture Content	%	N/A	NONE	8.5	6.0	13		
Total mass of sample received	kg	0.001	NONE	1.3	1.5	1.5		
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected		
General Inorganics								
pH - Automated	pH Units	N/A	MCERTS	8.9	10.9	8.8		
Total Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1		
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.037	0.35	0.12		
Sulphide	mg/kg	1	MCERTS	12	5.3	25		
Organic Matter	%	0.1	MCERTS	0.5	0.8	1.2		
Total Phenols								
Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0		
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05		
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05		
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05		
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05		
Phenanthrene	mg/kg	0.05	MCERTS	0.46	< 0.05	0.58		
Anthracene	mg/kg	0.05	MCERTS	0.16	< 0.05	0.19		
Fluoranthene	mg/kg	0.05	MCERTS	1.5	< 0.05	1.9		
Pyrene	mg/kg	0.05	MCERTS	1.2	< 0.05	1.5		
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.65	< 0.05	0.90		
Chrysene	mg/kg	0.05	MCERTS	0.70	< 0.05	0.78		
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	0.68	< 0.05	1.1		
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	0.41	< 0.05	0.35		
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.56	< 0.05	0.64		
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.29	< 0.05	0.34		
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05		
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.33	< 0.05	0.40		
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	6.87	< 0.80	8.64		
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	12	5.0	11		
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	0.2	0.3		
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0		
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	16	13	19		
Copper (aqua regia extractable)	mg/kg	1	MCERTS	16	8.6	39		
Lead (aqua regia extractable)	mg/kg	1	MCERTS	67	4.7	51		
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	0.3	< 0.3	8.6		
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	13	8.1	20		
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0		
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	40	31	58		

Analytical Report Number: 18-81635

Project / Site name: Queensmere House, 49 Queens Road, East Grinstea
Your Order No: J13542-1

Lab Sample Number				940019	940020	940021		
Sample Reference				WLS03	WLS04	WLS04		
Sample Number				None Supplied	None Supplied	None Supplied		
Depth (m)				1.30	0.40	0.80		
Date Sampled				04/04/2018	04/04/2018	04/04/2018		
Time Taken				None Supplied	None Supplied	None Supplied		
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Petroleum Hydrocarbons								
Petroleum Range Organics (C6 - C10)	mg/kg	0.1	ISO 17025	-	-	-		
TPH C10 - C40	mg/kg	10	MCERTS	100	730	200		
TPH2 (C6 - C10)	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1		
TPH C6 - C40	mg/kg	10	NONE	100	730	200		
TPH Texas (C8 - C10)	mg/kg	10	MCERTS	-	-	-		
TPH Texas (C10 - C12)	mg/kg	1	MCERTS	-	-	-		
TPH Texas (C12 - C16)	mg/kg	10	MCERTS	-	-	-		
TPH Texas (C16 - C21)	mg/kg	10	MCERTS	-	-	-		
TPH Texas (C21 - C40)	mg/kg	10	MCERTS	-	-	-		
TPH Texas (C6 - C40)	mg/kg	10	NONE	-	-	-		

Analytical Report Number : 18-81635

Project / Site name: Queensmere House, 49 Queens Road, East Grinstead

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
940014	WLS01	None Supplied	0.20	Brown rubble with gravel. **
940015	WLS01	None Supplied	1.20	Brown clay and sand with gravel.
940016	WLS02	None Supplied	0.30	Brown rubble with gravel and clinker. **
940017	WLS02	None Supplied	0.80	Brown sandy clay with gravel.
940018	WLS03	None Supplied	0.40	Brown sand with rubble and brick.
940019	WLS03	None Supplied	1.30	Brown sand with gravel and brick.
940020	WLS04	None Supplied	0.40	Brown rubble with gravel and clinker. **
940021	WLS04	None Supplied	0.80	Brown clay and sand with gravel.

** Non MCERTS matrix.

The results included within the report are representative of the samples submitted for analysis.

Analytical Report Number : 18-81635

Project / Site name: Queensmere House, 49 Queens Road, East Grinstead

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	MCERTS
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically.	In-house method based on BS1377 Part 2, 1990, Chemical and Electrochemical Tests	L019-UK/PL	W	NONE
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	MCERTS
Organic matter (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	BS1377 Part 3, 1990, Chemical and Electrochemical Tests""	L009-PL	D	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L099-PL	D	MCERTS
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests, 2:1 water:soil extraction, analysis by ICP-OES.	L038-PL	D	MCERTS
Sulphide in soil	Determination of sulphide in soil by acidification and heating to liberate hydrogen sulphide, trapped in an alkaline solution then assayed by ion selective electrode.	In-house method	L010-PL	D	MCERTS
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
TPH Banding in Soil by FID	Determination of hexane extractable hydrocarbons in soil by GC-FID.	In-house method, TPH with carbon banding.	L076-PL	W	MCERTS
TPH C6 - C40 (soil)	Determination of TPH bands by HS-GC-MS/GC-FID	In-house method	L076-PL	W	NONE
TPH Texas (Soil)	Determination of dichloromethane/hexane extractable hydrocarbons in soil by GC-MS.	In-house method	L064-PL	D	ISO 17025
TPH2 (Soil)	Determination of hydrocarbons C6-C10 by headspace GC-MS.	In-house method based on USEPA8260	L088-PL	W	MCERTS

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.
For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

Sample ID	Other_ID	Sample Type	Job	Sample Number	Sample Deviation Code	test_name	test_ref	Test Deviation code
WLS03		S	18-81635	940019	b	TPH2 (Soil)	L088-PL	b
WLS04		S	18-81635	940021	b	TPH2 (Soil)	L088-PL	b

Key: a - No sampling date b - Incorrect container
c - Holding time d - Headspace e - Temperature

CERTIFICATE OF ANALYSIS

Site :	Queensmere House, 49 Queens Road, East Grinstead	**Job No :**	J13542
Sample Group :	made ground	**Client :**	Queensmere House Ltd
Test Suite :	STL Key Contaminants Suite	**Date Issued :**	30/Apr/2018

Sample Ref:		WLS01	WLS03	WLS04
Depth unit	m	0.2	0.4	0.4
Lab ID		940014	940018	940020
pH Value		11.7	10.1	10.9
Asbestos		Not-detected	Not-detected	Not-detected
Asbestos Description				
Asbestos Type				
Total Arsenic (As)	mg/kg	6.8	17	5
Total Cadmium (Cd)	mg/kg	< 0.2	0.5	0.2
Total Chromium (Cr)	mg/kg	14	19	13
Hexavalent Chromium (CrVI)	mg/kg	< 4.0	< 4.0	< 4.0
Total Copper (Cu)	mg/kg	12	16	8.6
Total Lead (Pb)	mg/kg	14	7.4	4.7
Total Mercury (Hg)	mg/kg	< 0.3	< 0.3	< 0.3
Total Nickel (Ni)	mg/kg	9.7	16	8.1
Total Selenium (Se)	mg/kg	< 1.0	< 1.0	< 1.0
Total Zinc (Zn)	mg/kg	27	47	31
Phenol	mg/kg	< 1	< 1	< 1
Total Cyanide (CN)	mg/kg	< 1	< 1	< 1
Free Cyanide	mg/kg			
Complex Cyanide	mg/kg			
Thiocyanate as SCN	mg/kg			
Total Sulphate (SO4)	mg/kg			
Soluble Sulphate* (SO4)	g/l	0.076	0.15	0.35
Sulphide (S)	mg/kg	5.7	< 1.0	5.3
Benzo(a)pyrene	mg/kg	0.45	< 0.05	< 0.05
Naphthalene	mg/kg	< 0.05	< 0.05	< 0.05
Total of 16 EPA PAHs	mg/kg			
Elemental Sulphur	mg/kg			
Wt. loss on drying	% of wet			
Retained on 2mm sieve	% of dry			
EPH/GC	mg/kg	390	72	730
Soil Organic Matter	%	0.4	0.2	0.8
-- dependent option	* 1:2 Extract			
EXTRAS				
Moisture Content (Dry Weight)	%			
Material Passing a 2mm Sieve	%			
Naphthalene		< 0.05	< 0.05	< 0.05
Acenaphthylene		< 0.05	< 0.05	< 0.05
Acenaphthene		< 0.05	< 0.05	< 0.05
Fluorene		< 0.05	< 0.05	< 0.05
Phenanthrene		0.65	< 0.05	< 0.05
Anthracene		0.18	< 0.05	< 0.05
Fluoranthene		1.2	< 0.05	< 0.05
Pyrene		1.3	< 0.05	< 0.05
Benzo(a)Anthracene		0.52	< 0.05	< 0.05
Chrysene		0.6	< 0.05	< 0.05
Benzo(b)Fluoranthene		0.59	< 0.05	< 0.05
Benzo(k)Fluoranthene		0.27	< 0.05	< 0.05
Benzo(a)Pyrene		0.45	< 0.05	< 0.05
Indeno(123-cd)Pyrene		0.22	< 0.05	< 0.05
Dibenzo(ah)Anthracene		< 0.05	< 0.05	< 0.05
Benzo(ghi)Perylene		0.26	< 0.05	< 0.05

Southern Testing: Keeble House, Stuart Way, East Grinstead, West Sussex RH19 4QA
ST Consult: Twigden Barns, Brixworth Road, Creaton, Northampton NN6 8NN

CERTIFICATE OF ANALYSIS

Site :	Queensmere House, 49 Queens Road, East Grinstead	**Job No :**	J13542
Sample Group :	natural ground	**Client :**	Queensmere House Ltd
Test Suite :	STL Key Contaminants Suite	**Date Issued :**	30/Apr/2018

Sample Ref:		WLS01	WLS02	WLS03	WLS04
Depth unit	m	1.2	0.8	1.3	0.8
Lab ID		940015	940017	940019	940021
pH Value		8.2	8.2	8.9	8.8
Asbestos		Not-detected	Not-detected	Not-detected	Not-detected
Asbestos Description					
Asbestos Type					
Total Arsenic (As)	mg/kg	9	5.6	12	11
Total Cadmium (Cd)	mg/kg	< 0.2	< 0.2	< 0.2	0.3
Total Chromium (Cr)	mg/kg	21	19	16	19
Hexavalent Chromium (CrVI)	mg/kg	< 4.0	< 4.0	< 4.0	< 4.0
Total Copper (Cu)	mg/kg	20	10	16	39
Total Lead (Pb)	mg/kg	30	8.9	67	51
Total Mercury (Hg)	mg/kg	< 0.3	< 0.3	0.3	8.6
Total Nickel (Ni)	mg/kg	15	11	13	20
Total Selenium (Se)	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0
Total Zinc (Zn)	mg/kg	38	25	40	58
Phenol	mg/kg	< 1	< 1	< 1	< 1
Total Cyanide (CN)	mg/kg	< 1	< 1	< 1	< 1
Free Cyanide	mg/kg				
Complex Cyanide	mg/kg				
Thiocyanate as SCN	mg/kg				
Total Sulphate (SO4)	mg/kg				
Soluble Sulphate* (SO4)	g/l	0.053	0.042	0.037	0.12
Sulphide (S)	mg/kg	1.5	11	12	25
Benzo(a)pyrene	mg/kg	< 0.05	< 0.05	0.56	0.64
Naphthalene	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Total of 16 EPA PAHs	mg/kg				
Elemental Sulphur	mg/kg				
Wt. loss on drying	% of wet				
Retained on 2mm sieve	% of dry				
EPH/GC	mg/kg	-	-	100	200
Soil Organic Matter	%	0.9	0.2	0.5	1.2
-- dependent option	* 1:2 Extract				
EXTRAS					
Moisture Content (Dry Weight)	%				
Material Passing a 2mm Sieve	%				
Naphthalene		< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene		< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthene		< 0.05	< 0.05	< 0.05	< 0.05
Fluorene		< 0.05	< 0.05	< 0.05	< 0.05
Phenanthrene		< 0.05	< 0.05	0.46	0.58
Anthracene		< 0.05	< 0.05	0.16	0.19
Fluoranthene		< 0.05	< 0.05	1.5	1.9
Pyrene		< 0.05	< 0.05	1.2	1.5
Benzo(a)Anthracene		< 0.05	< 0.05	0.7	0.78
Chrysene		< 0.05	< 0.05	0.65	0.9
Benzo(b)Fluoranthene		< 0.05	< 0.05	0.68	1.1
Benzo(k)Fluoranthene		< 0.05	< 0.05	0.41	0.35
Benzo(a)Pyrene		< 0.05	< 0.05	0.56	0.64
Indeno(123-cd)Pyrene		< 0.05	< 0.05	0.29	0.34
Dibenzo(ah)Anthracene		< 0.05	< 0.05	< 0.05	< 0.05
Benzo(ghi)Perylene		< 0.05	< 0.05	0.33	0.4

