Kivesborough
Littlehampton Road
Ferring
West Sussex

Ground Contamination
Risk Assessment Report

Report Beneficiary:
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Littlehampton Road
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EXECUTIVE SUMMARY

The following presents a summary of the main findings of the report. It is emphasised that no reliance should be placed on any individual point until the whole of the report has been read as other sections of the report may put into context the information contained herein.

It is proposed to construct three new houses with associated areas of private garden within the existing garden of Kivesborough, Littlehampton Road, Ferring, West Sussex.

The site currently comprises the garden, parking area and access road to the existing property located to the east of the site. A nursery is located to the west of the site.

The site comprised part of an open field at the time of the earliest inspected historical map, dated 1876. By the early 1960s, the site formed part of a larger nursery and a glasshouse was shown to extend onto the site. By the early 1970s, the site is shown in its current configuration.

Reference to geological datasets indicates that the site is expected to be underlain by River Terrace Deposits overlying the White Chalk Subgroup. The ground investigation confirmed the underlying soils to comprise a shallow thickness of made ground soils, overlying River Terrace deposits.

The River Terrace Deposits are classed as a Secondary A Aquifer. The White Chalk Subgroup is classed as a Principal Aquifer. The site does not lie within a SPZ. Groundwater was not encountered during the course of the investigation.

The preliminary contamination risk assessment identified potential pollutant linkages relating to proposed end users of the site and controlled waters.

The ground investigation did not identify any of the potential contaminants to be present at concentrations considered to pose an unacceptable risk to either end users of the site or controlled waters beneath the site. No remedial measures or further contamination risk assessment works are considered to be necessary.

It is recommended that this report is submitted to the Local Authority in support of a planning application for the site.

The conclusions drawn in this report should be considered as provisional until such time as the report has been accepted by the Local Authority.

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1. INTRODUCTION

It is proposed to construct three new houses with associated areas of private garden within the existing garden of Kivesborough, Littlehampton Road, Ferring, West Sussex. A copy of the proposed development layout is presented in Appendix A.

Ashdown Site Investigation Ltd was requested to undertake a ground investigation to inform a preliminary and quantitative risk assessment, for submission in support of a planning application for the site. This followed the issue of pre-application advice, in which Environmental Health recommended the imposition of the full contaminated land planning condition for the development.

The specific objectives of the works were to:

a) Establish the expected geology, hydrogeology and hydrology at the site;
b) Ascertain the development history and current site use;
c) Develop a preliminary conceptual model of the site identifying potential pollutant linkages relating to end users of the proposed development works, to controlled waters beneath and in the vicinity of the site, or to other off-site sensitive receptors, if identified;
d) Investigate the shallow ground and groundwater conditions in the area of the proposed development;
e) Test for the presence of contaminants identified by the preliminary conceptual model; and
f) Develop a quantitative conceptual model of the site identifying pollutant linkages relating to end users of the proposed development works, to controlled waters beneath and in the vicinity of the site, or to other off-site sensitive receptors, if identified.

The scope of the works covered by this report, and the terms and conditions under which they were undertaken, were set out within the offer letter Q13710, dated 3rd January 2024. The instruction to proceed was received on behalf of the client from ECE Planning.

Copies of the historical maps and geo-environmental data referred to in this report are presented within Appendix G. Whilst the boundary within the historical maps and geoenvironmental data include the existing property Kivesborough, this assessment is limited to the area of the proposed development only, as shown by the red line boundary on the proposed site plan included as Appendix A. Where necessary distances provided in the data from the site boundary will be reinterpreted accordingly.

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2. SITE CONTEXT

2.1 Walkover Survey

The site is located within the western part of the curtilage of Kivesborough located off Littlehampton Road, Ferring, West Sussex and is centred on the approximate Ordnance Survey national grid reference 508926, 103231. A site location plan and site plan are presented as Figure 1 and Figure 2, respectively.

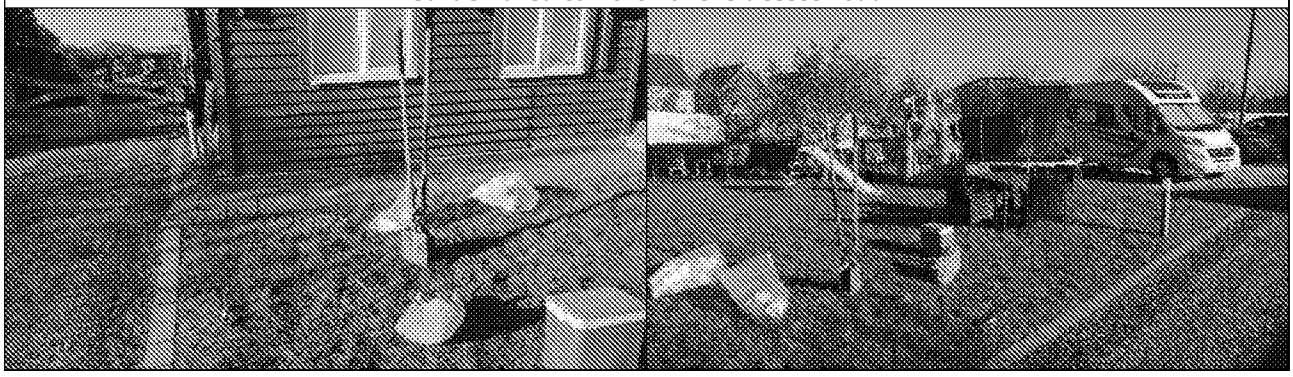
The site comprises two grass areas separated by a gravel access road that leads to a parking area, together with various outbuildings.

The larger garden area to the south of the access road is bordered by trees and contains a small wooden outhouse and a pond located centrally.

Garden area to south of the access road

The smaller garden area to the north is mainly laid to lawn, with a larger outbuilding along the western boundary.

Garden area to north of the access road



The existing house, Kivesborough, is located beyond the parking area to the east. A nursery is located to the west of the site, with undeveloped land to the north and south.

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2.2 Geological Data Review

2.2.1 Expected Geology and Aquifer Designation

The stratigraphic succession that may be expected to underlie the site has been established by reference to British Geological Survey (BGS) mapping and the BGS Lexicon of Named Rock Units. The expected stratigraphy is presented in the following table.

Table 1. Expected Strata and Aquifer Designation

Type	Stratum	Aquifer Designation
Superficial	River Terrace Deposits	Secondary A Aquifer
Bedrock	White Chalk Subgroup	Principal Aquifer

The River Terrace Deposits in this area was formerly denoted as the Brickearth and comprises brown sandy (fine) silt or clay largely originating from the solution weathering of the previously existing chalk. The material will have been reworked by water flow to produce some lateral variability in the grain size of the soil (sand and gravel) and can be expected to contain a variable content of flint.

The Wite Chalk Subgroup comprises chalk with flints. The Subgroup contains discrete marl seams, nodular chalk and flint seams throughout.

2.2.2 BGS Borehole

The nearest BGS borehole is identified ~34m to the north of the site and appears to be for a soakaway. The borehole encountered clay deposits to 8m depth overlying chalk.

2.2.3 Natural Ground Subsidence

Table 2. Natural Ground Subsidence from Groundsure Data

Section	Groundsure Comment
Soil Volume Change Potential (Shrink-Swell)	Low
Running Sands	Low
Compressible Deposits	Negligible
Collapsible Deposits	Low
Landslides	Very Low
Ground Dissolution of Soluble Rocks	Very Low

The chalk can be expected to have a deeply convoluted upper surface as a result of solution weathering and erosion. The presence of natural cavities in the chalk is very rare and solution features, if present, can be expected to be infilled with Quaternary Superficial Deposits. The infill material may be significantly weaker than the surrounding chalk. Solution features can comprise pipes extending to several metres deep into the chalk or conical depressions and basin shaped structures. The Groundsure data indicates the risk from soluble rocks is very low.

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2.2.4 Ground Cavities and Sinkholes

Table 3. Ground Cavities and Sinkholes from Groundsure Data

Section	Groundsure Comment
Natural Cavities	No records are identified within 500m of the site.
Mining Cavities	No records are identified within 500m of the site.
Reported Recent Incidents	No records are identified within 500m of the site.
Historical Incidents	No records are identified within 500m of the site.
National Karst Database	No records are identified within 500m of the site.

2.2.5 Mining and Ground Workings

Table 4. Mining and Ground Workings from Groundsure Data

Section	Groundsure Comment
BritPits	No BritPits are identified within 500m of the site.
Surface Ground Workings	The only records identified are for a small cutting 163m south of the site and a pond ~205m west of the site. Given the nature of the entries and the distance from the site they are not considered to pose an unacceptable risk.
Underground Workings	No underground workings are identified within 1km of the site.
Underground Mining Extents	No records are identified within 500m of the site.
Historical Mineral Planning Areas	No records are identified within 500m of the site.
Non-Coal Mining	The site is not identified to be in a non-coal mining area.
JPB Mining Areas	No records are identified within 500m of the site.
The Coal Authority – Non-Coal Mining	No records are identified within 500m of the site.
Researched Mining	No records are identified within 500m of the site.
Mining Record Office Plans	No records are identified within 500m of the site.
BGS Mine Plans	No records are identified within 500m of the site.
Coal Mining	No records are identified on the site.
Brine Areas	No records are identified on the site.
Gypsum Areas	No records are identified on the site.
Tin Mining	No records are identified on the site.
Clay Mining	No records are identified on the site.

Historically, chalk deposits were often mined locally. Most commonly historical mines characteristically comprise a narrow shaft with a number of chambers radiating from the base. These structures are colloquially known as "deneholes", "chalk-wells" or "chalkangles".

The depth of the features reflects the depth to the underlying chalk bedrock. The shaft width was commonly in the order of 2m to 3m, widening out into galleries at depth. The chalk was extracted for soil improvement and was usually applied directly to fields though sometimes the

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chalk was processed, typically by burning in kilns where the chalk was used to produce quicklime (calcium oxide).

Once they had reached their limits the mines were commonly capped. Various capping techniques were used; examples include the use of upturned trees or brick arching. Records pertaining to the distribution of these localised mines are incomplete, usually being limited to features marked as shafts or the occurrence of circular depressions on historic Ordnance Survey maps. In the field they are most likely to be visible as shallow depressions, if at all.

The Grounsure data does not indicate the presence of any historical mines within the vicinity of the site and the risk posed to the development is considered to be negligible to very low.

2.2.6 Radon

Table 5. Radon

Section	Groundsure Comment
Radon Affected Areas	The site is reported to be within an area where between 1% and 3% of properties are above the action level requiring radon gas protection measures to be installed in new buildings.
Radon Protection Measures	No radon protection measures are reported by the British Geological Survey to be necessary in the construction of new dwellings or extensions.

2.2.7 Soil Chemistry

Table 6. BGS Estimated Background Soil Chemistry

Contaminant	Estimated Value (mg/kg)
Arsenic	15-25
Bioaccessible Arsenic	-
Lead	100
Bioaccessible Lead	60
Cadmium	1.8
Chromium	60-90
Nickel	15-30

2.3 Hydrogeological and Hydrological Data

2.3.1 Groundwater Abstractions

A historical groundwater abstraction licence for farming and domestic use is recorded to lie 302m to the north of the site.

The closest active groundwater abstraction licence is recorded to lie 911m to the north of the site. The abstraction is for spray irrigation.

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2.3.2 Surface Water Abstractions

No surface water abstraction licences are indicated within 2km of the site.

2.3.3 Potable Abstractions

No potable abstraction licences are indicated within 2km of the site.

2.3.4 Groundwater Vulnerability

The level of groundwater vulnerability, as reported within the Groundsure data, is Medium.

2.3.5 Groundwater Source Protection Zones (SPZ)

The Environment Agency defines SPZs as those areas where groundwater supplies are at risk from potentially polluting activities and accidental releases of pollutants. SPZs are primarily a policy tool used to control activities close to water supplies intended for human consumption.

The site does not lie within a SPZ.

2.3.6 Surface Water Features

The nearest recorded significant surface water feature identified by the data is a water course, located 123m south west of the site. As discussed in Section 2.1, a pond is located on site.

2.3.7 Flood Risk

The table below summarises the flood risk data provided by the Groundsure report. It is noted that this does not constitute a flood risk assessment.

Table 7. Flood Risk

Section	On Site	Within 50m of the Site
Risk of Flooding from Rivers and Seas (RoFRaS)	None Identified	None Identified
Historical Flood Events	None Identified	None Identified
Flood Defences	None Identified	None Identified
Areas Benefitting from Flood Defences	None Identified	None Identified
Flood Storage Areas	None Identified	None Identified
Environment Agency Flood Zone 2	None Identified	None Identified
Environment Agency Flood Zone 3	None Identified	None Identified
Surface Water Flooding	Highest Risk: 1 in 1000 year, 0.3m-1.0m depth	Highest Risk: 1 in 100 year, 0.3m-1.0m depth
Groundwater Flooding	Highest Risk: Moderate-High	Highest Risk: Moderate-High

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3. GEO-ENVIRONMENTAL DATA

3.1 Historical Industrial Sites

The following table summarises past land uses of the site and the surrounding area extracted by Groundsure from historical maps.

Table 8. Historical Industrial Sites

Section	Remarks
Historical Industrial Land Uses	The site and the surrounding area are shown to be part of nurseries, shown earliest on the 1943 mapping.
Historical Tank Database	No historical tanks are identified within 100m of the site.
Historical Energy Features	No energy features are identified within 100m of the site.
Historical Petrol Stations	No historical petrol stations are identified within 100m of the site.
Historical Garages	No historical garages are identified within 100m of the site.
Historical Military Sites	No historical military sites are identified within 100m of the site.

3.2 Landfill and Other Waste Sites

The following table summarises the location of waste sites either on the site or within the surrounding area (within 250m of the site).

Table 9. Landfill and Other Waste Sites

Section	Groundsure Comments
Active or Recent Landfills	No active or recent landfills are identified within 250m of the site.
Historical Landfill (BGS Records/LA/Mapping Records EA Records)	No historical landfills are identified within 250m of the site.
Historical Waste Sites	No historical waste sites are identified within 250m of the site.
Licensed Waste Sites	No licensed waste sites are identified within 250m of the site.
Waste Exemptions	A number of exemptions are identified ~73m west of the site for the use of waste in construction. Given the nature of the exemption it is not considered to pose an unacceptable risk to the site.

3.3 Current Industrial Land Use

The relevant current industrial land uses are discussed in the table below.

Table 10. Current Industrial Land Uses

Section	Groundsure Comments
Recent Industrial Land Use	No recent industrial land uses are identified within 100m of the site.
Current or Recent Petrol stations	No current or recent petrol stations are identified within 100m of the site.
Electricity Cables / Gas Pipelines	No underground high voltage cables or high-pressure pipes are identified within 100m of the site.

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Section	Groundsure Comments
Sites determined as Contaminated Land	No sites determined as contaminated land are identified within 100m of the site.
Control of Major Accident Hazards (COMAH) Sites	No COMAH sites are identified within 100m of the site.
Regulated Explosive Sites	No regulated explosive sites are identified within 100m of the site.
Hazardous Substance Storage/Usage	No consents have been granted for hazardous substance storage/usage within 100m of the site.
Historical Licensed Industrial Activities (IPC)	No records are identified within 100m of the site.
Licensed Industrial Activities (Part A(1))	No records are identified within 100m of the site.
Licensed Pollutant Release (Part A(2)/B)	No records are identified within 100m of the site.
Radioactive Substance Authorisations	No records are identified within 100m of the site.
Licensed Discharges to Controlled Waters	No records are identified within 100m of the site.
Pollutant Release to Surface Water / Public Sewer	No records are identified within 100m of the site.
List 1 / List 2 Dangerous Substances	No records are identified within 100m of the site.
Pollution Incidents (EA/NRW)	No pollution incidents are identified within 100m of the site.
Pollution Inventory Substances / Waste Transfers / Radioactive Waste	No records are identified within 100m of the site.

3.4 Sensitive Land Use

No sensitive land uses at risk from contamination are identified within 1km of the site.

3.5 Railway Infrastructure and Projects

A railway line is identified approximately 170m south of the site.

4. HISTORICAL MAP AND IMAGERY REVIEW

Historical Ordnance Survey maps and imagery covering the area of the site have been reviewed and are summarised in the following table.

It is noted that maps and images present information applicable at the time of production of the maps or image captures, that maps are subject to surveying and cartographic errors and images to atmospheric conditions at the time of their capture. It is possible that significant developments may have taken place on or within the vicinity of the site that are not shown on the inspected maps and images.

'In the Vicinity of the Site' generally refers to features of relevance within approximately 250m of the site boundary but may also include more distant features if considered to be pertinent to the assessment of the development history.

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Table 11. Summary of Significant Features Identified on Historical Maps and Images

Map/Image Details	On-Site	In the Vicinity of the Site
1876 / 1877 1:10,560 /1:2,500	The site comprises part of an open field, which extends around the site.	The railway line, including its cutting is shown approximately 170m south of the site.
1943 1:10,560	The site comprises part of a nursery. A glass house is shown to extend onto the site from the south, occupying the south eastern extent of the site.	Further glasshouses are shown to the west and south east of the site.
1962 1:10,560	The glasshouse is no longer shown to occupy the site and appears to have been demolished. A track is shown running east to west through the site.	
1969-1971 1:2,500	The site appears to be shown in its current configuration, comprising the garden of a property located to the east of the site.	A glass house associated with the nursery is located to the west of the site.
1983 1:2,500		The glasshouse to the west is no longer shown.
1999 Aerial Photograph	The site is shown as previously described – a garden area either side of an access road.	A house is shown to the east of the site. The areas to the north, south and west of the site are undeveloped, though vegetation scarring indicative of historical structures is visible in the area to the north and south of the site.
2010 Aerial Photograph	The pond is shown within the garden area, as well as ancillary structures.	The house to the east of the site has been significantly redeveloped. A growing area associated with the nursery is shown to the west of the site.

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5. PRELIMINARY CONTAMINATION RISK ASSESSMENT

5.1 Introduction

The risk assessment considers the potential sources of contamination identified, the receptors that may be present in view of the development proposals and the contaminant pathways by which these may be linked. A complete pollutant linkage is only deemed to exist where all three are present and a site is considered suitable for use where no complete pollutant linkages are identified.

Where a complete pollutant linkage is deemed to be present, an assessment of the level of risk associated with the pollutant linkage has been carried out in line with current guidance[1].

The level of risk is determined using the risk matrix presented in the following table. Classifications of probability, consequence and risk are presented in Appendix B.

Table 12. Risk Assessment Matrix

		Probability			
		Very Low	**Low**	**Moderate**	**High**
Consequence	**Very Minor**	Negligible	Very Low	Low	Low/Moderate
	Minor	Very Low	Low	Low/Moderate	Moderate
	Moderate	Low	Low/Moderate	Moderate	High
	Severe	Low/Moderate	Moderate	High	Very High

5.2 Contaminant Pathways Identified

The development is to comprise new residential buildings together with areas of private garden.

Pathways associated with gas and vapour intrusion into new buildings are considered to be valid, along with direct contact and dust related pathways, and pathways associated with the consumption of home grown produce.

Should the proposed development plans be altered, a revised risk assessment may be required.

It is noted that an asbestos survey of existing structures and infrastructure[2] was beyond the brief of this report. The risk assessment assumes that, should asbestos be identified within buildings or infrastructure, any such materials will be managed in accordance with current legislation and guidance, to ensure this does not represent an ongoing risk to end users and, specifically, to ensure that asbestos materials are not introduced into the underlying soils.

The site is expected to be underlain by River Terrace Deposits overlying White Chalk Subgroup soils which are classed as a Secondary A and a Principal Aquifer, respectively. Although the site is not located within a SPZ, pathways relating to controlled waters may be reasonably considered to be present.

[1] Contaminated Land Risk Assessment: A guide to good practice, CIRIA C552, 2001.
[2] As defined under Section 5(a) of the Control of Asbestos Regulations, 2012.

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5.3 Potential Contamination Sources Identified

The following potential sources of contamination have been identified by the preliminary contamination risk assessment:

- Historical use of the site as part of a larger nursery.
- Potential made ground from historical demolition and clearance works on the site and the wider area.

The potential contaminants associated with these sources are set out in the conceptual model.

5.4 Preliminary Conceptual Model

The preliminary conceptual model for the proposed development is presented in Appendix C.

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6. SITE WORKS

6.1 Introduction

The intrusive site works comprised a series of dynamic sampler boreholes and hand augered boreholes. The intrusive work was carried out on 26th January, 2024. The exploratory hole locations are shown on Figure 2.

Descriptions of the strata encountered and comments on groundwater conditions are shown in the exploratory hole records given in Appendix D, together with explanatory notes to assist in their interpretation.

6.2 Exploratory Holes

The following table summarises the intrusive works undertaken at the site.

Table 13. Summary of Intrusive Works Undertaken

Designation	Depth (m bgl)	Method
WS01	1.50	Hand Auger
WS02	1.00	Hand Auger
WS03	1.00	Dynamic Sampler
WS04	1.00	Dynamic Sampler
WS05	1.00	Dynamic Sampler
WS06	1.00	Hand Auger
WS07	1.00	Hand Auger
WS08	0.70	Hand Auger

6.3 Sampling

Samples of soil were taken from the exploratory holes at the depths shown in the exploratory hole records. The types of samples taken are indicated on the exploratory hole records. Details on the sample types are provided in the explanatory notes.

Where appropriate, samples were stored in cool boxes with cooling blocks to maintain temperatures below 4°C until transferred to refrigerators upon return to the office and subsequently forwarded to the external accredited chemical testing laboratory.

6.4 Laboratory Testing

Laboratory testing was scheduled by Ashdown Site Investigation Ltd. Results from the laboratory tests are provided in Appendix E.

Chemical testing was undertaken by a laboratory with recognised (UKAS and MCERTS) accreditation for quality control.

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7. GROUND CONDITIONS

7.1 Stratigraphy

7.1.1 *Surface Covering*

With the exception of WS01, which was excavated through a 100mm layer of made ground comprising sandy clayey gravel of pea shingle, each of the exploratory holes was excavated through a surface cover of topsoil.

7.1.2 *Made Ground*

Made ground, generally comprising slightly gravelly slightly sandy silty clay, was recorded to depths of between 0.40m and 0.80m below ground level. The gravel fraction comprised variable quantities of flint, chalk, ash-like material, brick, glass, slate, clinker-like material, plastic and organic material.

7.1.3 *River Terrace Deposits*

Underlying the made ground soils, the investigation progressed into undisturbed silty clay deposits with varying sand and gravel content. The gravel fraction comprised variable quantities of flint, ironstone and chalk.

These deposits, which continued to the full depth of the investigation, are considered to represent the River Terrace Deposits indicated to underlie the site on BGS geological maps.

7.2 Groundwater Conditions and Stability

Each of the exploratory holes was recorded to remain dry and stable during the course of excavation.

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8. QUANTITATIVE CONTAMINATION ASSESSMENT

8.1 Assessment Strategy

Given that the potential sources of contamination are likely to be diffuse across the site, the ground investigation comprised a series of spatially distributed exploratory holes across the development area to allow samples of the shallow soils to be obtained and tested for the contaminants identified by the preliminary conceptual model.

8.2 Analysis of Contamination Test Results

8.2.1 Method of Assessment

For the assessment of risk to end users, comparison of the results of the laboratory testing has been made against published soil screening values (SSV) comprising the 'Suitable For Use Levels' (S4UL)[3] or, in lieu of an S4UL being developed for lead, the Category 4 Screening Level (C4SL)[4].

For the assessment of risk to controlled waters a qualitative assessment has been undertaken based upon the concentrations of contaminants recorded within the soil samples and the information obtained about the sensitivity of the underlying strata or nearby surface water receptors.

8.2.2 Heavy Metals & Polycyclic Aromatic Hydrocarbon (PAH) Compounds

The following table summarises the SSV along with the maximum and minimum concentrations of the heavy metals and PAH compounds tested for.

Table 14. Summary of Test Results – Heavy Metals and PAH Compounds

Contaminant	SSV (mg/kg)	No. of Samples	Minimum Concentration (mg/kg)	Maximum concentration (mg/kg)	Limit of Detection (mg/kg)	No of exceedances
Arsenic	37	8	8	14	< 2	0
Water Soluble Boron	290	8	<LOD	<LOD	< 1	0
Cadmium	11	8	0.3	0.7	< 0.2	0
Chromium	910	8	18	33	< 2	0
Hexavalent Chromium	6	8	<LOD	<LOD	< 2	0
Copper	2400	8	15	39	< 4	0
Lead	200	8	24	170	< 3	0
Mercury	40	8	<LOD	<LOD	< 1	0
Nickel	180	8	11	19	< 3	0
Selenium	250	8	<LOD	<LOD	< 3	0
Zinc	3700	8	65	357	< 3	0
Naphthalene	2.3	8	<LOD	<LOD	< 0.1	0
Acenaphthylene	170	8	<LOD	<LOD	< 0.1	0
Acenaphthene	210	8	<LOD	<LOD	< 0.1	0
Fluorene	170	8	<LOD	<LOD	< 0.1	0

[3] Nathanail, C.P, et al., The LQM/CIEH S4ULs for Human Health Risk Assessment, 2015, Land Quality Press, Nottingham. Copyright Land Quality Management Limited reproduced with permission; Publication Number S4UL3071.
[4] SP1010: Development of Category 4 Screening Levels for Assessment of Land Affected by Contamination. Final Project Report, published by DEFRA, 2014.

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Contaminant	SSV (mg/kg)	No. of Samples	Minimum Concentration (mg/kg)	Maximum concentration (mg/kg)	Limit of Detection (mg/kg)	No of exceedances
Phenanthrene	95	8	<LOD	<LOD	< 0.1	0
Anthracene	2400	8	<LOD	<LOD	< 0.1	0
Fluoranthene	280	8	<LOD	0.33	< 0.1	0
Pyrene	620	8	<LOD	0.32	< 0.1	0
Benz(a)anthracene	7.2	8	<LOD	0.19	< 0.1	0
Chrysene	15	8	<LOD	0.22	< 0.1	0
Benzo(b)fluoranthene	2.6	8	<LOD	0.25	< 0.1	0
Benzo(k)fluoranthene	77	8	<LOD	<LOD	< 0.1	0
Benzo(a)pyrene	2.2	8	<LOD	0.21	< 0.1	0
Indeno(123-cd)pyrene	27	8	<LOD	0.16	< 0.1	0
Dibenz(ah)anthracene	0.24	8	<LOD	<LOD	< 0.1	0
Benzo(ghi)perylene	320	8	<LOD	0.14	< 0.1	0

None of the samples of made ground tested recorded concentrations of heavy metals or PAH compounds above their respective SSV. The concentrations of heavy metals and PAH compounds present within the made ground soils are not considered to pose an unacceptable risk to end users of the site.

At the concentrations recorded, none of the heavy metals or PAH compounds would be expected to exhibit significant mobility within the soils and are therefore not considered to pose an unacceptable risk to controlled waters beneath the site.

8.2.3 Asbestos

No suspected asbestos materials were noted within any of the exploratory holes undertaken at the site.

Eight samples of the made ground were screened for the presence of asbestos. None of the samples recorded the presence of any asbestos materials.

There is not considered to be an unacceptable risk to end users from asbestos materials within soils.

Due to the heterogeneity of made ground, there will always remain the potential for localised asbestos materials to be encountered during construction works, though the likelihood of this is considered to be very low. All workers at the site should be made aware of what actions to take in the event that suspected asbestos materials are identified at any time during the development works.

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8.2.4 Petroleum Hydrocarbons

The following table lists the SSV for petroleum hydrocarbon equivalent carbon weight fractions calculated for 1% organic content.

Table 15. SSV for petroleum hydrocarbon equivalent carbon weight fractions

Petroleum Hydrocarbon Fraction	SSV (mg/kg)	Petroleum Hydrocarbon Fraction	SSV (mg/kg)
Aliphatic EC 5-6	42	Aromatic EC 5-7	70
Aliphatic EC >6-8	100	Aromatic EC >7-8	130
Aliphatic EC >8-10	27	Aromatic EC >8-10	34
Aliphatic EC >10-12	130	Aromatic EC >10-12	74
Aliphatic EC >12-16	1100	Aromatic EC >12-16	140
Aliphatic EC >16-35	65000	Aromatic EC >16-21	260
Aliphatic EC >35-44	65000	Aromatic EC >21-35	1100
		Aromatic EC >35-44	1100

Whilst full speciation of the concentrations of petroleum hydrocarbons by aromatic and aliphatic fractions was not undertaken, the results of the testing undertaken can still be compared with the more stringent of the screening values for the respective equivalent carbon weight fraction and, where the concentration recorded is found to be lower, it can be reasonably concluded that no significant risk is present.

No visual of olfactory evidence of petroleum hydrocarbon contamination was encountered within any of the exploratory holes at the site. Testing of the shallow soils recorded very low concentrations of petroleum hydrocarbon, significantly below the more conservative SSV for each equivalent carbon weight fraction.

The concentrations of petroleum hydrocarbons present within soils are not considered to pose an unacceptable risk to end users of the site or controlled waters beneath the site.

Comparison of the test results for petroleum hydrocarbons has been undertaken with the threshold value for PE water supply pipework[5]. The concentrations do not exceed the threshold value.

Nonetheless, it is strongly recommended that designers consult with the local water supply company to determine the specific water supply pipe material required to be used, or whether they require further laboratory testing and assessment specific to proposed routes of services.

[5] Set out within Table 3.1 of the Guidance for the Selection of Water Supply Pipes to be used in Brownfield Sites, UK Water Industry Research, 2010.

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8.3 Quantitative Contamination Risk Assessment

8.3.0 Contamination Sources Identified

Following the ground investigation, no sources of contamination have been identified by the quantitative contamination risk assessment.

8.3.1 Quantitative Conceptual Model

The quantitative conceptual model for the proposed development is presented in Appendix F.

In the absence of any complete pollutant linkages being identified, no remedial measures or further contamination risk assessment works are considered to be necessary.

8.4 Risks to Other Potential Receptors

All construction workers must undertake their own risk assessment, based upon the works to be carried out and the proposed method by which this will be achieved, in accordance with current health and safety legislation. Their assessment should take into account all available information about the site, including that present within this report.

Appropriate working procedures and PPE should be adopted to ensure the health and safety of the site operatives. Instruction should be given in the recognition of potentially hazardous materials. All site personnel should be appropriately briefed on the discovery strategy, presented below, and what actions they must take in the event that further evidence of contamination is identified or suspected.

8.5 Regulatory Approval

It is recommended that this report is submitted to the Local Authority in support of a planning application for the site. The report should also be submitted to any other relevant regulator and/or warrantor.

The conclusions drawn in this report should be considered as provisional until such time as the report has been accepted by the Local Authority.

8.6 Discovery Strategy

If, during the course of the site clearance and development works, any materials not previously identified by the investigation that are suspected of being 'contaminants' are encountered, then the following procedure should apply:

- All works in that area should cease and the site manager should be informed.
- Advice should be sought from suitably qualified and experienced personnel as to whether any further site inspection, sampling, testing and/or assessment is deemed necessary.
- If required, the conclusions of any assessment and any proposed remedial works (if required) should be agreed by the local authority.
- If necessary, full details of any remedial works should be included in a verification report for the site.

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Suspected 'contamination' may take the following form, though it is noted that this list is not exhaustive and site operatives should ask if they are at all unsure of any findings:

- Soil or water looks oily and/or has an oily odour
- Soil or water has a solvent type of odour
- Significant quantities of man-made materials within fill such as paint cans, car parts, glass fragments
- Suspected asbestos containing materials (insulating boards, cement, loose fibres etc.)
- Significant volumes of clinker like or ashy material
- Sand bags, and/or subsurface concrete structures
- Animal carcasses or evidence of animal burial pits

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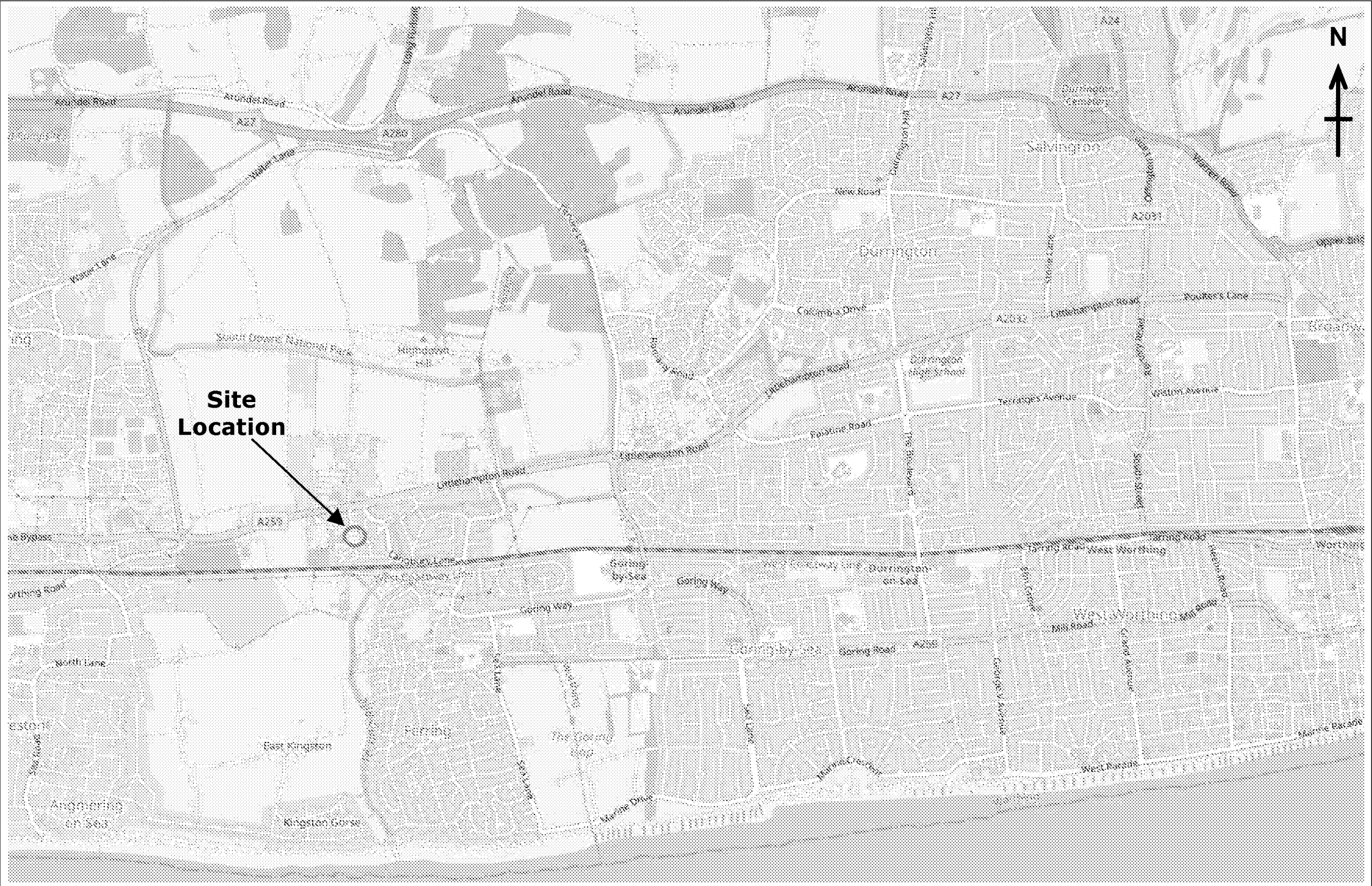
FIGURES



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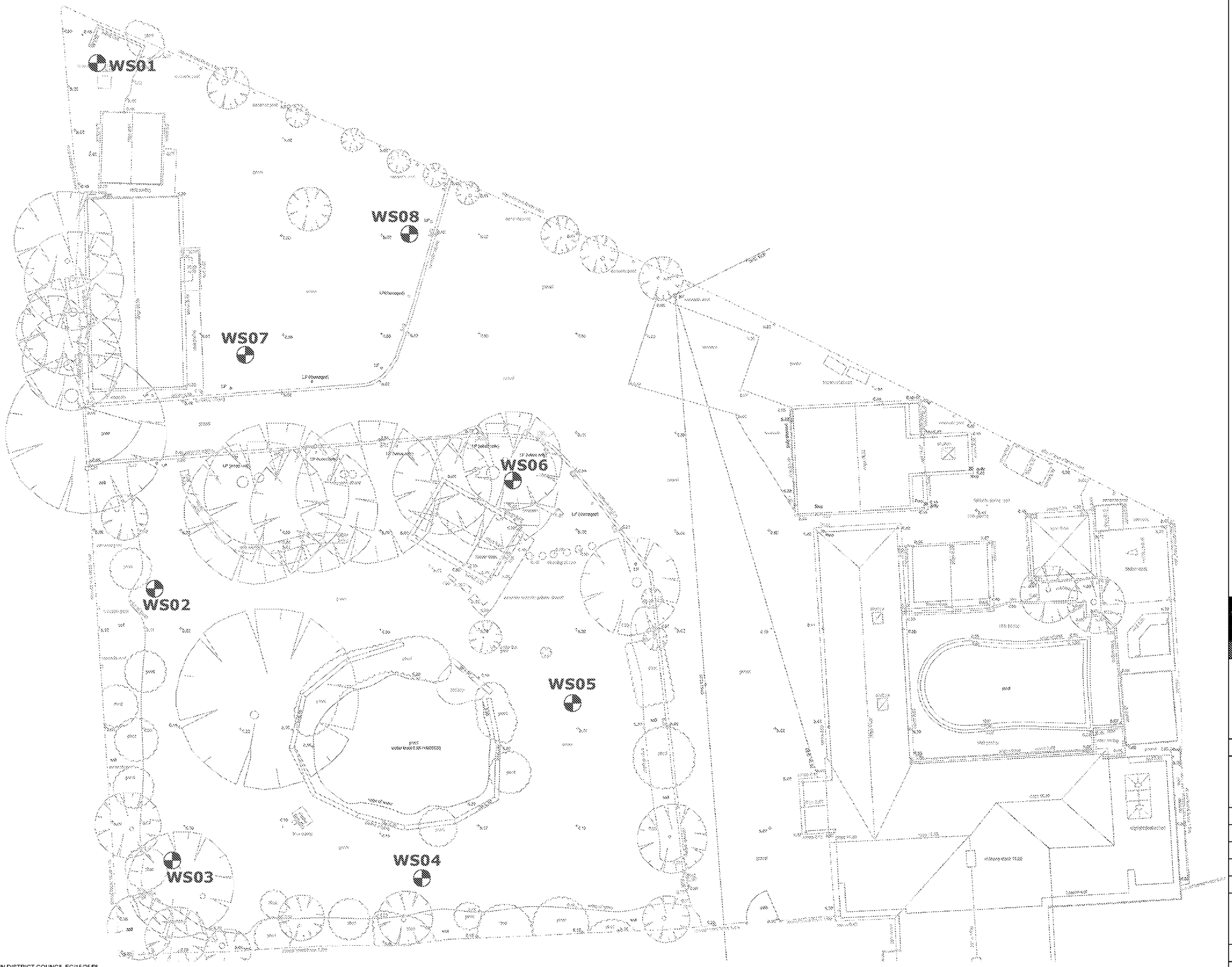
ASHDOWN SITE INVESTIGATION LIMITED	Site Location Plan	Site Name	Figure No.	Project Reference
		Kivesborough, Littlehampton Road, Ferring, West Sussex	1	P16455



N

ASHDOWN SITE INVESTIGATION LIMITED

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The Old Grain Store
Ditchling Common Business Park
Ditchling
East Sussex
BN6 8SG
01273 483119
contact@ashdownsi.co.uk

Site:

Kivesborough
Littlehampton Road
Ferring
West Sussex

Project Ref:

P16455

Figure No.

