

**Desk Study, Site
Investigation & Risk
Assessment Report**

Project Name: Former Police Station

Location: East Court House, College Lane,
East Grinstead, West Sussex, RH19 3LS

Client: ZMQL Limited

Project ID: J15797

Report Date: 6 January 2025

Report Issue: 1

SUMMARY

The site, which extends to 0.36 hectares comprises an approximately rectangular shaped boundary occupied by a former Police Station. It is proposed to redevelop the site into residential properties, by demolishing part of the existing structure and constructing residential apartments, while refurbishing the remaining section of the existing structure to create additional residential apartments.

Geological records indicate the site to be underlain by Ardingly Sandstone Member classified as a Secondary A aquifer, with no mapped superficial deposits.

A desk study was carried out and indicates that the site has a history of industrial use. The site appeared to be part of an undeveloped field until the 1977-1978 mapping, when the majority of the footprint became occupied with a police station and a substation at the northern boundary of the site. The footprint of the site appears to be consistent with the current layout from this mapping.

The preliminary conceptual site model identified on-site sources of contamination associated with the former and current site use, including an inactive police station, on-site fuel tanks, domestic garages with vehicle inspection pits and a substation, with the potential for Made Ground to be present associated with the former development.

An Unexploded Ordnance (UXO) risk assessment was not requested within our brief for the investigation.

Two phases of intrusive investigation were carried out. The initial phase comprised 3 No. windowless sampler boreholes to a maximum depth of 7.0m (bgl), and 2 No. foundation inspection pits to a maximum depth of 1.03m (bgl). The additional intrusive investigation comprised a series of 21 No. dynamic probes to a maximum depth of 14.0m (bgl).

The fieldwork was restricted by the presence of buildings, hardstanding and utility services. It should not be assumed that the same ground conditions would apply to these inaccessible areas.

The soils encountered were generally seen to be fairly variable. Within one of the boreholes (WLS01), the soils encountered comprised 0.7m of Made Ground over a dense, silty, gravelly, Sand to 1.6m (bgl), which in turn was underlain by a very dense, clayey, sandy, Silt, with bands of sandstone. The borehole (WLS01) refused at a depth of 2.0m (bgl).

However, the soils encountered within the other two boreholes (WLS02 & WLS03), encountered 0.1/0.12m of Blacktop, over Made Ground to 0.23/0.3m (bgl), which in turn was underlain by variable very loose to medium dense, silty, gravelly, Sand/Silt to 6.0/6.5m (bgl), below which was a very dense, silty, Sand, with laminations of sandstone.

No groundwater was encountered during the course of the intrusive investigation.

Any foundation solution must take into account the possible presence of cambering and gull features. At this stage on the basis of the investigation carried out to date it is recommended that either a shallow reinforced raft foundation or deep piled foundations be utilised for this site. For a shallow reinforced raft foundation an allowable bearing capacity of 30kPa is recommended at a depth of 1.0m.

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

Suspended ground floor slabs will be required where made ground depths are greater than 600mm or where foundations greater than 1.5m are required due to the presence of trees. Outside of these areas, either ground bearing or suspended floor slabs will be acceptable.

Detailed information on the proposed development, such as detailed final layout, loadings and serviceability limits was not provided. Accordingly, where geotechnical design advice is provided it is on the prescriptive basis allowed for by Eurocode 7: employing conventional and conservative design rules.

On the basis of the investigation works undertaken to date, and the findings of the laboratory testing, the shallow soils would not be considered contaminated, given the sites proposed residential end use. The existing topsoil on the west of the site would be considered suitable to be retained in the soft landscaped areas on this part of the site (whether they are designated private gardens or an area of communal soft landscaping).

Evidence of the potential presence of underground tanks was noted during the site walkover. To date no visual or olfactory evidence of potential petroleum hydrocarbon contamination has been found on the site. However, it is recommended that enquiries be made with the relevant Petroleum Officer for the area to obtain any records they may have of underground fuel storage tanks on the site, including their location, volume and whether they have been decommissioned or removed from site. The current, proposed site layout plan shows the area on the northwest of the site, where it is suspected the underground tanks may be present, as soft landscaping. Pending the findings of enquiries with the Petroleum Officer, further investigation should be undertaken in this area of the site.

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

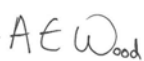
As with any site, areas of contamination not identified during investigation works may come to light during the course of redevelopment. Accordingly, a discovery strategy must be in place during the redevelopment to ensure that any hitherto unknown contamination is identified and dealt with in an appropriate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

A formal remediation strategy and verification plan should be agreed with the regulatory authorities prior to commencement of any remedial works.

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

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

The recommendations contained in this report are made in respect of the particular context of the investigation as described in the report and may not be appropriate to alternative development schemes. This report should be considered in its entirety and Southern Testing Laboratories Ltd. accepts no responsibility for and excludes liability in respect of any omission or alteration made by others, and any use of the report for any purpose other than that for which it was produced.

Author	Alisha Wood BSc (Hons) AMIEnvSc	
Author	S K Toms BSc (Hons) MSc MIEnvSc PIEMA	
	S Marshall BSc (Hons) FGS	
Check / Review	J N Race BSc MSc CGeol FGS	
	S F Pratt BSc MSc CGeol FGS DIC	

For and on behalf of Southern Testing Laboratories Limited

DOCUMENT HISTORY AND STATUS

Issue No.	Date	Purpose or Status	Author	Check / Review
1	06/01/25	First Issue	AW/SKT/SM	JNR/SFP

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TABLE OF CONTENTS

A	INTRODUCTION	1
1	Authority	1
2	Location	1
3	Proposed Construction	1
4	Object	1
5	Scope	1
B	DESK STUDY AND WALKOVER SURVEY	2
6	Desk Study	2
7	Site Walkover Survey	8
C	PRELIMINARY SITE MODELS	9
8	Conceptual Engineering Geological Ground Model	9
9	Conceptual Site Model	12
D	GROUND INVESTIGATION	15
10	Strategy and Method	15
11	Weather Conditions	15
12	Soils as Found	15
13	Dynamic Probing Results	16
14	Groundwater Observations	17
E	DISCUSSION OF GEOTECHNICAL TEST RESULTS AND RECOMMENDATIONS	17
15	Geotechnical Laboratory Tests	17
16	Soil Classification and Properties	17
17	Groundwater Levels	18
18	Swelling and Shrinkage	18
19	Soakaways	19
20	Sulphates and Acidity	20
21	Dynamic Probing Results	20
22	Foundations and Bearing Capacity	20
23	Existing Foundations	21
24	Floor Slabs	21
25	Excavations and Dewatering	21
26	Pavement Construction	22
F	DISCUSSION OF GEOENVIRONMENTAL TEST RESULTS AND RECOMMENDATIONS	22
27	Analytical Framework	22
28	Site Investigation – Soils	23
29	Summary of Identified Contamination	26

30	Risk Evaluation	27
31	Discussion and Conclusions	28
32	Soil Waste Management	28
33	General Guidance	29

TABLE OF APPENDICES

APPENDIX A

Site Plans and Exploratory Hole Logs

APPENDIX B

Field Sampling and In-Situ Test Methods and Results

APPENDIX C

Geotechnical Laboratory Test Methods and Results

APPENDIX D

Contamination Laboratory Test Methods and Results

APPENDIX E

Photographs

APPENDIX F

Phase 1 Desk Study – Historical Mapping

APPENDIX G

Phase 1 Desk Study – Environmental Database Search Results and Mapping

A INTRODUCTION

1 Authority

Our authority for carrying out this work is contained in an email instruction dated 12th August 2024 by Pierre Lederer in relation to our quotation Ref. Q241077.

2 Location

The site covers approximately 0.36ha and is located at East Court House to the east of College Lane, approximately 1 km east of the centre of East Grinstead, West Sussex. It is accessed via a private road. The approximate National Grid Reference of the site is TQ 39780 38670. The site location is shown on Figure 1 within Appendix A.

3 Proposed Construction

It is proposed to redevelop the site for residential use, by demolishing part of the existing structure and constructing residential apartments, while refurbishing the remaining section of to create additional apartments, as shown on the appended Figure 2.

At the time of writing the site was at outline application stage with regard to planning. Therefore, for the purposes of the preliminary contamination risk assessment, the proposed development land use is classified as Residential without consumption of Home-grown Produce has been assumed; CLEA Model Ref [1] / C4SL Report Ref [2].

The gas sensitivity of the proposed development is rated as High CIRIA C665 Ref [3].

4 Object

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

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

5 Scope

This report presents our desk study findings, exploratory hole logs and test results and our interpretation of this data.

A UXO risk assessment was not requested within our brief for the investigation however from a preliminary check of publically available UXO mapping, the site is located within a low UXO risk area.

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

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

The site investigation has been completed with reference to BS 5930 Ref [4] and BS 10175 Ref [5].

Waste Classification of soils has not been included within the brief for the investigation.

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

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The recommendations contained in this report are made in respect of the particular context of the investigation as described in the report and may not be appropriate to alternative development schemes. This report should be considered in its entirety and Southern Testing Laboratories Ltd. accepts no responsibility for and excludes liability in respect of any omission or alteration made by others, and any use of the report for any purpose other than that for which it was produced.

Detailed information on the proposed development, such as detailed final layout, loadings and serviceability limits was not provided. Accordingly, where geotechnical design advice is provided it is on the prescriptive basis allowed for by Eurocode 7: employing conventional and conservative design rules.

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

B DESK STUDY AND WALKOVER SURVEY

6 Desk Study

A Desk Study has been carried out. Reference has been made to the following information sources.

- Online Geological Maps Ref [4] & Ref [5];
- Aerial Photographs;
- Historical Ordnance Survey Maps;
- Environmental Databases;
- BGS Online Historical Borehole Records Ref [7];
- Search on Local Authority Planning Portal for planning history;
- Environment Agency / Gov.UK Website Flood Risk Ref [8];
- Zetica Preliminary Risk Maps¹;
- UK Radon Ref [9] and BRE Radon Ref [10]; and

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

The full report is included in Appendix F and G, a summary of the salient features is included in the following sections of this report.

6.1 Geology

The British Geological Survey Map of the area (Sheet No. 303 - 1971) together with the BGS online mapping, indicates that the site geology consists of the Ardingly Sandstone Member, with no mapped superficial deposits.

6.1.1 Ardingly Sandstone Member

The Ardingly Sandstone Member comprises the highest unit of the Lower Tunbridge Wells Sand Formation. The Ardingly Sandstone is typically a fine to medium grained massive cross-bedded sandstone. This sandstone is harder than most of the other Wealden strata and has formed numerous bluffs and crags in and around Tunbridge Wells, Uckfield, Ardingly and East Grinstead.

¹ Zetica UXO, Risk Maps | Zetica UXO, [Accessed 8th August 2024]

An important feature of the sandstone is that it is subject to "cambering". On and near steep hill slopes cracks and fissures have been formed because of movement in the underlying Wadhurst Clay. These are usually in two directions, parallel to, and at right angles to, the line of the escarpment, and range from a few mm wide, to a metre wide, or more. The fissures are often infilled with silt but are occasionally open (voids), and they can present significant difficulties to development on affected sites.

6.2 Historical Borehole Records

A search of previous exploratory hole records both from the online British Geological Survey database [6] and Southern Testing in-house records, revealed four publically available BGS records and eleven records from the STL source within 1km of the site. For the purpose of the assessment, the closest five records have been summarised below.

BH Reference	Final Depth (mbgl)	Distance from site (m) & Direction	Remarks
J11975 WLS1	7.20	~100m W	0-0.20- Dark brown organic silty TOPSOIL. 0.20-1.10- Very weak thickly laminated orangish brown SANDSTONE with some sandy infill between discontinuities. 1.10-7.20- Very weak weathered thinly laminated extremely closely spaced fractured SANDSTONE with much fine SAND infill. Recovered as SAND with much very weak fine SANDSTONE lithorelics (Difficult to drill). Groundwater was not encountered during excavation
J11975 WLS2 WLS3	5.50 4.00	~100m W	0-0.20/0.30- Dark brown organic silty TOPSOIL. 0.20/0.30-0.70/0.60- Brown desiccated SAND with occasional fine very weak SANDSTONE lithorelics and roots 0.70/0.60-2.00/0.90- Yellow brown with orange mottled / pale yellow fine SAND with numerous fine very weak sandstone lithorelics. 2.00/0.90-5.50/4.00- Very weak thickly laminated pale yellow with some orange mottling SANDSTONE with much sandy infill. Recovered as SAND with much very weak fine SANDSTONE lithorelics (Difficult to drill). Groundwater was not encountered during excavation
J13544 HA02 HA03	1.50/1.80	~450m SW	0-0.55/0.60- Soft brown silty sandy gravelly Clay with occasional fine to medium angular fragments of brick and (rare fragments of glass) and rootlets 0.55/0.60-1.50/1.55- Stiff light brown mottled orangish brown and grey silty sandy (gravelly) CLAY (with occasional fine to coarse subrounded to angular fragments of sandstone). 1.55-1.80- Stiff brown mottled orangish brown and grey sandy CLAY. Groundwater was not encountered during excavation.

BH Reference	Final Depth (mbgl)	Distance from site (m) & Direction	Remarks
J12485 WLS1	3.00	~500m NE	0-0.20- Concrete with steel rebar (MADE GROUND). 0.20-0.30- Reddish brown silty sandy GRAVEL. Gravel is fine to coarse subangular to subrounded limestone. (MADE GROUND) 0.30-2.00- Orange brown silty SAND with frequent fine to coarse subangular to subrounded sandstone and siltstone gravel. Sand is weakly cemented and iron stained. 2.00-2.80- Extremely weak light yellowish brown SILTSTONE. Weakly cemented with tightly spaced fissures with some iron staining and thin laminations. 2.80-3.00- Extremely weak orange brown silty fine grained sandstone. Groundwater was not encountered during excavation
TQ33NE25	3.75	~530m	0-0.25- MADE GROUND (concrete) 0.25-1.50- MADE GROUND (brown silt and fine sand with some flint gravel and concrete fragments). 1.50-1.80- Light brown grey SILT and fine SAND with very frequent fragments of weathered sandstone. 1.80-3.75- Brown orange brown and light brown grey thinly to very thinly bedded moderately to highly weathered silty SANDSTONE. Very weak to weak. Groundwater was not encountered during excavation.

6.3 Geological Hazards and Mining Activities

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

Data Source	Hazard	Hazard Potential to Site	Remarks
BGS	Potential for Collapsible Ground Stability Hazard	Very Low	Although expressed as "Very Low" the potential for subsidence associated with cambered ground and gull features within the Ardingly Sandstone Member could potentially lead to loose soils and collapsible ground stability hazards.
	Potential for Compressible Ground Stability Hazard	No hazard	
	Potential for Ground Dissolution Stability Hazard	No Hazard	
	Potential for Landslide Ground Stability Hazard	Very Low	
	Potential for Running Sand Ground Stability Hazard	No Hazard	Although expressed as "No Hazard" the likely presence of granular strata within the Ardingly Sandstone Member, may give rise to the potential for running sand, where groundwater is encountered.

Data Source	Hazard	Hazard Potential to Site	Remarks
	Potential for Swelling or Shrinkage Clay Ground Stability Hazard	No Hazard	
	Shallow Mining Hazard	The Envirocheck datasheet lists the site to be within an area that might not be affected by coal mining.	
	BGS recorded mineral site	The Envirocheck datasheet lists 6 No. BGS Recorded Mineral Sites within 1.0km of the site. The nearest entry is an opencast sandstone quarry listed 491km to the North of the site.	
ARUP [Ref [7]]	Mining Instability	The Arup maps and database indicate that Iron Workings are present within the local area, however, no precise locations are listed.	
CSS [Ref [8]] KURG [Ref [9]]	Underground Openings	Our in-house Underground Openings database, lists 3 No. entries within 1km of the site. The nearest entry is listed as an iron ore mine approximately 0.5km to the north east of the site.	
PBA	Natural & Mining Cavities	The Envirocheck datasheet lists 3 No. natural cavities recorded within 1km of the site, the closest relating to a gull/fissure due to Cambering 149m to the south of the site.	

6.4 Radon Risk

With reference to the Envirocheck report, UK Radon Ref [12] and BRE Radon Ref [13] guidance: The site is listed within a lower probability radon area (less than 1% of homes are estimated to be at or above the Action Level). On the basis of the Envirocheck datasheet, no radon protection is required on this site.

All basements are at increased risk of elevated levels of radon, regardless of geographic location.

A well-constructed waterproofing should be designed to protect against radon in accordance with guidance and recommendations on basement waterproofing as contained in BS8102:2022.

The designer should take note of any measures specific to radon protection for basements as detailed in BR211 (2023) and ensure any recommendations are followed.

The UK Health Security Agency and HSE policy and guidance recommends and, in some cases, requires, that the owner and/or occupier of buildings undertake radon monitoring in all occupied and used basement areas.

It is therefore the owner and/or occupier's responsibility to ensure that the above policy and statutory requirements regarding radon monitoring are followed.

If future monitoring identifies radon levels above 100Bq/m³ within a dwelling or above the relevant action level for occupational exposure, the Local Authority should be notified.

6.5 Hydrology and Hydrogeology

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

Data		Remarks	Possible Hazard to/from Site (Y/ N)
Aquifer Designation	Superficial Deposits	Not recorded to be mapped underlying the site	N

Data		Remarks	Possible Hazard to/from Site (Y/ N)
	Bedrock	The Bedrock (Ardingly Sandstone Member) mapped beneath the site is classified as a Secondary A Aquifer - Permeable layers capable of supporting water supplied at a local rather than strategic scale, and in some cases forming an important source of base flow.	Y
Groundwater Vulnerability		Secondary A Aquifer recorded as medium vulnerability, with well-connected fractures, and an intermediate pollutant speed.	Y
Abstractions	Surface Water	Not recorded within 2km of the site.	N
	Groundwater	Two recorded within 2km of the site, the closest located 995m north of the site relating to a point abstraction from a borehole at Hackenden Ps, East Grinstead (East Of Railway), permitted in 2006, where the permit end date was not specified.	N
Source Protection Zones		On the basis of the Envirocheck datasheet the site is not shown on or within 1km of a Source Protection Zone.	N
Surface Watercourses		On the basis of the Envirocheck datasheet the nearest water feature is located 75m to the north. It is understood this entry refers to a stream.	N
Groundwater Flood Risk		Limited Potential for Groundwater Flooding to Occur.	N
Surface Water Flood Risk*		The site is not shown within/adjacent to an area mapped as being at risk.	N
Marine / Fluvial Flood Risk*		The site is not shown within/adjacent to an area mapped as being at risk.	N
Reservoir Flood Risk*		The site is not shown within/adjacent to an area mapped as being at risk.	N
Discharge Consents		Three recorded within 1km, the closest located 85m N related to discharge of public sewage: Storm Sewage Overflow to a freshwater stream or river, permitted in 2020, where the permit end date was not specified.	N

* These sections are provided for information only, this report does not constitute a formal flood risk assessment and specialist advice should be sought in relation to potential flooding issues.

The site is situated on the Ardingly Sandstone, which is classified as a Secondary A aquifer. However, the site is not within a groundwater source protection zone.

On this basis, the relatively permeable strata beneath the site means that the groundwater is at potential risk from the migration of mobile contaminants arising from an on-site source, and from the transmission of contaminants via the groundwater from an off-site source.

6.6 Historical Ordnance Survey Maps

Copy extracts of historical Ordnance Survey plans dating from 1870 to 2024 were obtained and are presented in Appendix H. A summary of the salient features is presented below.

The earliest historical map of 1870 shows the site as an undeveloped field on an approximately rectangular shaped boundary. The site itself appears unchanged until circa 1967, where the majority of the site footprint is shown to be occupied by a Police Station and a substation was first shown at the northern boundary of the site. The building footprint appears to be consistent with the current layout from this date.

The earliest map of 1870 shows the immediate surroundings to be predominantly undeveloped with isolated residential developments towards the north, southeast and south, a cutting circa 9m west and two lakes ~80m west.

The most notable change to the surrounding area is residential development, which commenced in circa 1930's and appears to have increased through the 1950's to 1970's.

6.7 Environmental Databases

Data Source	Distance (m)	Direction	Details	Possible Hazard to Site (Y/N)
Historical Industrial Land Use (within 250m)	86 108	NW N	Cemetery Potentially infilled pond	N N
Current Industrial Land Use (within 250m)	0	NE	Electrical substation	Y
Current and Historical Landfills	/	/	None listed within 500m of the site	N
Potentially Infilled Ground (within 250m)	108	N	Pond, marsh, river, stream etc. (1950)	Y
Fuel Sites	/	/	None listed within 500m of the site	N
Pollution Incidents (within 250m)	0	NE	Controlled waters - Water Company Sewage: Crude Sewer overflow in 1997, recorded as a Category 3 minor incident	N
	225	NE	Drainage Failures : Foul Sewer Failure at Lynton Park Avenue in October 1999, recorded as a Category 3 minor incident	N
IPPC/LAPPC Authorisations	/	/	None listed within 500m of the site	N
Hazardous Substances Consents	/	/	None listed within 500m of the site	N
Sensitive Land Uses	/	/	None listed within 500m of the site	N

Although Polychlorinated Biphenyls (PCBs) are potential contaminants associated with substations, these chemicals were no longer used in substations from 1981. The on-site substation is believed (from historical mapping) to have been constructed after this date and therefore PCBs are unlikely to be present.

From the historic map extracts it appears that the infilled ground, located 108m to the north of the site, comprised a small pond at Blackwell Farm. It appears that the pond was infilled in the 1950's to allow the development of a road and associated residential development. Therefore, given the subsequent use of the land, the pond would likely have been filled with material suitable to support this redevelopment, which would not have included putrescible material. In addition, given the distance to the site and the small scale of the pond, this feature is not considered to pose a potential source of ground gas generation.

6.8 Planning Application History

It is understood that this desk study has been requested to support an outline planning application for the site.

Mid Sussex District Council's online planning portal contains no records of any planning applications for the site². No formal request has been made to the council for a full history search.

² Mid Sussex District Council, Public Register, [Search Results \(midsussex.gov.uk\)](https://searchresults.midsussex.gov.uk), accessed 02/09/24

6.9 Ground Gas Risk

There are no current or historical landfill sites, or areas of recorded backfilled ground considered to be a risk, within 500m of the site. Therefore, the risk to the site from the generation and migration of ground gases is not considered to pose a potential risk to the site.

6.10 UXO Risk Management

The agreed scope of work did not allow for either a preliminary or detailed UXO risk assessment.

By way of comment the possibility of unexploded ordnance (UXO) being encountered on a site falls within the category of a potentially significant risk and should be addressed as a legal duty under the Construction (Design and Management) Regulations by the Client as early as possible in a project.

An Unexploded Ordnance (UXO) risk assessment was not requested within our brief for the investigation, however from a preliminary check of publically available UXO mapping, the site is situated within a low UXO risk area. The maps have been reviewed for information purposes only and should not be perceived as part of a preliminary or detailed UXO risk assessment.

7 Site Walkover Survey

A walkover survey was carried out on 21st August 2024. At the time of the site visit the weather was dry and sunny.

7.1 General Site Description and Boundaries

At the time of the site walkover, the site comprised an approximately rectangular shaped boundary. The site was occupied by a roughly 'C-shaped' building. To the centre and east of the site were areas of hardstanding and parking. The hardstanding appeared to be in generally good condition, with localised cracking. There was some soft landscaping on the site, predominately along the boundaries of the site and at the front of the existing building and hardstanding.

The site is bounded to the north by a series of residential properties. To the east of the site is a car parking area, beyond which is an area of open land. The southern site boundary comprises an extension to the building present on site, which is in active use as a children's nursery. The site is bounded to the west by a wooden fence and a hedgerow, beyond which is Blackwell Hollow (B2110) road, which is present within a cutting.

7.2 Topography and Drainage

On a regional scale the topography of the local area generally slopes down towards the north and the east of the site. An area approximately 330m to the south of the site is a localised high point relative to the surrounding area. The site itself slopes down gently from the south to the north. Blackwell Hollow (B2110) present adjacent to the western site boundary is within a cutting, approximately 14m deep.