- : not determined -- : dependent option I/S : insufficient sample nt : not tested

APPENDIX E

Monitoring Data

Southern Testing
Environmental & Geotechnics

ST Consult
Environmental & Geotechnics

SOIL GAS AND GROUND WATER DAILY RECORD SHEET

Project Name:	Queensmere House, 49 Queens Road, East Grinstead, RH19 1BG	Project Engineer:	ER	Date:	23-Apr-18	Project No:
Client:		Operative:	GS	Day of the week:	Monday	J13542

		Land Gas Data									Groundwater Data			Remarks		
Well / TH No.	Atmospheric Pressure (mb) and Ambient Temperature		PID	BH pressure	Flow Rate		CH_4	CO_2	O_2	CO	H_2S	Depth to base of well	Water level	Height of Cover	Details of water samples (colour, clarity, odour etc)	Ground Conditions (soft, wet/dry, frozen etc) & Weather Conditions	General Remarks
			ppm	mb	l/hr		%	%	%	ppm	ppm	m below top of cover	m below top of cover	m above GL			
WLS01	1005 13˚c	P	0.1	0.0	0.0	P	0.0	0.0	20.5	0.0	0.0	2.70	-	-			Slightly wet base
		S	0.0	0.0	0.0	S	0.0	0.0	20.5	0.0	0.0						
		Time Of Readings: 11:15				Time Of Readings: 11:15						Time Of Readings: 11:15					
WLS02	1003 13˚c	P	0.0	0.0	0.0	P	0.0	0.1	20.4	0.0	0.0	2.28	-	-			
		S	0.0	0.0	0.0	S	0.0	0.0	20.4	0.0	0.0						
		Time Of Readings: 11:20				Time Of Readings: 11:20						Time Of Readings: 11:20					
WLS04	1003 13˚c	P	0.0	0.0	0.0	P	0.0	0.0	20.5	0.0	0.0	2.90	-	-			
		S	0.0	0.0	0.0	S	0.0	0.0	20.4	0.0	0.0						
		Time Of Readings: 11:30				Time Of Readings: 11:30						Time Of Readings: 11:30					
		P				P											
		S				S											
		Time Of Readings:				Time Of Readings:						Time Of Readings:					
		P				P											
		S				S											
		Time Of Readings:				Time Of Readings:						Time Of Readings:					
		P				P											
		S				S											
		Time Of Readings:				Time Of Readings:						Time Of Readings:					

P = Peak Reading, S = Steady reading

Equipment Used: Interface Meter, MiniRAE 2000, GFM435 Gas Analyser

Checked By

Southern Testing
Environments in Geotechnics

ST Consult
Environmental & Geotechnics

SOIL GAS AND GROUND WATER DAILY RECORD SHEET

Project Name:	Queensmere House, 49 Queens Road, East Grinstead, RH19 1BG	Project Engineer:	ER	Date:	15-May-18	Project No:
Client:		Operative:	GS	Day of the week:	Tuesday	J13542

		Land Gas Data									Groundwater Data			Remarks		
Well / TH No.	Atmospheric Pressure (mb) and Ambient Temperature		PID	BH pressure	Flow Rate		CH_4	CO_2	O_2	CO	H_2S	Depth to base of well	Water level	Height of Cover	Details of water samples (colour, clarity, odour etc)	Ground Conditions (soft, wet/dry, frozen etc) & Weather Conditions	General Remarks
			ppm	mb	l/hr		%	%	%	ppm	ppm	m below top of cover	m below top of cover	m above GL			
WLS01	1005 13˚c	P	0.2	0.0	0.0	P	0.0	0.0	20.4	0.0	0.0	2.68	-	-			Slightly wet base
		S	0.0	0.0	0.0	S	0.0	0.0	20.4	0.0	0.0						
		Time Of Readings:				Time Of Readings:						Time Of Readings:					
WLS02	1003 13˚c	P	0.5	0.0	0.0	P	0.0	0.0	20.3	0.0	0.0	2.28	-	-			
		S	0.2	0.0	0.0	S	0.0	0.0	20.2	0.0	0.0						
		Time Of Readings:				Time Of Readings:						Time Of Readings:					
WLS04	1003 13˚c	P	0.0	0.0	0.0	P	0.0	0.0	20.5	0.0	0.0	2.90	-	-			
		S	0.0	0.0	0.0	S	0.0	0.0	20.4	0.0	0.0						
		Time Of Readings:				Time Of Readings:						Time Of Readings:					
		P				P											
		S				S											
		Time Of Readings:				Time Of Readings:						Time Of Readings:					
		P				P											
		S				S											
		Time Of Readings:				Time Of Readings:						Time Of Readings:					
		P				P											
		S				S											
		Time Of Readings:				Time Of Readings:						Time Of Readings:					

P = Peak Reading, S = Steady reading	Equipment Used: Interface Meter, MiniRAE 2000, GFM435 Gas Analyser	Checked By	

APPENDIX F

Photographs

North corner

North

Site access to east side

Undercroft

Undercroft

Car park area

Planter to centre of car park

North east

	
Access and undercroft	

APPENDIX G

Desk Study Results

Conversion of an education building to residential apartments with new additional set back third floor;

Queensmere House,
49 Queen's Road,
East Grinstead,
West Sussex,
RH19 1BF

Contamination Statement

for

David Holman & Co Ltd

July 2017

ATP
Brook House Coventry Road
Ilford Essex IG1 4QR

T 020 8532 4141
F 020 8532 4140

June 2017
Ref: 17166

CONTENTS

1.0 Introduction

1.1 This following report has been prepared on behalf of our client, David Holman & Co Ltd, an application for planning permission for the conversion of an education building into new residential apartments with associated parking.

1.2 The application is to provide high quality living accommodation for people who are looking to downsize from family housing to apartment living in close proximity to the town centre. After seeking advice from local property agents the scheme looks to provide 13no duplex apartments and 1no. large 2 bed apartment. 14no. in total.

1.3 The report will review the previous use(s) of the building along with any previous surveys that have been undertaken.

1.4 Interpretation of environments conditions inherently depends on the conditions revealed by a limited data provided. Whilst we take all reasonable care in interpreting such data, and no liability can be accepted for its accuracy. This report is intended for planning purposes only.

1.5 Furthermore, we do not accept liability for the means of interpreting such data, such as the validity of published assessment criteria or methodologies. We accept no liability for the design of the investigation or any other work carried-out by other parties. We do not accept liability for data not identified in any desk study, or through the absence of a desk study, such as previously unidentified historical land uses or water abstractions.

1.6 Information contained in this report is intended for the use of the Client for the purposes set-out in the text, ATP makes no warranty or representation whatsoever express or implied with respect to the use of this information by any other party or for uses other than those described. We do not indemnify the Client or any third parties against any dispute, claim or consequential losses arising from any finding or other result of this investigation report.

Aerial photo: site identified in red.

2.0 Form of development

2.1 The proposed scheme for which an application has been submitted and the subject of this assessment is as follows:

Conversion of a D1 educational building to 14no. residential apartments with new additional set back third floor and infilling of existing under croft areas. Associated car parking, 2no. crossovers and access points, landscaping, cycle spaces, amenity areas, 1.1m high metal fence and new ramp.

The development provides the following accommodation;

1no. 2 bed 4 person apartments
5no. 3 bed 5 person apartments
8no. 3 bed 6 person apartments

14no. Total

Car Park (off street parking) – 14no. spaces

3.0 Contamination Statement Objectives

3.1 The purpose of the report is to set out details of the previous use(s) if the site, along with details of any surveys that have been taken.

3.2 We are not aware of any previous desk studies or ground investigation(s) undertaken on the site. We were also not made aware of any areas of concern known or suspected by the client.

4.0 Existing Survey

4.0 An environmental search (see appendix A) was carried 24th April, 2017. The environmental search included the following;

- Summary
- Aerial Photo
- Location Map
- Summary Table
- Current Land Use
- Historic Land Use
- Sensitivity
- Other Factors
- Useful Information
- Useful Contacts

4.1 Key Findings of the environment search;

- Mapping dated 1911 – 1950
- Geological Classification: Minor Aquifer (Variably permeable) - These can be fractured or potentially fractured rocks, which do not have a high primary permeability, or other formations of variable permeability including unconsolidated deposits. Although not producing large quantities of water for abstraction, they are important for local supplies and in supplying base flow to rivers, Soil Classification: Soils of High Leaching Potential (U) - Soil information for restored mineral workings and urban areas is based on fewer

observations than elsewhere. A worst case vulnerability classification (H) assumed, until proved otherwise, Map Scale: 1:100,000, Map Name: Sheet 46 East Sussex, Contact Ref: 1
- Affected Areas: The property is in a Lower probability radon area (less than 1% of homes are estimated to be at or above the Action Level)., Source: British Geological Survey, National Geoscience Information Service, Contact Ref: 3
- Radon Protection Measures: None, Source: British Geological Survey, National Geoscience Information Service, Contact Ref: 3
- Potential for Landslide Ground Stability Hazards - Hazard Potential: Very Low, Contact Ref: 3
- Potential for Collapsible Ground Stability Hazards - Hazard Potential: Very Low, Contact Ref: 3

5.1 Site Description

5.1 A site walkover was undertaken on 03/11/2015. Photographs of the site are provided in Appendix B. The site is currently occupied by a three storey office building with a site area of approx. 1573.5sq m / 0.157 hectares.

5.2 In summary, the site comprised an irregular shaped plot that contained a large education building with a car park to the rear. This building which is substantial was erected about 30 years ago in the 1980ies. It has been an office block, church and an educational facility. In the 1930ies it was Cottage Hospital.

5.3 The building was originally an office block built in the 1980's. It is a brick built building with a series of windows to the ground and first floor. The first floor has a tiled mono-pitch roof with a setback second floor behind. This is also capped with a mono-pitch tiled roof. The building is accessed via a glazed entrance off of Queens Road. There is vehicular parking to the area which is accessed via a ramp and under croft access way.

5.4 To the south of the site is Queen's Road. Opposite the site are a number of empty two storey residential properties and car parks servicing retail and commercial properties to Queens Walk and London Road. The site opposite has planning permission for the demolition of the existing retail premises and the re-development comprising new retail and 129 residential apartments.

5.5 To the east of the site is the vehicular access to the rear and an 1800mm high close board timber fence. The neighbouring building is a single store building with a large pitched roof that serves as a social club (Literary and Social Institution). Beyond is a split level four storey development providing 9no. one bedroom flats and 11no. two bedroom flats with car parking for 9no. cars.

5.6 The western boundary is a close board timber fence. Beyond is no.s 51-57 Queen's Road, which are Victorian terrace dwelling houses. Opposite is the Mid Sussex Queensway Car Park.

5.7 Car parking (42no) is provided to the rear / north of the site. The whole of the rear is covered in a tarmacadam finish with no landscaping. The site is bounded by 1800mm high close board timber fence with some overgrown hedging to the sides. The northern corner of the site has a number of established trees. The site falls to the rear towards the back of the site providing a parking under-croft to the building.

5.8 The visual inspection on site has not revealed any oil drums or waste 2. Whilst we are redeveloping the site these plans to not involve substantial digging into the ground. We will be filling in the existing under croft and replacing some of the

tarmac with gardens.

6.0 Ground Condition

6.1 No evidence of existing soil conditions was observed, such as existing excavations or the like.

6.2 No immediate evidence of significant structural movement was observed, although the inspection was superficial and a full inspection should be provided by others.

7.0 Surface Water and Groundwater

7.1 No surface water features were identified on site or in the immediate vicinity. No evidence of shallow groundwater, such as boggy waterlogged soils or water loving plants etc., were noted.

8.0 Vegetation

8.1 The majority of the area contained a tarmacadam surfaced carpark.

8.2 A detailed arboricultural survey was outside the scope of this report. A survey may be required for tree root protection purposes or for assessing the depth of foundations in the vicinity of trees.