2

Drawing Title

Site Plan

Scale

NTS

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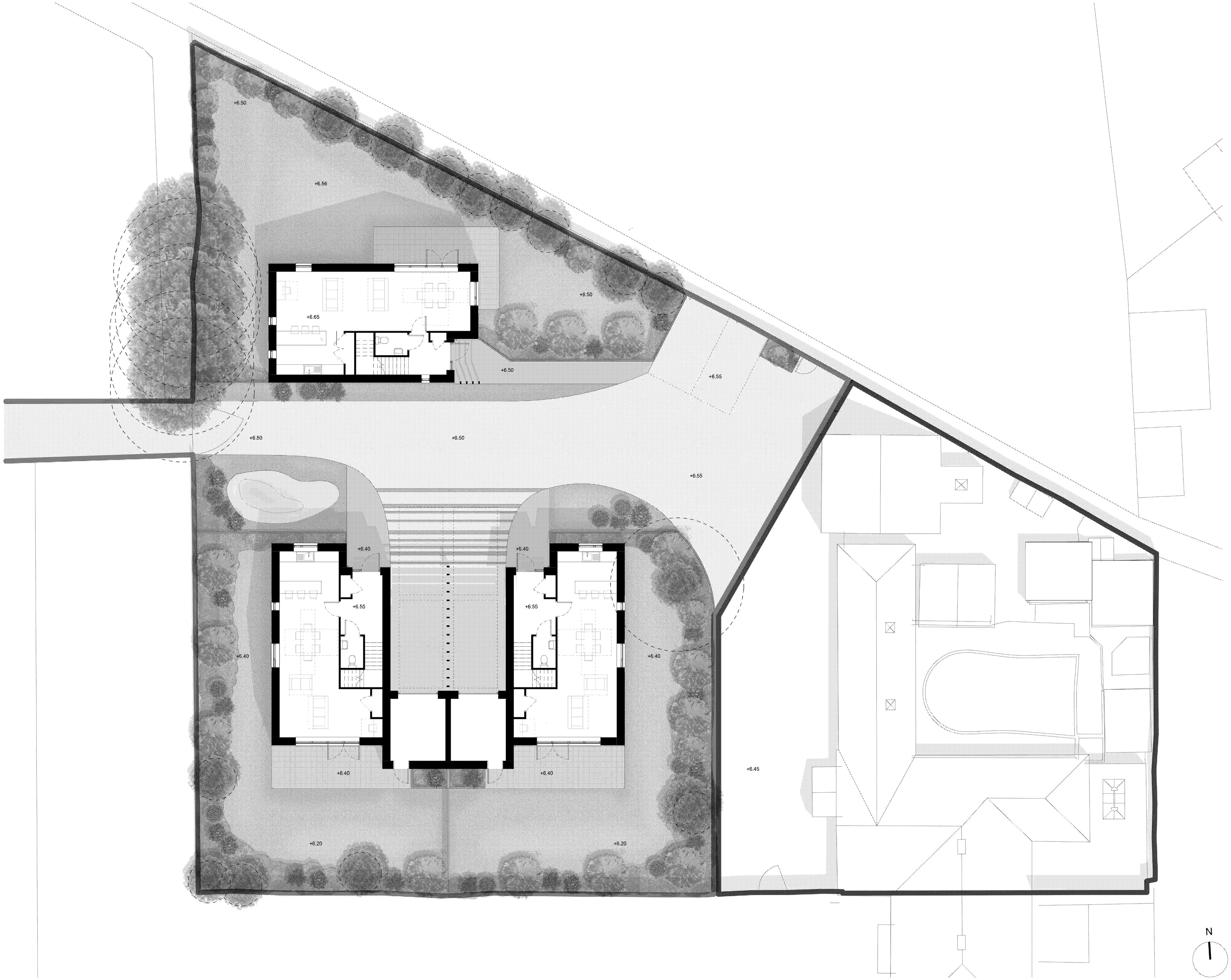
APPENDIX A

Proposed Development Layout

CDM 2015 Health & Safety Information



Rev	Date	Revision Details	Dr	Ch

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Mr & Mrs Dichello

Job Title
Kivesborough, Ferring

Drawing Tittle
Proposed Site Plan

Scale
1:100 @ A1 / 1:200 @ A3
metres 2 4 6 8 10

Project	Drawing No	Rev
7339	SK 10	

Drawn	Checked	Date
IM	JB	18.12.23

N

Status
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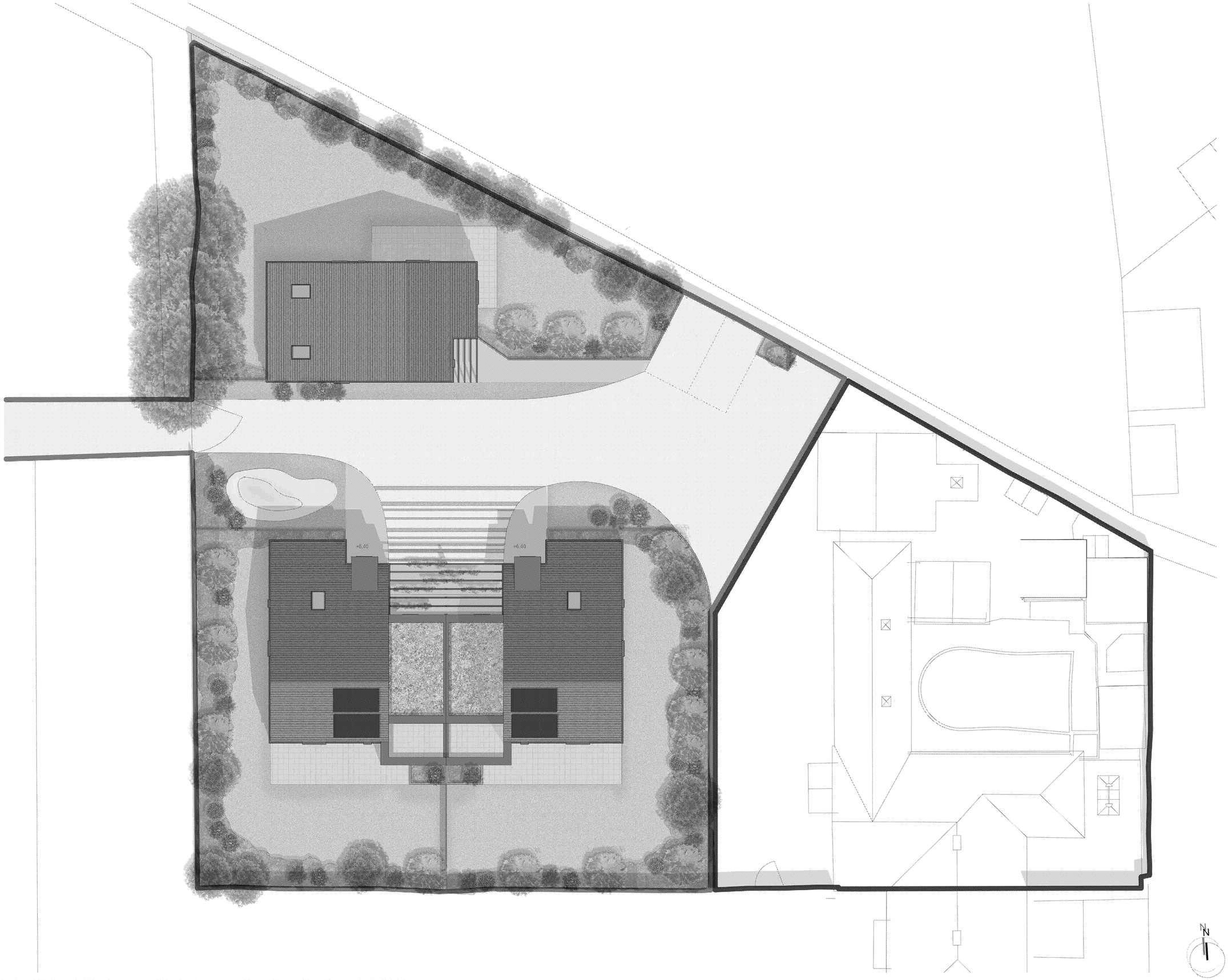

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Drawing Tittle
Proposed Site Plan - Roof Plan

Scale
1:100 @ A1 / 1:200 @ A3

metres 2 4 6 8 10

Project	Drawing No	Rev
7339	SK 12	

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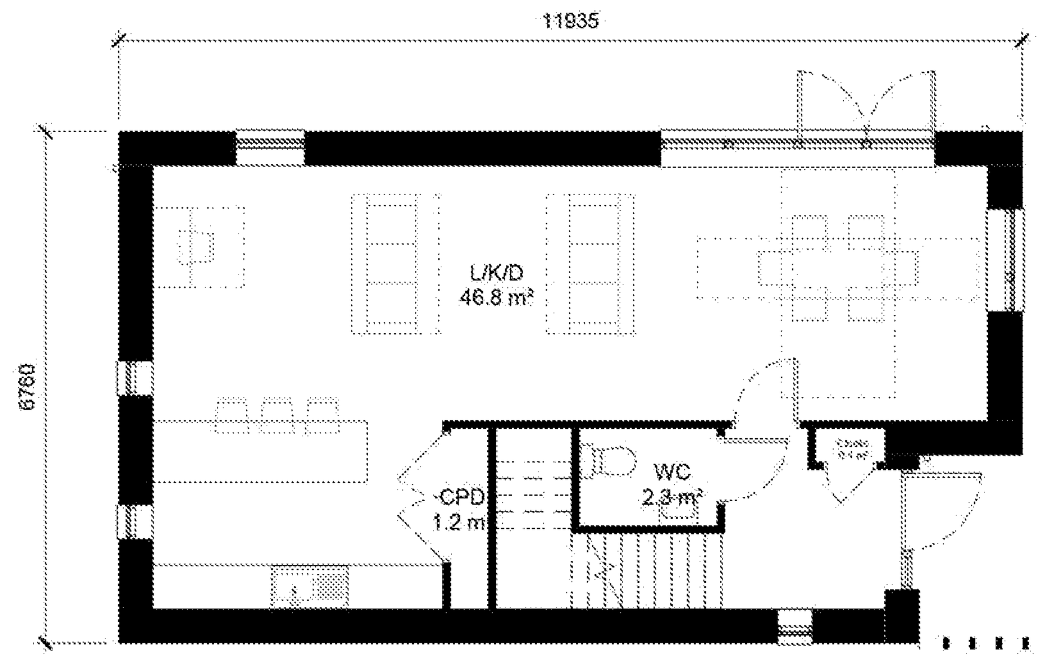

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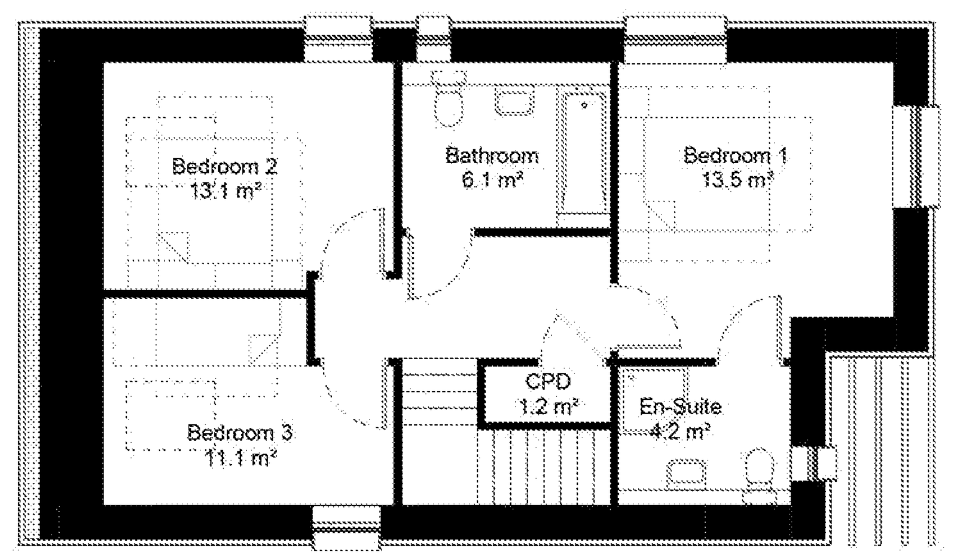

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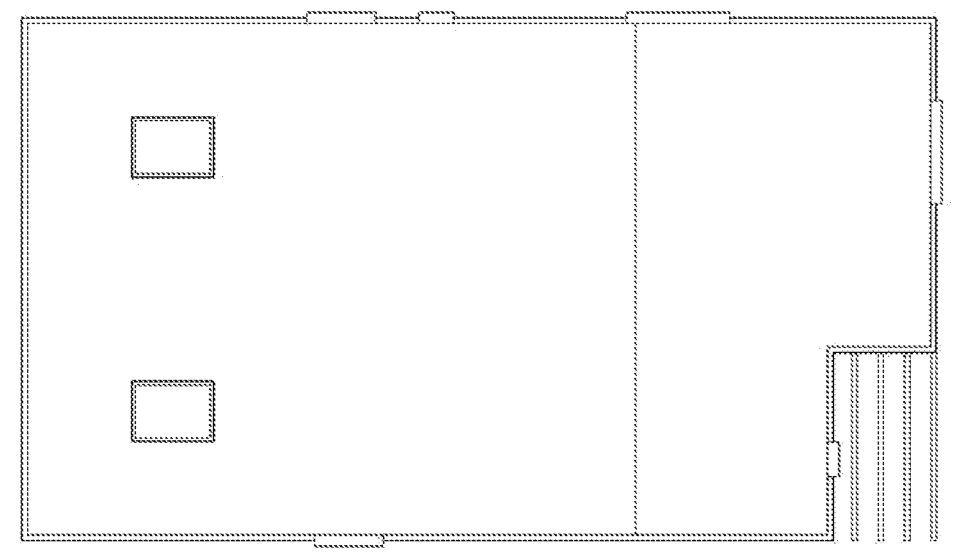

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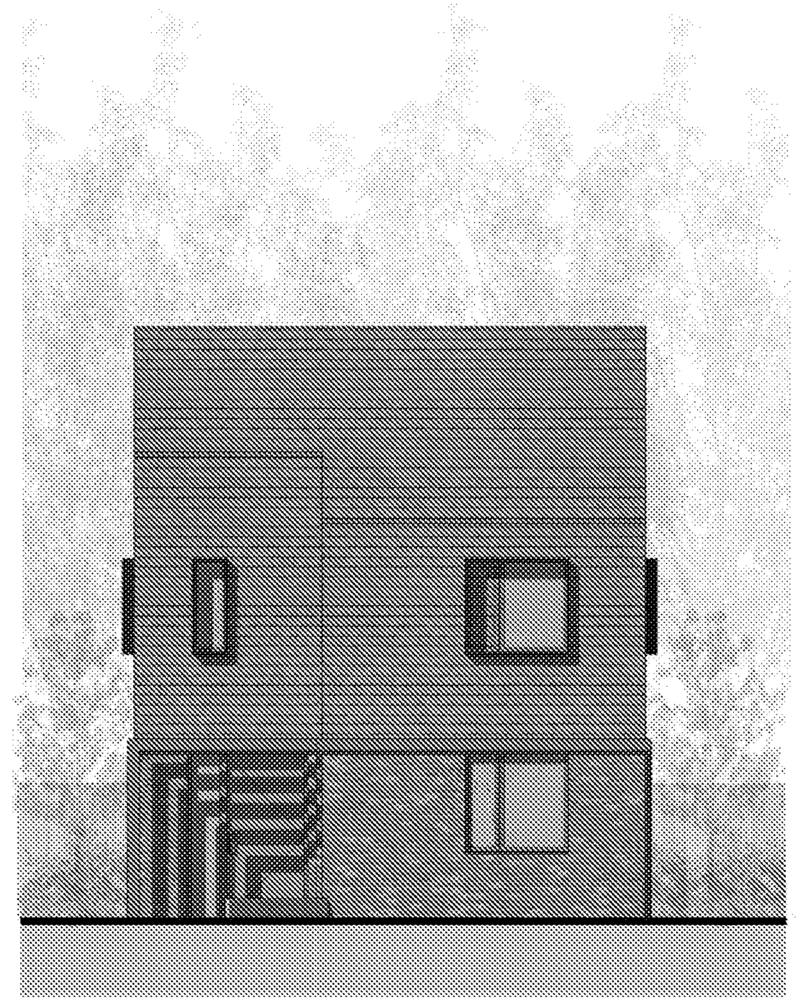

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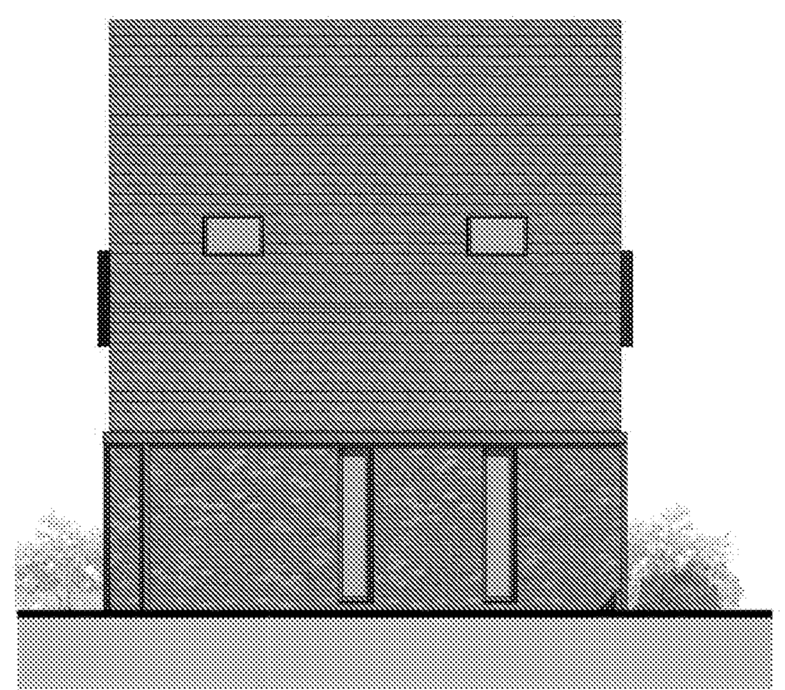

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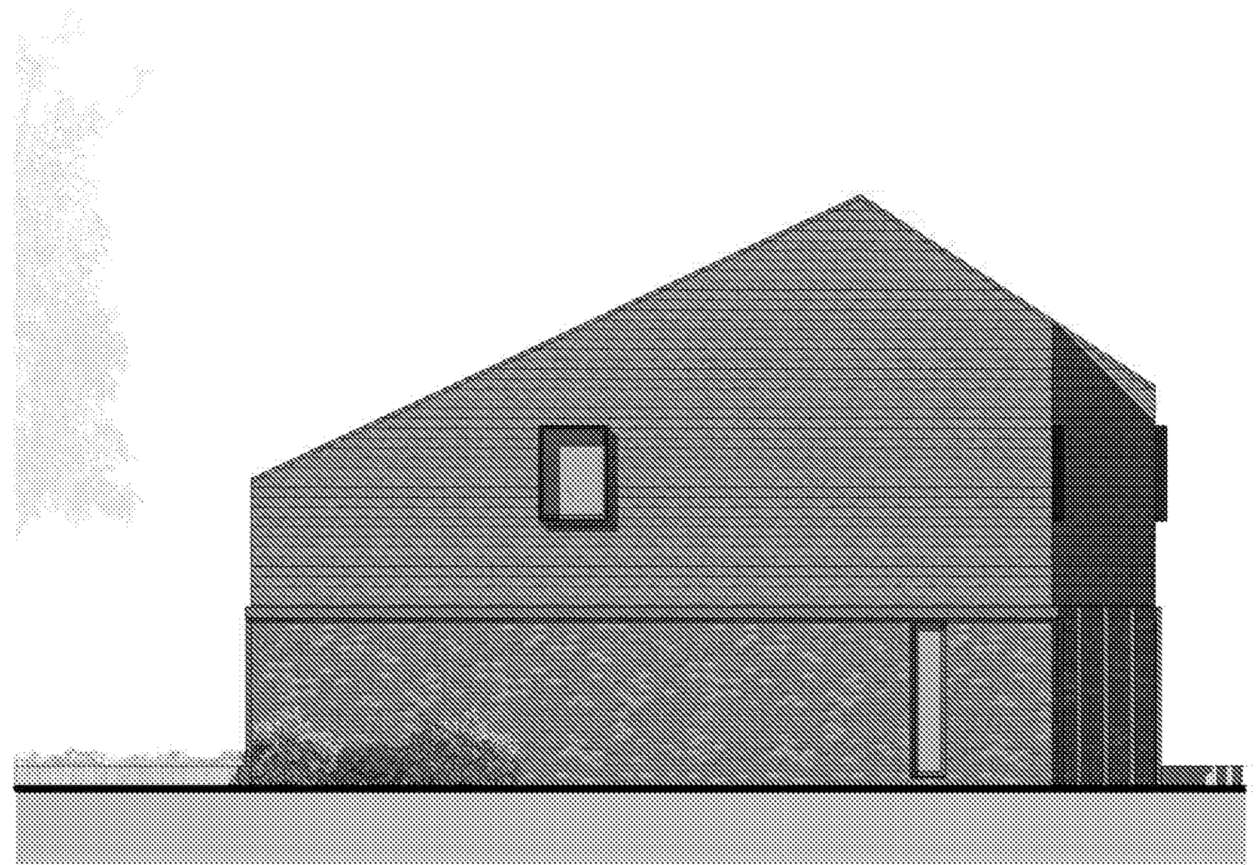

Plot 1 South Elevation
1 : 100

Plot 1 Section
1 : 100

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Drawing Tittle
Proposed Plans & Elevation - Plot 1

Scale
1:100 @ A1 / 1:200 @ A3
metres 2 4 6 8 10

Project	Drawing No	Rev
7339	SK 15	

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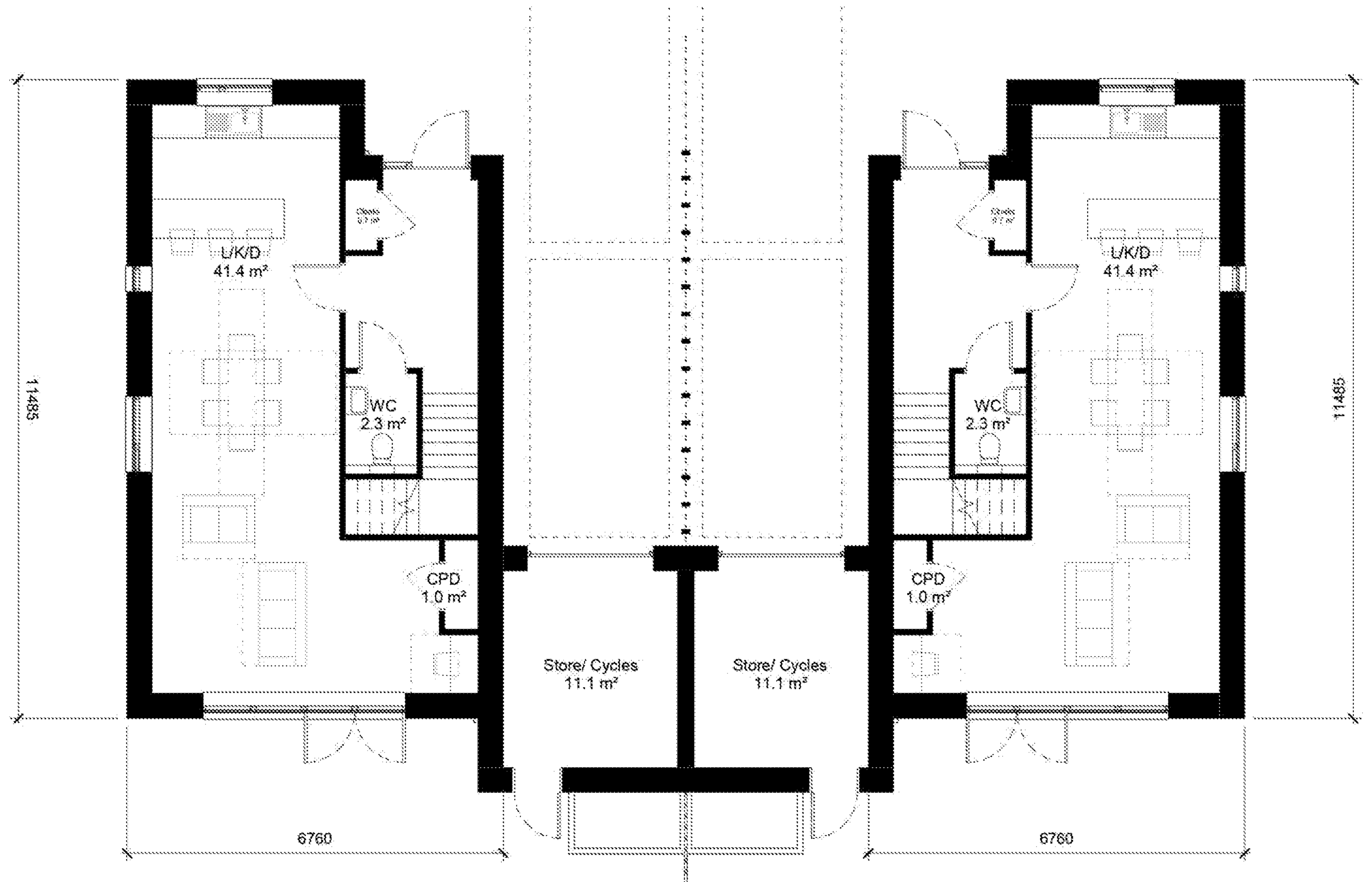

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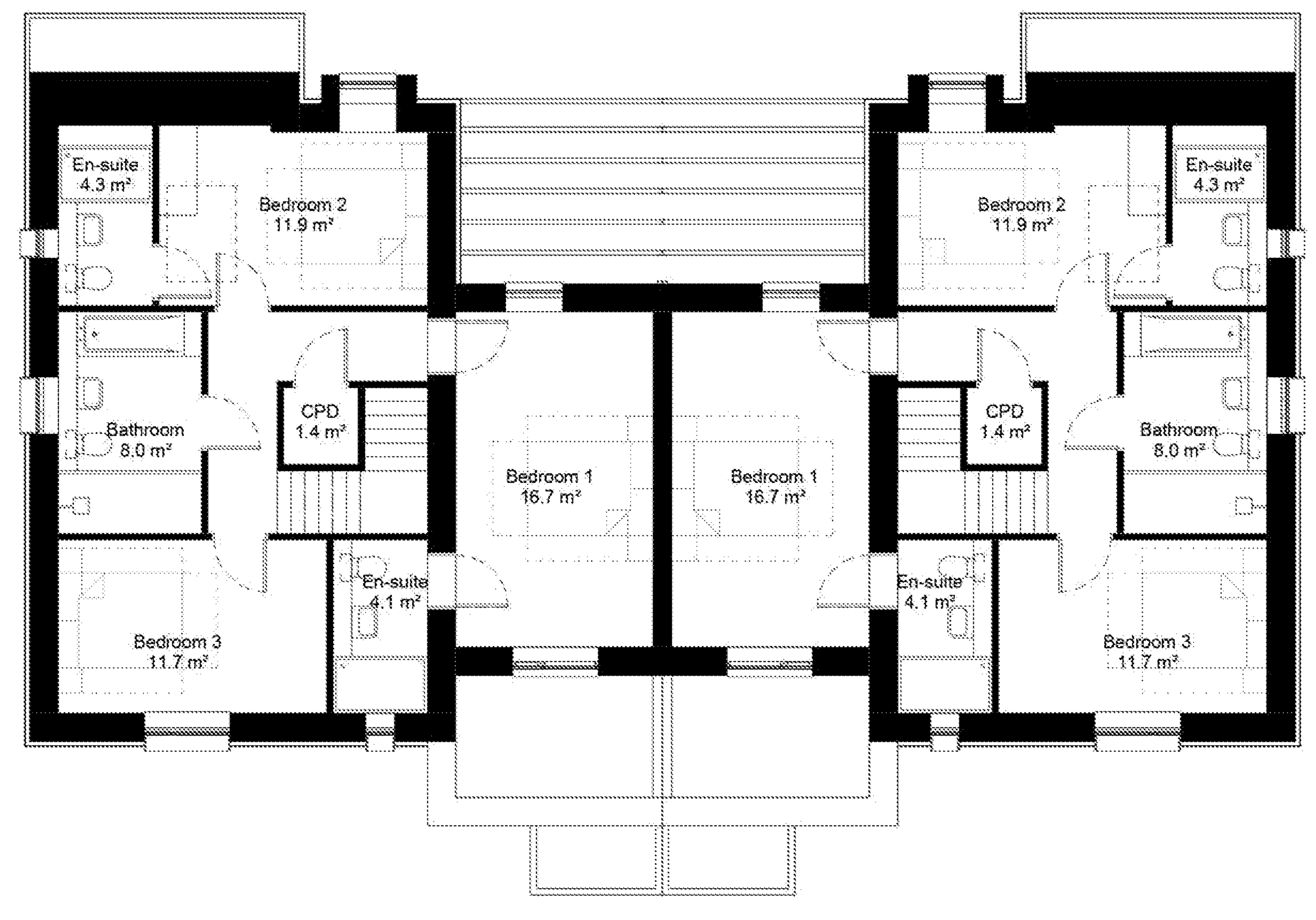

Plot 2-3 First Floor Plan

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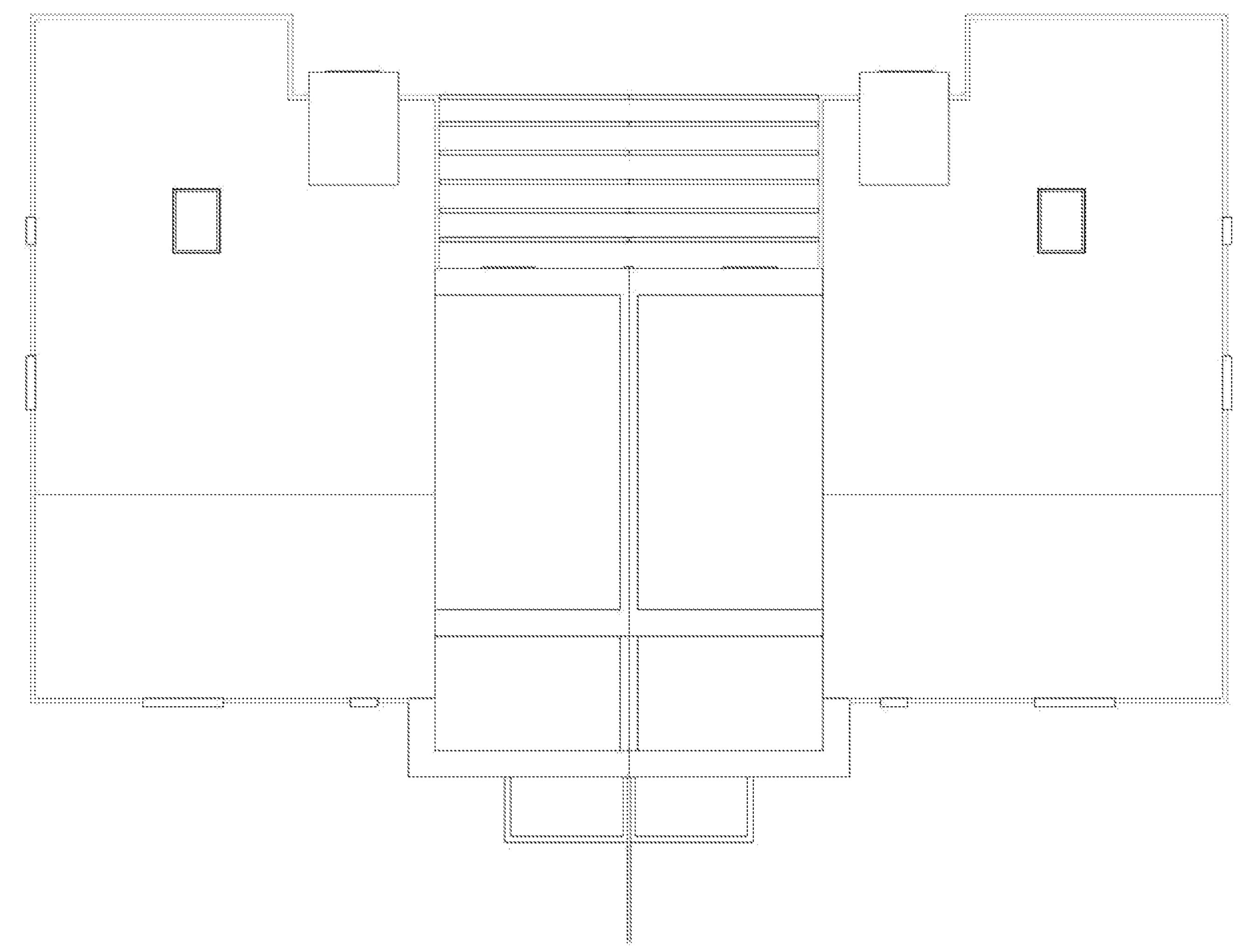

