



Gladman Developments

Arundel Road, Angmering

Phase 2 Geo-environmental and Geotechnical Site
Investigation

Project no. 52207 R01 (04)

RSK GENERAL NOTES

Project No.: 52207 R01 (04)

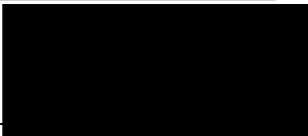
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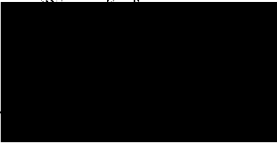
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Rev 03	05 th October 2020	Final report issued
Rev 04	06 th December 2021	Report updated to include new proposed development plan.

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Where field investigations have been carried out, these have been restricted to a level of detail required to achieve the stated objectives of the work.

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1 INTRODUCTION

1.1 Commissioning

RSK Environment Limited (RSK) was commissioned by Gladman Developments (the client) to carry out a Geoenvironmental and Geotechnical Site Investigation of the land at the land west of Arundel Road, Angmering, West Sussex, BN16 4ET. The project was carried out to an agreed brief as set out in RSK's proposal (Ref. 52207 T01 (01), dated 14th July 2020).

This report is subject to the RSK service constraints given in **Appendix A** and limitations that may be described through this document.

1.2 Objectives

The objective of the work is:

- to identify any land contamination and geotechnical constraints to the proposed development; and
- to identify the need for any additional investigation or remediation works to demonstrate that the site is suitable for its proposed use.

1.3 Scope of works

The scope of this assessment has been developed in accordance with relevant British Standards and authoritative technical guidance as referenced through the report. The assessment of the contamination status of the site is in line with the technical approach presented in CLR 11 Model Procedures for the Management of Land Contamination (Environment Agency, 2004) and in general accordance with BS 10175: 2011 + A2 2017 (BSI, 2017). It is also compliant with relevant planning policy and guidance.

The scope of the intrusive investigation has been designed in line with the recommendations of BS5930: 2015 Code of practice for ground investigations (BSI, 2016), which maintains compliance with BS EN 1997-1 and 1997-2 and their related standards. It has also been developed in general accordance with BS 10175: 2011 + A2 2017. Ground gas assessment has been undertaken in general accordance with BS8756: 2013 and BS 8485:2015+A1:2019.

A brief summary of relevant legislation and policy relating to contaminated land is given in **Appendix B**.

The scope of works for the assessment has included the following:

Desk Study:

- review of the existing PRA report.

Intrusive Investigation

- Design and implementation of an intrusive investigation, in situ testing, soil sampling, laboratory geo-environmental and geotechnical testing, groundwater and ground gas monitoring of installed boreholes;

- Generic quantitative risk assessment (GQRA) to evaluate potentially complete contaminant linkages identified in the refined CSM;
- Identification of the need for further action, e.g. supplementary intrusive investigations/ monitoring, remediation works or other mitigation, if any;
- Interpretation of ground conditions and geotechnical data to provide preliminary recommendations with respect to foundations and infrastructure design;
- Preliminary assessment of the potential waste classification (hazardous / non-hazardous) implications of soil arisings; and
- Preparation of this factual and interpretative report with recommendations for further works.

1.4 Existing reports

The following reports detailing previous works at the site were made available for review:

- Preliminary risk assessment: Land west of Arundel Road, Angmering, by RSK Ltd, report ref: 301954 R01 (00), dated August 2017.

Pertinent information from these reports has been summarised in Section 2 and 3.

1.5 Limitations

The comments given in this report and the opinions expressed are based on the ground conditions encountered during the site work and on the results of tests made in the field and in the laboratory. However, there may be conditions pertaining to the site that have not been disclosed by the investigation and therefore could not be taken into account. In particular, it should be noted that there may be areas of made ground not detected due to the limited nature of the investigation or the thickness and quality of made ground across the site may be variable. In addition, groundwater levels and ground gas concentrations and flows may vary from those reported due to seasonal, or other, effects and the limitations stated in the data should be recognised.

Asbestos is often present in soils in discrete areas. Whilst asbestos-containing materials may have not been encountered during the fieldworks or supporting laboratory analysis, the history of the site indicates that asbestos may be present in soils and could be encountered during more extensive ground works.

Preliminary geotechnical recommendations are presented, and these should be verified in a Geotechnical Design Report once proposed construction and structural design proposals are confirmed.

2 SITE DETAILS

2.1 Site location

Site location details are presented in **Table 1** and a site location plan is provided on **Figure 1**.

Table 1 Site location details

Site name	Land west of Arundel Road, Angmering
Full site address	Land west of Arundel Road, Angmering, West Sussex
National Grid reference (centre of site)	506542 ^E , 105327 ^N

2.2 Site description

The site covers an area of approximately 9 hectares on the western side of Arundel Road, its boundary and layout are shown on **Figure 2**.

It is currently occupied by a mixture of agricultural, industrial, residential land use. The site gradually slopes down towards the west with an elevation of approximately 22 metres above Ordnance Datum (mAOD) in the north-east, and 12 mAOD in the north-west. Hedgerows and mature trees are present along the southern, western and northern boundaries of the site.

2.3 Surrounding land uses

The site surroundings are a mixture of recreational, agricultural, industrial, residential properties, as described in **Table 2**.

Table 2 Surrounding land uses

North	Non- coniferous wooded area containing a surface watercourse flowing south-west with overgrown scrubland and New Place Farm beyond.
East	Overgrown scrubland presents directly east of Arundel Road, agricultural and wooded land lie beyond. Acorns Campsite lies within wooded area.
South	Recreational ground associated with Angmering Sports and Social Club present. With residential properties are present further south.
West	Agricultural land with public footpath running adjacent to the site boundary.

2.4 Development plans

It is understood that the proposed development will comprise 160No. dwellings with private gardens, associated infrastructure and access roads. A retention pond is proposed in the north western corner and an area on the south east corner has been set aside for commercial end use. The proposed development plan has been presented in **Figure 3**.

3 SUMMARY OF PREVIOUS PRA

3.1 Introduction

In August 2017, RSK Environment Limited was commissioned by Gladman Development Ltd to carry out a Preliminary Risk Assessment (PRA) in order to obtain information regarding ground conditions, from which risks to end users, the environment and structures can be assessed, with mitigation measures outlined if necessary.

3.1.1 Historical Context

The site

Historical mapping from 1876 indicates that the site was mostly comprised of open space fields with no areas of development. Tress mostly surrounded the site boundaries. No significant changes happened to the site until 1971.

In 1971 two commercial plant nurseries are seen to be present onsite; one located in the north-eastern corner of site (Wilmington Nursery, after renamed to Seven Acres) and the larger of the two located in the south eastern portion of site (New Place Nursery). Residential dwellings are also seen to be present in the form of a bungalow located within the north east.

By 1974, a circular feature is present in the north east of the site to the east of Seven Acres Nursery, that may be associated with a quarry / pit. This is no longer shown on the 1979 map.

Between 1988 and 1999 there are few stages of redevelopment in the north eastern and south eastern corners of the site, that saw the buildings associated with the Seven Acres Nursery no longer present, and the New Place Nursery predominantly used as car park / vehicle repair facilities.

There are no significant changes since.

The surrounding area

Predominantly open fields and farmland surround the site since first available records (1876). Some unnamed development is shown along Arundel Road to the north in 1897, followed by residential development to the south by 1937, the latter continues until present day. The main road (A27) to the north has been constructed by 1974.

3.1.2 Site Walkover

During the site walkover in 2017 combined with the historical information from the desk study, it was observed that the overall risk from land contamination at the site is considered to be 'very low to moderate' for the current land-use, with the moderate rating relating to the potential presence of made ground in the vicinity of the former buildings, onsite hydrocarbon and volatile organic compounds (VOC's) associated with the historic vehicle repair garages, and asbestos containing material (ACM) in the demolition of historic onsite buildings.

3.1.3 Published Geology

The published records for the area indicate the geology of the site to be characterised by superficial Head Deposits, excluding a small area in the north of the site where superficial deposits are not shown. The bedrock geology across the site consists of the London clay Formation

3.1.4 Radon

The environmental database report indicates that the site is not located within an 'Affected Area'. An 'Affected Area' is one with 1% or more homes above the radon Action Level of 200 Bq m⁻³. Therefore, the risk of significant ingress of radon into structures on-site is considered to be low and no radon protective measures are required within new dwellings (or extensions) at the site. The site-specific assessment within the environmental database report is at a higher resolution and therefore provides greater detail than that publicly available in the indicative radon atlas at www.ukradon.org.

3.1.5 Areas of other (rock or mineral) mining

No mines or quarries are recorded on or within 500 m of the site. there are four records for historic opencast quarries mining sand and gravel from the Head Deposits, Spetisbury Chalk Member and Lambeth Group between 500 m and 1 km from site, with the nearest being 747 m northeast from site.

The site is indicated by the coal authority interactive map viewer to be in area that is not affected by coal mining.

3.1.6 Hydrogeology

A summary of the hydrogeological setting of the site, with respect to the anticipated geological sequence set out in Section 3.1.3 is presented below in **Table 3**.

Table 3 Summary of hydrogeological setting

Condition	Description
Aquifer characteristics	The site is underlain by a shallow unconfined aquifer. The Head deposits are classified by the EA as a secondary undifferentiated aquifer and the London Clay is classified as unproductive strata.
Depth to groundwater and flow	Shallow groundwater in the site area is anticipated to flow in a north-westerly direction towards the surface water course.
Rising groundwater levels	Not applicable.
Licensed groundwater abstractions	The environmental database report indicates that there are no current licensed groundwater abstractions on-site. the nearest groundwater abstraction is located 25 m to the south-west of the site in the form of a spring, operated nu Richards J Pierce at Paris Farm for irrigation purposes.
Source protection zones	Information available indicates that the site does not lie within a currently designated groundwater Source Protection Zone (SPZ).

3.2 Hydrology

A summary of the hydrology within the site area is summarised in **Table 4**.

Table 4 Summary of hydrology in site area

Condition	Description
Surface watercourse s/features	There are no surface watercourses or water bodies located onsite. The nearest identified surface water feature to the site is an unnamed inland river approximately 60 m to the north where it later joins into the River Arun located 5.4 km west from site.
Surface water abstractions	The environmental database report indicates that there are 7 current licensed surface water abstractions within a 2 km radius of the site. The closest of these, which is located 1225 m south-west of the site.
Site drainage	Surface drainage from the site appears to be discharged into the ground.
Preliminary flood risk assessment	The indicative floodplain map for the area, shows that the site does not lie within the designated floodplain. (i.e. the site lies within flood zone 1, having less than 1 in 1000 annual probability of river or sea flooding).

3.3 Sensitive land uses

The environmental database report indicates that there are no environmentally sensitive areas within 500 m of the site.

3.4 Preliminary Conceptual Site Model

The information presented in the desk study was used to compile an initial conceptual site model. The identified potential sources of the contamination, associated contaminants and receptors were considered with plausible pathways that may link them, the resulting potential pollutant linkages were outlined.

On-site gas generation, migration and build up in confined spaces effecting future onsite users and buildings is identified in the PRA to be a complete linkage with a risk ranking of moderate which RSK consider should be further investigated. Off-site gas generation migration and build up in confined spaces effecting future on-site users and buildings is also identified to have a complete linkage with a risk ranking of moderate/low which RSK consider as a precautionary approach should be further investigated.

The PRA indicated that the risks posed to site were considered to be 'low to moderate', this included the following;

- Direct contact of future site users with herbicides and pesticides associated with the former nurseries (New Place and Seven Acres nurseries);
- Direct contact of future site users with made ground in the vicinity of former buildings on-site and made ground associated with the possible infilling of a pit / quarry in the north-east of the site;

- Direct contact of future site users with chemicals, fuel and asbestos containing materials associated with current and historic vehicle repair garages / used car dealers and historic end of life vehicle waste management facilities / car breakers and dismantlers;
- Direct contact of the future site users with chemicals and inks from the printing facilities; and
- The permeation of on-site contaminants (associated with Seven Acres and New Place Nurseries, vehicle repair garages, printing facility, made ground) through potable water supply pipes with the potential to cause risk to future on-site buildings and cause chronic damage to human health.

The recommendations included a site investigation for geotechnical and geo-environmental assessment and soakage testing.

3.5 Preliminary geotechnical constraints

BS EN 1997-1 defines three different Geotechnical Categories that structures may fall into, which are summarised as follows:

- Category 1: Small and relatively simple structures for which it is possible to ensure that the fundamental requirements will be satisfied on the basis of experience and qualitative geotechnical investigations; with negligible risk.
- Category 2: Conventional types of structure and foundation with no exceptional risk or difficult ground or loading conditions.
- Category 3: Structures or part of structures, which fall outside limits of Geotechnical Categories 1 and 2. Examples include very large or unusual structures; structures involving abnormal risks, or unusual or exceptionally difficult ground or loading conditions; structures in highly seismic areas; structures in areas of probable site instability or persistent ground movements that require separate investigation or special measures.

Based on the information provided above on the proposed development and in view of the anticipated ground conditions, a Geotechnical Category 2 has been assumed for the purposes of designing the geotechnical investigation. This should be reviewed at all stages of the investigation and revised where necessary.

A summary of commonly occurring geotechnical hazards associated with the anticipated geology is given in **Table 5** together with an assessment of whether the site may be affected by each of the stated hazards.

Table 5 Summary of preliminary geotechnical risks that may affect site

Hazard category	Hazard status based on desk study findings and proposed development		Engineering considerations if hazard affects site
	Could be present and/or affect site	Unlikely to be present and/or affect site	
Sudden lateral changes in ground conditions	☒	☐	Likely to affect ground engineering and foundation design and construction
Shrinkable clay soils	☒	☐	Design to NHBC Standards Chapter 4 or similar
Highly compressible and low bearing capacity soils, (including peat and soft clay)	☐	☒	Likely to affect ground engineering and foundation design and construction
Silt-rich soils susceptible to rapid loss of strength in wet conditions	☒	☐	Likely to affect ground engineering and foundation design and construction
Running sand at and below water table	☐	☒	Likely to affect ground engineering and foundation design and construction
Karstic dissolution features (including 'swallow holes' in Chalk terrain)	☐	☒	May affect ground engineering and foundation design and construction – refer to Section 4.1.2
Evaporite dissolution features and/or subsidence	☐	☒	May affect ground engineering and foundation design and construction
Ground subject to or at risk from landslides	☐	☒	Likely to require special stabilisation measures
Ground subject to periglacial valley cambering with gulls possibly present	☐	☒	Likely to affect ground engineering and foundation design and construction
Ground subject to or at risk from coastal or river erosion	☐	☒	Likely to require special protection/stabilisation measures
High groundwater table (including waterlogged ground)	☐	☒	May affect temporary and permanent works
Rising groundwater table due to diminishing abstraction in urban area	☐	☒	May affect deep foundations, basements and tunnels
Underground mining	☐	☒	Likely to require special stabilisation measures

Hazard category	Hazard status based on desk study findings and proposed development		Engineering considerations if hazard affects site
	Could be present and/or affect site	Unlikely to be present and/or affect site	
Effects of extreme temperature (e.g. cold stores or brick kilns/furnaces)	☐	☒	Likely to affect ground engineering and foundation design and construction
Existing sub-structures (e.g. tunnels, foundations, basements, and adjacent sub-structures)	☒	☐	Likely to affect ground engineering and foundation design and construction
Filled and made ground (including embankments, infilled ponds and quarries)	☒	☐	Likely to affect ground engineering and foundation design and construction
Adverse ground chemistry (including expansive slags and weathering of sulphides to sulphates)	☒	☐	May affect ground engineering and foundation design and construction
Site topography	☐	☒	May affect ground engineering and foundation design and construction
Note: Seismicity is not included in the above table as this is not normally a design consideration in the UK.			

4 SITE INVESTIGATION STRATEGY & METHODOLOGY

4.1 Introduction

RSK carried out an intrusive investigation and subsequent monitoring of boreholes between August and September 2020.

Prior to conducting intrusive works, utility service plans were obtained, and buried service clearance undertaken in line with RSK's health and safety procedures. Copies of statutory service records obtained by RSK as part of the agreed scope of works are contained in **Appendix C**.

4.2 Objectives

The specific objectives of the investigation were as follows:

- to establish the ground conditions underlying the site including the extent and thickness of any made ground;
- to investigate specific potential sources of contamination identified in initial CSM;
- to determine groundwater depth;
- to determine the ground gas regime underlying the site; and
- to assess geotechnical properties of soils.

4.3 Selection of investigation methods

The techniques adopted for the investigation were chosen with consideration of the objectives and site constraints, to allow collecting environmental samples and install shallow ground gas monitoring wells. The trial pitting also allowed greater visibility of the ground conditions, and allowed soakage testing to be undertaken

4.4 Investigation strategy

The ground investigation was carried out using intrusive ground investigation techniques in general accordance with the recommendations of BS5930: 2015 Code of practice for ground investigations, which maintains compliance with BS EN 1997-1 and 1997-2 and their related standards. Whilst every attempt was made to record full details of the strata encountered in the boreholes, techniques of hole formation and sampling will inevitably lead to disturbance, mixing or loss of material in some soils and rocks.

The investigation provided a non-targeted coverage from a contamination aspect, as well as providing geotechnical information at locations specific to the proposed development. Details of the investigation locations installations and rationale are presented in **Table 6**.

Table 6 Exploratory hole and monitoring well location rationale

Investigation Type	Number	Designation	Monitoring well installation	Rationale Examples below
Boreholes by drive-in sampling methods	9	WS1 to WS4; WS7 and WS9 to WS12	Gas/ groundwater	To prove the geological succession beneath the site, obtain chemical and geotechnical data. To install groundwater and gas monitoring wells.
Trial-pits excavated by hand/mechanical excavator	25	TP1 to TP25	n/a	To accurately log the upper strata beneath the site and collect samples from the shallow made ground soils. To allow undertaking BRE soakaway testing.
	3	SA1 to SA3		To allow assessment of the infiltration rate within the proposed attenuation area.
In situ CBR determination	7	CBR1 to CBR7	n/a	To provide design parameters for roads and hardstanding design.

4.4.1 Implementation of investigation works

The exploratory holes were logged by an engineer in general accordance with the recommendations of BS 5930:2015 (which incorporates the requirements of BS EN ISO 14688-1, 14688-2 and 14689-1). Infiltration testing was undertaken in general accordance with BRE Digest 365 (BRE,2016).

The monitoring well construction and associated response zones are detailed on the exploratory hole records in **Appendix D**.

The soil sampling and analysis strategy was designed to characterise each encountered soil strata, permit an assessment of the potential contaminant linkages identified and investigate the geotechnical characteristics. Sufficient samples were taken to allow for geo-environmental and geotechnical testing to be undertaken.

Soils collected for laboratory analysis were placed in a variety of containers appropriate to the anticipated testing suite required. They were dispatched to the laboratory in cool boxes under chain of custody documentation. Samples were stored in accordance with the RSK quality procedures to maintain sample integrity and preservation and to minimise the chance of cross contamination.

4.5 Monitoring programme

All three (3No.) monitoring rounds have been undertaken, each round scheduled to provide data to support refining of the CSM. The number of monitoring rounds undertaken is in general accordance with the decision matrix presented as Figure 6 of BS8576.

An infrared gas meter was used to measure gas flow, concentrations of carbon dioxide (CO₂), methane (CH₄), oxygen (O₂) and LEL in percentage by volume. Initial and steady state concentrations were recorded.

The atmospheric pressure before and during monitoring, together with the weather conditions, were recorded. Depths to groundwater were recorded using an electronic dip meter on each of the return monitoring visits.

The ground gas monitoring results together with the temporal conditions are contained within **Appendix E**. Equipment calibration certificates are available on request.

4.6 Laboratory testing

Laboratory testing was undertaken at a UKAS accredited laboratory with ISO17025 and MCERTS accredited test methods were specified where applicable for contamination testing and as shown in the laboratory test certificates appended.

4.6.1 Chemical analysis of soil samples

The soil sampling strategy was designed to characterise made ground and/or natural strata typically within the upper 1.0 m of the ground profile whilst also characterising deeper strata and the potential for contaminant migration from relevant sources of identified within the preliminary CSM.

The programme of chemical tests undertaken on soil samples obtained from the intrusive investigation is presented in **Table 7** with the laboratory testing results contained in **Appendix F**.

Table 7 Summary of chemical testing of soil samples

Stratum	Tests undertaken	No. of tests
Topsoil	Asbestos screening and ID	3
	Total Organic Carbon	8
	Soils Suite 1 - pH, As, Cd, Cr, Cu, Hg, Pb, Ni, Se, Zn	6
	Soils Suite 2 - Speciated PAH-16MS, TPHCWG (spec.TPH), pH, As, Cd, Cr, Cu, Hg, Pb, Ni, Se, Zn, Total Sulphate, ws Sulphate	6
	TPH Total (C6-C40) by GC-FID	6
	Speciated PAH EPA16 by GC-MS	6
	Hazardous Waste Suite - pH, Metals, TPH with ID, PAH 17, Moisture content & Asbestos screen	1
Made ground	Asbestos screening and ID	9
	Total Organic Carbon	9
	Soils Suite 2 - Speciated PAH-16MS, TPHCWG (spec.TPH), pH, As, Cd, Cr, Cu, Hg, Pb, Ni, Se, Zn, Total Sulphate, ws Sulphate	9

Stratum	Tests undertaken	No. of tests
	Hazardous Waste Suite - pH, Metals, TPH with ID, PAH 17, Moisture content & Asbestos screen	1

4.6.2 Geotechnical analysis of soils

Where appropriate, testing was undertaken in accordance with BS 1377:1990 Method of Tests for Soils for Civil Engineering Purposes or, where superseded, by the relevant part of BS EN ISO 17892:2014 Geotechnical investigation and testing – Laboratory Testing of Soil. Tests carried out in order to classify the concrete class required on-site have been undertaken following the procedures within BRE SD1:2005.

The programme of geotechnical tests undertaken on samples obtained from the intrusive investigation is presented in **Table 8**. The results and UKAS accreditation of tests methods are shown in **Appendix G**.

Table 8 Summary of geotechnical testing undertaken

Strata	Tests undertaken	No. of tests
Head Deposits	Moisture content %	19
	Liquid / Plastic limits	19
	Sieve analysis	5
	Sedimentation analysis	4
	pH & WSO4	11
	BRE Suite	1

4.6.3 Infiltration testing

Infiltration tests were carried out at three trial pit locations, to establish the infiltration rate of the shallow soils onsite. The tests were carried out generally in accordance with the method described in BRE Digest 365 (BRE, 2016). This involved filling the pits with water from a tanker and recording the drop-in water level with time as the water soaked into the ground.

Copies of the testing records are included in **Appendix D**.

5 SITE INVESTIGATION FACTUAL FINDINGS

The results of the intrusive investigation and subsequent geo-environmental and geotechnical laboratory analysis undertaken are detailed below.

5.1 Ground conditions encountered

The descriptions of the strata encountered, notes regarding visual or olfactory evidence of contamination, list of samples taken, field observations of soil and groundwater, in-situ testing and details of monitoring well installations are included on the exploratory hole records presented in **Appendix D**.

The exploratory holes revealed that the site is underlain by initial thickness of topsoil and made ground over variable deposits of Head deposits proven to the final depth of the investigation. This appears to generally confirm the stratigraphical succession described within the preliminary CSM.

For the purpose of discussion, the ground conditions encountered during the fieldworks are summarised in **Table 9** with the strata discussed in subsequent subsections.

Table 9 General succession of strata encountered

Stratum	Exploratory holes encountered	Depth to top of stratum m bgl	Proven thickness (m)
Topsoil	All trial pit locations excluding Tp08 and WS2	G.L.	0.30
Made ground	WS1, WS3, WS4, WS7, WS9, WS10, WS11, WS12 & TP08	G.L.	0.50
Head Deposits	All	0.30 to 0.50	Proven to 6.00 mbgl

5.1.1 Topsoil

The majority of the site was covered by topsoil, its thickness (max 0.30 m) proven at all trial pit locations except from TP08. Based on site observation the topsoil predominantly comprises of cohesive soils with variable granular content of flint and chalk fragments, and frequent rootlets.