9.0 Conclusion

9.1 The previous use(s) of the building were as follows;

- Cottage Hospital
- Office Building
- Church Use
- Educational Services

We believe that the site was farm land prior the construction of the Cottage Hospital.

9.2 We do not believe that any of the previous uses would have resulted in contamination of the site.

9.3 It is recommended that a ground investigation is carried out as a part of a planning condition to evaluate the ground conditions, the scope of any remedial measures may require;

- Shallow boreholes using a tracked / hand held window sampler or similar to assess the composition and depth of any Made Ground (below hardstanding, former buildings and retaining walls) and any field evidence of contamination into the underlying soils.
- Install a series of gas and groundwater monitoring position to be monitored on two return visits.
- Soil samples should be screened for vapours using a PID
- Selected samples (including materials bearing field evidence of contamination) should be sent for laboratory analysis
- Where encountered, water samples should be collected, for laboratory analysis.
- The analytical suites should include be varied to suit but may include, Metals and PAH’s, fuels and oils, PCBs, VOCs and SVOCs, asbestos, speciated TPHs (including BTEX) and solvents.

The scope of any ground investigation works should be agreed with the Local Authority and other stakeholders before carrying out any works.

Appendix A

Sitecheck Assess

CENTRAL SUSSEX COLLEGE , Queensmere House , QUEENS ROAD , EAST GRINSTEAD, RH19 1BG

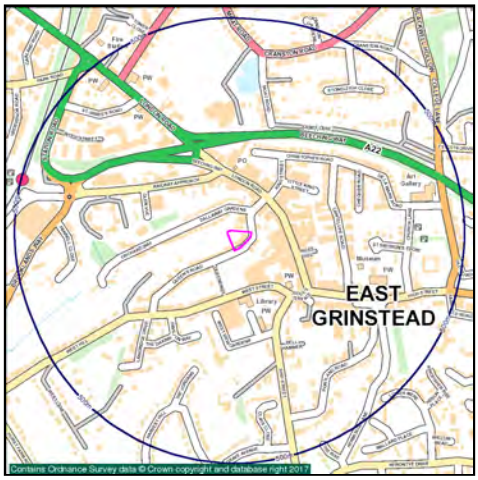
Prepared for:
TM Official Search
TM Group (UK)
1200
Delta Business Park
Swindon
Wiltshire
SN5 7XZ
Report Reference: SAS_122239876_1_1

Report Date: 24-APR-2017

Customer Reference: 16556422

National Grid Reference: 539320 138100

Site Area: 1628 m²



If you have any questions on the contents of this Report please contact Landmark Customer Helpdesk which is open from 9:00am - 5:30pm, Monday - Friday, via one of the following channels:

Telephone: 0844 844 9966
Fax: 0844 844 9980
Email: info@landmarkinfo.co.uk
Website: www.sitecheck.co.uk

Sitecheck Assess

Professional Opinion
on environmental risk

PASSED

The Sitecheck report dated 24-APR-2017 and reference SAS_122239876_1_1 for CENTRAL SUSSEX COLLEGE , Queensmere House , QUEENS ROAD , EAST GRINSTEAD, RH19 1BG has examined the sources of potential contamination in terms of historical land use, environmental data and current land uses where known.

The report has highlighted the presence of Historical Tanks And Energy Facilities on or within 25m of the site boundary.

INTRODUCTION

This professional opinion determines the level of environmental risk, as to whether a pollutant linkage exists which is created when there is a source of contamination, a pathway for it to travel along and receptors, which may be harmed. This risk-based approach underpins the government approach to contaminated land. If a pollutant linkage exists the property may be regarded by the local authority as being "Contaminated Land" for the purposes of Part 2A of the Environmental Protection Act 1990.

In completing this report, Argyll Environmental has undertaken a review of data made available to it. No site inspection, further enquiries or investigation of surface or ground conditions has been carried out by Argyll Environmental. No information as to the age, value and type of property has been made available. It is important to note that it is not known by Argyll Environmental for what purpose the report has been commissioned.

FACTORS AFFECTING THIS PROPERTY

Potential Sources:

A review of historical mapping has revealed no historical or current potentially contaminative uses of concern on site.

A review of selected 1:2,500 and 1:1,250 scale Ordnance Survey mapping covering a period from 1974 - 1983 has identified that the site is within 25 metres of Electrical Sub Station Facilities.

Potential Pathways:

- Direct human contact with soil (and water).
- Contamination transport to shallow groundwater.
- Contamination transport to deep groundwater.

Sitecheck Assess

Professional Opinion
on environmental risk

Potential Receptors:

The property itself, surrounding properties and their respective occupants may be considered as receptors. Buildings and people can suffer harm by definition of Part 2A of the Environmental Protection Act 1990.

Current Ordnance Survey mapping indicates residential dwellings within 25 metres of the site boundary.

The groundwater vulnerability map, Sheet 46 East Sussex, has revealed that the site is located above a Minor Aquifer (Variably permeable).

Although minor aquifers seldom produce large quantities of water for abstraction they may be important for local supplies and supplying base flow to rivers.

CONCLUSIONS:

In the professional opinion of Argyll Environmental, the level of risk associated with the information disclosed in the associated Sitecheck Assess report:

1) is unlikely to have an adverse effect on the value of the property, and
2) is not such that the property would be designated "contaminated land" within the meaning of Part IIA of the Environmental Protection Act 1990.

OTHER ENVIRONMENTAL FACTORS:
NONE

Approved by

Argyll Environmental Ltd

SOURCES OF ADDITIONAL PROFESSIONAL GUIDANCE:

If the report is for valuation, or investment, or other forms of lending decision making there may be issues arising from the current occupation, which need to be examined. The Royal Institution of Chartered Surveyors has provided guidance with respect to such matters and specific reference should be made to the guidance note 'Contamination, the environment and sustainability - Implications for chartered surveyors and their clients' published April 2010. This guidance note is referred to in UKGN1.1 paragraph 2.2 of the RICS Valuation Standards (6th Edition) (The "Red Book").

It is recommended that the client reviews the outputs of any valuation report, which should include a Property Observation Checklist, contained at Appendix A for commercial property or Appendix B for rural property in the Royal Institution of Chartered Surveyors guidance note 'Contamination, the environment and sustainability - Implications for chartered surveyors and their clients'. Completion of these checklists does not constitute an environmental assessment for the purposes of Professional Indemnity Insurance where many surveyors are unlikely to have appropriate indemnity cover. Any contamination, which is observed on the site by the surveyor during the normal course of their inspection, can also be recorded.

If the property is let, the landlord or the tenant (as appropriate) should take legal advice as to whether the covenants in the lease constitute legal or financial burdens. The Law Society's "Environmental Law Handbook-6th Edition" provides valuable assistance.

In leases with no express covenants dealing with environmental matters, lawyers and surveyors need to be aware of the extent to which the repairing of covenants can be applied and, when advising tenant clients in particular, will need to draw attention to the client's obligations to comply with enacted legislation.

Should contamination have been observed on site a suitably qualified, insured and experienced professional, preferably with the Specialist in Land Condition (SiLC) accreditation, should quantify whether this could give rise to an action by a regulator or any other party. A suitable management plan for action incorporated in a Land Quality Statement in accordance with RICS guidance should be put in place and appropriate matters taken up with the tenant / occupier.

In terms of development this report should be seen as a precursor to a thorough investigation of the property for planning control purposes. The DTI funded guidance published by the Construction Industry Research and Information Association (CIRIA) Brownfields-managing the development of previously developed land-a clients guide may be a useful starting point.

If you would like any further assistance regarding this report then please contact
Landmark on (Tel) 0844 844 9966, (Fax) 0844 844 9980, Email: helpdesk@landmark.co.uk

Historical Land Use Potentially Contaminative Uses	Page No.	Reference Number (Map ID)
Potentially Contaminative Industrial Uses (Past Land Use)		
Hospitals, Date of Mapping: 1911 - 1950	17	2

Sensitivity Pathways	Page No.	Reference Number (Map ID)
Groundwater Vulnerability		
Geological Classification: Minor Aquifer (Variably permeable) - These can be fractured or potentially fractured rocks, which do not have a high primary permeability, or other formations of variable permeability including unconsolidated deposits. Although not producing large quantities of water for abstraction, they are important for local supplies and in supplying base flow to rivers, Soil Classification: Soils of High Leaching Potential (U) - Soil information for restored mineral workings and urban areas is based on fewer observations than elsewhere. A worst case vulnerability classification (H) assumed, until proved otherwise, Map Scale: 1:100,000, Map Name: Sheet 46 East Sussex, Contact Ref: 1	22	-

Other Factors Geological	Page No.	Reference Number (Map ID)
Radon Potential - Radon Affected Areas		
Affected Areas: The property is in a Lower probability radon area (less than 1% of homes are estimated to be at or above the Action Level)., Source: British Geological Survey, National Geoscience Information Service, Contact Ref: 3	23	-
Radon Potential - Radon Protection Measures		
Radon Protection Measures: None, Source: British Geological Survey, National Geoscience Information Service, Contact Ref: 3	23	-
Potential for Landslide Ground Stability Hazards		
Hazard Potential: Very Low, Contact Ref: 3	23	-
Potential for Collapsible Ground Stability Hazards		
Hazard Potential: Very Low, Contact Ref: 3	23	-

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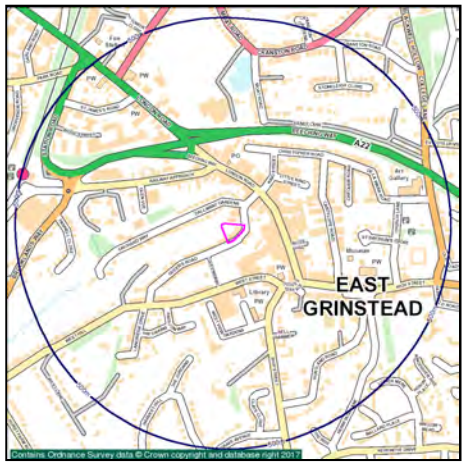
Site
CENTRAL SUSSEX COLLEGE ,Queensmere House ,QUEENS ROAD ,EAST GRINSTEAD,RH19 1BG

Grid Reference
539320, 138100

Report Reference
SAS_122239876_1_1

Customer Reference
16556422

Size of Site
1628 m²



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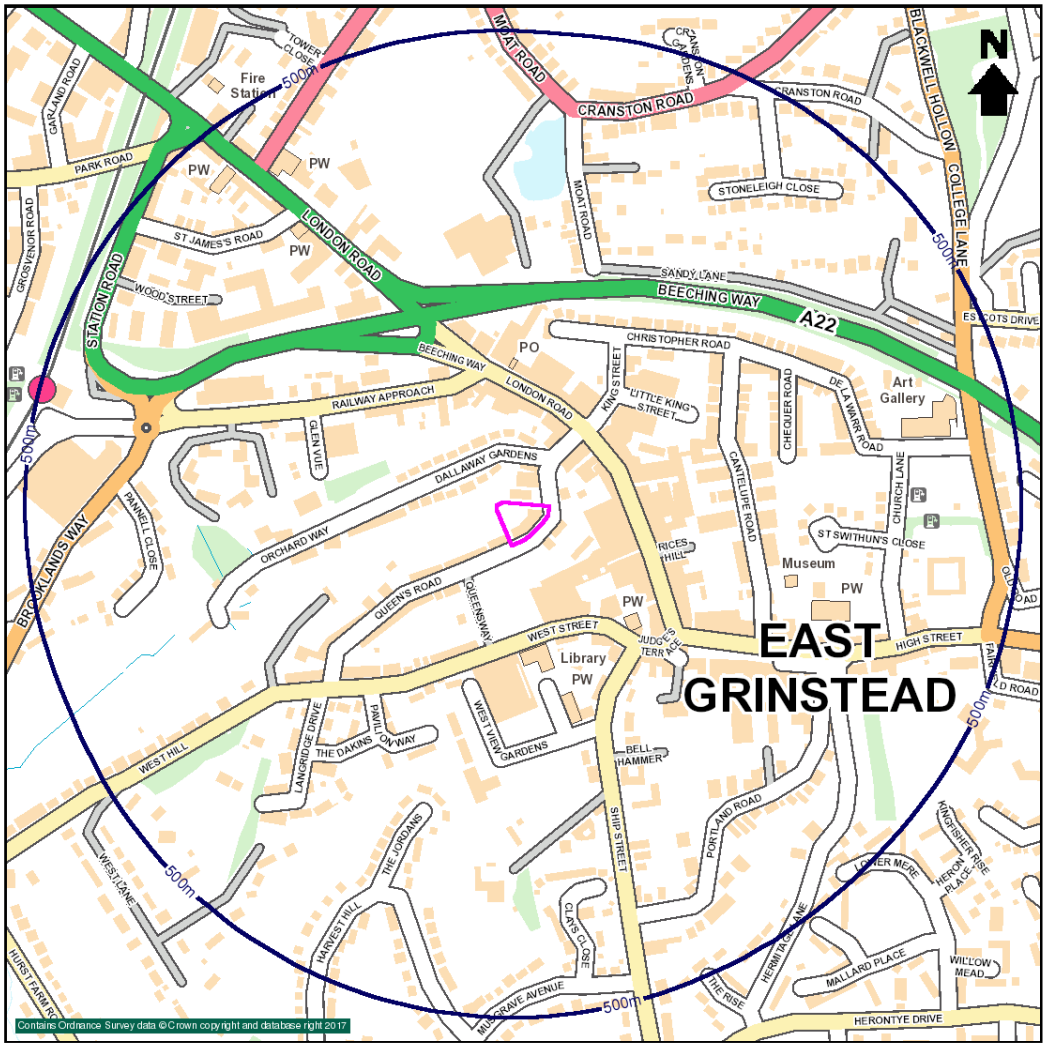