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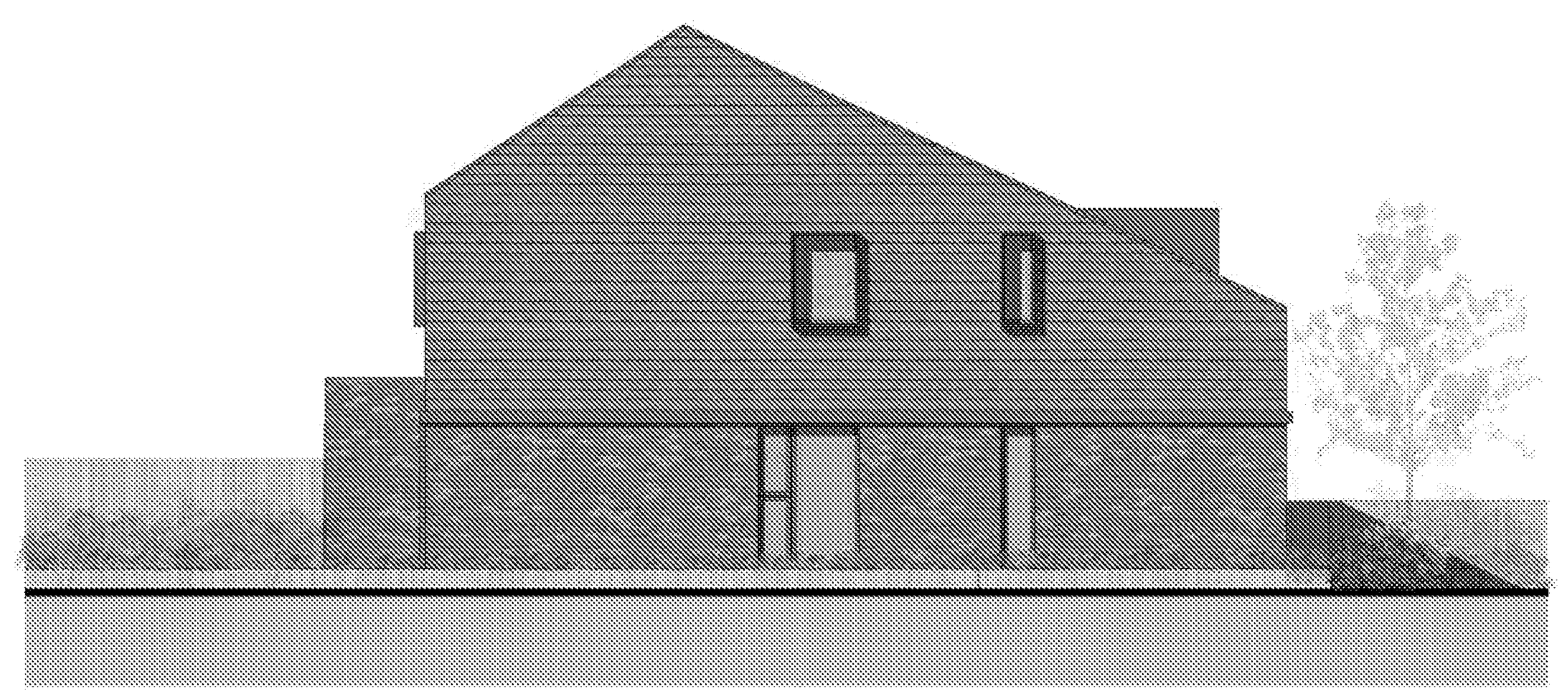
Plot 2-3 North Elevation

1 : 100



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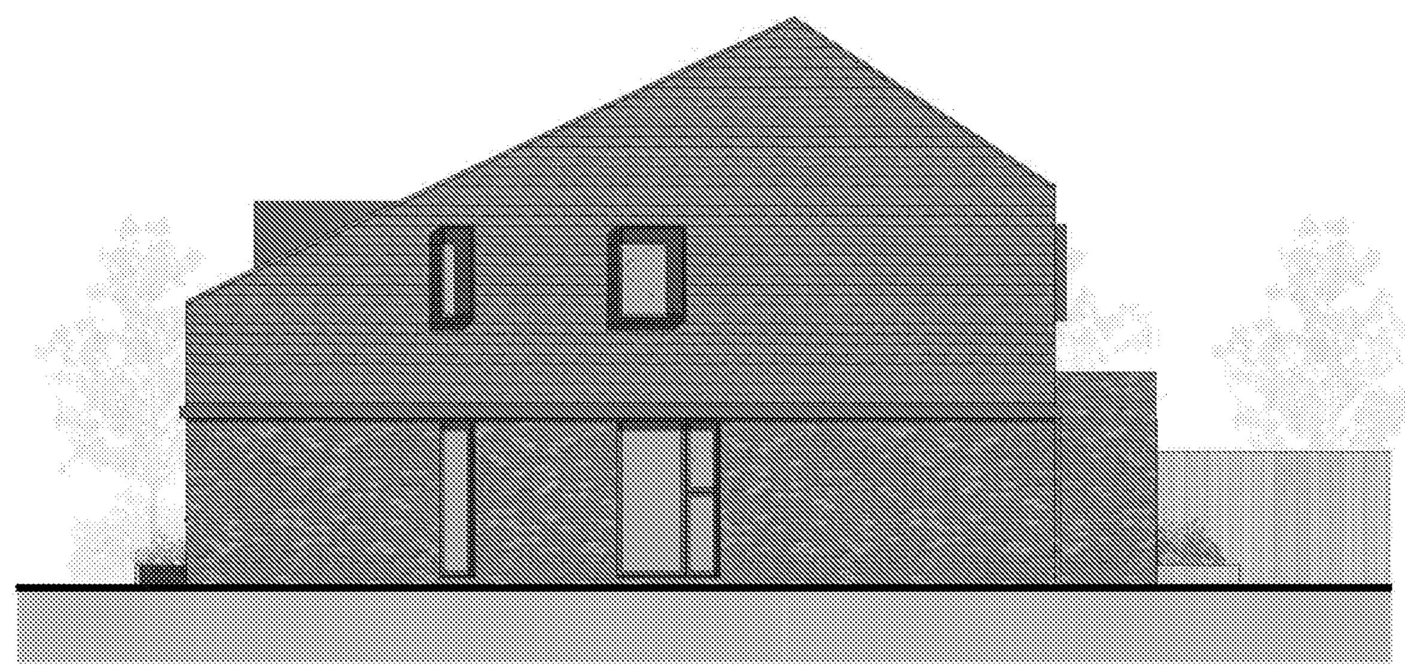
Plot 2-3 South Elevation

1 : 100



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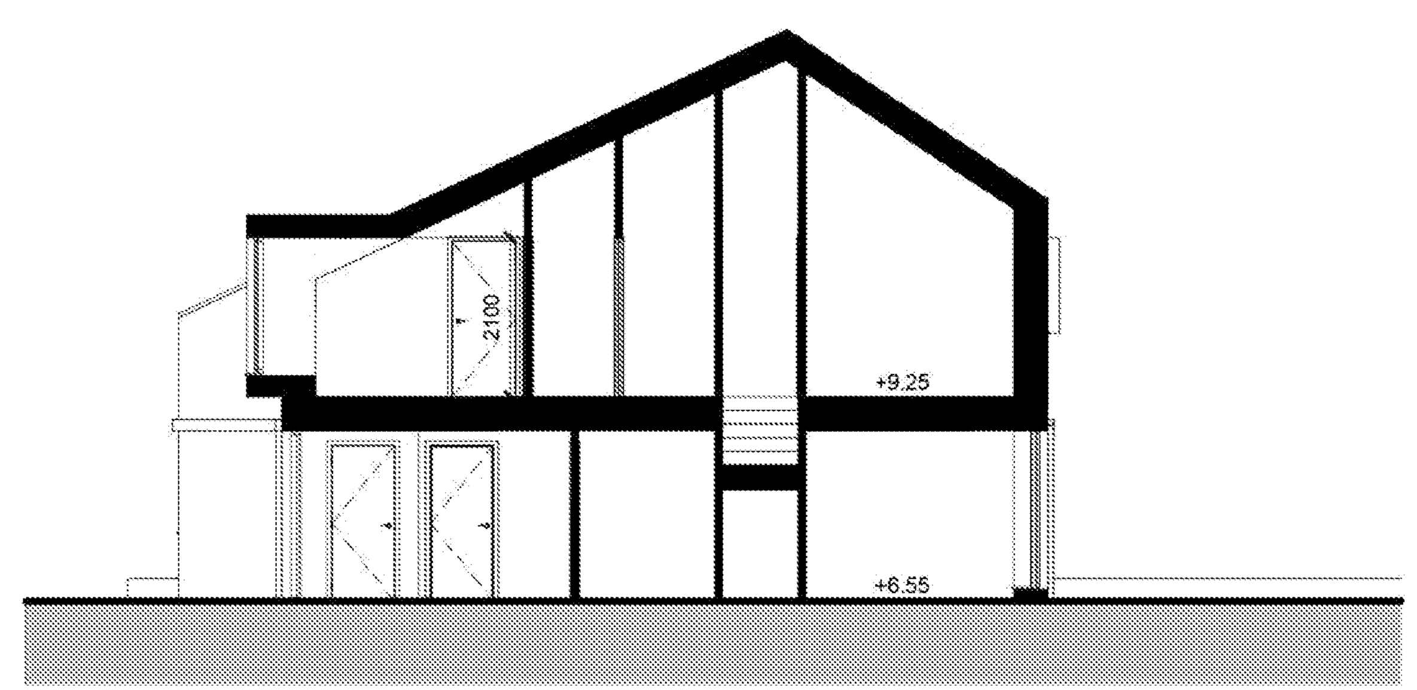

Plot 2 Section

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Proposed Plans & Elevations - Plot 2-3

Scale
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metres 2 4 6 8 10

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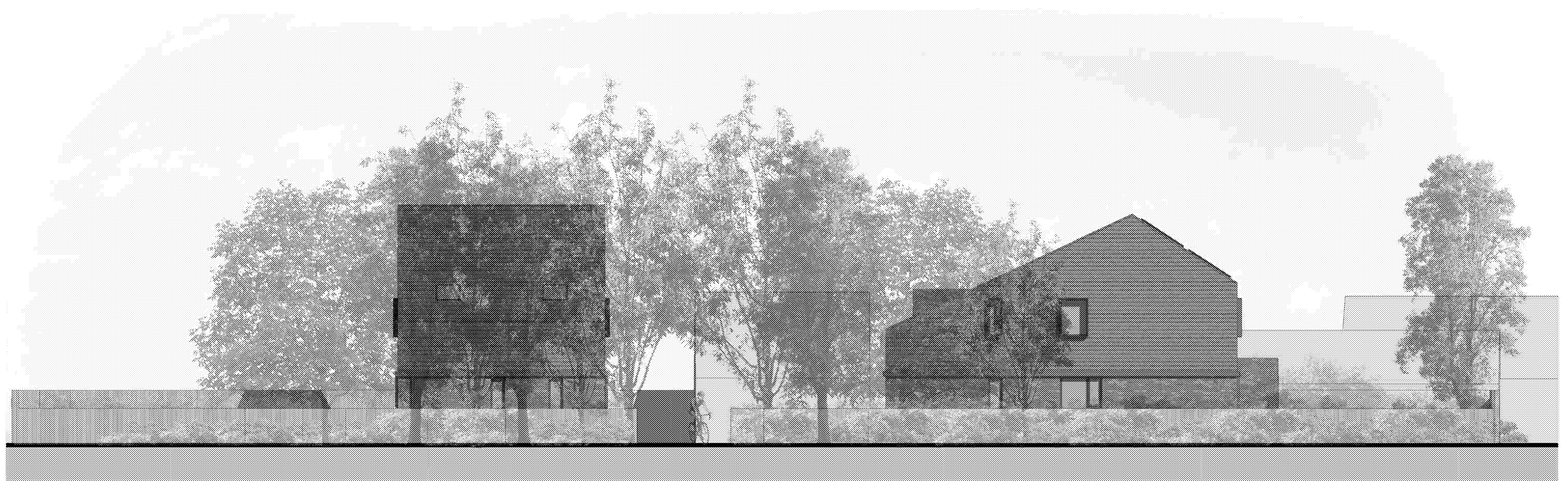

Street Scene AA
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Street Scene BB
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Proposed Street Scenes

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metres 2 4 6 8 10

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APPENDIX B

Classification of Probability, Consequence and Risk

Probability of risk being realised	
Classification	Definition
High	There is a pollution linkage and an event that either appears very likely in the short term and almost inevitable over the long term or there is evidence at the receptor of harm or pollution.
Moderate	There is a pollution linkage and all the elements are present and in the right place, which means that it is probable that an event will occur. Circumstances are such that an event is not inevitable, but possible in the short term and likely over the long term.
Low	There is a pollution linkage and circumstances are possible under which an event could occur. However, it is by no means certain that even over a longer period such event would take place and is less likely in the shorter term.
Very Low	There is a pollution linkage but circumstances are such that it is improbable that an event would occur even in the very long term.

Consequence of risk being realised		
Classification	Category	Definition
Severe	Human Health	Short term (acute) risk to human health likely to result in "significant harm" as defined by the Environment Protection Act 1990, Part IIA.
	Controlled Waters	Short term risk of pollution (note: Water Resources Act contains no scope for considering significance of pollution) of sensitive water resource.
	Property	Catastrophic damage to buildings/property.
	Ecological Systems	A short term risk to a particular ecosystem or organisation forming part of such ecosystem.
Moderate	Human Health	Chronic damage to Human Health.
	Controlled Waters	Pollution of sensitive water resources (note: Water Resources Act contains no scope for considering significance of pollution).
	Ecological System	A significant change in a particular ecosystem or organism forming part of such ecosystem.
Minor	Controlled Waters	Pollution of non-sensitive water resources.
	Property	Significant damage to crops, buildings, structures and services.
	Ecological Systems	Damage to sensitive buildings/structures/services or the environment.
Very Minor	Human Health	Non-permanent health effects to human health (easily prevented by means such as personal protective clothing, etc).
	Property	Easily repairable effects of damage to buildings, structures and services.
	Project	Harm, although not necessarily significant harm, which may result in a financial loss or expenditure to resolve.

Risk classification definitions	
Very High	There is a high probability that severe harm could arise to a designated receptor from an identified hazard, OR, there is evidence that severe harm to a designated receptor is currently happening. This risk, if realised, is likely to result in a substantial liability. Urgent investigation (if not undertaken already) and remediation are likely to be required.
High	Harm is likely to arise to a designated receptor from an identified hazard. Realisation of the risk is likely to present a substantial liability. Urgent investigation (if not undertaken already) is required and remedial works may be necessary in the short term and are likely over the long term.
Moderate	It is possible that harm could arise to a designated receptor from an identified hazard. However, it is relatively unlikely that any such harm would be severe, or if any harm were to occur it is more likely that the harm would be relatively mild. Investigation (if not already undertaken) is normally required to clarify the risk and to determine the potential liability. Some remedial works may be required in the longer term.
Low	It is possible that harm could arise to a designated receptor from an identified hazard, but there is a low likelihood of this hazard occurring and if realised, harm would at worst normally be mild.
Very Low	There is a low possibility that harm could arise to a receptor. In the event of such harm being realised, it is not likely to be severe.

APPENDIX C

Preliminary Conceptual Model

Kivesborough, Littlehampton Road, Ferring, West Sussex				Preliminary Conceptual Model		P16455	
Potential Source	**Potential Receptor**	**Potential Contaminants**	**Potential Pathway**	**Complete Linkage Present?**	**Probability**	**Consequence**	**Risk**
• Historical use of the site as part of a larger nursery	End Users	Petroleum Hydrocarbons	Dermal contact with soil and dust (indoor & outdoor)	Yes	P2: Low	C3: Moderate	Low/Moderate
			Ingestion of soil and indoor dust	Yes	P2: Low	C3: Moderate	Low/Moderate
			Consumption of home-grown produce and attached soil	Yes	P2: Low	C3: Moderate	Low/Moderate
			Inhalation of soil dust (indoor and outdoor)	Yes	P2: Low	C3: Moderate	Low/Moderate
			Inhalation of soil vapours	Yes	P1: Very Low	C3: Moderate	Low
			Inhalation of soil gases/ Risk of explosion	Identified contaminant does not pose a risk via this pathway			N/A
	End Users (via Water Supply Pipework)	Petroleum Hydrocarbons	Contamination of incoming services	Yes	P2: Low	C2: Minor	Low
	Groundwater	Petroleum Hydrocarbons	Migration to groundwater	Yes	P1: Very Low	C2: Minor	Very Low
• Potential made ground from historical demolition and clearance works on the site and the wider area	End Users	Asbestos, Heavy Metals and PAH Compounds	Dermal contact with soil and dust (indoor & outdoor)	Yes	P2: Low	C3: Moderate	Low/Moderate
			Ingestion of soil and indoor dust	Yes	P2: Low	C3: Moderate	Low/Moderate
			Consumption of home-grown produce and attached soil	Yes	P2: Low	C3: Moderate	Low/Moderate
			Inhalation of soil dust (indoor and outdoor)	Yes	P2: Low	C3: Moderate	Low/Moderate
			Inhalation of soil vapours	Identified contaminants do not pose a risk via this pathway			N/A
			Inhalation of soil gases/ Risk of explosion	Identified contaminants do not pose a risk via this pathway			N/A
	End Users (via Water Supply Pipework)		Contamination of incoming services	Identified contaminants do not pose a risk via this pathway			N/A
	Groundwater	Heavy Metals and PAH Compounds	Migration to groundwater	Yes	P1: Very Low	C2: Minor	Very Low

APPENDIX D

Explanatory Notes
Exploratory Hole Records

Explanatory Notes

Symbols and abbreviations on Exploratory Hole Records

Samples

U 'Undisturbed' Sample: - 100mm diameter by 450mm long. The number of blows to drive in the sampling tube is shown after the test index letter in the SPT column.
Pi Piston Sample: 'Undisturbed' sample 100mm diameter by 600mm long.
D Disturbed Sample
R Root Sample
B Bulk Disturbed Sample
W Water Sample
ES Environmental Suite (on older records may be referenced J T)

In Situ Testing

S Standard penetration test (SPT): Using the split spoon sampler.
C Standard Penetration Test (SPT): Using a solid cone instead of the sampler – conducted usually in coarse grained soils or weak rocks.
V Shear Vane Test: Undrained shear strength (cohesion) (kN/m^2) shown within the Vane/Pen Test and N Value column.
H Hand penetrometer Test: Undrained shear strength (cohesion) (kN/m^2) shown within the Vane/Pen Test and N Value column.
P Perth Penetrometer Test: Number of blows for 300mm penetration shown under Vane/Pen Test and N Value column.

Excavation Method

CP Cable Percussion Borehole
RC Rotary Cored Borehole
WLS Dynamic Sampler Borehole using windowless sampler tubes
WS Dynamic Sampler Borehole using window sampler tubes
TP Trial Pit excavated using mechanic excavator
HDP Trial Pit excavated using hand tools

Soil Description

Description and classification of soils has been carried out using as a general basis the British Standard Geotechnical investigation and testing – Identification and classification of soil, Part 1 Identification and description (BS EN ISO 14688-1) and Part 2 Principles of classification (BS EN 14688-2) as well as the BS5930 code of Practice for Ground Investigations.

Rock Description

Description and classification of rocks has been carried out using as a general basis the British Standard Geotechnical investigation and testing – Identification and classification of rock, Part 1 Identification and classification (BS EN ISO 14689-1) as well as the BS5930 code of Practice for Ground Investigations. TCR – Total Core Recovery, SCR – Solid Core Recovery, RQD – Rock Quality Designation, NI – Non Intact, If – indicative fracture spacing (min/ave/max), FI – Fracture Index.

Chalk Description

Chalk description is based on BS EN ISO 14688, BS EN ISO 14689 and BS5930. The classification of chalk generally follows the guidance offered by the Construction Industry Research and Information Association (CIRIA) C574, 'Engineering in Chalk'. This is based on assessment of chalk density, discontinuity and aperture spacing, and the proportion of intact chalk to silt of chalk.

In Situ Strength Testing

Standard penetration testing (SPT) carried out in accordance with BS EN ISO 22476-3:2005.

Continuous dynamic probe testing conducted using a super heavy DPSH-B (As defined by BS EN ISO 22476-2:2005) probing geometry. The DPSH-B configuration is similar to that of the standard penetration test (SPT); the main differences being that the tip comprises a 90° cone, the driving rods are lighter than those used for SPT testing and the blow counts are recorded over 100mm increments rather than 300mm, as is the case for the SPT.

Perth penetrometer tests carried out in accordance with Australian Standard AS 1289:6.3.3-1997, Method of Testing Soils for Engineering Purposes; no equivalent European or British Standard having been published to date.

Undrained shear strength determinations made in-situ using a Geonor hand shear vane or a hand penetrometer.

Testing to determine the in-situ California Bearing Ratio (CBR) of soils conducted at shallow depths using a hand-held Transport Research Laboratory (TRL) cone penetrometer.

APPENDIX E

Contamination Laboratory Test Results

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Ashdown Site Investigations Ltd
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Ditchling Common
West Sussex
BN6 8SG

Derwentside Environmental Testing Services Ltd
Unit 1
Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Kent
ME17 2JN
[redacted]

DETS Report No: 24-00857

Site Reference:	Kivesborough, Littlehampton Road, Ferring, West Sussex
Project / Job Ref:	P16455 2010
Order No:	11489
Sample Receipt Date:	30/01/2024
Sample Scheduled Date:	30/01/2024
Report Issue Number:	1
Reporting Date:	05/02/2024

Authorised by:

[redacted]

Steve Knight
Customer Support Manager

Dates of laboratory activities for each tested analyte are available upon request.

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Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
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[redacted]

Soil Analysis Certificate						
DETS Report No: 24-00857	**Date Sampled**	26/01/24	26/01/24	26/01/24	26/01/24	26/01/24
Ashdown Site Investigations Ltd	**Time Sampled**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Kivesborough, Littlehampton Road, Ferring, West Sussex	**TP / BH No**	WS01	WS02	WS03	WS04	WS05
Project / Job Ref: P16455_2010	**Additional Refs**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: 11489	**Depth (m)**	0.35	0.15	0.50	0.40	0.10
Reporting Date: 05/02/2024	**DETS Sample No**	696382	696383	696384	696385	696386

Determinand	Unit	RL	Accreditation					
Asbestos Screen (S)	N/a	N/a	ISO17025	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected
pH	pH Units	N/a	MCERTS	7.8	7.1	7.9	7.7	6.9
Total Sulphate as SO_4	mg/kg	< 200	MCERTS	327	444	265	361	564
Total Sulphate as SO_4	%	< 0.02	MCERTS	0.03	0.04	0.03	0.04	0.06
Organic Matter (SOM)	%	< 0.1	MCERTS	3.7	7.5	2	2.7	6.2
Arsenic (As)	mg/kg	< 2	MCERTS	11	14	9	14	11
W/S Boron	mg/kg	< 1	NONE	< 1	< 1	< 1	< 1	< 1
Cadmium (Cd)	mg/kg	< 0.2	MCERTS	0.3	0.7	0.4	0.6	0.7
Chromium (Cr)	mg/kg	< 2	MCERTS	25	31	23	33	32
Chromium (hexavalent)	mg/kg	< 2	NONE	< 2	< 2	< 2	< 2	< 2
Copper (Cu)	mg/kg	< 4	MCERTS	30	27	15	29	39
Lead (Pb)	mg/kg	< 3	MCERTS	38	170	24	51	38
Mercury (Hg)	mg/kg	< 1	MCERTS	< 1	< 1	< 1	< 1	< 1
Nickel (Ni)	mg/kg	< 3	MCERTS	19	16	17	19	16
Selenium (Se)	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Zinc (Zn)	mg/kg	< 3	MCERTS	95	357	65	119	110

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30°C. The Method Description page describes if the test is performed on the dried or as-received portion
Subcontracted analysis (S)

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Soil Analysis Certificate						
DETS Report No: 24-00857	**Date Sampled**	26/01/24	26/01/24	26/01/24		
Ashdown Site Investigations Ltd	**Time Sampled**	None Supplied	None Supplied	None Supplied		
Site Reference: Kivesborough, Littlehampton Road, Ferring, West Sussex	**TP / BH No**	WS06	WS07	WS08		
Project / Job Ref: P16455_2010	**Additional Refs**	None Supplied	None Supplied	None Supplied		
Order No: 11489	**Depth (m)**	0.15	0.20	0.15		
Reporting Date: 05/02/2024	**DETS Sample No**	696387	696388	696389		

Determinand	Unit	RL	Accreditation					
Asbestos Screen (S)	N/a	N/a	ISO17025	Not Detected	Not Detected	Not Detected		
pH	pH Units	N/a	MCERTS	7.4	7.6	7.4		
Total Sulphate as SO_4	mg/kg	< 200	MCERTS	650	508	450		
Total Sulphate as SO_4	%	< 0.02	MCERTS	0.07	0.05	0.05		
Organic Matter (SOM)	%	< 0.1	MCERTS	7.2	7.6	7.9		
Arsenic (As)	mg/kg	< 2	MCERTS	9	8	11		
W/S Boron	mg/kg	< 1	NONE	< 1	< 1	< 1		
Cadmium (Cd)	mg/kg	< 0.2	MCERTS	0.5	0.5	0.5		
Chromium (Cr)	mg/kg	< 2	MCERTS	28	18	23		
Chromium (hexavalent)	mg/kg	< 2	NONE	< 2	< 2	< 2		
Copper (Cu)	mg/kg	< 4	MCERTS	32	33	38		
Lead (Pb)	mg/kg	< 3	MCERTS	50	75	55		
Mercury (Hg)	mg/kg	< 1	MCERTS	< 1	< 1	< 1		
Nickel (Ni)	mg/kg	< 3	MCERTS	15	11	13		
Selenium (Se)	mg/kg	< 2	MCERTS	< 2	< 2	< 2		
Zinc (Zn)	mg/kg	< 3	MCERTS	106	109	149		

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30°C. The Method Description page describes if the test is performed on the dried or as-received portion
Subcontracted analysis (S)

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Soil Analysis Certificate - Speciated PAHs							
DETS Report No: 24-00857	**Date Sampled**	26/01/24	26/01/24	26/01/24	26/01/24	26/01/24
Ashdown Site Investigations Ltd	**Time Sampled**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Kivesborough, Littlehampton Road, Ferring, West Sussex	**TP / BH No**	WS01	WS02	WS03	WS04	WS05
Project / Job Ref: P16455_2010	**Additional Refs**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: 11489	**Depth (m)**	0.35	0.15	0.50	0.40	0.10
Reporting Date: 05/02/2024	**DETS Sample No**	696382	696383	696384	696385	696386

Determinand	Unit	RL	Accreditation					
Naphthalene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluorene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Phenanthrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	0.13	< 0.1	< 0.1	0.14
Pyrene	mg/kg	< 0.1	MCERTS	< 0.1	0.12	< 0.1	< 0.1	< 0.1
Benzo(a)anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Chrysene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(b)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(k)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(a)pyrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dibenz(a,h)anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(ghi)perylene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Total EPA-16 PAHs	mg/kg	< 1.6	MCERTS	< 1.6	< 1.6	< 1.6	< 1.6	< 1.6

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Soil Analysis Certificate - Speciated PAHs							
DETS Report No: 24-00857	**Date Sampled**	26/01/24	26/01/24	26/01/24		
Ashdown Site Investigations Ltd	**Time Sampled**	None Supplied	None Supplied	None Supplied		
Site Reference: Kivesborough, Littlehampton Road, Ferring, West Sussex	**TP / BH No**	WS06	WS07	WS08		
Project / Job Ref: P16455_2010	**Additional Refs**	None Supplied	None Supplied	None Supplied		
Order No: 11489	**Depth (m)**	0.15	0.20	0.15		
Reporting Date: 05/02/2024	**DETS Sample No**	696387	696388	696389		

Determinand	Unit	RL	Accreditation					
Naphthalene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1		
Acenaphthylene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1		
Acenaphthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1		
Fluorene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1		
Phenanthrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1		
Anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1		
Fluoranthene	mg/kg	< 0.1	MCERTS	0.16	0.33	< 0.1		
Pyrene	mg/kg	< 0.1	MCERTS	0.13	0.32	< 0.1		
Benzo(a)anthracene	mg/kg	< 0.1	MCERTS	< 0.1	0.19	< 0.1		
Chrysene	mg/kg	< 0.1	MCERTS	< 0.1	0.22	< 0.1		
Benzo(b)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	0.25	< 0.1		
Benzo(k)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1		
Benzo(a)pyrene	mg/kg	< 0.1	MCERTS	< 0.1	0.21	< 0.1		
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.1	MCERTS	< 0.1	0.16	< 0.1		
Dibenz(a,h)anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1		
Benzo(ghi)perylene	mg/kg	< 0.1	MCERTS	< 0.1	0.14	< 0.1		
Total EPA-16 PAHs	mg/kg	< 1.6	MCERTS	< 1.6	1.8	< 1.6		

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Soil Analysis Certificate - EPH Banded (Type F)							
DETS Report No: 24-00857	**Date Sampled**	26/01/24	26/01/24	26/01/24	26/01/24	26/01/24
Ashdown Site Investigations Ltd	**Time Sampled**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Kivesborough, Littlehampton Road, Ferring, West Sussex	**TP / BH No**	WS01	WS02	WS03	WS04	WS05
Project / Job Ref: P16455_2010	**Additional Refs**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: 11489	**Depth (m)**	0.35	0.15	0.50	0.40	0.10
Reporting Date: 05/02/2024	**DETS Sample No**	696382	696383	696384	696385	696386

Determinand	Unit	RL	Accreditation					
EPH (>C8 - C10) : EH_1D_Total	mg/kg	< 1	MCERTS	< 1	< 1	< 1	< 1	< 1
EPH (>C10 - C12) : EH_1D_Total	mg/kg	< 1	MCERTS	< 1	< 1	< 1	< 1	< 1
EPH (>C12 - C16) : EH_1D_Total	mg/kg	< 1	MCERTS	< 1	< 1	< 1	< 1	< 1
EPH (>C16 - C21) : EH_1D_Total	mg/kg	< 1	MCERTS	< 1	< 1	< 1	< 1	< 1
EPH (>C21 - C40) : EH_1D_Total	mg/kg	< 6	MCERTS	10	10	< 6	< 6	< 6
EPH (C8 - C40) : EH_1D_Total	mg/kg	< 6	MCERTS	10	10	< 6	< 6	< 6

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Soil Analysis Certificate - EPH Banded (Type F)						
DETS Report No: 24-00857	**Date Sampled**	26/01/24	26/01/24	26/01/24		
Ashdown Site Investigations Ltd	**Time Sampled**	None Supplied	None Supplied	None Supplied		
Site Reference: Kivesborough, Littlehampton Road, Ferring, West Sussex	**TP / BH No**	WS06	WS07	WS08		
Project / Job Ref: P16455_2010	**Additional Refs**	None Supplied	None Supplied	None Supplied		
Order No: 11489	**Depth (m)**	0.15	0.20	0.15		
Reporting Date: 05/02/2024	**DETS Sample No**	696387	696388	696389		

Determinand	Unit	RL	Accreditation					
EPH (>C8 - C10) : EH_1D_Total	mg/kg	< 1	MCERTS	< 1	< 1	< 1		
EPH (>C10 - C12) : EH_1D_Total	mg/kg	< 1	MCERTS	< 1	< 1	< 1		
EPH (>C12 - C16) : EH_1D_Total	mg/kg	< 1	MCERTS	< 1	< 1	< 1		
EPH (>C16 - C21) : EH_1D_Total	mg/kg	< 1	MCERTS	< 1	2	< 1		
EPH (>C21 - C40) : EH_1D_Total	mg/kg	< 6	MCERTS	< 6	26	41		
EPH (C8 - C40) : EH_1D_Total	mg/kg	< 6	MCERTS	< 6	28	41		

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Soil Analysis Certificate - Sample Descriptions	
DETS Report No: 24-00857	
Ashdown Site Investigations Ltd	
Site Reference: Kivesborough, Littlehampton Road, Ferring, West Sussex	
Project / Job Ref: P16455_2010	
Order No: 11489	
Reporting Date: 05/02/2024	

DETS Sample No	TP / BH No	Additional Refs	Depth (m)	Moisture Content (%)	Sample Matrix Description
696382	WS01	None Supplied	0.35	18.2	Brown sandy clay with stones
696383	WS02	None Supplied	0.15	16.8	Brown sandy clay with stones and vegetation
696384	WS03	None Supplied	0.50	15.4	Brown sandy clay
696385	WS04	None Supplied	0.40	14.6	Brown sandy clay
696386	WS05	None Supplied	0.10	22.4	Brown sandy clay with stones
696387	WS06	None Supplied	0.15	17.8	Brown sandy clay with stones
696388	WS07	None Supplied	0.20	19.1	Brown sandy clay with stones and vegetation
696389	WS08	None Supplied	0.15	22.8	Brown sandy clay with stones and vegetation

Moisture content is part of procedure E003 & is not an accredited test
Insufficient Sample I/S
Unsuitable Sample U/S

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UKAS TESTING 4480

Soil Analysis Certificate - Methodology & Miscellaneous Information
DETS Report No: 24-00857
Ashdown Site Investigations Ltd
Site Reference: Kivesborough, Littlehampton Road, Ferring, West Sussex
Project / Job Ref: P16455_2010
Order No: 11489
Reporting Date: 05/02/2024