No visual or olfactory signs of contamination were noted with the stratum.

5.1.2 Made ground

The made ground was encountered generally in the south-eastern portion of site, its thickness proven as a maximum of 0.30 m. Based on site observation the made ground is variable, comprising clayey, gravelly sand, or sandy, gravelly clay with variable masonry and concrete and locally (TP8) metal fragments.

Based on site observations, this stratum does not appear to be engineered, exhibiting variable level of compaction and density across the site.

No visual or olfactory signs of contamination was noted within the stratum.

5.1.3 Head Deposits

The Head deposits were encountered in all exploratory holes from depths of between 0.30 mbgl to 0.50 mbgl and proven to final depths at all locations.

Based on site observations the unit consisted of predominantly cohesive soils, comprising of initially soft, becoming firm and stiff with depth, silty, slightly sandy clay, locally with a substantial granular content of fine to coarse angular gravel and chalk fragments.

Bands of predominantly granular soils comprising orange, brown, clayey, sandy gravel were encountered in the central portion of the site (TP7 to TP13), with variable thickness ranging from 0.40 m in TP10 and 1.20 m in TP13.

A summary of the in-situ and laboratory test results recorded in the stratum are presented in **Table 10**.

Table 10 Summary of in-situ and laboratory test results for granular unit

Soil parameters		Values	Reference
Grading (%)	Gravel	1 to 52	Appendix G
	Sand	4 to 16	
	Silt	12 to 67	
	Clay	25 to 46	
Moisture content (%)		11 to 25	Appendix G; Figure 6
Liquid limit (%)		34 to 74	Appendix G
Plastic limit (%)		19 to 26	
Plasticity index (%)		14 to 50	
Modified plasticity index (%)		5 to 47.5	-
Plasticity term		Low to Very High	Appendix G
Volume change potential		Low to High	-
SPT 'N' values		5 to 22	Appendix D; Figure 4
Undrained shear strength inferred from SPT 'N' values (kN/m ²)		26 to 128	Figure 5
Consistency term from field description		Soft to Stiff (predominantly Firm)	Appendix D

5.2 Groundwater

Groundwater was not encountered during the investigation. Resting groundwater levels recorded during the monitoring visits are summarised in **Table 11**.

Table 11 Summary of groundwater monitoring results

Exploratory position	Stratum	Strike (mbgl)	Monitoring Results (mbgl)		
			18/09/20	24/09/20	30/09/20
WS1	Head Deposits	No strike	Dry	Dry	Dry
WS2			2.20	2.19	2.20
WS3			2.42	2.40	2.40
WS4			1.70	1.70	1.70
WS7			2.01	2.00	2.00
WS9			Dry	Dry	Dry
WS10			Dry	Dry	Dry
WS11			3.68	3.69	3.69

The findings reflect the groundwater table within the Head deposits, at the highest depth of 1.70 mbgl.

5.3 Chemical laboratory results

The soil testing results are presented in **Appendix F** and discussed in section 6.

5.4 Geotechnical laboratory results

The results of the geotechnical testing are discussed in Section 8 and presented in **Appendix G**.

5.5 Ground gas monitoring

The results of the ground gas monitoring are given in **Appendix E** and discussed in Section 6.4.

6 GEO-ENVIRONMENTAL ASSESSMENT

6.1 Refinement of initial CSM

The results of the Preliminary Risk Assessment (PRA) and the resultant Initial CSM concluded that the risks posed to end-users ranged between 'very low to moderate'.

Ground conditions encountered during the intrusive exploratory works largely confirmed the assumptions made within the preliminary risk assessment. Visual and olfactory signs of contaminative impact were not observed during the investigation.

6.2 Linkages for assessment

In line with CLR11 (Environment Agency, 2004), there are two stages of quantitative risk assessment, generic (GQRA) and detailed (DQRA). The GQRA comprises the comparison of soil, groundwater, soil gas and ground gas results with generic assessment criteria (GAC) that are appropriate to the linkage being assessed. This comparison can be undertaken directly against the laboratory results or following statistical analysis depending upon the sampling procedure that was adopted.

Following the refinement of the initial CSM, the potentially complete contaminant linkages that require further assessment and the methodology of assessment are presented in **Table 12**. Given the mixed proposed end use of the site, and in order to allow for accurate comparison between the soil results and the relevant Generic Assessment Criteria (GAC), the site has been zoned as illustrated on **Figure 3** and described in the table below.

Table 12 Linkages for GQRA

Potentially relevant contaminant linkage	Assessment method
Soil	
1. Oral, dermal and inhalation exposure with impacted soil, soil vapour and dust by future residents	Human health GAC in Appendix I for a proposed public open space end use. (Zone 1 Proposed public open space). Human health GAC in Appendix I for a proposed commercial end use since the proposed end use includes commercial properties. (Zone 2 Former Seven Acres Nursery). Human health GAC in Appendix I for a proposed residential end use with home-grown produce since the proposed end use includes residential gardens. (Zone 3 Proposed residential properties).
2. Inhalation exposure of future residents to asbestos fibres	Qualitative assessment based on the asbestos minerals present, their form, concentration, location and the nature of the proposed development.

Potentially relevant contaminant linkage	Assessment method
3. Uptake of contaminants by vegetation potentially impacting plant growth (phytotoxicity)	Comparison of soil data to GAC in Appendix J for phytotoxicity.
4. Contaminants permeating potable water supply pipes	Comparison of soil data to GAC in Appendix K for plastic water supply pipes using UKWIR (2010) guidance.
Ground Gas	
6. Concentrations of methane and carbon dioxide in ground gas entering and accumulating in enclosed spaces or small rooms in new buildings, which could affect future site users. For methane this could create a potentially explosive atmosphere, while death by asphyxiation could result from carbon dioxide.	Gas screening values (GSV) have been calculated using maximum methane and carbon dioxide concentrations with maximum flow rates recorded at the site. The GSV have been compared with the revised Wilson and Card classification presented in BS8485.

6.3 Methodology and assessment of soil results

The analysis of laboratory results relating to soil samples submitted for testing is included in the following sections. As mentioned above the subject site has been divided into three zones as the findings from the investigation suggest that Made Ground is not consistent throughout the site.

Zone 1 is located in the northern tip of the site that is subject to become public open space, and GAC values relating to the public open space scenario will be used to compare the results from the soil samples taken within that area.

According to proposed development plan, the area around the former Seven Acres Nursery (identified as **Zone 2**) is proposed to be a commercial development, therefore a commercial scenario GAC's will allow for accurate evaluation of contamination risk in this area.

The reminder of the site (**Zone 3**) is proposed for residential end-use, and thus relevant GAC values will be used to assess the soil collected within the area.

6.3.1 Oral, dermal and inhalation exposure with impacted soil by future occupants/site users

The analytical results have been subjected to an initial 'screening' assessment against the appropriate generic assessment criteria (GAC) values derived by RSK using CLEA software v1.06 and supporting UK guidance. Where available, published soil guideline values (SGV) were used as the adopted GAC.

As a conservative approach, a 1% soil organic matter has been assumed. The GAC for human health used in this assessment are included in **Appendix I**.

Determinants exceeded the adopted GACs for human health have been summarised in **Table 13** below.

Table 13 Soil exceedance of the adopted Human Health GAC

Determinant	GAC (mg/kg)	Exceedances
Lead	630	WS1 (Zone 1) 0.10-0.20 m – made ground (1,520 mg/kg)
Benzo(a)pyrene	5	WS3 (Zone 3) 0.20-0.30 m – made ground (5.07 mg/kg) WS7 (Zone 3) 0.10-0.20 m – made ground (13.6 mg/kg)
Benzo(b)fluoranthene	2.6	WS3 (Zone 3) 0.20-0.30 m – made ground (5.01 mg/kg) WS7 (Zone 3) 0.10-0.20 m – made ground (13.4 mg/kg)
Dibenzo(ah)anthracene	0.24	WS3 (Zone 3) 0.20-0.30 m – made ground (1.01 mg/kg) WS7 (Zone 3) 0.10-0.20 m – made ground (3.13 mg/kg)
Benzo(a)anthracene	7	WS7 (Zone 3) 0.10-0.20 m – made ground (12.6 mg/kg)

The above table

In addition to the simple comparison of data to the adopted screening values, the CIEH document 'Guidance on Comparing Soil Contamination Data with a Critical Concentration', dated May 2008 recommends a statistical review should be conducted to demonstrate the site's 'suitability for use' with a defined level of confidence. The methodology is presented within **Appendix H**. Given the limited dataset for both zones, it is not considered appropriate to conduct statistical assessment, and therefore impacted soils are considered to be widespread. The lead compound is not volatile and therefore if encapsulated it is not considered a cause for concern, however where volatile exceedances are encountered further remedial actions are required.

No other exceedances were identified during the assessment.

6.3.2 Inhalation exposure of future occupants/site users to asbestos fibres

The visual inspection at the laboratory identified no materials suspected of potentially containing asbestos and the scheduled laboratory screening for asbestos found no detectable asbestos fibres within the samples of made ground.

6.3.3 Uptake of contaminants by vegetation potentially inhibiting plant growth (phytotoxicity)

Determinants exceeding the adopted GACs for assessment or phytotoxic risk have been summarised in **Table 14**.

Table 14 Soil exceedance of the adopted Phytotoxic GAC

Determinant	GAC (mg/kg)*	Exceedances
Copper	135	WS1 at 0.10-0.20 m - made ground (166 mg/kg)
Lead	300	WS1 at 0.10-0.20 m - made ground (1520 mg/kg)
Mercury	1	WS9 at 0.10-0.20 m - made ground (1.8 mg/kg) WS11 at 0.00-0.50 m - made ground (1.52 mg/kg) WS12 at 0.10-0.70 m - made ground (1.19 mg/kg)
Zinc	200	WS1 at 0.10-0.20 m - made ground (1010 mg/kg)
*GAC for pH 7 adopted		

In summary, exceedances in relation to the relevant GAC's were recorded in the made ground at a single location in **Zone 1** (WS1), two locations in **Zone 2** (WS11 and WS12) and a single location in **Zone 3** (WS9).

6.3.4 Impact of organic contaminants on potable water supply pipes

For initial assessment purposes, the results of the investigation have been compared with the GAC presented in **Appendix K** for this linkage, which are reproduced from *UKWIR Report 10/WM/03/21. Guidance for the Selection of Water Supply Pipes to be used in Brownfield Sites* (UKWIR, 2010).

The results indicate that a relevant linkage is unlikely to exist associated with organic contaminants and therefore pollutant polyethylene (PE) and/or polyvinyl chloride (PVC) water supply pipes are expected to be suitable for use on the development unless remedial measures are implemented that mitigate the risk.

It should be noted that at the time of this investigation the future routes of water supply pipes had not been established, hence the investigation and sampling strategy may not be fully compliant with UKWIR recommendations. Consequently, a targeted investigation and specific sampling/analytical strategy may be required at a later date once the route(s) of the supply pipe(s) is/are known. In addition, it is recommended that the relevant water supply company be contacted at an early stage to confirm its requirements for assessment, which may not necessarily be the same as those recommended by UKWIR.

6.4 Ground gas risk assessment

6.4.1 Appropriate guidance

The risks to development from ground gases have been assessed in accordance with BS8485:2015, which provides guidance on ground gas (methane and carbon dioxide) characterisation and hazard assessment, as well as a framework for the prescription of protection measures within new buildings.

The process involves characterising the gas hazard from combining the qualitative assessment of risk (using the conceptual site model) with ground investigation data so that a 'characteristic situation' (CS) can be derived for the site. Characteristic situations range from CS1 to CS6, the higher the CS the higher the hazard potential. Protection

measures within new buildings can be prescribed using a point scoring system, taking into consideration the CS and the proposed building type.

BS8485 indicates that the gas hazard can be characterised using the following methods:

- an empirical semi-quantitative approach using gas monitoring data to determine the 'characteristic situation' of the site (or zones of the site) and subsequent protective measures (Wilson and Card approach);
- an empirical semi-quantitative approach using TOC data to determine the 'characteristic situation' of the site (or zones of the site) and subsequent protective measures (CL: AIRE RB17 approach); or
- detailed quantitative assessment methodologies.

For the purpose of this assessment, the first approach listed above has been used to characterise the gas hazard and provide advice on the protective measures likely to be required within new buildings at the site.

The empirical semi quantitative approach using gas monitoring data is based on calculations of the gas screening value (GSV). BS8485 defines the GSV as the '*flow rate (l/hr) of a specific hazardous gas representative of a site or zone, derived from assessment of borehole concentration and flow rate measurements and taking account of all other influencing factors, in accordance with a conceptual site model*'.

Once derived for both methane and carbon dioxide the GSVs are compared to the thresholds presented in Table 2 of BS8485, so that a CS can be determined for the site, or a zone. It is important to note that the GSV thresholds are guideline values and not absolute. The GSV thresholds may be exceeded in certain circumstances, if the site conceptual model indicates it is safe to do so. Similarly, consideration of additional factors such as very high concentrations of methane, should lead to consideration of the need to adopt a higher risk classification than the GSV threshold indicates.

The results of the ground gas monitoring and testing undertaken at the site are given in **Appendix E**. The results of the monitoring rounds are presented in **Table 15**.

Table 15 Summary of ground gas monitoring results

Borehole	Response zone/stratum	Number of monitoring visits	Methane (%)	Carbon dioxide (%)	Oxygen (%)	Flow rate (l/hr)	Water level (m b TOC)	Atmospheric pressure (mbar)
WS1	MG ¹⁾	3	<0.1	2.0	20.1 to 21.1	0.0	Dry	995 to 1024
WS2				1.4 to 2.2	19.8 to 21.8		2.19 to 2.20	
WS3				5.0 to 5.6	15.0 to 16.1		2.40 to 2.42	

Borehole	Response zone/ stratum	Number of monitoring visits	Methane (%)	Carbon dioxide (%)	Oxygen (%)	Flow rate (l/hr)	Water level (m b TOC)	Atmospheric pressure (mbar)
WS4				5.5	9.6 to 10.5		1.70	
WS7				3.5 to 4.0	19.8 to 20.1		2.00 to 2.01	
WS9				5.0 to 5.3	10.1 to 10.5		Dry	
WS10				1.8 to 2.0	20.1 to 20.4		Dry	
WS11				5.8 to 6.1	15.5 to 16.2		3.68 to 3.69	
1) MG – made ground								

BS8485 suggests that the GSV should be derived by multiplying the worse credible (worst case) recorded flow value in any standpipe in that strata or zone with the maximum gas concentration in any other standpipe in that strata or zone. Further guidance is given in BS8485 section 6.3.

Considering the assessment of the gas monitoring results the following maximum GSVs have been derived for the site.

- CH_4 GSV = CH_4 concentration ($<0.1\% \text{ v/v}$)/100 x flow rate (0.1 l/hr) = 0.0001 l/hr; and
- CO_2 GSV = CO_2 concentration (6.1%v/v)/100 x flow rate (0.1 l/hr) = 0.0061 l/hr.

Based on the current understanding of the conceptual site model and the assessment undertaken, the site has been classified as CS1. Considering the foregoing and in accordance with BS8485, ground gas protective measures are not considered necessary within proposed buildings.

As above, all 3No. monitoring rounds have been completed with the results used to confirm the above assessment.

7 PRELIMINARY WASTE ASSESSMENT

In accordance with the definition provided in the Waste Framework Directive (WFD), materials are only considered waste if 'they are discarded, intended to be discarded or required to be discarded, by the holder'. Naturally occurring soils are not considered waste if reused on the site of origin for the purposes of development. Soils such as made ground that are not of clean and natural origin (irrespective of whether they are contaminated or not) and other materials such as recycled aggregate, do not become waste until the criteria above are met. Further background information is provided in **Appendix H**.

Excavation arisings from the development may therefore be classified as waste if surplus to requirements or unsuitable for reuse. The following assessments assume the material tested is classified subsequently as waste.

RSK recommends that a Sampling Plan be prepared to support any waste classifications and hazardous waste assessments, prior to any material being excavated. Given the level of data obtained, scale of the development and heterogeneity of the site soils, the following assessment should be considered indicative and further assessment should be undertaken following the preparation of a waste sampling plan.

7.1 Hazardous waste assessment

Technical Guidance WM3 (EA, 2018) sets out in Appendix D requirements for waste sampling. It is a legal requirement to correctly assess and classify waste. The level of sampling should be proportionate to the volume of waste and its heterogeneity. The preliminary assessment provided below is based only upon the available sample results and may not be sufficient to adequately classify the waste.

7.1.1 Chemical contaminants

EnviroLab, an RSK company, has developed a waste soils characterisation assessment tool (HASWASTE), which follows the guidance within Technical Guidance WM3. The analytical results have been assessed using this tool to assess the hazardous properties to support potential off-site disposal of materials in the future. Note that it is ultimately for landfills to confirm what wastes they are able to accept within the constraints of their permit.

The results are summarised in **Table 16** and presented in full in **Appendix L**.

Table 16 Results of waste soils characterisation assessment (HASWASTE)

Sample ref/ depth	Hazardous properties identified
WS1 / 0.10-0.20 m	Yes (HP7 Carcinogenic & HP14 Ecotoxic)
WS11 / 0.0-0.50 m	Yes (HP7 Carcinogenic & HP11 Mutagenic)

All above mentioned samples are classified as having hazardous properties and were all identified in the Made Ground in WS1 **Zone 1** and WS11 **Zone 2**.

This suggest that should made ground soils derived from this area is destined for off-site disposal, it would require disposal at a suitable permitted hazardous waste landfill or treatment facility.

8 GEOTECHNICAL ASSESSMENT

8.1 Proposed development

It is understood that the proposed development will comprise 160 No. dwellings with private gardens, associated infrastructure and access roads. A retention pond is proposed in the north western corner and an area on the south east corner has been set aside for commercial end use.

At this stage no specific information relating to building loads has been provided and therefore a wall loading of 100 kN/m has been considered. It has been assumed the ground-bearing floor slabs will not be required and that beam and block flooring will be utilised.

8.2 Key geotechnical hazards / development constraints

The risks identified below are purely based on the current available in-situ investigation information data are will be updated upon receipt of the geotechnical laboratory results:

- ***Sudden lateral changes in ground conditions.***

The investigation encountered both variable composition of the near surface Head deposits.

- ***Shrinkable clay soils.***

The predominantly cohesive Head deposits are with low to high volume change potential.

- ***Silt-rich soils susceptible to rapid loss of strength in wet conditions.***

The Head deposits soils are with variable and locally high silt content.

- ***Existing sub-structures.***

Foundations of the historical and existing buildings in the eastern portion of the site.

- ***Filled and made ground.***

Made ground up to 0.50 m thick was encountered predominantly in the south eastern corner of the site.

8.3 Foundations

8.3.1 Foundation options

Given the presence of competent natural soils at a relatively shallow depth, it is considered that traditional spread footings will be suitable for the proposed low-rise development. As stated above, due to the presence of shrinkable soils the foundations should be designed taking into account all the normal precautions, in accordance with NHBC standards or similar to minimise the risk of future foundation movements.

Based on the laboratory test results and the tentative Driscoll Criteria, the soils in the initial 1.0 mbgl in vicinity of TP3 to TP10, TP22, TP23, TP25 and WS2 show signs of significant desiccation.

It should be noted that for any moderate / heavy loads, spread footings will not be appropriate for the development, and consideration should be given to deep piled foundations.

8.3.2 Spread foundations

The recommendations for the design and construction of spread foundations in relation to the ground conditions are set out in **Table 17**.

Table 17 Design and construction of spread foundations

Design/construction considerations	Design/construction recommendations
Founding stratum	Firm slightly sandy, gravelly, silty clay of the Head Deposits.
Depth	Foundations should be taken to a minimum depth of 0.9 m below the final or existing ground level, whichever is lower, and at least 0.1 m into the founding stratum below any overlying made ground or otherwise unsuitable soils. Owing to the presence of shrinkable clay soils, foundations should be designed taking into account all the normal precautions, including minimum founding depths, to minimise the risk of future foundation movements in accordance with NHBC standards or similar. The findings of the ground investigation indicate that foundations should be designed for shrinkable soils of low to high volume change potential. A foundation zoning plan indicating minimum foundation depths based on the above findings and the presence of trees and other vegetation at the site is provided as Figure 7.
Variable founding soils	Owing to the lateral and vertical variability of the founding strata, consideration should be given to incorporating appropriate reinforcement into the strip foundations to minimise the risk of future differential foundation movements.
Presumed bearing capacity	Spread foundations with a width of up to 1.0 m and constructed on the cohesive Head Deposits, at a minimum depth of 1.00 mbgl may be designed using a net allowable bearing pressure of 75 kN/m². The allowable bearing capacity includes an overall safety factor of 3 against bearing capacity failure and with total settlements associated with the bearing pressure estimated to be less than 25 mm.
Construction considerations	All foundation excavations should be inspected, and any made ground and soft, organic or otherwise unsuitable materials removed and replaced with mass concrete. The proposed founding stratum is a very silt-rich soil, hence susceptible to rapid softening once exposed. Hence all foundation excavations should immediately be blinded with concrete or the full foundation constructed.

8.3.3 Floor slabs

The majority of the near surface soils encountered during the investigation showed signs of being desiccated. Therefore, it is recommended that ground floor slabs should be

suspended. Alternatively, an appropriate depth of the desiccated material could be removed from site and replaced with well-compacted, suitable granular fill.

8.4 Roads and hardstanding

In the 1.00 m to 1.50 m below the proposed finished ground level, the exploratory holes have revealed a soil profile comprising topsoil/made ground, over soft to firm, sandy, gravely, silty clay of the Head deposits. The potentially poorest sub-grade material within this profile is the made ground.

In pavement design terms, the groundwater conditions are anticipated to comprise a low water table, i.e. at least 1 m below the pavement formation level.

The results of in-situ testing are provided in **Appendix D** and summarised in **Table 18**.

Table 18 Summary of CBR values derived from in-situ DCP tests

Test location	Depth (mbgl)	Material type	Minimum CBR value
CBR1 / TP17	0.33	Head deposits	9.2%
CBR2 / TP18	0.30		17%
CBR3 / TP20	0.35		3.5%
CBR4 / TP21	0.30		17%
CBR5 / TP19	0.33		5.4%
CBR6 / TP16	0.40		6.3%
CBR7 / TP15	0.50		6.1%

Based on the above, the recommended sub-grade soil CBR value for road pavement design is therefore 4%. This value assumes that during construction the formation level will be carefully compacted, and any soft spots removed and replaced with well-compacted granular fill.

The sub-grade soils in the vicinity of test locations may be susceptible to improvement by rolling with conventional compaction plant.

The sub-grade soils can be regarded as frost-susceptible, based upon the criteria given in Appendix 1 of TRRL (1970) Report Road Note 29. When the sub-grade is frost-susceptible the thickness of sub-base must be sufficient to give a total thickness of non-frost-susceptible pavement construction over the soil of not less than 450 mm.

It is recommended that the sub-grade condition at the time of construction should be confirmed by testing at the final formation level by in situ CBR testing.

8.5 Excavations for foundations and services

Generally, the trial pits remained stable during excavation which indicates that foundation excavations should also remain stable in the short term. In the event that excavations are to remain open for longer periods, consideration should be given to the use of trench support systems.

Man entry into any excavations should not be undertaken without provision of suitable shoring and support and dewatering or suitable regrading and battering of side slopes to safe angles. Confined spaces protocols for the Health and Safety of personnel should always be used where man entry into excavations is to be undertaken as low oxygen conditions may be present.

No groundwater was encountered in during the trial pit excavations, with the highest standing water level recorded at 1.70 mbgl. Dewatering, therefore, is unlikely to be required to facilitate foundation excavation. This is to be confirmed following the completion of the monitoring programme.