Several manhole covers were located within the hardstanding, several of which were located outside of the garages and a drainage gully, running parallel to the northern boundary. No visual or olfactory evidence of gross contamination associated with this infrastructure was not observed.

7.3 Vegetation

Vegetation on site including decorative shrubbery and semi-mature to mature trees limited to the areas of soft landscaping focused along the site boundary and around the front of the building.

7.4 Buildings and Land Use on Site and Nearby

The building on site comprises a part two and part three-storey brick and masonry built former police station. A row of lock-up garages were present on the west side of the site. Potential petroleum hydrocarbon staining was noted on the hardstanding. A car inspection pit was present in the northern-most building.

To the front of the garage containing the inspection pit were three metal covers, thought to potentially be underground fuel storage tank covers. There was also what appeared to be a fuel pump switch noted on the outside of the garages, with what appeared to be a decommissioned (capped at ground level) vent pipe to the north of the covers. To the east of the metal covers was what could be a fuel pump island. Further to the east were surface water drains and the cover to a surface water interceptor.

It is recommended that consultation is sought with the relevant Petroleum Officer as to any records they may have for fuel storage at the site; and the location and nature of any below ground fuel storage tanks.

In the southernmost of the buildings was an above ground (suspected) heating oil fuel tank and associated infrastructure, which was above hard standing, which appeared to be in good condition. The tank itself also appeared to be in generally good condition with no visual or olfactory evidence of spill, although the contents of the tanks were not known. Along the northern boundary was a row of domestic garages and a bicycle storage area.

The site is within a wider open space/park area which includes a number of similar commercial style structures (including the pre-school to the immediate south) as well as some residential properties.

7.5 Inaccessible Site Areas

The main former police station building was not investigated during the site walkover, as it was understood that internal demolition was being undertaken. A building likely associated with the substation was also not investigated as it was inaccessible at the time of the walkover.

7.6 Site Photographs

A series of photographs showing the site and surrounding area at the time of the intrusive investigation are included in Appendix G.

C PRELIMINARY SITE MODELS

8 Conceptual Engineering Geological Ground Model

From the desk study information and walkover undertaken at this site the following conceptual ground model has been formulated.

Data Source	Comments
Geology	The recorded soils beneath the site comprises the Ardingly Sandstone Member. From the publically available BGS and Southern Testing borehole records within this geology locally and based on the walkover survey within the road cutting to the west of the site, competent massive sandstone might be expected beneath the site. Cambering is common in the area and gulls/fissures infilled with loose superficial soils might also be expected together with some superficial drift/head.
Former Site Use	The site comprises a disused commercial/office building which is proposed to be partly demolished, hence the presence of existing foundations should be considered. Buried fuel tanks are thought to be present and the possibility of hydrocarbon contamination in soils should not be overlooked.
Groundwater	A shallow groundwater table is unlikely to be encountered underlying the site within the bedrock geology. Some perched water seepages should however be anticipated. Construction activities should consider the Secondary A Aquifer, especially if contamination is present within the underlying soils, as to not create preferential pathways for contaminant migration.
Surface Water	The site is generally located in an area of very low risk from surface water flooding and from flooding from rivers without defences

Data Source	Comments
Potential Geo-hazards	The geological setting of the site and surrounding area may give rise to the potential for cambering to occur within the Ardingly Sandstone Member, where gulls may form, leading to the potential for subsidence to occur. This is reinforced by the presence of the closest natural cavity entry which is associated with cambering, located 149m to the south of the site and visible effects of cambering in the rock strata within the road cutting to the immediate west of the site The potential of granular soils (sand and gravel) associated with Ardingly Sandstone Member, may give rise to the potential for running sand to be encountered, especially if high groundwater or perched water entries are encountered.

On the basis of the available information the geotechnical categorisation for the proposed structure(s) is considered to fall within Geotechnical Category; 3 – very large or unusual structures; abnormal risks or exceptionally difficult ground or loading conditions; Eurocode 7 Ref [19].

8.1 Conceptual Geological Ground Model - Cambering

The site is located at a topographically elevated position that slopes downwards to the north. Areas of cambered ground are well documented in and around the area of East Grinstead.

Furthermore, possible gull features (fractures in the massive sandstone) are present in Blackwell Hollow to the west of the site which comprises a sandstone cutting. Such features are indicative of cambered ground.

Cambering refers to a geological process that probably occurred during the ice age periods when the south of England was experiencing a periglacial climate. The cambering process is indicated in Figure 1 below, but it is generally associated with a periglacial climate when runoff from the glaciers located to the north of the Thames estuary carved valleys through the bedrock in the south of England. Cambering may have developed when valley erosion occurred in a plastic clay substrate, which is capped by a brittle rock. This erosion caused the overlying brittle rock to fracture due to stress relief and then migrate towards the valley centre. Further processes associated with a periglacial climate (ice wedging, soil heave, valley bulging etc.) contributed to the formation of wide fractures or 'Gulls' within the brittle overburden bedrock. The gull features are usually in two directions, parallel to, and at right angles to, the line of the escarpment, and may be several metres or more across.

The gulls are filled with wind-blown Aeolian deposits (silt/ fine sands) or may contain soil that originates from the overburdened geology. The infill soil is usually unconsolidated and should be considered metastable (i.e. liable to collapse). The infill soils may in some areas have been washed out to create open cavities/ voids within the gulls, or in some cases, it is possible no infill soil was ever present, and a void could have been created by the lateral movement of a gull, with bridging of soils over the void.

Changes in ground loading, the hydrogeology, or the introduction of water into the ground through soakaways or leaking drains etc. can cause gull-infill soils to migrate leading to the creation of voids. These can cause surface collapses by vertical void migration, or by a sudden vertical drop of surface soil masses into underlying voids.

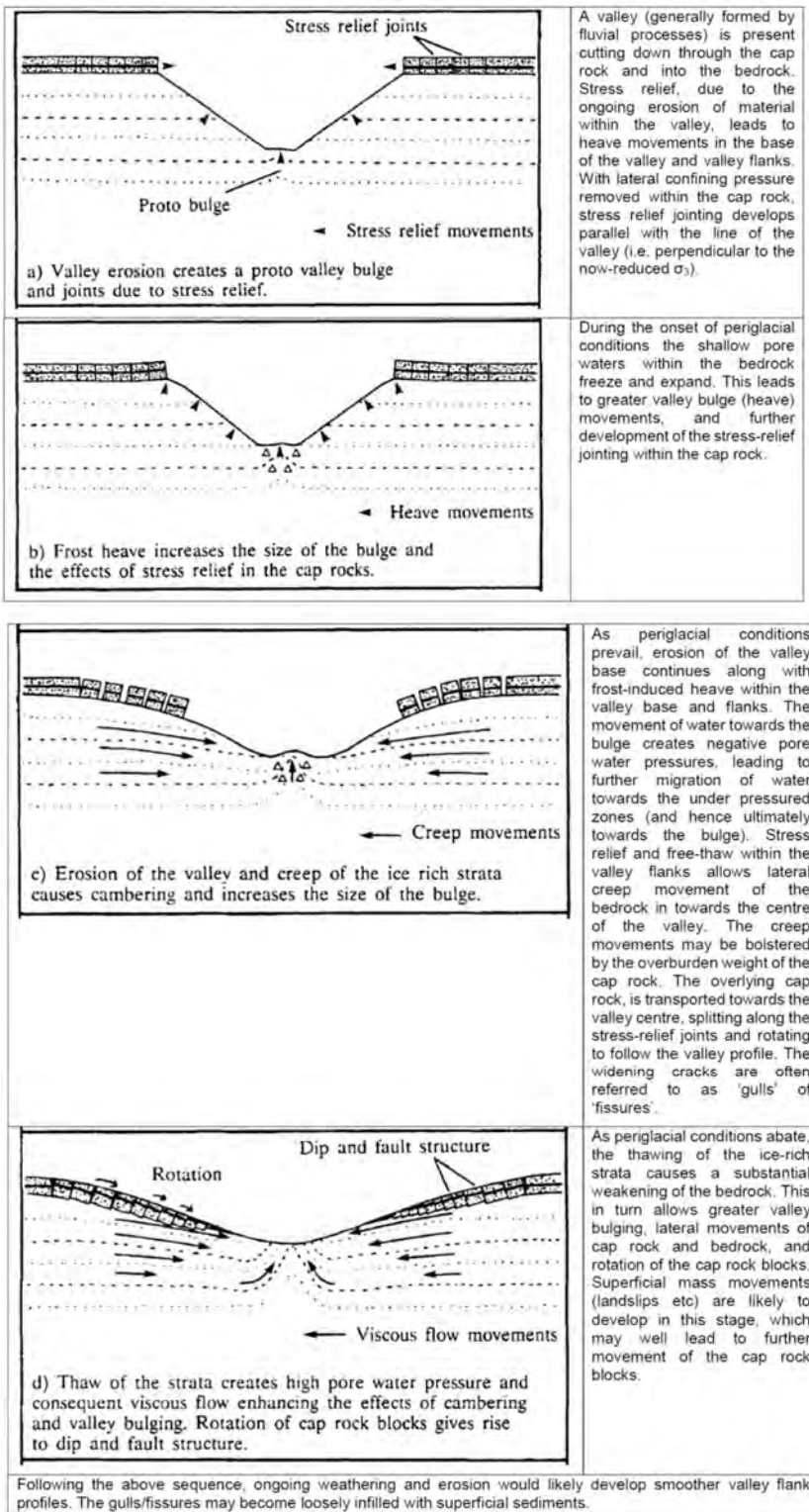


Fig 1. Proposed Mechanism of Cambering and Valley Bulging (Ref: A Review of the Mechanism of Cambering and Valley Bulging: C.D Parks, QJEG Special Publication No.7 PP373-380. 1991).

There is appropriate geological and topographical conditions present in the area for cambering to have occurred.

The most common trigger to gull collapses is inundation by water. Possible sources could be natural water flow through the ground, surface water runoff, leaking drainage pipework or tanks.

9 Conceptual Site Model

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

9.1 Potential Sources of Contamination

The site has a history of agricultural use, prior to its development with a police station. The surrounding area has a similar history of use to the site, gradually having been developed for largely residential use.

A few potentially contaminative uses have been identified on site.

The likely hazard to site has been evaluated based on the UK CIRIA C552 approach (see Appendix C for details),

9.1.1 On-Site Sources

Potential Source		Potential Contaminants and comments	Likely hazard to Site
Historic use of the site	Undeveloped Land	No potential sources of contamination identified.	N/A
Current use of the site	Disused Police Station	Potentially asbestos containing materials within the building. Petroleum Hydrocarbon based oils, solvents and fuels, Made Ground containing heavy metals, metalloids, asbestos, anthropogenic inclusions and Polycyclic Aromatic Hydrocarbons (PAHs).	Low
	Suspected underground fuel storage tanks and associated infrastructure	Petroleum Hydrocarbons and volatile organic compounds.	Moderate
	Spillages and leaks associated with the vehicle inspection pit, interceptor and onsite tank	Petroleum Hydrocarbons and volatile organic compounds.	Low to Moderate
	Substation	Petroleum Hydrocarbons and PCBs (polychlorinated biphenyls)	Very Low
Ground Gases/Vapours		Petroleum Hydrocarbons and volatile organic compounds.	Low to Moderate
Ground and/or surface water		Petroleum Hydrocarbons and volatile organic compounds.	Low to Moderate

Prior to its development as a police station (circa mid 1960's) the site was mapped as undeveloped land. Therefore, the site is not considered to be at risk from on-site sources of historic contamination, pre-development.

The current use of the site as a police station is not considered to pose a significant risk to the site. It is possible that the buildings maybe underlain by Made Ground, due to the importation of materials (sub-base etc.), however, this is considered to pose a low risk.

Evidence of the potential presence of underground fuel storage tanks (tank covers, a vent pipe and cut-off switch) were noted during the site walkover. At the present time, it is not known whether the tanks are still present beneath the site, and if so, whether they have been decommissioned. Even if they have historically been decommissioned, there is still a potential for historical leaks to have occurred. Therefore, this source of potential contamination is considered to pose a moderate risk to the site.

There is an above ground fuel storage tank, interceptor and vehicle inspection pit present on the site. These features are considered potential hotspots of contamination arising from the storage and use of petroleum hydrocarbon based fuels, oils, lubricants etc. Although any impacts are considered likely to be localised, the potential risks to the site are considered low to moderate at this stage.

The electricity substation is also considered a potential hotspot of contamination. However, the risks from this source are considered very low, as given its age PCB's may not be present. Even if they are, they are relatively immobile in the environment, and therefore pose a very localised risk.

The potential presence of underground fuel storage tanks poses a potential risk to groundwater. Given it is not known whether the tanks are still present beneath the site, and if so, whether they have been decommissioned, there is considered to be a low to moderate risk to groundwater from this potential source of contamination.

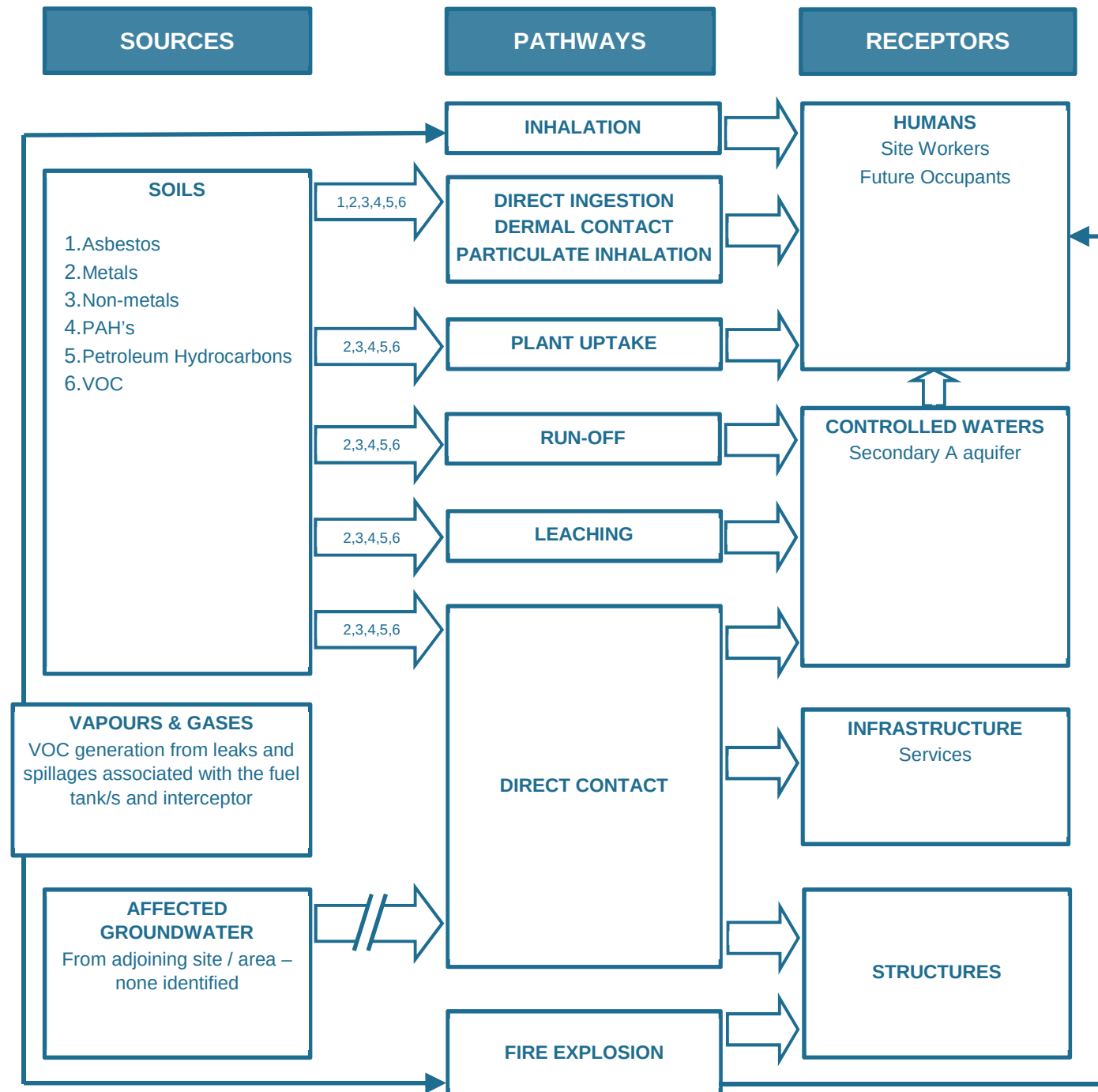
If underground fuel storage tanks are present on the site, there is also a potential risk from the migration of fuel vapours. Again, at this stage, the risk to the site is considered to be low to moderate.

9.1.2 Off-Site Sources

No potential off-site sources of contamination, with the potential to cause a risk of contamination to the site, have been identified.

9.2 Pollutant Linkages and Conceptual Site Model Summary

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



// Denotes potential pollutant linkage not complete.

D GROUND INVESTIGATION

10 Strategy and Method

The strategy adopted for the intrusive investigation comprised the following:

Activity / Method	Purpose	Max Depth Range (m bgl)	Installations / Notes
WLS01-WLS03 Dynamic Windowless Sampling	Boreholes to investigate the shallow ground conditions within external areas. To allow SPT's and collection of samples for geotechnical and contamination testing. Installation of shallow land gas and groundwater monitoring wells.	2.0 / 7.0	50mm gas & groundwater monitoring wells installed within WLS01, WLS02 & WLS03.
TP01 & TP02 Hand-dug	Inspection pits to prove existing foundations detail.	0.57 / 1.03	
WLS01 – WLS03 DCP CBR	Dynamic Cone Penetrometer (DCP) CBR tests adjacent to the exploratory hole locations.	1.0	Undertaken adjacent to selected WLS boreholes.
DP01 – DP21 Dynamic Probing	Dynamic probes to investigate the loose soils encountered on site.	2.6 / 14.0	

Exploratory hole locations are shown in Figures 3, 3a, 3b & 3c in Appendix A.

In-situ test and sampling methods descriptions employed are given in Appendix B together with the test results.

The presence of buildings, hardstanding and utility services limited/restricted the fieldwork.

During the Dynamic Probing works, access to our previous borehole (WLS03) was restricted by the presence of demolition rubble.

11 Weather Conditions

The initial fieldwork comprising 3 No. windowless sampler boreholes and 2 No. foundation inspection trial pits was carried out on 21st August 2024, at which time the weather was generally cloudy but dry.

The additional fieldwork comprising 21 No. dynamic probes was carried out on 5th November & 6th December 2024, at which time the weather was generally overcast but dry.

12 Soils as Found

The soils encountered are described in detail in the attached exploratory hole logs (Appendix A), but in general were seen to be fairly variable. Within the borehole (WLS01) outside of the current building footprint, the soils encountered comprised 0.7m of Made Ground over a dense, silty, gravelly, Sand to 1.6m (bgl), which in turn was underlain by a very dense, clayey, sandy, Silt, with bands of sandstone. The borehole (WLS01) refused at a depth of 2.0m (bgl).

The soils encountered within the two boreholes inside the current building footprint (WLS02 & WLS03), encountered 0.1/0.12m of Blacktop, over Made Ground to 0.23/0.3m (bgl), which in turn was underlain by variable very loose to medium dense, silty, gravelly, Sand/Silt to 6.0/6.5m (bgl), below which was a very dense, silty, Sand, with lamination of sandstone.

At this stage the cause of the very loose to loose soils encountered within WLS02 & WLS03 is unknown, however, it may be due to the potential presence of Gull features associated with cambering within the Ardingly Sandstone Member. It is recommended that further investigation work is carried out to delineate this area. This could be undertaken by carrying out additional exploratory holes, in the form of trial pitting/boreholes, or by undertaking a series of dynamic probes.

12.1 Visual and Olfactory Evidence of Contamination

During the course of the intrusive investigation works, no visual or olfactory evidence of significant contamination was noted, however, made ground was encountered within all of the exploratory holes. These materials comprised predominately gravelly sand soils and included anthropogenic materials; fragments of brick, concrete and plastic, as well as sandstone and flint gravel. No obvious contamination was encountered based only on a visual and olfactory assessment.

13 Dynamic Probing Results

Due to the presence of relatively loose soils encountered within two of the windowless sampler boreholes (WLS02 & WLS03) during the initial investigation, it was recommended that some additional probing works be undertaken along the foundation lines of the proposed structures at spacing of approximately 3.0m, however, due to budgetary constraints the scope of these works was reduced by the client to a single day. Therefore, it was agreed that the probing works would focus on the area around WLS02 & WLS03 where the loose soils were encountered.

A series of eleven dynamic probes were undertaken. These comprised nine dynamic probes carried out around the vicinity of WLS02 where loose soils were previously encountered to a depth of 7.0m (bgl), with an additional two probes being undertaken along the front of the garages to provide extra coverage.

During the site works no access was available to the area around WLS03, as this location was under a pile of demolition rubble, and other works were being undertaken on site.

The location of the dynamic probes are shown on Figure 3a & Figure 3b in Appendix A.

The results of the dynamic probes are included within Appendix B and are summarised in the table below.

Hole ID	Total Depth (m bgl)	Distance from WLS02	Direction from WLS02	Notes
DP01	4.3m	1.1m	West	
DP02	4.3m	0.55m	West	
DP03	14.0m	1.1m	East	
DP04	10.3m	2.2m	East	
DP05	7.9m	1.05m	North	
DP06	6.5m	0.65m	North	
DP07	7.6m	1.25m	South	
DP08	7.0m	0.65m	South	
DP09	4.7m	0.60m	East	
DP10	4.0m	Approx. 9.0m	South	Along existing garages.
DP11	7.3m	Approx. 18.0m	South	Along existing garages.

A number of additional probes (DP12 – DP21) were undertaken, at approximately 5.0m centres, along the southern and western elevations of the existing structure, in the area where the new proposed foundations maybe be placed to provide additional coverage and due to the variable results of the initial dynamic probes.

The location of the dynamic probes DP12 to DP21 are shown on Figure 3c in Appendix A.

The results of the dynamic probes are included within Appendix B and are summarised in the table below.

Hole ID	Total Depth (m bgl)	Notes
DP12	5.5m	Along proposed build line.
DP13	2.6m	Along proposed build line.

Hole ID	Total Depth (m bgl)	Notes
DP14	4.0m	Along proposed build line.
DP15	6.3m	Along proposed build line.
DP16	2.7m	Along proposed build line.
DP17	7.6m	Along proposed build line.
DP18	8.8m	Along proposed build line.
DP19	4.1m	Along proposed build line.
DP20	6.4m	Along proposed build line.
DP21	6.0m	Along proposed build line.

The results of both phases of dynamic probing are fairly variable.

14 Groundwater Observations

No groundwater was encountered during the course of the intrusive investigation.

E DISCUSSION OF GEOTECHNICAL TEST RESULTS AND RECOMMENDATIONS

15 Geotechnical Laboratory Tests

The following geotechnical laboratory testing was carried out on selected samples in order to aid material classification and characterise soil properties. The test method references and results are given in Appendix C.

Laboratory Test	Number of Samples Tested	Stratum
Moisture Content	3	Silty, sandy, Clay/Sand
Atterberg Limit	3	Silty, sandy, Clay/Sand
Particle Size Distribution (Pipette)	1	Silty, sandy, Clay/Sand
BRE SD1 Suite A*	6	Silty, sandy, Clay/Sand

**Sulphate results for an additional 2 No. made ground samples and 1 No. natural soil sample are included within the contamination test results.*

16 Soil Classification and Properties

16.1 Made Ground

Made Ground was noted within the windowless sampler boreholes and trial pits at depths between 0.23 – 0.7m (bgl). These soils generally comprised silty, gravelly, sand and included anthropogenic materials including, fragments of brick, concrete and plastic, as well as sandstone and flint gravel.

At this stage no geotechnical laboratory testing has been undertaken on the made ground materials recovered.

It is possible that obstructions could be present within the made ground materials associated with the former/current developments on the site.

The made ground should be anticipated to be very variable in both composition and thickness across the site and potentially have a high compressibility.