Matrix	Analysed On	Determinand	Brief Method Description	Method No
Soil	D	Boron - Water Soluble	Determination of water soluble boron in soil by 2:1 hot water extract followed by ICP-OES	E012
Soil	AR	BTEX	Determination of BTEX by headspace GC-MS	E001
Soil	D	Cations	Determination of cations in soil by aqua-regia digestion followed by ICP-OES	E002
Soil	D	Chloride - Water Soluble (2:1)	Determination of chloride by extraction with water & analysed by ion chromatography	E009
Soil	AR	Chromium - Hexavalent	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry	E016
Soil	AR	Cyanide - Complex	Determination of complex cyanide by distillation followed by colorimetry	E015
Soil	AR	Cyanide - Free	Determination of free cyanide by distillation followed by colorimetry	E015
Soil	AR	Cyanide - Total	Determination of total cyanide by distillation followed by colorimetry	E015
Soil	D	Cyclohexane Extractable Matter (CEM)	Gravimetrically determined through extraction with cyclohexane	E011
Soil	AR	Diesel Range Organics (C10 - C24)	Determination of hexane/acetone extractable hydrocarbons by GC-FID	E004
Soil	AR	Electrical Conductivity	Determination of electrical conductivity by addition of saturated calcium sulphate followed by electrometric measurement	E022
Soil	AR	Electrical Conductivity	Determination of electrical conductivity by addition of water followed by electrometric measurement	E023
Soil	D	Elemental Sulphur	Determination of elemental sulphur by solvent extraction followed by GC-MS	E020
Soil	AR	EPH (C10 – C40)	Determination of acetone/hexane extractable hydrocarbons by GC-FID	E004
Soil	AR	EPH Product ID	Determination of acetone/hexane extractable hydrocarbons by GC-FID	E004
Soil	AR	EPH TEXAS (C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C40)	Determination of acetone/hexane extractable hydrocarbons by GC-FID for C8 to C40. C6 to C8 by headspace GC-MS	E004
Soil	D	Fluoride - Water Soluble	Determination of Fluoride by extraction with water & analysed by ion chromatography	E009
Soil	D	Fraction Organic Carbon (FOC)	Determination of TOC by combustion analyser.	E027
Soil	D	Organic Matter (SOM)	Determination of TOC by combustion analyser.	E027
Soil	D	TOC (Total Organic Carbon)	Determination of TOC by combustion analyser.	E027
Soil	AR	Exchangeable Ammonium	Determination of ammonium by discrete analyser.	E029
Soil	D	FOC (Fraction Organic Carbon)	Determination of fraction of organic carbon by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	D	Loss on Ignition @ 450oC	Determination of loss on ignition in soil by gravimetrically with the sample being ignited in a muffle furnace	E019
Soil	D	Magnesium - Water Soluble	Determination of water soluble magnesium by extraction with water followed by ICP-OES	E025
Soil	D	Metals	Determination of metals by aqua-regia digestion followed by ICP-OES	E002
Soil	AR	Mineral Oil (C10 - C40)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge	E004
Soil	AR	Moisture Content	Moisture content; determined gravimetrically	E003
Soil	D	Nitrate - Water Soluble (2:1)	Determination of nitrate by extraction with water & analysed by ion chromatography	E009
Soil	D	Organic Matter	Determination of organic matter by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	AR	PAH - Speciated (EPA 16)	Determination of PAH compounds by extraction in acetone and hexane followed by GC-MS with the use of surrogate and internal standards	E005
Soil	AR	PCB - 7 Congeners	Determination of PCB by extraction with acetone and hexane followed by GC-MS	E008
Soil	D	Petroleum Ether Extract (PEE)	Gravimetrically determined through extraction with petroleum ether	E011
Soil	AR	pH	Determination of pH by addition of water followed by electrometric measurement	E007
Soil	AR	Phenols - Total (monohydric)	Determination of phenols by distillation followed by colorimetry	E021
Soil	D	Phosphate - Water Soluble (2:1)	Determination of phosphate by extraction with water & analysed by ion chromatography	E009
Soil	D	Sulphate (as SO4) - Total	Determination of total sulphate by extraction with 10% HCl followed by ICP-OES	E013
Soil	D	Sulphate (as SO4) - Water Soluble (2:1)	Determination of sulphate by extraction with water & analysed by ion chromatography	E009
Soil	D	Sulphate (as SO4) - Water Soluble (2:1)	Determination of water soluble sulphate by extraction with water followed by ICP-OES	E014
Soil	AR	Sulphide	Determination of sulphide by distillation followed by colorimetry	E018
Soil	D	Sulphur - Total	Determination of total sulphur by extraction with aqua-regia followed by ICP-OES	E024
Soil	AR	SVOC	Determination of semi-volatile organic compounds by extraction in acetone and hexane followed by GC-MS	E006
Soil	AR	Thiocyanate (as SCN)	Determination of thiocyanate by extraction in caustic soda followed by acidification followed by addition of ferric nitrate followed by colorimetry	E017
Soil	D	Toluene Extractable Matter (TEM)	Gravimetrically determined through extraction with toluene	E011
Soil	D	Total Organic Carbon (TOC)	Determination of organic matter by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	AR	TPH CWG (ali: C5- C6, C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C34, aro: C5-C7, C7-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C35)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge for C8 to C35. C5 to C8 by headspace GC-MS	E004
Soil	AR	TPH LQM (ali: C5-C6, C6-C8, C8-C10, C10-C12, C12-C16, C16-C35, C35-C44, aro: C5-C7, C7-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C35, C35-C44)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge for C8 to C44. C5 to C8 by headspace GC-MS	E004
Soil	AR	VOCs	Determination of volatile organic compounds by headspace GC-MS	E001
Soil	AR	VPH (C6-C8 & C8-C10)	Determination of hydrocarbons C6-C8 by headspace GC-MS & C8-C10 by GC-FID	E001

D Dried
AR As Received

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List of HWOL Acronyms and Operators
DETS Report No: 24-00857
Ashdown Site Investigations Ltd
Site Reference: Kivesborough, Littlehampton Road, Ferring, West Sussex
Project / Job Ref: P16455_2010
Order No: 11489
Reporting Date: 05/02/2024

Acronym	Description
HS	Headspace analysis
EH	Extractable Hydrocarbons - i.e. everything extracted by the solvent
CU	Clean-up - e.g. by florisil, silica gel
1D	GC - Single coil gas chromatography
2D	GC-GC - Double coil gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics only
AR	Aromatics only
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
_	Operator - underscore to separate acronyms (exception for +)
+	Operator to indicate cumulative eg. EH+HS_Total or EH_CU+HS_Total

Det - Acronym
EPH Banded (C10 - C12) - EH_1D_Total
EPH Banded (C12 - C16) - EH_1D_Total
EPH Banded (C16 - C21) - EH_1D_Total
EPH Banded (C21 - C40) - EH_1D_Total
EPH Banded (C8 - C10) - EH_1D_Total
EPH Banded (C8 - C40) - EH_1D_Total

APPENDIX F

Quantitative Conceptual Model

Kivesborough, Littlehampton Road, Ferring, West Sussex				Quantitative Conceptual Model		P16455	
Source	**Receptor**	**Contaminants**	**Pathway**	**Complete Linkage Present?**	**Probability**	**Consequence**	**Risk**
None Identified	End Users		Dermal contact with soil and dust (indoor & outdoor)	No contaminants present above SSVs			N/A
			Ingestion of soil and indoor dust	No contaminants present above SSVs			N/A
			Consumption of home-grown produce and attached soil	No contaminants present above SSVs			N/A
			Inhalation of soil dust (indoor and outdoor)	No contaminants present above SSVs			N/A
			Inhalation of soil vapours	No contaminants present above SSVs			N/A
			Inhalation of soil gases/ Risk of explosion	No potential gas source identified			N/A
	End Users (via Water Supply Pipework)		Contamination of incoming services	No contaminants present above screening criteria			N/A
	Groundwater		Migration to groundwater	No contaminants present at concentrations posing risk to groundwater			N/A

APPENDIX G

Groundsure Enviro+Geo Insight Report
Historical Maps

Groundsure
LOCATION INTELLIGENCE

Enviro+Geo
Insight

KINGSBORO, LITTLEHAMPTON ROAD, FERRING,

Order Details

Date: 25/01/2024

Your ref: P16455

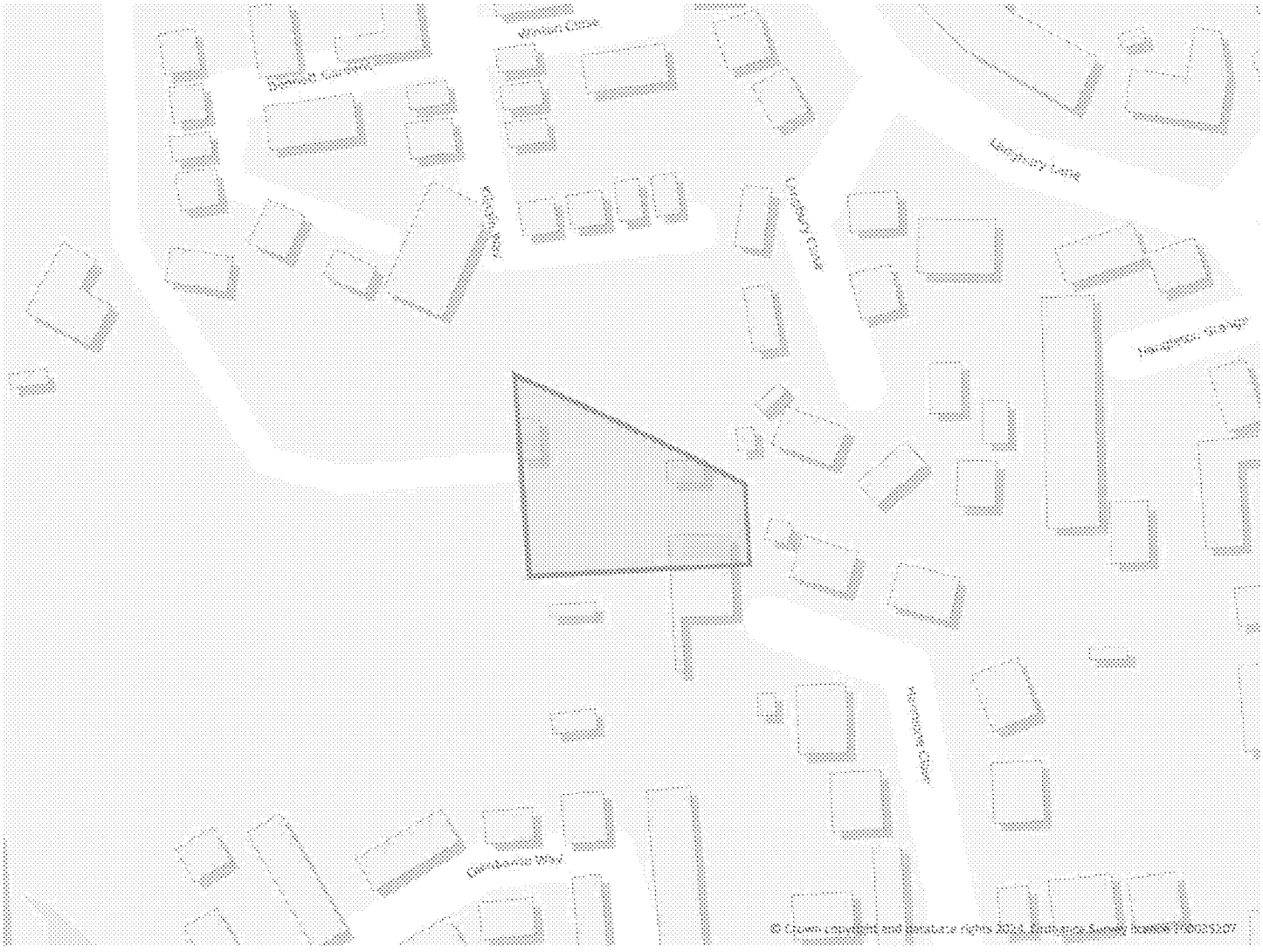
Our Ref: GS-E2X-TZX-Y7A-PZG

Site Details

Location: 508926 103237

Area: 0.19 ha

Authority: Arun District Council ↗



[redacted]

Certified B Corporation

Summary of findings

Page	Section	Past land use >	On site	0-50m	50-250m	250-500m	500-2000m
15 >	1.1 >	Historical industrial land uses >	4	0	7	4	-
16 >	1.2 >	Historical tanks >	0	0	3	11	-
17 >	1.3 >	Historical energy features >	0	0	2	4	-
18	1.4	Historical petrol stations	0	0	0	0	-
18	1.5	Historical garages	0	0	0	0	-
18	1.6	Historical military land	0	0	0	0	-
Page	Section	Past land use - un-grouped >	On site	0-50m	50-250m	250-500m	500-2000m
19 >	2.1 >	Historical industrial land uses >	5	0	8	6	-
20 >	2.2 >	Historical tanks >	0	0	3	20	-
21 >	2.3 >	Historical energy features >	0	0	3	10	-
22	2.4	Historical petrol stations	0	0	0	0	-
22	2.5	Historical garages	0	0	0	0	-
Page	Section	Waste and landfill >	On site	0-50m	50-250m	250-500m	500-2000m
23	3.1	Active or recent landfill	0	0	0	0	-
23	3.2	Historical landfill (BGS records)	0	0	0	0	-
24	3.3	Historical landfill (LA/mapping records)	0	0	0	0	-
24	3.4	Historical landfill (EA/NRW records)	0	0	0	0	-
24	3.5	Historical waste sites	0	0	0	0	-
24	3.6	Licensed waste sites	0	0	0	0	-
24 >	3.7 >	Waste exemptions >	0	0	3	12	-
Page	Section	Current industrial land use >	On site	0-50m	50-250m	250-500m	500-2000m
27 >	4.1 >	Recent industrial land uses >	0	0	5	-	-
28 >	4.2 >	Current or recent petrol stations >	0	0	1	0	-
28	4.3	Electricity cables	0	0	0	0	-
28	4.4	Gas pipelines	0	0	0	0	-
29	4.5	Sites determined as Contaminated Land	0	0	0	0	-

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29	4.6	Control of Major Accident Hazards (COMAH)	0	0	0	0	-
29	4.7	Regulated explosive sites	0	0	0	0	-
29	4.8	Hazardous substance storage/usage	0	0	0	0	-
29	4.9	Historical licensed industrial activities (IPC)	0	0	0	0	-
30	4.10	Licensed industrial activities (Part A(1))	0	0	0	0	-
30 >	4.11 >	Licensed pollutant release (Part A(2)/B) >	0	0	1	3	-
31	4.12	Radioactive Substance Authorisations	0	0	0	0	-
31 >	4.13 >	Licensed Discharges to controlled waters >	0	0	11	17	-
35	4.14	Pollutant release to surface waters (Red List)	0	0	0	0	-
35	4.15	Pollutant release to public sewer	0	0	0	0	-
35	4.16	List 1 Dangerous Substances	0	0	0	0	-
35	4.17	List 2 Dangerous Substances	0	0	0	0	-
35	4.18	Pollution Incidents (EA/NRW)	0	0	0	0	-
36	4.19	Pollution inventory substances	0	0	0	0	-
36	4.20	Pollution inventory waste transfers	0	0	0	0	-
36	4.21	Pollution inventory radioactive waste	0	0	0	0	-

Page	Section	Hydrogeology >	On site	0-50m	50-250m	250-500m	500-2000m
37 >	5.1 >	Superficial aquifer >	Identified (within 500m)				
39 >	5.2 >	Bedrock aquifer >	Identified (within 500m)				
40 >	5.3 >	Groundwater vulnerability >	Identified (within 50m)				
41 >	5.4 >	Groundwater vulnerability- soluble rock risk >	Identified (within 0m)				
41	5.5	Groundwater vulnerability- local information	None (within 0m)				
42 >	5.6 >	Groundwater abstractions >	0	0	0	1	5
44	5.7	Surface water abstractions	0	0	0	0	0
44	5.8	Potable abstractions	0	0	0	0	0
44	5.9	Source Protection Zones	0	0	0	0	-
45	5.10	Source Protection Zones (confined aquifer)	0	0	0	0	-

Page	Section	Hydrology >	On site	0-50m	50-250m	250-500m	500-2000m
46 >	6.1 >	Water Network (OS MasterMap) >	0	0	8	-	-

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47 >	6.2 >	Surface water features >	0	0	4	-	-
47 >	6.3 >	WFD Surface water body catchments >	1	-	-	-	-
48 >	6.4 >	WFD Surface water bodies >	0	0	1	-	-
48 >	6.5 >	WFD Groundwater bodies >	1	-	-	-	-
Page	Section	River and coastal flooding >	On site	0-50m	50-250m	250-500m	500-2000m
49	7.1	Risk of flooding from rivers and the sea	None (within 50m)				
50 >	7.2 >	Historical Flood Events >	0	0	1	-	-
50	7.3	Flood Defences	0	0	0	-	-
50	7.4	Areas Benefiting from Flood Defences	0	0	0	-	-
50	7.5	Flood Storage Areas	0	0	0	-	-
51	7.6	Flood Zone 2	None (within 50m)				
51	7.7	Flood Zone 3	None (within 50m)				
Page	Section	Surface water flooding >					
52 >	8.1 >	Surface water flooding >	1 in 100 year, 0.3m - 1.0m (within 50m)				
Page	Section	Groundwater flooding >					
54 >	9.1 >	Groundwater flooding >	Moderate-High (within 50m)				
Page	Section	Environmental designations >	On site	0-50m	50-250m	250-500m	500-2000m
55	10.1	Sites of Special Scientific Interest (SSSI)	0	0	0	0	0
56	10.2	Conserved wetland sites (Ramsar sites)	0	0	0	0	0
56	10.3	Special Areas of Conservation (SAC)	0	0	0	0	0
56	10.4	Special Protection Areas (SPA)	0	0	0	0	0
56	10.5	National Nature Reserves (NNR)	0	0	0	0	0
57	10.6	Local Nature Reserves (LNR)	0	0	0	0	0
57 >	10.7 >	Designated Ancient Woodland >	0	0	0	0	8
57	10.8	Biosphere Reserves	0	0	0	0	0
58	10.9	Forest Parks	0	0	0	0	0
58	10.10	Marine Conservation Zones	0	0	0	0	0
58	10.11	Green Belt	0	0	0	0	0
58	10.12	Proposed Ramsar sites	0	0	0	0	0

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58	10.13	Possible Special Areas of Conservation (pSAC)	0	0	0	0	0
59	10.14	Potential Special Protection Areas (pSPA)	0	0	0	0	0
59	10.15	Nitrate Sensitive Areas	0	0	0	0	0
59 >	10.16 >	Nitrate Vulnerable Zones >	0	0	0	0	1
60 >	10.17 >	SSSI Impact Risk Zones >	1	-	-	-	-
61	10.18	SSSI Units	0	0	0	0	0
Page	Section	Visual and cultural designations >	On site	0-50m	50-250m	250-500m	500-2000m
62	11.1	World Heritage Sites	0	0	0	-	-
63	11.2	Area of Outstanding Natural Beauty	0	0	0	-	-
63	11.3	National Parks	0	0	0	-	-
63 >	11.4 >	Listed Buildings >	0	0	2	-	-
64	11.5	Conservation Areas	0	0	0	-	-
64	11.6	Scheduled Ancient Monuments	0	0	0	-	-
64	11.7	Registered Parks and Gardens	0	0	0	-	-
Page	Section	Agricultural designations >	On site	0-50m	50-250m	250-500m	500-2000m
65 >	12.1 >	Agricultural Land Classification >	Grade 1 (within 250m)				
66	12.2	Open Access Land	0	0	0	-	-
66	12.3	Tree Felling Licences	0	0	0	-	-
66	12.4	Environmental Stewardship Schemes	0	0	0	-	-
66	12.5	Countryside Stewardship Schemes	0	0	0	-	-
Page	Section	Habitat designations	On site	0-50m	50-250m	250-500m	500-2000m
67	13.1	Priority Habitat Inventory	0	0	0	-	-
67	13.2	Habitat Networks	0	0	0	-	-
67	13.3	Open Mosaic Habitat	0	0	0	-	-
67	13.4	Limestone Pavement Orders	0	0	0	-	-
Page	Section	Geology 1:10,000 scale >	On site	0-50m	50-250m	250-500m	500-2000m
68 >	14.1 >	10k Availability >	Identified (within 500m)				
69	14.2	Artificial and made ground (10k)	0	0	0	0	-
70 >	14.3 >	Superficial geology (10k) >	1	0	2	2	-

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71	14.4	Landslip (10k)	0	0	0	0	-
72 >	14.5 >	Bedrock geology (10k) >	1	1	0	0	-
73	14.6	Bedrock faults and other linear features (10k)	0	0	0	0	-
Page	Section	Geology 1:50,000 scale >	On site	0-50m	50-250m	250-500m	500-2000m
74 >	15.1 >	50k Availability >	Identified (within 500m)				
75	15.2	Artificial and made ground (50k)	0	0	0	0	-
75	15.3	Artificial ground permeability (50k)	0	0	-	-	-
76 >	15.4 >	Superficial geology (50k) >	1	1	2	4	-
77 >	15.5 >	Superficial permeability (50k) >	Identified (within 50m)				
77	15.6	Landslip (50k)	0	0	0	0	-
77	15.7	Landslip permeability (50k)	None (within 50m)				
78 >	15.8 >	Bedrock geology (50k) >	1	2	0	0	-
79 >	15.9 >	Bedrock permeability (50k) >	Identified (within 50m)				
79	15.10	Bedrock faults and other linear features (50k)	0	0	0	0	-
Page	Section	Boreholes >	On site	0-50m	50-250m	250-500m	500-2000m
80 >	16.1 >	BGS Boreholes >	0	1	0	-	-
Page	Section	Natural ground subsidence >					
81 >	17.1 >	Shrink swell clays >	Low (within 50m)				
82 >	17.2 >	Running sands >	Low (within 50m)				
83 >	17.3 >	Compressible deposits >	Negligible (within 50m)				
84 >	17.4 >	Collapsible deposits >	Low (within 50m)				
85 >	17.5 >	Landslides >	Very low (within 50m)				
86 >	17.6 >	Ground dissolution of soluble rocks >	Very low (within 50m)				
Page	Section	Mining and ground workings >	On site	0-50m	50-250m	250-500m	500-2000m
88	18.1	BritPits	0	0	0	0	-
89 >	18.2 >	Surface ground workings >	0	0	5	-	-
89	18.3	Underground workings	0	0	0	0	0
89	18.4	Underground mining extents	0	0	0	0	-
89	18.5	Historical Mineral Planning Areas	0	0	0	0	-

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90 >	18.6 >	Non-coal mining >	0	0	0	1	1
90	18.7	JPB mining areas	None (within 0m)				
90	18.8	The Coal Authority non-coal mining	0	0	0	0	-
91	18.9	Researched mining	0	0	0	0	-
91	18.10	Mining record office plans	0	0	0	0	-
91	18.11	BGS mine plans	0	0	0	0	-
91	18.12	Coal mining	None (within 0m)				
91	18.13	Brine areas	None (within 0m)				
92	18.14	Gypsum areas	None (within 0m)				
92	18.15	Tin mining	None (within 0m)				
92	18.16	Clay mining	None (within 0m)				

Page	Section	Ground cavities and sinkholes	On site	0-50m	50-250m	250-500m	500-2000m
93	19.1	Natural cavities	0	0	0	0	-
93	19.2	Mining cavities	0	0	0	0	0
93	19.3	Reported recent incidents	0	0	0	0	-
93	19.4	Historical incidents	0	0	0	0	-
94	19.5	National karst database	0	0	0	0	-

Page	Section	Radon >	
95 >	20.1 >	Radon >	Between 1% and 3% (within 0m)

Page	Section	Soil chemistry >	On site	0-50m	50-250m	250-500m	500-2000m
97 >	21.1 >	BGS Estimated Background Soil Chemistry >	1	6	-	-	-
97	21.2	BGS Estimated Urban Soil Chemistry	0	0	-	-	-
98	21.3	BGS Measured Urban Soil Chemistry	0	0	-	-	-

Page	Section	Railway infrastructure and projects >	On site	0-50m	50-250m	250-500m	500-2000m
99	22.1	Underground railways (London)	0	0	0	-	-
99	22.2	Underground railways (Non-London)	0	0	0	-	-
100	22.3	Railway tunnels	0	0	0	-	-
100	22.4	Historical railway and tunnel features	0	0	0	-	-
100	22.5	Royal Mail tunnels	0	0	0	-	-

100	22.6	Historical railways	0	0	0	-	-
100 >	22.7 >	Railways >	0	0	4	-	-
101	22.8	Crossrail 1	0	0	0	0	-
101	22.9	Crossrail 2	0	0	0	0	-
101	22.10	HS2	0	0	0	0	-

Recent aerial photograph

Capture Date: 20/04/2021

Site Area: 0.19ha

ARUN DISTRICT COUNCIL FG/15/25/PL

Recent site history - 2018 aerial photograph

Capture Date: 28/06/2018

Site Area: 0.19ha

ARUN DISTRICT COUNCIL FG/15/25/PL

Recent site history - 2012 aerial photograph

Capture Date: 13/09/2012

Site Area: 0.19ha

ARUN DISTRICT COUNCIL FG/15/25/PL

Recent site history - 2010 aerial photograph

Capture Date: 24/04/2010

Site Area: 0.19ha

ARUN DISTRICT COUNCIL FG/15/25/PL

Recent site history - 1999 aerial photograph

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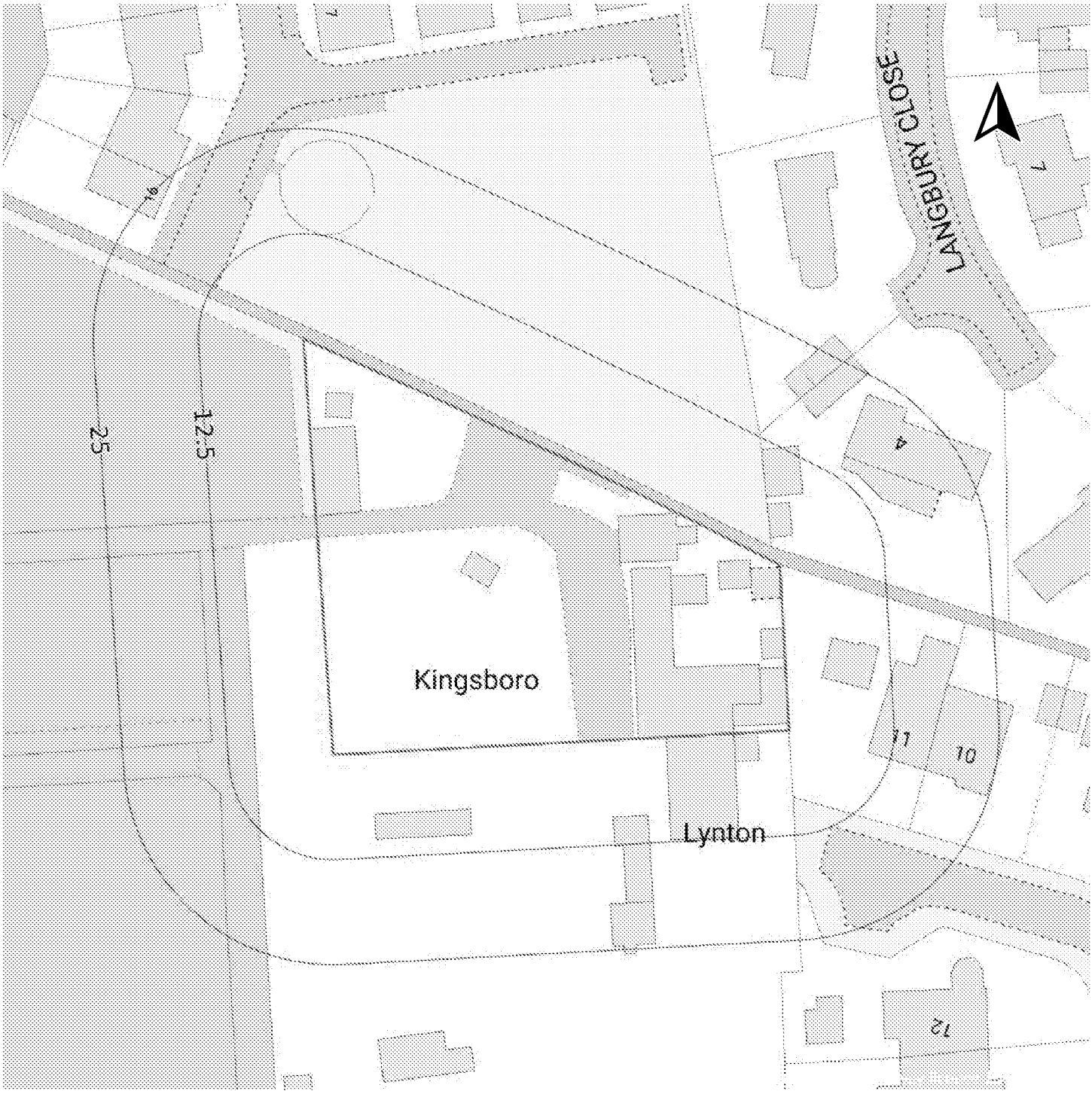
Capture Date: 29/08/1999

Site Area: 0.19ha

ARUN DISTRICT COUNCIL FG/15/25/PL

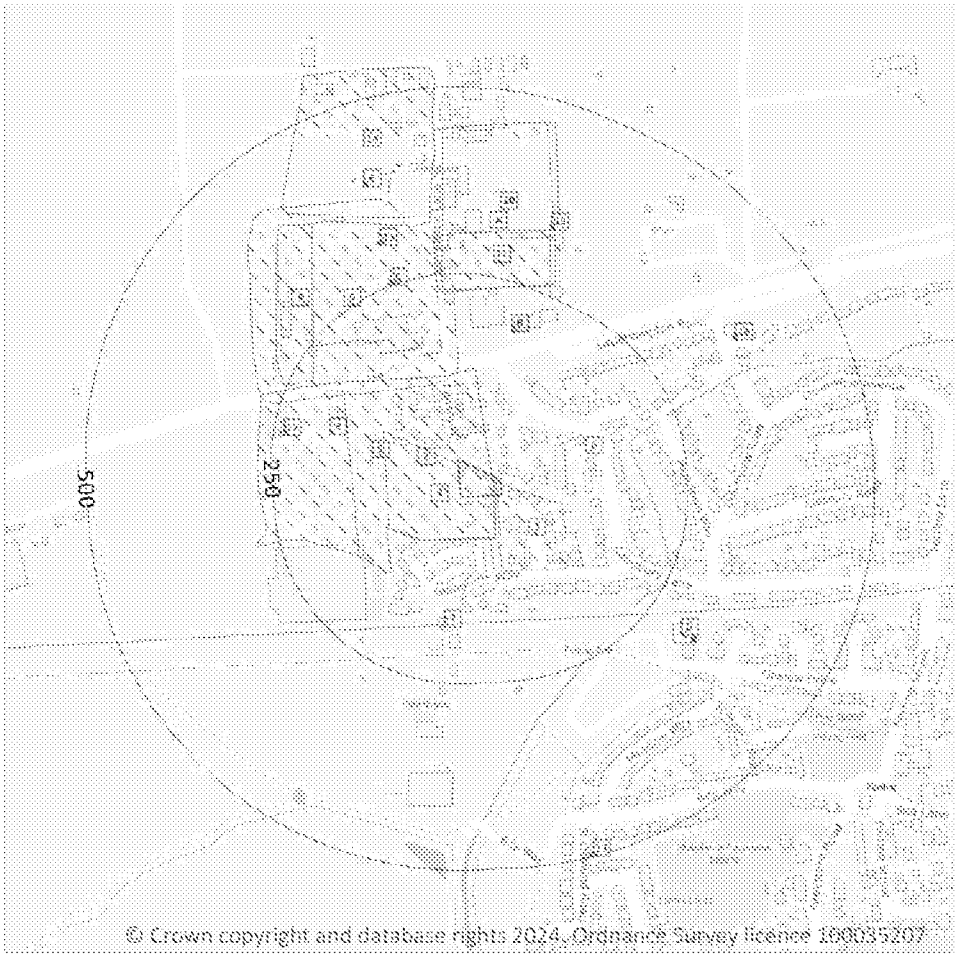
OS MasterMap site plan



Site Area: 0.19ha

ARUN DISTRICT COUNCIL FG/15/25/PL

1 Past land use



Site Outline

Search buffers in metres (m)

Historical industrial land uses

Historical tanks

Historical energy features

1.1 Historical industrial land uses

Records within 500m	15

Potentially contaminative land use features digitised from historical Ordnance Survey mapping at 1:10,000 and 1:10,560 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use map on page 15 >

ID	Location	Land use	Dates present	Group ID
1	On site	Nurseries	1974	2168164

ID	Location	Land use	Dates present	Group ID
2	**On site**	**Nursery**	**1957**	**2225963**
3	**On site**	**Nursery**	**1943 - 1957**	**2274456**
4	**On site**	**Nursery**	**1943**	**2290146**
5	107m N	Unspecified Commercial/Industrial	1957	2130601
6	121m E	Unspecified Tank	1876	2153149
A	147m N	Nursery	1957 - 1974	2211832
7	163m S	Cuttings	1957	2129134
9	223m NW	Unspecified Works	1974	2159235
10	227m N	Nurseries	1974	2168165
11	229m N	Nursery	1943	2227920
C	250m NW	Unspecified Tank	1932 - 1943	2247567
C	253m NW	Unspecified Tank	1957	2260474
D	288m SE	Pumping Station	1943	2151648
14	230m N	Nursery	1974	2259690

This data is sourced from Ordnance Survey / Groundsure.

1.2 Historical tanks

Records within 500m	14

Tank features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use map on page 15 >

ID	Location	Land use	Dates present	Group ID
8	169m W	Unspecified Tank	1971	359151
12	230m W	Tanks	1983	374891
C	249m N	Unspecified Tank	1971	359155
C	253m NW	Unspecified Tank	1932 - 1942	388288

ID	Location	Land use	Dates present	Group ID
A	281m N	Unspecified Tank	1932 - 1942	395451
A	281m N	Unspecified Tank	1911	359154
A	303m N	Unspecified Tank	1983 - 1993	402606
13	306m N	Tanks	1971 - 1993	402659
15	232m N	Unspecified Tank	1994	359160
E	385m N	Tanks	1983 - 1993	405250
E	386m N	Unspecified Tank	1971	359161
E	394m N	Unspecified Tank	1971 - 1983	388502
E	397m N	Unspecified Tank	1983	359162
E	401m N	Unspecified Tank	1971 - 1983	397917

This data is sourced from Ordnance Survey / Groundsure.

1.3 Historical energy features

Records within 500m	6

Energy features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use map on page 15 >

ID	Location	Land use	Dates present	Group ID
B	187m N	Electricity Substation	1971	260175
B	187m N	Electricity Substation	1983 - 1993	269643
D	318m SE	Electricity Substation	1979	282350
D	320m SE	Electricity Substation	1969 - 1971	273122
16	364m NE	Electricity Substation	1969 - 1979	270536
17	494m S	Electricity Substation	1969 - 1994	279475

This data is sourced from Ordnance Survey / Groundsure.

1.4 Historical petrol stations

Records within 500m	0

Petrol stations digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

This data is sourced from Ordnance Survey / Groundsure.

1.5 Historical garages

Records within 500m	0

Garages digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

This data is sourced from Ordnance Survey / Groundsure.

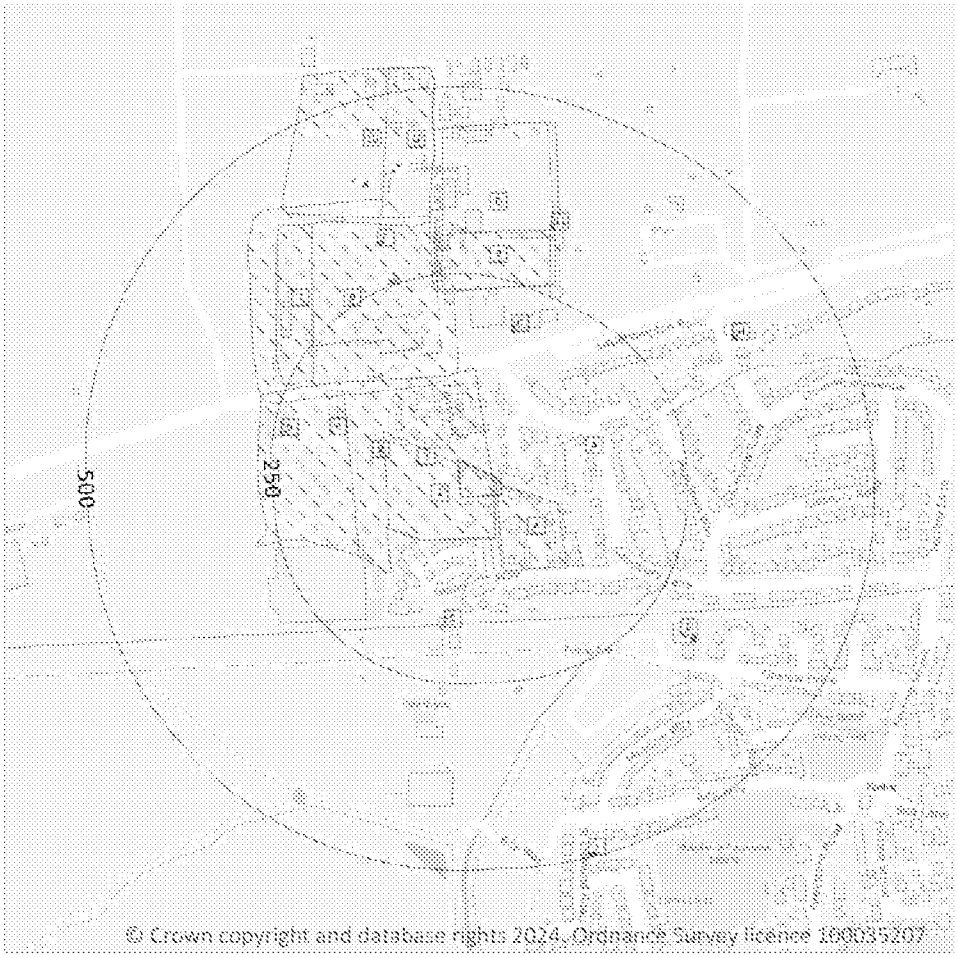
1.6 Historical military land

Records within 500m	0

Areas of military land digitised from multiple sources including the National Archives, local records, MOD records and verified other sources, intelligently grouped into contiguous features.