Excavation should be possible using conventional site plant. Breakers may be necessary to remove any concrete obstructions within the made ground.

8.6 Chemical attack on buried concrete

This assessment of the potential for chemical attack on buried concrete at the site is based on *BRE Special Digest 1: Concrete in aggressive ground*, which represents the most up-to-date guidance on this topic currently available in the UK.

The desk study and site walkover indicate that, for the purposes of assessing the aggressive chemical environment of the site, the site should be considered as comprising natural ground unlikely to contain pyrite

Based on the characteristic water-soluble sulphate concentration in the soil of 101 mg/l (SO₄), the Design Sulphate (DS) Class for the shallow soils (made ground and Head Deposits) is DS1, as determined from Table C1 of *BRE Special Digest 1*.

Based on the mobile groundwater conditions and the characteristic pH value of 6.60 measured in the Head Deposits, the aggressive chemical environment for concrete (ACEC) is AC-1.

8.7 Infiltration drainage

The results of soakaway testing are given in **Appendix D** and summarised in **Table 19**.

Table 19 Infiltration test results

Trial pit	Geological unit	Test result (m/s)
SA1 / TP24	Head deposits (slightly sandy, slightly gravelly clay)	7.69×10 ⁻⁷
SA2 / TP23		N/A (insufficient infiltration)
SA3 / TP22		6.54×10 ⁻⁷

Based upon the results of the soakaway tests presented in above table, the ground conditions do not appear suitable from a geotechnical viewpoint for the use of pit soakaways to discharge surface run-off water into the shallow Head deposits.

The use of permeable paving as part of any future development hardstanding will need to consider the low infiltration rates recorded, but if considered, it is unlikely that permeable paving will be a suitable form of surface water management alone.

The EA should be contacted at the design stage in order to obtain a 'consent to discharge'. This may not be forthcoming where soakage will be into or just above the water table, particularly within groundwater protection zones. In addition, planning approval will have to be sought for their use.

9 CONCLUSIONS AND RECOMMENDATIONS

9.1 Geo-environmental

Ground conditions encountered during the intrusive investigation identified Made Ground present in the majority of the exploratory holes located within the southern extent of the subject site excluding WS2 and limited to only two of the trial pits locations TP08 and TP12.

Soils encountered elsewhere remained consistent, comprising of topsoil over natural Head Deposits.

The results of the GQRA indicate exceedances of relevant RSK adopted GACs, more specifically, lead within Zone 1 (POS), and PAHs contained within the area of the existing car-park in the eastern portion of Zone 3. It is noted that, given that this latter part of the site has been previously developed, there remains a potential for previously unforeseen ground conditions including localised chemically non-compliant soils and asbestos containing materials cannot be ruled out entirely. Furthermore, exceedances of heavy metals were also recorded within the Made Ground in relation to plant phytotoxicity.

With potentially contaminate linkages identified, additional sampling and testing is recommended within the areas where exceedances of heavy metals (Zone 1) and PAHs (Zone 3) were identified. This will allow delineation of the identified contamination, and further assessment including statistical analysis where required.

Alternatively, provisions should be made for appropriate remedial measures, that incorporate a suitable thickness of subsoil and topsoil cover to isolate any residual contamination. The minimum thickness of this clean capping layer, which will also provide a suitable growing medium, should be 450 mm in Zone 1 (POS) and 600 mm in Zone 3 (residential). Dependent on the proposed finished levels, this may involve the excavation and removal of some or all of the Made Ground.

Any proposed imported materials should be validated with appropriate chemical test certificates and approved in advance of materials being delivered to site.

The results of the preliminary ground gas risk assessment indicate ground gas protection measure are unlikely to be required as part of any future development.

The results of the preliminary waste assessment indicate the Made Ground soils encountered within the northern tip and southern extent of site more specifically exploratory holes locations WS1 and WS11 of the subject site is destined for off-site disposal and would require disposal at a suitably permitted hazardous waste landfill or treatment facility.

It is strongly recommended that the Local Authority be contacted at an early stage to seek their views on this assessment of contamination.

Appropriate measures should be adopted to protect the health and safety of site workers during the works and to control any possible pollution caused by the works.

It is possible that any ground works undertaken may encounter different conditions from those revealed by the site investigation that could require special treatment or other

alleviation measures. Fly-tipped waste should be removed by licensed contractors in line with best practice.

9.2 Geotechnical

Traditional spread footings founded within the firm silty clay / clay silt, at least 0.9 m below the existing ground levels can be used for the proposed development, and allowable bearing capacity of 75 kN/m² can be used for the design. Due to the localised presence of desiccated soils, the foundations should be locally deeper and designed taking into account all the normal precautions, in accordance with NHBC standards or similar to minimise the risk of future foundation movements, as per the foundation zoning plan provided.

Owing to the significant lateral and vertical variability of the founding strata, consideration should be given to incorporating appropriate reinforcement into the strip foundations to minimise the risk of future differential foundation movements. It is recommended that foundation excavations are inspected by a suitably qualified geotechnical engineer to confirm the suitability of soils at the formation levels.

Temporary groundwater control and trench wall support systems are unlikely to be necessary to allow the foundation excavation works.

The recommended sub-grade soil CBR value for road pavement design on the made ground and Head Deposits is 4%. The sub-grade soils can be regarded as frost-susceptible, based upon the criteria given in Appendix 1 of TRRL (1970) Report Road Note 29.

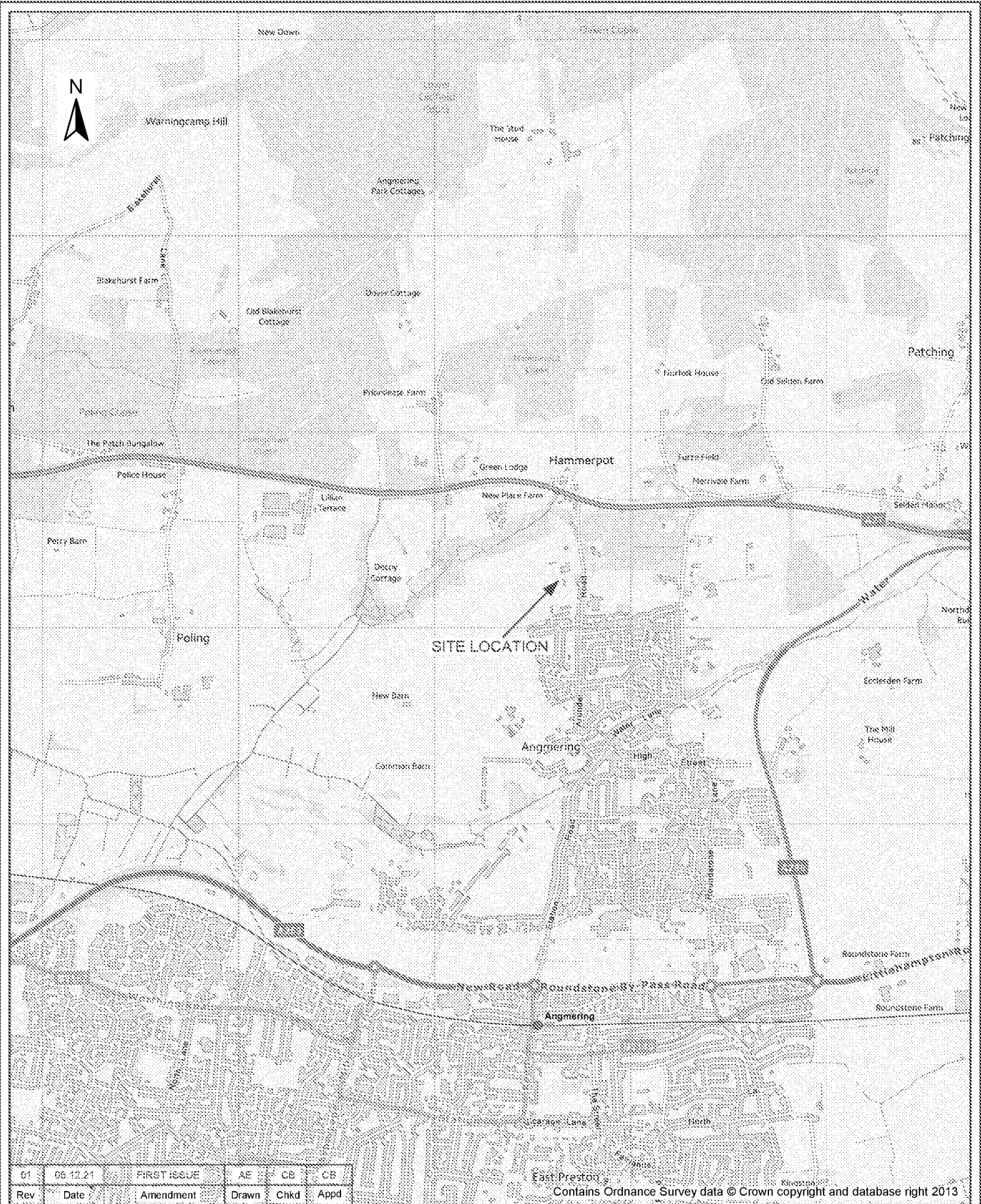
The Design Sulphate Class for the site DS-1 with an Aggressive Chemical Environment for Concrete classification of AC-1 can be adopted for the proposed development.

Based upon the results of the soakaway tests presented in above table, the ground conditions do not appear suitable from a geotechnical viewpoint for the use of pit soakaways to discharge surface run-off water into the shallow Head deposits.

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FIGURES



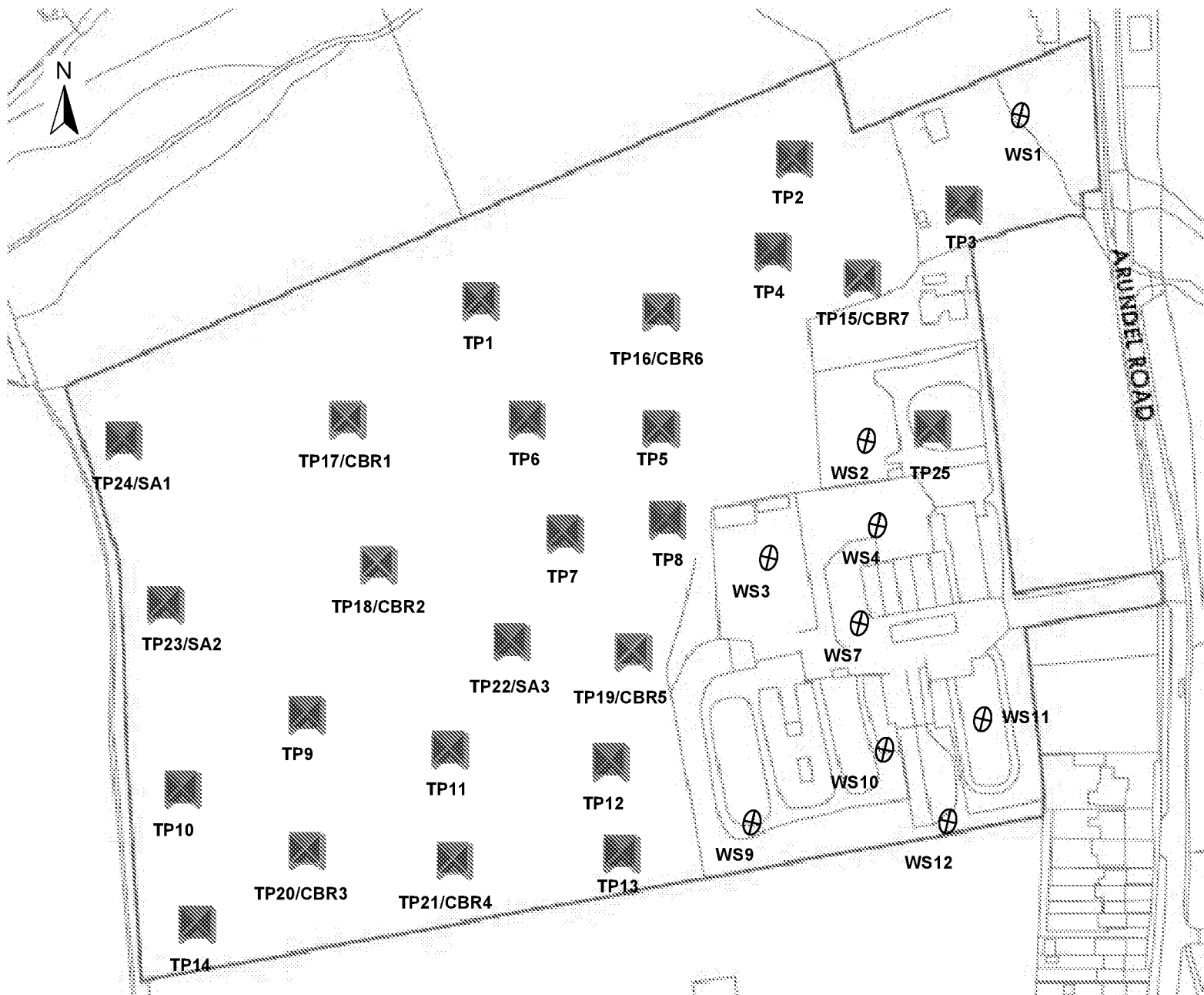
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Rev	Date	Amendment	Drawn	Chkd	Appd

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Half Moon Lane,
Tonbridge, Kent,
TN11 9JL
Email: info@rsk.co.uk
Web: www.rsk.co.uk

Client	Gladman Developments					
Project Name	Arundel Road, Angmering					
Description	Site Location Plan					
Dimension	Scale	Size	Revision	Geolocation	Project ID	Figure
m	1:25000	A4	01	508632.105245	52207	01
File name				52207-Site Location Plan		



LEGEND

01	06.12.21	FIRST ISSUE	AE	CB	CB
Rev	Date	Amendment	Drawn	Chkd	Appd



RISK
GEOSCIENCES

Arundel Court,
Half Moon Lane,
Tonbridge, Kent,
TN11 9HU

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Web: www.risk.co.uk

Client		
Gladman Developments		
Project Name		
Arundel Road, Angmering		
Description		
Exploratory Hole Location Plan		
Project ID	Figure	Revision
52207	02	01
File name		
52207-Exploratory Hole Location Plan		
Dimensions	Scale	Size
m	N.T.S	A4



LEGEND

----- Site boundary

Base plan provided by ASP drawing ref: 20232-P101A

01	06.12.21	FIRST ISSUE	AE	CB	CB
Rev	Date	Amendment	Drawn	Chkd	Appd



Arundel Court,
Half Moon Lane,
Tonbridge, Kent,
TN11 9HU

Email: info@risk.co.uk
Web: www.risk.co.uk

Client

Gladman Developments

Project Name

Arundel Road, Angmering

Description

Proposed Development Plan

Project ID	Figure	Revision
52207	03	01

File name
52207-Proposed Development Plan

Dimensions	Scale	Size
m	N.T.S	A4



SPT 'N' VALUES vs DEPTH

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Arundel Road, Angmering

Client:

Gladman Developments

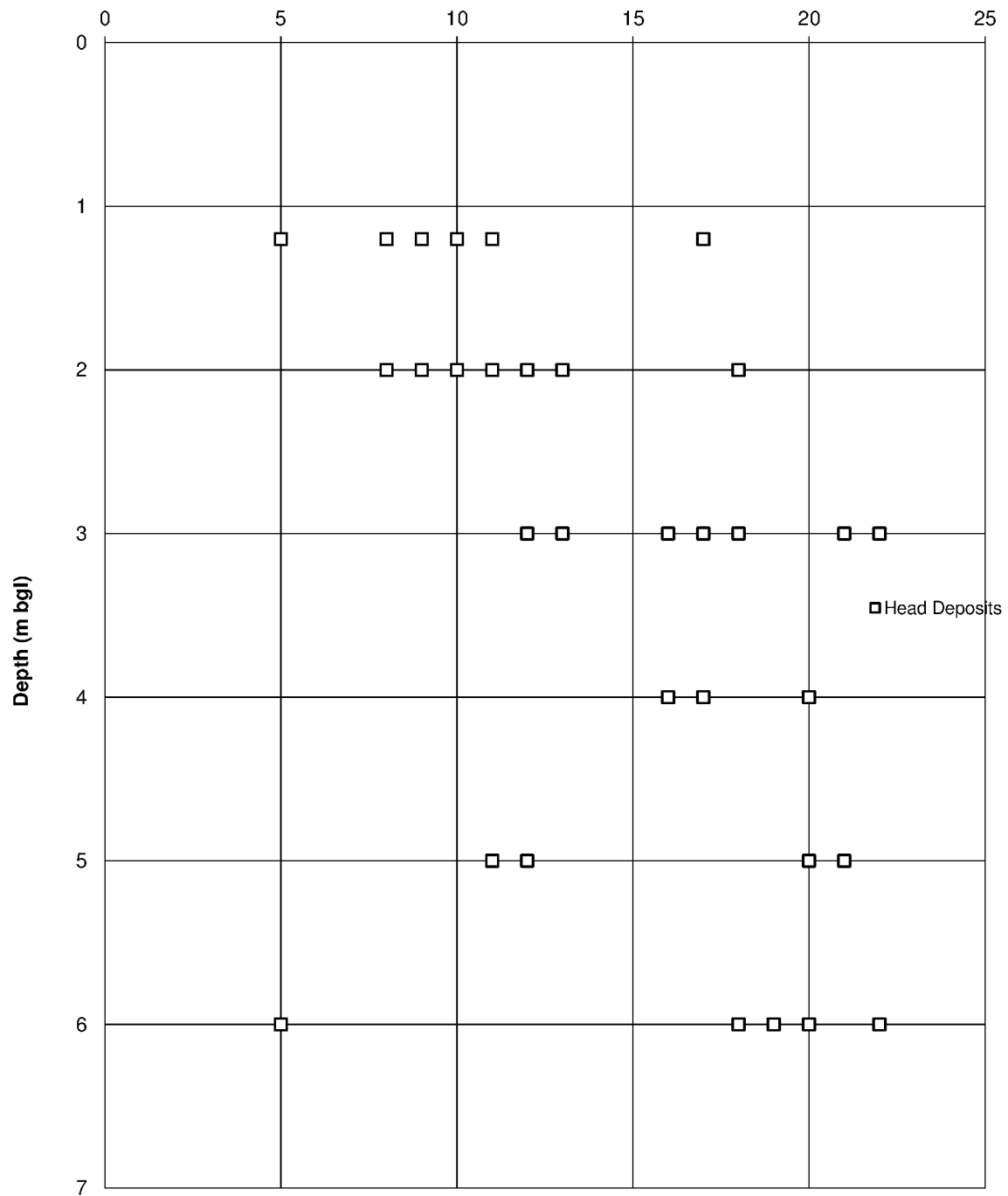
Job Number:

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Figure:

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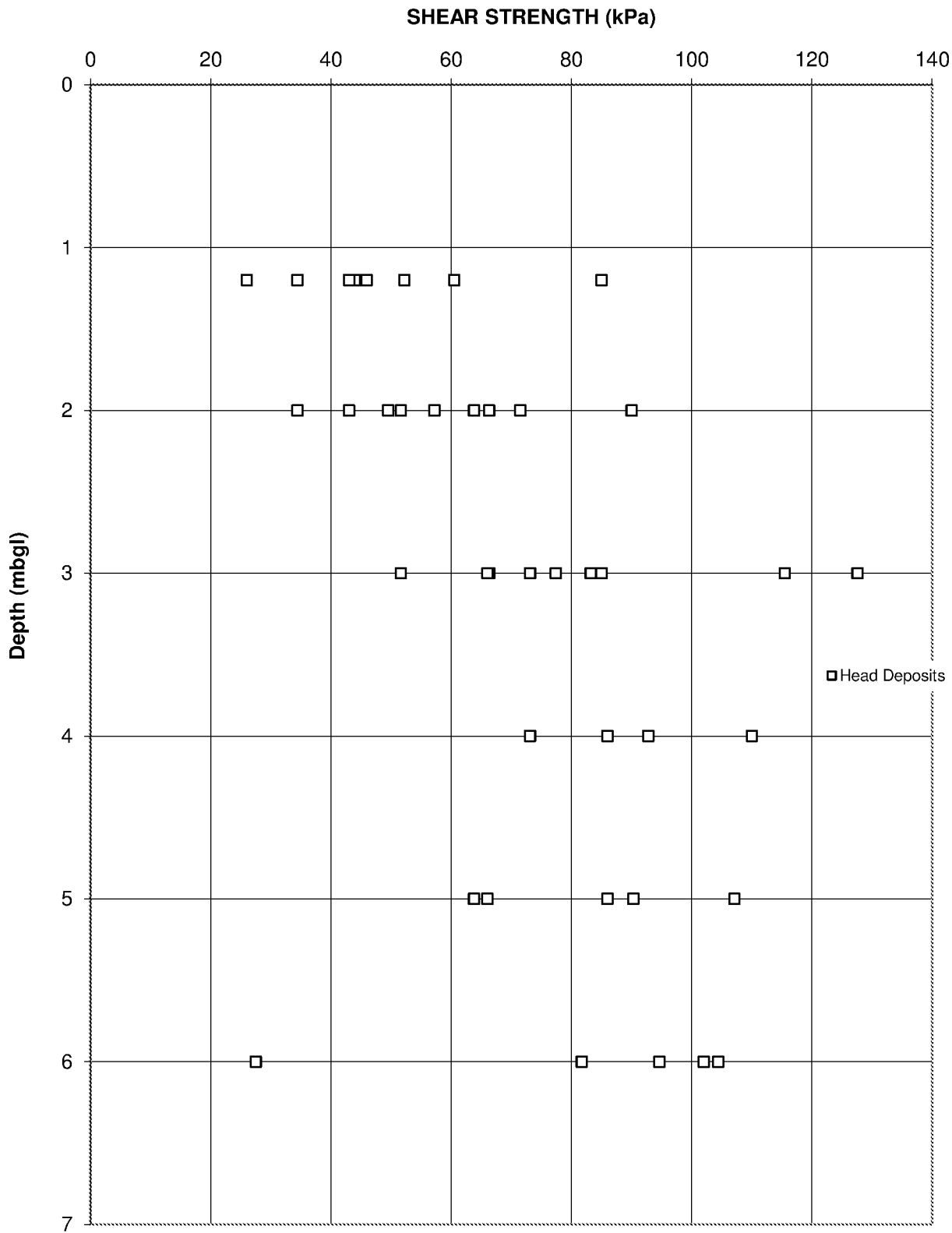
SPT 'N' Value (for 300mm penetration)





SHEAR STRENGTH vs DEPTH

Site: Arundel Road, Angmering	Client: Gladman Developments	Job Number:	52207
		Appendix:	5





MOISTURE CONTENT vs DEPTH

Site:

Arundel Road, Angmering

Client:

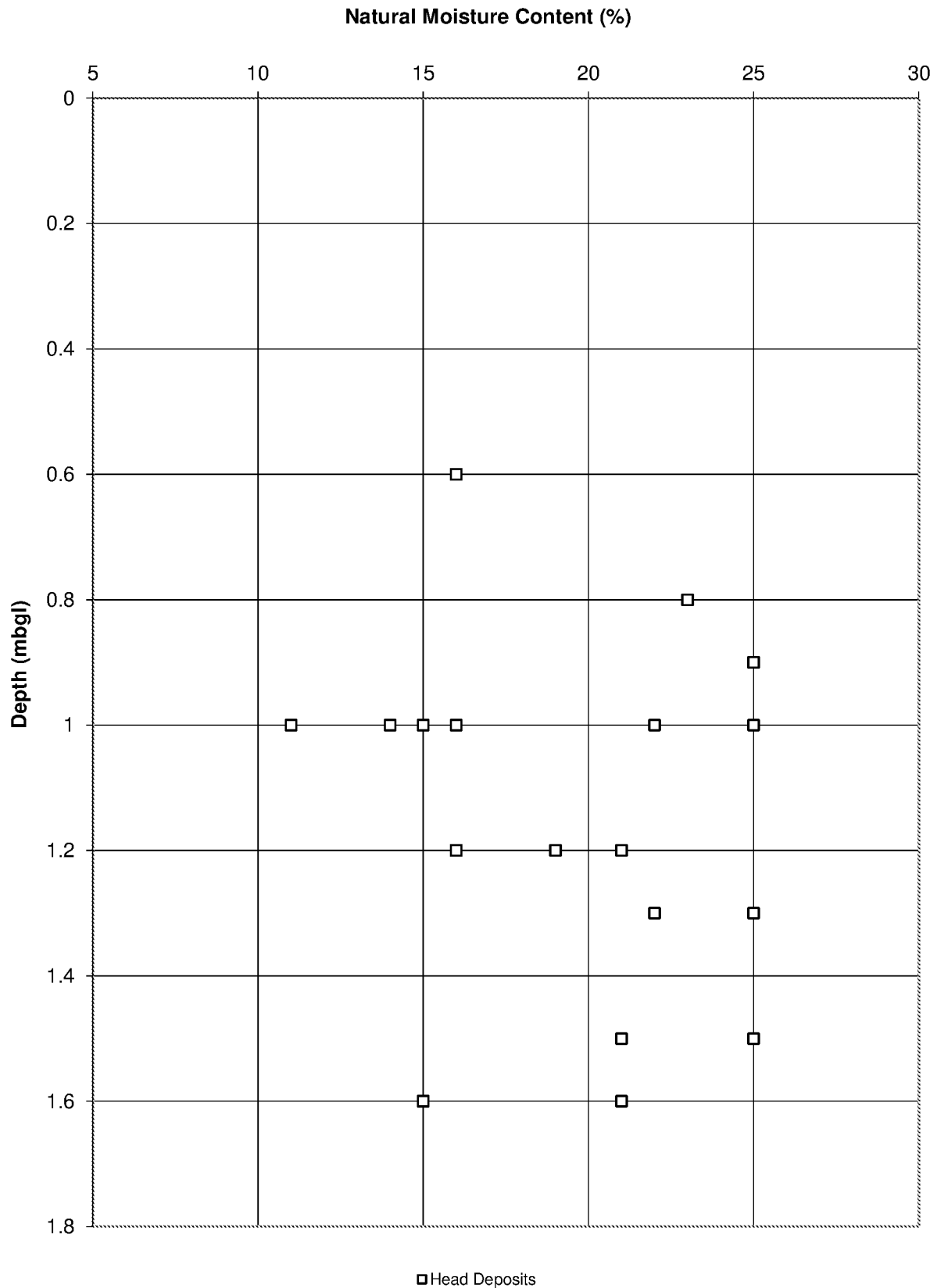
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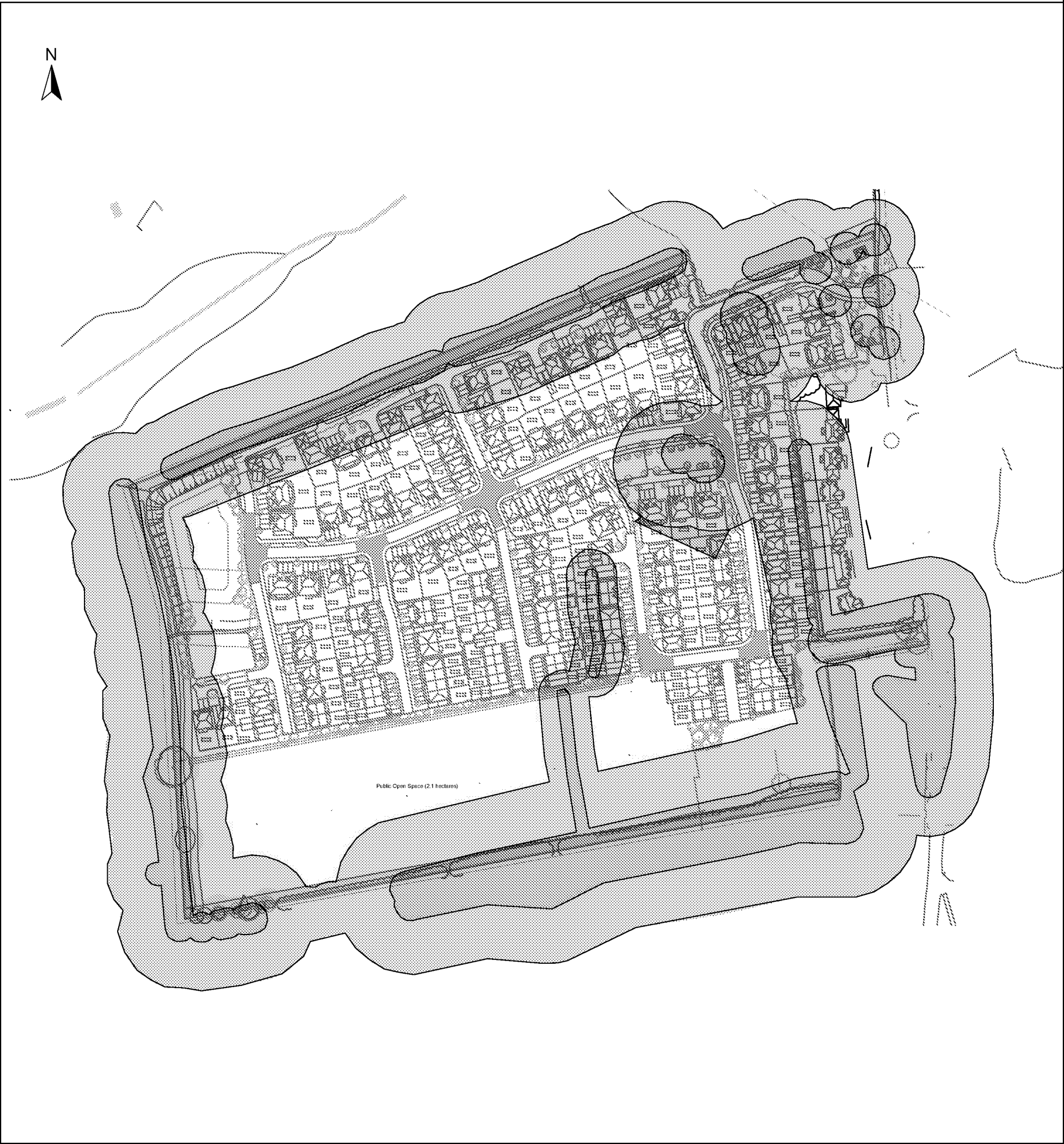
Appendix:

6



Note:
The foundation depths detailed on this zoning plan are based on the effects of existing tree influence only. Depths have been determined in accordance with the recommendations set out within NHBC Chapter 4.2 (Building Near Trees) and are to be confirmed following review of all information provided within this Geo-Environmental Site Assessment and subsequent exploratory logs.

- Notes:**
- This foundation zoning plan is to be read in conjunction with recommendations made within Geo-environmental site assessment Ref:522207-R01-(00)
 - This foundation zoning plan has been produced based on the types and locations of trees shown within CSA Environmental's Tree Survey and Arboricultural Impact Assessment (Ref:CSA/3467/08) only, and does not allow for trees/hedges not shown within the assessments, including areas of proposed planting.
 - A topographical plan showing tree locations and types is included as part of CSA Environmental's Tree Survey and Arboricultural Impact Assessment (Ref:CSA/3467/08) . Not all tree trunks or tree types are shown on the plan (particularly in wooded areas) and therefore assumptions have been made with regards to the location of some tree trunks and tree types, if our assumptions are wrong the recommendations made may no longer apply.



LEGEND

- Foundations require piling due to the effects of existing trees
- Foundations require deepening due to the effects of existing trees
- Foundations with min. founding depths of 1.00m from existing ground level due to the presence of high plasticity soils
- Foundations with min. founding depths of 0.90m from existing ground level due to the presence of medium plasticity soils

- Notes:**
- Foundations on this site are to be designed and constructed in accordance with NHBC: Chapter 4.2 (Building near trees) and CSA Environmental's Tree Survey and Arboricultural Assessment (Ref: CSA/3467/08). The soils underlying the site are of medium-high volume change in accordance with the findings of the Site Assessment.
 - The foundation strategy indicated above is in accordance with existing levels. Foundation requirements subject to change following receipt of proposed FFL's.
 - Foundations are to be taken to non-desiccated soils, which should be taken as the greater of:
 - 1) The minimum depths shown on the drawing, which are derived from chapter 4.2
 - 2) 500mm below evidence of live roots or other signs of desiccation.
 - It is essential to ensure that the foundation bottom is inspected and approved by a competent person to ensure that there are no tree roots present. Alternatively material excavated from the trench bottom should be examined.
 - If there is any doubt regarding the foundation depths, RSK should be contacted for advice.

Base plan provided by ASP drawing ref: 20232-P101A

01	06.12.21	FIRST ISSUE	AE	CB	CB
Rev	Date	Amendment	Drawn	Chkd	Appd

Ambley Court,
Hall Moss Lane,
Tunbridge, Kent,
TN11 5HU

Email: info@rsk.co.uk
Web: www.rsk.co.uk

Client Gladman Developments		
Project Name Arundel Road, Angmering		
Description Foundation Zoning Plan		
Project ID 52207	Figure 07	Revision 01
File name 52207-Foundation Zoning Plan		
Dimensions m	Scale N.T.S	Size A3

APPENDIX A

SERVICE CONSTRAINTS

1. This report and the site investigation carried out in connection with the report (together the "Services") were compiled and carried out by RSK Environment Limited (RSK) for Gladman Developments Ltd (the "Client") in accordance with the terms of a contract between RSK and the Client, dated 14th July 2020. The Services were performed by RSK with the reasonable skill and care ordinarily exercised by an environmental consultant at the time the Services were performed. Further, and in particular, the Services were performed by RSK taking into account the limits of the scope of works required by the client, the time scale involved and the resources, including financial and manpower resources, agreed between RSK and the Client.
2. Other than that, expressly contained in paragraph 1 above, RSK provides no other representation or warranty whether express or implied, in relation to the Services.
3. Unless otherwise agreed in writing, the Services were performed by RSK exclusively for the purposes of the Client. RSK is not aware of any interest of or reliance by any party other than the Client in or on the Services. Unless expressly provided in writing, RSK does not authorise, consent or condone any party other than the client relying upon the Services. Should this report or any part of this report, or otherwise details of the Services or any part of the Services be made known to any such party, and such party relies thereon that party does so wholly at its own and sole risk and RSK disclaims any liability to such parties. **Any such party would be well advised to seek independent advice from a competent environmental consultant and/or lawyer.**
4. It is RSK's understanding that this report is to be used for the purpose described in the introduction to the report. That purpose was a significant factor in determining the scope and level of the Services. Should the purpose for which the report is used, or the proposed use of the site change, this report may no longer be valid and any further use of or reliance upon the report in those circumstances by the client without RSK's review and advice shall be at the client's sole and own risk. Should RSK be requested to review the report after the date of this report, RSK shall be entitled to additional payment at the then existing rates or such other terms as agreed between RSK and the client.
5. The passage of time may result in changes in site conditions, regulatory or other legal provisions, technology or economic conditions which could render the report inaccurate or unreliable. The information and conclusions contained in this report should not be relied upon in the future without the written advice of RSK. In the absence of such written advice of RSK, reliance on the report in the future shall be at the Client's own and sole risk. Should RSK be requested to review the report in the future, RSK shall be entitled to additional payment at the then existing rate or such other terms as may be agreed between RSK and the client.
6. The observations and conclusions described in this report are based solely upon the Services which were provided pursuant to the agreement between the Client and RSK. RSK has not performed any observations, investigations, studies or testing not specifically set out or required by the contract between the client and RSK. RSK is not liable for the existence of any condition, the discovery of which would require performance of services not otherwise contained in the Services. For the avoidance of doubt, unless otherwise expressly referred to in the introduction to this report, RSK did not seek to evaluate the presence on or off the site of asbestos, invasive plants, electromagnetic fields, lead paint, heavy metals, radon gas or other radioactive or hazardous materials, unless specifically identified in the Services.
7. The Services are based upon RSK's observations of existing physical conditions at the Site gained from a visual inspection of the site together with RSK's interpretation of information, including documentation, obtained from third parties and from the Client on the history and usage of the site, unless specifically identified in the Services or accreditation system (such as UKAS ISO 17020:2012 clause 7.1.6):

- a. The Services were based on information and/or analysis provided by independent testing and information services or laboratories upon which RSK was reasonably entitled to rely.
- b. The Services were limited by the accuracy of the information, including documentation, reviewed by RSK and the observations possible at the time of the visual inspection.
- c. The Services did not attempt to independently verify the accuracy or completeness of information, documentation or materials received from the client or third parties, including laboratories and information services, during the performance of the Services.

RSK is not liable for any inaccurate information or conclusions, the discovery of which inaccuracies required the doing of any act including the gathering of any information which was not reasonably available to RSK and including the doing of any independent investigation of the information provided to RSK save as otherwise provided in the terms of the contract between the Client and RSK.

8. The intrusive environmental site investigation aspects of the Services are a limited sampling of the site at pre-determined locations based on the known historic / operational configuration of the site. The conclusions given in this report are based on information gathered at the specific test locations and can only be extrapolated to an undefined limited area around those locations. The extent of the limited area depends on the properties of the materials adjacent and local conditions, together with the position of any current structures and underground utilities and facilities, and natural and other activities on site. In addition, chemical analysis was carried out for a limited number of parameters (as stipulated in the scope between the client and RSK, based on an understanding of the available operational and historical information) and it should not be inferred that other chemical species are not present.
9. Any site drawing(s) provided in this report is (are) not meant to be an accurate base plan but is (are) used to present the general relative locations of features on, and surrounding, the site. Features (intrusive and sample locations etc) annotated on site plans are not drawn to scale but are centred over the approximate location. Such features should not be used for setting out and should be considered indicative only.
10. The comments given in this report and the opinions expressed are based on the ground conditions encountered during the site work and on the results of tests made in the field and in the laboratory. However, there may be conditions pertaining to the site that have not been disclosed by the investigation and therefore could not be taken into account. In particular, it should be noted that there may be areas of made ground not detected due to the limited nature of the investigation or the thickness and quality of made ground across the site may be variable. In addition, groundwater levels and ground gas concentrations and flows, may vary from those reported due to seasonal, or other, effects and the limitations stated in the data should be recognised.
11. Asbestos is often observed to be present in soils in discrete areas. Whilst asbestos-containing materials may have been locally encountered during the fieldworks or supporting laboratory analysis, the history of brownfield and demolition sites indicates that asbestos fibres may be present more widely in soils and aggregates, which could be encountered during more extensive ground works.
12. Unless stated otherwise, only preliminary geotechnical recommendations are presented in this report and these should be verified in a Geotechnical Design Report, once proposed construction and structural design proposals are confirmed.

APPENDIX B

SUMMARY OF LEGISLATION AND POLICY RELATING TO CONTAMINATED LAND

Part IIA of the Environmental Protection Act 1990

Part IIA of the Environmental Protection Act 1990 (Part IIA) and its associated Contaminated Land Regulations 2000 (SI 2000/227), which came into force in England on 1 April 2000, formed the basis for the current regulatory framework and the statutory regime for the identification and remediation of contaminated land. Part IIA of the EPA 1990 defines contaminated land as ‘any land which appears to the Local Authority in whose area it is situated to be in such a condition by reason of substances in, on or under the land, that significant harm is being caused, or that there is significant possibility of significant harm being caused, or that pollution of controlled waters is being or is likely to be caused’. Controlled waters are considered to include all groundwater, inland waters and estuaries.

In August 2006, the Contaminated Land (England) Regulations 2006 (SI 2006/1380) were implemented, which extended the statutory regime to include Part IIA of the EPA as originally introduced on 1 April 2000, together with changes intended chiefly to address land that is contaminated by virtue of radioactivity. These have been replaced subsequently by the Contaminated Land (England) (Amendment) Regulations 2012, which now exclude land that is contaminated by virtue of radioactivity.

The intention of Part IIA is to deal with contaminated land issues that are considered to cause significant harm on land that is not undergoing development (see Environmental Protection Act 1990: Part 2A Contaminated Land Statutory Guidance, April 2012). This document replaces Annex III of Defra Circular 01/2006, published in September 2006 (the remainder of this document is now obsolete).

Planning Policy

Contaminated land is often dealt with through planning because of land redevelopment. This approach was documented in Planning Policy Statement: Planning and Pollution Control PPS23, which states that it remains the responsibility of the landowner and developer to identify land affected by contamination and carry out sufficient remediation to render the land suitable for use. PPS23 was withdrawn early in 2012 and has been replaced by much reduced guidance within the National Planning Policy Framework (NPPF), reference ISBN: 978-1-5286-1033-9, February 2019.

The new framework has only limited guidance on contaminated land, as follows:

Chapter 11. Making effective use of land

- 117 Planning policies and decisions should promote an effective use of land in meeting the need for homes and other uses, while safeguarding and improving the environment and ensuring safe and healthy living conditions. Strategic policies should set out a clear strategy for accommodating objectively assessed needs, in a way that makes as much use as possible of previously-developed or ‘brownfield’ land.
- 118. Planning policies and decisions should:

c) give substantial weight to the value of using suitable brownfield land within settlements for homes and other identified needs, and support appropriate opportunities to remediate despoiled, degraded, derelict, contaminated or unstable land.

Chapter 15. Conserving and enhancing the natural environment

170. Planning policies and decisions should contribute to and enhance the natural and local environment by:

e) preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans; and

f) remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate.

Ground conditions and pollution

178. Planning policies and decisions should ensure that:

a) a site is suitable for its proposed use taking account of ground conditions and any risks arising from land instability and contamination. This includes risks arising from natural hazards or former activities such as mining, and any proposals for mitigation including land remediation (as well as potential impacts on the natural environment arising from that remediation);

b) after remediation, as a minimum, land should not be capable of being determined as contaminated land under Part 2A of the Environmental Protection Act 1990; and

c) adequate site investigation information, prepared by a competent person, is available to inform these assessments.

179. Where a site is affected by contamination or land stability issues, responsibility for securing a safe development rests with the developer and/or landowner.

Water Resources Act (WRA)

The Water Resources Act 1991 (Amendment) (England and Wales) Regulations 2009 updated the Water Resources Act 1991, which introduced the offence of causing or knowingly permitting pollution of controlled waters. The Act provides the Environment Agency with powers to implement remediation necessary to protect controlled waters and recover all reasonable costs of doing so.

Water Framework Directive (WFD)

The Water Framework Directive 2000/60/EC is designed to:

- enhance the status and prevent further deterioration of aquatic ecosystems and associated wetlands that depend on the aquatic ecosystems
- promote the sustainable use of water
- reduce pollution of water, especially by 'priority' and 'priority hazardous' substances

- ensure progressive reduction of groundwater pollution.

The WFD requires a management plan for each river basin be developed every six years.

Groundwater Directive (GWD)

The 1980 Groundwater Directive 80/68/EEC and the 2006 Groundwater Daughter Directive 2006/118/EC of the WFD are the main European legislation in place to protect groundwater. The 1980 Directive is due to be repealed in December 2013. The European legislation has been transposed into national legislation by regulations and directions to the Environment Agency.

Priority Substances Directive (PSD)

The Priority Substances Directive 2008/105/EC is a 'Daughter' Directive of the WFD, which sets out a priority list of substances posing a threat to or via the aquatic environment. The PSD establishes environmental quality standards for priority substances, which have been set at concentrations that are safe for the aquatic environment and for human health. In addition, there is a further aim of reducing (or eliminating) pollution of surface water (rivers, lakes, estuaries and coastal waters) by pollutants on the list. The WFD requires that countries establish a list of dangerous substances that are being discharged and EQS for them. In England and Wales, this list is provided in the River Basin Districts Typology, Standards and Groundwater threshold values (Water Framework Directive) (England and Wales) Directions 2010. In order to achieve the objectives of the WFD, classification schemes are used to describe where the water environment is of good quality and where it may require improvement.

Environmental Permitting Regulations (EPR)

The Environmental Permitting (England and Wales) Regulations 2016 (as amended) provide a single regulatory framework that streamlines and integrates waste management licensing, pollution prevention and control, water discharge consenting, groundwater authorisations, and radioactive substances regulation. Schedule 22, paragraph 6 of EPR 2016 states: 'the regulator must, in exercising its relevant functions, take all necessary measures - (a) to prevent the input of any hazardous substance to groundwater; and (b) to limit the input of non-hazardous pollutants to groundwater so as to ensure that such inputs do not cause pollution of groundwater.'

Notes:

1. *The above information is provided for background but does not constitute site-specific advice*
2. *The above summary applies to England only. Variations exist within other countries of the United Kingdom*



APPENDIX C

UTILITY SERVICE PLANS

Maps by email Plant Information Reply



IMPORTANT WARNING

Information regarding the location of BT apparatus is given for your assistance and is intended for general guidance only. No guarantee is given of its accuracy.

It should not be relied upon in the event of excavations or other works being made near to BT apparatus which may exist at various depths and may deviate from the marked route.



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KEY TO BT SYMBOLS

DP		Pole	
Planned DP		Planned Pole	
PCP		Joint Box	
Planned PCP		Change Of State	
Built		Split Coupling	
Planned		Duct Tee	
Inferred		Planned Box	
Building		Manhole	
Kiosk		Planned Manhole	
Hatchings		Cabinet	
		Planned Cabinet	

Other proposed plant is shown using dashed lines.
BT Symbols not listed above maybe disregarded.
Existing BT Plant may not be recorded.
Information valid at time of preparation

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BT Ref : RH12265N

Map Reference : (centre) TQ0658305339

Easting/Northing : (centre) 506583,1053

Issued : 24/08/2017 12:26:47

WARNING: IF PLANNED WORKS FALL INSIDE HATCHED AREA IT IS ESSENTIAL BEFORE PROCEEDING THAT YOU CONTACT THE NATIONAL NOTICE HANDLING CENTRE. PLEASE SEND E-MAIL TO: nnhc@openreach.co.uk

Certificate Details

Certificate Number	6933248
Issue Date	25/08/2017
Client Ref	LKS/Angmering 2017-84
Address	land west of, Arundel Road, Angmering, West Sussex, BN16 4ET

We hereby certify that, based upon historical parish and tithe district boundaries, third party data and the relevant documentation found at The National Archives, the property is within a tithe district or Parish that has no record of risk of chancel repair liability.

No-one involved in the production of this report has any relationship with any party involved in the sale of the property.

The service is only available for properties in England and Wales. The data used to identify potential risk is derived from an academic study of historical parish boundaries and the relevant documentation pertaining to potential chancel repair liability held at the National Archive.

“No record of risk” means:

- a) no record of risk is held by The National Archives within the relevant Inland Revenue Indices for the subject parish;
- b) the property is within a parish with evidence of risk but the property is situated within a tithe district that has no risk per the records described above;
- c) the record held by the National Archive details that the total liability is held by the Church Commissioners, Cathedrals and/or educational establishments.

When purchasing land from any of these parties please enquire with them directly regarding this liability. It should be noted that this service searches against the identified address point of the subject building and not the delineated boundary of the property, in order to establish the location in respect of the relevant historical boundary.

ChancelCheck® is provided with the benefit of a Search Insurance policy offering cover up to a market value of £2m where pre-existing matter adversely affects the result of the ChancelCheck® provided on the property.

Terms and Conditions

This Certificate is prepared by CLS Property Insight Limited ('CLS') and is subject to the following Terms and Conditions:

Business Clients Vis

ChancelCheck® Guidance Note

Chancel Repair Liability Background

Chancel repair liability is a medieval anomaly whereby the Church of England and Wales was granted powers to charge those owning "rectorial land" for the upkeep of the chancel of some Parish Churches.

Chancel repair liability affects millions of acres in England and Wales and is still deemed a usual and necessary search by conveyancers.

Chancel repair liability can still be attached to land regardless of whether or not the liability is noted against the title, making the prospective risk unquantifiable.