17 Groundwater Levels

No groundwater was encountered during the course of the intrusive investigation, with the boreholes being noted as dry upon completion of drilling.

Groundwater monitoring wells were installed within all three of the boreholes (WLS01-WLS03) at the time of drilling. The standing water level within the groundwater monitoring wells were measured at the time of the first phase of dynamic probing, the results of which are summarised in the table below:

Hole ID	Date	Standing Water Level (m bgl)	Notes
WLS01	05/11/2024	Dry	
WLS02	05/11/2024	Dry	
WLS03	05/11/2024	-	Unable to access due to building rubble.

By way of comment, groundwater levels vary considerably from season to season and year to year, often rising close to the ground surface in wet or winter weather, and falling in periods of drought. Groundwater levels measured in Winter months may be significantly higher than those that might be experienced in dry or Summer months and the possibility of a requirement for dewatering or alternative foundation solution that may not have initially been considered should not be overlooked.

Long-term monitoring from boreholes or standpipes is required to assess the ground water regime and this did not form part of the brief for this site investigation. The effects of climate change, particularly the increased likelihood of significant rainfall events and warmer, wetter winters may mean groundwater levels in the future could be higher than those measured during site investigation works.

18 Swelling and Shrinkage

Shrinkable soils are subject to changes in volume as their moisture content is altered. Soil moisture contents vary from season to season and can be influenced by a number of factors including the action of roots. The resulting shrinkage or swelling of the soil can cause subsidence or heave damage to foundations, the structures they support and services.

Atterberg Limit tests were carried out on a total of three samples of the more clayey materials recovered from across the site. These materials are classified as NP (non-plastic) to CL (clays of low plasticity). The results of the Atterberg Limit tests are included within Appendix C and are summarised in the table below.

	Natural Water Content (%)	Liquid Limit (%)	Plastic Limit (%)	Unmodified Plasticity Index (%)	Passing 425µm Sieve
Range	10-16	26-32	16-19	10-13	82-100
Mean	13	29	17.5	11.5	94

Based on the NHBC classification, one sample is classified as non-plastic, with the other two samples classified as NHBC Low Volume Change Potential (VCP).

On the basis of the above we would recommend an NHBC Low Volume Change Potential site classification be adopted for design purposes, for conventional foundations.

The sand materials are likely to be negligible in terms of swelling and shrinkage.

The designer should be aware that precautions regarding swelling and shrinkage are applicable, and in this respect NHBC precautions provide a helpful guide with respect to minimum foundation depths and deepening particularly within the zone of influence of vegetation.

Assessment of foundation depths should take into account trees, hedgerow and shrubs which are to be removed, are to remain or are proposed in any planting scheme; and which may be allowed to reach maturity.

Full details of protective measures are given in NHBC Standards Ref [11], Chapter 4.2 to which the reader is referred.

19 Soakaways

Preliminary falling head infiltration testing was carried out in one of the windowless sampler boreholes (WLS01), with the results calculated using a modified BRE365 method.

19.1 Soakage Test Results

The BRE paper DG365, Ref [12] describes a method for site testing to determine soil infiltration rates at the proposed site of a soakaway. The test method in this instance has been modified by carrying out the test within a small diameter borehole. The full results of the soakage tests are presented together with the in-situ test method in Appendix B.

Infiltration rates were assessed using the methodology given in BRE DG365 Ref [12],

The infiltration rate from each trial hole is summarised in the table below. The soakage rate in this report is expressed as $\text{l/m}^2/\text{minute}$, which is a convenient rate to use. The BRE use a unit of m/sec , which is the value in $\text{l/m}^2/\text{minute}$ divided by 60,000.

Test ID	Test Depth (m bgl)	Design Infiltration Rate		Notes
		$\text{l/m}^2/\text{minute}$	m/sec	
WLS01	2.0m	0.124	2.06×10^{-6}	2 No. tests completed.

The Design Infiltration Rate is usually taken as the lowest of the three tests. Where three fillings have not been carried out, a reduction factor should be applied to the result to provide a design infiltration rate.

Should soakaways be required as part of the proposed site development, it is recommended that full-scale trial pit tests (BRE DG365 Ref [12]) be undertaken, preferably at the locations of the proposed soakaways, once access is available. By way of note, any proposed soakaways should be located away from any gull features to avoid ground settlement due to washing out of loose infill and sufficiently remote from the road cutting to avoid discharge into the cutting.

Alternatively, borehole soakaways may provide an effective drainage solution for the site, subject to testing, actual depths to groundwater and Environment Agency approval etc.

19.2 General Guidance on Design of Soakaways

Any soakaway scheme may require the approval of the Environment Agency, Building Control and, where applicable, the adopting Highways Authority.

Soakaways are used to store the immediate surface water run-off from hard surfaced areas, such as roof or car parks, and allow for efficient infiltration into the adjacent soil. They should be designed to discharge their stored water sufficiently quickly to provide the necessary capacity to receive run-off from a subsequent storm. The time taken for discharge depends upon the soakaway shape and size, and the surrounding soil's infiltration characteristics.

Groundwater levels can vary considerably from season to season and year to year, often rising in wet or winter weather, and falling in periods of drought. As such, a high groundwater table may affect the storage capacity of soakaways. In addition, it should be noted that an unsaturated zone may be required between the base of soakaways and the groundwater table, by the Environment Agency. Longer term monitoring may be required to establish actual groundwater levels as part of the planning approval process.

The design of soakaways can be square, circular (conventional) or trench excavations, and may be rubble filled, perforated precast concrete ring units, plastic cells or any similar structure that collects rainwater and run-off and allow discharge directly into the ground. Depending on the geological conditions, and depth at which suitable infiltration is achieved, soakaways can also be deep bored.

Long-term maintenance and inspection must be considered during the design and construction process. Maintenance of silt traps, gully pots and interceptors will improve the long-term performance of soakaways. The use of wet well chambers within the soakaway system can further assist in pollutant trapping and extending the operating life of soakaways.

Generally, roof and surface run-off should not significantly impact on groundwater quality and subject to appropriate approvals from the Environment Agency could be discharged directly to soakaways. However, although again subject to approvals from the Environment Agency, paved surface run-off for larger trafficked areas should generally be passed through a suitable form of oil interception device prior to discharge to the soakaway.

Care must be taken to ensure that the discharge of large volumes of surface run-off into the soil does not disrupt the existing sub-surface drainage patterns. Similarly in areas of sloping topography, consideration should be given to the siting of soakaways to avoid potential discharge and or flooding of down slope areas.

20 Sulphates and Acidity

Chemical analysis of the underlying soils has been undertaken to establish the aggressive chemical environment for concrete in accordance with the BRE Special Digest 1, Ref [13]. The site category determined is that of a brownfield location that does not contain pyrites (or potential pyrites), as the underlying soils form part of the Ardingly Sandstone Member.

The measured pH of the made ground and natural soils analysed were in the range 7.3-8.7 (slightly alkaline).

The soluble sulphate levels recorded within the made ground (2 No. samples) were in the range 122-191mg/l and within the natural soil analysed (7 No. samples) the measured soluble sulphate concentrations were 4.66-45.7mg/l.

Given the sample numbers tested the characteristic value for sulphate concentration has been determined from the mean of highest two measured concentrations.

The Design Sulphate Class is DS-1. At this stage, in the absence of long-term monitoring, groundwater should be assumed to be mobile and therefore, the ACEC site classification is AC-1.

21 Dynamic Probing Results

A series of twenty one dynamic probes were undertaken (see Section 13), to depths between 2.6 – 14.0m (bgl).

The summary graphs displaying the results of the Dynamic Probing tests are included in Appendix B. These graphs present the number of blows for every 100mm penetrated by the probe tip. The greater the blow count, the higher the strength of the material. Conversely lower blow counts (0 – 2) could indicate very loose ground or possible an open cavity/void. A blow count >50 per 100m penetration is regarded as a refusal, and is possibly associated with the probe tip striking an obstruction or solid bedrock. The exposed faces within Blackwell Hollow comprise massive sandstone, which if encountered during the Dynamic Probe testing would cause a refusal.

The Dynamic Probe results across the site show a very varied apparent density within the underlying soils, with some very loose materials being noted. The distributions of looser or denser soils has no obvious distribution pattern either laterally or vertically. Some of this looser material is probably associated with gull feature infill (such as seen in DP03 & DP07)

The minimum depth of refusal encountered within the Dynamic Probes undertaken within the vicinity of WLS02 was 4.3m (bgl), with the deepest depth of refusal being 14.0m (bgl).

The minimum depth of refusal encountered within the Dynamic Probes carried out along the western and southern elevations of the existing building was 2.6m (bgl), with the deepest depth of refusal being 8.8m (bgl).

22 Foundations and Bearing Capacity

It is recommended that any foundation solution for the site will need to take into account the potential presence of subsidence associated with gull features within the suspected cambered ground.

The geological setting of the site is one where cambered ground and the associated gull features might reasonably be anticipated, as seen in the loose soils encountered within WLS02 and WLS03 to depths of between 6.0-7.0m (bgl) and within the dynamic probing results. The material within the gulls can often be described as “metastable” and can remain undiscovered and of no significant consequence until instability is triggered by additional ground loading, or more often, by water inundation. Of particular importance, therefore, is the integrity of all water mains/drains and careful positioning of soakaways. Regardless of the intensity of any investigation, on such sites an enhanced level of risk due to the cambered ground hazard risk must be accepted, compared to typical low risk ground conditions/geological settings.

Development subsidence risk cannot be removed entirely, but can be mitigated by a variety of measures, such as; a) redesigning development layouts to avoid construction within high risk areas; b) reinforcing foundations and other structure to accommodate loss of support; or c) transferring loads down into the materials below any identified features by means of carefully installed piles.

On the basis of the investigation works undertaken to date, which indicated very variable soil densities and some suspected infilled gull features, it is recommended that a shallow reinforced raft foundation be utilised for this site.

We do not recommend the use of conventional strip or trench fill foundations. For a shallow reinforced raft foundation an allowable bearing capacity of 30kPa is recommended at a depth of 1.0m. All loadings should be transferred beneath any fill or made ground, topsoil, soft or disturbed soils and be placed within the underlying natural soils.

On the basis of the information obtained to date and our own experience, any foundations solution should take into account the requirement for subsidence damage protection. In order to help better understand and qualify the risks for specific building locations it is recommended that foundation lines are probed, using either dynamic or cone penetration testing methods at close centres. Such test holes will need to be subsequently grouted.

A minimum foundation depth of 750mm is required for NHBC Low Volume Change Potential soils. The designer should be aware that precautions regarding swelling and shrinkage are applicable and in this respect NHBC precautions provide a helpful guide with respect to minimum foundation depths and deepening particularly within the zone of influence of trees hedgerows or shrubs; existing, proposed or removed.

Subject to the Engineers final design excessive foundation deepening may be required. Based on NHBC guidance, foundations below 2.5m must be designed individually by an engineer on an individual property basis taking into account soil desiccation, heave, lateral pressure, trench stability and workmanship. At depths in excess of 2.5m a piled foundation is usually the most appropriate foundation option.

23 Existing Foundations

Two trial pits (TP01-TP02) were excavated by hand, to a maximum depth of 1.03m (bgl), in order to expose the foundations of the existing structures on site. These comprised a trial pit (TP01) on the existing garages and a trial pit (TP02) on the existing structure. Plan and cross-section drawings, together with photographs are included in Appendix A and D.

24 Floor Slabs

Suspended ground floor slabs will be required where made ground depths are greater than 600mm or where foundations greater than 1.5m are required due to the presence of trees. Outside of these areas, either ground bearing or suspended floor slabs will be acceptable.

25 Excavations and Dewatering

Excavations should generally be achievable using conventional plant. For any deeper excavations, such as for drainage runs then sandstone rock may be encountered for which hydraulic breakers maybe be required.

Statutory lateral support will be required in all excavations where personnel must work. Instability of the aides of any excavation carried out must be expected, accordingly measures should be taken at all times to ensure excavations are adequately supported or battered back. An allowance should be made for breaking out sub-surface obstructions associated with past developments/old drain runs etc. on site.

The made ground, and the Sand/Silt materials (especially those encountered within WLS02 & WLS03), will be prone to instability and unheralded collapse in open excavations during wet weather or where seepages are encountered.

Allowance should be made for perch water entries within the made ground and shallow soils from old land drains, service pipe runs, etc. The majority of these would be anticipated to be dealt with using simple dewatering methods, such as pumping from sumps, the use of specialist dewatering techniques is not expected.

26 Pavement Construction

It is anticipated that the proposed pavement areas will be formed in the made ground, silty sandy Clay and/or silty Sand materials. The results of the Dynamic Cone Penetrometer (DCP) CBR tests indicated CBR values in the range 3.5-24% at an anticipated formation depth of around 0.4-0.5m (bgl). However it should be noted that DCP CBR readings can vary significantly depending on a number of factors, including the presence of granular materials (such as those encountered within the made ground and shallow soils) and the moisture content of the soils, which can in turn vary depending on the weather and other site conditions leading up to and during testing.

Taking these factors into consideration, and given that the results within the made ground may well be falsely elevated by materials such as brick, concrete and sandstone, a preliminary CBR value of 2.5% can be assumed for pavement foundation design purposes. However, given that the soils are likely to be disturbed by construction plant during the construction it would be suggested that the CBR value is reassessed as construction progresses.

Given the potential presence of made ground soils at the formation level it is suggested the formation is inspected for soft spots, and that these are removed and filled to a minimum of 500mm and proof-rolled prior to construction. Geogrid reinforcement could also be considered depending on the depth of made ground present.

The formation should be considered potentially frost-susceptible.

The most important element of any road construction is drainage and attention must be given not only to the drainage of the subsoil but to the various layers of construction. To this end, the formation should be shaped to a camber or crossfall to allow water movement out of the sub-base. Silty soils soften extremely quickly if allowed to become wet or if they are excavated below the water table and this softening can give rise to a very substantial increase in costs.

Sub-base and coarse capping materials tend to segregate during placing operations, particularly when end tipped. On soft clay subgrades this can lead to punching and softening of the formation. The use of an appropriate geotextile or geofabric, laid in accordance with manufacturer's recommendations / guidance, should help to minimise this.

The formation should be proof-rolled in a manner appropriate to the subgrade soils, and any soft spots found should be excavated and replaced with compacted granular material. The surface of the formation should then be appropriately compacted, prior to laying the capping layer and/or sub-base.

Construction traffic should be kept off formations and it is often advisable to leave a protective layer of soil above formation level until the last moment before reducing to formation level and placing the capping and/or sub-base.

F DISCUSSION OF GEOENVIRONMENTAL TEST RESULTS AND RECOMMENDATIONS

27 Analytical Framework

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

The CLEA model Ref [1], provides a methodology for quantitative assessment of the long-term risks posed to human health by exposure to contaminated soils. Toxicological data is used to calculate a Soil Guideline Value (SGV) for an individual contaminant, based on the proposed site use; these represent minimal risk concentrations and may be used as screening values.

In the absence of any published SGVs for certain substances, Southern Testing have derived or adopted Tier 1 screening values for initial assessment of the soil, based on available current UK guidance including the LQM/CIEH S4UL's Ref [14] and CL:AIRE Soil Generic Assessment Criteria Ref [15]. In addition, in 2014, DEFRA Ref [16] published the results of a research programme to develop screening values to assist decision making under Part 2A of the Environmental Protection Act. Category 4 screening levels were published for 6 substances, with reference to human health risk only. This guidance includes revisions of the CLEA exposure parameters, presenting parameters for public open space land use scenarios, and also of the toxicological approach. The screening levels represent a low risk scenario, based on a 'Low Level of Toxicological Concern' rather than the 'Minimal Risk' of CLEA. Category

4 screening levels for further substances have been published subsequently. The analytical results of this investigation may be considered relative to these levels.

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

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

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

28 Site Investigation – Soils

28.1 Sampling Regime

The number of sample locations was limited and was partly targeted at potential sources of contamination and also intended to provide general coverage.

Access was restricted by the presence of buildings, hardstanding and utility services.

28.2 Testing

The potential for contamination by heavy metals, PAHs, Asbestos and Petroleum Hydrocarbons was identified in the preliminary conceptual model together with observations made on site. Therefore, the following tests were selected.

Test Suite	Number of Samples	Soil Tested
STL Key Contamination Suite	2	Made Ground
	2	Topsoil
	1	Natural Soils
Asbestos Screen	2	Made Ground
	2	Topsoil
	1	Natural Soils
TPH Texas Split (C6-C40)	1	Made Ground

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

28.3 Test Results and Identified Contamination Sources

28.3.1 General Contaminants

The results of the key contaminant tests have been analysed in accordance with the CLEA methodology. The samples have been grouped into two populations comprising made ground and natural soil. For each parameter in each population the concentration has been compared to a Tier 1 screening value. If the concentration exceeds the screening value, the soil may be regarded as contaminated and further assessment may be required. If neither the value does not exceeds the screening value, the soil may be regarded as not contaminated, though further confirmatory assessment may be required.

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

Soil Type: Made Ground

Contaminants	Units	TP02 at 0.2m	WLS02 at 0.2m	Residential without Home-grown Produce Consumption Tier 1 Screening Values
Arsenic (As)	mg/kg	8.6	6.9	37
Cadmium (Cd)	mg/kg	1.3	<0.2	11
Trivalent Chromium (CrIII)*	mg/kg	21	16	910
Hexavalent Chromium (CrVI)	mg/kg	<1.8	<1.8	6.0
Lead (Pb)	mg/kg	160	12	200
Mercury (Hg)	mg/kg	<0.3	<0.3	7.6-11
Selenium (Se)	mg/kg	<1.0	<1.0	250
Nickel (Ni)	mg/kg	17	11	130
Copper (Cu)	mg/kg	55	8.5	2,400
Zinc (Zn)	mg/kg	1100	40	3,700
Phenol	mg/kg	<1.0	<1.0	120-380
Benzo(a)pyrene (BaP)	mg/kg	0.2	0.39	1.7-2.4
Naphthalene	mg/kg	<0.05	<0.05	2.3-13
Total Polyaromatic Hydrocarbons (PAH)	mg/kg	2.05	3.05	/
Total Cyanide (CN)	mg/kg	<1.0	<1.0	/
Acidity (pH values)	Units	8.4	8.7	/
Soil Organic Matter	%	1.6	1.6	/

* Assumed as Total Cr minus CrVI

Two samples of the made ground recovered from across the site, were submitted for testing. The concentrations of the various contaminants tested are low and fall below the corresponding Tier 1 assessment criteria for a Residential land use without homegrown produce consumption.

Soil Type: Topsoil

Contaminants	Units	TS1@0.1m	TS2@0.1m	Residential without Home-grown Produce Consumption Tier 1 Screening Values
Arsenic (As)	mg/kg	7.4	4	37
Cadmium (Cd)	mg/kg	<0.2	<0.2	11
Trivalent Chromium (CrIII)*	mg/kg	17	13	910
Hexavalent Chromium (CrVI)	mg/kg	<1.8	<1.8	6.0
Lead (Pb)	mg/kg	64	41	200
Mercury (Hg)	mg/kg	<0.3	<0.3	7.6-11
Selenium (Se)	mg/kg	<1.0	<1.0	250
Nickel (Ni)	mg/kg	11	8.4	130
Copper (Cu)	mg/kg	15	12	2,400

Contaminants	Units	TS1@0.1m	TS2@0.1m	Residential without Home-grown Produce Consumption Tier 1 Screening Values
Zinc (Zn)	mg/kg	76	82	3,700
Phenol	mg/kg	1.2	<1.0	120-380
Benzo(a)pyrene (BaP)	mg/kg	0.14	<0.05	1.7-2.4
Naphthalene	mg/kg	<0.05	<0.05	2.3-13
Total Polyaromatic Hydrocarbons (PAH)	mg/kg	1.23	<0.80	/
Total Cyanide (CN)	mg/kg	<1.0	<1.0	/
Acidity (pH values)	Units	5.9	6.6	/
Soil Organic Matter	%	3.8	3.6	/

* Assumed as Total Cr minus CrVI

Two samples of topsoil were taken from the west side of the site (as it is understood that this area is to remain as soft landscaping), and were submitted for testing. The concentrations of the various contaminants tested are low and fall below the corresponding Tier 1 assessment criteria for a Residential land use without homegrown produce consumption.

Soil Type: Natural Soils

Contaminants	Units	WLS03 at 0.4m	Residential without Home-grown Produce Consumption Tier 1 Screening Values
Arsenic (As)	mg/kg	4.7	37
Cadmium (Cd)	mg/kg	<0.2	11
Trivalent Chromium (CrIII)*	mg/kg	14	910
Hexavalent Chromium (CrVI)	mg/kg	<1.8	6.0
Lead (Pb)	mg/kg	6.8	200
Mercury (Hg)	mg/kg	<0.3	7.6-11
Selenium (Se)	mg/kg	1.0	250
Nickel (Ni)	mg/kg	9.3	130
Copper (Cu)	mg/kg	7.1	2,400
Zinc (Zn)	mg/kg	32	3,700
Phenol	mg/kg	<1.0	120-380
Benzo(a)pyrene (BaP)	mg/kg	0.15	1.7-2.4
Naphthalene	mg/kg	<0.05	2.3-13
Total Cyanide (CN)	mg/kg	<1.0	/
Acidity (pH values)	Units	8.4	/
Soil Organic Matter	%	0.3	/

* Assumed as Total Cr minus CrVI

A single sample of the natural soils recovered from WLS03 at 0.4m was submitted for testing. The concentrations of the various contaminants tested are low and fall below the corresponding Tier 1 assessment criteria for a Residential land use without homegrown produce consumption. Based on the results to date, the natural soils can be considered essentially free from significant contamination, with respect to human health and the land-use proposed. This concurs with the visual and olfactory evidence.

28.3.2 Asbestos Containing Materials

No asbestos containing materials were detected in the samples analysed and none were observed in the exploratory holes. However, it should be noted that the exploratory holes are of small size relative to the area investigated. Therefore, the samples obtained may not reflect the full composition of the soils on the site, and there is always the potential for pockets of asbestos or for asbestos containing materials to be present, which have not been detected in the sampling.

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

No assessment of the fabric of the existing buildings has been made at this stage.

28.3.3 Organic Contaminants

No visual or olfactory evidence of fuel/oil contamination was noted in the exploratory holes. A sample of the made ground soiled recovered from WLS02 at 0.2m, located to the north of the suspected location of potential underground fuel storage tanks, was submitted for Total Petroleum Hydrocarbon (TPH Texas Split) analysis.

The results of the TPH Texas Split testing is summarised in the table below.

Hydrocarbon Fraction	Measured Concentrations mg/kg
	WLS02 at 0.2m
TPH (>EC6-EC8)	<0.01
TPH (>EC8-EC10)	<0.02
TPH (>EC10-EC12)	<2.0
TPH (>EC12-EC16)	<4.0
TPH (>EC16-EC21)	<10
TPH (>EC21-EC40)	<10
TPH Total (>EC6-EC40)	<10
TPHC10-C40	<0.01
Petroleum Range Organics (EC6-EC10)	<0.02

The concentrations of the various petroleum hydrocarbon fractions are less than the limit of detection and, therefore, are not considered to pose any risk to site end users or ground workers.

However, it is recommended that further investigation is made regarding the possible presence of underground fuel storage tanks on the site.

29 Summary of Identified Contamination

On the basis of the contamination testing carried out to date, no significant contamination has been identified with respect to either human health or the wider environment.

30 Risk Evaluation

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

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

30.1 Revised Conceptual Model

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

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

Key:

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

30.2 Relevant Pollutant Linkages

No Relevant Pollutant Linkages for which remedial action will be required have been identified in the revised conceptual model.

However, possible pollutant linkages with respect to petroleum hydrocarbons and asbestos have been identified.

Evidence of the potential presence of underground fuel storage tanks was noted on the northwest of the site. Further investigation, comprising consultation with the Petroleum Officer and intrusive investigation, should be undertaken to confirm the nature and location of any such features, and determine whether they have been decommissioned/removed.