This data is sourced from Ordnance Survey / Groundsure / other sources.

2 Past land use - un-grouped



Site Outline

Search buffers in metres (m)

Historical industrial land uses

Historical tanks

Historical energy features

2.1 Historical industrial land uses

Records within 500m	19

Potentially contaminative land use features digitised from historical Ordnance Survey mapping at 1:10,000 and 10,560 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use - un-grouped map on page 19 >

ID	Location	Land Use	Date	Group ID
1	On site	Nursery	1943	2290146
2	On site	Nurseries	1974	2168164
3	On site	Nursery	1957	2225963

ID	Location	Land Use	Date	Group ID
A	**On site**	**Nursery**	**1943**	**2274456**
A	**On site**	**Nursery**	**1957**	**2274456**
B	107m N	Unspecified Commercial/Industrial	1957	2130601
4	121m E	Unspecified Tank	1876	2153149
B	147m N	Nursery	1974	2211832
5	163m S	Cuttings	1957	2129134
7	223m NW	Unspecified Works	1974	2159235
D	226m N	Nursery	1957	2211832
D	227m N	Nurseries	1974	2168165
B	229m N	Nursery	1943	2227920
8	250m NW	Unspecified Tank	1943	2247567
B	250m NW	Unspecified Tank	1932	2247567
8	253m NW	Unspecified Tank	1957	2260474
E	288m SE	Pumping Station	1943	2151648
10	330m N	Nursery	1974	2259690
G	330m N	Nursery	1974	2259690

This data is sourced from Ordnance Survey / Groundsure.

2.2 Historical tanks

Records within 500m	23

Tank features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use - un-grouped map on page 19 >

ID	Location	Land Use	Date	Group ID
6	169m W	Unspecified Tank	1971	359151
9	230m W	Tanks	1983	374891
8	249m N	Unspecified Tank	1971	359155
8	253m NW	Unspecified Tank	1932	388288

ID	Location	Land Use	Date	Group ID
B	253m NW	Unspecified Tank	1942	386288
D	281m N	Unspecified Tank	1932	395451
D	281m N	Unspecified Tank	1942	395451
D	281m N	Unspecified Tank	1911	359154
D	283m N	Unspecified Tank	1983	402906
D	303m N	Unspecified Tank	1992	402906
D	303m N	Unspecified Tank	1993	402906
F	306m N	Tanks	1971	402659
F	306m N	Tanks	1983	402659
F	306m N	Tanks	1993	402659
H	332m N	Unspecified Tank	1994	359160
G	385m N	Tanks	1983	405250
G	385m N	Tanks	1993	405250
G	286m N	Unspecified Tank	1971	259161
G	394m N	Unspecified Tank	1971	388502
G	395m N	Unspecified Tank	1983	388502
G	397m N	Unspecified Tank	1983	359162
G	401m N	Unspecified Tank	1971	397917
G	401m N	Unspecified Tank	1983	397917

This data is sourced from Ordnance Survey / Groundsure.

2.3 Historical energy features

Records within 500m	13

Energy features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use - un-grouped map on page 19 >

ID	Location	Land Use	Date	Group ID
C	187m N	Electricity Substation	1971	260175

ARUN DISTRICT COUNCIL FG/15/25/PL

ID	Location	Land Use	Date	Group ID
C	187m N	Electricity Substation	1983	269643
C	187m N	Electricity Substation	1993	269643
E	318m SE	Electricity Substation	1979	282350
E	320m SE	Electricity Substation	1969	273122
E	320m SE	Electricity Substation	1971	273122
H	364m NE	Electricity Substation	1979	270536
H	364m NE	Electricity Substation	1969	270536
H	365m NE	Electricity Substation	1971	270536
I	494m S	Electricity Substation	1994	279475
I	494m S	Electricity Substation	1969	279475
I	495m S	Electricity Substation	1989	279475
I	495m S	Electricity Substation	1989	279475

This data is sourced from Ordnance Survey / Groundsure.

2.4 Historical petrol stations

Records within 500m	0

Petrol stations digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

This data is sourced from Ordnance Survey / Groundsure.

2.5 Historical garages

Records within 500m	0

Garages digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

This data is sourced from Ordnance Survey / Groundsure.

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3 Waste and landfill

Site Outline

Search buffers in metres (m)

Waste exemptions

3.1 Active or recent landfill

Records within 500m	0

Active or recently closed landfill sites under Environment Agency/Natural Resources Wales regulation.

This data is sourced from the Environment Agency and Natural Resources Wales.

3.2 Historical landfill (BGS records)

Records within 500m	0

Landfill sites identified on a survey carried out on behalf of the DoE in 1973. These sites may have been closed or operational at this time.

This data is sourced from the British Geological Survey.

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3.3 Historical landfill (LA/mapping records)

Records within 500m	0

Landfill sites identified from Local Authority records and high detail historical mapping.

This data is sourced from the Ordnance Survey/Groundsure and Local Authority records.

3.4 Historical landfill (EA/NRW records)

Records within 500m	0

Known historical (closed) landfill sites (e.g. sites where there is no PPC permit or waste management licence currently in force). This includes sites that existed before the waste licensing regime and sites that have been licensed in the past but where a licence has been revoked, ceased to exist or surrendered and a certificate of completion has been issued.

This data is sourced from the Environment Agency and Natural Resources Wales.

3.5 Historical waste sites

Records within 500m	0

Waste site records derived from Local Authority planning records and high detail historical mapping.

This data is sourced from Ordnance Survey/Groundsure and Local Authority records.

3.6 Licensed waste sites

Records within 500m	0

Active or recently closed waste sites under Environment Agency/Natural Resources Wales regulation.

This data is sourced from the Environment Agency and Natural Resources Wales.

3.7 Waste exemptions

Records within 500m	15

Activities involving the storage, treatment, use or disposal of waste that are exempt from needing a permit. Exemptions have specific limits and conditions that must be adhered to.

Features are displayed on the Waste and landfill map on page 23 >

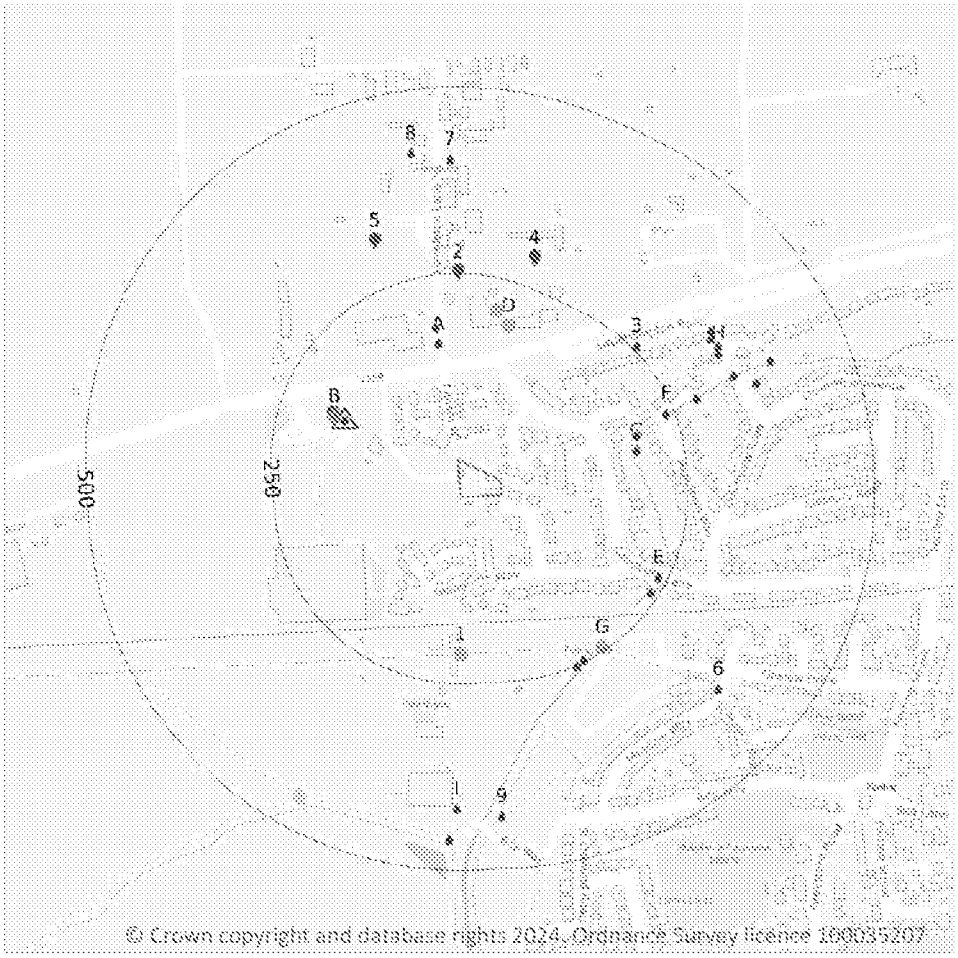
ID	Location	Site	Reference	Category	Sub-Category	Description
A	73m W	-	WEX266973	Using waste exemption	Not on a farm	Use of waste in construction

ID	Location	Site	Reference	Category	Sub-Category	Description
A	73m W	LITTLEHAMPTON ROAD, FERRING, WORTHING, BN12 6PN	WEX147352	Using waste exemption	Not on a farm	Use of waste in construction
A	73m W	LITTLEHAMPTON ROAD, FERRING, WORTHING, BN12 6PN	WEX118580	Using waste exemption	Not on a farm	Use of waste in construction
1	275m N	Hangleton Farm Hangleton Lane WORTHING West Sussex BN12 6PP	EPR/AE5554WX/A001	Using waste exemption	Non-Agricultural Waste Only	Use of waste in construction
B	297m NW	sentry self storage coopers industrial estate littlehampton road ferring west sussex bn12 6pw	EPR/NP04088D/A001	Treating waste exemption	Non-Agricultural Waste Only	Manual treatment of waste
B	297m NW	Coopers Industrial Estate Littlehampton Road WORTHING West Sussex BN12 6PW	EPR/TF0703LK/A001	Treating waste exemption	Non-Agricultural Waste Only	Manual treatment of waste
C	347m SE	ONSLOW DRIVE, FERRING, WORTHING, BN12 5RX	WEX343872	Disposing of waste exemption	Not on a farm	Burning waste in the open
C	347m SE	ONSLOW DRIVE, FERRING, WORTHING, BN12 5RX	WEX218748	Disposing of waste exemption	Not on a farm	Burning waste in the open
D	397m N	Foschini Nursery Hangleton Lane West Sussex	EPR/HE5383YC/A001	Using waste exemption	Non-Agricultural Waste Only	Use of waste in construction
E	401m NW	Cobbins Nursery Hangleton Lane WORTHING West Sussex BN12 6PP	EPR/JH0178XR/A001	Storing waste exemption	Agricultural Waste Only	Storage of waste in a secure place
E	401m NW	Cobbins Nursery Hangleton Lane WORTHING West Sussex BN12 6PP	EPR/JH0178XR/A001	Treating waste exemption	Agricultural Waste Only	Treatment of waste wood and waste plant matter by chipping, shredding, cutting or pulverising
E	401m NW	Cobbins Nursery Hangleton Lane WORTHING West Sussex BN12 6PP	EPR/JH0178XR/A001	Disposing of waste exemption	Agricultural Waste Only	Deposit of agricultural waste consisting of plant tissue under a Plant Health notice
E	401m NW	Cobbins Nursery Hangleton Lane WORTHING West Sussex BN12 6PP	EPR/JH0178XR/A001	Disposing of waste exemption	Agricultural Waste Only	Burning waste in the open

ID	Location	Site	Reference	Category	Sub-Category	Description
E	401m NW	Cobbins Nursery Hangleton Lane WORTHING West Sussex BN12 6PP	EPR/JH0178XR/A001	Treating waste exemption	Agricultural Waste Only	Screening and blending of waste
D	433m N	-	WEX268842	Using waste exemption	On a farm	Use of waste in construction

This data is sourced from the Environment Agency and Natural Resources Wales.

4 Current industrial land use



Site Outline

Search buffers in metres (m)

Recent industrial land uses

Current or recent petrol stations

Licensed pollutant release (Part A(2)/B)

Licensed Discharges to controlled waters

4.1 Recent industrial land uses

Records within 250m	5

Current potentially contaminative industrial sites.

Features are displayed on the Current industrial land use map on page 27 >

ID	Location	Company	Address	Activity	Category
B	176m NW	Asda Ferring Worthing Automat	Littlehampton Road, Ferring, Worthing, West Sussex, BN12 6PN	Petrol and Fuel Stations	Road and Rail
D	192m N	Electricity Sub Station	West Sussex, BN12	Electrical Features	Infrastructure and Facilities

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ID	Location	Company	Address	Activity	Category
D	207m N	Yeomans Peugeot	Yeomans Peugeot, Littlehampton Road, Ferring, West Sussex, BN12 6PB	New Vehicles	Motoring
1	211m S	Pylon	West Sussex, BN12	Electrical Features	Infrastructure and Facilities
G	245m SE	Pylon	West Sussex, BN12	Electrical Features	Infrastructure and Facilities

This data is sourced from Ordnance Survey.

4.2 Current or recent petrol stations

Records within 500m	1

Open, closed, under development and obsolete petrol stations.

Features are displayed on the Current industrial land use map on page 27 >

ID	Location	Company	Address	LPG	Status
B	163m NW	ASDA	Littlehampton Road, Ferring, Worthing, West Sussex, BN12 6PN	No	Open

This data is sourced from Experian.

4.3 Electricity cables

Records within 500m	0

High voltage underground electricity transmission cables.

This data is sourced from National Grid.

4.4 Gas pipelines

Records within 500m	0

High pressure underground gas transmission pipelines.

This data is sourced from National Grid.

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4.5 Sites determined as Contaminated Land

Records within 500m	0

Contaminated Land Register of sites designated under Part 2a of the Environmental Protection Act 1990.

This data is sourced from Local Authority records.

4.6 Control of Major Accident Hazards (COMAH)

Records within 500m	0

Control of Major Accident Hazards (COMAH) sites. This data includes upper and lower tier sites, and includes a historical archive of COMAH sites and Notification of Installations Handling Hazardous Substances (NIHHS) records.

This data is sourced from the Health and Safety Executive.

4.7 Regulated explosive sites

Records within 500m	0

Sites registered and licensed by the Health and Safety Executive under the Manufacture and Storage of Explosives Regulations 2005 (MSER). The last update to this data was in April 2011.

This data is sourced from the Health and Safety Executive.

4.8 Hazardous substance storage/usage

Records within 500m	0

Consents granted for a site to hold certain quantities of hazardous substances at or above defined limits in accordance with the Planning (Hazardous Substances) Regulations 2015.

This data is sourced from Local Authority records.

4.9 Historical licensed industrial activities (IPC)

Records within 500m	0

Integrated Pollution Control (IPC) records of substance releases to air, land and water. This data represents a historical archive as the IPC regime has been superseded.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.10 Licensed industrial activities (Part A(1))

Records within 500m	0

Records of Part A(1) installations regulated under the Environmental Permitting (England and Wales) Regulations 2016 for the release of substances to the environment.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.11 Licensed pollutant release (Part A(2)/B)

Records within 500m	4

Records of Part A(2) and Part B installations regulated under the Environmental Permitting (England and Wales) Regulations 2016 for the release of substances to the environment.

Features are displayed on the Current industrial land use map on page 27 >

ID	Location	Address	Details	
8	178m NW	Asda Petrol Station, Asda Ferring Superstore, Littlehampton Road, Ferring, Worthing BN12 6PW	Process: Unloading of Petrol into Storage at Service Stations Status: Current Permit Permit Type: Part B	Enforcement: No Enforcements Notified Date of enforcement: No Enforcements Notified Comment: No Enforcements Notified
2	251m N	Perifleur Nursery, Hangleton Lane, Ferring, Worthing, BN12 6PP	Process: Vegetable Matter Drying Processes Status: Historical Permit Permit Type: Part B	Enforcement: No Enforcements Notified Date of enforcement: No Enforcements Notified Comment: No Enforcements Notified
4	289m N	Millbeech Hangleton Nursery, Hangleton Lane, BN12 6PP	Process: Combustion & Incineration Status: Historical Permit Permit Type: Part B	Enforcement: No Enforcements Notified Date of enforcement: No Enforcements Notified Comment: No Enforcements Notified
5	314m NW	Cobbins Nurseries, Hangleton Lane, Angmering, Worthing, West Sussex, BN12 6PP	Process: Combustion & Incineration Status: Current Permit Permit Type: Part B	Enforcement: No Enforcements Notified Date of enforcement: No Enforcements Notified Comment: No Enforcements Notified

This data is sourced from Local Authority records.

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4.12 Radioactive Substance Authorisations

Records within 500m	0

Records of the storage, use, accumulation and disposal of radioactive substances regulated under the Radioactive Substances Act 1993.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.13 Licensed Discharges to controlled waters

Records within 500m	28

Discharges of treated or untreated effluent to controlled waters under the Water Resources Act 1991.

Features are displayed on the Current industrial land use map on page 27 >

ID	Location	Address	Details	
A	157m N	WYEVALE GARDEN CENTRE, FERRING, WYEVALE GARDEN CENTRE, A259, FERRING, WEST SUSSEX, BN12 6PG	Effluent Type: SEWAGE & TRADE COMBINED - UNSPECIFIED Permit Number: P12182 Permit Version: 2 Receiving Water: VIA A CULVERT TO FERRING RIFE	Status: SURRENDERED UNDER EPR 2010 Issue date: 19/05/2008 Effective Date: 19/05/2008 Revocation Date: 05/03/2012
B	160m NW	COUNTRY FAYRE MARKET, COUNTRY FAYRE MARKET, LITTLEHAMPTON ROAD, FERRING, WORTHING, WEST SUSSEX, BN12 6PN	Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY Permit Number: P01993 Permit Version: 1 Receiving Water: INTO LAND	Status: PRE NRA LEGISLATION WHERE ISSUE DATE 01-SEP-89 (HISTORIC ONLY) Issue date: 08/11/1988 Effective Date: 08/11/1988 Revocation Date: 20/12/2012
B	160m NW	COUNTRY FAYRE MARKET, COUNTRY FAYRE MARKET, LITTLEHAMPTON ROAD, FERRING, WORTHING, WEST SUSSEX, BN12 6PN	Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY Permit Number: P01993 Permit Version: 2 Receiving Water: INTO LAND	Status: REVOKED UNDER EPR 2010 Issue date: 21/12/2012 Effective Date: 21/12/2012 Revocation Date: 28/08/2013
A	180m N	WYEVALE GARDEN CENTRE, FERRING, WYEVALE GARDEN CENTRE, A259, FERRING, WEST SUSSEX, BN12 6PG	Effluent Type: SEWAGE & TRADE COMBINED - UNSPECIFIED Permit Number: P12182 Permit Version: 1 Receiving Water: VIA A CULVERT TO FERRING RIFE	Status: VARIED BY APPLICATION - (WRA 91 SCHED 10 - AS AMENDED BY ENV ACT 1995) Issue date: 10/12/2004 Effective Date: 10/12/2004 Revocation Date: 18/05/2008
C	186m E	RESIDENTIAL DEVELOPMENT, RESIDENTIAL DEVELOPMENT, BROOKSIDE NURSERY, LANGBURY LANE FERRING, WORTHING WEST SUSSEX	Effluent Type: MISCELLANEOUS DISCHARGES - SURFACE WATER Permit Number: S01497 Permit Version: 1 Receiving Water: CONTROLLED SEA	Status: LAPSED UNDER SCHEDULE 23 ENVIRONMENT ACT 1995 Issue date: 01/04/1991 Effective Date: 01/04/1991 Revocation Date: 31/03/1997

ID	Location	Address	Details	
C	186m E	BROOKSIDE NURSERY, BROOKSIDE NURSERY, LANGBURY LANE, FERRING, WORTHING WEST SUSSEX	Effluent Type: MISCELLANEOUS DISCHARGES - SURFACE WATER Permit Number: SO1568 Permit Version: 1 Receiving Water: FRESHWATER RIVER	Status: LAPSED UNDER SCHEDULE 23 ENVIRONMENT ACT 1995 Issue date: 22/02/1967 Effective Date: 22/02/1967 Revocation Date: 31/03/1997
C	191m E	LITTLEHAMPTON ROAD, A 259, LITTLEHAMPTON ROAD, A.259, AT FERRING, WORTHING, WEST SUSSEX	Effluent Type: MISCELLANEOUS DISCHARGES - SURFACE WATER Permit Number: SO1652 Permit Version: 1 Receiving Water: FRESHWATER RIVER	Status: LAPSED UNDER SCHEDULE 23 ENVIRONMENT ACT 1995 Issue date: 09/10/1967 Effective Date: 09/10/1967 Revocation Date: 31/03/1997
E	238m SE	ROAD OFF LANGBURY LANE, ROAD OFF LANGBURY LANE, FERRING, WORTHING WEST SUSSEX	Effluent Type: MISCELLANEOUS DISCHARGES - SURFACE WATER Permit Number: SO1180 Permit Version: 1 Receiving Water: CONTROLLED SEA	Status: LAPSED UNDER SCHEDULE 23 ENVIRONMENT ACT 1995 Issue date: 24/03/1961 Effective Date: 24/03/1961 Revocation Date: 31/03/1997
F	239m E	LAND AT RIFESIDE, HIGHDOWN WAY, LAND AT RIFESIDE, HIGHDOWN WAY, FERRING	Effluent Type: MISCELLANEOUS DISCHARGES - SURFACE WATER Permit Number: SO2835 Permit Version: 1 Receiving Water: FRESHWATER RIVER	Status: PRE NRA LEGISLATION WHERE ISSUE DATE 01-SEP-89 (HISTORIC ONLY) Issue date: 26/05/1960 Effective Date: 26/05/1960 Revocation Date: 01/07/1991
E	239m SE	PLOT 16 LANGBURY LANE, PLOT 16 LANGBURY LANE, FERRING	Effluent Type: MISCELLANEOUS DISCHARGES - SURFACE WATER Permit Number: SO2559 Permit Version: 1 Receiving Water: FRESHWATER RIVER	Status: PRE NRA LEGISLATION WHERE ISSUE DATE 01-SEP-89 (HISTORIC ONLY) Issue date: 31/10/1966 Effective Date: 31/10/1966 Revocation Date: 28/02/1997
G	246m SE	ONSLOW DRIVE PUMPING STATION, ONSLOW DRIVE PUMPING STATION, FERRING, SUSSEX	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: A00859 Permit Version: 1 Receiving Water: FRESHWATER RIVER	Status: SURRENDERED UNDER EPR 2010 Issue date: 23/07/2001 Effective Date: 23/07/2001 Revocation Date: 24/05/2010
G	251m SE	ONSLOW DRIVE FERRING WPS, FERRING, ONSLOW CARAVAN PARK, ONSLOW DRIVE, FERRING, WORTHING, WEST SUSSEX, BN12 5RX	Effluent Type: SEWAGE DISCHARGES - PUMPING STATION - WATER COMPANY Permit Number: A01404 Permit Version: 1 Receiving Water: FERRING RIFE	Status: NEW CONSENT (WRA 91, S88 & SCHED 10 AS AMENDED BY ENV ACT 1995) Issue date: 17/10/2006 Effective Date: 17/10/2006 Revocation Date: -

ID	Location	Address	Details	
3	255m NE	LITTLEHAMPTON ROAD, A.259, LITTLEHAMPTON ROAD, A 259, AT FERRING, WORTHING, WEST SUSSEX	Effluent Type: MISCELLANEOUS DISCHARGES - SURFACE WATER Permit Number: SO1652 Permit Version: 1 Receiving Water: FRESHWATER RIVER	Status: LAPSED UNDER SCHEDULE 23 ENVIRONMENT ACT 1995 Issue date: 09/10/1967 Effective Date: 09/10/1967 Revocation Date: 31/03/1997
F	283m E	BUNGALOWS ADJ. STANBROOKE, BUNGALOWS ADJ. STANBROOKE, FERRING, WORTHING, WEST SUSSEX	Effluent Type: MISCELLANEOUS DISCHARGES - SURFACE WATER Permit Number: SO1185 Permit Version: 1 Receiving Water: CONTROLLED SEA	Status: LAPSED UNDER SCHEDULE 23 ENVIRONMENT ACT 1995 Issue date: 17/05/1960 Effective Date: 17/05/1960 Revocation Date: 31/03/1997
H	237m NE	BUNGALOWS ADJ. STANBROOKE, BUNGALOWS ADJ. STANBROOKE, FERRING, WORTHING, WEST SUSSEX	Effluent Type: MISCELLANEOUS DISCHARGES - SURFACE WATER Permit Number: SO1185 Permit Version: 1 Receiving Water: CONTROLLED SEA	Status: LAPSED UNDER SCHEDULE 23 ENVIRONMENT ACT 1995 Issue date: 17/05/1960 Effective Date: 17/05/1960 Revocation Date: 31/03/1997
H	239m NE	BUNGALOWS ADJ. STANBROOKE, BUNGALOWS ADJ. STANBROOKE, FERRING, WORTHING, WEST SUSSEX	Effluent Type: MISCELLANEOUS DISCHARGES - SURFACE WATER Permit Number: SO1185 Permit Version: 1 Receiving Water: CONTROLLED SEA	Status: LAPSED UNDER SCHEDULE 23 ENVIRONMENT ACT 1995 Issue date: 17/05/1960 Effective Date: 17/05/1960 Revocation Date: 31/03/1997
H	241m NE	LITTLEHAMPTON ROAD, A.259, LITTLEHAMPTON ROAD, A.259, AT FERRING, WORTHING, WEST SUSSEX	Effluent Type: MISCELLANEOUS DISCHARGES - SURFACE WATER Permit Number: SO1652 Permit Version: 1 Receiving Water: FRESHWATER RIVER	Status: LAPSED UNDER SCHEDULE 23 ENVIRONMENT ACT 1995 Issue date: 09/10/1967 Effective Date: 09/10/1967 Revocation Date: 31/03/1997
H	342m NE	BUNGALOWS ADJ. STANBROOKE, BUNGALOWS ADJ. STANBROOKE, FERRING, WORTHING, WEST SUSSEX	Effluent Type: MISCELLANEOUS DISCHARGES - SURFACE WATER Permit Number: SO1185 Permit Version: 1 Receiving Water: CONTROLLED SEA	Status: LAPSED UNDER SCHEDULE 23 ENVIRONMENT ACT 1995 Issue date: 17/05/1960 Effective Date: 17/05/1960 Revocation Date: 31/03/1997
H	345m NE	BUNGALOWS ADJ. STANBROOKE, BUNGALOWS ADJ. STANBROOKE, FERRING, WORTHING, WEST SUSSEX	Effluent Type: MISCELLANEOUS DISCHARGES - SURFACE WATER Permit Number: SO1185 Permit Version: 1 Receiving Water: CONTROLLED SEA	Status: LAPSED UNDER SCHEDULE 23 ENVIRONMENT ACT 1995 Issue date: 17/05/1960 Effective Date: 17/05/1960 Revocation Date: 31/03/1997
H	365m E	21 DOWNVIEW ROAD, 21 DOWNVIEW ROAD, FERRING	Effluent Type: UNSPECIFIED Permit Number: SO2523 Permit Version: 1 Receiving Water: FRESHWATER RIVER	Status: PRE NRA LEGISLATION WHERE ISSUE DATE 01-SEP-89 (HISTORIC ONLY) Issue date: 30/07/1965 Effective Date: 30/07/1965 Revocation Date: 28/02/1997

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ID	Location	Address	Details	
6	390m SE	ONSLOW DRIVE, ONSLOW DRIVE, FERRING, WORTHING, WEST SUSSEX	Effluent Type: MISCELLANEOUS DISCHARGES - SURFACE WATER Permit Number: SO1197 Permit Version: 1 Receiving Water: CONTROLLED SEA	Status: LAPSED UNDER SCHEDULE 23 ENVIRONMENT ACT 1995 Issue date: 08/05/1958 Effective Date: 08/05/1958 Revocation Date: 31/03/1997
H	395m E	BUNGALOWS ADJ. STANBROOKE, BUNGALOWS ADJ. STANBROOKE, FERRING, WORTHING, WEST SUSSEX	Effluent Type: MISCELLANEOUS DISCHARGES - SURFACE WATER Permit Number: SO1185 Permit Version: 1 Receiving Water: CONTROLLED SEA	Status: LAPSED UNDER SCHEDULE 23 ENVIRONMENT ACT 1995 Issue date: 17/05/1960 Effective Date: 17/05/1960 Revocation Date: 31/03/1997
7	402m N	HANGLETON FARM STABLES, HANGLETON FARM STABLES, HANGLETON LANE, FERRING WEST SUSSEX	Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY Permit Number: P02511 Permit Version: 1 Receiving Water: INTO LAND	Status: PRE NRA LEGISLATION WHERE ISSUE DATE 01-SEP-89 (HISTORIC ONLY) Issue date: 25/08/1989 Effective Date: 25/08/1989 Revocation Date: -
E	415m N	FOSCHINI NURSERY, HANGLETON LANE, FERRING, WORTHING, WEST SUSSEX, BN12 6PP	Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY Permit Number: EPRGB3339GR Permit Version: 1 Receiving Water: GROUNDWATER VIA INFILT. SYSTEM	Status: NEW ISSUED UNDER EPR 2010 Issue date: 18/07/2017 Effective Date: 18/07/2017 Revocation Date: -
I	417m S	FERRING COUNTRY CENTRE LTD, RIFE WAY, FERRING, SUSSEX	Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY Permit Number: P01515 Permit Version: 1 Receiving Water: INTO LAND	Status: POST NRA LEGISLATION WHERE ISSUE DATE > 31-AUG-89 (HISTORIC ONLY) Issue date: 19/05/1988 Effective Date: 19/05/1988 Revocation Date: 20/12/2012
I	417m S	FERRING COUNTRY CENTRE LTD, RIFE WAY, FERRING, SUSSEX	Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY Permit Number: P01515 Permit Version: 2 Receiving Water: INTO LAND	Status: REVOKED UNDER EPR 2010 Issue date: 21/12/2012 Effective Date: 21/12/2012 Revocation Date: 08/02/2016
9	430m S	INTER VILLAGE ROAD AT FERRING, INTER VILLAGE ROAD AT FERRING, WORTHING, WEST SUSSEX	Effluent Type: MISCELLANEOUS DISCHARGES - SURFACE WATER Permit Number: SO1058 Permit Version: 1 Receiving Water: CONTROLLED SEA	Status: LAPSED UNDER SCHEDULE 23 ENVIRONMENT ACT 1995 Issue date: 01/04/1991 Effective Date: 01/04/1991 Revocation Date: 31/03/1997
I	460m S	FERRING COUNTRY CENTRE, RIFE WAY, FERRING, WEST SUSSEX, BN12 5JZ	Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY Permit Number: EPR0B3669RC Permit Version: 1 Receiving Water: FERRING RIFE	Status: NEW ISSUED UNDER EPR 2010 Issue date: 09/02/2016 Effective Date: 09/02/2016 Revocation Date: -

This data is sourced from the Environment Agency and Natural Resources Wales.

4.14 Pollutant release to surface waters (Red List)

Records within 500m	0

Discharges of specified substances under the Environmental Protection (Prescribed Processes and Substances) Regulations 1991.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.15 Pollutant release to public sewer

Records within 500m	0

Discharges of Special Category Effluents to the public sewer.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.16 List 1 Dangerous Substances

Records within 500m	0

Discharges of substances identified on List I of European Directive E 2006/11/EC, and regulated under the Environmental Damage (Prevention and Remediation) Regulations 2015.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.17 List 2 Dangerous Substances

Records within 500m	0

Discharges of substances identified on List II of European Directive E 2006/11/EC, and regulated under the Environmental Damage (Prevention and Remediation) Regulations 2015.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.18 Pollution Incidents (EA/NRW)

Records within 500m	0

Records of substantiated pollution incidents. Since 2006 this data has only included category 1 (major) and 2 (significant) pollution incidents.

This data is sourced from the Environment Agency and Natural Resources Wales.

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4.19 Pollution inventory substances

Records within 500m	0

The pollution inventory (substances) includes reporting on annual emissions of certain regulated substances to air, controlled waters and land. A reporting threshold for each substance is also included. Where emissions fall below the reporting threshold, no value will be given. The data is given for the most recent complete year available.

This data is sourced from the Environment Agency and the Scottish Environment Protection Agency.

4.20 Pollution inventory waste transfers

Records within 500m	0

The pollution inventory (waste transfers) includes reporting on annual transfers and recovery/disposal of controlled wastes from a site. A reporting threshold for each waste type is also included. Where releases fall below the reporting threshold, no value will be given. The data is given for the most recent complete year available.

This data is sourced from the Environment Agency and the Scottish Environment Protection Agency.

4.21 Pollution inventory radioactive waste

Records within 500m	0

The pollution inventory (radioactive wastes) includes reporting on annual releases of radioactive substances from a site, including the means of release. Where releases fall below the reporting threshold, no value will be given. The data is given for the most recent complete year available.

This data is sourced from the Environment Agency and the Scottish Environment Protection Agency.

5 Hydrogeology - Superficial aquifer

Site Outline

Search buffers in metres (m)

- Principal
- Secondary A
- Secondary B
- Secondary Undifferentiated
- Unproductive
- Unknown

5.1 Superficial aquifer

Records within 500m	3

Aquifer status of groundwater held within superficial geology.

Features are displayed on the Hydrogeology map on page 37 >

ID	Location	Designation	Description
1	**On site**	**Secondary A**	**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. These are generally aquifers formerly classified as minor aquifers**
2	257m W	Secondary Undifferentiated	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type

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ID	Location	Designation	Description
3	314m N	Secondary Undifferentiated	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type

This data is sourced from the British Geological Survey, the Environment Agency and Natural Resources Wales.

Bedrock aquifer

Site Outline

Search buffers in metres (m)

- Principal
- Secondary A
- Secondary B
- Secondary Undifferentiated
- Unproductive

5.2 Bedrock aquifer

Records within 500m	1

Aquifer status of groundwater held within bedrock geology.

Features are displayed on the Bedrock aquifer map on page 39 >

ID	Location	Designation	Description
1	On site	Principal	Geology of high intergranular and/or fracture permeability, usually providing a high level of water storage and may support water supply/river base flow on a strategic scale. Generally principal aquifers were previously major aquifers

This data is sourced from the British Geological Survey, the Environment Agency and Natural Resources Wales.