Site
CENTRAL SUSSEX COLLEGE ,Queensmere House ,QUEENS ROAD ,EAST GRINSTEAD,RH19 1BG

Grid Reference
539320, 138100

Report Reference
SAS_122239876_1_1

Customer Reference
16556422

Size of Site
1628 m²

Current Land Use	On Site	0-250m	250-500m
Contaminants	**0**	**41**	**42**
Waste / Landfill Sites			
BGS Recorded Landfill Sites	0	0	0
Licensed Waste Management Facilities (Landfill Boundaries)	0	0	0
Licensed Waste Management Facilities (Locations)	0	0	3
Local Authority Recorded Landfill Sites	0	0	0
Registered Landfill Sites	0	0	0
Registered Waste Transfer Sites	0	0	0
Registered Waste Treatment or Disposal Sites	0	0	0
Statutory Authorisations			
Local Authority Pollution Prevention and Controls	0	3	2
Contaminated Land Register Entries and Notices	0	0	0
Radioactive Substances Register	0	0	0
Discharge Consents			
Discharge Consents	0	0	2
Water Industry Act Referrals	0	0	0
Industrial Processes			
Integrated Pollution Controls	0	0	0
Integrated Pollution Control Registered Waste Sites	0	0	0
Environmental Permitting Regulations - Industry	0	0	0
Local Authority Integrated Pollution Prevention And Control	0	0	0
Storage of Hazardous Substances			
Control of Major Accident Hazards Sites (COMAH)	0	0	0
Explosive Sites	0	0	0
Notification of Installations Handling Hazardous Substances (NIHHS)	0	0	0
Planning Hazardous Substance Consents	0	0	0
Contraventions			
Local Authority Pollution Prevention and Control Enforcements	0	0	0
Enforcement and Prohibition Notices	0	0	0
Planning Hazardous Substance Enforcements	0	0	0
Prosecutions Relating to Authorised Processes	0	0	0
Prosecutions Relating to Controlled Waters	0	0	1
Substantiated Pollution Incident Register	0	0	0

If you would like any further assistance regarding this report then please contact
Landmark on (Tel) 0844 844 9966, (Fax) 0844 844 9980, Email: helpdesk@landmark.co.uk

Current Land Use	On Site	0-250m	250-500m
Contaminants	**0**	**41**	**42**
Potentially Contaminative Uses			
Contemporary Trade Directory Entries	0	38	32
Fuel Station Entries	0	0	2
Miscellaneous			
BGS Recorded Mineral Sites	0	0	0

Historical Land Use	On Site	0-250m	250-500m
Contaminants	**1**	**22**	**32**
Potentially Contaminative Uses			
Historical Tanks And Energy Facilities	0	16	23
Potentially Contaminative Industrial Uses (Past Land Use)	1	4	5
Potentially Infilled Land			
Former Marshes	0	0	0
Potentially Infilled Land (Non-Water)	0	0	0
Potentially Infilled Land (Water)	0	2	4

Sensitivity	On Site	0-250m	250-500m
Pathways and Receptors	**1**	**0**	**1**
Pathways			
Groundwater Vulnerability	1	n/a	n/a
Drift Deposits	0	n/a	n/a
Historical Flood Liabilities	0	0	0
Extreme Flooding from Rivers or Sea without Defences	0	0	n/a
Flooding from Rivers or Sea without Defences	0	0	n/a
Areas Benefiting from Flood Defences	0	0	n/a
Flood Water Storage Areas	0	0	n/a
Flood Defences	0	0	n/a

If you would like any further assistance regarding this report then please contact
Landmark on (Tel) 0844 844 9966, (Fax) 0844 844 9980, Email: helpdesk@landmark.co.uk

Sensitivity Pathways and Receptors	On Site 1	0-250m 0	250-500m 1
Environmentally Sensitive Receptors			
Areas of Outstanding Natural Beauty	0	0	0
Environmentally Sensitive Areas	0	0	0
Local Nature Reserves	0	0	0
Marine Nature Reserves	0	0	0
National Nature Reserves	0	0	0
Nearest Surface Water Feature	0	0	1
Ramsar Sites	0	0	0
Sites of Special Scientific Interest	0	0	0
Source Protection Zones	0	0	0
Special Areas of Conservation	0	0	0
Special Protection Areas	0	0	0
Water Abstractions	0	0	0
Protected Countryside Areas			
Forest Parks	0	0	0
National Parks	0	0	0
National Scenic Areas	0	0	0

If you would like any further assistance regarding this report then please contact
Landmark on (Tel) 0844 844 9966, (Fax) 0844 844 9980, Email: helpdesk@landmark.co.uk

Other Factors Geological	On Site 8	0-250m 2	250-500m 0
Brine Compensation Area	0	n/a	n/a
Coal Mining Affected Areas	0	n/a	n/a
Mining Instability	0	0	n/a
Man-Made Mining Cavities	0	0	0
Natural Cavities	0	0	0
Non Coal Mining Areas of Great Britain	0	0	n/a
Radon Potential - Radon Affected Areas	1	n/a	n/a
Radon Potential - Radon Protection Measures	1	n/a	n/a
Potential for Collapsible Ground Stability Hazards	1	0	n/a
Potential for Compressible Ground Stability Hazards	1	0	n/a
Potential for Ground Dissolution Stability Hazards	1	0	n/a
Potential for Landslide Ground Stability Hazards	1	0	n/a
Potential for Running Sand Ground Stability Hazards	1	1	n/a
Potential for Shrinking or Swelling Clay Ground Stability Hazards	1	1	n/a

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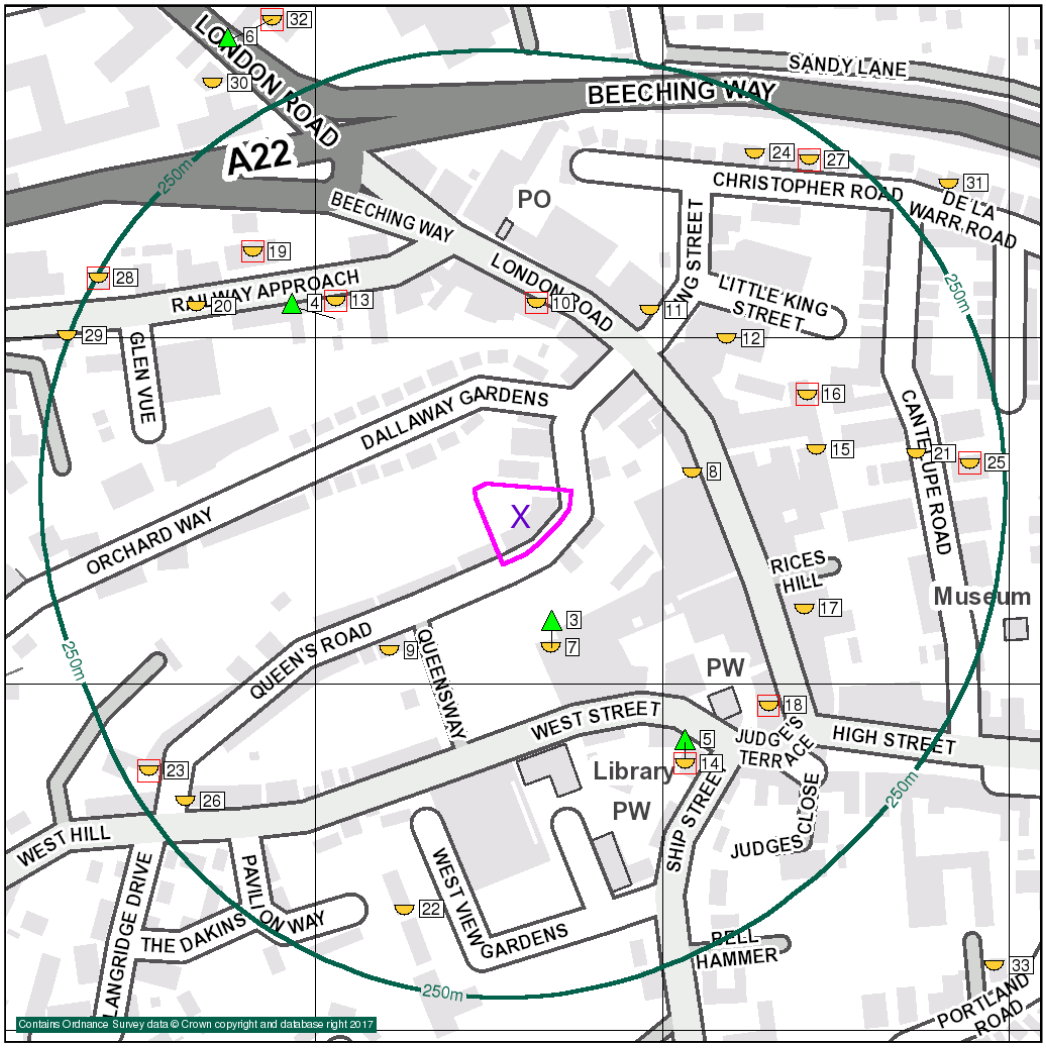
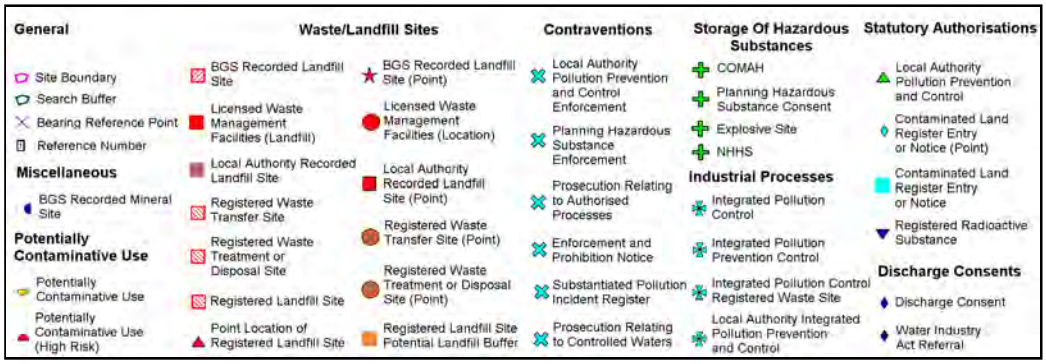
Landmark on (Tel) 0844 844 9966, (Fax) 0844 844 9980, Email: helpdesk@landmark.co.uk





If you would like any further assistance regarding this report then please contact
Landmark on (Tel) 0844 844 9966, (Fax) 0844 844 9980, Email: helpdesk@landmark.co.uk