Given the age of development of the site, it is possible that any imported soils present beneath the buildings/hardstanding (subbase/crushed material) may contain asbestos. A careful watch should be kept during redevelopment works for any such materials.

31 Discussion and Conclusions

On the basis of the investigation works undertaken to date, and the findings of the laboratory testing, the shallow soils would not be considered contaminated, given the sites proposed residential end use. The existing topsoil on the west of the site would be considered suitable to be retained in the soft landscaped areas on this part of the site (as an area of communal soft landscaping).

Evidence of the potential presence of underground tanks was noted during the site walkover. Borehole WLS02 was located close to the suspected location of the tanks; with no visual or olfactory evidence of potential petroleum fuel hydrocarbon contamination noted in this location. However, it is recommended that enquiries be made with the relevant Petroleum Officer for the area to obtain any records they may have of underground fuel storage tanks on the site, including their location, volume and whether they have been decommissioned or removed from site. The current, proposed site layout plan shows the area on the northwest of the site, where it is suspected the underground tanks may be present, as soft landscaping. Pending the findings of enquiries with the Petroleum Officer, further intrusive investigation should be undertaken in this area of the site.

The risk to the end users and other potential receptors, from the soils tested to date, is very low. As a precaution, however, the construction workers should still adopt good site practices and the use of appropriate PPE should be sufficient to mitigate any risk. This report should be forwarded to the contractors for their health and safety appraisal.

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

A formal remediation strategy and verification plan should be agreed with the regulatory authorities prior to commencement of any remedial works.

32 Soil Waste Management

32.1 Re-use of Soils

It is anticipated that the arisings from groundworks on this site will comprise made ground and natural soils.

Clean natural arisings from groundworks may be re-used on site without further testing, where there is a definite use for such materials, e.g. raising levels or construction of landscaping layers or bunds as set out in the approved plans for the development.

Treated contaminated soils may be reused on site under an appropriate Materials Management Plan, where certain criteria are met, in accordance with the CL:AIRE Definition of Waste Code of Practice, Ref [17].

32.2 Disposal of Soils

Some soils will require removal from site and disposal to suitably licensed landfills. Different guidelines and charges will apply to different waste classifications. As waste producers, the Developer holds responsibilities under the various governing regulations, particularly the Waste Duty of Care Code of Practice under the Environmental Protection Act 1990, Ref [18].

The chemical analyses appended to this report can be used to inform the initial classification of the soils as either Hazardous or Non-Hazardous, and derive the appropriate EWC code, for offsite disposal or transfer. Waste Acceptance Criteria (WAC) testing may be needed for confirmation of the material's classification, and will be required to demonstrate an inert classification.

There are strict requirements in place for the accurate description of wastes using EWC codes and, therefore, it is essential that materials that would be given different descriptions (e.g. blacktop, made ground and natural soils), as well as those with different classifications, are carefully segregated during excavation and storage on site. This will also ensure the most cost effective disposal. Mixing these materials can give rise to significant difficulties in disposal and also substantially increase costs.

Soil arisings may be transferred to other development sites under a Materials Management Plan, where certain criteria are met, in accordance with the CL:AIRE Definition of Waste Code of Practice Ref [17].

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

33 General Guidance

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

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

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

REFERENCES

- [1] Environment Agency, "Updated technical background to the CLEA model," 2009.
- [2] Contaminated Land: Applications in Real Environments (CL:AIRE), "Development of Category 4 Screening Levels for Assessment of Land Affected by Contamination," 2014.
- [3] CIRIA, "C665 Assessing risks posed by hazardous ground gases to buildings," 2007.
- [4] BSI Standards, "BS 5930 Code of practice for ground investigations," 2015.
- [5] BSI Standards, "BS10175 Investigation of potentially contaminated sites – Code of practice," 2013.
- [6] British Geological Survey (BGS), "Borehole Scans," [Online]. Available: <http://www.bgs.ac.uk/data/boreholescans/home.html>.
- [7] Ove Arup on behalf of the Department of Environment, "Review Of Mining Instability In Great Britain," 1990.
- [8] Chelsea Spelaeological Society, "Various Records, Journals and Special Publications".
- [9] Kent Underground Research Group, "Various Records, Journals and Special Publications".
- [10] BSI Standards, "Eurocode 7 Geotechnical Design," 2013.
- [11] NHBC, "NHBC Standards Plus," [Online]. Available: <http://www.nhbc.co.uk/Builders/ProductsandServices/TechZone/nhbcstandards/>.
- [12] Building Research Establishment (BRE), "DG365 Soakaway Design," 2016.
- [13] Building Research Establishment (BRE), "SD1 Concrete in aggressive ground," 2005.
- [14] C. Nathanail, C. McCaffrey, A. Gillett and R. & N. J. Ogden, "The LQM/CIEH S4ULs for Human Health Risk Assessment," Land Quality Press, Nottingham, 2015.
- [15] EIC/AGS/CL:AIRE, "Soil Generic Assessment Criteria for Human Health Risk Assessment," 2010.
- [16] DEFRA, "SP1010 Development of Category 4 Screening Levels for Assessment of Land Affected by Contamination," 2014.
- [17] CL:AIRE, "CL:AIRE Definition of Waste Code of Practice," [Online]. Available: <http://www.claire.co.uk/projects-and-initiatives/dow-cop>.
- [18] Environment Agency, "Waste duty of care code of practice," [Online]. Available: <https://www.gov.uk/government/publications/waste-duty-of-care-code-of-practice>.
- [19] BSI Standards, "BS 3882:2015 Specification for Topsoil," 2015.
- [20] CIRIA, "C574 Engineering in Chalk," 2002.
- [21] R. N. Mortimore, Logging the Chalk, 2014.

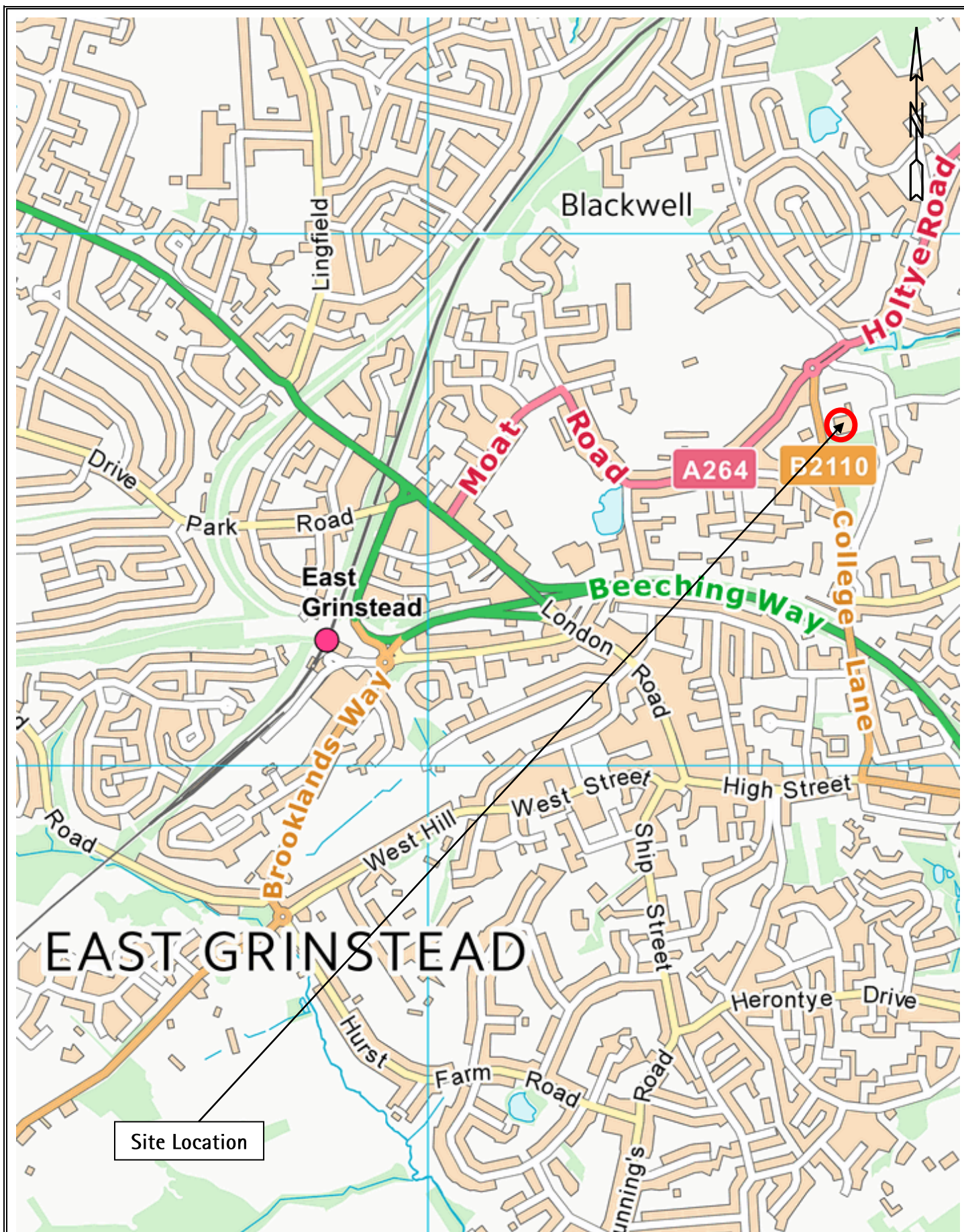
- [22] BSI Standards, "BS EN ISO 22476-3:2005+A1:2011 Geotechnical investigation and testing. Field testing. Standard penetration test," 2011.
- [23] E. & V. H. Klyen, "Proceedings of Annual Transportation Convention; Using DCP soundings to optimize pavement rehabilitation.," *Report LS/83 Materials Branch, South Africa: Transvaal Roads Department.*, 1983.
- [24] Transport and Road Research Laboratory, "A user's manual for a program to analyse dynamic cone penetrometer data.," *Road Note 8*, 1990.
- [25] BSI Standards, "BS EN ISO 22475-1:2006 Geotechnical investigation and testing. Sampling methods and groundwater measurements. Technical principles for execution.," 2006.
- [26] BSI Standards, "BS ISO 18400-100:2017 Soil quality. Sampling. Guidance on the selection of sampling standards," 2017.
- [27] BSI Standards, "BS ISO 18400-101:2017 Soil quality. Sampling. Framework for the preparation and application of a sampling plan," 2017.
- [28] BSI Standards, "BS ISO 18400-103:2017 Soil quality. Sampling. Safety," 2017.
- [29] BSI Standards, "BS ISO 18400-105:2017 Soil quality. Sampling. Packaging, transport, storage and preservation of samples," 2017.
- [30] BSI Standards, "BS ISO 18400-107:2017 Soil quality. Sampling. Recording and reporting," 2017.

A collage of six images related to geotechnical engineering. Top left: A large concrete pipe. Top middle: A close-up of a soil sample in a sieve. Top right: A pressure gauge on a rock surface. Middle left: A worker in a high-visibility vest. Middle right: A red truck with 'Southern' on the side. Bottom right: A person using a tool to sample soil.

APPENDIX A

Site Plans and Exploratory Hole Logs





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

Site: Former Police Station, East Court House, East Grinstead, RH19 3LS

STL: J15797

Fig No: 1

Date: 21st August 2024

Site Location Plan

 Southern Testing

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

 ST Consult



Site: Former Police Station, East Court House, College Lane, East Grinstead, RH19 3LS

STL: J15797

Fig No: 2

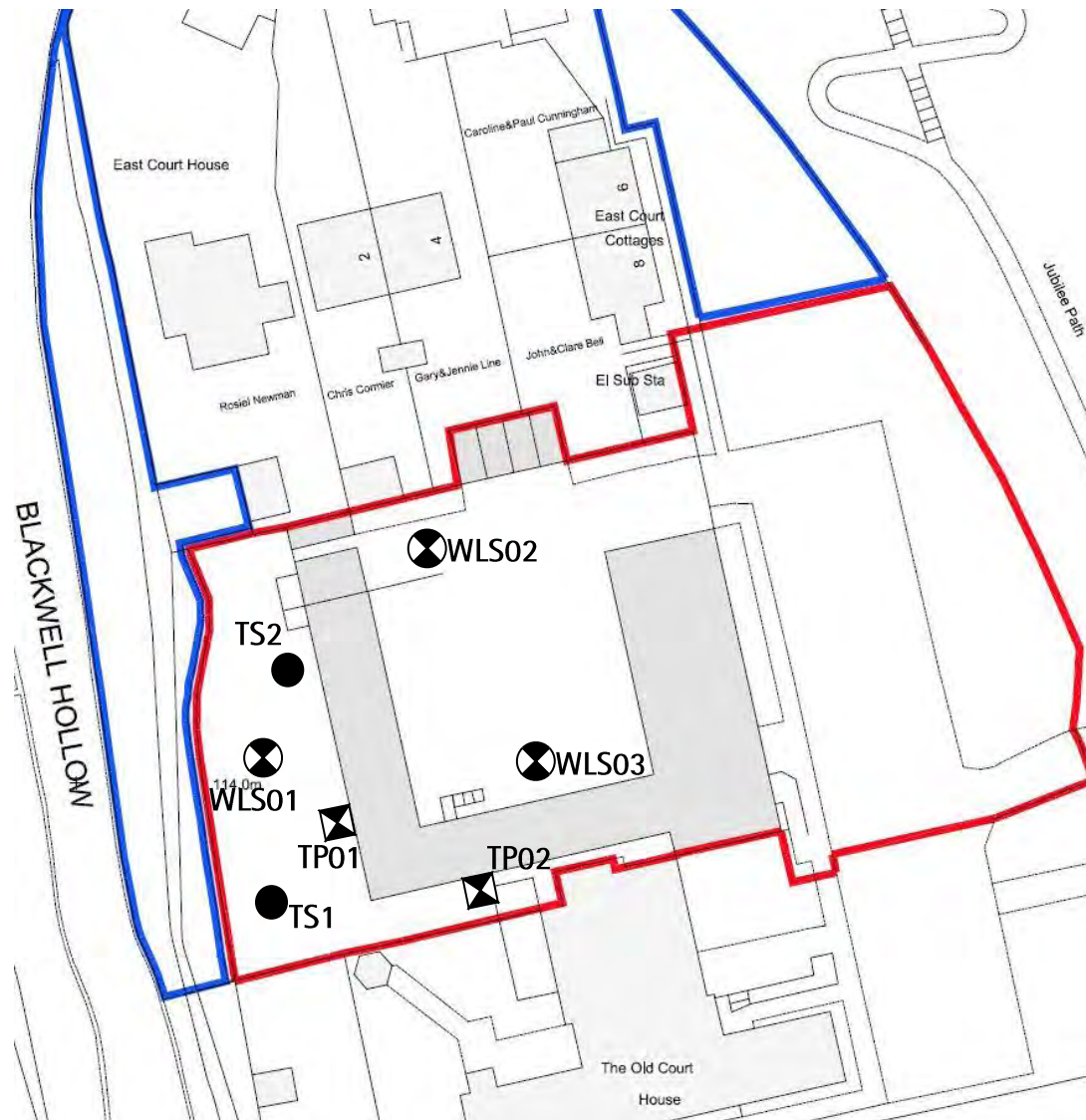
Date: 21st August 2024

Site plan showing proposed construction.



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





NB: Positions of Boreholes and/or Trial Pits are only indicative unless dimensioned

Site: Former Police Station, East Court House, College Lane, East Grinstead, RH19 3LS

Date: 12th December 2024

STL: J15797

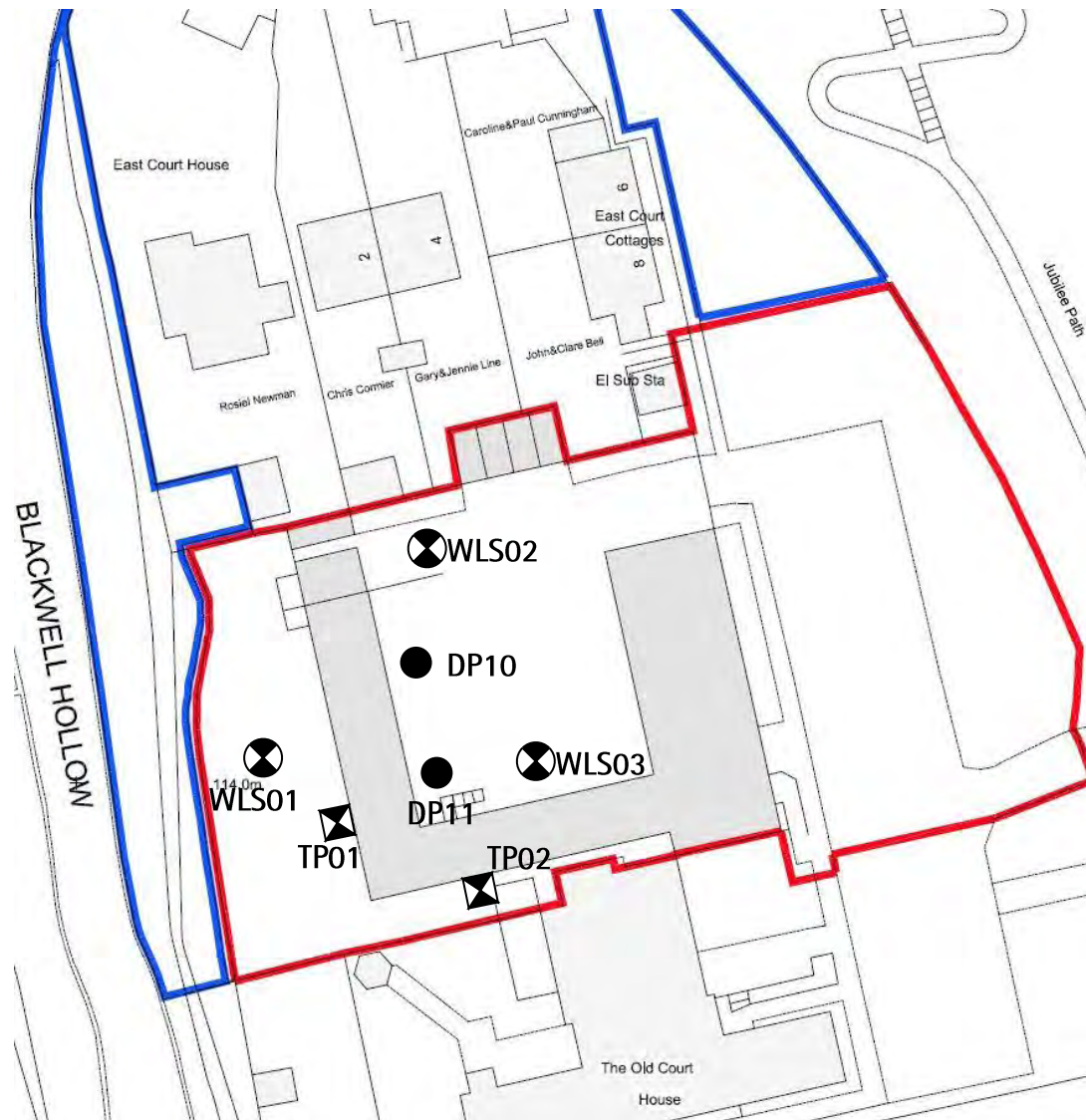
Fig No: 3

Site plan showing approximate exploratory hole locations.

 Southern Testing

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

 ST Consult



NB: Positions of Boreholes and/or Trial Pits are only indicative unless dimensioned

Site: Former Police Station, East Court House, College Lane, East Grinstead, RH19 3LS

STL: J15797

Fig No: 3a

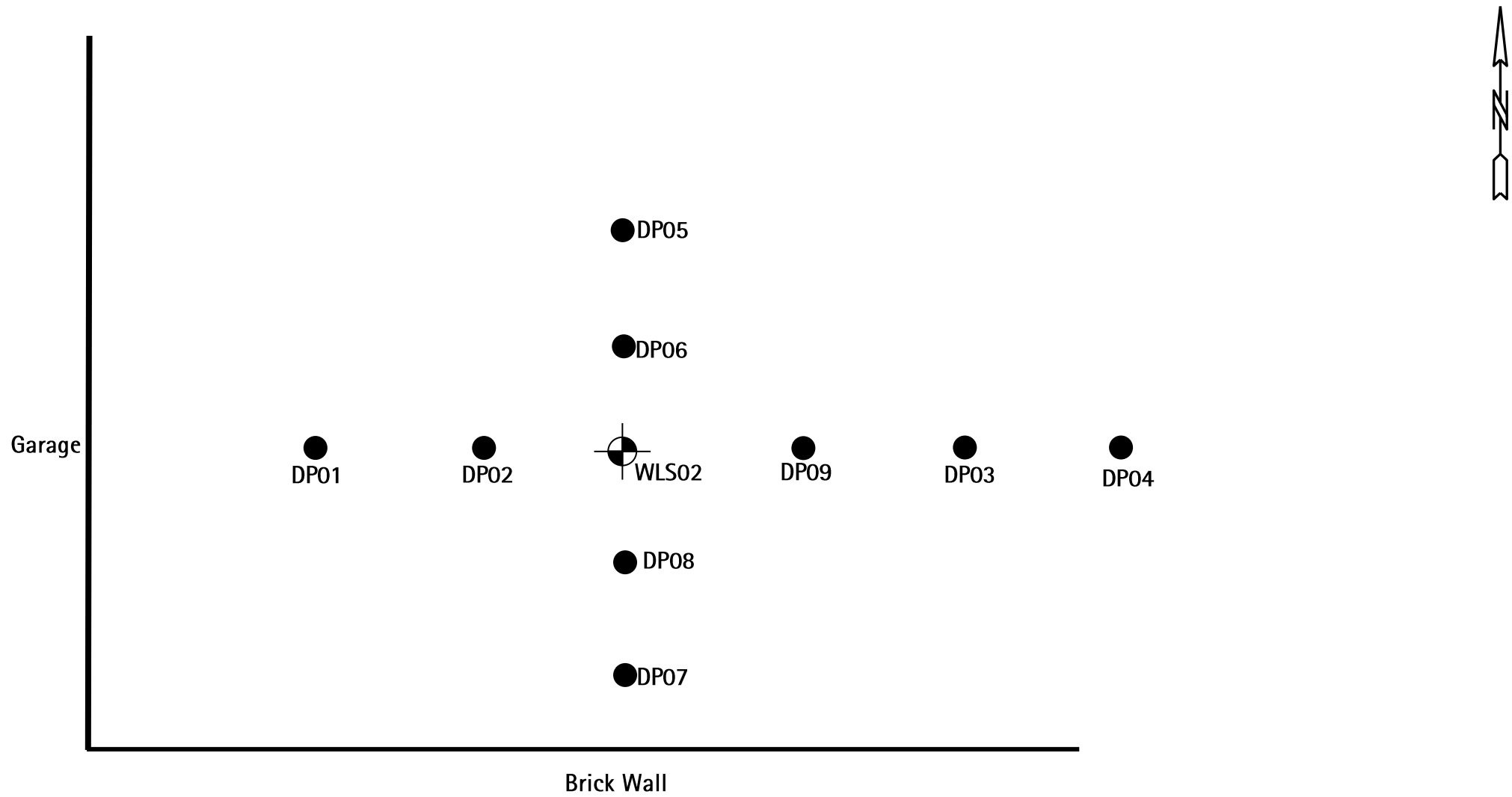
Date: 5th November 2024

Site plan showing approximate exploratory hole locations.