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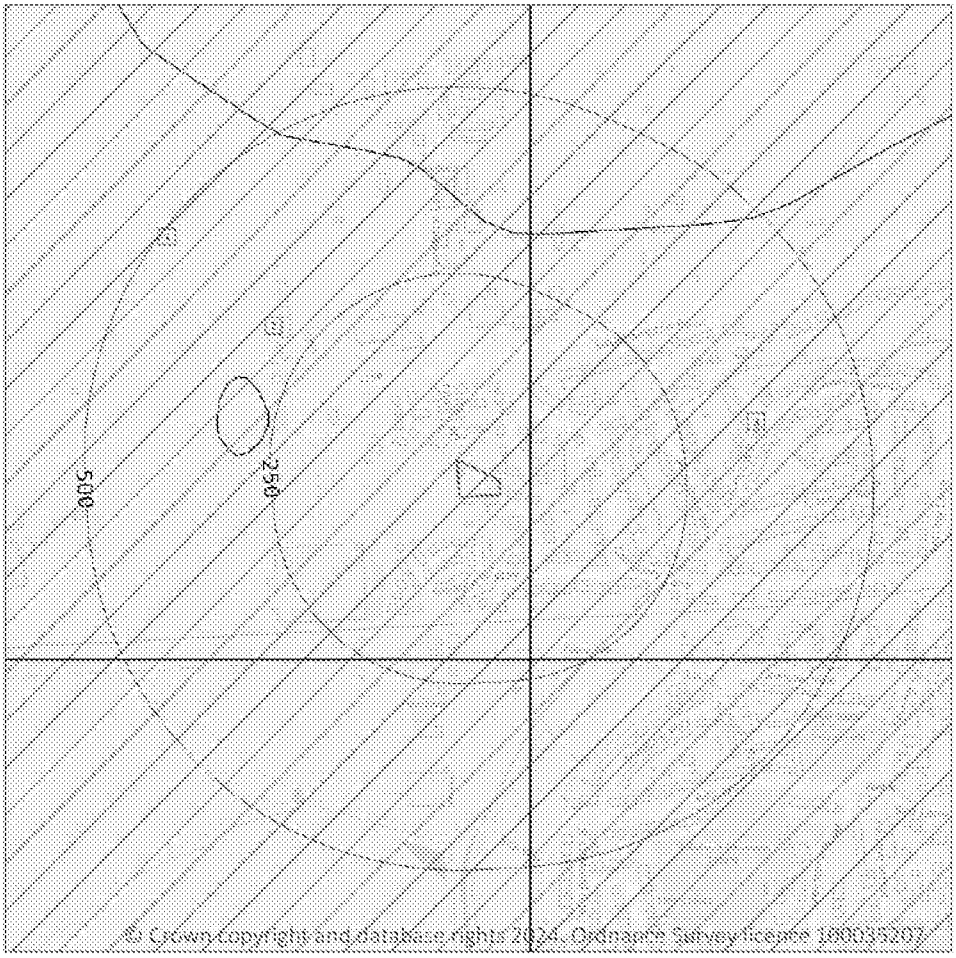
Groundwater vulnerability



Site Outline

Search buffers in metres (m)

Superficial vulnerability

- Principal superficial aquifer, high vulnerability
- Secondary superficial aquifer, high vulnerability
- Principal superficial aquifer, medium vulnerability
- Secondary superficial aquifer, medium vulnerability
- Principal superficial aquifer, low vulnerability
- Secondary superficial aquifer, low vulnerability

Bedrock vulnerability

- Principal bedrock aquifer, high vulnerability
- Secondary bedrock aquifer, high vulnerability
- Principal bedrock aquifer, medium vulnerability
- Secondary bedrock aquifer, medium vulnerability
- Principal bedrock aquifer, low vulnerability
- Secondary bedrock aquifer, low vulnerability

Other information

- Unproductive aquifer
- Soluble rock risk
- Local information

5.3 Groundwater vulnerability

Records within 50m	2

An assessment of the vulnerability of groundwater to a pollutant discharged at ground level based on the hydrological, geological, hydrogeological and soil properties within a one kilometre square grid. Groundwater vulnerability is described as High, Medium or Low as follows:

- High - Areas able to easily transmit pollution to groundwater. They are likely to be characterised by high leaching soils and the absence of low permeability superficial deposits.
- Medium - Intermediate between high and low vulnerability.
- Low - Areas that provide the greatest protection from pollution. They are likely to be characterised by low leaching soils and/or the presence of superficial deposits characterised by a low permeability.

Features are displayed on the Groundwater vulnerability map on page 40 >

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ID	Location	Summary	Soil / surface	Superficial geology	Bedrock geology
1	On site	**Summary Classification: Secondary superficial aquifer - Medium Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer**	**Leaching class: Intermediate Infiltration value: >70% Dilution value: 300-550mm/year**	**Vulnerability: Medium Aquifer type: Secondary Thickness: <3m Patchiness value: >90% Recharge potential: High**	**Vulnerability: Medium Aquifer type: Principal Flow mechanism: Well connected fractures**
3	40m E	Summary Classification: Secondary superficial aquifer - Medium Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer	Leaching class: Intermediate Infiltration value: >70% Dilution value: 300-550mm/year	Vulnerability: Medium Aquifer type: Secondary Thickness: <3m Patchiness value: >90% Recharge potential: No Data	Vulnerability: Medium Aquifer type: Principal Flow mechanism: Well connected fractures

This data is sourced from the British Geological Survey, the Environment Agency and Natural Resources Wales.

5.4 Groundwater vulnerability- soluble rock risk

Records on site	1

This dataset identifies areas where solution features that enable rapid movement of a pollutant may be present within a 1km grid square.

ID	Maximum soluble risk category	Percentage of grid square covered by maximum risk
2	**Significant soluble rocks are likely to be present. Low possibility of localised subsidence or dissolution-related degradation of bedrock occurring naturally, but may be possible in adverse conditions such as high surface or subsurface water flow.**	**28.000000000000004%**

This data is sourced from the British Geological Survey and the Environment Agency.

5.5 Groundwater vulnerability- local information

Records on site	0

This dataset identifies areas where additional local information affecting vulnerability is held by the Environment Agency. Further information can be obtained by contacting the Environment Agency local Area groundwater team through the Environment Agency National Customer Call Centre on 03798 506 506 or by email on enquiries@environment-agency.gov.uk ↗.

This data is sourced from the British Geological Survey and the Environment Agency.

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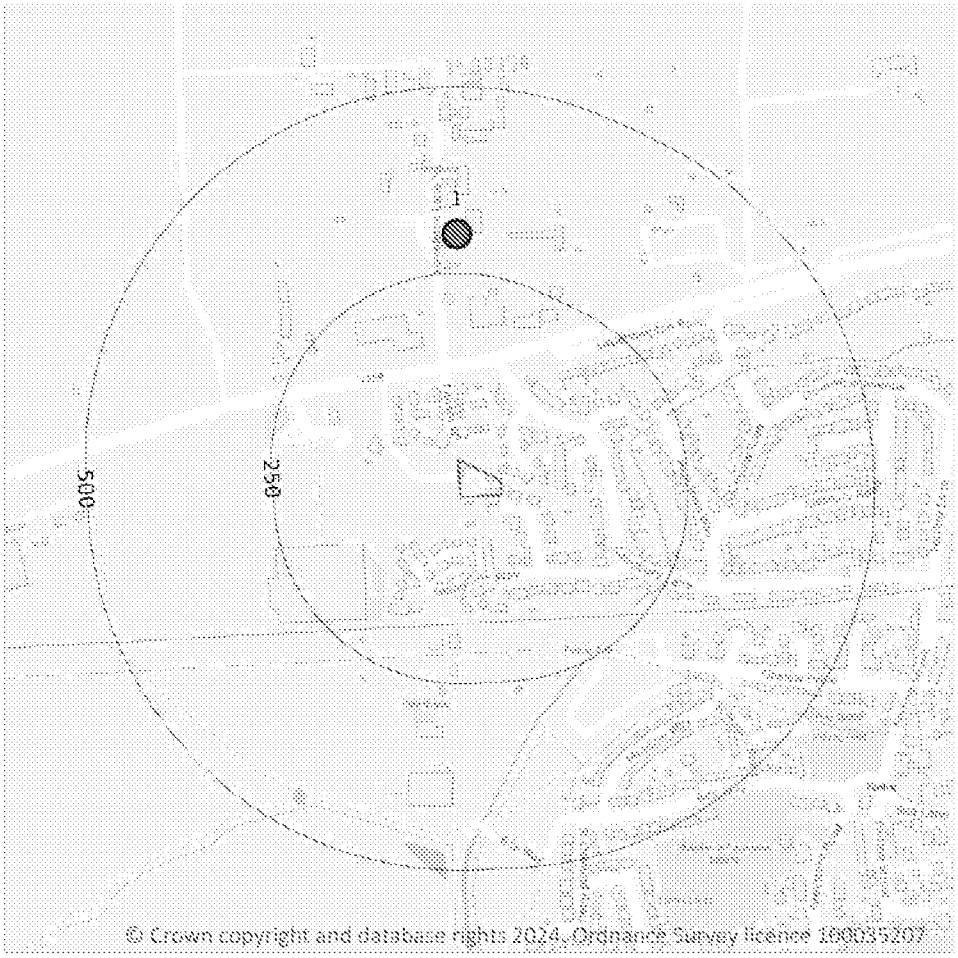
Abstractions and Source Protection Zones



Site Outline

Search buffers in metres (m)

- Source Protection Zone 1 — Inner catchment
- Source Protection Zone 2 — Outer catchment
- Source Protection Zone 3 — Total catchment
- Source Protection Zone 4 — Zone of Special Interest
- Source Protection Zone 1c — Inner catchment - confined aquifer
- Source Protection Zone 2c — Outer catchment - confined aquifer
- Source Protection Zone 3c — Total catchment - confined aquifer
- Drinking water abstraction licences
- Drinking water abstraction licences — Polygon features
- Drinking water abstraction licences — Linear features
- Groundwater abstraction licence (point)
- Groundwater abstraction licence (area)
- Groundwater abstraction licence (linear)
- Surface Water Abstractions (point)
- Surface Water Abstractions (area)
- Surface Water Abstractions (linear)

5.6 Groundwater abstractions

Records within 2000m	6

Licensed groundwater abstractions for sites extracting more than 20 cubic metres of water a day and includes active and historical records. The data may be for a single abstraction point, between two points (line data) or a larger area.

Features are displayed on the Abstractions and Source Protection Zones map on page 42 >

ID	Location	Details	
1	302m N	Status: Historical Licence No: 10/41/310103 Details: General Farming & Domestic Direct Source: Southern Region Groundwater Point: REYNARDS NURSERY Data Type: Point Name: Fox Esq Easting: 508900 Northing: 103570	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: - Expiry Date: - Issue No: 100 Version Start Date: 01/01/1971 Version End Date: -
-	311m N	Status: Active Licence No: 10/41/310112 Details: Spray Irrigation - Direct Direct Source: Southern Region Groundwater Point: ROUNDSTONE FARM FERRING Data Type: Point Name: Langmead Easting: 508580 Northing: 104120	Annual Volume (m^3): 77270 Max Daily Volume (m^3): 1620 Original Application No: 169/0753 Original Start Date: 03/11/1987 Expiry Date: - Issue No: 100 Version Start Date: 08/06/2009 Version End Date: -
-	1261m W	Status: Active Licence No: 10/41/310106 Details: Spray Irrigation - Direct Direct Source: Southern Region Groundwater Point: ROUNDSTONE NURSERY Data Type: Point Name: Haskins Roundstone Garden Centre Limited Easting: 507640 Northing: 103240	Annual Volume (m^3): 18200 Max Daily Volume (m^3): 191 Original Application No: NPS/WR/037406 Original Start Date: 27/01/1966 Expiry Date: - Issue No: 102 Version Start Date: 16/02/2022 Version End Date: -
-	1386m W	Status: Historical Licence No: 10/41/414002 Details: Horticultural Watering Direct Source: Southern Region Groundwater Point: WEST END NURSERIES Data Type: Point Name: Van Heyningen Bros. Ltd Easting: 507540 Northing: 103530	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: - Expiry Date: - Issue No: 100 Version Start Date: 11/01/1966 Version End Date: -
-	1546m NE	Status: Historical Licence No: 10/41/310110 Details: Spray Irrigation - Direct Direct Source: Southern Region Groundwater Point: NORTHBROOK FARM GORING Data Type: Point Name: S.Salbstein Limited Easting: 510230 Northing: 104120	Annual Volume (m^3): 10000 Max Daily Volume (m^3): 614 Original Application No: - Original Start Date: - Expiry Date: - Issue No: 102 Version Start Date: 01/04/2010 Version End Date: -

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ID	Location	Details	
-	1846m W	Status: Historical Licence No: 10/41/414018 Details: Horticultural Watering Direct Source: Southern Region Groundwater Point: FRESH ACRES NURSERIES Data Type: Point Name: Fresh Acres Nurseries Ltd Easting: 507140 Northing: 103820	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: - Expiry Date: - Issue No: 100 Version Start Date: 19/07/1967 Version End Date: -

This data is sourced from the Environment Agency and Natural Resources Wales.

5.7 Surface water abstractions

Records within 2000m	0

Licensed surface water abstractions for sites extracting more than 20 cubic metres of water a day and includes active and historical records. The data may be for a single abstraction point, a stretch of watercourse or a larger area.

This data is sourced from the Environment Agency and Natural Resources Wales.

5.8 Potable abstractions

Records within 2000m	0

Licensed potable water abstractions for sites extracting more than 20 cubic metres of water a day and includes active and historical records. The data may be for a single abstraction point, a stretch of watercourse or a larger area.

This data is sourced from the Environment Agency and Natural Resources Wales.

5.9 Source Protection Zones

Records within 500m	0

Source Protection Zones define the sensitivity of an area around a potable abstraction site to contamination.

This data is sourced from the Environment Agency and Natural Resources Wales.

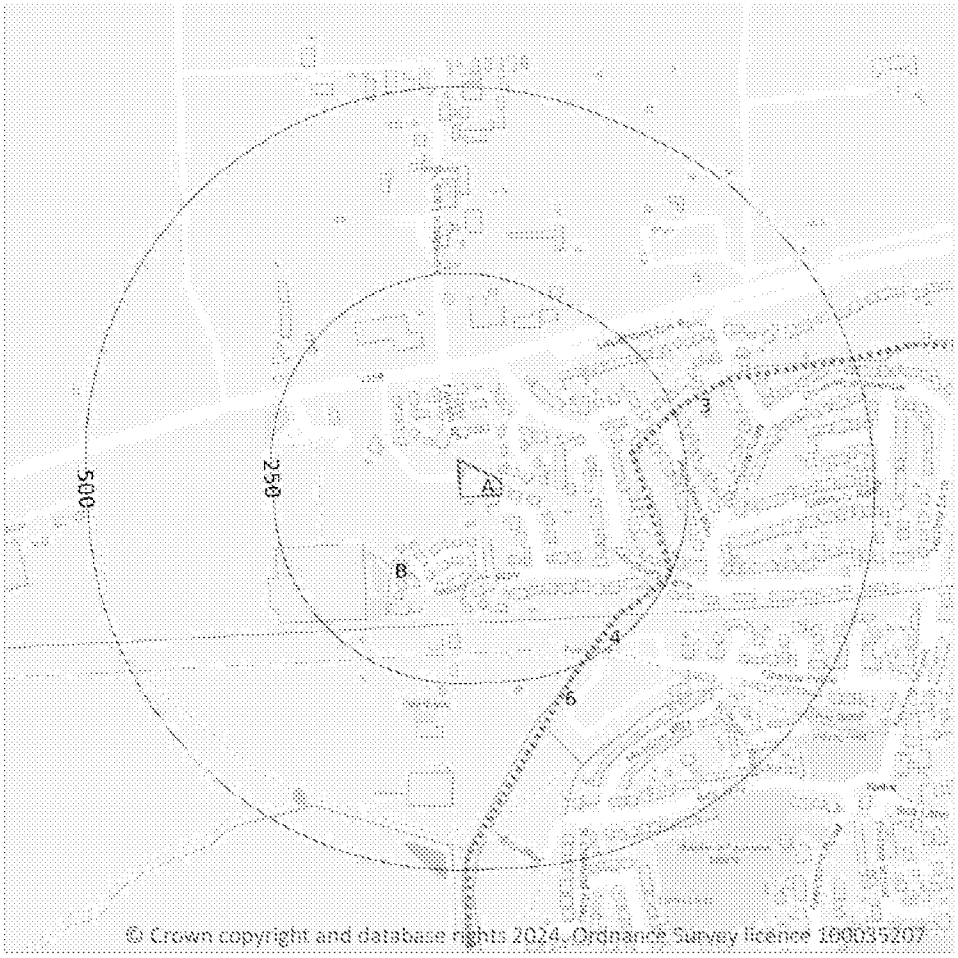
5.10 Source Protection Zones (confined aquifer)

Records within 500m	0

Source Protection Zones in the confined aquifer define the sensitivity around a deep groundwater abstraction to contamination. A confined aquifer would normally be protected from contamination by overlying geology and is only considered a sensitive resource if deep excavation/drilling is taking place.

This data is sourced from the Environment Agency and Natural Resources Wales.

6 Hydrology



Site Outline

Search buffers in metres (m)

Water Network (OS MasterMap)

Surface water features (wider than 5m)

Surface water features (narrower than 5m)

WFD River, canal and surface water transfer water bodies

WFD Lake water bodies

WFD Transitional and coastal water bodies

WFD Surface water body catchments boundaries

WFD Groundwater body boundaries

6.1 Water Network (OS MasterMap)

Records within 250m	8

Detailed water network of Great Britain showing the flow and precise central course of every river, stream, lake and canal.

Features are displayed on the Hydrology map on page 46 >

ID	Location	Type of water feature	Ground level	Permanence	Name
8	123m SW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-

ID	Location	Type of water feature	Ground level	Permanence	Name
B	130m SW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
B	130m SW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
B	166m SW	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	-
3	180m E	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Ferring Rife
B	185m SW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
4	224m SE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Ferring Rife
6	248m SE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Ferring Rife

This data is sourced from the Ordnance Survey.

6.2 Surface water features

Records within 250m	4

Covering rivers, streams and lakes (some overlap with OS MasterMap Water Network data in previous section) but additionally covers smaller features such as ponds. Rivers and streams narrower than 5m are represented as a single line. Lakes, ponds and rivers or streams wider than 5m are represented as polygons.

Features are displayed on the Hydrology map on page 46 >

This data is sourced from the Ordnance Survey.

6.3 WFD Surface water body catchments

Records on site	1

The Water Framework Directive is an EU-led framework for the protection of inland surface waters, estuaries, coastal waters and groundwater through river basin-level management planning. In terms of surface water, these basins are broken down into smaller units known as management, operational and water body catchments.

Features are displayed on the Hydrology map on page 46 >

ID	Location	Type	Water body catchment	Water body ID	Operational catchment	Management catchment
A	On site	River	Ferring Rife	GB107041073300	Arun Lower	Arun and Western Streams

This data is sourced from the Environment Agency and Natural Resources Wales.

6.4 WFD Surface water bodies

Records identified	1

Surface water bodies under the Directive may be rivers, lakes, estuary or coastal. To achieve the purpose of the Directive, environmental objectives have been set and are reported on for each water body. The progress towards delivery of the objectives is then reported on by the relevant competent authorities at the end of each six-year cycle. The river water body directly associated with the catchment listed in the previous section is detailed below, along with any lake, canal, coastal or artificial water body within 250m of the site. Click on the water body ID in the table to visit the EA Catchment Explorer to find out more about each water body listed.

Features are displayed on the Hydrology map on page 46 >

ID	Location	Type	Name	Water body ID	Overall rating	Chemical rating	Ecological rating	Year
2	181m E	River	Ferring Rife	GB107041073300 ↗	Moderate	Fail	Moderate	2019

This data is sourced from the Environment Agency and Natural Resources Wales.

6.5 WFD Groundwater bodies

Records on site	1

Groundwater bodies are also covered by the Directive and the same regime of objectives and reporting detailed in the previous section is in place. Click on the water body ID in the table to visit the EA Catchment Explorer to find out more about each groundwater body listed.

Features are displayed on the Hydrology map on page 46 >

ID	Location	Name	Water body ID	Overall rating	Chemical rating	Quantitative	Year
A	On site	Littlehampton Anticline East	GB40701G503400 ↗	Poor	Good	Poor	2019

This data is sourced from the Environment Agency and Natural Resources Wales.

7 River and coastal flooding

Site Outline

Search buffers in metres (m)

River and coastal flooding:

- High
- Medium
- Low
- Very Low
- Historical Flood Events
- Areas Used for Flood Storage
- Areas Benefiting from Flood Defences
- Flood Defences

7.1 Risk of flooding from rivers and the sea

Records within 50m	0

The chance of flooding from rivers and/or the sea in any given year, based on cells of 50m within the Risk of Flooding from Rivers and Sea (RoFRaS)/Flood Risk Assessment Wales (FRAW) models. Each cell is allocated one of four flood risk categories, taking into account flood defences and their condition. The risk categories for RoFRaS for rivers and the sea and FRAW for rivers are; Very low (less than 1 in 1000 chance in any given year), Low (less than 1 in 100 but greater than or equal to 1 in 1000 chance), Medium (less than 1 in 30 but greater than or equal to 1 in 100 chance) or High (greater than or equal to 1 in 30 chance). The risk categories for FRAW for the sea are; Very low (less than 1 in 1000 chance in any given year), Low (less than 1 in 200 but greater than or equal to 1 in 1000 chance), Medium (less than 1 in 30 but greater than or equal to 1 in 200 chance) or High (greater than or equal to 1 in 30 chance).

This data is sourced from the Environment Agency and Natural Resources Wales.

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7.2 Historical Flood Events

Records within 250m	1

Records of historic flooding from rivers, the sea, groundwater and surface water. Records began in 1946 when predecessor bodies started collecting detailed information about flooding incidents, although limited details may be included on flooding incidents prior to this date. Takes into account the presence of defences, structures, and other infrastructure where they existed at the time of flooding, and includes flood extents that may have been affected by overtopping, breaches or blockages.

Features are displayed on the River and coastal flooding map on page 49 >

ID	Location	Event name	Date of flood	Flood source	Flood cause	Type of flood
A	92m NE	Ferring 1980	1980-10-10 1980-10-10	Drainage	Other	Fluvial

This data is sourced from the Environment Agency and Natural Resources Wales.

7.3 Flood Defences

Records within 250m	0

Records of flood defences owned, managed or inspected by the Environment Agency and Natural Resources Wales. Flood defences can be structures, buildings or parts of buildings. Typically these are earth banks, stone and concrete walls, or sheet-piling that is used to prevent or control the extent of flooding.

This data is sourced from the Environment Agency and Natural Resources Wales.

7.4 Areas Benefiting from Flood Defences

Records within 250m	0

Areas that would benefit from the presence of flood defences in a 1 in 100 (1%) chance of flooding each year from rivers or 1 in 200 (0.5%) chance of flooding each year from the sea.

This data is sourced from the Environment Agency and Natural Resources Wales.

7.5 Flood Storage Areas

Records within 250m	0

Areas that act as a balancing reservoir, storage basin or balancing pond to attenuate an incoming flood peak to a flow level that can be accepted by the downstream channel or to delay the timing of a flood peak so that its volume is discharged over a longer period.

This data is sourced from the Environment Agency and Natural Resources Wales.

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River and coastal flooding - Flood Zones

7.6 Flood Zone 2

Records within 50m	0

Areas of land at risk of flooding, when the presence of flood defences are ignored. Covering land between Flood Zone 3 (see next section) and the extent of the flooding from rivers or the sea with a 1 in 1000 (0.1%) chance of flooding each year.

This data is sourced from the Environment Agency and Natural Resources Wales.

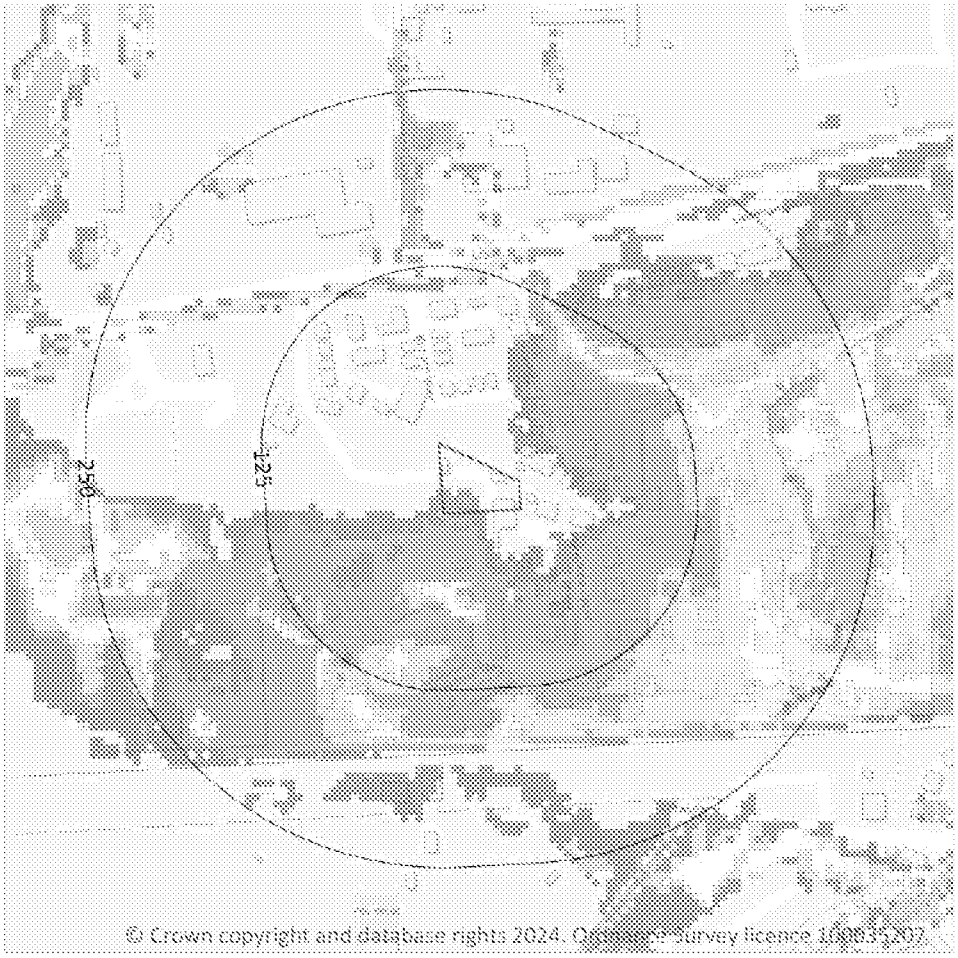
7.7 Flood Zone 3

Records within 50m	0

Areas of land at risk of flooding, when the presence of flood defences are ignored. Covering land with a 1 in 100 (1%) or greater chance of flooding each year from rivers or a 1 in 200 (0.5%) or greater chance of flooding each year from the sea.

This data is sourced from the Environment Agency and Natural Resources Wales.

8 Surface water flooding



Site Outline
Search buffers in metres (m)

1 in 1000 return period
- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

1 in 250 return period
- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

1 in 100 return period
- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

1 in 30 return period
- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

8.1 Surface water flooding

Highest risk on site	**1 in 1000 year, 0.3m - 1.0m**
Highest risk within 50m	**1 in 100 year, 0.3m - 1.0m**

Ambiental Risk Analytics surface water (pluvial) FloodMap identifies areas likely to flood as a result of extreme rainfall events, i.e. land naturally vulnerable to surface water ponding or flooding. This data set was produced by simulating 1 in 30 year, 1 in 100 year, 1 in 250 year and 1 in 1,000 year rainfall events. Modern urban drainage systems are typically built to cope with rainfall events between 1 in 20 and 1 in 30 years, though some older ones may flood in a 1 in 5 year rainfall event.

Features are displayed on the Surface water flooding map on page 52 >

The data shown on the map and in the table above shows the highest likelihood of flood events happening at the site. Lower likelihood events may have greater flood depths and hence a greater potential impact on a site.

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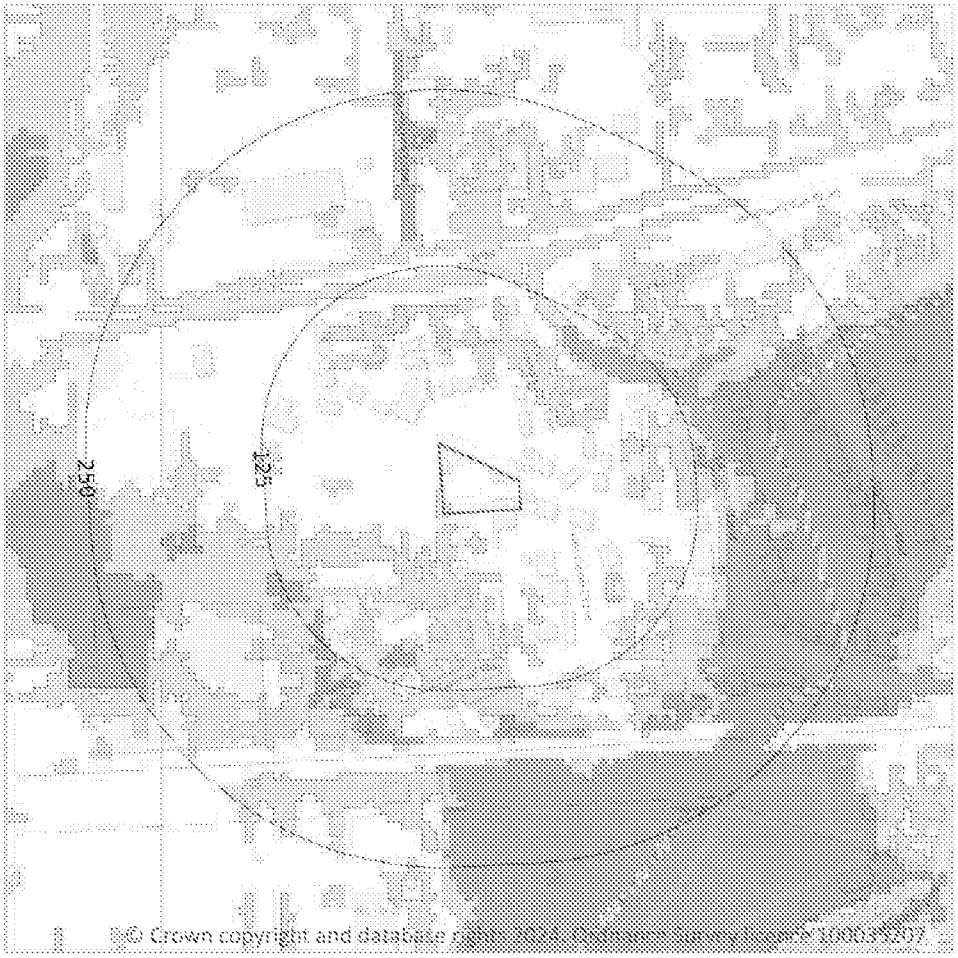
The table below shows the maximum flood depths for a range of return periods for the site.

Return period	Maximum modelled depth
1 in 1000 year	Between 0.3m and 1.0m
1 in 250 year	Negligible
1 in 100 year	Negligible
1 in 30 year	Negligible

This data is sourced from Ambiental Risk Analytics.

9 Groundwater flooding



Site Outline

Search buffers in metres (m)

- High
- Moderate - High
- Moderate
- Low
- Negligible

9.1 Groundwater flooding

Highest risk on site	**Moderate-High**
Highest risk within 50m	**Moderate-High**

Groundwater flooding is caused by unusually high groundwater levels. It occurs when the water table rises above the ground surface or within underground structures such as basements or cellars. Groundwater flooding tends to exhibit a longer duration than surface water flooding, possibly lasting for weeks or months, and as a result it can cause significant damage to property. This risk assessment is based on a 1 in 100 year return period and a 5m Digital Terrain Model (DTM).

Features are displayed on the Groundwater flooding map on page 54 >

This data is sourced from Ambiental Risk Analysis.

10 Environmental designations

Site Outline

Search buffers in metres (m)

Designated Ancient Woodland

10.1 Sites of Special Scientific Interest (SSSI)

Records within 2000m	0

Sites providing statutory protection for the best examples of UK flora, fauna, or geological or physiographical features. Originally notified under the National Parks and Access to the Countryside Act 1949, SSSIs were re-notified under the Wildlife and Countryside Act 1981. Improved provisions for the protection and management of SSSIs were introduced by the Countryside and Rights of Way Act 2000 (in England and Wales) and (in Scotland) by the Nature Conservation (Scotland) Act 2004 and the Wildlife and Natural Environment (Scotland) Act 2010.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.2 Conserved wetland sites (Ramsar sites)

Records within 2000m	0

Ramsar sites are designated under the Convention on Wetlands of International Importance, agreed in Ramsar, Iran, in 1971. They cover all aspects of wetland conservation and wise use, recognizing wetlands as ecosystems that are extremely important for biodiversity conservation in general and for the well-being of human communities. These sites cover a broad definition of wetland; marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, and even some marine areas.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.3 Special Areas of Conservation (SAC)

Records within 2000m	0

Areas which have been identified as best representing the range and variety within the European Union of habitats and (non-bird) species listed on Annexes I and II to the Directive. SACs are designated under the EC Habitats Directive.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.4 Special Protection Areas (SPA)

Records within 2000m	0

Sites classified by the UK Government under the EC Birds Directive, SPAs are areas of the most important habitat for rare (listed on Annex I to the Directive) and migratory birds within the European Union.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.5 National Nature Reserves (NNR)

Records within 2000m	0

Sites containing examples of some of the most important natural and semi-natural terrestrial and coastal ecosystems in Great Britain. They are managed to conserve their habitats, provide special opportunities for scientific study or to provide public recreation compatible with natural heritage interests.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

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10.6 Local Nature Reserves (LNR)

Records within 2000m	0

Sites managed for nature conservation, and to provide opportunities for research and education, or simply enjoying and having contact with nature. They are declared by local authorities under the National Parks and Access to the Countryside Act 1949 after consultation with the relevant statutory nature conservation agency.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.7 Designated Ancient Woodland

Records within 2000m	8

Ancient woodlands are classified as areas which have been wooded continuously since at least 1600 AD. This includes semi-natural woodland and plantations on ancient woodland sites. 'Wooded continuously' does not mean there is or has previously been continuous tree cover across the whole site, and not all trees within the woodland have to be old.

Features are displayed on the Environmental designations map on page 55 >

ID	Location	Name	Woodland Type
1	1264m N	Unknown	Ancient & Semi-Natural Woodland
-	1458m NE	Farmer Land Coppice	Ancient & Semi-Natural Woodland
A	1532m NE	White House Coppice, Millers Croft	Ancient & Semi-Natural Woodland
-	1717m NE	The White House Coppice	Ancient & Semi-Natural Woodland
-	1775m NE	The White House Coppice	Ancient & Semi-Natural Woodland
-	1782m NE	The White House Coppice	Ancient & Semi-Natural Woodland
-	1840m NE	Unknown	Ancient & Semi-Natural Woodland
-	1994m NE	Unknown	Ancient & Semi-Natural Woodland

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.8 Biosphere Reserves

Records within 2000m	0

Biosphere Reserves are internationally recognised by UNESCO as sites of excellence to balance conservation and socioeconomic development between nature and people. They are recognised under the Man and the Biosphere (MAB) Programme with the aim of promoting sustainable development founded on the work of the local community.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

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10.9 Forest Parks

Records within 2000m	0

These are areas managed by the Forestry Commission designated on the basis of recreational, conservation or scenic interest.

This data is sourced from the Forestry Commission.

10.10 Marine Conservation Zones

Records within 2000m	0

A type of marine nature reserve in UK waters established under the Marine and Coastal Access Act (2009). They are designated with the aim to protect nationally important, rare or threatened habitats and species.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.11 Green Belt

Records within 2000m	0

Areas designated to prevent urban sprawl by keeping land permanently open.

This data is sourced from the Ministry of Housing, Communities and Local Government.

10.12 Proposed Ramsar sites

Records within 2000m	0

Ramsar sites are areas listed as a Wetland of International Importance under the Convention on Wetlands of International Importance especially as Waterfowl Habitat (the Ramsar Convention) 1971. The sites here supplied have a status of 'Proposed' having been identified for potential adoption under the framework.