Contaminants Waste / Landfill Sites	Ref No.	Search Buffer	Direction
Local Authority Landfill Coverage			
Name: Mid Sussex District Council, - Has supplied landfill data, Contact Ref: 2	-	On Site	SW
Name: West Sussex County Council, - Has supplied landfill data, Contact Ref: 4	-	On Site	SW
Licensed Waste Management Facilities (Locations)			
Location: Dec Uk Branch, Greenstede House, Wood Street, East Grinstead, West Sussex, RH19 1UZ, Licence Number: 10047, Site Category: Mobile Plant, Licence Status: Surrendered,IPPC Reference: Not Supplied Positional Accuracy: Manually positioned to the address or location, Contact Ref: 1	-	250-500m	NW
Location: Dec Uk Branch, Greenstede House, Wood Street, East Grinstead, West Sussex, RH19 1UZ, Licence Number: 10048, Site Category: Mobile Plant, Licence Status: Modified,IPPC Reference: Not Supplied Positional Accuracy: Manually positioned to the address or location, Contact Ref: 1	-	250-500m	NW
Location: Mobile Plant, Licence Number: 102584, Site Category: Mobile Plant, Licence Status: Issued,IPPC Reference: Not Supplied Positional Accuracy: Located by supplier to within 10m, Contact Ref: 1	-	250-500m	NW

Statutory Authorisations	Ref No.	Search Buffer	Direction
Local Authority Pollution Prevention and Controls			
Johnsons Cleaners Uk Ltd, 4 Queens Walk, East Grinstead, Rh19 4dw, Part B - Other Industries, Reference: PPC/DC/09, Status: Permitted, Positional Accuracy: Manually positioned to the address or location, Contact Ref: 2	3	0-250m	S
Bowecare Dry Cleaners, 24 Railway Approach, East Grinstead, Rh19 1bp, Part B - Other Industries, Reference: EPR/DC/04, Status: Permitted, Positional Accuracy: Manually positioned to the address or location, Contact Ref: 2	4	0-250m	NW
Escort Dry Cleaners, 6 West Street, East Grinstead, RH19 4ED, Part B - Other Industries, Reference: EPR/DC/02, Status: Permitted, Positional Accuracy: Manually positioned to the address or location, Contact Ref: 2	5	0-250m	SE
East Grinstead Service Station, 147-149 London Road, EAST GRINSTEAD, West Sussex, RH19 1ET, Part B - Fuel and Power Industry Sector, Reference: EPR/VR/13, Status: Permitted, Positional Accuracy: Automatically positioned to the address, Contact Ref: 2	6	250-500m	NW
Brooklands Service Station, 27 Station Road, EAST GRINSTEAD, West Sussex, RH19 1DJ, Part B - Fuel and Power Industry Sector, Reference: EPR/VR/10, Status: Permitted, Positional Accuracy: Automatically positioned to the address, Contact Ref: 2	-	250-500m	NW

If you would like any further assistance regarding this report then please contact
Landmark on (Tel) 0844 844 9966, (Fax) 0844 844 9980, Email: helpdesk@landmark.co.uk

Contaminants Discharge Consents	Ref No.	Search Buffer	Direction
Discharge Consents			
Southern Water Services Ltd, Queens Rd/Dallaway Gdns E Grinstead Queens Road/Dallaway Gardens, Queens Road, East Grinstead, West Sussex, Sewerage Discharge, Reference: A01075, Version: 1, Status: New Consent (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995), Positional Accuracy: Located by supplier to within 10m, Contact Ref: 1	-	250-500m	W
Southern Water Services Ltd, Queens Rd/Dallaway Gdns E Grinstead Queens Road/Dallaway Gardens, Queens Road, East Grinstead, West Sussex, Sewerage Discharge, Reference: A01075, Version: 2, Status: Modified (Water Resources Act 1991, Schedule 10 as amended by Environment Act 1995), Positional Accuracy: Located by supplier to within 10m, Contact Ref: 1	-	250-500m	W

Contraventions	Ref No.	Search Buffer	Direction
Prosecutions Relating to Controlled Waters			
Sunnyside Stream, Brooklands Park, East Grinstead, Rh19, EA (Water Resources) Prosecution, Hearing Date: 2nd June 2006, Positional Accuracy: Manually positioned within the geographical locality, Contact Ref: 1	-	250-500m	W

Potentially Contaminative Uses	Ref No.	Search Buffer	Direction
Contemporary Trade Directory Entries			
Johnson Cleaners (Uk) Ltd, Unit 3, Queens Walk, East Grinstead, West Sussex, RH19 4DW, Dry Cleaners, Status: Inactive, Positional Accuracy: Automatically positioned to the address	7	0-250m	S
Supasnaps, 48, London Road, East Grinstead, West Sussex, RH19 1AB, Photographic Processors, Status: Inactive, Positional Accuracy: Automatically positioned to the address	8	0-250m	E
Ashdown Electronics, 74, Queens Road, East Grinstead, West Sussex, RH19 1BD, Electrical Engineers, Status: Inactive, Positional Accuracy: Automatically positioned to the address	9	0-250m	SW
J R Ices, 94, London Road, East Grinstead, West Sussex, RH19 1EP, Ice Cream Manufacturers & Suppliers, Status: Inactive, Positional Accuracy: Automatically positioned to the address	10	0-250m	N
Prontaprint, 102b, London Road, East Grinstead, West Sussex, RH19 1EP, Printers, Status: Inactive, Positional Accuracy: Automatically positioned to the address	10	0-250m	N
Robert Dyas Ltd, 61-63, London Road, EAST GRINSTEAD, West Sussex, RH19 1EQ, Hardware, Status: Inactive, Positional Accuracy: Automatically positioned to the address	11	0-250m	NE
Caffyns Plc, 12-14, King Street, East Grinstead, West Sussex, RH19 3DJ, Car Dealers, Status: Inactive, Positional Accuracy: Automatically positioned to the address	12	0-250m	NE

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Contaminants Potentially Contaminative Uses	Ref No.	Search Buffer	Direction
Contemporary Trade Directory Entries			
I B S Copier Service Ltd, 20, Railway Approach, East Grinstead, West Sussex, RH19 1BP, Photocopiers, Status: Inactive, Positional Accuracy: Manually positioned to the address or location	13	0-250m	NW
West Street Laundry Services, 10, West Street, East Grinstead, West Sussex, RH19 4EQ, Laundries & Launderettes, Status: Active, Positional Accuracy: Automatically positioned to the address	14	0-250m	SE
Bowe Care, 24, Railway Approach, East Grinstead, West Sussex, RH19 1BP, Dry Cleaners, Status: Active, Positional Accuracy: Automatically positioned to the address	13	0-250m	NW
Escort Dry Cleaners, 6, West Street, East Grinstead, West Sussex, RH19 4EQ, Dry Cleaners, Status: Active, Positional Accuracy: Automatically positioned to the address	14	0-250m	SE
June Bridge Ltd, The Old Mill, 45, London Road, East Grinstead, West Sussex, RH19 1AW, Lingerie Manufacturers & Wholesalers, Status: Inactive, Positional Accuracy: Automatically positioned to the address	15	0-250m	E
C E C Engineering Services Ltd, 2, Cantelupe Mews, Cantelupe Road, East Grinstead, West Sussex, RH19 3BG, Electrical Engineers, Status: Active, Positional Accuracy: Automatically positioned to the address	16	0-250m	NE
Currys, 17, London Road, East Grinstead, West Sussex, RH19 1AL, Electrical Goods Sales, Manufacturers & Wholesalers, Status: Inactive, Positional Accuracy: Automatically positioned to the address	17	0-250m	E
One Stop Photos, 2, Swan Court, 4, London Road, East Grinstead, West Sussex, RH19 1AG, Photographic Processors, Status: Inactive, Positional Accuracy: Automatically positioned to the address	18	0-250m	SE
June Bridge Ltd, 4, Cantelupe Mews, Cantelupe Road, East Grinstead, West Sussex, RH19 3BG, Lingerie Manufacturers & Wholesalers, Status: Inactive, Positional Accuracy: Automatically positioned to the address	16	0-250m	E
Digital Repair & Exchange Ltd, 1, Swan Court, London Road, East Grinstead, West Sussex, RH19 1AG, Domestic Appliances - Servicing, Repairs & Parts, Status: Active, Positional Accuracy: Automatically positioned to the address	18	0-250m	SE
The Bookshop, The Round House, High Street, East Grinstead, West Sussex, RH19 3AW, Plastics - Raw Materials, Status: Inactive, Positional Accuracy: Automatically positioned to the address	18	0-250m	SE
Barston Chemical Services, 49b, Railway Approach, East Grinstead, West Sussex, RH19 1BT, Chemicals - Distributors & Wholesalers, Status: Inactive, Positional Accuracy: Automatically positioned to the address	19	0-250m	NW
Oakfields Of East Grinstead, 49b, Railway Approach, East Grinstead, West Sussex, RH19 1BT, Car Dealers, Status: Inactive, Positional Accuracy: Automatically positioned to the address	19	0-250m	NW
Overton Automotive Centre, 49b, Railway Approach, East Grinstead, West Sussex, RH19 1BT, Garage Services, Status: Inactive, Positional Accuracy: Automatically positioned to the address	19	0-250m	NW
Baxters, Railway Approach, East Grinstead, West Sussex, RH19 1BT, Car Dealers - Used, Status: Inactive, Positional Accuracy: Manually positioned to the road within the address or location	20	0-250m	NW

Contaminants Potentially Contaminative Uses	Ref No.	Search Buffer	Direction
Contemporary Trade Directory Entries			
Briggs Waste Disposal Ltd, The Market House,Cantelupe Rd, East Grinstead, West Sussex, RH19 3BL, Waste Disposal Services, Status: Inactive, Positional Accuracy: Manually positioned to the road within the address or location	21	0-250m	E
Aspiring Angels, 100 West View Gdns, East Grinstead, West Sussex, RH19 4EH, Ironing & Home Laundry Services, Status: Inactive, Positional Accuracy: Manually positioned within the geographical locality	22	0-250m	S
Sorrell Bros, 137a, West Street, East Grinstead, RH19 4EN, Gunsmiths, Status: Inactive, Positional Accuracy: Automatically positioned to the address	23	0-250m	SW
Business & Domestic Cleaning Ltd, 12, Christopher Road, East Grinstead, West Sussex, RH19 3BT, Cleaning Services - Domestic, Status: Inactive, Positional Accuracy: Automatically positioned to the address	24	0-250m	NE
Ems Ltd, Medway House,18-22 Cantelupe Rd, East Grinstead, West Sussex, RH19 3BJ, Digital Printing, Status: Inactive, Positional Accuracy: Manually positioned to the address or location	25	0-250m	E
East Grinstead Guns Ltd, 137, West Street, East Grinstead, West Sussex, RH19 4EN, Gunsmiths, Status: Inactive, Positional Accuracy: Automatically positioned to the address	26	0-250m	SW
E M S, Medway House, 18-22, Cantelupe Road, East Grinstead, West Sussex, RH19 3BJ, Printers, Status: Inactive, Positional Accuracy: Automatically positioned to the address	25	0-250m	E
Ems Design & Print, Medway House, 18-22, Cantelupe Road, East Grinstead, West Sussex, RH19 3BJ, Printers, Status: Inactive, Positional Accuracy: Automatically positioned to the address	25	0-250m	E
Bathglaze, 6, Christopher Road, East Grinstead, West Sussex, RH19 3BT, Bath Resurfacing, Status: Inactive, Positional Accuracy: Automatically positioned to the address	27	0-250m	NE
Bath Glaze Uk, 6, Christopher Road, East Grinstead, West Sussex, RH19 3BT, Bath Resurfacing, Status: Inactive, Positional Accuracy: Automatically positioned to the address	27	0-250m	NE
Affordable Appliances Ltd, 133, Queens Road, East Grinstead, West Sussex, RH19 1BE, Refrigerators & Freezers - Servicing & Repairs, Status: Inactive, Positional Accuracy: Automatically positioned to the address	23	0-250m	SW
Bulldog Motor Co Ltd, 69, Railway Approach, East Grinstead, West Sussex, RH19 1BT, Car Dealers, Status: Inactive, Positional Accuracy: Automatically positioned to the address	28	0-250m	NW
Tower Car Sales 2, 69, Railway Approach, East Grinstead, West Sussex, RH19 1BT, Car Dealers - Used, Status: Inactive, Positional Accuracy: Automatically positioned to the address	28	0-250m	NW
A To B Autos, 69, Railway Approach, East Grinstead, West Sussex, RH19 1BT, Car Dealers - Used, Status: Inactive, Positional Accuracy: Automatically positioned to the address	28	0-250m	NW
Railway Approach Cars, 69, Railway Approach, East Grinstead, West Sussex, RH19 1BT, Car Dealers - Used, Status: Inactive, Positional Accuracy: Manually positioned to the address or location	28	0-250m	NW
Bm Autos, 69, Railway Approach, East Grinstead, West Sussex, RH19 1BT, Car Dealers - Used, Status: Inactive, Positional Accuracy: Automatically positioned to the address	28	0-250m	NW