 Southern Testing

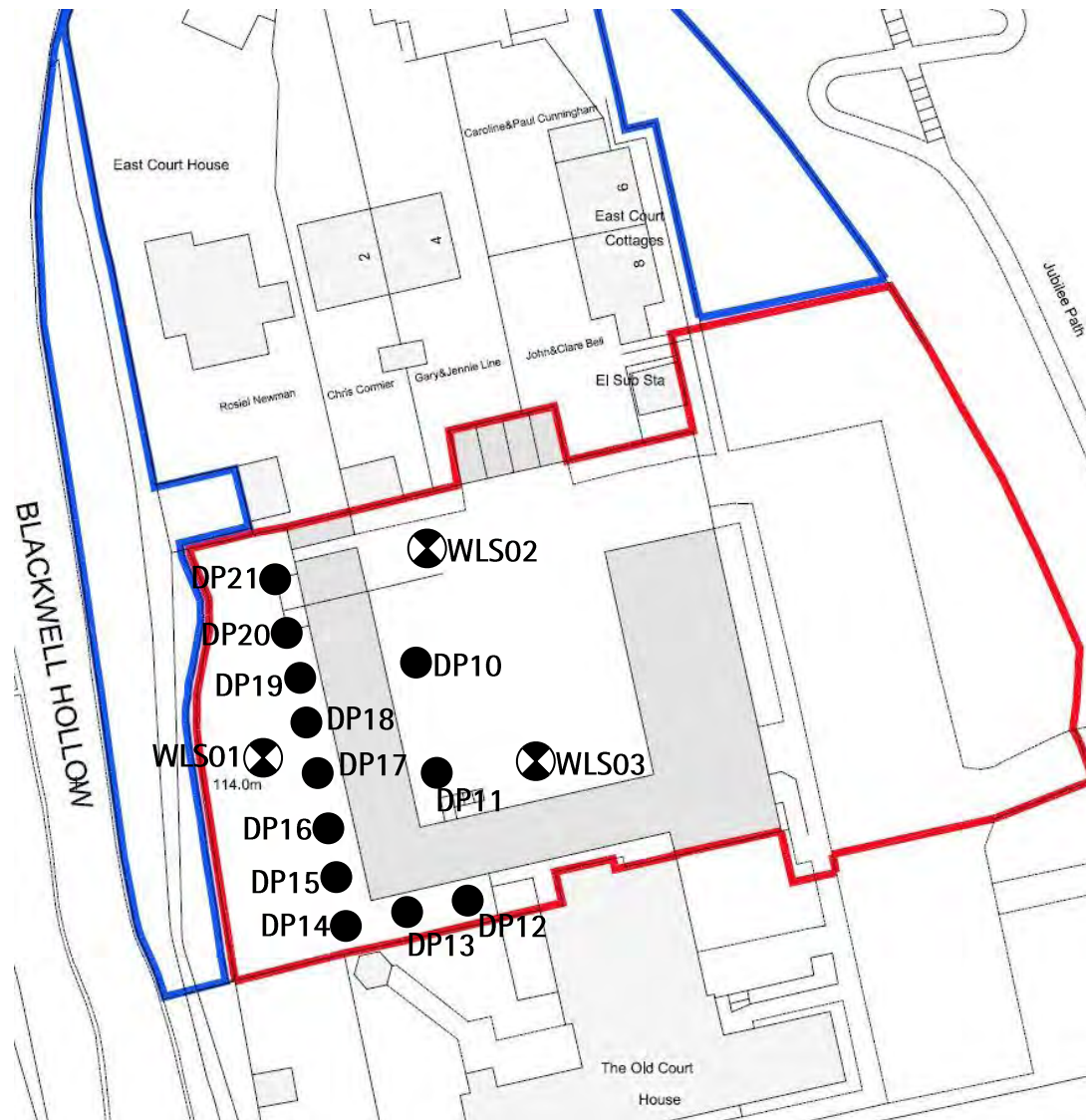
Southern Testing: Keeble House, Stuart Way, East Grinstead, West Sussex RH19 4QA
ST Consult: Twigden Barns, Brixworth Road, Creaton, Northampton NN6 8NN

 ST Consult



NB: Positions of Boreholes and/or Dynamic Probes are only indicative unless dimensioned – Not to scale.

Site: Former Police Station, East Court House, College Lane, East Grinstead, RH19 3LS	STL: J15797	Fig No: 3b
Date: 5 th November 2024	Site plan showing approximate dynamic probe locations in relation to WLS02	
 Southern Testing Southern Testing: Keeble House, Stuart Way, East Grinstead, West Sussex RH19 4QA ST Consult: Twigden Barns, Brixworth Road, Creton, Northampton NN6 8NN  ST Consult		



NB: Positions of Boreholes and/or Trial Pits are only indicative unless dimensioned

Site: Former Police Station, East Court House, College Lane, East Grinstead, RH19 3LS

STL: J15797

Fig No: 3c

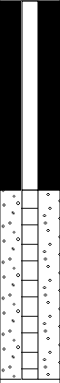
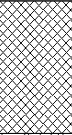
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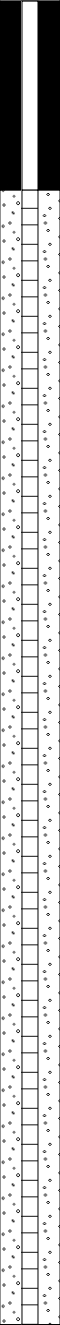
Site plan showing approximate exploratory hole locations.

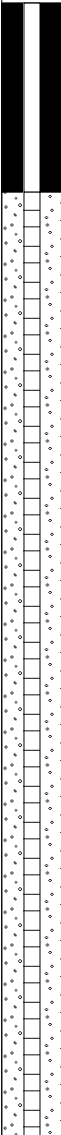
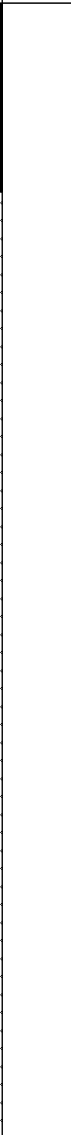
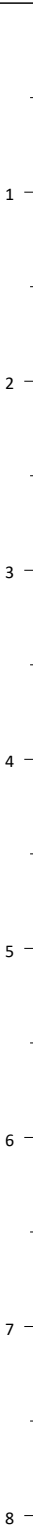
 Southern Testing

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

 ST Consult

					Start - End Date:		Project ID:		Hole Type:		WLS01	
					21/08/2024		J15797		WLS		Sheet 1 of 1	
Client:		Barter Hill Partnership Ltd					Co-ordinates:		Level (m AOD)		Logger:	
											SM	
Project Name:		Former Police Station					Location:		East Grinstead			
Well	Water Strikes	Samples and Insitu Testing			Progress		Depth (m)	Level (m AOD)	Legend	Stratum Description		
		Depth (m)	Type/Fl	Results	Runs							
		0.30	ES	N=40 (4,6/6,9,13,12)		0.70	(0.70)		Pale brown to greyish brown, silty, gravelly, SAND. Gravel comprises brick, concrete and sandstone. MADE GROUND		1	
	0.80	ES										
	1.00	D SPT										
			1.50	D	N=119 (4,6/24,34,30,31)		1.60	(0.40)		Very dense, pale orange brown to pale grey, clayey, sandy, SILT, with bands of very weak to weak, sandstone.		2
		2.00	D SPT									
									End of Borehole at 2.00m		3	
											4	
											5	
											6	
											7	
											8	
Remarks:												
1. Borehole dry upon completion of drilling.												
Status:		DRAFT			Log Print Date and Time:		23/08/2024 03:15		Log Approved By:			

						Start - End Date:		Project ID:		Hole Type:		WLS02	
						21/08/2024		J15797		WLS		Sheet 1 of 1	
Client:		Barter Hill Partnership Ltd						Co-ordinates:		Level (m AOD)		Logger:	
												SM	
Project Name:		Former Police Station						Location:		East Grinstead			
Well	Water Strikes	Samples and Insitu Testing			Progress		Depth (m)	Level (m AOD)	Legend	Stratum Description			
		Depth (m)	Type/Fl	Results	Runs								
		0.20	ES			0.10	(0.10)		BLACKTOP Dark brown to greyish brown, gravelly, SAND. Gravel comprises brick, blacktop, concrete, and sandstone. MADE GROUND Firm, yellowish brown to orange brown, silty, sandy, CLAY.			1	
		0.50	ES			0.30	(0.20)						
		1.00	D HP SPT	UCS(kPa)=450 N=47 (5,12/15,15,8,9)		1.20	(0.90)						
			1.50	D						Loose to medium dense, orange brown, silty, gravelly, fine to medium, SAND. Gravel comprises very weak, fine to medium, sub-angular, sandstone.			2
		2.00	D SPT	N=4 (3,3/2,1,1,0)									
		2.70	D										
		3.00	SPT	N=8 (2,1/2,2,2,2)									
			4.00	D SPT	N=7 (1,0/1,1,2,3)					Loose, pale grey mottled orange brown, silty, gravelly, SAND. Gravel comprises very weak to weak, fine to coarse, sub-angular siltstone.			3
		5.00	SPT	N=4 (1,1/1,1,1,1)									
		6.00	D SPT	N=11 (5,4/2,2,3,4)									
		7.00	D SPT	N=50 (3,9/50 for 275mm)		7.00	(0.50)		Very dense, thinly laminated, dark orange brown, silty, fine to medium SAND, with frequent laminations of very weak to weak, ironstained sandstone.			4	
													
									End of Borehole at 7.00m			5	
												6	
												7	
												8	
Remarks:													
1. Borehole dry upon completion of drilling.													
Status:		DRAFT		Log Print Date and Time:		23/08/2024 03:15		Log Approved By:					

				Start - End Date:		Project ID:		Hole Type:		WLS03			
				21/08/2024		J15797		WLS		Sheet 1 of 1			
Client:		Barter Hill Partnership Ltd				Co-ordinates:			Level (m AOD)		Logger:		
											AW		
Project Name:		Former Police Station				Location:		East Grinstead					
Well	Water Strikes	Samples and Insitu Testing			Progress		Depth (m)	Level (m AOD)	Legend	Stratum Description			
		Depth (m)	Type/Fl	Results	Runs								
		0.15	ES			0.12	(0.12)		BLACKTOP				
		0.40	ES			0.23	(0.11)		Light brown sandy GRAVEL. Sand is fine to coarse. Gravel is angular to subrounded fine to coarse flint and concrete.				
		0.50	D						MADE GROUND				
							(0.97)		Orangish brown slightly silty slightly gravelly SAND with a low cobble content of angular sandstone. Sand is fine and medium. Gravel is angular and subangular fine to coarse extremely weak and very weak sandstone.				
		1.00	SPT	N=25 (5,6/7,6,6,6)		1.20			Orangish brown slightly silty slightly gravelly SAND with localised brown mottling and black speckling up to 5mm. Sand is fine and medium. Gravel is subangular fine and medium extremely weak and very weak sandstone.				
		1.50	D			1.60	(0.40)		Becomes grey and orange mottled.				
		1.80	D			2.00	(0.40)		Stiff grey slightly gravelly slightly sandy SILT. Gravel is angular and subangular extremely weak siltstone.				
		2.00	SPT	N=7 (6,5/3,2,1,1)			(0.40)		Loose yellowish brown silty slightly gravelly SAND. Sand is fine. Gravel is angular and subrounded fine to coarse very weak sandstone.				
						2.40	(0.30)		Orangish brown sandy SILT. Sand is fine.				
		2.50	D			2.70	(0.15)		Orangish brown sandy slightly gravelly SILT. Sand is fine. Gravel is angular and subangular fine and medium extremely weak and very weak sandstone.				
		2.90	D			2.85	(0.20)		Becomes grey and orange mottled.				
		3.00	SPT	N=10 (5,3/2,3,3,2)		3.05			Light yellowish brown silty slightly sandy GRAVEL. Sand is fine. Gravel is angular and subangular fine to coarse very weak siltstone and weak sandstone.				
							(0.90)		Light yellowish brown sandy slightly gravelly SILT. Sand is fine. Gravel is angular fine and medium weak sandstone.				
									Becomes grey and orange mottled. Gravel becoming fine to coarse weak sandstone.				
		4.00	SPT	N=2 (1,0/1,0,1,0)		3.95			Very loose orangish brown slightly gravelly silty SAND with occasional angular sandstone cobbles. Sand is fine. Gravel is angular and subangular fine to coarse extremely weak to weak sandstone.				
		4.30	D				(1.05)						
						5.00			Loose orangish brown slightly gravelly silty SAND with occasional angular sandstone cobbles. Sand is fine. Gravel is angular and subangular fine to coarse extremely weak to weak sandstone.				
							(1.00)		ARDINGLY SANDSTONE MEMBER				
		5.70	D						Becoming light grey and gravelly.				
						6.00			Becoming orangish brown. Gravels becoming iron stained.				
		6.00	SPT	N=25 (5,5/6,6,7,6)					End of Borehole at 6.00m				
		Remarks:											
1. Borehole dry upon completion of drilling.													
Status:		DRAFT		Log Print Date and Time:		11/09/2024 03:56		Log Approved By:					

Logger:

East Grinstead

2

~~DRAFT~~
~~3 Trial~~

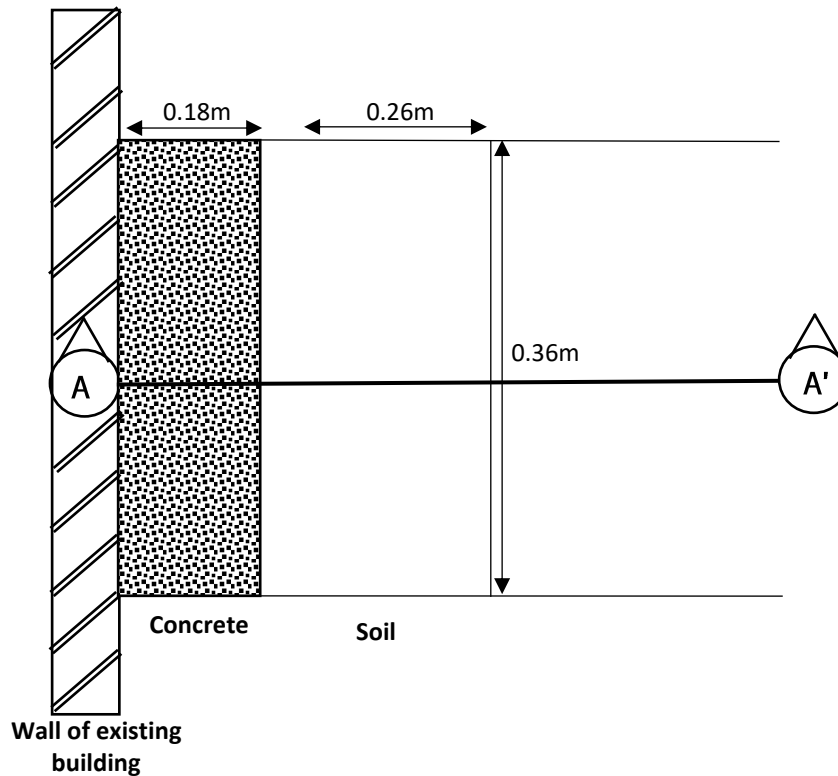
3. Trial pit undertaken for the purpose of foundation inspection.

4. Hole terminated as base of the foundation was encountered.

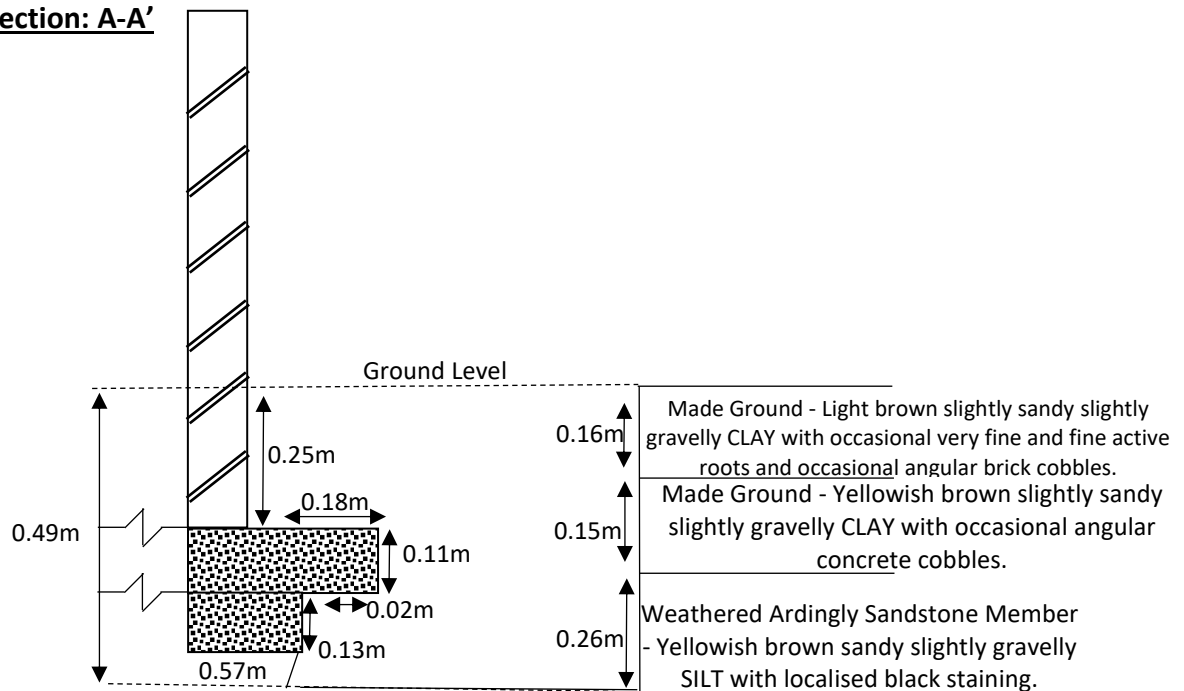
East Grinstead

2Log Approved By:

Plan



Cross Section: A-A'



NB: Positions of Boreholes and/or Trial Pits are only indicative unless dimensioned
NOT TO SCALE

Site: Former Police Station, East Court House, College Lane, East Grinstead, RH19 3LS

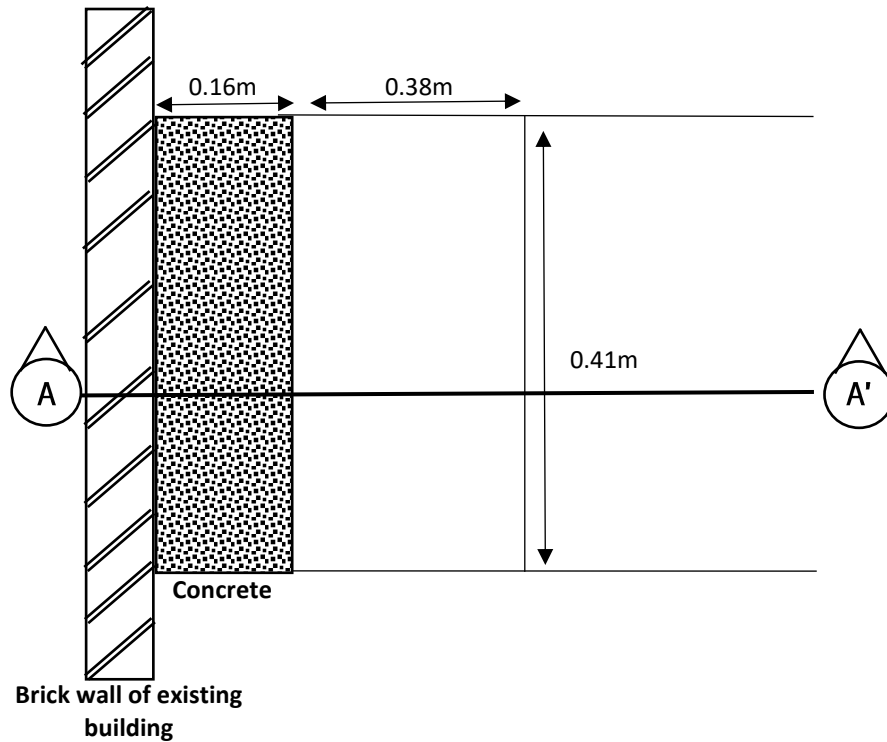
STL: J15797

Fig No: TP01

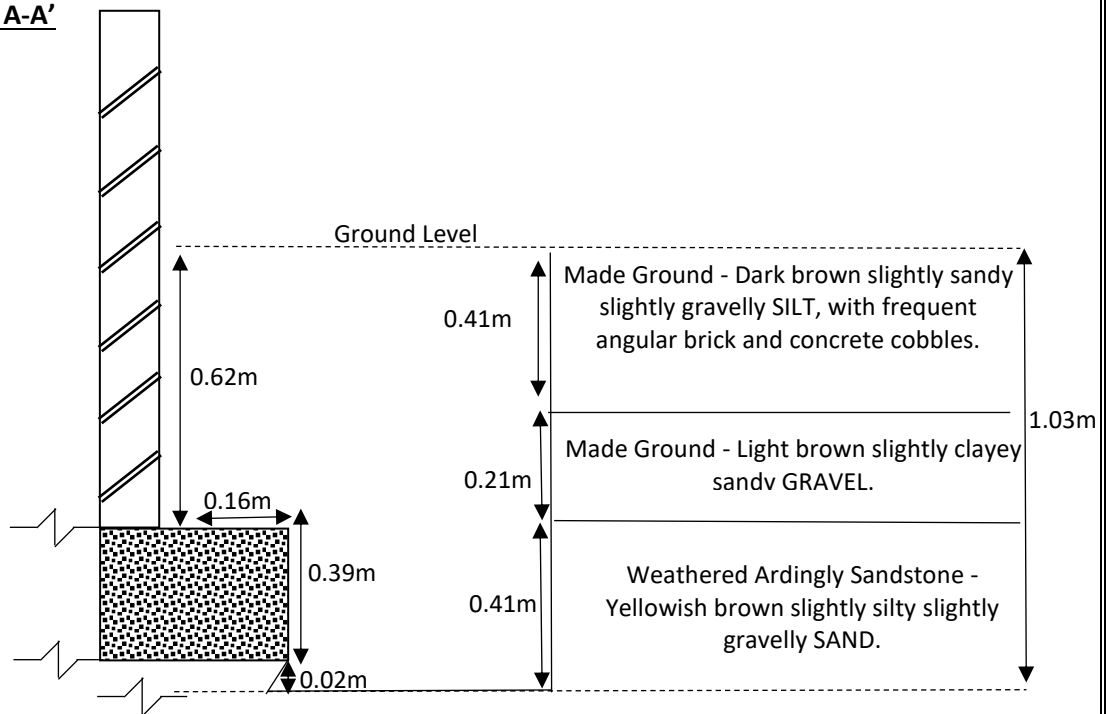
Date: 21st August 2024

TP01 Foundation Inspection Pit

Plan



Cross Section: A-A'



NB: Positions of Boreholes and/or Trial Pits are only indicative unless dimensioned
NOT TO SCALE

Site: Former Police Station, East Court House, College Lane, East Grinstead, RH19 3LS

STL: J15797

Fig No: TP02

Date: 21st August 2024

TP02 Foundation Inspection Pit

Key to Exploratory Hole Logs, Plans and Sections

Backfill Symbols		Pipe Symbols		Principal Soil Types		Principal Rock Types		Drilling Records	
Arisings		Plain Pipe		Topsoil		Mudstone		Water Strike	
Concrete		Slotted Pipe		Made Ground		Claystone		Depth Water Rose	
Blacktop		Piezometer		Clay		Siltstone		Total Core Recovery (%) [TCR]	
Bentonite		Piezometer Tip		Silt		Sandstone		Solid Core Recovery (%) [SCR]	
Gravel Filter		Filter Tip		Sand		Limestone		Rock Quality Index (%) RQD]	
Sand Filter		Extensometer		Gravel		Chalk		Fracture Index (fractures / m) [FI]	
		Inclinometers		Peat					

All soil and rock descriptions are in general accordance with BS5930 2015, BS EN ISO 14688-1:2002+A1:2013 and BS EN ISO 14689-1:2003. Chalk descriptions are also based on CIRIA C574 and "Logging the Chalk – R.N. Mortimer 2015". The Geology Code is only provided where a positive identification of the sample strata has been made.