The Church continues to actively register their interest, to protect their right to charge for chancel repair liability in perpetuity.

ChancelCheck® Identifies the Problem

ChancelCheck®	ChancelCheck® is an online, low cost (£20 + VAT) screening report designed to inform the Homebuyer of any potential chancel repair liability. It is in accordance with the Conveyancing and CML Handbooks.
Certificate	If the area of land selected falls within a parish that does not have the ability to claim for chancel repair liability, the search will be returned as a Certificate.
Report	If the area of land selected falls within a parish that has the ability to claim for chancel repair liability, a potential liability will be returned and the search will come back as a Report. Where an issue has been identified, ChancelSure® is available to cover the potential risk.

NB. ChancelCheck® does not publish the relevant parish name to deter contacting the Church. Doing so will put the Church on notice of a potential liability and may lead to negating insurance cover.

ChancelSure® Offers a Solution

ChancelSure®	ChancelSure® is the market leading chancel repair indemnity product, providing comprehensive protection and security for the homeowner where a potential chancel liability has been identified. ChancelSure® offers a cost effective solution, protecting the owner/occupier, mortgagee, lessees and successors if required. ChancelSure® policies have been specifically designed to work in conjunction with ChancelCheck® and are fully compliant with lender requirements. ChancelSure® insurance is part of the ConveySure® suite of legal indemnity insurance products, which are available from CLS and other authorised resellers. ChancelSure® premiums start at £40.00 including IPT, a schedule of online premiums is provided overleaf.
Insurer Details	The highest and most consistently-rated security, AA-, available through AmTrust International Underwriters Designated Activity Company (DAC).
Expert Underwriters	The policies are underwritten by AmTrust International Underwriters Designated Activity Company (DAC) and fully compliant with the requirements of Part II of the CML Handbook.
Period of Cover	Cover is offered for 25, 35 years or in perpetuity. ChancelSure® policies offer full value indemnity insurance against claims and legal costs of up to £3m. All ChancelSure® policies include diminution of value cover.
Bespoke Policies	Bespoke policies are available for larger areas, higher limits of indemnity, when there is prior knowledge of a risk, a Unilateral Notice registered or a caution lodged against the title. Email express@clsrs.co.uk for any enquiries.
Samples	To download a sample policy, please visit www.cls.co.uk .

ChancelSure® Insurance Policy Premiums

ChancelSure® is the market leading chancel repair indemnity product, providing comprehensive protection and security for the homeowner where a potential chancel liability has been identified. CLS Risk Solutions Limited underwrites ChancelSure® policies on behalf of AmTrust International Underwriters Designated Activity Company (DAC) and therefore offers the highest and most consistently-rated security available in the UK Title Indemnity market (AA- rated since 2005/6 per Standard & Poor's).

The figures quoted below are our standard one-off policy premiums (including IPT) which will apply to most properties. However, as chancel repair liability is a fluctuating risk, these figures may alter for some properties. In addition, we periodically review our underwriting data and may carry out further assessment before confirming the availability of cover. For a draft policy, please visit our website [www.clsrisk.co.uk](#) or contact our Underwriting Team at enquiries@clsrisk.co.uk

ChancelSure® offers diminution in value and a 200% escalator clause as standard, with 25 year, 35 year and in perpetuity terms available. For lender compliant insurance policies (no cover notes with invoices payable by BACS or cheque within 14 days) log onto [www.clsrisk.co.uk](#)

Residential Property (25 Years)

Limit of Indemnity	Residential Non Successor < 5 acres	Residential Successor < 5 acres	Residential Non Successor 5 – 10 acres	Residential Successor 5 – 10 acres
£100,000	£40.00	£65.00	£50.00	£90.00
£250,000	£54.00	£95.00	£75.00	£125.00
£500,000	£75.00	£125.00	£110.00	£150.00
£1,000,000	£94.00	£140.00	£130.00	£165.00
£1,500,000	£130.00	£175.00	£150.00	£195.00
£2,000,000	£150.00	£190.00	£175.00	£215.00
£2,500,000	£175.00	£210.00	£225.00	£275.00
£3,000,000	£210.00	£250.00	£275.00	£325.00

Residential Property (35 Years)

Limit of Indemnity	Residential Successor < 5 acres	Residential Successor 5 - 10 acres
£100,000	£80.00	£105.00
£250,000	£120.00	£145.00
£500,000	£145.00	£165.00
£1,000,000	£160.00	£185.00
£1,500,000	£185.00	£210.00
£2,000,000	£210.00	£240.00
£2,500,000	£225.00	£300.00
£3,000,000	£325.00	£423.00

Residential Property (In Perpetuity)

Residential Successor < 5 acres	Residential Successor 5 - 10 acres
£90.00	£125.00
£140.00	£165.00
£165.00	£180.00
£180.00	£215.00
£215.00	£240.00
£240.00	£300.00
£265.00	£350.00
£363.00	£472.00

Bespoke Policies

Bespoke policies are available for larger areas, higher limits of indemnity, when there is prior knowledge of a risk, a Unilateral Notice registered or a caution lodged against the title.

Please contact our underwriting team by email enquiries@clsrisk.co.uk

ChancelSure® Insurance Policy Premiums

Commercial Property (25 Years)

Limit of Indemnity	Commercial Non Successor < 3 acres	Commercial Non Successor 3 - 5 acres	Commercial Non Successor 5 - 10 acres
£250,000	£130.00	£200.00	£250.00
£500,000	£220.00	£400.00	£550.00
£750,000	£450.00	£600.00	£750.00
£1,000,000	£500.00	£800.00	£900.00
£1,500,000	£700.00	£1,000.00	£1,300.00
£2,000,000	£1,250.00	£1,350.00	£1,500.00
£2,500,000	£1,400.00	£1,550.00	£1,700.00
£3,000,000	£1,600.00	£1,750.00	£1,900.00

Commercial Property (25 Years)

Limit of Indemnity	Commercial Successor < 3 acres	Commercial Successor 3 - 5 acres	Commercial Successor 5 – 10 acres
£250,000	£200.00	£300.00	£375.00
£500,000	£320.00	£600.00	£700.00
£750,000	£625.00	£850.00	£950.00
£1,000,000	£680.00	£1,100.00	£1,150.00
£1,500,000	£950.00	£1,250.00	£1,500.00
£2,000,000	£1,500.00	£1,750.00	£2,000.00
£2,500,000	£1,750.00	£2,000.00	£2,200.00
£3,000,000	£1,900.00	£2,150.00	£2,350.00

Bespoke Policies

Bespoke policies are available for larger areas, higher limits of indemnity, when there is prior knowledge of a risk, a Unilateral Notice registered or a caution lodged against the title.

Please contact our underwriting team by email to underwriting@cls-chancel.com

PCCB Guidance Note

IMPORTANT CONSUMER PROTECTION INFORMATION

This search has been produced by CLS Property Insight Limited (CLS); Suite 5, 40 Churchill Square, Kings Hill, West Malling, Kent, ME19 4YU (Call: 01732 897530, Email: info@clspropertyinsight.co.uk)

CLS Property Insight Limited is registered with the Property Codes Compliance Board (PCCB) as a subscriber to the Search Code. The PCCB independently monitors how registered firms maintain compliance with the Code.

The Search Code

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

By giving you this information, the search firm is confirming that they keep to the principles of the Code. This provides important protection for you.

Core Principles

Search providers which subscribe to the Code will:

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

Complaints

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

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

TPO's Contact Details:

The Property Ombudsman scheme; Milford House, 43-55 Milford Street Salisbury, Wiltshire, SP1 2BP (Call: 01245 377000, Email: info@propertyombudsman.org.uk, Website: www.propertyombudsman.org.uk).

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

PLEASE ASK YOUR SEARCH PROVIDER IF YOU WOULD LIKE A COPY OF THE FULL SEARCH CODE

CLS Complaint Resolution Procedure

If you have a complaint regarding our services or products, please send the details to:
CLS Property Insight Limited, Suite 5, 40 Churchill Square, Kings Hill, West Malling, Kent,
ME19 4YU (Call: 01732 897530, Email: info@clspropertyinsight.co.uk)



Your complaint will be acknowledged within 5 working days of receipt and you should receive a written response within 20 working days. Where this is not possible, we will inform you of the reasons why and give an indication of when you should expect a response. If you have not received a response within 40 working days of original receipt of the complaint or you are not happy with the response given you may take one of the following actions:

- If your complaint is in relation to our search products you may refer your complaint to:
The Property Ombudsman scheme; Milford House, 43-55 Milford Street Salisbury, Wiltshire, SP1 2BP (Call: 01245 377000, Email: info@propertyombudsman.org.uk).
- If your complaint is in relation to our insurance products you may refer your complaint to:
Financial Ombudsman Service; Exchange Tower, Harbour Exchange Square, London, E14 9SR. (Call: 020 7964 1000, Fax: 020 7964 1001, Email: complaints@financial-ombudsman.org.uk).
- For details of the additional protection and benefits provided by commissioning a code compliant search product from an IPSA registered member please visit www.ipsa.co.uk

Order received: 25 August 2017
Order completed: 6 September 2017

Drainage and water enquiry

Commercial

Order reference: LS/U1308354

Your reference: SF25471037000 LKS/Angmering
2017-84

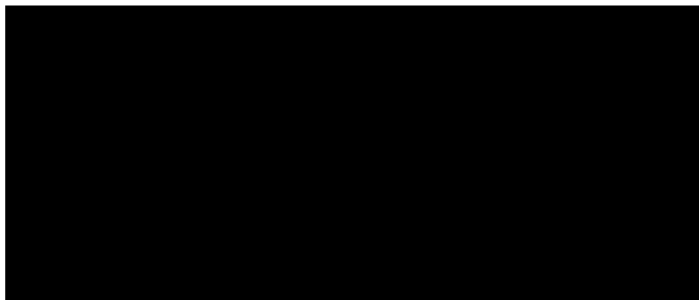
Search address:

**Land West Of Arundel Road
Littlehampton
West Sussex
BN16 4ET**

Ordered by:

**Searchflow
42 Kings Hill Avenue
West Malling
Kent
ME19 4AJ**

For enquiries regarding the information provided in this report, please contact the LandSearch team:



LandSearch
Southern Water Services
Southern House
Capstone Road
Chatham
Kent
ME5 7QA

What you need to know about...

Private sewer transfer

On 1 October 2011, ownership of private sewers and lateral drains changed in accordance with The Water Industry (Schemes for Adoption of Private Sewers) Regulations 2011. The contents of this search may not reflect these changes.

For further information please visit our website: www.southernwater.co.uk/sewer-ownership-changes.

Records searched

The following records were searched in compiling this report: the Map of Public Sewers, the Map of Waterworks, water and sewerage records, the Register of Properties subject to Internal Foul Flooding, the Register of Properties subject to Poor Water Pressure and the Drinking Water Register. Should the property not fall entirely within Southern Water's region, a copy of the records held by the relevant water company was searched.

Competition in the non-household retail market

From April 2017 non-household customers in England can choose their retailer. 'Retail' refers to the way in which customers are billed for their water and sewerage as well as customer services including meter reading.

The 'wholesale' part of the water industry was not opened for competition in April 2017. This means Southern Water continues to look after the pipes and infrastructure for all its customers across Kent, Sussex, Hampshire and the Isle of Wight.

Moving

There can be a lot to do and remember when you're moving. Whether you are moving within our area, moving into our area or moving out of the area please let your retailer know.

Your order summary

Maps		
1.1	Where relevant, please include a copy of an extract from the public sewer map.	Map provided
1.2	Where relevant, please include a copy of an extract from the map of waterworks.	Map provided
Drainage		
2.1	Does foul water from the property drain to a public sewer?	No
2.2	Does surface water from the property drain to a public sewer?	No
2.3	Is a surface water drainage charge payable?	See answer
2.4	Does the public sewer map indicate any public sewer, disposal main or lateral drain within the boundaries of the property?	No
2.4.1	Does the public sewer map indicate any public pumping station or any other ancillary apparatus within the boundaries of the property?	No
2.5	Does the public sewer map indicate any public sewer within 30.48 metres (100 feet) of any buildings within the property?	No
2.5.1	Does the public sewer map indicate any public pumping station or any other ancillary apparatus within 50 metres of any buildings within the property?	No
2.6	Are any sewers or lateral drains serving, or which are proposed to serve the property, the subject of an existing adoption agreement or an application for such an agreement?	No
2.7	Has any sewerage undertaker approved or been consulted about any plans to erect a building or extension on the property over or in the vicinity of a public sewer, disposal main or drain?	No
2.8	Is the building which is or forms part of the property at risk of internal flooding due to overloaded public sewers?	No
2.9	Please state the distance from the property to the nearest boundary of the nearest sewage treatment works.	See answer
Water		
3.1	Is the property connected to mains water supply?	No
3.2	Are there any water mains, resource mains or discharge pipes within the boundaries of the property?	No
3.3	Is any water main or service pipe serving, or which is proposed to serve the property, the subject of an existing adoption agreement or an application for such an agreement?	No
3.4	Is the property at risk of receiving low water pressure or flow?	No
3.5	What is the classification of the water supply for the property?	See answer
3.6	Is there a meter installed at this property?	See answer
Charging		
4.1.1	Who is responsible for providing the sewerage services for the property?	Southern Water
4.1.2	Who is responsible for providing the water services for the property?	Southern Water
4.2	Who bills the property for sewerage services?	See answer
4.3	Who bills the property for water services?	See answer
Trade effluent information		
4.4	Is there a consent on this property to discharge trade effluent under Section 118 of the Water Industry Act (1991) into the public sewerage system?	No

Maps

Public sewer map

Q. 1.1: Where relevant, please include a copy of an extract from the public sewer map.

A.: A copy of an extract from the public sewer map is provided.

Guidance Notes:

The Water Industry Act 1991 defines public sewers as those which the Company has responsibility for. Other assets and rivers, watercourses, ponds, culverts or highway drains may be shown for information purpose only.

Any private sewers or lateral drains which are indicated on the extract of the public sewer map as being subject to an agreement under Section 104 of the Water Industry Act 1991 are not an "as constructed" record. It is recommended these details be checked with the developer.

Map of waterworks

Q. 1.2: Where relevant, please include a copy of an extract from the map of waterworks.

A.: A copy of an extract of the map of waterworks is provided.

Guidance Notes:

Assets other than vested water mains may be shown on the plan for information only.

The Company is not responsible for private supply pipes connecting the property to the public water main and does not hold details of these. These may pass through land outside of the control of the seller, or may be shared with adjacent properties. The buyer may wish to investigate whether separate rights or easements are needed for their inspection, repair or renewal.

If an extract of the public water main record is enclosed, this will show known public water mains in the vicinity of the property. It should be possible to estimate the likely length and route of any private water supply pipe connecting the property to the public water network.

Drainage

Foul water

Q. 2.1: Does foul water from the property drain to a public sewer?

A.: The Company's records indicate that foul water from the property does not drain to the public sewerage system.

Guidance Notes:

The Company is not responsible for private drains and sewers that connect the property to the public sewerage system and does not hold details of these.

The property owner will normally have sole responsibility for private drains serving the property and may have shared responsibility, with other users, if the property is served by a private sewer which also serves other properties. These may pass through land outside of the control of the seller and the buyer may wish to investigate whether separate rights or easements are needed for their inspection, repair or renewal.

The copy extract will show known public sewers in the vicinity of the property. It should be possible to estimate the likely length and route of any private drains and/or sewers connecting the property to the public sewerage system.

If foul water does not drain to the public sewerage system the property may have private facilities in the form of a cesspit, septic tank or other type of treatment plant.

Surface water

Q. 2.2: Does surface water from the property drain to a public sewer?

A.: The Company's records indicate that surface water from the property does not drain to the public sewerage system. If the property was constructed after 6 April 2015 the surface water drainage may be served by a Sustainable Drainage System. Further information may be available from the developer.

Guidance Notes:

The Company is not responsible for private drains and sewers that connect the property to the public sewerage system and does not hold details of these.

The property owner will normally have sole responsibility for private drains serving the property and may have shared responsibility, with other users, if the property is served by a private sewer which also serves other properties. These may pass through land outside of the control of the seller and the buyer may wish to investigate whether separate rights or easements are needed for their inspection, repair or renewal.

The copy extract will show known public sewers in the vicinity of the property. It should be possible to estimate the likely length and route of any private drains and/or sewers connecting the property to the public sewerage system.

In some cases company records do not distinguish between foul and surface water connections to the public sewerage system. If on inspection the buyer finds that the property is not connected for surface water drainage, the property may be eligible for a rebate of the surface water drainage charge. Details can be obtained from the Company.

If surface water does not drain to the public sewerage system the property may have private facilities in the form of a soakaway or private connection to a watercourse.

Surface water drainage charge

Q. 2.3: Is a surface water drainage charge payable?

A.: Records confirm that a surface water drainage charge is not applicable at this property. If the property was constructed after 6 April 2015 the surface water drainage may be served by a Sustainable Drainage System. Further information may be available from the developer.

Guidance Notes:

Where surface water from a property does not drain to the public sewerage system no surface water drainage charges are applicable.

If on inspection the buyer finds that the property is not connected for surface water drainage, the buyer should contact their retailer.

Public sewers within the boundary of the property

Q. 2.4: Does the public sewer map indicate any public sewer, disposal main or lateral drain within the boundaries of the property?

A.: The public sewer map indicates that there are no public sewers, disposal mains or lateral drains within the boundaries of the property. However, from 1 October 2011 there may be additional public sewers, disposal mains or lateral drains which are not recorded on the public sewer map but which may further prevent or restrict development of the property. It is therefore recommended that investigations are made into the drainage arrangements of the property as the owner may be liable for repairs to the drainage system.

Guidance Notes:

The approximate boundary of the property has been determined by reference to the Ordnance Survey record or the map supplied.

The presence of a public sewer within the boundary of the property may restrict further development within it.

Southern Water Services has a statutory right of access to carry out work on their assets, subject to notice. This may result in employees of Southern Water Services or its contractors needing to enter the property to carry out work.

Please note if the property was constructed after 1 July 2011 any sewers and/or lateral drain within the boundary of the property are the responsibility of the householder.

Public pumping station within the boundary of the property

Q. 2.4.1: Does the public sewer map indicate any public pumping station or any other ancillary apparatus within the boundaries of the property?

A.: The public sewer map included indicates that there is no public pumping station within the boundaries of the property. Any other ancillary apparatus is shown on the public sewer map and referenced on the legend.

Guidance Notes:

The approximate boundary of the property has been determined by reference to the Ordnance Survey record or the map supplied.

The presence of a pumping station within the boundary of the property may restrict further development within it.

Southern Water Services has a statutory right of access to carry out work on their assets, subject to notice. This may result in employees of Southern Water Services or its contractors needing to enter the property to carry out work.

It should be noted that only private pumping stations installed before 1 July 2011 will be transferred into the ownership of Southern Water Services.

Public sewers near to the property

Q. 2.5: Does the public sewer map indicate any public sewer within 30.48 metres (100 feet) of any buildings within the property?

A.: The public sewer map indicates that there are no public sewers within 30.48 metres (100 feet) of a building within the property.

Guidance Notes:

From 1 October 2011 there may be additional lateral drains and/or public sewers which are not recorded on the public sewer map but are also within 30.48 metres (100 feet) of a building within the property.

The presence of a public sewer within 30.48 metres (100 feet) of a building within the property can result in the local authority requiring a property to be connected to the public sewer.

The measure is estimated from the Ordnance Survey record, between a building within the boundary of the property and the nearest public sewer.

Public pumping station near to the property

Q. 2.5.1: Does the public sewer map indicate any public pumping station or any other ancillary apparatus within 50 metres of any buildings within the property?

A.: The public sewer map included indicates that there is no public pumping station within 50 metres of any buildings within the property. Any other ancillary apparatus is shown on the public sewer map and referenced on the legend.

Guidance Notes:

The measure is estimated from the Ordnance Survey record, between a building within the boundary of the property and the nearest pumping station.

It should be noted that only private pumping stations installed before 1 July 2011 will be transferred into the ownership of Southern Water Services.

Public adoption of sewers and lateral drains

Q. 2.6: Are any sewers or lateral drains serving, or which are proposed to serve the property, the subject of an existing adoption agreement or an application for such an agreement?

A.: Records indicate that the sewers serving the development, of which this property forms part, are not the subject of an application for adoption under Section 104 of the Water Industry Act 1991. Where the property is part of an established development it would not normally be subject to an adoption agreement under Section 104 of the Water Industry Act 1991.

Guidance Notes:

This enquiry is of interest to purchasers of new homes who will want to know whether or not the property will be linked to a public sewer.

Where the property is part of a very recent or ongoing development and the sewers are not the subject of an adoption application, buyers should consult with the developer to ascertain the extent of private drains and sewers for which they will hold maintenance and renewal liabilities.

Final adoption is subject to the developer complying with the terms of the adoption agreement under Section 104 of the Water Industry Act 1991.

Any sewers and/or lateral drains within the boundary of the property are not the subject of an adoption agreement and remain the responsibility of the householder. Adoptable sewers are normally those situated in the public highway.

Building over a public sewer, disposal main or drain

Q. 2.7: Has the sewerage undertaker approved or been consulted about any plans to erect a building or extension on the property over or in the vicinity of a public sewer, disposal main or drain?

A.: There are no records in relation to any approval or consultation about any plans to erect a building or extension on the property over or in the vicinity of a public sewer, disposal main or drain. However, the sewerage undertaker might not be aware of a building or extension on the property over or in the vicinity of a public sewer, disposal main or drain.

Guidance Notes:

Buildings or extensions erected over a sewer in contravention of Building Control may have to be removed or altered.

From 1 October 2011 private sewers, disposal mains and lateral drains were transferred into public ownership and the sewerage undertaker may not have approved or been consulted about any plans to erect a building or extension on the property or in the vicinity of these.

Risk of flooding due to overloading public sewers

Q. 2.8: Is the building which is or forms part of the property at risk of internal flooding due to overloaded public sewers?

A.: The building is not recorded as being at risk of internal flooding due to overloaded public sewers. From 1 October 2011 private sewers, disposal mains and lateral drains were transferred into public ownership. It is therefore possible that a building may be at risk of internal flooding due to an overloaded public sewer which the sewerage undertaker is not aware of. For further information it is recommended that enquiries are made of the vendor.

Guidance Notes:

A sewer is "overloaded" when the flow from a storm is unable to pass through it due to a permanent problem (e.g. flat gradient, small diameter). Flooding as a result of temporary problems such as blockages, siltation, collapses and equipment or operational failures are excluded.

"Internal flooding" from the public sewers is defined as flooding, which enters a building or passes below a suspended floor.

For reporting purposes, buildings are restricted to those normally occupied and used for residential, public, commercial, business or industrial purposes.

"At Risk" properties are defined as properties that have suffered or are likely to suffer internal flooding from the public foul, combined or surface water sewers due to overloading of the sewerage system more frequently than the relevant reference period (either once or twice in ten years) as determined by the sewerage undertaker's reporting procedure.

Flooding as a result of storm events proven to be exceptional and beyond the reference period of one in ten years are not included.

Buildings may be at risk of flooding but not identified where flooding incidents have not been reported to the sewerage undertaker.

Public sewers are defined as those for which the sewerage undertaker holds statutory responsibility under the Water Industry Act 1991.

It should be noted that flooding can occur from private sewers and drains which are not the responsibility of the sewerage undertaker. This report excludes flooding from the private sewers and drains and the sewerage undertaker makes no comment upon this matter.

Sewage treatment works

Q. 2.9: Please state the distance from the property to the nearest boundary of the nearest sewage treatment works.

A.: The nearest sewage treatment works is 1.88 kilometres East of the property. The name of the sewage treatment works is CLAPHAM WTW, which is the responsibility of Southern Water Services, Southern House, Yeoman Road, Worthing, West Sussex, BN13 3NX.

Guidance Notes:

The nearest sewage treatment works will not always be the sewage treatment works serving the catchment within which the property is situated.