This data is sourced from Natural England.

10.13 Possible Special Areas of Conservation (pSAC)

Records within 2000m	0

Special Areas of Conservation are areas which have been identified as best representing the range and variety within the European Union of habitats and (non-bird) species listed on Annexes I and II to the Directive. SACs are designated under the EC Habitats Directive. Those sites supplied here are those with a status of 'Possible' having been identified for potential adoption under the framework.

This data is sourced from Natural England and Natural Resources Wales.

10.14 Potential Special Protection Areas (pSPA)

Records within 2000m	0

Special Protection Areas (SPAs) are areas designated (or 'classified') under the European Union Wild Birds Directive for the protection of nationally and internationally important populations of wild birds. Those sites supplied here are those with a status of 'Potential' having been identified for potential adoption under the framework.

This data is sourced from Natural England.

10.15 Nitrate Sensitive Areas

Records within 2000m	0

Areas where nitrate concentrations in drinking water sources exceeded or was at risk of exceeding the limit of 50 mg/l set by the 1980 EC Drinking Water Directive. Voluntary agricultural measures as a means of reducing the levels of nitrate were introduced by DEFRA as MAFF, with payments being made to farmers who complied. The scheme was started as a pilot in 1990 in ten areas, later implemented within 32 areas. The scheme was closed to further new entrants in 1998, although existing agreements continued for their full term. All Nitrate Sensitive Areas fell within the areas designated as Nitrate Vulnerable Zones (NVZs) in 1996 under the EC Nitrate Directive (91/676/EEC).

This data is sourced from Natural England.

10.16 Nitrate Vulnerable Zones

Records within 2000m	1

Areas at risk from agricultural nitrate pollution designated under the EC Nitrate Directive (91/676/EEC). These are areas of land that drain into waters polluted by nitrates. Farmers operating within these areas have to follow mandatory rules to tackle nitrate loss from agriculture.

Location	Name	Type	NVZ ID	Status
1866m N	Sussex Chalk	Groundwater	S6	Existing

This data is sourced from Natural England and Natural Resources Wales.

SSSI Impact Zones and Units

Site Outline

Search buffers in metres (m)

SSSI Impact Risk Zones

SSSI Units

Not recorded

Favourable

Unfavourable - Recovering

Unfavourable - No change

Unfavourable - Declining

Partially destroyed

Destroyed

10.17 SSSI Impact Risk Zones

Records on site	1

Developed to allow rapid initial assessment of the potential risks to SSSIs posed by development proposals. They define zones around each SSSI which reflect the particular sensitivities of the features for which it is notified and indicate the types of development proposal which could potentially have adverse impacts.

Features are displayed on the SSSI Impact Zones and Units map on page 60 >

ID	Location	Type of developments requiring consultation
1	On site	**Infrastructure - Airports, helipads and other aviation proposals.**

This data is sourced from Natural England.

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10.18 SSSI Units

Records within 2000m	0

Divisions of SSSIs used to record management and condition details. Units are the smallest areas for which Natural England gives a condition assessment, however, the size of units varies greatly depending on the types of management and the conservation interest.

This data is sourced from Natural England and Natural Resources Wales.

11 Visual and cultural designations

Site Outline

Search buffers in metres (m)

- Listed buildings
- Conservation areas
- Conservation areas - no data
- National Parks
- Areas of Outstanding Natural Beauty
- Registered parks and gardens
- Scheduled Monuments
- World Heritage Sites

11.1 World Heritage Sites

Records within 250m	0

Sites designated for their globally important cultural or natural interest requiring appropriate management and protection measures. World Heritage Sites are designated to meet the UK's commitments under the World Heritage Convention.

This data is sourced from Historic England, Cadw and Historic Environment Scotland.

11.2 Area of Outstanding Natural Beauty

Records within 250m	0

Areas of Outstanding Natural Beauty (AONB) are conservation areas, chosen because they represent 18% of the finest countryside. Each AONB has been designated for special attention because of the quality of their flora, fauna, historical and cultural associations, and/or scenic views. The National Parks and Access to the Countryside Act of 1949 created AONBs and the Countryside and Rights of Way Act, 2000 added further regulation and protection. There are likely to be restrictions to some developments within these areas.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

11.3 National Parks

Records within 250m	0

In England and Wales, the purpose of National Parks is to conserve and enhance landscapes within the countryside whilst promoting public enjoyment of them and having regard for the social and economic well-being of those living within them. In Scotland National Parks have the additional purpose of promoting the sustainable use of the natural resources of the area and the sustainable social and economic development of its communities. The National Parks and Access to the Countryside Act 1949 established the National Park designation in England and Wales, and The National Parks (Scotland) Act 2000 in Scotland.

This data is sourced from Natural England, Natural Resources Wales and the Scottish Government.

11.4 Listed Buildings

Records within 250m	2

Buildings listed for their special architectural or historical interest. Building control in the form of 'listed building consent' is required in order to make any changes to that building which might affect its special interest. Listed buildings are graded to indicate their relative importance, however building controls apply to all buildings equally, irrespective of their grade, and apply to the interior and exterior of the building in its entirety, together with any curtilage structures.

Features are displayed on the Visual and cultural designations map on page 62 >

ID	Location	Name	Grade	Reference Number	Listed date
1	120m E	North Hangelton South Hangelton	II	1027656	12/10/1954
2	155m E	Hangelton Cottage Inglenook	II	1027616	20/09/1984

This data is sourced from Historic England, Cadw and Historic Environment Scotland.

11.5 Conservation Areas

Records within 250m	0

Local planning authorities are obliged to designate as conservation areas any parts of their own area that are of special architectural or historic interest, the character and appearance of which it is desirable to preserve or enhance. Designation of a conservation area gives broader protection than the listing of individual buildings. All the features within the area, listed or otherwise, are recognised as part of its character. Conservation area designation is the means of recognising the importance of all factors and of ensuring that planning decisions address the quality of the landscape in its broadest sense.

This data is sourced from Historic England, Cadw and Historic Environment Scotland.

11.6 Scheduled Ancient Monuments

Records within 250m	0

A scheduled monument is an historic building or site that is included in the Schedule of Monuments kept by the Secretary of State for Digital, Culture, Media and Sport. The regime is set out in the Ancient Monuments and Archaeological Areas Act 1979. The Schedule of Monuments has c.20,000 entries and includes sites such as Roman remains, burial mounds, castles, bridges, earthworks, the remains of deserted villages and industrial sites. Monuments are not graded, but all are, by definition, considered to be of national importance.

This data is sourced from Historic England, Cadw and Historic Environment Scotland.

11.7 Registered Parks and Gardens

Records within 250m	0

Parks and gardens assessed to be of particular interest and of special historic interest. The emphasis being on 'designed' landscapes, rather than on planting or botanical importance. Registration is a 'material consideration' in the planning process, meaning that planning authorities must consider the impact of any proposed development on the special character of the landscape.

This data is sourced from Historic England, Cadw and Historic Environment Scotland.

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12 Agricultural designations

Site Outline

Search buffers in metres (m)

- Grade 1 - excellent quality
- Grade 2 - very good quality
- Grade 3 - good to moderate quality
- Grade 3a - good quality
- Grade 3b - moderate quality
- Grade 4 - poor quality
- Grade 5 - very poor quality
- Non-agricultural land
- Urban land
- Exclusion land
- Tree felling licences
- Open Access land

12.1 Agricultural Land Classification

Records within 250m	2

Classification of the quality of agricultural land taking into consideration multiple factors including climate, physical geography and soil properties. It should be noted that the categories for the grading of agricultural land are not consistent across England, Wales and Scotland.

Features are displayed on the Agricultural designations map on page 65 >

ID	Location	Classification	Description
1	On site	Urban	-
2	On site	Grade 1	Excellent quality agricultural land. Land with no or very minor limitations to agricultural use. A very wide range of agricultural and horticultural crops can be grown and commonly includes top fruit, soft fruit, salad crops and winter harvested vegetables. Yields are high and less variable than on land of lower quality.

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This data is sourced from Natural England.

12.2 Open Access Land

Records within 250m	0

The Countryside and Rights of Way Act 2000 (CROW Act) gives a public right of access to land without having to use paths. Access land includes mountains, moors, heaths and downs that are privately owned. It also includes common land registered with the local council and some land around the England Coast Path. Generally permitted activities on access land are walking, running, watching wildlife and climbing.

This data is sourced from Natural England and Natural Resources Wales.

12.3 Tree Felling Licences

Records within 250m	0

Felling Licence Application (FLA) areas approved by Forestry Commission England. Anyone wishing to fell trees must ensure that a licence or permission under a grant scheme has been issued by the Forestry Commission before any felling is carried out or that one of the exceptions apply.

This data is sourced from the Forestry Commission.

12.4 Environmental Stewardship Schemes

Records within 250m	0

Environmental Stewardship covers a range of schemes that provide financial incentives to farmers, foresters and land managers to look after and improve the environment. The schemes identified may be historical schemes that have now expired, or may still be active.

This data is sourced from Natural England.

12.5 Countryside Stewardship Schemes

Records within 250m	0

Countryside Stewardship covers a range of schemes that provide financial incentives to farmers, foresters and land managers to look after and improve the environment. Main objectives are to improve the farmed environment for wildlife and to reduce diffuse water pollution.

This data is sourced from Natural England.

13 Habitat designations

13.1 Priority Habitat Inventory

Records within 250m	0

Habitats of principal importance as named under Natural Environment and Rural Communities Act (2006) Section 41.

This data is sourced from Natural England.

13.2 Habitat Networks

Records within 250m	0

Habitat networks for 18 priority habitat networks (based primarily, but not exclusively, on the priority habitat inventory) and areas suitable for the expansion of networks through restoration and habitat creation.

This data is sourced from Natural England.

13.3 Open Mosaic Habitat

Records within 250m	0

Sites verified as Open Mosaic Habitat. Mosaic habitats are brownfield sites that are identified under the UK Biodiversity Action Plan as a priority habitat due to the habitat variation within a single site, supporting an array of invertebrates.

This data is sourced from Natural England.

13.4 Limestone Pavement Orders

Records within 250m	0

Limestone pavements are outcrops of limestone where the surface has been worn away by natural means over millennia. These rocks have the appearance of paving blocks, hence their name. Not only do they have geological interest, they also provide valuable habitats for wildlife. These habitats are threatened due to their removal for use in gardens and water features. Many limestone pavements have been designated as SSSIs which affords them some protection. In addition, Section 34 of the Wildlife and Countryside Act 1981 gave them additional protection via the creation of Limestone Pavement Orders, which made it a criminal offence to remove any part of the outcrop. The associated Limestone Pavement Priority Habitat is part of the UK Biodiversity Action Plan priority habitat in England.

This data is sourced from Natural England.

14 Geology 1:10,000 scale - Availability

Site Outline

Search buffers in metres (m)

- Full coverage
- Partial coverage
- No coverage

14.1 10k Availability

Records within 500m	1

An indication on the coverage of 1:10,000 scale geology data for the site, the most detailed dataset provided by the British Geological Survey. Either 'Full', 'Partial' or 'No coverage' for each geological theme.

Features are displayed on the Geology 1:10,000 scale - Availability map on page 68 >

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	On site	No coverage	Full	Full	No coverage	TQ00SE

This data is sourced from the British Geological Survey.

ARUN DISTRICT COUNCIL FG/15/25/PL

Geology 1:10,000 scale - Artificial and made ground

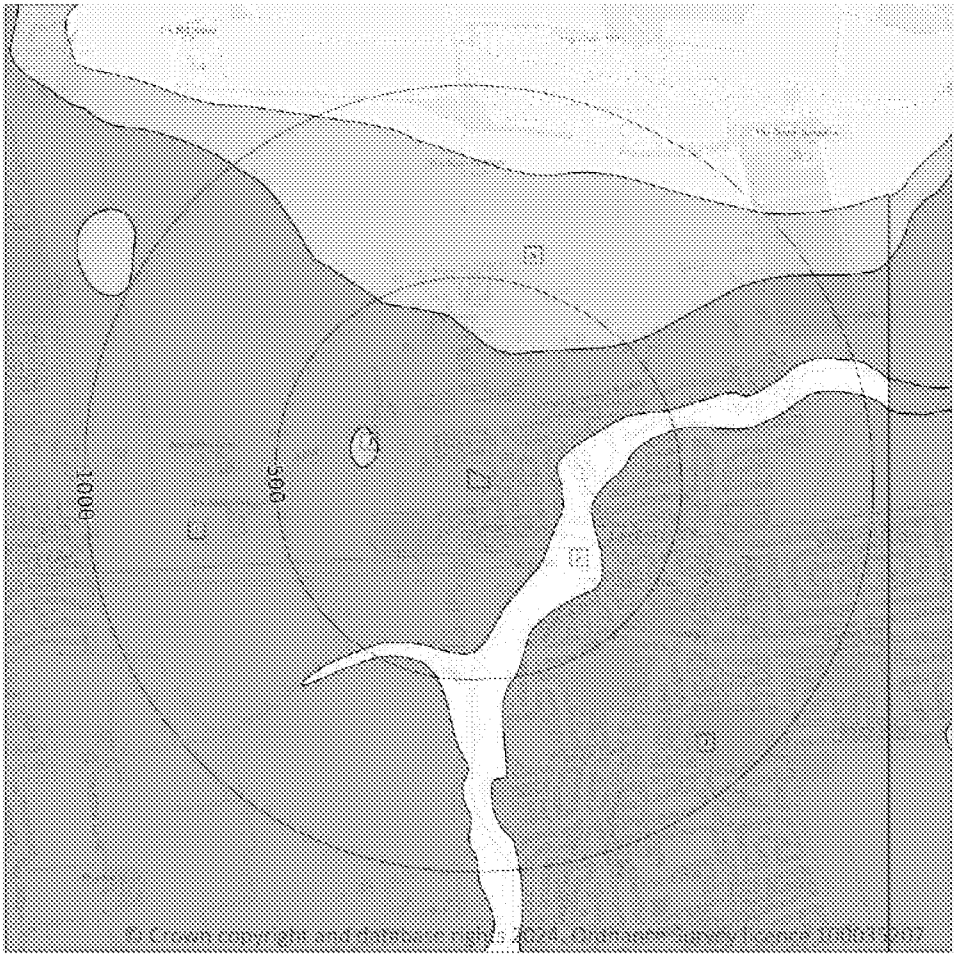
14.2 Artificial and made ground (10k)

Records within 500m	0

Details of made, worked, infilled, disturbed and landscaped ground at 1:10,000 scale. Artificial ground can be associated with potentially contaminated material, unpredictable engineering conditions and instability.

This data is sourced from the British Geological Survey.

Geology 1:10,000 scale - Superficial



Site Outline

Search buffers in metres (m)

Landslip (10k)

Superficial geology (10k)
Please see table for more details.

14.3 Superficial geology (10k)

Records within 500m	5

Superficial geological deposits at 1:10,000 scale. Also known as 'drift', these are the youngest geological deposits, formed during the Quaternary. They rest on older deposits or rocks referred to as bedrock.

Features are displayed on the Geology 1:10,000 scale - Superficial map on page 70 >

ID	Location	LEX Code	Description	Rock description
1	**On site**	**BRK-Z**	**Brickearth - Silt**	**Silt**
2	178m E	ALV-XSZC	Alluvium - Sand, Silt And Clay	Sand, Silt And Clay
3	239m W	HEAD-DMTN	Head - Diamicton	Diamicton

ARUN DISTRICT COUNCIL FG/15/25/PL

ID	Location	LEX Code	Description	Rock description
4	272m E	BRK-Z	Brickearth - Silt	Silt
5	319m N	HEAD-DMTN	Head - Diamicton	Diamicton

This data is sourced from the British Geological Survey.

14.4 Landslip (10k)

Records within 500m	0

Mass movement deposits on BGS geological maps at 1:10,000 scale. Primarily superficial deposits that have moved down slope under gravity to form landslips. These affect bedrock, other superficial deposits and artificial ground.

This data is sourced from the British Geological Survey.

Geology 1:10,000 scale - Bedrock

Site Outline

Search buffers in metres (m)

Bedrock faults and other linear features (10k)

Bedrock geology (10k)
Please see table for more details.

14.5 Bedrock geology (10k)

Records within 500m	2

Bedrock geology at 1:10,000 scale. The main mass of rocks forming the Earth and present everywhere, whether exposed at the surface in outcrops or concealed beneath superficial deposits or water.

Features are displayed on the Geology 1:10,000 scale - Bedrock map on page 72 >

ID	Location	LEX Code	Description	Rock age
1	On site	LPCK-CHLK	Lewes Nodular Chalk Formation, Seaford Chalk Formation, Newhaven Chalk Formation, Culver Chalk Formation And Portsdown Chalk Formation (undifferentiated) - Chalk	Campanian Age - Turonian Age
2	15m SW	NPCH-CHLK	New Pit Chalk Formation - Chalk	Turonian Age

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This data is sourced from the British Geological Survey.

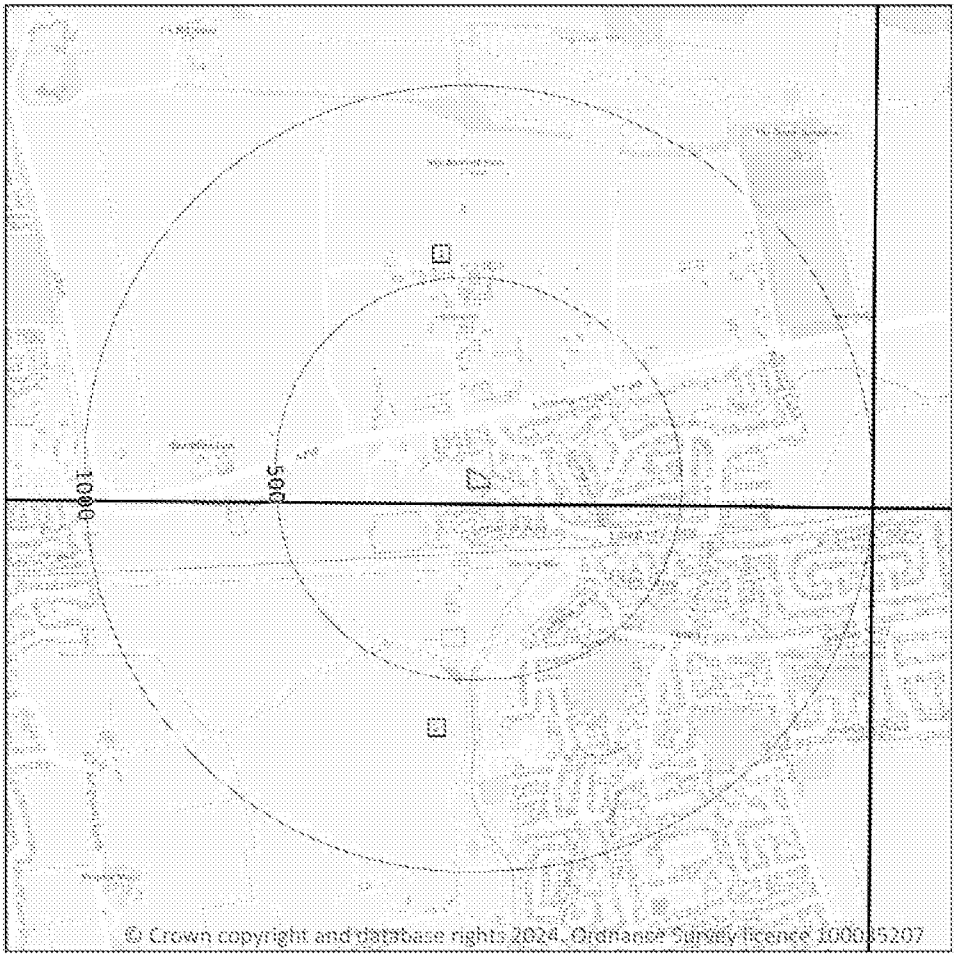
14.6 Bedrock faults and other linear features (10k)

Records within 500m	0

Linear features at the ground or bedrock surface at 1:10,000 scale of six main types; rock, fault, fold axis, mineral vein, alteration area or landform. Features are either observed or inferred, and relate primarily to bedrock.

This data is sourced from the British Geological Survey.

15 Geology 1:50,000 scale - Availability



Site Outline

Search buffers in metres (m)

Geological map tile

15.1 50k Availability

Records within 500m	2

An indication on the coverage of 1:50,000 scale geology data for the site. Either 'Full' or 'No coverage' for each geological theme.

Features are displayed on the Geology 1:50,000 scale - Availability map on page 74 >

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	**On site**	**Full**	**Full**	**Full**	**Full**	**EW317_332_chichester_and_bognor_v4**
2	42m S	Full	Full	Full	Full	EW317_332_chichester_and_

This data is sourced from the British Geological Survey.

Geology 1:50,000 scale - Artificial and made ground

15.2 Artificial and made ground (50k)

Records within 500m	0

Details of made, worked, infilled, disturbed and landscaped ground at 1:50,000 scale. Artificial ground can be associated with potentially contaminated material, unpredictable engineering conditions and instability.

This data is sourced from the British Geological Survey.

15.3 Artificial ground permeability (50k)

Records within 50m	0

A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of any artificial deposits (the zone between the land surface and the water table).

This data is sourced from the British Geological Survey.

Geology 1:50,000 scale - Superficial

Site Outline

Search buffers in metres (m)

Landslip (50k)

Superficial geology (50k)
Please see table for more details.

15.4 Superficial geology (50k)

Records within 500m	8

Superficial geological deposits at 1:50,000 scale. Also known as 'drift', these are the youngest geological deposits, formed during the Quaternary. They rest on older deposits or rocks referred to as bedrock.

Features are displayed on the Geology 1:50,000 scale - Superficial map on page 76 >

ID	Location	LEX Code	Description	Rock description
1	**On site**	**RTDU-XSZC**	**RIVER TERRACE DEPOSITS (UNDIFFERENTIATED)**	**SAND, SILT AND CLAY**
2	42m S	RTDU-XSZC	RIVER TERRACE DEPOSITS (UNDIFFERENTIATED)	SAND, SILT AND CLAY
3	150m E	ALV-XCZSV	ALLUVIUM	CLAY, SILT, SAND AND GRAVEL
4	176m E	ALV-XCZSV	ALLUVIUM	CLAY, SILT, SAND AND GRAVEL

ID	Location	LEX Code	Description	Rock description
5	252m E	RTDU-XSZC	RIVER TERRACE DEPOSITS (UNDIFFERENTIATED)	SAND, SILT AND CLAY
6	252m E	RTDU-XSZC	RIVER TERRACE DEPOSITS (UNDIFFERENTIATED)	SAND, SILT AND CLAY
7	257m W	HEAD-XCZSV	HEAD	CLAY, SILT, SAND AND GRAVEL
8	314m N	HEAD-XCZSV	HEAD	CLAY, SILT, SAND AND GRAVEL

This data is sourced from the British Geological Survey.

15.5 Superficial permeability (50k)

Records within 50m	1

A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of any superficial deposits (the zone between the land surface and the water table).

Location	Flow type	Maximum permeability	Minimum permeability
On site	Intergranular	High	Low

This data is sourced from the British Geological Survey.

15.6 Landslip (50k)

Records within 500m	0

Mass movement deposits on BGS geological maps at 1:50,000 scale. Primarily superficial deposits that have moved down slope under gravity to form landslips. These affect bedrock, other superficial deposits and artificial ground.

This data is sourced from the British Geological Survey.

15.7 Landslip permeability (50k)

Records within 50m	0

A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of any landslip deposits (the zone between the land surface and the water table).

This data is sourced from the British Geological Survey.

Geology 1:50,000 scale - Bedrock

Site Outline

Search buffers in metres (m)

Bedrock faults and other linear features (50k)

Bedrock geology (50k)
Please see table for more details.

15.8 Bedrock geology (50k)

Records within 500m	3

Bedrock geology at 1:50,000 scale. The main mass of rocks forming the Earth and present everywhere, whether exposed at the surface in outcrops or concealed beneath superficial deposits or water.

Features are displayed on the Geology 1:50,000 scale - Bedrock map on page 78 >

ID	Location	LEX Code	Description	Rock age
1	On site	LPCK-CHLK	LEWES NODULAR CHALK FORMATION, SEAFORD CHALK FORMATION, NEWHAVEN CHALK FORMATION, CULVER CHALK FORMATION AND PORTSDOWN CHALK FORMATION (UNDIFFERENTIATED) - CHALK	TURONIAN
2	16m SW	NPCH-CHLK	NEW PIT CHALK FORMATION - CHALK	TURONIAN

ID	Location	LEX Code	Description	Rock age
3	42m S	NPCH-CHLK	NEW PIT CHALK FORMATION - CHALK	TURONIAN

This data is sourced from the British Geological Survey.

15.9 Bedrock permeability (50k)

Records within 50m	2

A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of bedrock (the zone between the land surface and the water table).

Location	Flow type	Maximum permeability	Minimum permeability
On site	**Fracture**	**Very High**	**Very High**
16m SW	Fracture	Very High	Very High

This data is sourced from the British Geological Survey.

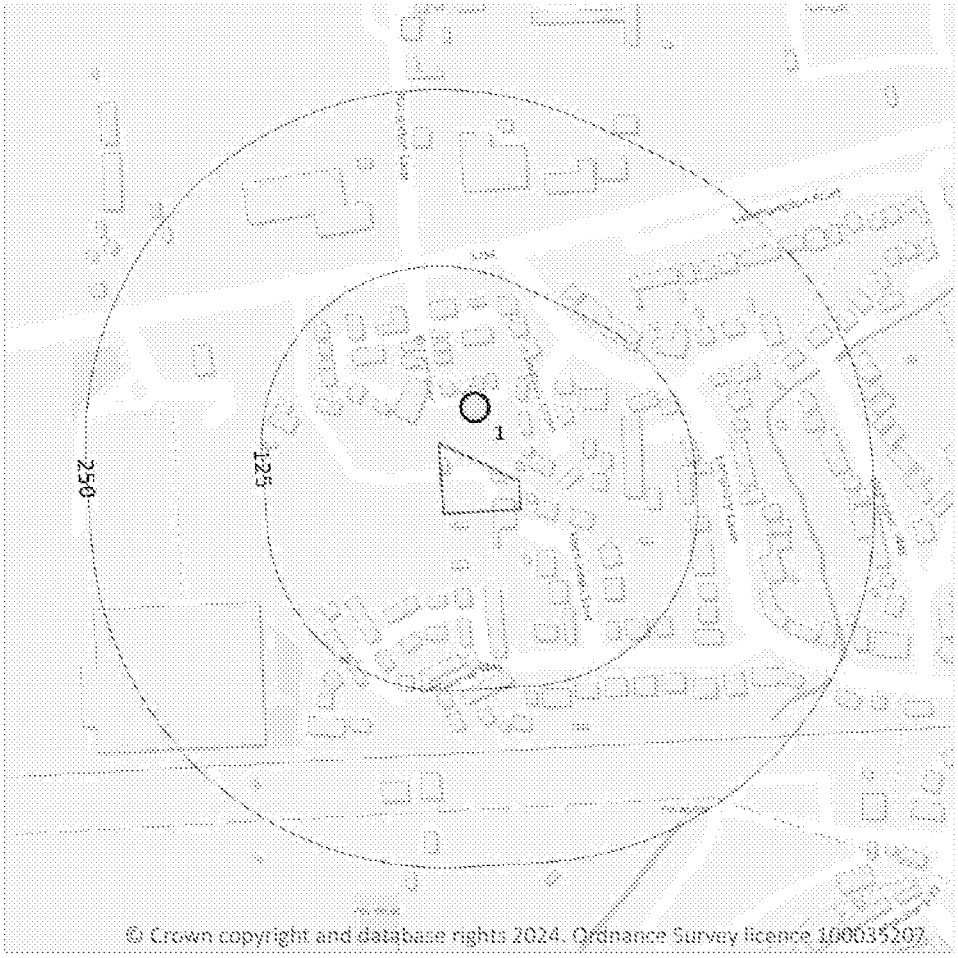
15.10 Bedrock faults and other linear features (50k)

Records within 500m	0

Linear features at the ground or bedrock surface at 1:50,000 scale of six main types; rock, fault, fold axis, mineral vein, alteration area or landform. Features are either observed or inferred, and relate primarily to bedrock.

This data is sourced from the British Geological Survey.

16 Boreholes



Site Outline

Search buffers in metres (m)

Confidential

0 - 10m

10 - 30m

30m+

Unknown

16.1 BGS Boreholes

Records within 250m	1

The Single Onshore Boreholes Index (SOBI); an index of over one million records of boreholes, shafts and wells from all forms of drilling and site investigation work held by the British Geological Survey. Covering onshore and nearshore boreholes dating back to at least 1790 and ranging from one to several thousand metres deep.

Features are displayed on the Boreholes map on page 80 >

ID	Location	Grid reference	Name	Length	Confidential	Web link
1	34m N	508927 103293	GREENSIDE LITTLEHAMPTON ROAD FERRING	21.0	N	19078272 ↗

This data is sourced from the British Geological Survey.

17 Natural ground subsidence - Shrink swell clays

Site Outline

Search buffers in metres (m)

- No data
- Negligible
- Very low
- Low
- Moderate
- High

17.1 Shrink swell clays

Records within 50m	1

The potential hazard presented by soils that absorb water when wet (making them swell), and lose water as they dry (making them shrink). This shrink-swell behaviour is controlled by the type and amount of clay in the soil, and by seasonal changes in the soil moisture content (related to rainfall and local drainage).

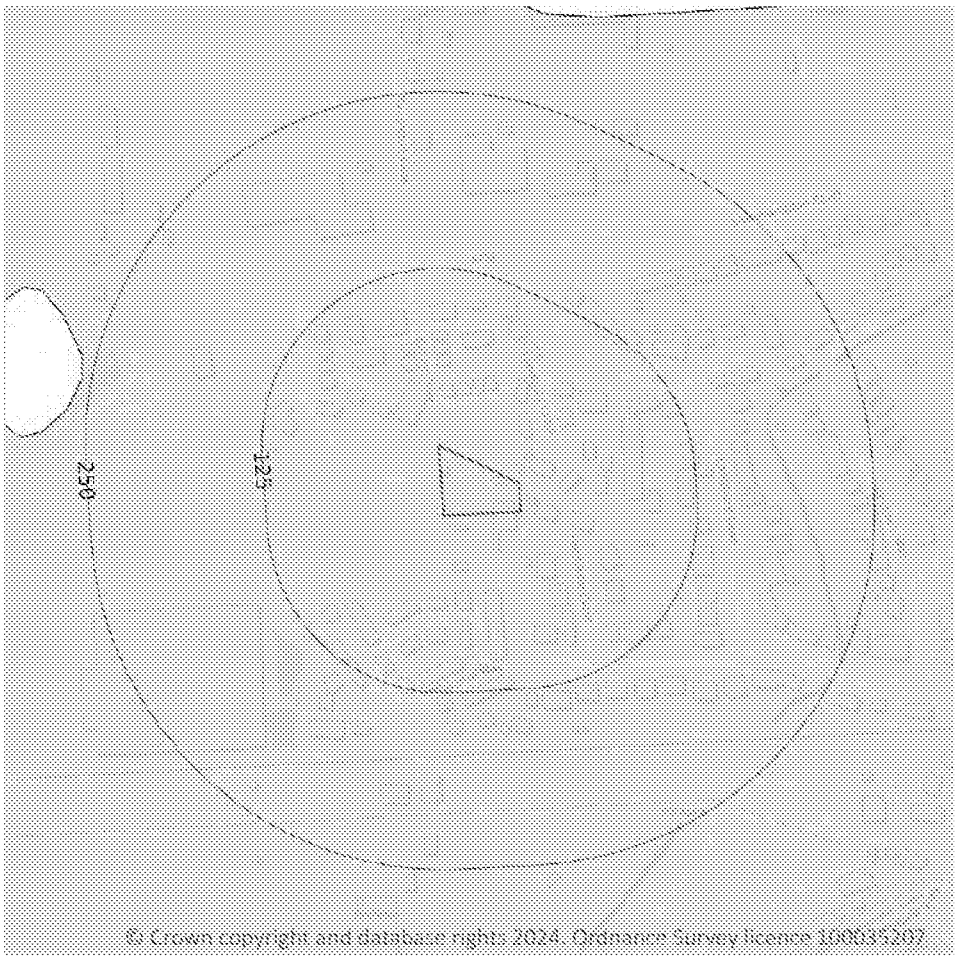
Features are displayed on the Natural ground subsidence - Shrink swell clays map on page 81 >

Location	Hazard rating	Details
On site	Low	Ground conditions predominantly medium plasticity.

This data is sourced from the British Geological Survey.

ARUN DISTRICT COUNCIL FG/15/25/PL

Natural ground subsidence - Running sands



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Site Outline

Search buffers in metres (m)

- No data
- Negligible
- Very low
- Low
- Moderate
- High

17.2 Running sands

Records within 50m	1

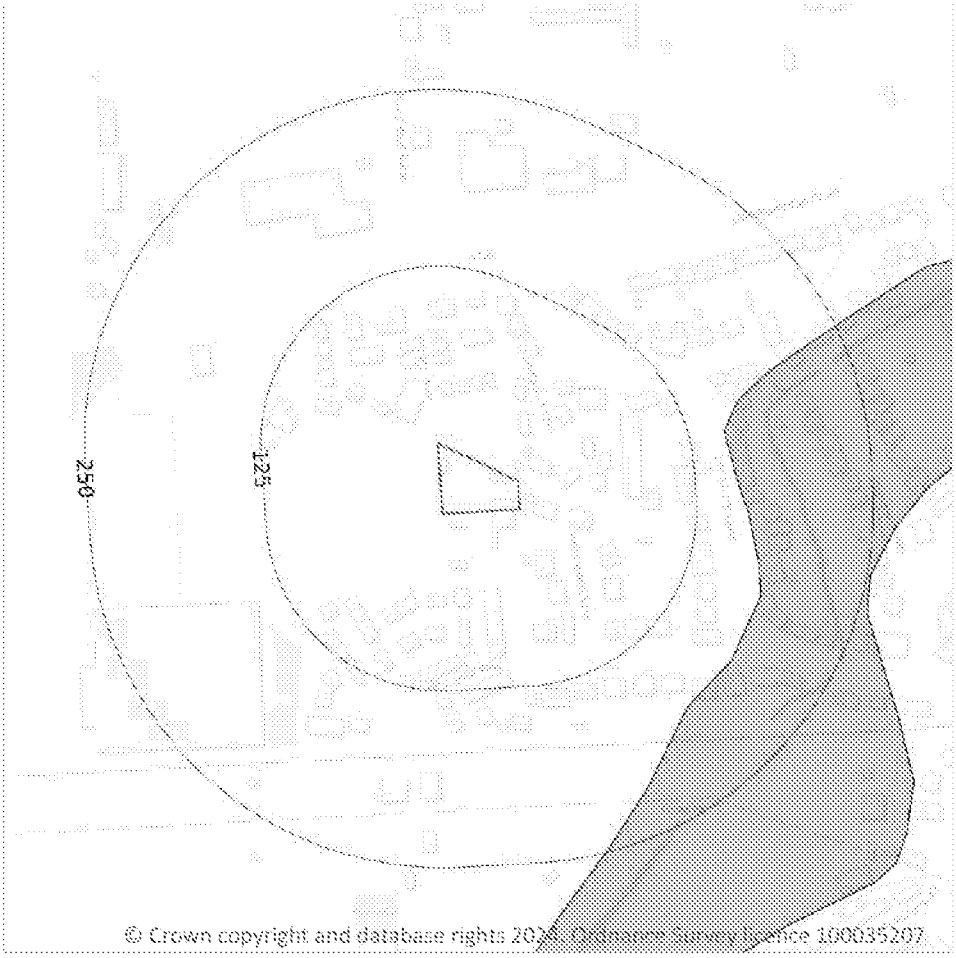
The potential hazard presented by rocks that can contain loosely-packed sandy layers that can become fluidised by water flowing through them. Such sands can 'run', removing support from overlying buildings and causing potential damage.