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Contaminants Potentially Contaminative Uses	Ref No.	Search Buffer	Direction
Contemporary Trade Directory Entries			
The Washday Laundrette, 90, Railway Approach, East Grinstead, West Sussex, RH19 1BP, Dry Cleaners, Status: Active, Positional Accuracy: Automatically positioned to the address	29	250-500m	W
Railway Approach Cars, 75, Railway Approach, East Grinstead, RH19 1BT, Car Dealers - Used, Status: Active, Positional Accuracy: Automatically positioned to the address	28	250-500m	NW
E G M S Ltd, Ashdown House, 140-144, London Road, East Grinstead, West Sussex, RH19 1ES, Air Conditioning & Refrigeration Contractors, Status: Inactive, Positional Accuracy: Automatically positioned to the address	30	250-500m	NW
Logos 4 Life Ltd, 7a, De la Warr Road, East Grinstead, West Sussex, RH19 3BS, T-Shirts, Status: Active, Positional Accuracy: Automatically positioned to the address	31	250-500m	NE
Shell (Uk) Ltd, Linx House, 147-149, London Road, East Grinstead, West Sussex, RH19 1ET, Petrol Filling Stations, Status: Inactive, Positional Accuracy: Automatically positioned to the address	32	250-500m	NW
Elite Print & Embroidery Ltd, 6, Middle Row, EAST GRINSTEAD, West Sussex, RH19 3AX, T-Shirts, Status: Active, Positional Accuracy: Automatically positioned to the address	-	250-500m	SE
Print Room, 6, Middle Row, East Grinstead, West Sussex, RH19 3AX, Printers, Status: Active, Positional Accuracy: Automatically positioned to the address	-	250-500m	SE
F A Anderson Country Clothing, 49, High Street, East Grinstead, RH19 3AS, Gunsmiths, Status: Active, Positional Accuracy: Automatically positioned to the address	-	250-500m	E
F A Anderson, 49a, High Street, East Grinstead, West Sussex, RH19 3AF, Gunsmiths, Status: Inactive, Positional Accuracy: Automatically positioned to the address	-	250-500m	E
F A Anderson, 49a, High Street, East Grinstead, West Sussex, RH19 3AF, Gunsmiths, Status: Inactive, Positional Accuracy: Automatically positioned to the address	-	250-500m	E
Disco Hi-Tec Ltd, Second Floor, 151, London Road, East Grinstead, West Sussex, RH19 1ET, Cutting Tools & Machinery, Status: Inactive, Positional Accuracy: Automatically positioned to the address	-	250-500m	NW
Rentokil Property Care, East Grinstead House, Wood Street, East Grinstead, RH19 1UZ, Damp & Dry Rot Control, Status: Active, Positional Accuracy: Automatically positioned to the address	-	250-500m	NW
Rentokil Property Care, East Grinstead House, Wood Street, East Grinstead, RH19 1UZ, Damp & Dry Rot Control, Status: Inactive, Positional Accuracy: Automatically positioned to the address	-	250-500m	NW
Jewson, 153-157, London Road, East Grinstead, West Sussex, RH19 1EU, Builders' Merchants, Status: Inactive, Positional Accuracy: Automatically positioned to the address	-	250-500m	NW
Builder Center, 153-157, London Road, East Grinstead, West Sussex, RH19 1EU, Builders' Merchants, Status: Inactive, Positional Accuracy: Automatically positioned to the address	-	250-500m	NW
Ashdown Veterinary Services, 27, Portland Road, East Grinstead, West Sussex, RH19 4EB, Veterinary Equipment Manufacturers, Status: Inactive, Positional Accuracy: Automatically positioned to the address	33	250-500m	SE

Contaminants Potentially Contaminative Uses	Ref No.	Search Buffer	Direction
Contemporary Trade Directory Entries			
Fuel Fixer, Linx House 147-149,London Road, East Grinstead, West Sussex, RH19 1ET, Breakdown and Recovery, Status: Inactive, Positional Accuracy: Manually positioned within the geographical locality	-	250-500m	NW
Fuel Fixer, Linx House,147-149 London Road, East Grinstead, West Sussex, RH19 1ET, Garage Services, Status: Active, Positional Accuracy: Manually positioned within the geographical locality	-	250-500m	NW
M J K Group, Pannell Cl, Woodlands, East Grinstead, West Sussex, RH19 1DA, Blast Cleaning, Status: Inactive, Positional Accuracy: Manually positioned to the road within the address or location	-	250-500m	W
Printintime, 174, London Road, East Grinstead, RH19 1ES, Printers, Status: Active, Positional Accuracy: Automatically positioned to the address	-	250-500m	NW
Arthur Broad Associates, 174-174a, London Road, East Grinstead, West Sussex, RH19 1ES, Printers, Status: Inactive, Positional Accuracy: Manually positioned to the address or location	-	250-500m	NW
The Stove & Fireplace Centre, 77, High Street, East Grinstead, West Sussex, RH19 3DD, Fireplaces & Mantelpieces, Status: Active, Positional Accuracy: Automatically positioned to the address	-	250-500m	E
Langley Oak Ltd, 5, St. James Road, East Grinstead, West Sussex, RH19 1DL, Car Dealers, Status: Inactive, Positional Accuracy: Automatically positioned to the address	-	250-500m	NW
East Grinstead Cleaners, 180, London Road, East Grinstead, West Sussex, RH19 1EY, Carpet, Curtain & Upholstery Cleaners, Status: Inactive, Positional Accuracy: Automatically positioned to the address	-	250-500m	NW
Esso, 27, Station Road, East Grinstead, West Sussex, RH19 1DJ, Petrol Filling Stations, Status: Active, Positional Accuracy: Automatically positioned to the address	-	250-500m	NW
Brooklands Service Station, 27, Station Road, East Grinstead, West Sussex, RH19 1DJ, Petrol Filling Stations - 24 Hour, Status: Inactive, Positional Accuracy: Automatically positioned to the address	-	250-500m	NW
Persil Service Ltd, Brooklands Way, East Grinstead, West Sussex, RH19 1DD, Dry Cleaners, Status: Inactive, Positional Accuracy: Manually positioned to the address or location	-	250-500m	W
Holtye Windows Ltd, Station Road, East Grinstead, West Sussex, RH19 1DJ, Window Frame Manufacturers, Status: Active, Positional Accuracy: Manually positioned within the geographical locality	-	250-500m	NW
Corralls, 202, London Road, East Grinstead, West Sussex, RH19 1EY, Coal & Smokeless Fuel Merchants & Distributors, Status: Inactive, Positional Accuracy: Automatically positioned to the address	-	250-500m	NW
Fernwood Polishing, 67, Moat Road, East Grinstead, West Sussex, RH19 3LJ, French Polishing, Status: Active, Positional Accuracy: Automatically positioned to the address	-	250-500m	N
Simon Carves Ltd, 2, Estcots Drive, East Grinstead, West Sussex, RH19 3DA, Chemical Engineers, Status: Inactive, Positional Accuracy: Automatically positioned to the address	-	250-500m	E
Elite Printing Services, 1, Station Road, East Grinstead, West Sussex, RH19 1DJ, Printers, Status: Inactive, Positional Accuracy: Automatically positioned to the address	-	250-500m	NW

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Contaminants Potentially Contaminative Uses	Ref No.	Search Buffer	Direction
Fuel Station Entries			
East Grinstead Service Station, Linx House, 147-149, London Road, East Grinstead, West Sussex, RH19 1ET, Fuel Station, Status: Open, Positional Accuracy: Automatically positioned to the address,	32	250-500m	NW
Rss Brooklands, 27, Station Road, East Grinstead, West Sussex, RH19 1DJ, Fuel Station, Status: Open, Positional Accuracy: Automatically positioned to the address,	-	250-500m	NW

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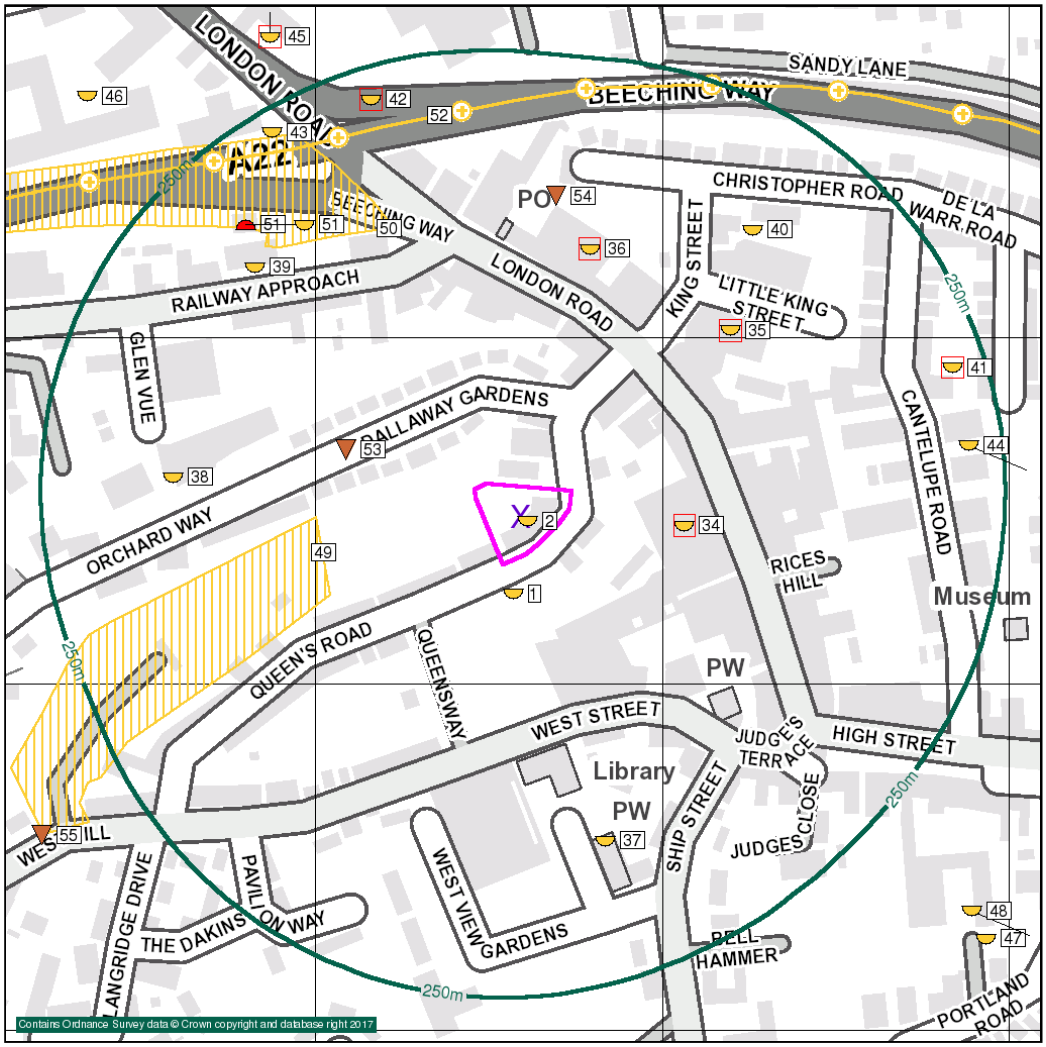

General	Potentially Contaminative Use		Potentially Infilled Land	
Site Boundary	Point Feature	Point Feature (High Risk)	Point Feature	Point Feature (High Risk)
Search Buffer	Area Feature	Area Feature (High Risk)	Area Feature	Area Feature (High Risk)
Bearing Reference Point	Line Feature	Line Feature (High Risk)	Line Feature	Line Feature (High Risk)
Reference Number				