The sewerage undertaker's records were inspected to determine the nearest sewage treatment works.

It should be noted that there may be a private sewage treatment works closer than the one detailed above that have not been identified.

Water

Connection to mains water supply

Q. 3.1: Is the property connected to mains water supply?

A.: Records indicate that the property is not connected to mains water supply and water is therefore likely to be provided by virtue of a private supply.

Guidance Notes:

The situation should be checked with the current owner of the property.

Details of private supplies are not kept by the water undertaker.

Water mains, resource mains or discharge pipes

Q. 3.2: Are there any water mains, resource mains or discharge pipes within the boundaries of the property?

A.: The map of waterworks does not indicate any water mains, resource mains or discharge pipes within the boundaries of the property.

Guidance Notes:

The boundary of the property has been determined by reference to the Ordnance Survey record or the map supplied.

The presence of a public water main within the boundary of the property may restrict further development within it.

Water undertakers have a statutory right of access to carry out work on their assets, subject to notice. This may result in employees of the water undertaker or its contractors needing to enter the property to carry out work.

Adoption of water mains and services pipes

Q. 3.3: Is any water main or service pipe serving, or which is proposed to serve the property, the subject of an existing adoption agreement or an application for such an agreement?

A.: Records confirm that water mains or service pipes serving the property are not the subject of an existing adoption agreement or an application for such an agreement.

Guidance Notes:

This enquiry is of interest to purchasers of new homes who will want to know whether or not the property will be linked to the mains water supply.

Risk of low water pressure or flow

Q. 3.4: Is the property at risk of receiving low water pressure or flow?

A.: Records confirm that the property is not recorded by the water undertaker as being at risk of receiving low water pressure or flow.

Guidance Notes:

"Low water pressure" means water pressure below the regulatory reference level which is the minimum pressure when demand on the system is not abnormal.

The reference level of service is a flow of 9 litres/minute at a pressure of 10 metres head on the customer's side of the main stop tap (mst). The reference level of service must be applied on the customer's side of a meter or any other company fittings that are on the customer's side of the main stop tap.

The reference level applies to a single property. Where more than one property is served by a common service pipe, the flow assumed in the reference level must be appropriately increased to take account of the total number of properties served.

For two properties, a flow of 18 litres/minute at a pressure of 10 metres head on the customers side of the mst is appropriate. For three or more properties the appropriate flow should be calculated from the standard loadings provided in BS6700 or Institute of Plumbing handbook.

Water companies include properties receiving pressure below the reference level, provided that allowable exclusions do not apply (i.e. events which can cause pressure to temporarily fall below the reference level). Refer to list below:

Abnormal demand: This exclusion is intended to cover abnormal peaks in demand and not the daily, weekly or monthly peaks in demand which are normally expected. Companies exclude properties which are affected by low pressure only on those days with the highest peak demands. During the year companies may exclude, for each property, up to five days of low pressure caused by peak demand.

Planned maintenance: Companies exclude low pressures caused by planned maintenance. It is not intended that companies identify the number of properties affected in each instance. However, companies must maintain sufficiently accurate records to verify that low pressure incidents that are excluded because of planned maintenance are actually caused by maintenance.

One-off incidents: This exclusion covers a number of causes of low pressure; mains bursts; failures of company equipment (such as PRVs or booster pumps); firefighting; and action by a third party. However, if problems of this type affect a property frequently, they cannot be classed as one-off events and further investigation will be required before they can be excluded.

Low pressure incidents of short duration: Properties affected by low pressures which only occur for a short period, and for which there is evidence that incidents of a longer duration would not occur during the course of the year, may be excluded.

Water hardness

Q. 3.5: What is the classification of the water supply for the property?

A.: The water supplied to the property has an average water hardness of 295 mg/l calcium carbonate which is defined as "Hard" by Southern Water.

Guidance Notes:

The hardness of water depends on the amount of calcium in it – the more it contains, the harder the water is.

There is no UK or European standard set for the hardness of drinking water. More information on water hardness can be found on the Drinking Water Inspectorates' website: <http://www.dwi.gov.uk/>

Water hardness can be expressed in various indices for example the hardness settings for dishwashers are commonly expressed in Clark's degrees, but check with the manufacturer as there are also other units. The following table explains how to convert mg/l calcium and mg/l calcium carbonate classifications.

To Convert from:	To Clark degrees	To French degrees	To German degrees
mg/l calcium	multiply by 0.18	multiply by 0.25	multiply by 0.14
mg/l calcium carbonate	multiply by 0.07	multiply by 0.10	multiply by 0.056

Water meters

Q. 3.6: Is there a meter installed at this property?

A.: Records indicate that the property is not served by a water meter.

Guidance Notes:

Where the property is not served by a water meter and the customer wishes to consider this method of charging they should contact their water retailer.

If a property is measured (metered) upon change of occupation this property will retain the meter.

Charging

Sewerage undertaker

Q. 4.1.1: Who is responsible for providing the sewerage services for the property?

A.: Southern Water is responsible for providing the sewerage services for the property.

Guidance Notes:

The 'wholesale' part of the water industry did not open for competition in April 2017. This means that Southern Water continues to operate the network of pipes, mains and treatment works.

As a wholesaler, Southern Water sells sewerage services to the companies who enter the retail market. In some instances, wholesalers will still need to interact directly with customers. For example, customers will still contact Southern Water to report internal sewer flooding.

Water undertakers

Q. 4.1.2: Who is responsible for providing the water services for the property?

A.: Southern Water is responsible for providing the water services for the property.

Guidance Notes:

The 'wholesale' part of the water industry did not open for competition in April 2017. This means that water undertakers continue to operate the network of pipes, mains and treatment works.

As a wholesaler, water undertakers sell water services to the companies who enter the retail market. In some instances, wholesalers will still need to interact directly with customers. For example, customers will still contact water undertakers to report leaks.

Sewerage bills

Q. 4.2: Who bills the property for sewerage services?

A.: If you wish to know who bills the sewerage services for this property then you will need to contact the current owner. For a list of all potential retailers of sewerage services for the property please visit www.open-water.org.uk.

Guidance Notes:

From April 2017 non-household customers in England can choose their retailer.

'Retail' refers to the way in which customers are billed for their water and sewerage as well as customer services including meter reading.

Water bills

Q. 4.3: Who bills the property for water services?

A.: If you wish to know who bills the water services for this property then you will need to contact the current owner. For a list of all potential retailers of water services for the property please visit www.open-water.org.uk.

Guidance Notes:

From April 2017 non-household customers in England can choose their retailer.

'Retail' refers to the way in which customers are billed for their water and sewerage as well as customer services including meter reading.

Trade effluent information

Q. 4.4: Is there a consent on this property to discharge trade effluent under Section 118 of the Water Industry Act (1991) into the public sewerage system?

A.: The trader operating at this commercial property does not hold either a Trade Effluent Consent, or an acknowledgement of a trade effluent discharge, as issued by Southern Water.

Guidance Notes:

Please note, any existing consent is dependent on the business being carried out at the property and will not transfer automatically upon change of ownership.

Any change of ownership from the current incumbent of a property will require the negotiation of a new trade effluent consent or a new acknowledgement between the new incumbent and Southern Water.

Where consent or acknowledgement details have been provided, this does not represent a direct copy of the original.

Other Information

Additional meter information

No further information.

DISCLAIMER: These replies and information, including that shown on the enclosed plan(s), are given on the distinct understanding that neither the Company nor any of its representatives is legally liable for its accuracy or for any action or omission to act whatsoever by anyone on the strength of that information, save as to obvious error. In particular, any person proposing to construct or excavate on land on the basis of information hereby provided should carry out all necessary on-site investigations.

Appendix one: Terms and expressions

"the 1991 Act" means the Water Industry Act 1991(i);
"the 2000 Regulations" means the Water Supply (Water Quality) Regulations 2000(ii);
"the 2001 Regulations" means the Water Supply (Water Quality) Regulations 2001(iii);
"adoption agreement" means an agreement made or to be made under Section 51A(1) or 104(1) of the 1991 Act(iv);
"bond" means a surety granted by a developer who is a party to an adoption agreement;
"bond waiver" means an agreement with a developer for the provision of a form of financial security as a substitute for a bond;
"calendar year" means the twelve months ending with 31 December;
"discharge pipe" means a pipe from which discharges are made or are to be made under Section 165(1) of the 1991 Act;
"disposal main" means (subject to Section 219(2) of the 1991 Act) any outfall pipe or other pipe which:
(a) is a pipe for the conveyance of effluent to or from any sewage disposal works, whether of a sewerage undertaker or of any other person; and
(b) is not a publicsewer;
"drain" means (subject to Section 219(2) of the 1991 Act) a drain used for the drainage of one building or any buildings or yards appurtenant to buildings within the same curtilage;
"effluent" means any liquid, including particles of matter and other substances in suspension in the liquid;
"financial year" means the twelve months ending with 31 March;
"lateral drain" means:
(a) that part of a drain which runs from the curtilage of a building (or buildings or yards within the same curtilage) to the sewer with which the drain communicates or is to communicate; or
(b) (if different and the context so requires) the part of a drain identified in a declaration of vesting made under Section 102 of the 1991 Act or in an agreement made under Section 104 of that Act(v);
"licensed water supplier" means a company which is the holder for the time being of a water supply licence under Section 17A(1) of the 1991 Act(vi);
"maintenance period" means the period so specified in an adoption agreement as a period of time:
(a) from the date of issue of a certificate by a sewerage undertaker to the effect that a developer has built (or substantially built) a private sewer or lateral drain to that undertaker's satisfaction; and
(b) until the date that private sewer or lateral drain is vested in the sewerage undertaker;
"map of waterworks" means the map made available under section 198(3) of the 1991 Act(vii) in relation to the information specified in subsection (1A);
"private sewer" means a pipe or pipes which drain foul or surface water, or both, from premises, and are not vested in a sewerage undertaker;
"public sewer" means, subject to Section 106(1A) of the 1991 Act(viii), a sewer for the time being vested in a sewerage undertaker in its capacity as such, whether vested in that undertaker:
(a) by virtue of a scheme under Schedule 2 to the Water Act 1989(ix);
(b) by virtue of a scheme under Schedule 2 to the 1991 Act(x);
(c) under Section 179 of the 1991 Act(xi); or
(d) otherwise;
"public sewer map" means the map made available under Section 199(5) of the 1991 Act(xii);
"resource main" means (subject to Section 219(2) of the 1991 Act) any pipe, not being a trunk main, which is or is to be used for the purpose of:
(a) conveying water from one source of supply to another, from a source of supply to a regulating reservoir or from a regulating reservoir to a source of supply; or
(b) giving or taking a supply of water inbulk;
"sewerage services" includes the collection and disposal of foul and surface water and any other services which are required to be provided by a sewerage undertaker for the purpose of carrying out its functions;
"sewerage undertaker" means the company appointed to be the sewerage undertaker under Section 6(1) of the 1991 Act for the area in which the property is or will be situated;
"surface water" includes water from roofs and other impermeable surfaces within the curtilage of the property;
"water main" means (subject to Section 219(2) of the 1991 Act) any pipe, not being a pipe for the time being vested in a person other than the water undertaker, which is used or to be used by a water undertaker or licensed water supplier for the purpose of making a general supply of water available to customers or potential customers of the undertaker or supplier, as distinct from for the purpose of providing a supply to particular customers;
"water meter" means any apparatus for measuring or showing the volume of water supplied to, or of effluent discharged from any premises;
"water supplier" means the company supplying water in the water supply zone, whether a water undertaker or licensed water supplier;
"water supply zone" means the names and areas designated by a water undertaker within its area of supply that are to be its water supply zones for that year; and
"water undertaker" means the company appointed to be the water undertaker under Section 6(1) of the 1991 Act for the area in which the property is or will be situated.

In this report, references to a pipe, including references to a main, a drain or a sewer, shall include references to a tunnel or conduit which serves or is to serve as the pipe in question and to any accessories for the pipe.

- (i) 1991 c.56.
- (ii) S.I. 2000/3184. These Regulations apply in relation to England.
- (iii) S.I. 2001/3911. These Regulations apply in relation to Wales.
- (iv) Section 51A was inserted by Section 92(2) of the Water Act 2003 (c. 37). Section 104(1) was amended by Section 96(4) of that Act.
- (v) Various amendments have been made to Sections 102 and 104 by section 96 of the Water Act 2003.
- (vi) Inserted by Section 56 of and Schedule 4 to the Water Act 2003.
- (vii) Subsection (1A) was inserted by Section 92(5) of the Water Act 2003.
- (viii) Section 106(1A) was inserted by Section 99 of the Water Act 2003.
- (ix) 1989 c.15.
- (x) To which there are various amendments made by Section 101(1) of and Schedule 8 to the Water Act 2003.
- (xi) To which there are various amendments made by Section 101(1) of and Schedule 8 to the Water Act 2003.
- (xii) Section 199 was amended by Section 97(1) and (8) of the Water Act 2003.

Appendix two: A guide to new development

The information contained below is for general guidance only. It is recommended that Southern Water's Developer Services department be contacted for further details concerning new infrastructure development.

Wastewater information

Sewer requisitions

It may be necessary for a developer to request that Southern Water provides a public sewer to connect a development site to the existing public system. The developer is responsible for the cost of the work, although a discount will be applied based on the future predicted income from the development served by the new sewer.

Sewer diversions

If a public sewer crosses private land, it may be possible for the landowner/developer to request the sewer be diverted. In the majority of cases Southern Water will allow the developer to undertake this work under close supervision. Whether Southern Water or the developer undertakes the diversionary works the costs are the responsibility of the developer.

Building-over sewers

Public sewers are afforded statutory protection and consequently there is no right to build over or in close proximity to a public sewer. If an existing public sewer either crosses a development site or is located in close proximity to a development site it is essential that a developer contact Southern Water.

Sewer connections

A developer can serve notice on Southern Water that it wishes to make a connection to the public sewerage system. The developer must provide 21 days' notice and the work will be supervised by Southern Water.

Water information

Water requisitions

It may be necessary for a developer to request that Southern Water provides both:

- (a) a public water main to connect a development site to the existing public system and,
- (b) on-site public water mains to serve the individual properties.

In both cases the developer is responsible for the cost of the work, although a discount will be applied based on the future predicted income from the development.

It is possible for the developer to lay the on-site mains themselves under a Self-Lay Agreement. Further details are available from Southern Water.

Water main diversions

The building over or in close proximity to public water mains is not permitted. A developer must request that Southern Water undertakes a diversion of a water main that is affected by a development.

Water connections

A developer can request a new connection to a public water main. This work will be undertaken by Southern Water.

Contact us

For specific information on Southern Water's Developer Services service, including details on how to contact the right person, please visit our website: www.southernwater.co.uk/developers-and-builders-overview.

Appendix three: Terms and conditions

The Customer the Client and the Purchaser are asked to note these terms, which govern the basis on which this drainage and water report is supplied.

Definitions

"The Company" means the water service company operating within the Southern Water drainage area that provides information to Southern Water for this commercial search Report.

"Order" means any request completed by the Customer requesting the Report.

"Report" means the drainage and/or water report prepared by The Company in respect of the Property.

"Property" means the address or location supplied by the Customer in the Order.

"Customer" means the person, company, firm or other legal body placing the Order, either on their own behalf as Client, or, as an agent for a Client.

"Client" means the person, company or body who is the intended recipient of the Report with an actual or potential interest in the Property.

"Purchaser" means the actual or potential purchaser of the Property including their mortgage lender.

1.0 Agreement

- 1.1 Southern Water agrees to supply the Report subject to these terms. The scope and limitations of the Report are described in paragraph 2 of these terms. Where the Customer is acting as an agent for the Client then the Customer shall be responsible for bringing these terms to the attention of the Client.
- 1.2 The Customer and Client agree that the placing of an Order for a Report indicates their acceptance of these terms.

2.0 The Report

Whilst Southern Water will use reasonable care and skill in producing the Report, it is provided to the Client on the basis that they acknowledge and agree to the following:

- 2.1 The information contained in the Report can change on a regular basis so Southern Water cannot be responsible to the Client for any change in the information contained in the Report after the date on which the Report was produced and sent to the Client.
- 2.2 The Report does not give details about the actual state or condition of the Property nor should it be used or taken to indicate or exclude actual suitability or unsuitability of the Property for any particular purpose, or relied upon for determining saleability or value, or used as a substitute for any physical investigation or inspection. Further advice and information from appropriate experts and professionals should always be obtained.
- 2.3 The information contained in the Report is based upon the accuracy of the address supplied by the Customer or Client.
- 2.4 The Report provides information as to the location and connection of existing services, and details of trade effluent consents. It should not be relied upon for any other purpose. The Report may contain opinions or general advice to the Customer and the Client and Southern Water cannot ensure that any such opinion or general advice is accurate, complete or valid and accepts no liability therefore.
- 2.5 The position and depth of apparatus shown on any maps attached to the Report are approximate, and are furnished as a general guide only, and no warranty as to its correctness is given or implied. The exact positions and depths should be obtained by excavation trial holes.

3.0 Liability

- 3.1 Southern Water shall not be liable to the Client for any failure defect or non-performance of its obligations arising from any failure of or defect in any machine, processing system or transmission link or anything beyond Southern Water's reasonable control or the acts or omissions of any party for whom Southern Water is not responsible.
- 3.2 Where a Report is requested for an address falling within a geographical area where Southern Water and another Company separately provide water and sewerage services, then it shall be deemed that liability for the information given by Southern Water or the Company as the case may be will remain with Southern Water or the Company as the case may be in respect of the accuracy of the information supplied. Where Southern Water is supplying information which has been provided to it by another Company for the purposes outlined in this agreement, Southern Water will therefore not be liable in any way for the accuracy of that information.
- 3.3 Where the Customer sells this Report to a Client (other than in the case of a bona fide legal adviser recharging the cost of the Report as a disbursement) Southern Water or the Company as the case may be shall not in any circumstances (whether for breach of contract, negligence or any other tort, under statute or statutory duty or otherwise at all) be liable for any loss or damage whatsoever (save to the extent provided by clause 3.4) and the Customer shall indemnify Southern Water in respect of any claim (other than a claim covered by clause 3.4) by the Client.
- 3.4 Southern Water shall accept liability for death or personal injury arising from its negligence.
- 3.5 The entire liability of Southern Water or the Company as the case may be in respect of all causes of action arising under or in connection with the Report (whether for breach of contract, negligence or any other tort, under statute or statutory duty or otherwise at all) shall not exceed £2,000,000 (two million pounds); and Southern Water or the Company as the case may be shall not in any circumstances (whether for breach of contract, negligence or any other tort, under statute or statutory duty or otherwise at all) be liable for any loss of profit, loss of goodwill, loss of reputation, loss of business or any indirect, special or consequential loss, damage or other claims, costs or expenses.

4.0 Copyright and confidentiality

- 4.1 The Customer and the Client acknowledge that the Report is confidential and is intended for the personal use of the Client. The copyright and any other intellectual property rights in the Report shall remain the property of Southern Water. No intellectual or other property rights are transferred or licensed to the Customer or the Client except to the extent expressly provided.
- 4.2 The Customer or Client is entitled to make copies of the Report (other than any maps contained in the, or attached to the Report, where no copying is permitted).
- 4.3 The Customer and Client agree (in respect of both the original and any copies made) to respect and not to alter any trademark, copyright notice or other property marking which appears on the Report.
- 4.4 The maps contained in the Report are protected by Crown Copyright and must not be used for any purpose outside the context of the Report.
- 4.5 The Customer and the Client agree to indemnify Southern Water or the Company as the case may be against any losses, costs, claims and damage suffered by Southern Water or the Company as the case may be, as a result of any breach by either of them of the terms of paragraphs 4.1 to 4.4 inclusive.

5.0 Payment

- 5.1 Unless otherwise stated all prices are inclusive of VAT. The Customer shall pay for the price of the Report specified by Southern Water, without any set off, deduction or counterclaim. Unless the Customer or Client has an account with Southern Water for payment for Reports, payments for Reports must be received in full by Southern Water before the Report is produced. For Customers or Clients with accounts, payment terms will be as agreed with Southern Water.

6.0 General

- 6.1 If any provision of these terms is or becomes invalid or unenforceable, it will be taken to be removed from the rest of these terms to the extent that it is invalid or unenforceable. No other provision of these terms shall be affected.
- 6.2 These terms shall be governed by English law and all parties submit to the exclusive jurisdiction of the English courts.
- 6.3 Nothing in this notice shall in any way restrict your statutory or any other rights of access to the information contained in the Report.

These Terms and conditions are available in larger print for those with impaired vision.

Appendix four: Complaints procedure

When we get it wrong

You deserve the highest standard of service from us, but sometimes we make mistakes. If we do, please let us know and we will investigate and review your concerns.

Whilst we always try to resolve all complaints straight away, if this is not possible and you are not happy with the course of action taken by us, you can ask us to escalate the issue internally or take your complaint to an independent third party.

How you contact us

Firstly please call us and we will try to sort out your problem straight away.

You can call us between 8am and 5pm, Monday to Friday on 01323 416166 (individual consumers);

Email us at complaints@landsearch.co.uk

Write to us at LandSearch, Southern Water Services, Southern House, Capstone Road, Chatham, Kent, ME5 7QA.

What you can expect

You will receive a full, fair and courteous response from someone who can effectively deal with your problem.

If we can remedy the problem straight away we will do it but if we cannot immediately resolve your problem we will keep you informed of actions being taken.

The process

We will try to resolve any telephone contact or complaint at the time of the call, however, if that isn't possible, we will take the details of your complaint and we will investigate and get back to you within 10 working days.

We will respond to written complaints within 10 working days of the date received, but we will always aim to respond more quickly. Depending on the scale of investigation required, we will keep you informed of the progress and update you with new timescales if necessary.

If you are still not satisfied with our response or action we will refer the matter to a Senior Manager for resolution. At your request we will liaise with a third party representative acting on your behalf.

Our commitment to you

If we do not respond to your complaint within 10 working days of receipt of your contact, we will compensate you in line with Southern Water's Customer services — Guaranteed standards of service for business customers.

If we find your complaint to be justified, or we have made any errors that substantially change the outcome in your search result, we will refund the search fee. We will also provide you with a revised search and undertake the necessary action to put things right as soon as practically possible. You will be kept informed of the progress of any action required.

If you remain dissatisfied

While we aim to resolve your complaint first time, in the event that we are unable to resolve the issue to your satisfaction, ultimately you can contact a third party. Please make sure that you have followed the process above first, if not, your complaint will be passed back to us.

SEWER RECORDS PAGE 1 OF 2

105627



105049

506094

O.S. REF.

TQ0605SE

Title: Land West Of Arundel Road

Drawn by: malikra

Scale: 1:2500

Date: 06/09/2017

The positions of pipes shown on this plan are believed to be correct, but Southern Water Services Ltd accept no responsibility in the event of inaccuracy.
The actual positions should be determined on site.