Location / Method Identifiers		In-situ Test Location / Method	
BH	Borehole (undefined)	DP	Dynamic Probe
CP	Cable Percussive	CPT	Cone Penetration Test
RC	Rotary Core	CBR	In-situ CBR Test
RO	Rotary Open Hole	DCP	CBR using Dynamic Cone Penetrometer
ODC	Rotary ODEX/Symmetrix drilling cased	CBRT	CBR using TRL Probe
CP+RC	Cable Percussive to Rotary Core	PB	Plate Bearing Test
SNC	Sonic	SPT (S)	Standard Penetration Test (Split Barrel Sampler)
CFA	Continuous Flight Auger	SPT (C)	Standard Penetration Test (Solid Cone)
FA	Flight Auger	N	SPT Result
VC	Vibro Core	-/-	Blows/Penetration (mm) after seating drive
WLS+RC	Windowless (Dynamic) Sampler to Rotary Core	-*/-	Total Blows / Penetration (mm)
WLS	Windowless Sampler	()	Extrapolated Value
WS	Window Sampler	PPT	Perth Penetration (In-House Method - Equivalent N Value)
HA	Hand Auger	HP / UCS	Strength from Hand Penetrometer (kN/m ²)
C	Road / Pavement Core	IVN	Strength from Hand Vane ((kN/m ²) P = peak, R = residual
IP	Inspection Pit (Hand Excavation)	PID	Photo Ionisation Detector (ppm)
TP	Trial Pit (Machine Excavated)	MEXE	Mexi-Cone CBR (%)
OP	Observation Pit (Supported Excavation Hand or Machine)		

Samples / Test Type	
B	Bulk Sample
BLK	Block Sample
C	Core Sample
CBRS	CBR Mould Sample
D	Small Disturbed Sample
ES	Environmental Sample (Soil)
EW	Environmental Sample (Water)
GS	Environmental Sample (Gas)

Samples / Test Type	
SPTLS	Standard Penetration Test Split Barrel Sample
TW	Thin Wall Push In Sample (e.g. Shelby Sampler)
U	Undisturbed Open Drive Sample (blows to take)
UT	Thin Wall Undisturbed Open Drive Sample (blows to take)
W	Water Sample (Geotechnical)
SP	Sample from Stockpile
P	Piston Sample
AMAL	Amalgamated Sample

APPENDIX B

Field Sampling and In-Situ Test Methods and Results



B

Soil and Rock Descriptions

All soil and rock descriptions are in general accordance with BS5930 Ref [4].

Anthropogenic soils ('made ground' or 'fill') describe materials which have been placed by man and can be divided into those composed of reworked natural soils and those composed of or containing man-made materials. 'Fill' is used to describe material placed in a controlled manner and 'made ground' is used to describe materials placed without strict engineering control.

The classification of materials such as topsoil is based on visual description only and should not be interpreted to mean that the material complies with criteria used in BS 3882 Ref [19].

Chalk descriptions are based on CIRIA C574 Ref [20] and Mortimore Ref [21].

The geology code is only provided on logs where a positive identification of the sample strata has been made.

Inspection Pit

Inspection pits are hand excavated from the surface (maximum depth 1.2 – 1.5m) using appropriate tools to locate and avoid existing buried services at exploratory hole positions. They are also regularly used as part of investigations on existing structures to expose and determine foundation detail.

Dynamic Sampling - Window or Windowless

Window sampling is carried out by driving hollow steel tubes incorporating a longitudinal access slot (window) and a cutting shoe into the ground using a percussive 'breaker'. This enables recovery of a continuous soil sample for examination and sub-sampling.

Windowless samplers are designed for taking disturbed, continuous soil samples to depths up to 10 metres (depending on ground conditions). The samplers comprise steel tubes of about 50-100mm diameter with a rigid plastic liner (no window) and are driven into the ground with a sliding hammer mounted on a tracked purpose-designed soil sampling rig. After driving and extracting the sampler from the ground, the plastic liner is extracted together with the enclosed soil sample. The sample can then either be extracted, split and sub-sampled or plastic end caps may be fitted, the tube labelled and transported for future examination and sub-sampling.

Soil samples are disturbed by the driving process with both techniques and can be regarded as being between Class 5 up to Class 3 samples at best (in favourable ground).

The major advantage of using windowless samplers is that the plastic liner greatly reduces the possibility of cross-contamination between successive samples.

An equivalent in-situ test to the Standard Penetration Test can be carried out with the windowless sampler rig.

Standard Penetration Test (SPT)

The Standard Penetration Test (SPT) is specified in BS EN ISO 22476-3 Ref [22]. In this test, an open-ended tube is driven into the ground by blows from a free-falling hammer (with specified sizes, weights and distances).

The tube is seated by driving to a penetration of 150mm, or by 25 blows, whichever occurs first. It is then driven for a maximum of a further 300mm and the number of blows is termed the penetration resistance (N). If 300mm penetration cannot be achieved in 50 blows, the test drive is terminated and penetration depth is recorded.

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

A classification of relative density descriptions as used on borehole logs, based upon uncorrected SPT N values, is given within BS5930 Ref [4] and set out as follows:

Classification based on uncorrected SPT N Value	Term
0 - 4	Very Loose
4 - 10	Loose
10 – 30	Medium Dense
30 – 50	Dense
Over 50	Very Dense

Hand Penetrometer Test

The handheld soil penetrometer consists of a spring loaded and calibrated plunger which is forced into cohesive soil. A reading of unconfined compression strength (equal to twice cohesion) is given on a calibrated scale. The average of a set of three readings shall be recorded.

In common with other hand methods of strength assessment it does not give an accurate indication of bearing capacity in stiff or fissured soils, because of the small test area.

Dynamic Cone Penetrometer (DCP) CBR Test (Modified)

The dynamic cone CBR test uses light portable equipment and is used to provide a continuous record of the penetration resistance of each layer in the ground for a depth of a metre from the surface. The penetration resistance provides a measure from which CBR values may be calculated.

In the test a 22 mm diameter 60° cone is driven into the ground to a depth of up to one metre by a 9.09 kg weight, freely falling over 600 mm. The number of blows is recorded for each successive 50mm penetration increment.

A plot of the cumulative number of blows versus depth penetrated is drawn. This plot usually takes the form of a series of straight lines, the slopes of which are measured and expressed as penetration in mm per blow. It is the practice of this laboratory to adopt the lower of two values derived from formulae established by Kleyn & Van Heerden Ref [23]

$$CBR = 10^{(2.632 - 1.28 \log_{10} (mm / blow))}$$

& TRL Ref [24]

$$CBR = 10^{(2.48 - 1.057 \log_{10} (mm / blow))}$$

The test is an adaptation of the Perth Penetrometer Test developed for the granular soils in Perth West Australia in the 1960s, and in the UK by this laboratory since 1973. It is similar to the TRL dynamic cone penetrometer. Local experience by this laboratory has shown in UK conditions it has been found to give consistent results for granular soils.

Disturbed Samples

Disturbed samples were taken from exploratory holes in general accordance with BS 5930 [4] and BS EN ISO 22475-1 Ref [25] as required and stored in appropriately labelled containers. Details of the type, size and depth of sample will be recorded within the exploratory hole record. Such samples can be regarded as being between Class 5 up to Class 3 quality depending upon their method of sampling.

Environmental Samples

Environmental samples were taken from the boreholes at regular intervals in the made ground and natural soils as indicated on the exploratory hole logs. The sampling strategy was in general accordance with BS10175 Ref [5] and BS ISO 18400 Refs [26], [27], [28], [29] & [30].

These samples were collected and stored in glass jars or plastic pots and transferred to the laboratory in cool boxes as appropriate to the proposed laboratory testing.

Monitoring Well

A groundwater and/or ground gas monitoring well consists of a perforated pipe, which is installed in the ground. The standpipe is typically 50mm nominal in diameter and is installed in a lined borehole. It is perforated from the base with a sand/gravel surround through the soil horizon of interest to an appropriate depth below ground level. Above this there is a bentonite seal with solid pipework and is provided with an end cap or a gas valve at the top as appropriate.

Gas monitoring is carried out via the gas tap. Water sampling/purging can be undertaken by removing the gas tap and bung.

The well is usually completed at the surface with a flush cast iron cover or raised lockable cover.

Soakage Tests (after BRE DG365 2016)

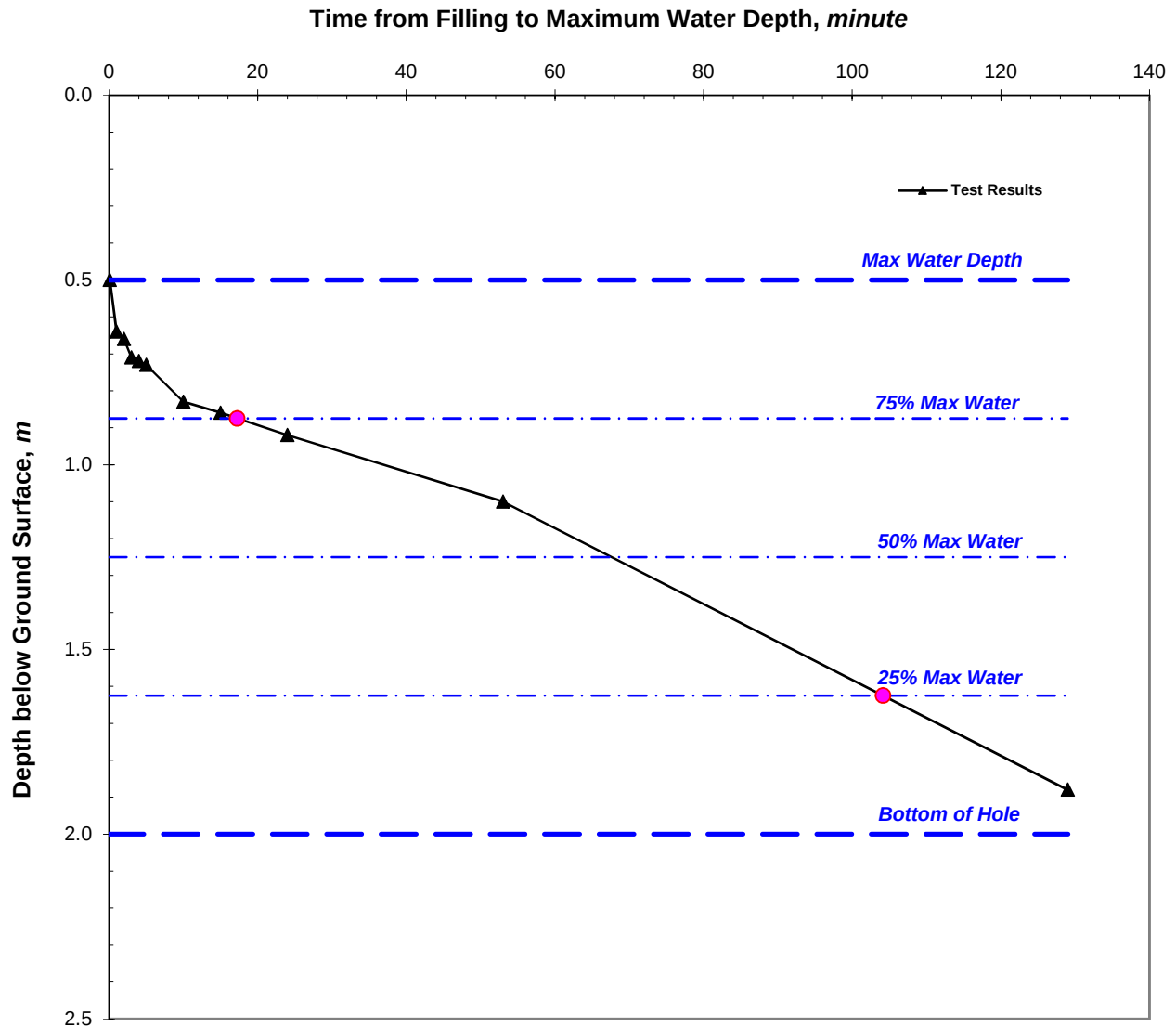
The BRE DG365 Ref [12] paper on soakaway design allows for the design of trench soakaways as well as traditional square and circular soakaways.

The test to measure the soil infiltration rate is carried out in pits which are excavated to the full depth of the proposed soakaway. The trial pits are filled and allowed to drain to empty or near empty, three times, on the same day or on consecutive days. Water levels are recorded against time. Where the sides are unstable the pit should be filled with granular material to provide stability during the test.

Calculated soakage rates are expressed as $\text{l/m}^2/\text{minute}$, which is a convenient rate to use. The BRE use a unit of m/sec , which is the value in $\text{l/m}^2/\text{minute}$ divided by 60,000.

Preliminary Falling-Head Soakage Test

Test Hole No: WLS01
Test No: Test No 1 (Initial)



Diameter of Borehole, m	0.100	Depth to Water at Start of Test, m	0.500
Depth to End of Borehole Casing, m		Max Water Dropdown during Test, m	1.380
Depth to Borehole Base, m	2.000	Total Soakage Test Time, min	129.0
Depth to Top of Permeable Soils, m		Mean Internal Discharge Area, m ²	0.243
Depth to Groundwater Surface, m		Discharge Rate, litre/min	0.068
Depth to Top of Granular Fill, m		Soakage Rate, litre/m ² /min	0.278
Voids Assumed within Borehole, %	100%	BRE Soil Infiltration Rate, m/sec	4.64E-06

Comments:

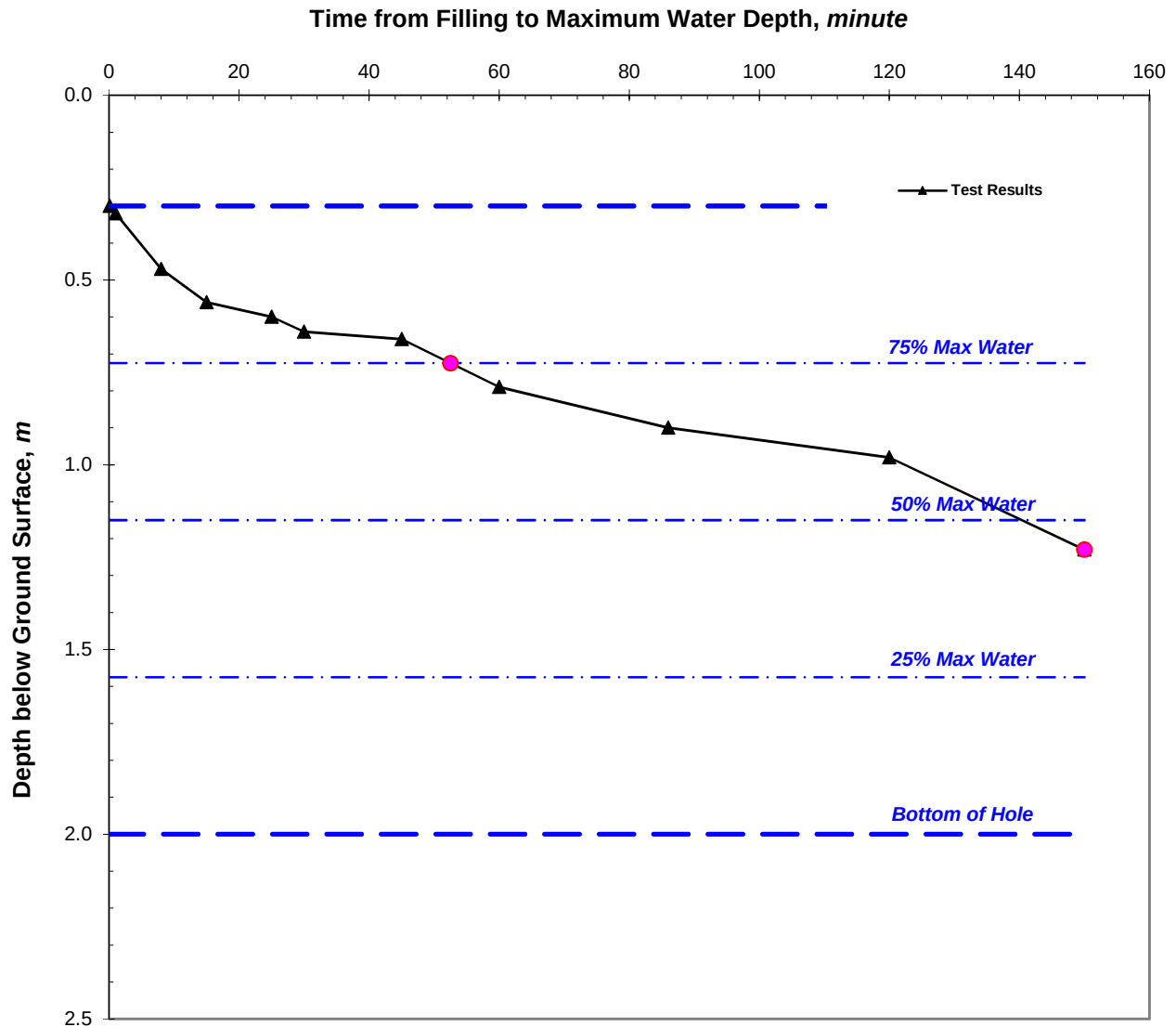
Pit was nearly emptied at finish of test.

Client: ZMQL Limited	Job No: J15797	Test Date: 21/Aug/2024
Site: Former Police Station, East Court House, C	Tested By:	Engineer: SM Fig. S1

Preliminary Falling-Head Soakage Test

Test Hole No: WLS01

Test No: Test No 2 (Repeated)



Diameter of Borehole, m	0.100	Depth to Water at Start of Test, m	0.300
Depth to End of Borehole Casing, m		Max Water Dropdown during Test, m	0.930
Depth to Borehole Base, m	2.000	Total Soakage Test Time, min	150.0
Depth to Top of Permeable Soils, m		Mean Internal Discharge Area, m ²	0.329
Depth to Groundwater Surface, m		Discharge Rate, litre/min	0.041
Depth to Top of Granular Fill, m		Soakage Rate, litre/m ² /min	0.124
Voids Assumed within Borehole, %	100%	BRE Soil Infiltration Rate, m/sec	2.06E-06

Comments:

Water level fell to 50% -- 25% max water depth, calculations were based on actual fall of water level achieved.
Result not compliant with BRE365 requirement since water did not fall to 25% max water depth.

Client: ZMQL Limited	Job No: J15797	Test Date: 30/Jan/2019
Site: Former Police Station, East Court House, C	Tested By:	Engineer: SM Fig. S2

Summary Sheet

Results of Preliminary Falling-Head Soakage Tests

Site : Former Police Station, East Court House, Colleg					Job No : J15797		
Client : ZMQL Limited					O S Reference : TQ 39782 38652		
Tested By :				Engineer: SM		Test Date :	
Hole No	Test No	Hole Depth <i>m</i>	Soakage Rate for Each Test <i>litre/m² /min</i>	Soakage Rate for Each Hole <i>litre/m² /min m/sec</i>		Water Level at Finish of Test	Remarks
WLS01	No 1	2.00	0.278	0.124 2.06E-6		Nearly empty pit.	
WLS01	No 2	2.00	0.124				
Mean Value of All Calculated Soakage Rates :				0.124 2.06E-6 <i>litre/m² /min m/sec</i>			

Dynamic Cone Penetrometer (DCP) Test Results

Test No: WLS01

Chainage:

Tested By: OS

Start Layer:

Checked By: SM

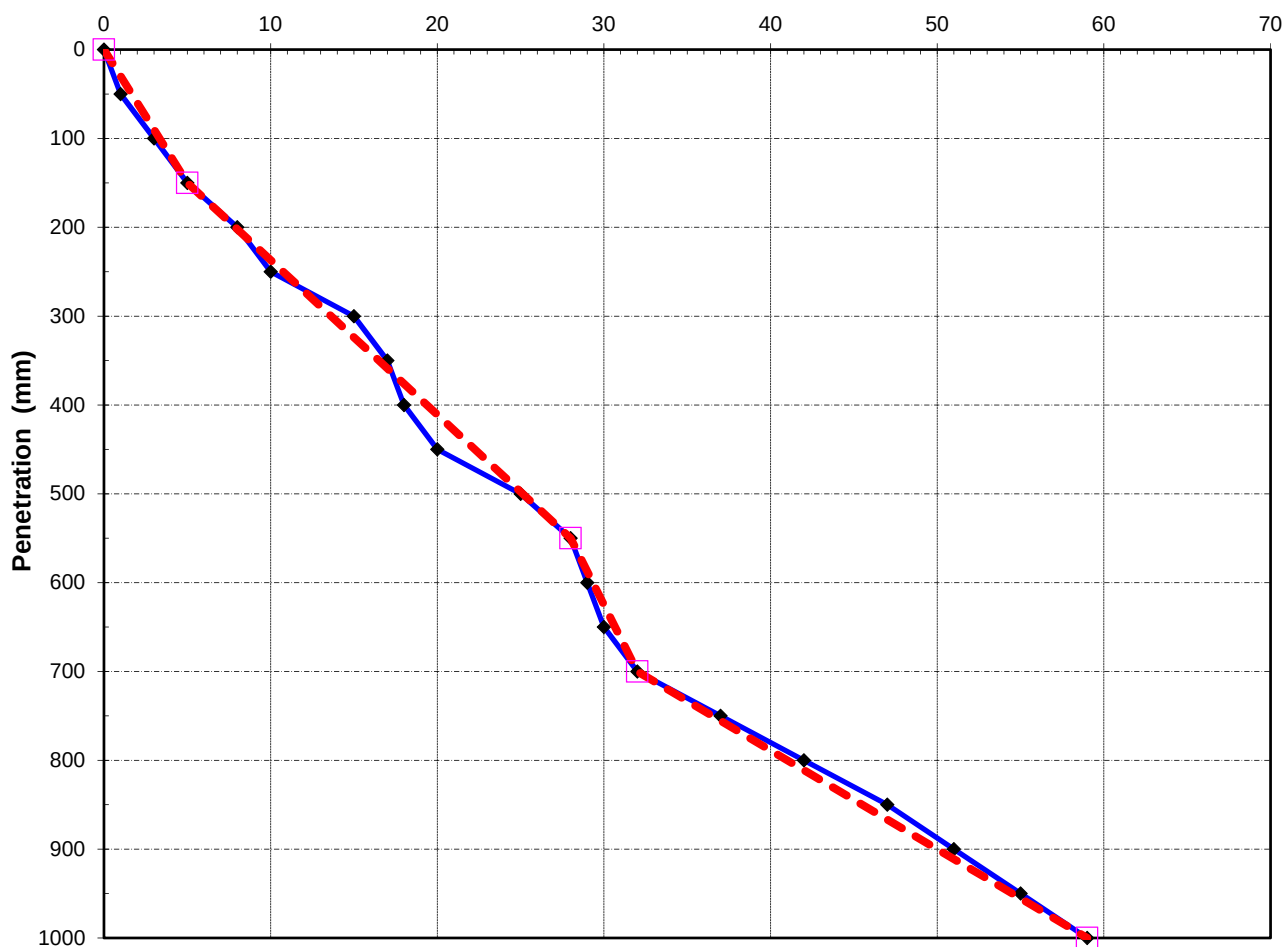
Soil Condition:

Test Date: 21-Aug-24

Notes:

Perth Cone CBR Penetration vs Cumulative Blow Count

Cumulative Blow Count



Evaluated CBR Values from DCP Test Results

Layer No	From (mm)	To (mm)	Depth (mm)	Blow Count	No. of Blows	DCP mm/blow	CBR %	Soil Type	Remarks
1	0	150	150	5	5	30.0	5.5		
2	150	550	400	28	23	17.4	11		
3	550	700	150	32	4	37.5	4.1		
4	700	1000	300	59	27	11.1	20		

Client: ZMQL Limited

Job No: J15797

Site: Former Police Station, East Court House, Co

Date: 21/08/2024

Fig.