Contaminants Potentially Contaminative Uses	Ref No.	Search Buffer	Direction
Historical Tanks And Energy Facilities			
Electrical Sub Station Facilities, Scale of Mapping: 1:1,250, Date of Mapping: 1974 - 1983	1	0-250m	S
Potential Tanks, Scale of Mapping: 1:2,500, Date of Mapping: 1962 - 1967	34	0-250m	E
Potential Tanks, Scale of Mapping: 1:1,250, Date of Mapping: 1956 - 1966	34	0-250m	E
Potential Tanks, Scale of Mapping: 1:1,250, Date of Mapping: 1956 - 1983	35	0-250m	NE
Potential Tanks, Scale of Mapping: 1:2,500, Date of Mapping: 1962 - 1967	35	0-250m	NE
Potential Tanks, Scale of Mapping: 1:1,250, Date of Mapping: 1956	36	0-250m	N
Potential Tanks, Scale of Mapping: 1:2,500, Date of Mapping: 1962	36	0-250m	N
Electrical Sub Station Facilities, Scale of Mapping: 1:1,250, Date of Mapping: 1956	37	0-250m	S
Electrical Sub Station Facilities, Scale of Mapping: 1:1,250, Date of Mapping: 1974 - 1983	38	0-250m	W
Potential Tanks, Scale of Mapping: 1:1,250, Date of Mapping: 1974 - 1983	39	0-250m	NW
Electrical Sub Station Facilities, Scale of Mapping: 1:1,250, Date of Mapping: 1974 - 1983	40	0-250m	NE
Potential Tanks, Scale of Mapping: 1:2,500, Date of Mapping: 1967	41	0-250m	E
Potential Tanks, Scale of Mapping: 1:1,250, Date of Mapping: 1966	41	0-250m	E
Tanks, Scale of Mapping: 1:2,500, Date of Mapping: 1962	42	0-250m	N
Tanks, Scale of Mapping: 1:1,250, Date of Mapping: 1956	42	0-250m	N
Electrical Sub Station Facilities, Scale of Mapping: 1:1,250, Date of Mapping: 1983	43	0-250m	NW
Electrical Sub Station Facilities, Scale of Mapping: 1:1,250, Date of Mapping: 1989	44	250-500m	E
Potential Tanks, Scale of Mapping: 1:1,250, Date of Mapping: 1964 - 1974	45	250-500m	NW
Potential Tanks, Scale of Mapping: 1:2,500, Date of Mapping: 1967	45	250-500m	NW
Electrical Sub Station Facilities, Scale of Mapping: 1:1,250, Date of Mapping: 1983	-	250-500m	N
Electrical Sub Station Facilities, Scale of Mapping: 1:1,250, Date of Mapping: 1983	46	250-500m	NW
Electrical Sub Station Facilities, Scale of Mapping: 1:1,250, Date of Mapping: 1979	-	250-500m	W
Electrical Sub Station Facilities, Scale of Mapping: 1:2,500, Date of Mapping: 1956	-	250-500m	W
Electrical Sub Station Facilities, Scale of Mapping: 1:1,250, Date of Mapping: 1991	47	250-500m	SE
Electrical Sub Station Facilities, Scale of Mapping: 1:1,250, Date of Mapping: 1976 - 1991	48	250-500m	SE
Tanks, Scale of Mapping: 1:1,250, Date of Mapping: 1956 - 1966	-	250-500m	NE
Tanks, Scale of Mapping: 1:2,500, Date of Mapping: 1962 - 1967	-	250-500m	NE

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Contaminants Potentially Contaminative Uses	Ref No.	Search Buffer	Direction
Historical Tanks And Energy Facilities			
Electrical Sub Station Facilities, Scale of Mapping: 1:1,250, Date of Mapping: 1979	-	250-500m	NW
Potential Tanks, Scale of Mapping: 1:1,250, Date of Mapping: 1956 - 1966	-	250-500m	NW
Potential Tanks, Scale of Mapping: 1:2,500, Date of Mapping: 1962	-	250-500m	NW
Potential Tanks, Scale of Mapping: 1:2,500, Date of Mapping: 1967	-	250-500m	NW
Potential Tanks, Scale of Mapping: 1:1,250, Date of Mapping: 1979	-	250-500m	NW
Potential Tanks, Scale of Mapping: 1:2,500, Date of Mapping: 1956 - 1967	-	250-500m	NW
Electrical Sub Station Facilities, Scale of Mapping: 1:1,250, Date of Mapping: 1989	-	250-500m	NE
Tanks, Scale of Mapping: 1:2,500, Date of Mapping: 1956	-	250-500m	NW
Tanks, Scale of Mapping: 1:1,250, Date of Mapping: 1956 - 1966	-	250-500m	NE
Tanks, Scale of Mapping: 1:2,500, Date of Mapping: 1962 - 1967	-	250-500m	NE
Electrical Sub Station Facilities, Scale of Mapping: 1:1,250, Date of Mapping: 1989	-	250-500m	E
Electrical Sub Station Facilities, Scale of Mapping: 1:1,250, Date of Mapping: 1979	-	250-500m	N
Potentially Contaminative Industrial Uses (Past Land Use)			
Hospitals, Date of Mapping: 1911 - 1950	2	On Site	SE
Cemetery or Graveyard, Date of Mapping: 1878 - 1978	49	0-250m	W
Railways, Date of Mapping: 1899 - 1978	50	0-250m	NW
Road haulage, Date of Mapping: 1978	51	0-250m	NW
Railways, Date of Mapping: 1878 - 1963	52	0-250m	N
Railways, Date of Mapping: 1899 - 1963	-	250-500m	W
Railways, Date of Mapping: 1878	-	250-500m	W
Railways, Date of Mapping: 1878 - 1961	-	250-500m	E
Brewing & malting, Date of Mapping: 1899	-	250-500m	NW
Railways, Date of Mapping: 1899 - 1978	-	250-500m	W

Contaminants Potentially Infilled Land	Ref No.	Search Buffer	Direction
Potentially Infilled Land (Water)			
Unknown Filled Ground (Pond, marsh, river, stream, dock etc), Date of Mapping: 1914	53	0-250m	W
Unknown Filled Ground (Pond, marsh, river, stream, dock etc), Date of Mapping: 1911	54	0-250m	N
Unknown Filled Ground (Pond, marsh, river, stream, dock etc), Date of Mapping: 1914	55	250-500m	SW
Unknown Filled Ground (Pond, marsh, river, stream, dock etc), Date of Mapping: 1950	-	250-500m	N
Unknown Filled Ground (Pond, marsh, river, stream, dock etc), Date of Mapping: 1950	-	250-500m	N
Unknown Filled Ground (Pond, marsh, river, stream, dock etc), Date of Mapping: 1963	-	250-500m	S

Map Details

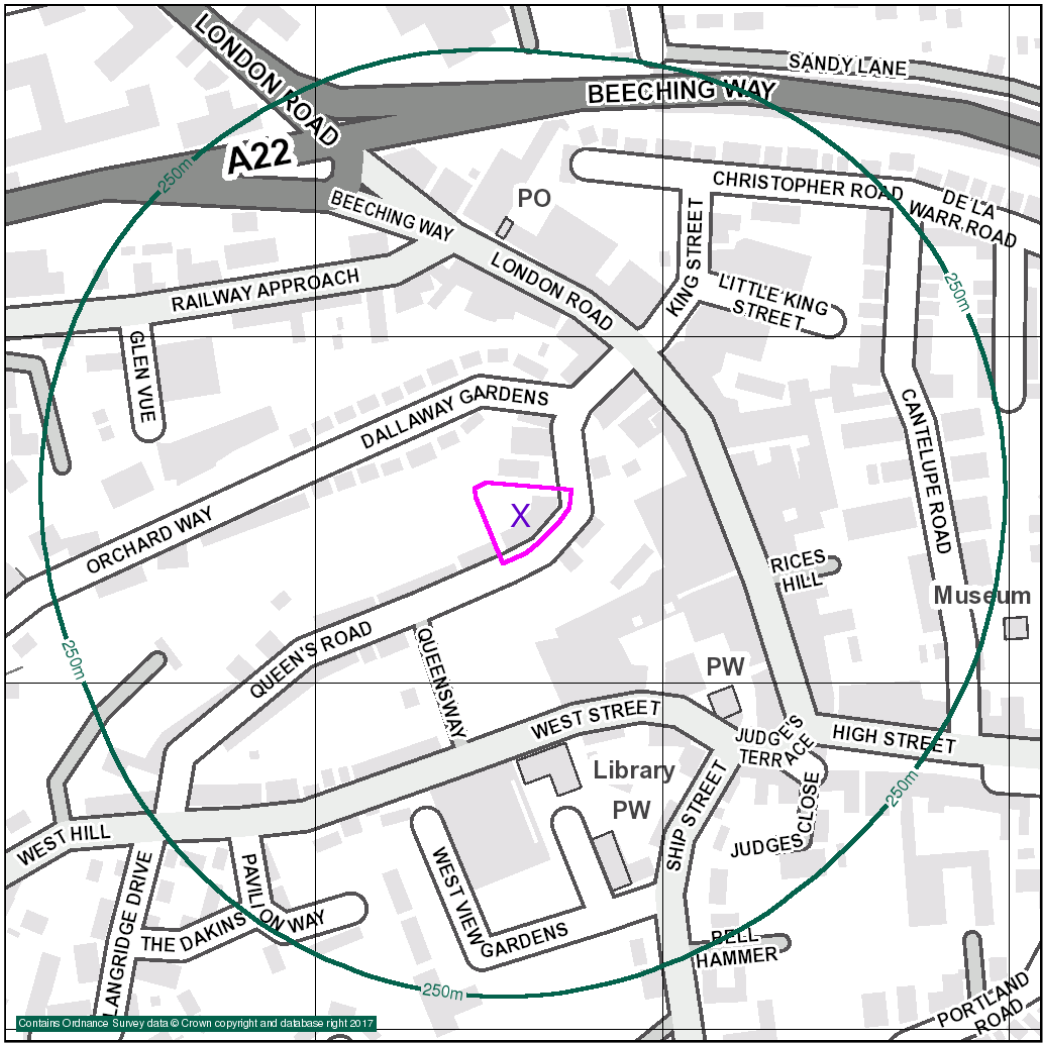
The following maps have been analysed for Historical Tanks and Energy Facilities

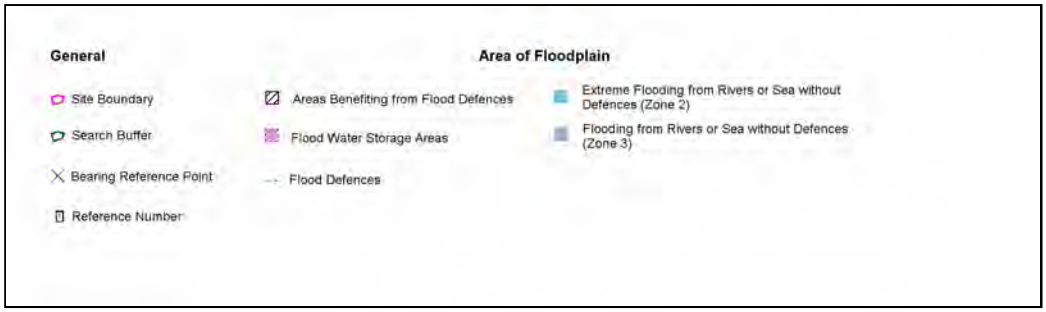
1:1,250	Mapsheet	Published
Ordnance Survey Plan	TQ3938SW	1956
Ordnance Survey Plan	TQ3938SW	1964
Ordnance Survey Plan	TQ3938SW	1966
Ordnance Survey Plan	TQ3938SW	1974
Ordnance Survey Plan	TQ3938SW	1983
1:2,500	**Mapsheet**	**Published**
Ordnance Survey Plan	TQ3938	1962
Ordnance Survey Plan	TQ3938	1967

The following maps have been analysed for Potentially Contaminative Uses and Potentially Infilled Land information

1:10,000	Mapsheet	Published
Ordnance Survey Plan	TQ33NE	1978
1:10,560	**Mapsheet**	**Published**
Sussex	005_00	1878
Surrey	042_00	1879
Sussex	005_NW	1899
Surrey	042_SE	1899
Sussex	005_NW	1911
Surrey	042_SE	1914
Sussex	005_NW	1950
Ordnance Survey Plan	TQ33NE	1963