WARNING: Unknown (UNK) materials may include Bonded Asbestos Cement

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507037

SEWER RECORDS PAGE 2 OF 2

Node	Cover	Invert	Size	Material	Shape	Node	Cover	Invert	Size	Material	Shape	Node	Cover	Invert	Size	Material	Shape	Node	Cover	Invert	Size	Material	Shape
0002X	19.64	17.68	150	VC	CIRC																		
3501X			UNK	UNK	CIRC																		
3502X			UNK	UNK	CIRC																		
351DX			UNK	UNK	CIRC																		
7003X	13.53	12.26	150	VC	CIRC																		
7004X			UNK	UNK	UNK																		
700DX			UNK	UNK	UNK																		
701DX	14	12.85	150	VC	CIRC																		
7101X			150	VC	CIRC																		
710DX			UNK	UNK	CIRC																		

22/23

LINE STYLES / COLOURS

Brown	-----	Foul
	-----	Foul Siphon Sewer
	-----	Foul Vacuum Main
	-----	Foul Rising Main
Red	-----	Combined
	-----	Combined Siphon Sewer
	-----	Combined Rising Main
	-----	Lateral Drain
Orange	-----	Building Over Agreement Area
Dark Blue	-----	Treated Effluent
Purple	-----	Sludge
	-----	Sewer Catchment
	-----	Section 104 Area
Light Blue	-----	Surface Water
	-----	Surface Water Rising Main
Yellow	-----	Private
Green	-----	Access Shaft
	-----	Decommissioned

MATERIALS

AK	Alkaline
BAC	Bonded Asbestos Cement
BRD	Brick (Common)
BRE	Brick (Engineering)
CC	Concrete Box Culvert
CI	Cast Iron
CO	Concrete (In-Situ)
CP	Concrete (Pre-Cast)
CSB	Concrete Segments (bolted)
CSU	Concrete Segments (unbolted)
DI	Ductile Iron
GRG	Glass Reinforced Concrete
GRP	Glass Reinforced Plastic
MAC	Masonry In regular Courses
MAR	Masonry In random Courses
PE	Polyethylene
PF	Pitch Fibre
PP	Polypropylene
PVC	Polyvinyl Chloride
RPM	Reinforced Plastic Matrix
SI	Spun Iron
ST	Steel
VC	Vertifed Clay
XXX	Other
ZZZ	Unknown

Manhole (SW)
Manhole (F&C)
Lamp hole (SW)
Lamp hole (F&C)
Pumping Station (SW)
Pumping Station (F&C)
Side entry manhole (SW)
Side entry manhole (F&C)
Blind shaft (SW)
Blind shaft (F&C)
Ejector station (SW)
Ejector station (F&C)
Watertight door (SW)
Watertight door (F&C)
Flushing ch. Min-e (SW)
Flushing ch. Min-e (F&C)
Flushing ch. No-e (SW)
Flushing ch. No-e (F&C)
Damascus Chamber

LEGEND - SEWERS

Washout (SW)
Washout (F&C)
Rodding Eye (SW)
Rodding Eye (F&C)
Gauging point (SW)
Gauging point (F&C)
Intercept chamber (SW)
Intercept chamber (F&C)
Storm Tank (SW)
Storm Tank (F&C)
Vortex chamber (SW)
Vortex chamber (F&C)
Label ellipse
Dummy/S24 manhole
Outfall
Penstock chamber
Demiboards
Storm Overflow
Backdrop manhole
Other (s)
Other
Change In sewer (s)
Change In sewer
Rafflux valve
Flap valve
Cascade
Anode
Valve
Closed Valve
Air Valve
Hatch box (SW)
Hatch box (F&C)
Direction arrow
Emptying valve
Catchpit
Soakaway
Inlet
Balancing Pond

Wastewater treatment works
Marine treatment works
Outfall headworks
Vent
Vent column
Tidal storage tank
Blank end
Head of Public Sewer
Micro Pumping Station
SHAPES (S)
A Arched
B Barrel
C Circular
E Egg
H Horseshoe
R Rectangular
S Square
T Trapezoidal
U U Shape
X Other
NODE REFERENCING SYSTEM
1st digit: hundred metre easting identifier
2nd digit: hundred metre northing identifier
3rd digit: sewer type identifier
4th digit: next sequential node
0-4 = Foul/Combined
5-9 = Surface Water

Drawn by:	malikra	
Title:	Land West Of Arundel Road	
Date:	06/09/2017	

105568



105084

506110

LEGEND - MAINS

	Distribution Main / Communication pipe		Clockwise closing valve
	Trunk Main		Fire Hydrant
	Raw water main		Washout
	Non potable		Washout hydrant
	Abandoned main		Meter
	Proposed Main		Capped end
	Fire main		Emptying plug
	Non SWS		Stopcock
	Sluice valve		Leak Noise Correlator Survey Point
	Closed valve		Anode
	Air valve		Telemetry cable
	Butterfly valve		Access point / hatchbox
	Pressure reducing valve		
	Reflux valve		
	Motorised valve		

WARNING: SAC pipes are constructed of Bonded Asbestos Cement

MATERIALS

	Dialysis machine		Alkathene
	Break pressure tank		Cast iron
	Change node		Spun (grey) iron
	Pumping station		Concrete
	Booster station		Ductile iron
	Insertion Flow Meter Point		Bonded Asbestos Cement
	Water tower		Glass reinforced plastic
	Service reservoir		Glass reinforced epoxy
	Water Supply Works		(Unplasticised) Polyvinyl chloride
	Bore hole / Well		Polyethylene
	Intake		Steel
	Customer site		Concrete segments bolted
	Swab insertion point		Concrete segments unbolted
			Galvanised iron
			Ductile sleeve
			Concrete pre-stressed
			High performance polyethylene
			Unknown

WARNING: Unknown (LINK) materials may include Bonded Asbestos Cement

AK	Drawn by:	malikra
CI	Scale:	1:2500
SI	Date:	06/09/2017
CO	The positions of pipes shown on this plan are believed to be correct, but Southern Water Services Ltd. accept no responsibility in the event of inaccuracy. The actual positions of pipes should be determined on site.	
DI		
BAC	Based upon Ordnance Survey Digital Data with the permission of the controller of H.M.S.O. Crown Copyright Reserved Licence No. WU 298530.	
GRP		
GRE		
PVC		
PE		
ST		
CSB		
CSU		
GI		
DS		
CPS		
HPE		
??		

O.S.Ref: TQ0605SE

TITLE: Land West Of Arundel Road



507073

SiteSolutions Energy & Infrastructure

Energy



Oil and Gas Exploration

NOT IDENTIFIED



Wind Energy

NOT IDENTIFIED



Solar Energy

NOT IDENTIFIED



Other Renewable Energy

NOT IDENTIFIED

Infrastructure



High Speed 2

NOT IDENTIFIED



Crossrail 1

NOT IDENTIFIED

This report is issued for the property described as:

land west of
Arundel Road
Angmering
West Sussex
BN16 4ET

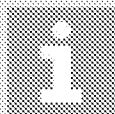
Report Reference
137210952

Customer Reference
LKS/Angmering 2017-84_HS2

Report produced on
25 August 2017

The Responsible Authority for the site is:
Arun District Council

Energy & Infrastructure Report



Understanding this report

We have designed this report for home owners, business owners, or those purchasing a home or business. It complements other planning reports by alerting users to energy and infrastructure projects.

The projects and developments we check for cover the whole of the UK. We have split it into two sections: **Energy** and **Infrastructure**. There will be maps and data for each individual development or project that has been identified.

The developments and projects included have the potential to affect nearby property values. They could result in added visual impact or noise to the neighbourhood. The impact on property values may also be positive. For instance, being near a new rail link may boost values in the local area.

We check each project or development against your property to the distance described to the right. If we find something nearby we will display "IDENTIFIED" on the front page.

If we don't find anything we will display "NOT IDENTIFIED".

We will only describe issues relevant to the property in this report. By excluding unnecessary information, we hope you find the report easier to understand.

Alert Distances

The distance we search from your property for each development follows independent expert guidance.

The following projects/developments and corresponding alert distances are searched for:

Energy

Oil and gas exploration blocks (current) – to 4km
Oil and gas exploration blocks (offered) – to 4km
Oil and gas drilling well locations – to 4km
Wind farms and turbines – to 4km
Solar farms – to 2km
Renewable power plants – to 2km

We use planning applications data for wind, solar and other renewable energy developments. The data only includes energy developments with a capacity to produce over 1MW of power. The report will only show "IDENTIFIED" on the front page if the planning application is active. We will still provide details of the inactive applications. These are applications that have been refused, withdrawn, abandoned etc.

Infrastructure

High Speed 2 – to 4km in rural areas and 2km in urban areas
Crossrail 1 – to 2km (Crossrail 2 is not included)

Next Steps:

If any of the developments or projects included in this report have been identified you should follow the advice detailed in the recommendations on the next page.

For help with the report contact our Customer Services Team



Recommendations



Oil and Gas Exploration

We have found no Oil and Gas Exploration licenses or drilling facilities within 4km of the site. No further action is considered necessary.



Wind Energy

We have found no Wind Energy facilities within 4km of the site. No further action is considered necessary.



Solar Energy

We have found no Solar Energy facilities within 2km of the site. No further action is considered necessary.



Other Renewable Energy

We have found no Other Renewable Energy facilities within 2km of the site. No further action is considered necessary.



High Speed 2

We have found no High Speed 2 within 4km of the site. No further action is considered necessary.



Crossrail 1

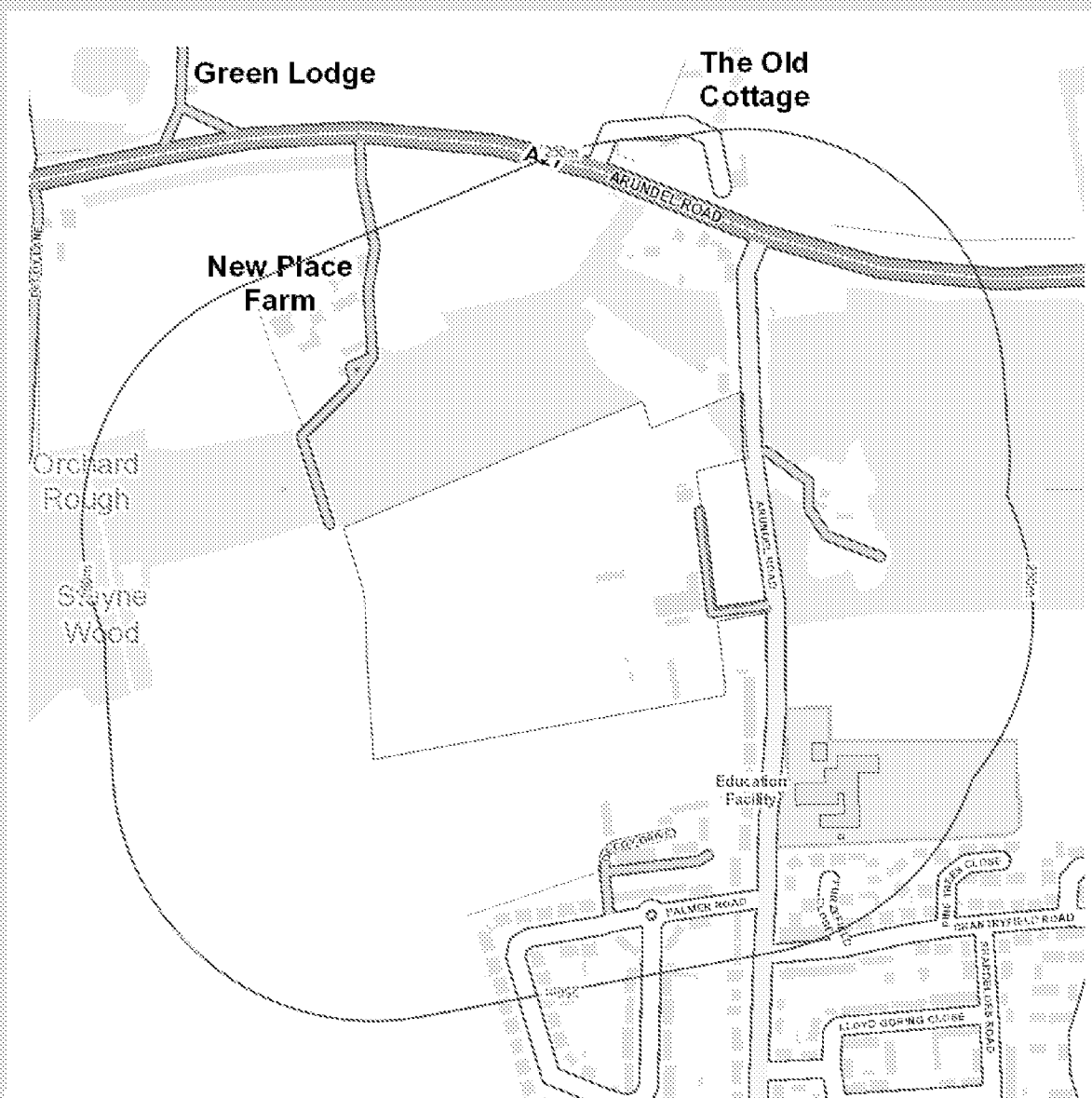
We have found no Crossrail 1 within 2km of the site. No further action is considered necessary.

Property Location

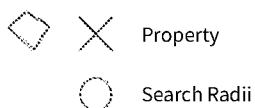


Location Plan

The map below shows the location of the property



Contains Ordnance Survey © Crown copyright and database right 2017



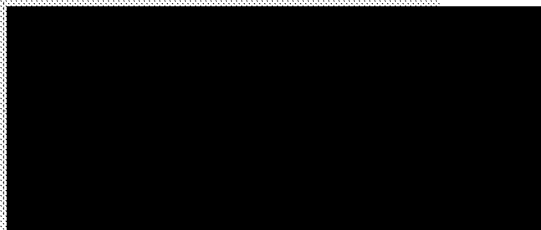
Useful Contacts

Please See below the contact details of the suppliers referred to within this report. For all queries please contact:

Landmark Information Group

Imperium
Imperial Way
Reading
RG2 0TD

If you require assistance please contact our customer services team on:



Name	Address	Contact Details
Landmark Customer Services	Landmark Information Group Imperium Imperial Way Reading RG2 0TD	T: 0844 844 9952 E: helpdesk@landmark.co.uk W: www.landmark.co.uk
Department for Business, Energy & Industrial Strategy (BEIS)		W: www.gov.uk/government/organisations/department-of-energy-climate-change
RenewableUK	Greencoat House Francis Street London SW1P 1DH	T: 020 7901 3000 E: info@renewableuk.com W: www.renewableuk.com
HS2 Ltd	High Speed Two (HS2) Ltd One Canada Square Canary Wharf E14 5AB	T: 020 7944 4908 E: HS2enquiries@hs2.org.uk W: www.gov.uk/government/organisations/high-speed-two-limited
Crossrail Ltd	25 Canada Square Canary Wharf E14 5LQ	T: 0345 602 3813 W: www.crossrail.co.uk
Environment Agency	National Customer Contact Centre PO Box 544 Rotherham S60 1BY	T: 03708 506 506 E: enquiries@environment-agency.gov.uk W: www.gov.uk/government/organisations/environment-agency
Oil and Gas Authority	Imperium Imperial Way Berkshire RG2 0TD	T: 0844 844 9966

Useful Information

Data Sources

Oil and Gas Exploration	Contains public sector information licensed under the Open Government Licence v3.0
Wind Energy	© RenewableUK 2017 and contains public sector information licensed under the Open Government Licence v3.0
Solar Energy	Contains public sector information licensed under the Open Government Licence v3.0
Renewable Power Plants	Contains public sector information licensed under the Open Government Licence v3.0
High Speed 2	Contains public sector information licensed under the Open Government Licence v3.0
Crossrail 1	Contains public sector information licensed under the Open Government Licence v3.0

Limitations of the Report

The Energy and Infrastructure Report has been designed to satisfy standard due-diligence enquiries for residential and commercial sites. It is a 'remote' investigation and reviews databases of publicly available information that have been chosen to enable a desk-based analysis of key infrastructure projects. The report does not include data on all UK energy and infrastructure projects, nor does Argyll make specific information requests of the regulatory authorities for any relevant information they may hold. Therefore, Argyll cannot guarantee that all land uses or factors of concern will have been identified by the report.

Argyll Environmental is unable to comment directly with regards to the potential effect these key energy or infrastructure projects will have on the value of nearby properties. We would recommend contacting an appropriate surveyor who can provide a valuation.

While every effort is made to ensure accuracy, Argyll cannot guarantee the accuracy or completeness of such information or data. We do not accept responsibility for inaccurate data provided by external data providers.

For further information regarding the datasets reviewed within our analysis, please contact our customer services team on 0844 844 9966. This report is provided under the Argyll Environmental Terms and Conditions for Data Reports, a copy of which is available on our website.

Terms and Conditions

Full terms and conditions can be found on the following link:

https://lmkargyll1.s3.amazonaws.com/s3fs-public/tc_dp_3-3_new_address.pdf

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- sets out minimum standards which firms compiling and selling search reports have to meet
- promotes the best practice and quality standards within the industry for the benefit of consumers and property professionals
- enables consumers and property professionals to have confidence in firms which subscribe to the code, their products and services.

By giving you this information, the search firm is confirming that they keep to the principles of the Code. This provides important protection for you.

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Firms which subscribe to the Search Code will:

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

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

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

TPOs Contact Details:

The Property Ombudsman scheme
Milford House
43-55 Milford Street
Salisbury
Wiltshire SP1 2BP



You can get more information about the PCCB from [REDACTED]
PLEASE ASK YOUR SEARCH PROVIDER IF YOU WOULD LIKE A COPY OF THE SEARCH CODE

Complaints procedure

If you want to make a complaint, we will:

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

Complaints should be sent to:

Legal Director
Argyll Environmental Ltd
1st Floor
98 – 99 Queens Road
Brighton
BN1 3XF

[REDACTED]

If you are not satisfied with our final response, or if we exceed the response timescales, you may refer the complaint to The Property Ombudsman scheme (TPOs):

[REDACTED]

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



Network Records NetMAP Symbols Booklet - South East England

Version 1.2

Released October 2010

Always check with your local Network Records office or the UK Power Networks server to ensure that you are using the most up to date copy of this booklet - Tel: 08000 565866

(i)

Index:-

Page no:	Contents:
1	Guidance notes.
2	The area covered by this guide.
3	<u>1:500 (& 1:1250) view</u>
	Scenery.
4	Scenery (UK Power Networks use only).
7	Primary distribution line route (EHV).
8	Secondary distribution cables (HV/LV).
9	Secondary distribution cable terminology.
12	Cable ducts.
13	Poles.
14	EHV, HV and LV sites.
15	Joints.
16	Street furniture
17	Miscellaneous.
18	Connectivity.
19	Abbreviations.
20	Cable phasing.
21	Operational status colours.
22	<u>1:2500 view</u> (UK Power Networks use only).
	Notes.
23	Primary distribution line route.
24	Secondary distribution cables.
25	Primary and secondary sites.
27	Switch types.
28	<u>1:10000 view</u> (UK Power Networks use only).
	Notes.
29	Secondary distribution cables.
30	Primary and secondary sites.

(ii)

Guidance notes.

Important notice:

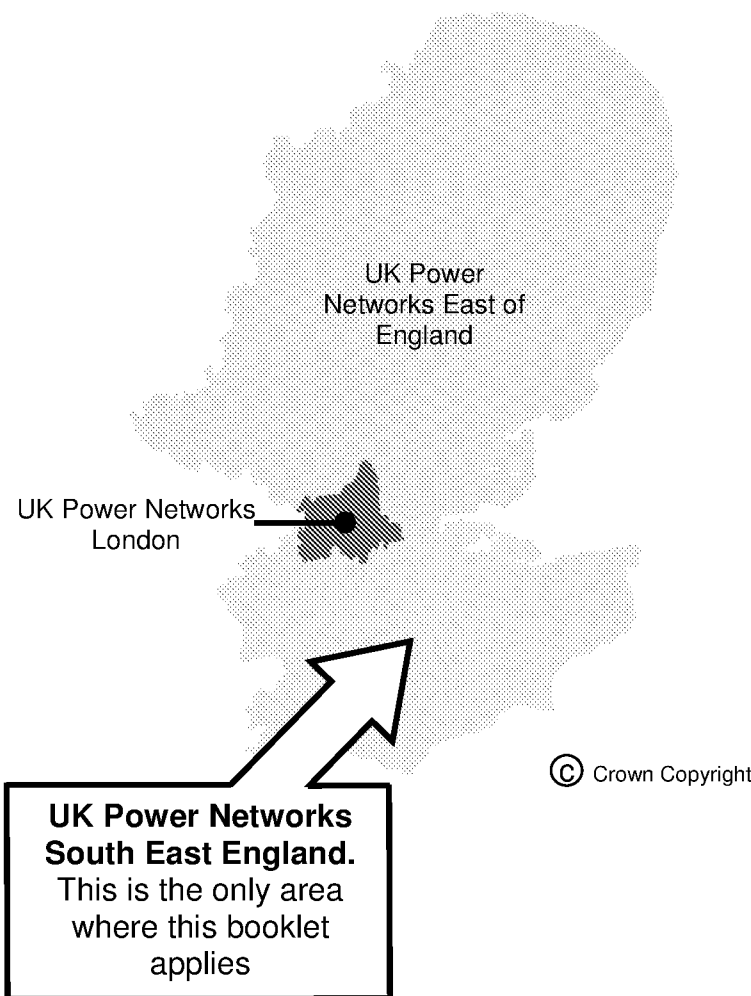
If you do not understand the NetMAP record that you are using, please contact the UK Power Networks Network Records team for guidance on
Tel: 08000 565866.

- The position of apparatus shown on NetMAP is believed to be correct, but the original landmarks may have altered since the apparatus was installed.
- It must be assumed that there is at least one service to each property, lamp column, street sign etc.
- Third party cables are not usually shown.
- When viewed in black and white, the line-style indicates the voltage.
- All LV cables are 4 core and all HV cables are 3 core – unless otherwise stated.
- All cables are copper – unless otherwise stated.