Features are displayed on the Natural ground subsidence - Running sands map on page 82 >

Location	Hazard rating	Details
On site	**Low**	**Running sand conditions may be present. Constraints may apply to land uses involving excavation or the addition or removal of water.**

This data is sourced from the British Geological Survey.

Natural ground subsidence - Compressible deposits



Site Outline

Search buffers in metres (m)

- No data
- Negligible
- Very low
- Low
- Moderate
- High

17.3 Compressible deposits

Records within 50m	1

The potential hazard presented by types of ground that may contain layers of very soft materials like clay or peat and may compress if loaded by overlying structures, or if the groundwater level changes, potentially resulting in depression of the ground and disturbance of foundations.

Features are displayed on the Natural ground subsidence - Compressible deposits map on page 83 >

Location	Hazard rating	Details
On site	Negligible	Compressible strata are not thought to occur.

This data is sourced from the British Geological Survey.

ARUN DISTRICT COUNCIL FG/15/25/PL

Natural ground subsidence - Collapsible deposits

Site Outline

Search buffers in metres (m)

- No data
- Negligible
- Very low
- Low
- Moderate
- High

17.4 Collapsible deposits

Records within 50m	1

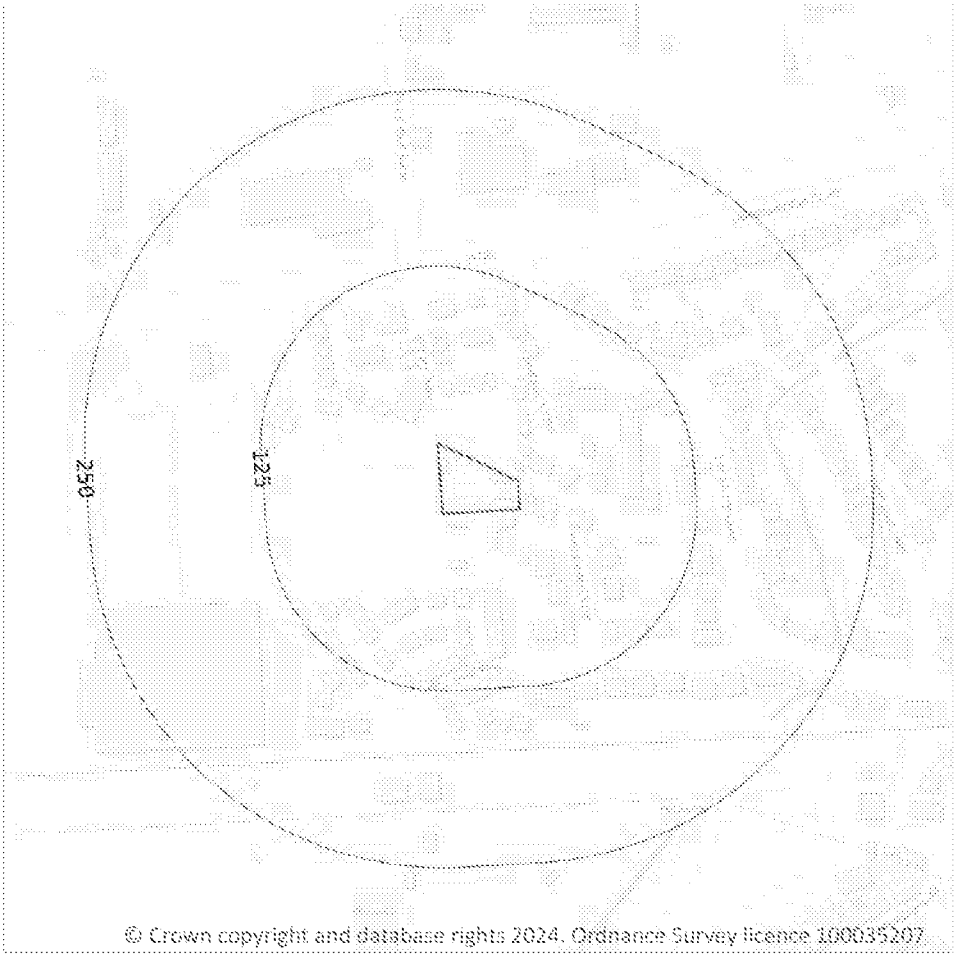
The potential hazard presented by natural deposits that could collapse when a load (such as a building) is placed on them or they become saturated with water.

Features are displayed on the Natural ground subsidence - Collapsible deposits map on page 84 >

Location	Hazard rating	Details
On site	Low	Deposits with potential to collapse when loaded and saturated are possibly present in places.

This data is sourced from the British Geological Survey.

Natural ground subsidence - Landslides



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Site Outline

Search buffers in metres (m)

- No data
- Negligible
- Very low
- Low
- Moderate
- High

17.5 Landslides

Records within 50m	1

The potential for landsliding (slope instability) to be a hazard assessed using 1:50,000 scale digital maps of superficial and bedrock deposits, combined with information from the BGS National Landslide Database and scientific and engineering reports.

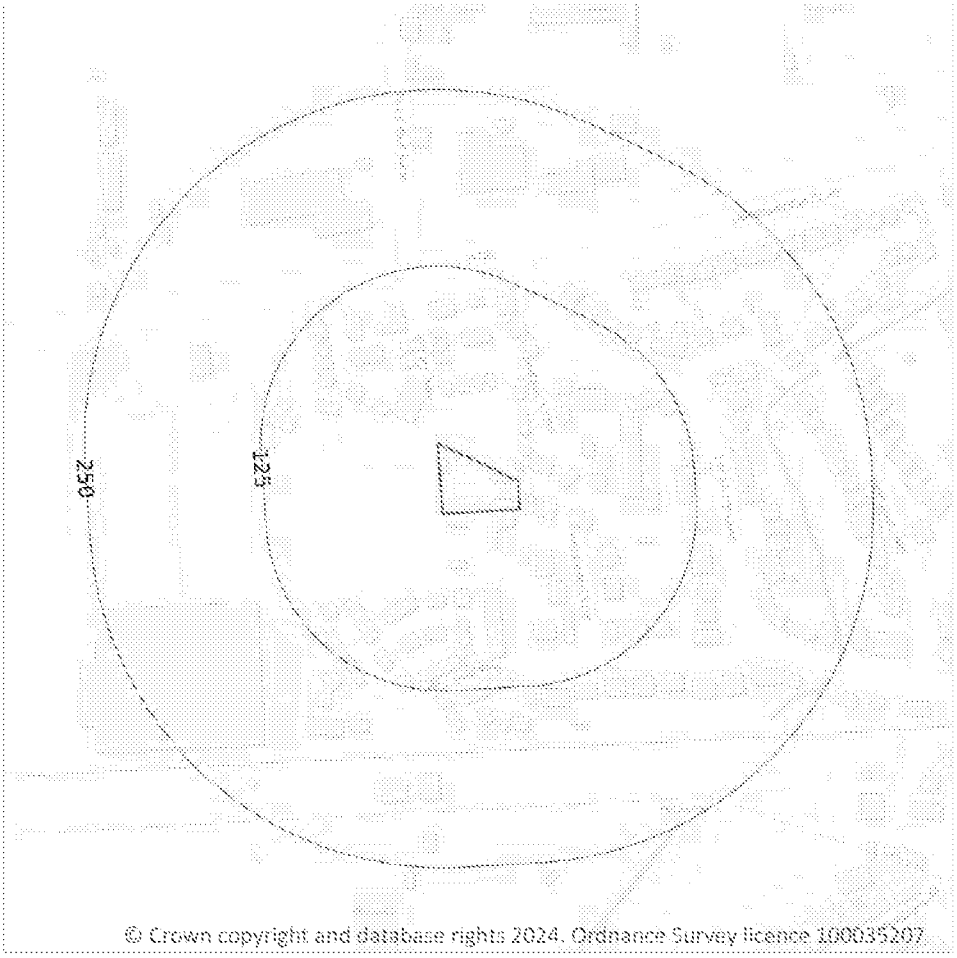
Features are displayed on the Natural ground subsidence - Landslides map on page 85 >

Location	Hazard rating	Details
On site	**Very low**	**Slope instability problems are not likely to occur but consideration to potential problems of adjacent areas impacting on the site should always be considered.**

This data is sourced from the British Geological Survey.

ARUN DISTRICT COUNCIL FG/15/25/PL

Natural ground subsidence - Ground dissolution of soluble rocks



Site Outline

Search buffers in metres (m)

- No data
- Negligible
- Very low
- Low
- Moderate
- High

17.6 Ground dissolution of soluble rocks

Records within 50m	1

The potential hazard presented by ground dissolution, which occurs when water passing through soluble rocks produces underground cavities and cave systems. These cavities reduce support to the ground above and can cause localised collapse of the overlying rocks and deposits.

Features are displayed on the Natural ground subsidence - Ground dissolution of soluble rocks map on page 86 >

Location	Hazard rating	Details
On site	**Very low**	**Soluble rocks are present within the ground. Few dissolution features are likely to be present. Potential for difficult ground conditions or localised subsidence are at a level where they need not be considered.**

This data is sourced from the British Geological Survey.

18 Mining and ground workings

Site Outline

Search buffers in metres (m)

BritPits

Surface ground workings

Underground workings

Underground mining extents

Historical mineral planning areas

TCA non-coal mining

Non Coal Mining

Sporadic underground mining of restricted extent possible

Localised small scale underground mining possible

Small scale mining possible

Underground mining known or likely within or in close proximity

Underground mining known within or in very close proximity

18.1 BritPits

Records within 500m	0

BritPits (an abbreviation of British Pits) is a database maintained by the British Geological Survey of currently active and closed surface and underground mineral workings. Details of major mineral handling sites, such as wharfs and rail depots are also held in the database.

This data is sourced from the British Geological Survey.

18.2 Surface ground workings

Records within 250m	5

Historical land uses identified from Ordnance Survey mapping that involved ground excavation at the surface. These features may or may not have been subsequently backfilled.

Features are displayed on the Mining and ground workings map on page 88 >

ID	Location	Land Use	Year of mapping	Mapping scale
1	163m S	Cuttings	1957	1:10560
A	205m W	Pond	1943	1:10560
A	205m W	Pond	1932	1:10560
A	205m W	Pond	1910	1:10560
A	210m W	Pond	1957	1:10560

This is data is sourced from Ordnance Survey/Groundsure.

18.3 Underground workings

Records within 1000m	0

Historical land uses identified from Ordnance Survey mapping that indicate the presence of underground workings e.g. mine shafts.

This is data is sourced from Ordnance Survey/Groundsure.

18.4 Underground mining extents

Records within 500m	0

This data identifies underground mine workings that could present a potential risk, including adits and seam workings. These features have been identified from BGS Geological mapping and mine plans sourced from the BGS and various collections and sources.

This data is sourced from Groundsure.

18.5 Historical Mineral Planning Areas

Records within 500m	0

Boundaries of mineral planning permissions for England and Wales. This data was collated between the 1940s (and retrospectively to the 1930s) and the mid 1980s. The data includes permitted, withdrawn and refused permissions.

ARUN DISTRICT COUNCIL FG/15/25/PL

This data is sourced from the British Geological Survey.

18.6 Non-coal mining

Records within 1000m	2

The potential for historical non-coal mining to have affected an area. The assessment is drawn from expert knowledge and literature in addition to the digital geological map of Britain. Mineral commodities may be divided into seven general categories - vein minerals, chalk, oil shale, building stone, bedded ores, evaporites and 'other' commodities (including ball clay, jet, black marble, graphite and chert).

Features are displayed on the Mining and ground workings map on page 88 >

ID	Location	Name	Commodity	Class	Likelihood
2	314m N	Not available	Chalk	A	Underground mine workings are uncommon, although the geology is similar to that worked elsewhere. Potential for difficult ground conditions are unlikely and are at a level where they need not be considered.
-	998m E	Not available	Chalk	A	Underground mine workings are uncommon, although the geology is similar to that worked elsewhere. Potential for difficult ground conditions are unlikely and are at a level where they need not be considered.

This data is sourced from the British Geological Survey.

18.7 JPB mining areas

Records on site	0

Areas which could be affected by former coal and other mining. This data includes some mine plans unavailable to the Coal Authority.

This data is sourced from Johnson Poole and Bloomer.

18.8 The Coal Authority non-coal mining

Records within 500m	0

This data provides an indication of the potential zone of influence of recorded underground non-coal mining workings. Any and all analysis and interpretation of Coal Authority Data in this report is made by Groundsure, and is in no way supported, endorsed or authorised by the Coal Authority. The use of the data is restricted to the terms and provisions contained in this report. Data reproduced in this report may be the copyright of the Coal Authority and permission should be sought from Groundsure prior to any re-use.

This data is sourced from The Coal Authority.

18.9 Researched mining

Records within 500m	0

This data indicates areas of potential mining identified from alternative or archival sources, including; BGS Geological paper maps, Lidar data, aerial photographs (from World War II onwards), archaeological data services, websites, Tithe maps, and various text/plans from collected books and reports. Some of this data is approximate and Groundsure have interpreted the resultant risk area and, where possible, specific areas of risk have been captured.

This data is sourced from Groundsure.

18.10 Mining record office plans

Records within 500m	0

This dataset is representative of Mining Record Office and/or plan extents held by Groundsure and should be considered approximate. Where possible, plans have been located and any specific areas of risk they depict have been captured.

This data is sourced from Groundsure.

18.11 BGS mine plans

Records within 500m	0

This dataset is representative of BGS mine plans held by Groundsure and should be considered approximate. Where possible, plans have been located and any specific areas of risk they depict have been captured.

This data is sourced from Groundsure.

18.12 Coal mining

Records on site	0

Areas which could be affected by past, current or future coal mining.

This data is sourced from the Coal Authority.

18.13 Brine areas

Records on site	0

The Cheshire Brine Compensation District indicates areas that may be affected by salt and brine extraction in Cheshire and where compensation would be available where damage from this mining has occurred. Damage from salt and brine mining can still occur outside this district, but no compensation will be available.

This data is sourced from the Cheshire Brine Subsidence Compensation Board.

18.14 Gypsum areas

Records on site	0

Generalised areas that may be affected by gypsum extraction.

This data is sourced from British Gypsum.

18.15 Tin mining

Records on site	0

Generalised areas that may be affected by historical tin mining.

This data is sourced from Groundsure.

18.16 Clay mining

Records on site	0

Generalised areas that may be affected by kaolin and ball clay extraction.

This data is sourced from the Kaolin and Ball Clay Association (UK).

19 Ground cavities and sinkholes

19.1 Natural cavities

Records within 500m	0

Industry recognised national database of natural cavities. Sinkholes and caves are formed by the dissolution of soluble rock, such as chalk and limestone, gulls and fissures by cambering. Ground instability can result from movement of loose material contained within these cavities, often triggered by water.

This data is sourced from Stantec UK Ltd.

19.2 Mining cavities

Records within 1000m	0

Industry recognised national database of mining cavities. Degraded mines may result in hazardous subsidence (crown holes). Climatic conditions and water escape can also trigger subsidence over mine entrances and workings.

This data is sourced from Stantec UK Ltd.

19.3 Reported recent incidents

Records within 500m	0

This data identifies sinkhole information gathered from media reports and Groundsure's own records. This data goes back to 2014 and includes relative accuracy ratings for each event and links to the original data sources. The data is updated on a regular basis and should not be considered a comprehensive catalogue of all sinkhole events. The absence of data in this database does not mean a sinkhole definitely has not occurred during this time.

This data is sourced from Groundsure.

19.4 Historical incidents

Records within 500m	0

This dataset comprises an extract of 1:10,560, 1:10,000, 1:2,500 and 1:1,250 scale historical Ordnance Survey maps held by Groundsure, dating back to the 1840s. It shows shakeholes, deneholes and other 'holes' as noted on these maps. Dene holes are medieval chalk extraction pits, usually comprising a narrow shaft with a number of chambers at the base of the shaft. Shakeholes are an alternative name for suffusion sinkholes, most commonly found in the limestone landscapes of North Yorkshire but also extensively noted around the Brecon Beacons National Park.

Not all 'holes' noted on Ordnance Survey mapping will necessarily be present within this dataset.

This data is sourced from Groundsure.

19.5 National karst database

Records within 500m	0

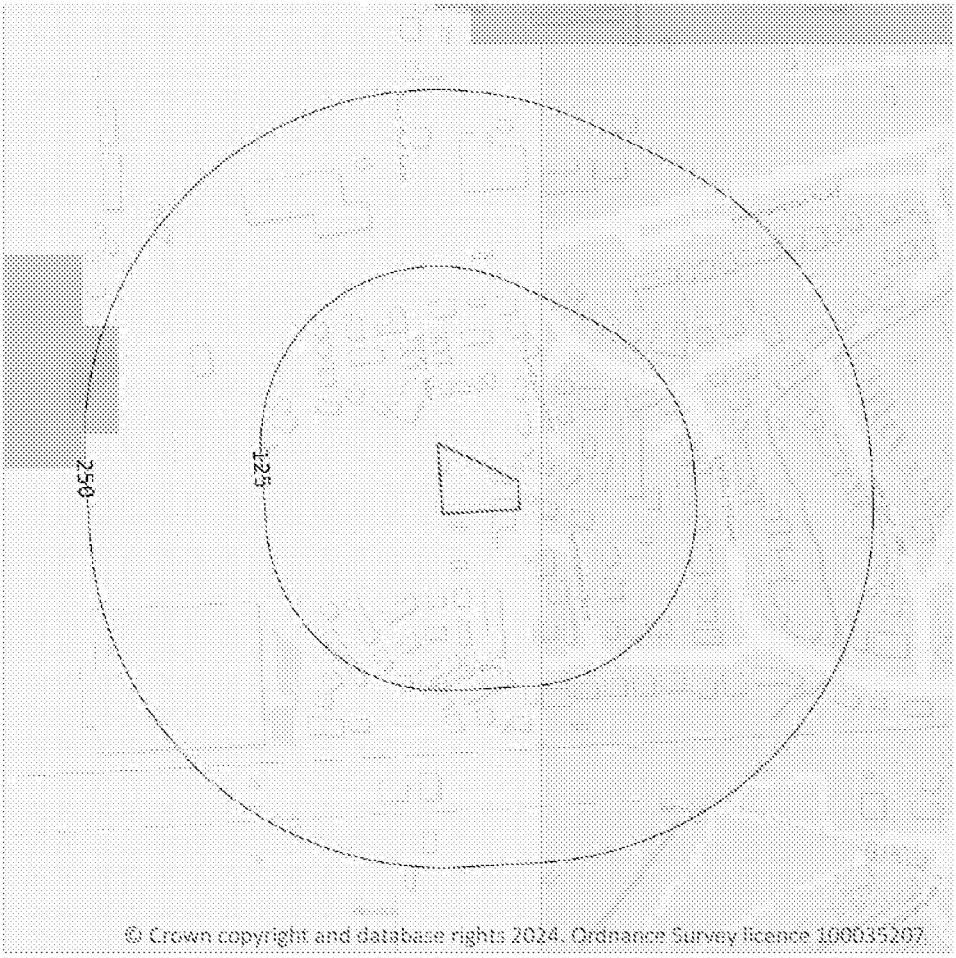
This is a comprehensive database of national karst information gathered from a wide range of sources. BGS have collected data on five main types of karst feature: Sinkholes, stream links, caves, springs, and incidences of associated damage to buildings, roads, bridges and other engineered works.

Since the database was set up in 2002 data covering most of the evaporite karst areas of the UK have now been added, along with data covering about 60% of the Chalk, and 35% of the Carboniferous Limestone outcrops. Many of the classic upland karst areas have yet to be included. Recorded so far are: Over 800 caves, 1300 stream sinks, 5600 springs, 10,000 sinkholes.

The database is not yet complete, and not all records have been verified. The absence of data does not mean that karst features are not present at a site. A reliability rating is included with each record.

This data is sourced from the British Geological Survey.

20 Radon



Site Outline

Search buffers in metres (m)

- Greater than 30%
- Between 10% and 30%
- Between 5% and 10%
- Between 3% and 5%
- Between 1% and 3%
- Less than 1%

20.1 Radon

Records on site	1

The Radon Potential data classifies areas based on their likelihood of a property having a radon level at or above the Action Level in Great Britain. The dataset is intended for use at 1:50,000 scale and was derived from both geological assessments and indoor radon measurements (more than 560,000 records). A minimum 50m buffer should be considered when searching the maps, as the smallest detectable feature at this scale is 50m. The findings of this section should supersede any estimations derived from the Indicative Atlas of Radon in Great Britain (1:100,000 scale).

Features are displayed on the Radon map on page 95 >

Location	Estimated properties affected	Radon Protection Measures required
On site	Between 1% and 3%	None

This data is sourced from the British Geological Survey and UK Health Security Agency.

21 Soil chemistry

21.1 BGS Estimated Background Soil Chemistry

Records within 50m	7

The estimated values provide the likely background concentration of the potentially harmful elements Arsenic, Cadmium, Chromium, Lead and Nickel in topsoil. The values are estimated primarily from rural topsoil data collected at a sample density of approximately 1 per 2 km^2. In areas where rural soil samples are not available, estimation is based on stream sediment data collected from small streams at a sampling density of 1 per 2.5 km^2; this is the case for most of Scotland, Wales and southern England. The stream sediment data are converted to soil-equivalent concentrations prior to the estimation.

Location	Arsenic	Bioaccessible Arsenic	Lead	Bioaccessible Lead	Cadmium	Chromium	Nickel
On site	**15 - 25 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**15 - 30 mg/kg**
16m SW	15 - 25 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
41m E	15 - 25 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
41m E	15 - 25 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
42m S	15 - 25 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
49m SE	15 - 25 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
49m SE	15 - 25 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg

This data is sourced from the British Geological Survey.

21.2 BGS Estimated Urban Soil Chemistry

Records within 50m	0

Estimated topsoil chemistry of Arsenic, Cadmium, Chromium, Copper, Nickel, Lead, Tin and Zinc and bioaccessible Arsenic and Lead in 23 urban centres across Great Britain. These estimates are derived from interpolation of the measured urban topsoil data referred to above and provide information across each city between the measured sample locations (4 per km^2).

This data is sourced from the British Geological Survey.

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21.3 BGS Measured Urban Soil Chemistry

Records within 50m	0

The locations and measured total concentrations (mg/kg) of Arsenic, Cadmium, Chromium, Copper, Nickel, Lead, Tin and Zinc in urban topsoil samples from 23 urban centres across Great Britain. These are collected at a sample density of 4 per km^2.

This data is sourced from the British Geological Survey.

22 Railway infrastructure and projects

Site Outline

Search buffers in metres (m)

- Crossrail 1 Stations
- Crossrail 1 Route
- Crossrail 2 Stations
- Crossrail 2 Route
- Crossrail 2 Worksites
- Crossrail 2 Safeguarding
- Crossrail 2 Headhouses
- Railway stations
- Active railways
- Active tunnels
- Abandoned railways
- Historic railways
- Historic tunnels
- Underground stations
- Underground Lines
- Royal Mail tunnels
- HS2 optimised route
- HS2 Stations
- HS2 Depots
- HS2 Surface Safeguarding
- HS2 Subsurface Safeguarding

22.1 Underground railways (London)

Records within 250m	0

Details of all active London Underground lines, including approximate tunnel roof depth and operational hours.

This data is sourced from publicly available information by Groundsure.

22.2 Underground railways (Non-London)

Records within 250m	0

Details of the Merseyrail system, the Tyne and Wear Metro and the Glasgow Subway. Not all parts of all systems are located underground. The data contains location information only and does not include a depth assessment.

This data is sourced from publicly available information by Groundsure.

22.3 Railway tunnels

Records within 250m	0

Railway tunnels taken from contemporary Ordnance Survey mapping.

This data is sourced from the Ordnance Survey.

22.4 Historical railway and tunnel features

Records within 250m	0

Railways and tunnels digitised from historical Ordnance Survey mapping as scales of 1:1,250, 1:2,500, 1:10,000 and 1:10,560.

This data is sourced from Ordnance Survey/Groundsure.

22.5 Royal Mail tunnels

Records within 250m	0

The Post Office Railway, otherwise known as the Mail Rail, is an underground railway running through Central London from Paddington Head District Sorting Office to Whitechapel Eastern Head Sorting Office. The line is 10.5km long. The data includes details of the full extent of the tunnels, the depth of the tunnel, and the depth to track level.

This data is sourced from Groundsure/the Postal Museum.

22.6 Historical railways

Records within 250m	0

Former railway lines, including dismantled lines, abandoned lines, disused lines, historic railways and razed lines.

This data is sourced from OpenStreetMap.

22.7 Railways

Records within 250m	4

Currently existing railway lines, including standard railways, narrow gauge, funicular, trams and light railways.

Features are displayed on the Railway infrastructure and projects map on page 99 >

Location	Name	Type
167m S	West Coastway Line	rail
170m S	Not given	Multi Track
171m S	West Coastway Line	rail
197m SW	Not given	Multi Track

This data is sourced from Ordnance Survey and OpenStreetMap.

22.8 Crossrail 1

Records within 500m	0

The Crossrail railway project links 41 stations over 100 kilometres from Reading and Heathrow in the west, through underground sections in central London, to Shenfield and Abbey Wood in the east.

This data is sourced from publicly available information by Groundsure.

22.9 Crossrail 2

Records within 500m	0

Crossrail 2 is a proposed railway linking the national rail networks in Surrey and Hertfordshire via an underground tunnel through London.

This data is sourced from publicly available information by Groundsure.

22.10 HS2

Records within 500m	0

HS2 is a proposed high speed rail network running from London to Manchester and Leeds via Birmingham. Main civils construction on Phase 1 (London to Birmingham) of the project began in 2019, and it is currently anticipated that this phase will be fully operational by 2026. Construction on Phase 2a (Birmingham to Crewe) is anticipated to commence in 2021, with the service fully operational by 2027. Construction on Phase 2b (Crewe to Manchester and Birmingham to Leeds) is scheduled to begin in 2023 and be operational by 2033.

This data is sourced from HS2 ltd.

Data providers

Groundsure works with respected data providers to bring you the most relevant and accurate information. To find out who they are and their areas of expertise see https://www.groundsure.com/sources-reference ↗.

Terms and conditions

Groundsure's Terms and Conditions can be accessed at this link: www.groundsure.com/terms-and-conditions-april-2023/ ↗.

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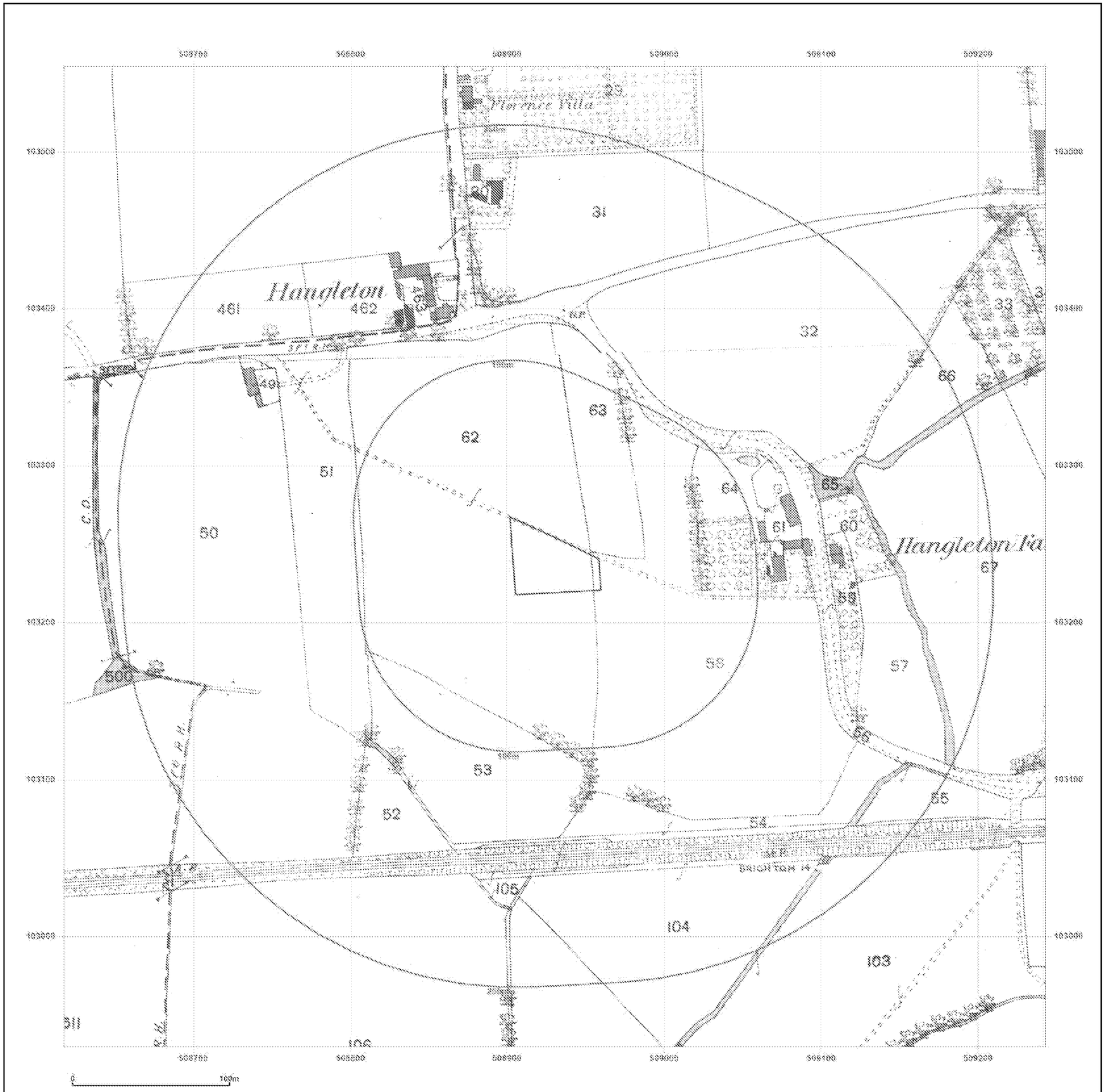

Groundsure INSIGHTS

Site Details:

KINGSBORO, LITTLEHAMPTON ROAD, FERRING

Client Ref: P16455
Report Ref: GS-4UI-SKV-AMV-512
Grid Ref: 508930, 103242

Map Name: County Series
Map date: **1877**
Scale: 1:2,500
Printed at: 1:2,500

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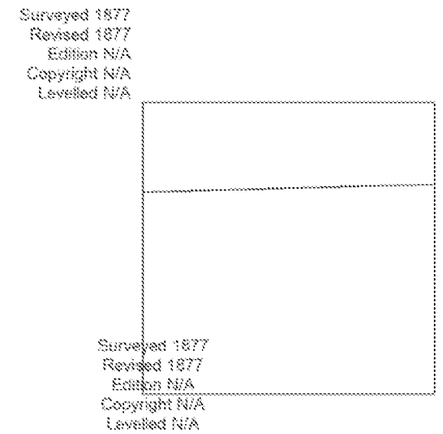

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Map legend available at:
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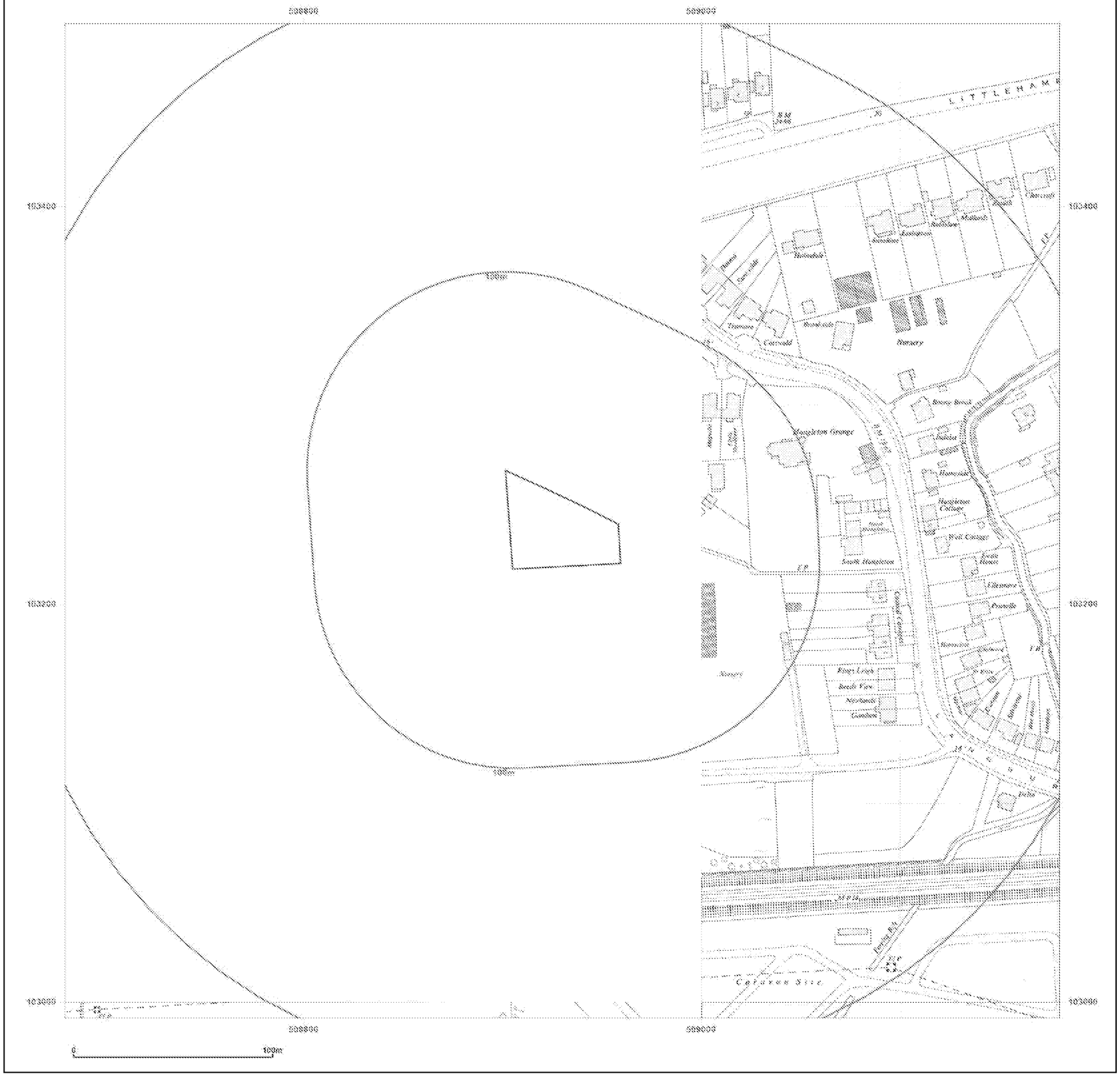

Groundsure INSIGHTS

Site Details:

KINGSBORO, LITTLEHAMPTON ROAD, FERRING

Client Ref: P16455
Report Ref: GS-4UI-SKV-AMV-512
Grid Ref: 508930, 103242

Map Name: National Grid

Map date: **1960**

Scale: 1:1,250

Printed at: 1:2,000

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Surveyed 1959
Revised 1959
Edition N/A
Copyright 1960
Levelled 1950

Surveyed 1959
Revised 1959
Edition N/A
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Groundsure INSIGHTS

Site Details:

KINGSBORO, LITTLEHAMPTON ROAD, FERRING

Client Ref: P16455
Report Ref: GS-4UI-SKV-AMV-512
Grid Ref: 508930, 103242

Map Name: National Grid

Map date: **1969**

Scale: 1:1,250

Printed at: 1:2,000

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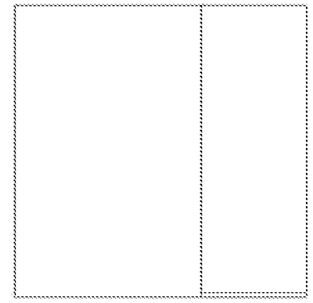

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