Flood Map





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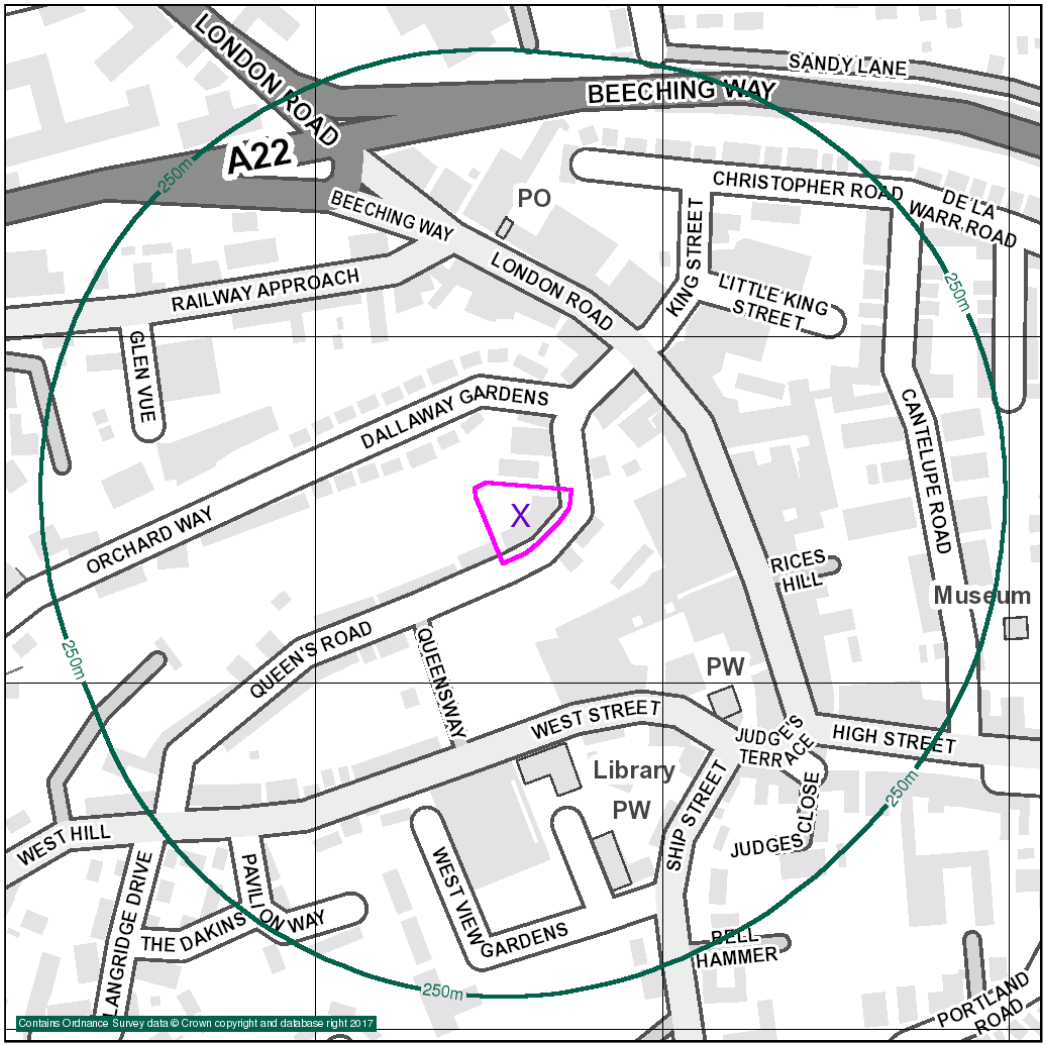
Sensitivity Map



Pathways and Receptors Pathways	Ref No.	Search Buffer	Direction
Groundwater Vulnerability			
Geological Classification: Minor Aquifer (Variably permeable) - These can be fractured or potentially fractured rocks, which do not have a high primary permeability, or other formations of variable permeability including unconsolidated deposits. Although not producing large quantities of water for abstraction, they are important for local supplies and in supplying base flow to rivers, Soil Classification: Soils of High Leaching Potential (U) - Soil information for restored mineral workings and urban areas is based on fewer observations than elsewhere. A worst case vulnerability classification (H) assumed, until proved otherwise, Map Scale: 1:100,000, Map Name: Sheet 46 East Sussex, Contact Ref: 1	-	On Site	SW
Drift Deposits			
None	-		-
Extreme Flooding from Rivers or Sea without Defences			
None	-		-
Flooding from Rivers or Sea without Defences			
None	-		-
Areas Benefiting from Flood Defences			
None	-		-
Flood Water Storage Areas			
None	-		-
Flood Defences			
None	-		-

Environmentally Sensitive Receptors	Ref No.	Search Buffer	Direction
Nearest Surface Water Feature			
Distance: 262m	-	250-500m	W

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Other Factors Geological	Search Buffer	Direction
Brine Compensation Area		
No		-
Coal Mining Affected Areas		
In an area which may not be affected by Coal Mining		-
Non Coal Mining Areas of Great Britain		
No Hazard		-
Radon Potential - Radon Affected Areas		
Affected Areas: The property is in a Lower probability radon area (less than 1% of homes are estimated to be at or above the Action Level)., Source: British Geological Survey, National Geoscience Information Service, Contact Ref: 3	On Site	SW
Radon Potential - Radon Protection Measures		
Radon Protection Measures: None, Source: British Geological Survey, National Geoscience Information Service, Contact Ref: 3	On Site	SW
Potential for Collapsible Ground Stability Hazards		
Hazard Potential: Very Low, Contact Ref: 3	On Site	SW
Potential for Compressible Ground Stability Hazards		
Hazard Potential: No Hazard, Contact Ref: 3	On Site	SW
Potential for Ground Dissolution Stability Hazards		
Hazard Potential: No Hazard, Contact Ref: 3	On Site	SW
Potential for Landslide Ground Stability Hazards		
Hazard Potential: Very Low, Contact Ref: 3	On Site	SW
Potential for Running Sand Ground Stability Hazards		
Hazard Potential: No Hazard, Contact Ref: 3	On Site	SW
Hazard Potential: Very Low, Contact Ref: 3	0-250m	W
Potential for Shrinking or Swelling Clay Ground Stability Hazards		
Hazard Potential: No Hazard, Contact Ref: 3	On Site	SW
Hazard Potential: Very Low, Contact Ref: 3	0-250m	N

If you would like any further assistance regarding this report then please contact
Landmark on (Tel) 0844 844 9966, (Fax) 0844 844 9980, Email: helpdesk@landmark.co.uk

Registered Landfill Sites

At present no complete national data set exists for landfill site boundaries, therefore a point grid reference, provided by the data supplier, is used for some landfill sites. In certain cases the point grid references supplied provide only an approximate position and can vary from the site entrance to the centre of the site. Where the exact position of the site is unclear, Landmark construct either a 100 metre or 250 metre "buffer" around the point to warn of the possible presence of landfill. The size of this "buffer" relates to the positional accuracy that can be attributed to the site. The "buffer" is shown on the map as an orange cross-hatched circle and is referred to in the map legend as Potential Landfill Buffer. Where actual boundaries are available, the landfill site area is shown on the map as a red diagonal hatched polygon and referred to in the map legend as Registered Landfill Site.

Local Authority Recorded Landfill Sites

Local Authority landfill data are sourced from individual local authorities that were able to provide information on sites operating prior to the introduction of the Control of Pollution Act (COPA) in 1974. Appropriate authorities are listed under Local Authority Landfill Coverage with an indication of whether or not they were able to make landfill data available. Details of any records identified are disclosed. You should be aware that if the local authority 'Had landfill data but passed it to the relevant environment agency' it does not necessarily mean that local authority landfill data is included in our other Landfill datasets. In addition if no data has been made available, for all or part of the search area, you should be aware that a negative response under 'Local Authority Recorded Landfill Sites' does not necessarily confirm that no local authority landfills exist.

Flooding

The Sitecheck report flood map plots all flood related features revealed within the search area as supplied by the relevant environment agency. However, to avoid confusion, the text entry in the body of the report only reveals the detail of the nearest feature in each flood data set. This is also reflected in the summary table where only a single entry is included to indicate the search buffer of the nearest occurrence.

Mining Instability Data

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If you would like any further assistance regarding this report then please contact
Landmark on (Tel) 0844 844 9966, (Fax) 0844 844 9980, Email: helpdesk@landmark.co.uk

Contact Names and Addresses

1 Environment Agency National Customer Contact Centre (NCCC)

PO Box 544
Templeborough
Rotherham
S60 1BY

Telephone 03708 506 506

enquiries@environment-agency.gov.uk

Please note that the Environment Agency/Natural Resources Wales/SEPA have a charging policy in place for enquiries.

2 Mid Sussex District Council Environmental Services Section

The Oaklands
Oaklands Road
Haywards Heath
West Sussex
RH16 1SS

Telephone 01444 458166 extn 2288
Fax 01444 450027

www.midsussex.gov.uk

3 British Geological Survey Enquiry Service

British Geological Survey
Kingsley Dunham Centre
Keyworth
Nottingham
Nottinghamshire
NG12 5GG

Telephone 0115 936 3143
Fax 0115 936 3276

enquiries@bgs.ac.uk
www.bgs.ac.uk

4 West Sussex County Council Environment & Development

County Hall
Tower hall
Chichester
West Sussex
PO19 1RH

Telephone 01243 777100

www.westsussex.gov.uk

Other Contacts

Institution of Civil Engineering Surveyors

26 Market Street
ALTRINCHAM
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WA14 1PF

Telephone 0161 928 8074

www.ices.org.uk/ices.asp

The Association of Geotechnical and Geoenvironmental Specialists

Foreham Street
83 Copers
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BR3 1NR

Telephone 020 86588212

www.ags.org.uk/

The Environmental Auditors Registration Association

Welton House
Limekiln Way
Lincoln
LN2 4US

Telephone 01522 540069

www.greenchannel.com/iea/earahome.htm

The Environmental Industries Commission

45 Weymouth Street
London
W1N 3LD

Telephone 020 79351675

www.eic-uk.co.uk/

The Institution of Civil Engineers

One Great George Street
Westminster
LONDON
SW1P 3AA

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Fax 0207 222 7500

www.ice.org.uk

The Royal Institution of Chartered Surveyors

12 Great George Street
Parliament Square
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SW1P 3AD

Telephone 020 7222 7000

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Search Code

IMPORTANT CONSUMER PROTECTION INFORMATION

This search has been produced by Landmark Information Group Ltd, Imperium, Imperial Way, Reading, Berkshire, RG2 0TD. Telephone: 0844 844 9966, Fax No: 0844 844 9980, email: helpdesk@landmark.co.uk which 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, 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 Code will:

- Display the 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 all search services comply with the law, registration rules and standards.
- Monitor their compliance with the Code.

COMPLAINTS

If you have a query or complaint about your search, you should raise it directly with the firm, and if appropriate ask for your 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 up to £5,000 to you if the Ombudsman finds that you have suffered actual financial loss and/or aggravation, distress or inconvenience 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
Web site: www.tpos.co.uk
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

Search Code

COMPLAINTS PROCEDURE

If you want to make a complaint, we will:

- Acknowledge it within 5 working days of its 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.

Complaints should be sent to:

Head of Customer Relations
Landmark Information Group Ltd
Landmark UK Property
Imperium
Imperial Way
Reading
RG2 0TD

Telephone: 0844 844 9966

E-mail: helpdesk@landmark.co.uk

Fax: 0844 844 9980

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.

LANDMARK STANDARD TERMS & CONDITIONS

Full Terms and Conditions can be found on the following link:

http://www.landmarkinfo.co.uk/Terms/Show/515

Appendix B

Figure 1 – Aerial view of the site

Figure 2 – View of existing vehicular entrance and eastern boundary

Figure 3 - Front view of building facing Queen's Road

Figure 4 - Front view of western side of the college

Figure 4 - View of neighbouring properties to the west

Figure 3 - View of existing car park to the rear

Figure 7 - View of west boundary

Figure 8 - View of the rear of the building + undercroft parking

Figure 9 - View of the rear of the building + undercroft parking

Figure 10 - View of eastern boundary