Plan Provision Team
and CableWatch
Fore Hamlet
Ipswich
Suffolk IP3 8AA

The area covered by this guide:

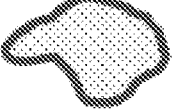


1:500 (& 1:1250) view

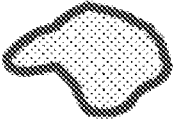
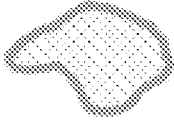
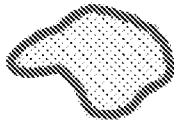
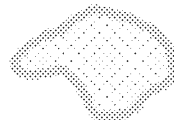
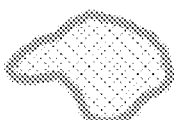
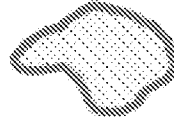
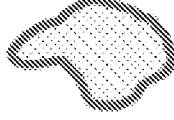
Scenery

NetMAP system	Description
   	Secondary buildings and fence lines Building line Kerb line UK Power Networks / SPN licence boundary (not visible unless selected)

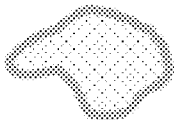
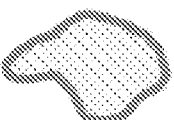
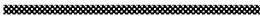
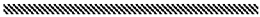
Scenery for UK Power Networks use only - boxed in red

NetMAP system	Description
 Inset Network – Contact xxxx IDNO for further information  	Area of inset network - not the asset of UK Power Networks (only visible to UK Power Networks and their immediate contractors) Proposed Cross Rail route (only visible to UK Power Networks and their immediate contractors) High pressure pipelines in the general vicinity (only visible to UK Power Networks and their immediate contractors)
Note: Pipelines are only viewable on NetMAP by UK Power Networks staff and their immediate contractors. Do not carry out any excavation without consent from the relevant agency - legally protected high pressure petroleum products pipeline route in the general vicinity - consult www.linewatch.co.uk for contacts and guidance. Pipeline contact numbers can also be found on the intranet – out of hours, contact our Control Centre.	
   	Water - surface water (only visible to UK Power Networks and their immediate contractors) Water - Source Protection Zone 1 (only visible to UK Power Networks and their immediate contractors) Water - Source Protection Zone 2 (only visible to UK Power Networks and their immediate contractors) Water - Source Protection Zone 3 (only visible to UK Power Networks and their immediate contractors)
section continued on next page	

Scenery for UK Power Networks use only - boxed in red

NetMAP system	Description
	Historical - Scheduled Monuments (only visible to UK Power Networks and their immediate contractors)
	Historical - Parks and Gardens (only visible to UK Power Networks and their immediate contractors)
	Historical - Areas of Archaeological Potential (AAP) (only visible to UK Power Networks and their immediate contractors)
	Nature - Ramsar Wetlands of International Importance (only visible to UK Power Networks and their immediate contractors)
	Nature - Special Area of Conservation (SAC) (only visible to UK Power Networks and their immediate contractors)
	Nature - Special Protected Area (SPA) (only visible to UK Power Networks and their immediate contractors)
	Nature - Site of Special and Scientific Interest (SSSI) (only visible to UK Power Networks and their immediate contractors)
section continued on next page	

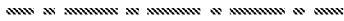
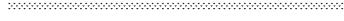
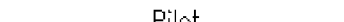
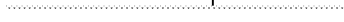
Scenery for UK Power Networks use only - boxed in red

NetMAP system	Description
	Nature - Local Nature Reserve (only visible to UK Power Networks and their immediate contractors)
	Nature - National Nature Reserve (only visible to UK Power Networks and their immediate contractors)
	Nature - Area of Outstanding Natural Beauty (AONB) (only visible to UK Power Networks and their immediate contractors)
	Nature - National Park (only visible to UK Power Networks and their immediate contractors)
	Fluid filled cables - very high sensitivity (only visible to UK Power Networks and their immediate contractors)
	Fluid filled cables - high sensitivity (only visible to UK Power Networks and their immediate contractors)
	Fluid filled cables - medium sensitivity (only visible to UK Power Networks and their immediate contractors)
	Fluid filled cables - low sensitivity (only visible to UK Power Networks and their immediate contractors)

Primary distribution line route (1:500 view)

NetMAP system	Description
	275–400kV National Grid route
	132kV cable route
	33kV cable route
Approximate routes only – see separate record	

Secondary distribution cables (1:500 view)

NetMAP system	Description
	11kV underground cable
	11kV overhead line
	6.6kV underground cable
	6.6kV overhead line
	<6.6kV underground cable
	<6.6kV overhead line
	LV underground cable
	LV overhead line
 Pilot	Pilot cable
 2c SU pl	LV street lighting (pl)
	Service overhead line
	Service underground
	Logical service connection

Secondary distribution cable terminology (1:500 view)

HV underground

sta (no text)	PILCSTA (paper insulated lead covered steel tape armour)
XLPE	PILCSWA (paper insulated lead covered steel wire armour)
bcs	XLPE (cross linked polyethylene) insulation
scs	CAS (corrugated aluminium sheath) belted construction
ua	CAS (corrugated aluminium sheath) with screened cores
c/c	PILC (paper insulated lead covered) unarmoured
Poly	Concentric cores
BOTES	Poly (polyethylene) insulation
of	BOTES – Board of Trade earth screen
33 kV design	Oil filled
ax	Constructed to 33 kV specification
cx	Triplex with aluminium conductor
	Triplex with copper conductor

HV overhead

(no text)	Bare open wire
pvc	Open wire PVC covered
cat	ABC (aerial bundled or bunched conductor) with supporting strain wire
+ew	Open wire with extra earth conductor
ccc	Compact covered conductor

Overhead line materials

sca	Steel cored aluminium
cc	Cadmium copper
st	Steel
sil	Simalec
ccs	Copper covered steel
cpl	Compactal

section continued on next page

Secondary distribution cable terminology continued (1:500 view)

LV underground mains and services

W	Waveform
We	Waveform with separate earth wire
H	Hybrid – copper neutral with aluminium phase conductor
He	Hybrid with separate earth wire
ua	PILC (paper insulated lead covered) unarmoured
(no text)	PILC (paper insulated lead covered) with/without armour
XLPE	XLPE (cross linked polyethylene) insulation
DISTRI	PISTA (paper insulated steel tape armour) 4c SAC (solid aluminium core) with lead covered neutral
c/c	Concentric cores
s/c	Split concentric with separated neutral and earth wires
CONSAC	Paper insulated aluminium sheathed 3 core with solid aluminium cores
vb	Vulcanised bitumen/rubber insulation
Capothene	Capothene core insulation
tby	Tape braid and yarn
swa	PILSWA (paper insulated lead steel wire armour)
sac	PILSTA (paper insulated steel tape armour) solid aluminium core
Solidal	4 sector SAC with solid aluminium cores
LSF	Low smoke and fume (orange cable)
Trough	Cable laid in filled trough

LV overhead mains and services

(no text)	Bare open wire
ABC	Aerial bundled (or bunched) conductor
cat	ABC (aerial bundled or bunched conductor) with supporting strain wire
pvc	PVC covered open wire
c/c	Concentric cores
H	Hybrid – copper neutral with aluminium phase conductor
ue	Under eaves – hessian covered lead cable
vir	Vulcanised India rubber insulation

section continued on next page

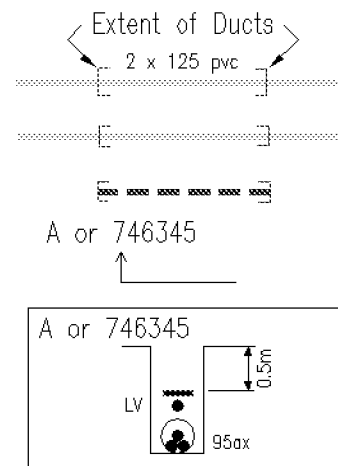
Secondary distribution cable terminology continued (1:500 view)

Various annotation

.1	Cable size (sq. inches)
185	Cable size (sq. millimetres)
a	Aluminium
ITC	Instrument traced cable or ITC - cable traced electronically using Cable Avoidance Tool (CAT) or similar

Cable ducts (1:500 view)

NetMAP system



Description

Duct 2 way

Duct 1 way (no text)

Spare duct

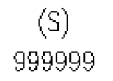
Cross section arrow

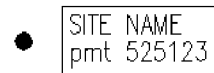
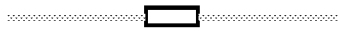
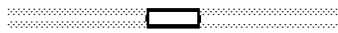
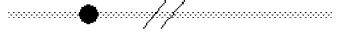
Cross section showing:
duct, tile depth, tile, single LV
cable and HV Triplex cable

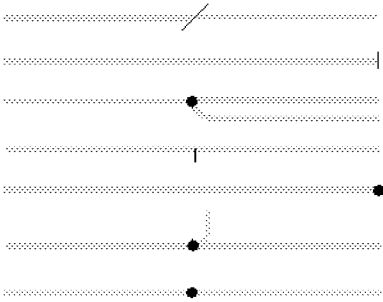
Duct materials

(no text)
pvc
st
asb
fbr
wi
cp
t/e

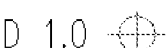
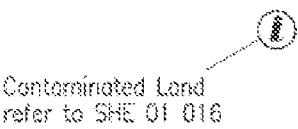
Earthenware
PVC
Steel
Asbestos
Fibre
Iron
Concrete pipe
Trenchless excavation

Poles (1:500 view)	
NetMAP system	Description
       	Section pole Pole number (unique) Single leg H pole 3 member 4 member Strut Pole support (stay) Flying stay Tower 33kV to 400kV

EHV, HV and LV sites (1:500 view)	
NetMAP system	Description
Note: EHV and HV sites are identified by a unique 6 digit number (SPENS)	
           	Ground mounted primary substation showing name, transformer voltage and SPENS number Pole mounted substation showing name and SPENS number Ground mounted substation showing name and SPENS number 2 way link box 4 way link box Link box without busbar (options similar to 1:2500 view) LV distribution pillar Voltage regulator Voltage balancer Open point Open point – out of phase Overhead open point
Note: For LV linking, use the 1:2500 view	

Joints (1:500 view)	
NetMAP system	Description
	Straight (same for HV) Pot end (same for HV) Branch (same for HV) Sleeve repair Capped end Service to LV main Under eaves service
□ .1 .15 □ R – R Y – B B – Y Jointing phase drawing	

Street furniture (1:500 view)	
NetMAP system	Description
	Pole mounted street light Street light Zebra crossing Road sign Bollard Pelican crossing Traffic controller Advertising sign Amplifier station Control cubicle <u>Text displayed/description</u> Pay and display Bus shelter TBS Kiosk Water meter PL pillar TCB Unknown

Miscellaneous (1:500 view)	
NetMAP system	Description
       	Underground chamber or draw pit Earth conductor Earth pin Height marker Depth marker Supply point Missing data in or near this location Contaminated land reference

Connectivity (1:500 view)	
NetMAP system	Description
   	Edge node Node Connector Pole termination (nothing visible unless selected) Edge nodes, nodes, connectors and pole termination joints may not appear on screen unless turned on and selected.

Abbreviations (1:500 view)

NetMAP system	Description
NR	No record
SU	Size unknown
AB	Abandoned
(M)	PME available
VO5	Year LV linking verified
MS	Milestone
MP	Marker post
pmt	Pole mounted transformer
pl	Public lighting
TBS	Temporary builder's supply
TCB	Telephone call box
CET	Cable electronically traced
IT	Instrument traced (same as CET)
CAT	Cable avoidance tool (same as CET)
+sl	Street lighting
+sw	Switch wire
2c	2 core
PESL	Public Electricity Supply License
Added	Supplied by SPN
Excluded	Not supplied by SPN
IIP	Assumed open point
VSxxxx	Vacant site
CB	Callender box

Cable phasing (1:500 view)

<u>Old core colours</u>	<u>Shown on map</u>	<u>New core colours</u>
Neutral	Neutral	Neutral
Red	R	L1
Yellow	Y	L2
Blue	B	L3
Note:- Scott is a different phasing system		

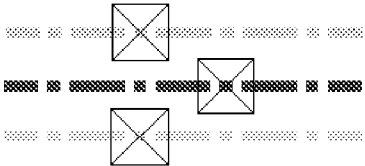
Operational status colours (1:500 view)

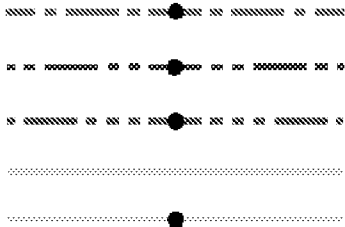
PROPOSAL ————— Symbols and cables appear in ORANGE
 OUT OF SERVICE ————— Cable and joints appear in BLACK
 ABANDONED ————— Cables and joints appear in GREY

1:2500 view - for UK Power Networks use only - boxed red

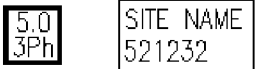
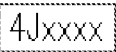
Notes

1. No underground HV cables are shown on the 1:2500 view
2. Poles and joint details are similar to the 1:500 view
3. For cable/line information refer to the 1:500 view

Primary distribution line route (1:2500 view)	
NetMAP system	Description
	275–400kV National Grid route 132kV cable route 33kV cable route

Secondary distribution cables (1:2500 view)	
NetMAP system	Description
	11kV overhead line 6.6kV overhead line <6.6kV overhead line LV underground cable LV overhead line

Primary and secondary sites (1:2500 view)

NetMAP system	Description
Note: EHV and HV sites are identified by a unique 6 digit number (SPENS)	
	Ground mounted substation showing capacity, phase, name and SPENS number
	Pole mounted substation showing capacity, phase, name and SPENS number
	Primary substation showing name and SPENS number (no site shown)
	2 way link box
	4 way link box
	Link box identifier
	4 way link box without busbar
	6 way link box without busbar
	8 way link box without busbar

section continued on next page

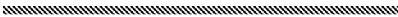
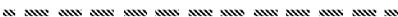
Primary and secondary sites continued (1:2500 view)

NetMAP system	Description
	LV distribution pillar
	Voltage regulator
	Voltage balancer
	Open point
	Open point - out of phase
	Earth pin

Switch types (1:2500 view)	
NetMAP system	Description
ABSD	Air brake switch disconnecter
A/R	Auto recloser
A/S	Sectionaliser
FUSE	Fuse
S/D	Surge diverter
PF	Pathfinder
ASL	Automatic sectionalising links
PMR	Pole mounted recloser
PMS	Pole mounted sectionaliser
GVR	Gas vacuum recloser

1:10000 view - for UK Power Networks use only - boxed red
Notes
1. No EHV cables/overhead lines shown on 1:10000 view. 2. For congested areas print at 1:5000. 3. HV site used instead of branch joint on 1:10000 for connectivity purposes. The site is not displayed until it is selected.

Secondary distribution cables (1:10000 view)

NetMAP system	Description
	11kV underground cable
	6.6kV underground cable
	<6.6kV underground cable
	11kV overhead line
	6.6kV overhead line
	<6.6kV overhead line

Primary and secondary sites (1:10000 view)

NetMAP system	Description
Note: EHV and HV sites are identified by a unique 6 digit number (SPENS)	
SITE NAME 008590 	Primary substation showing name and SPENS number
SITE NAME 521234	 11kV ground mounted substation showing name and SPENS number
SITE NAME 524514	 6.6kV ground mounted substation showing name and SPENS number
SITE NAME 523634	 <6.6kV ground mounted substation showing name and SPENS number
SITE NAME pmt 527522	 11kV pole mounted substation showing name and SPENS number
SITE NAME pmt 525743	 6.6kV pole mounted substation showing name and SPENS number
SITE NAME pmt 526543	 <6.6kV pole mounted substation showing name and SPENS number
SITE NAME 527238	 Pole mounted switching substation showing name and SPENS number

Our Ref: 11086846 Your Ref: LKS/Angmering 2017-84

Friday, 25 August 2017

Lisa Simmons
Gladman House Alexandria Way
Congleton
Cheshire
CW12 1LB

Dear Lisa Simmons

Thank you for contacting us regarding UK Power Networks equipment at the above site. I have enclosed a copy of our records which show the electrical lines and/or electrical plant. I hope you find the information useful.

I have also enclosed a fact sheet which contains important information regarding the use of our plans and working around our equipment. Safety around our equipment is our number one priority so please ensure you have completed all workplace risk assessments before you begin any works.

Should your excavation affect our Extra High Voltage equipment (6.6 KV, 22 KV, 33 KV or 132 KV), please contact us to obtain a copy of the primary route drawings and associated cross sections.

If you have any further queries do not hesitate to contact us.

Plan Provision



This information is made available to you on the terms set out below. If you do not accept the terms of use set out in this fact sheet please do not use the plans and return them to UK Power Networks.

1. UK Power Networks does not warrant that the information provided to you is correct. You rely upon it at your own risk.
2. UK Power Networks does not exclude or limit its liability if it causes the death of any person or causes personal injury to a person where such death or personal injury is caused by its negligence.
3. Subject to paragraph 2 UK Power Networks has no liability to you in contract, in tort (including negligence), for breach of statutory duty or otherwise how for any loss, damage, costs, claims, demands, or expenses that you or any third party may suffer or incur as a result of using the information provided whether for physical damage to property or for any economic loss (including without limitation loss of profit, loss of opportunity, loss of savings, loss of goodwill, loss of business, loss of use) or any special or consequential loss or damage whatsoever.
4. The information about UK Power Networks electrical plant and/or electric lines provided to you belongs to and remains the property of UK Power Networks. You must not alter it in any respect.
5. The information provided to you about the electrical plant and/or electric lines depicted on the plans may NOT be a complete record of such apparatus belonging to UK Power Networks. The information provided relates to electric lines and/or electrical plant belonging to UK Power Networks that it believes to be present but the plans are not definitive: other electric lines and/or electrical plant may be present and that may or may not belong to UK Power Networks.
6. Other apparatus not belonging to UK Power Networks is not shown on the plan. It is your responsibility to make your own enquiries elsewhere to discover whether apparatus belonging to others is present. It would be prudent to assume that other apparatus is present.
7. You are responsible for ensuring that the information made available to you is passed to those acting on your behalf and that all such persons are made aware of the contents of this letter.
8. Because the information provided to you may not be accurate, you are recommended to ascertain the presence of UK Power Networks electric lines and/or electrical plant by the digging of trial holes. Trial holes should be dug by hand only.

Excavations must be carried out in line with the Health and Safety Executive guidance document HSG 47. We will not undertake this work. A copy of HSG 47 can be obtained from the Health and Safety Executives website.

All electric lines discovered must be considered LIVE and DANGEROUS at all times and must not be cut, resited, suspended, bent or interfered with unless specially authorised by UK Power Networks.

The electric line and electrical plant belonging to UK Power Networks remains so even when made dead and abandoned and any such electric line and/or electrical plant exposed shall be reported to UK Power Networks.

Where your works are likely to affect our electric lines and/or electrical plant an estimate of the price of any protective /diversionary works can be prepared by UK Power Networks Branch at Metropolitan House, Darkes Lane, Potters Bar, Herts. , EN6 1AG, telephone no. 0845 2340040



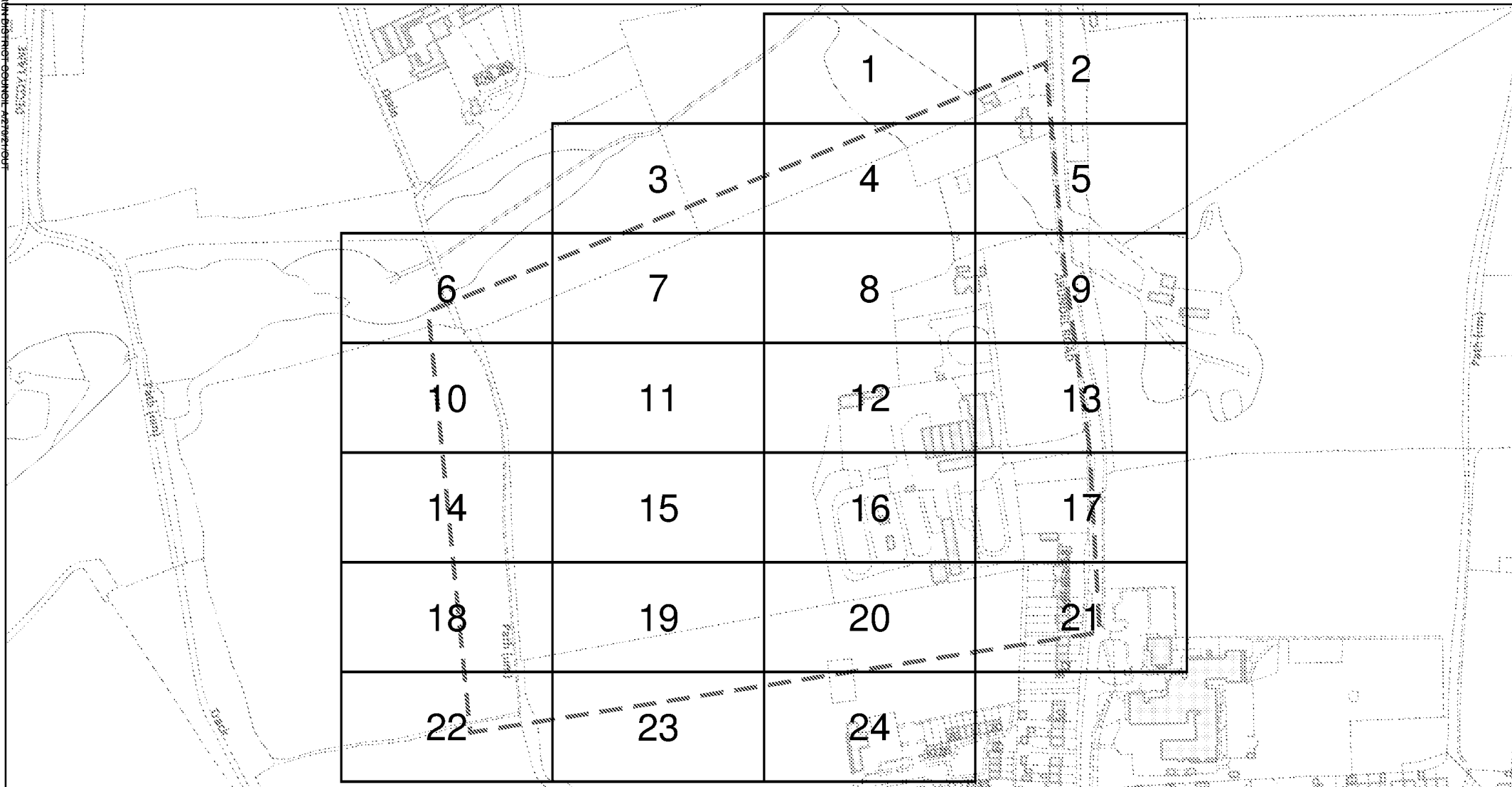
- 9 Any work near to any overhead electricity lines must be carried out by you in accordance with the Health and Safety Executive guidance document GS6 and the Electricity at Work Regulations.

The GS6 Recommendations may be purchased from HSE Books or downloaded from the Energy Networks Association's website.

If given a reasonable period of prior notice UK Power Networks will attend on site without charge to advise how and where "goal posts" should be erected. If you wish to use this service, in the first instance please telephone: 0845 6014516 between 08:30 and 17:00 Monday to Friday.

10. You are responsible for the security of the information provided to you. It must not be given, sold or made available upon payment of a fee to a third party.
11. If in carrying out work on land in, on, under or over which is installed an electric line and/or electrical plant that belongs to UK Power Networks you and/or anyone working on your behalf damages (however slightly) that apparatus you must inform immediately UK Power Networks by our emergency 24 hour three digit telephone number **105** providing;
- your name, address and telephone number;
 - the date, time and place at which such damage was caused;
 - a description of the electric line and/or electrical plant to which damage was caused;
 - the name of the person whom it appears to you is responsible for that damage;
 - the nature of the damage.
12. The expression "UK Power Networks" includes UK Power Networks (EPN) plc, UK Power Networks (LPN) plc, UK Power Networks (SEPN) plc, UK Power Networks and any of their successors and predecessors in title.





Dig Sites Area: Line:

The quality and accuracy of any print will depend on your printer, your computer and its print settings. Measurements scaled from this plan may not match measurements between the same points on the ground.

This plan must be used with the attached 'Symbols' document.

Date Requested: 25/08/2017
Job Reference: 11086846
Site Location: 506096 105002
Requested by:
Mrs Lisa Simmons
Your Scheme/ Reference:
LKS/ Angmering 2017-84
Scale: 1:3587 (When plotted at A4)

1. The position of the apparatus shown on this drawing is believed to be correct but the original landmarks may have been altered since the apparatus was installed.
2. The exact position of the apparatus should be verified - use approved cable avoidance tools prior to excavation using suitable hand tools.
3. It is essential that trial holes are carefully made avoiding the use of mechanical tools or picks until the exact location of all the cables have been determined.
4. It must be assumed that there is a service cable into each property, lamp column and street sign, etc.
5. All cables must be treated as being live unless proved otherwise by UK Power Networks.
6. The information proved must be given to all people working near UK Power Networks plant and equipment. Do not use plans more than 3 months after the issue date for excavation purposes.
7. Please be aware that electric cables/lines belonging to other owners of licensed electricity distribution systems may be present and it is your responsibility to identify their location.

1. UK Power Networks does not warrant that the information provided to you is correct. You rely upon it at your own risk.
2. UK Power Networks does not exclude or limit its liability if it causes the death of any persons or causes personal injury to a person.
3. Subject to paragraph 2 UK Power Networks has no liability to you in contract, in tort (including negligence), for breach of statutory duty or otherwise for any loss, damage, cost, claims, demands, or expenses that you or any third party may suffer or incur as a result of using the information provided whether for physical damage to property or for any economic loss (including without limitation loss of profit, loss of opportunity, loss of savings, loss of goodwill, loss of business, loss of use) or any special or consequential loss or damage whatsoever.
4. This plan has been provided to you on the basis of the terms of use set out in the covering letter that accompanies this plan. If you do not accept and/or do not understand the terms of use set out in the covering letter you must not use the plan and must return it to the sender of the letter.
5. You are responsible for the security of the information provided to you. It must not be given, sold or made available upon payment of a fee to a third party.



IF IN DOUBT - ASK! PHONE
0800 056 5866
EMERGENCY - If you damage a
cable or line
Phone 0800 783 8838 (24hrs)
URGENTLY



ALWAYS LOOK UP
BEFORE
YOU START WORK
Refer to HSE Guidance
note GS6

Maps produced at 1:2500 scale are Geo-Schematics which show LV mains cables and overhead lines (in some cases all voltages). Prior to carrying out excavations you must refer to the 1:500 records to determine the location of all known underground plant and equipment.