Dynamic Cone Penetrometer (DCP) Test Results

Test No: WLS02

Chainage:

Tested By: OS

Start Layer:

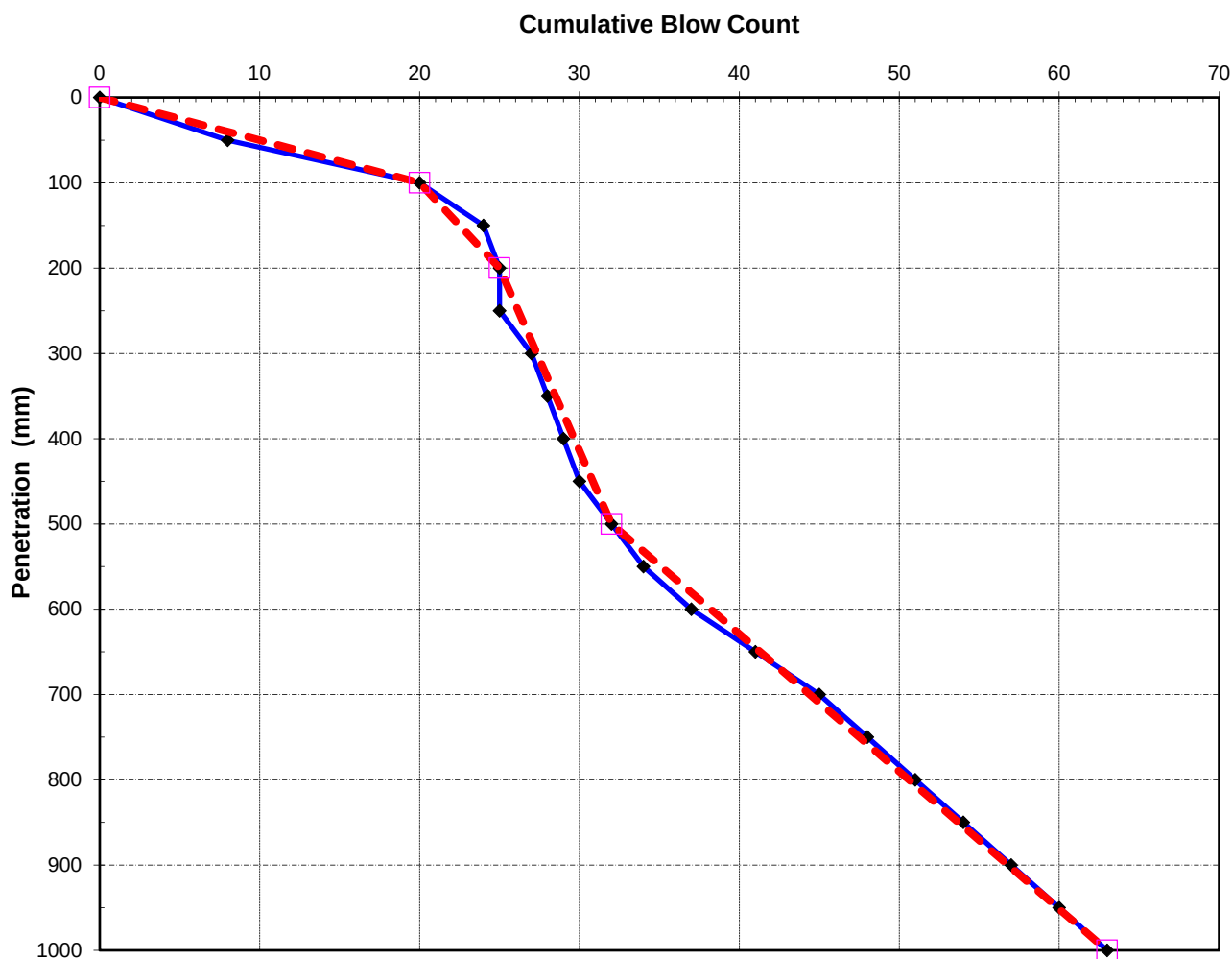
Checked By: SM

Soil Condition:

Test Date: 21-Aug-24

Notes:

Perth Cone CBR Penetration vs Cumulative Blow Count



Evaluated CBR Values from DCP Test Results

Layer No	From (mm)	To (mm)	Depth (mm)	Blow Count	No. of Blows	DCP mm/blow	CBR %	Soil Type	Remarks
1	0	100	100	20	20	5.0	55		
2	100	200	100	25	5	20.0	9.3		
3	200	500	300	32	7	42.9	3.5		
4	500	1000	500	63	31	16.1	12		

Client: ZMQL Limited

Job No: J15797

Site: Former Police Station, East Court House, Co

Date: 21/08/2024

Fig.

Dynamic Cone Penetrometer (DCP) Test Results

Test No: WLS03

Chainage:

Tested By: OS

Start Layer:

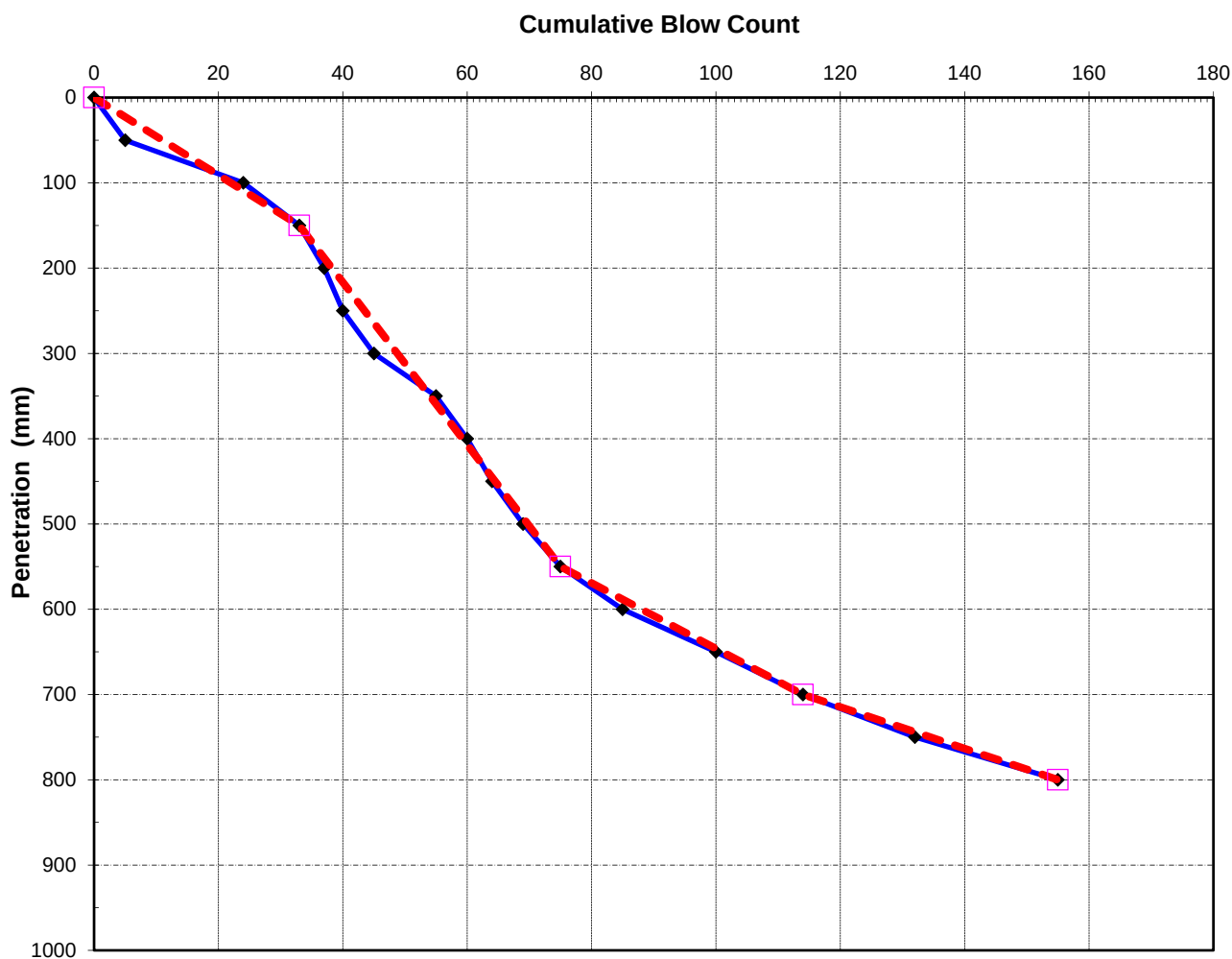
Checked By: SM

Soil Condition:

Test Date: 21-Aug-24

Notes:

Perth Cone CBR Penetration vs Cumulative Blow Count



Evaluated CBR Values from DCP Test Results

Layer No	From (mm)	To (mm)	Depth (mm)	Blow Count	No. of Blows	DCP mm/blow	CBR %	Soil Type	Remarks
1	0	150	150	33	33	4.5	61		
2	150	550	400	75	42	9.5	24		
3	550	700	150	114	39	3.8	73		
4	700	800	100	155	41	2.4	118		

Client: ZMQL Limited

Job No: J15797

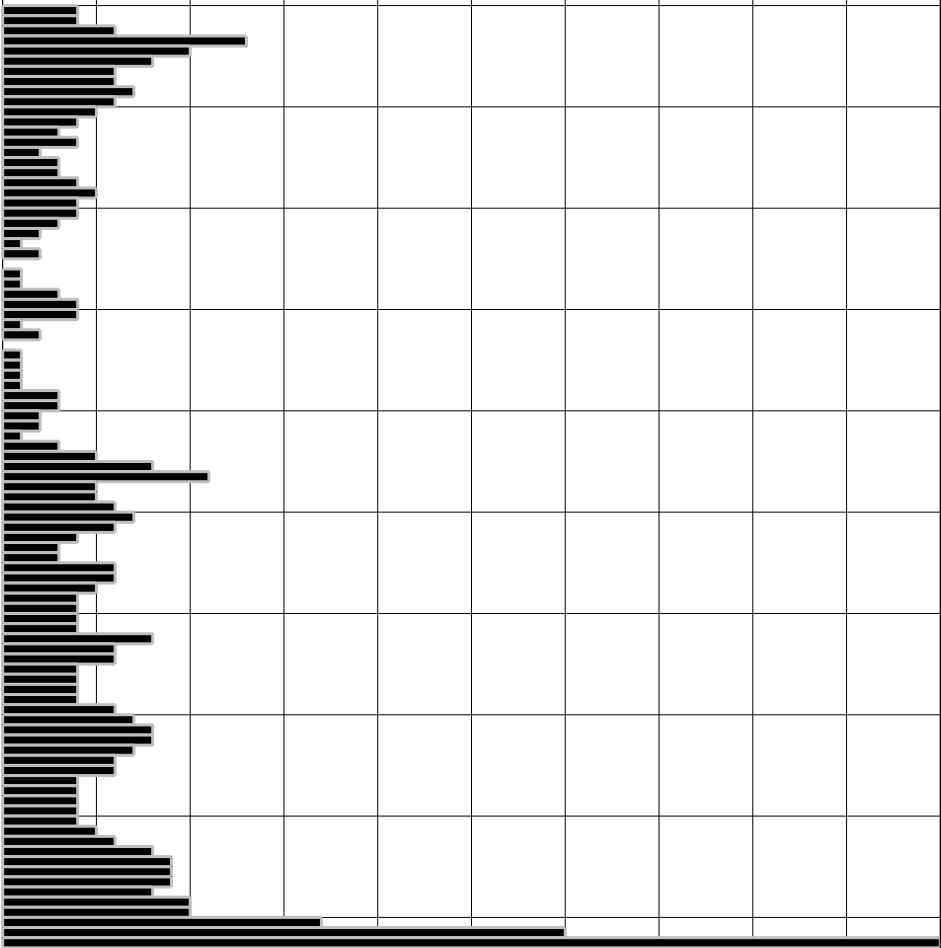
Site: Former Police Station, East Court House, Co

Date: 21/08/2024

Fig.

Southern Testing ST Consult					Start - End Date:		Project ID:		Hole Type:		DP01				
					05/11/2024		J15797		DP		Sheet 1 of 1				
Client:		Barter Hill Partnership Ltd				Co-ordinates:		Level (m AOD)		Logger:					
Project Name:		Former Police Station				Location:		East Grinstead							
Depth (m)	Blow Count per 100mm				Blows/100mm										Torque (Nm)
0	0				0										
5	5				5										
10	10				10										
15	15				15										
20	20				20										
25	25				25										
30	30				30										
35	35				35										
40	40				40										
45	45				45										
50	50				50										
1	8				16										8
2	6				6										7
3	6				6										6
4	9				8										9
5	6				4										4
6	2				3										5
7	16				50										9
8															
9															
10															
11															
12															
13															
14															
15															
Fall Height (mm)		750		Cone Diameter (mm)		50.5		Abort Reason							
Hammer Wt (kg)		63.5		Final Depth (m bgl)		4.30									
Probe Type		DPSH-B													
Status:		DRAFT		Log Print Date and Time:		08/11/2024 11:07		Log Approval By:							

Depth (m)	Blow Count per 100mm					Blows/100mm																Torque (Nm)
						0	5	10	15	20	25	30	35	40	45	50						
1	13	16	17	13	6	<																

					Start - End Date:		Project ID:		Hole Type:		DP04					
					05/11/2024		J15797		DP		Sheet 1 of 1					
Client:		Barter Hill Partnership Ltd					Co-ordinates:		Level (m AOD)		Logger:					
Project Name:		Former Police Station					Location:		East Grinstead							
Depth (m)	Blow Count per 100mm				Blows/100mm										Torque (Nm)	
					0	5	10	15	20	25	30	35	40	45	50	
1	4	6	13	10	4											
2	4	3	4	2	3											
3	3	2	1	2	0											
4	1	2	0	1	1											
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Fall Height (mm) 750 Cone Diameter (mm) 50.5 Abort Reason																
Hammer Wt (kg) 63.5 Final Depth (m bgl) 10.30																
Probe Type DPSH-B																
Status:		DRAFT			Log Print Date and Time:			08/11/2024 11:11			Log Approval By:					

Logger:

East Grinstead

Fall Height (mm)	750	Cone Diameter (mm)	50.5	Abort Reason	
Hammer Wt (kg)	63.5	Final Depth (m bgl)	7.90		
Probe Type	DPSH-B				
Status:	DRAFT	Log Print Date and Time:	08/11/2024 11:11	Log Approval By:	

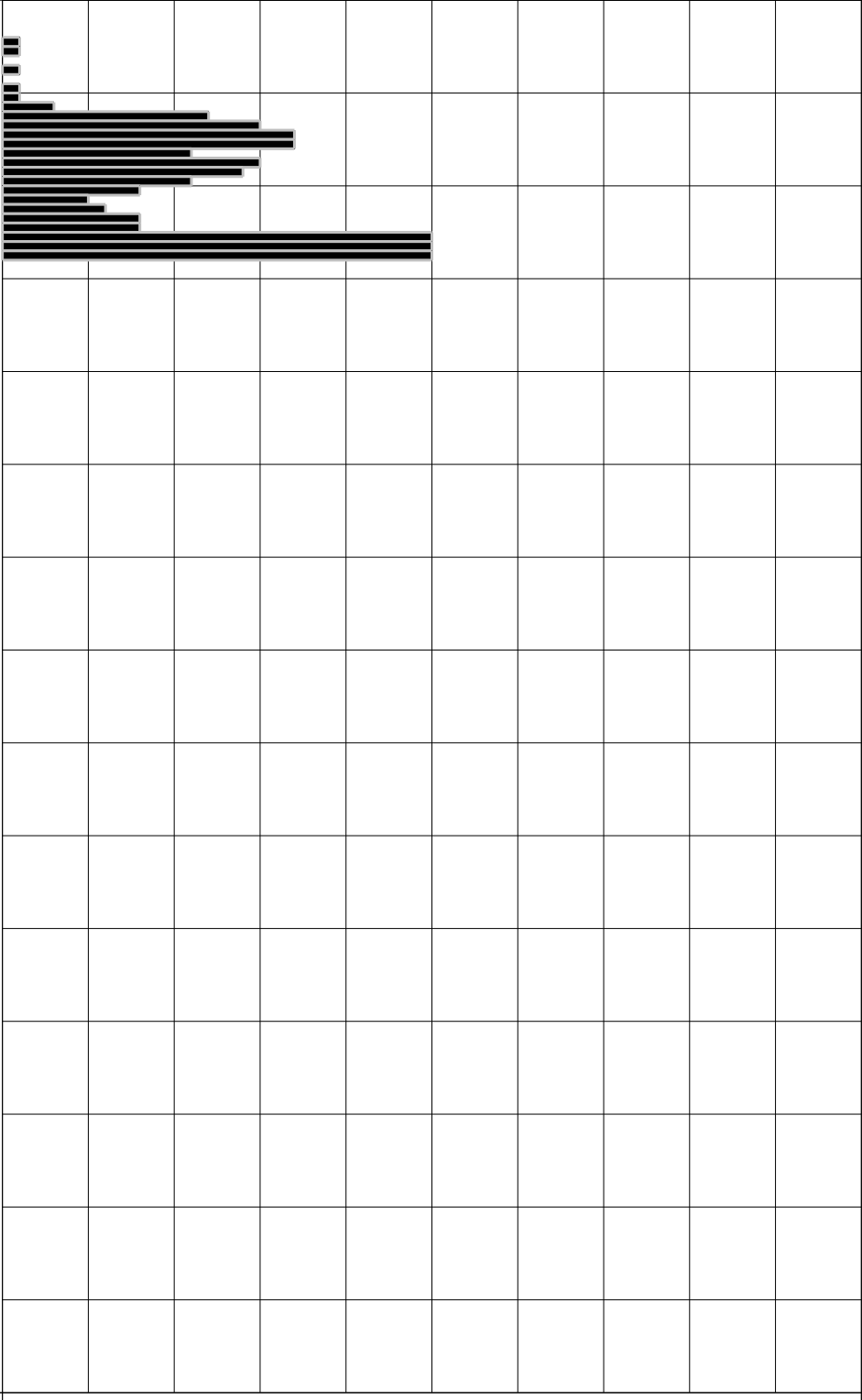
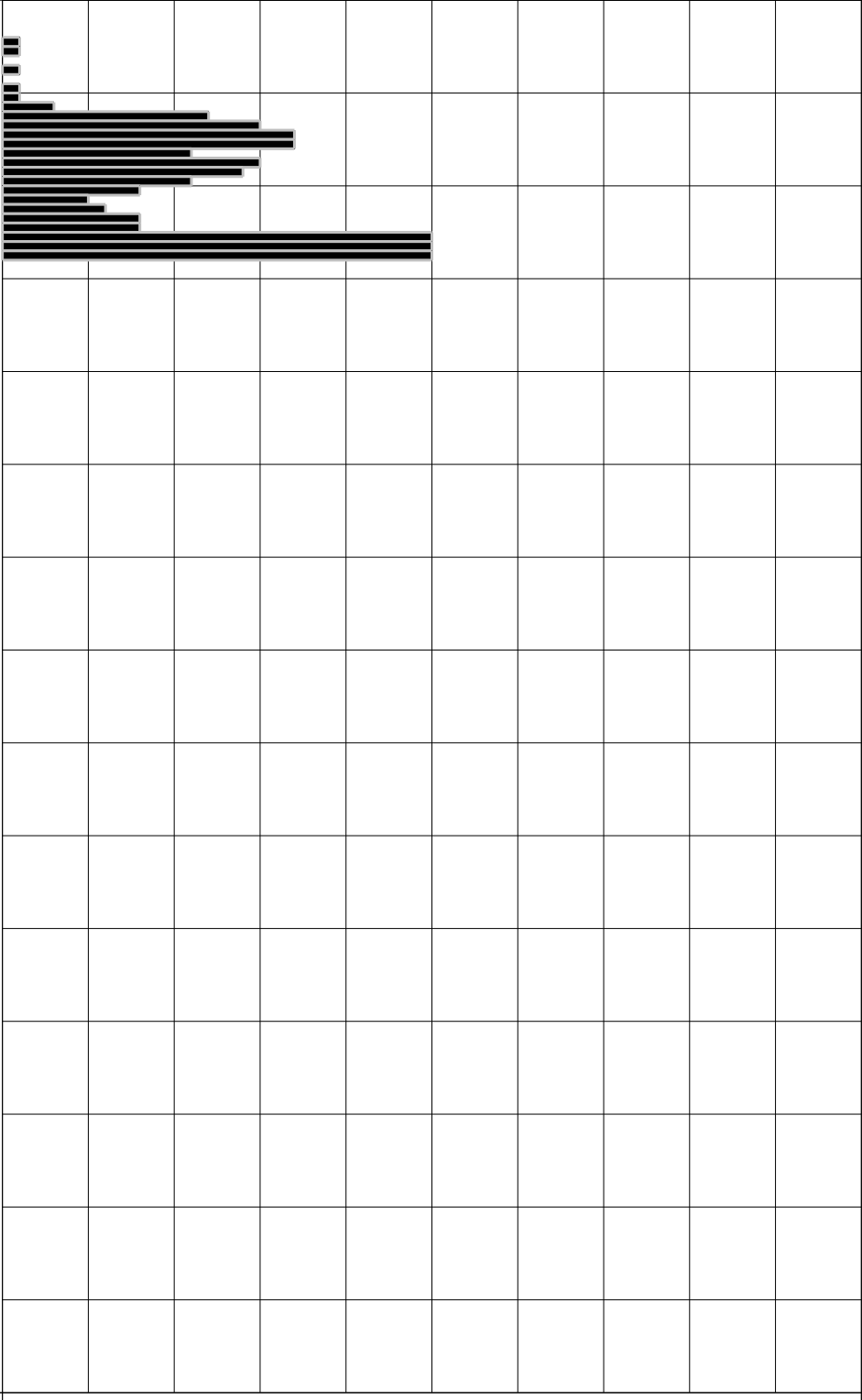
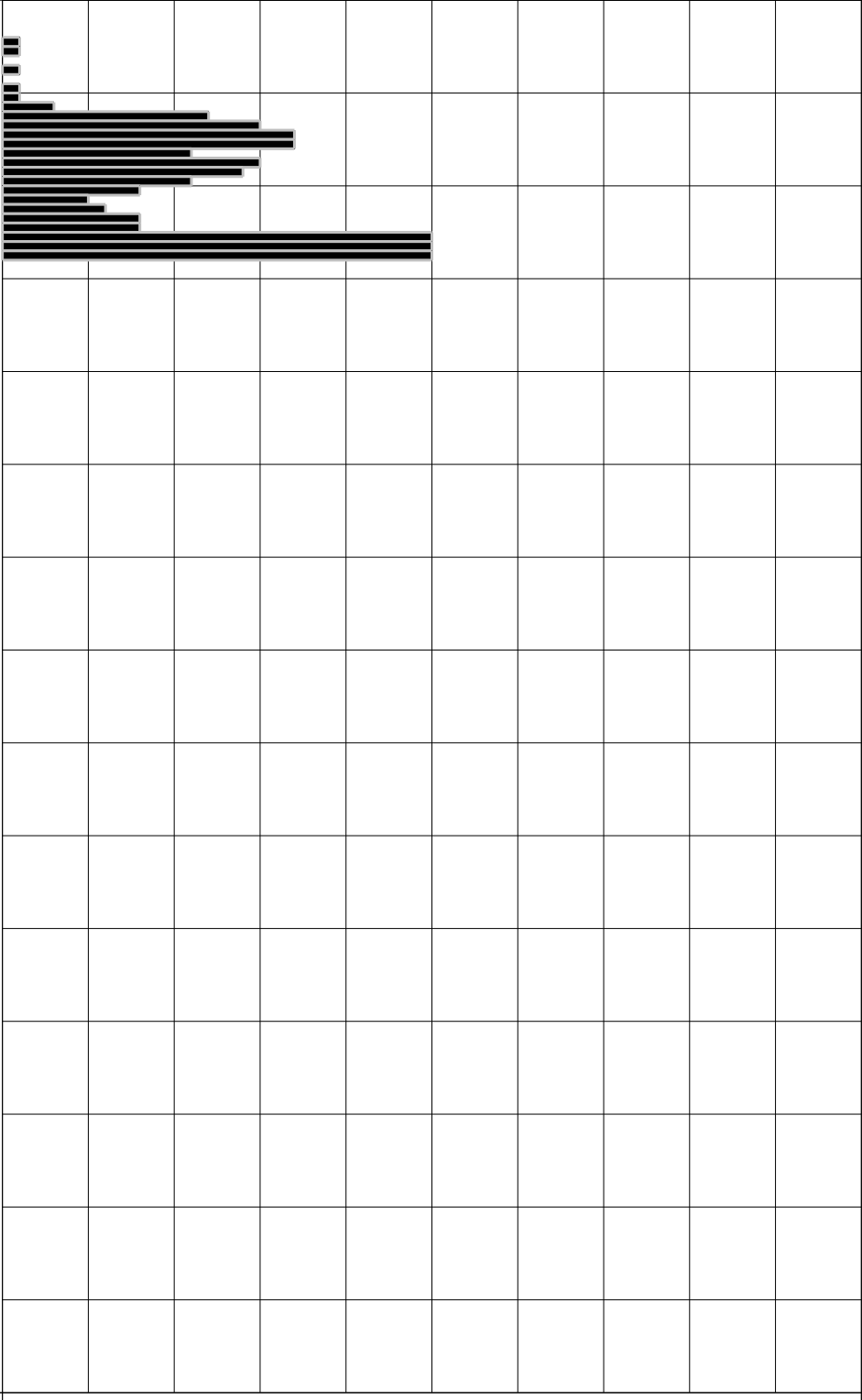
					Start - End Date:		Project ID:		Hole Type:		DP11						
					05/11/2024		J15797		DP		Sheet 1 of 1						
Client:		Barter Hill Partnership Ltd					Co-ordinates:		Level (m AOD)		Logger:						
Project Name:		Former Police Station					Location:		East Grinstead								
Depth (m)		Blow Count per 100mm				Blows/100mm										Torque (Nm)	
						05101520253035404550											
1		6664				16											
						4444											
2		1221				2222											
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3		1121				1111											
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Hammer Wt (kg)		63.5				Final Depth (m bgl)		7.30									
Probe Type		DPSH-B															
Status:		DRAFT				Log Print Date and Time:		08/11/2024 11:35		Log Approval By:							

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					Start - End Date:		Project ID:		Hole Type:		DP15					
					06/12/2024		J15797		DP		Sheet 1 of 1					
Client:		Barter Hill Partnership Ltd					Co-ordinates:		Level (m AOD)		Logger:					
Project Name:		Former Police Station					Location:		East Grinstead							
Depth (m)	Blow Count per 100mm				Blows/100mm										Torque (Nm)	
					05101520253035404550											
1	0	1	1	2	1											
	1	1	1	1	2											
1	4	12	14	14	11											
	11	9	8	9	8											
2	5	4	4	8	7											
	9	12	13	10	10											
3	10	6	1	1	1											
	2	4	4	4	4											
4	3	3	7	10	15											
	12	11	13	26	28											
5	18	7	4	4	4											
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Fall Height (mm)		750			Cone Diameter (mm)		50.5			Abort Reason						
Hammer Wt (kg)		63.5			Final Depth (m bgl)		6.30									
Probe Type		DPSH-B														
Status:		DRAFT			Log Print Date and Time:		12/12/2024 09:54			Log Approval By:						

					Start - End Date:		Project ID:		Hole Type:		DP16																																																																																																																																																																																																																																																																																																																						
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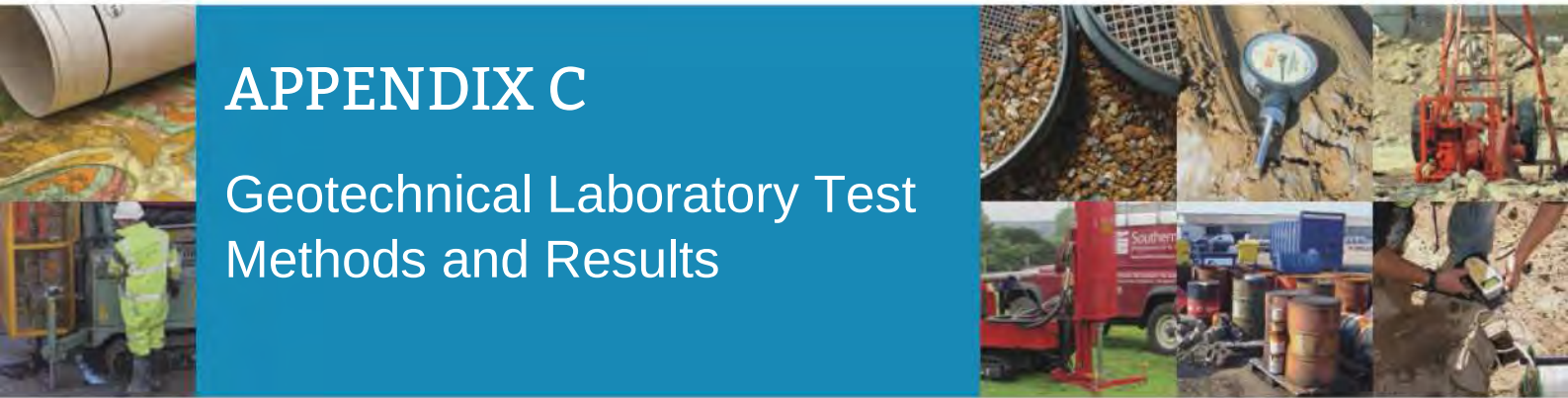
					Start - End Date:		Project ID:		Hole Type:		DP19				
					06/12/2024		J15797		DP		Sheet 1 of 1				
Client:		Barter Hill Partnership Ltd					Co-ordinates:		Level (m AOD)		Logger:				
Project Name:		Former Police Station					Location:		East Grinstead						
Depth (m)		Blow Count per 100mm				Blows/100mm								Torque (Nm)	
						05101520253035404550									
0		1				1									
1		1				1									
1		3				2									
3		3				4									
4		5				4									
2		15				11									
		12				16									
		8				14									
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Fall Height (mm)		750				Cone Diameter (mm)		50.5		Abort Reason					
Hammer Wt (kg)		63.5				Final Depth (m bgl)		4.10							
Probe Type		DPSH-B													
Status:		DRAFT				Log Print Date and Time:		12/12/2024 09:56		Log Approval By:					

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					Start - End Date:		Project ID:		Hole Type:		DP21						
					06/12/2024		J15797		DP		Sheet 1 of 1						
Client:		Barter Hill Partnership Ltd					Co-ordinates:		Level (m AOD)		Logger:						
Project Name:		Former Police Station					Location:		East Grinstead								
Depth (m)		Blow Count per 100mm				Blows/100mm										Torque (Nm)	
						05101520253035404550											
0		011															
1		25656															
2		712272015															
3		99975															
4		44444															
5		66855															
6		7136333															
7		323367															
8		66568															
9		13263250															
10																	
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12																	
13																	
14																	
15																	
Fall Height (mm)		750				Cone Diameter (mm)		50.5		Abort Reason							
Hammer Wt (kg)		63.5				Final Depth (m bgl)		6.00									
Probe Type		DPSH-B															
Status:		DRAFT					Log Print Date and Time:		12/12/2024 09:57		Log Approval By:						

APPENDIX C

Geotechnical Laboratory Test Methods and Results



Plasticity Index and Water Content Summary

BS1377-2:2022 cl. 5, BS EN ISO 17892-1:2014 + A1:2022, BS EN ISO 17892-12:2018 + A2:2022

Project Name		Former Police Station, East Grinstead					Project Number		J15797	
Client		ZMQL Limited				PE	SM	Date Issued		04-Sep-24
Location ID	Depth m	Sample Type	Visual Description	Comments	Initial WC %	Liquid Limit %	Plastic Limit %	Plasticity Index	Classi- fication	Passing 425 micron %
WLS01	1.50	D	Yellow brown sandy slightly gravelly SILT. Gravel consists of fine to coarse subangular sandstone.	Sample passed through 425µm sieve. Non-plastic.	10		NP	-	NP	82
WLS02	1.00	D	Very stiff buff brown patched yellow ochre silty slightly sandy CLAY.		16	26	16	10	CL	100
WLS03	1.80	D	Very stiff buff brown patched grey silty slightly sandy CLAY.		13	32	19	13	CL	100

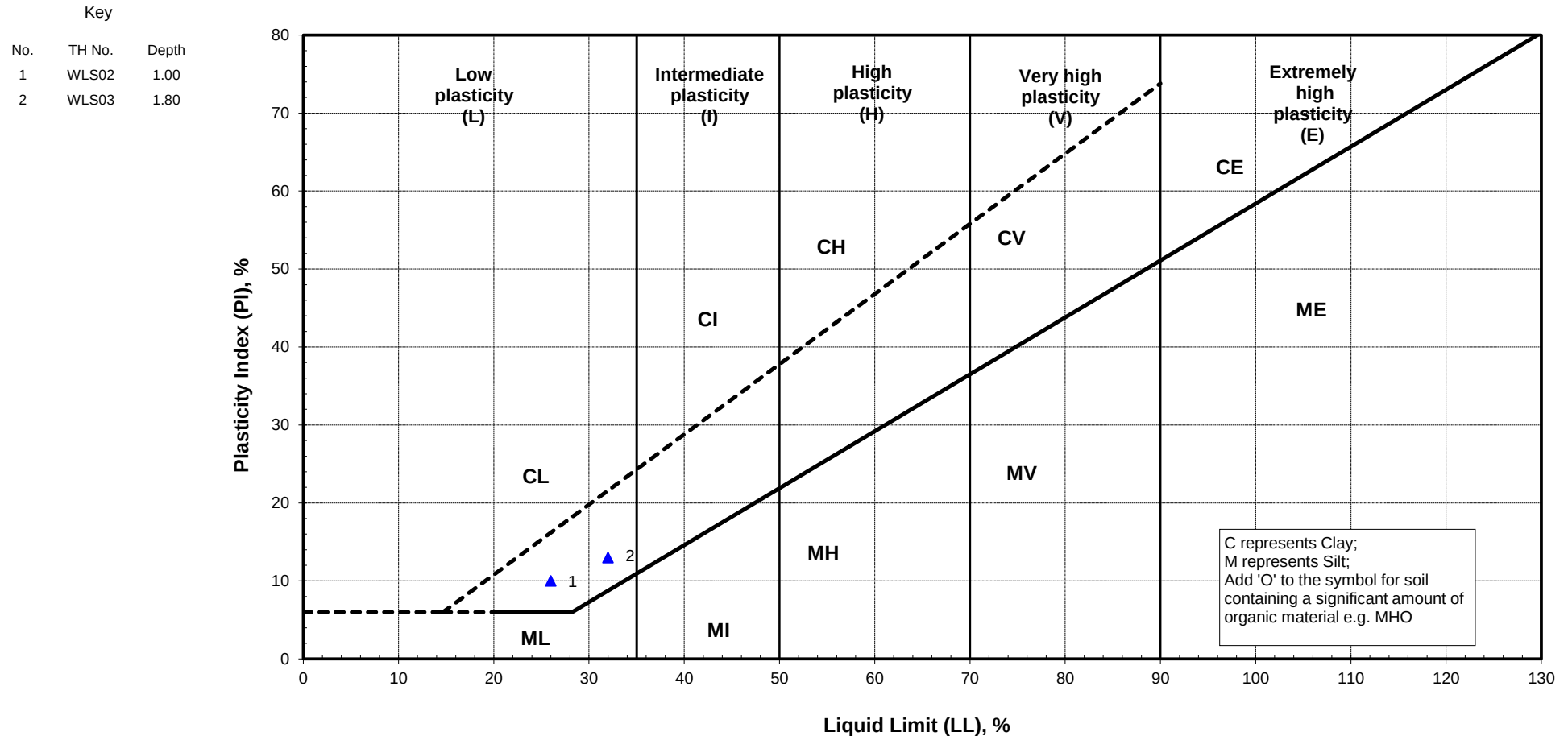
Registered office Southern Testing Laboratories Ltd, Keeble House, Stuart Way, East Grinstead RH19 4QA. Testing carried out at Units 20A & B, Durkins Road, East Grinstead RH19 2RW. BSI Ref: FS29280 under BS EN ISO 9001.

Jun 13

Plasticity Chart for Atterberg Limit Tests



Project Name	Former Police Station, East Grinstead			Project Number	J15797
Client Name	ZMQL Limited	PE	SM	Date Issued	04-Sep-24



Liquid Limit

Maximum Value	32
Minimum Value	26
Average Value	29

Plastic Limit

Maximum Value	19
Minimum Value	16
Average Value	18

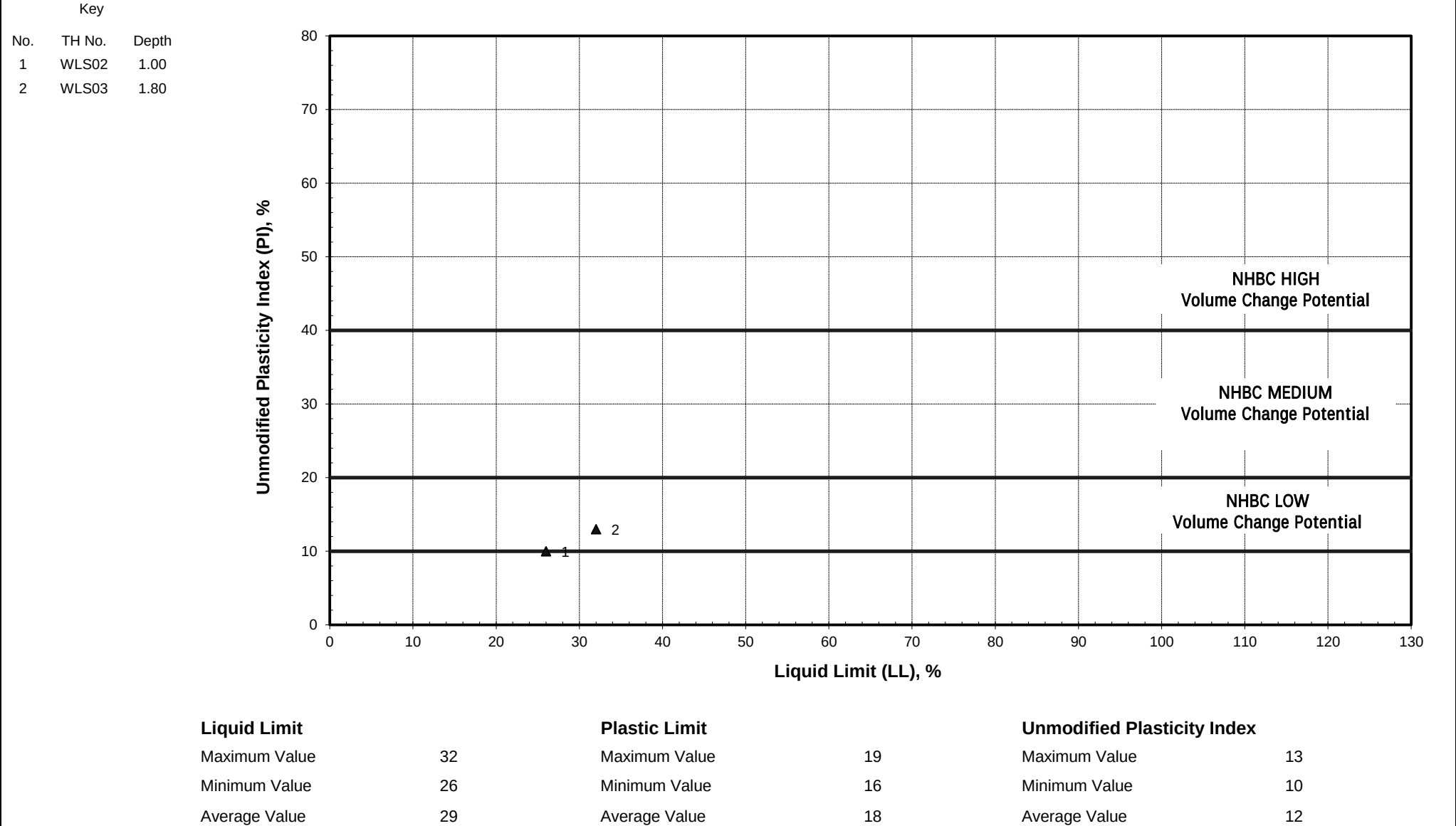
Plasticity Index

Maximum Value	13
Minimum Value	10
Average Value	12

NHBC Classification for Volume Change Potential



Project Name	Former Police Station, East Grinstead			Project Number	J15797
Client Name	ZMQL Limited	PE	SM	Date Issued	04-Sep-24



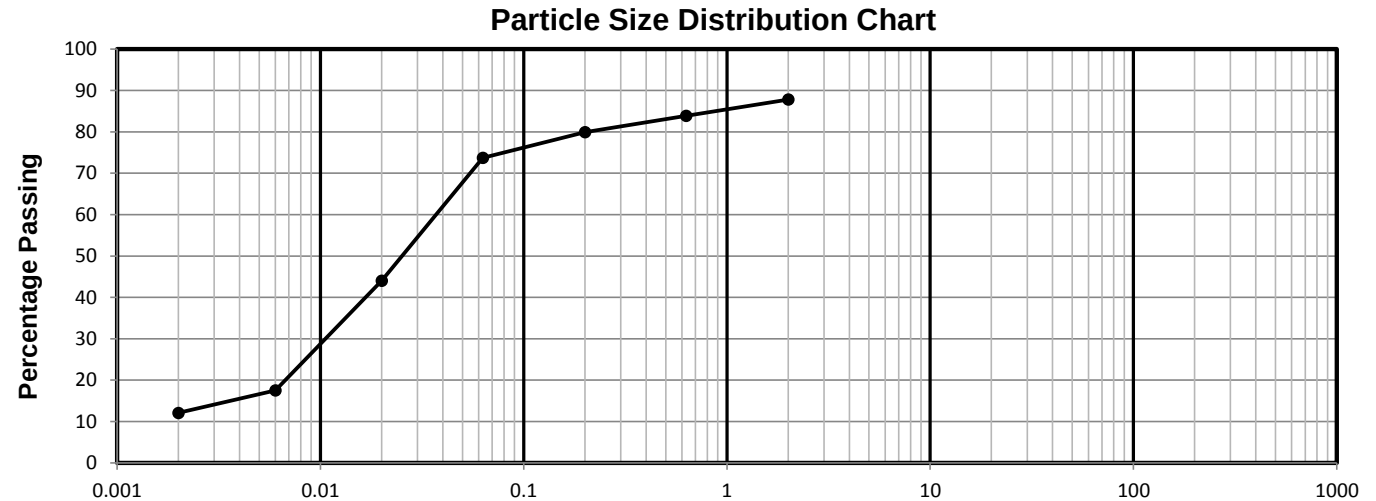
PARTICLE SIZE DISTRIBUTION REPORT

BS EN ISO 17892-4:2016 cl. 5.2, 5.4



Project Name	Former Police Station, East Grinstead			Project Number	J15797
Client Name	ZMQL Limited	PE	SM	Date Issued	04-Sep-24

Particle Size	% Passing
2mm	88
630µm	84
200µm	80
63µm	74
20µm	44
6µm	18
2µm	12



CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES
	SILT			SAND			GRAVEL			
12	62			14			12			

Sedimentation pre-treatment: None

Visual Description of Sample:

Very stiff buff mottled orange silty slightly sandy slightly gravelly CLAY. Gravel consists of fine and medium subangular siltstone.

Particle Density (Assumed) Mg/m³

2.70

Coefficient of Uniformity

Test Methods:

Sedimentation by Pipette BS EN ISO 17892-4:2016 cl. 5.4

Location

WLS02

Depth (m)

2.00

Sample Type

D

Comments:

Tested By

STL Lab

Checked By

GeorginaB



Southern Testing Laboratories Ltd
Keeble House
Stuart Way
East Grinstead
West Sussex
RH19 4QA

t: 01342 333100

e: contamresults@southerntesting.co.uk

i2 Analytical Ltd.
7 Woodshots Meadow,
Croxley Green
Business Park,
Watford,
Herts,
WD18 8YS

t: 01923 225404

f: 01923 237404

e: reception@i2analytical.com

Analytical Report Number : 24-038565

Project / Site name:	Former Police Station, East Grinstead	Samples received on:	27/08/2024
Your job number:	J15797	Samples instructed on / Analysis started on:	27/08/2024
Your order number:	J15797 3	Analysis completed by:	02/09/2024
Report Issue Number:	1	Report issued on:	04/09/2024
Samples Analysed:	6 soil samples		

Signed: _____

Anna Goc
PL Head of Reporting Team
For & on behalf of i2 Analytical Ltd.

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

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

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

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

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

Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

Analytical Report Number: 24-038565

Project / Site name: Former Police Station, East Grinstead

Your Order No: J15797 3

Lab Sample Number				298413	298414	298415	298416	298417
Sample Reference				TP01	WLS01	WLS02	WLS02	WLS03
Sample Number				D	D	D	D	D
Depth (m)				0.35-0.50	1.00	1.50	4.00	1.50
Date Sampled				21/08/2024	21/08/2024	21/08/2024	21/08/2024	21/08/2024
Time Taken				0930	1000	1130	1130	1200
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status					

Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	9.8	6.8	12	9.8	12
Total mass of sample received	kg	0.1	NONE	1.5	1.5	1.4	0.9	1.3

General Inorganics

pH (L099)	pH Units	N/A	MCERTS	7.3	7.9	8.3	8.5	8
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	9.3	59	49	21	10
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	4.66	29.3	24.4	10.7	5.02

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Analytical Report Number: 24-038565

Project / Site name: Former Police Station, East Grinstead

Your Order No: J15797 3

Lab Sample Number				298418
Sample Reference				WLS03
Sample Number				D
Depth (m)				2.50-2.70
Date Sampled				21/08/2024
Time Taken				1200
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status	

Stone Content	%	0.1	NONE	< 0.1
Moisture Content	%	0.01	NONE	11
Total mass of sample received	kg	0.1	NONE	0.8

General Inorganics

pH (L099)	pH Units	N/A	MCERTS	8.3
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	72
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	35.8

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Analytical Report Number : 24-038565

Project / Site name: Former Police Station, East Grinstead

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

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

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
298413	TP01	D	0.35-0.50	Brown sand with gravel and vegetation
298414	WLS01	D	1	Brown sand with gravel
298415	WLS02	D	1.5	Brown sandy clay with gravel
298416	WLS02	D	4	Brown sand with gravel
298417	WLS03	D	1.5	Brown sand with gravel
298418	WLS03	D	2.50-2.70	Brown sand with gravel

Analytical Report Number : 24-038565

Project / Site name: Former Police Station, East Grinstead

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Moisture Content	Moisture content, determined gravimetrically (up to 30°C)	In-house method	L019B	W	NONE
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight	In-house method based on British Standard Methods and MCERTS requirements.	L019B	D	NONE
Sulphate, water soluble, in soil (16hr extraction)	Sulphate, water soluble, in soil (16hr extraction)	In-house method	L038B	D	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement	In-house method	L099-PL	D	MCERTS

For method numbers ending in 'UK' or 'A' analysis have been carried out in our laboratory in the United Kingdom (Watford).

For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).

For method numbers ending in 'PL' or 'B' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30°C.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Quality control parameter failure associated with individual result applies to calculated sum of individuals.

The result for sum should be interpreted with caution

APPENDIX D

**Contamination Laboratory
Test Methods and Results**

D



Southern Testing Laboratories Ltd
Keeble House
Stuart Way
East Grinstead
West Sussex
RH19 4QA

t: 01342 333100

e: contamresults@southerntesting.co.uk

i2 Analytical Ltd.
7 Woodshots Meadow,
Croxley Green
Business Park,
Watford,
Herts,
WD18 8YS

t: 01923 225404

f: 01923 237404

e: reception@i2analytical.com

Analytical Report Number : 24-038566

Project / Site name:	Former Police Station, East Grinstead	Samples received on:	27/08/2024
Your job number:	J15797	Samples instructed on / Analysis started on:	27/08/2024
Your order number:	J15797 2	Analysis completed by:	05/09/2024
Report Issue Number:	1	Report issued on:	05/09/2024
Samples Analysed:	3 soil samples		

Signed: _____

Anna Goc
PL Head of Reporting Team
For & on behalf of i2 Analytical Ltd.

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

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

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

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

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Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

Analytical Report Number: 24-038566

Project / Site name: Former Police Station, East Grinstead

Your Order No: J15797_2

Lab Sample Number	298419	298420	298421
Sample Reference	TP02	WLS02	WLS03
Sample Number	ES	ES	ES
Depth (m)	0.20-0.30	0.20	0.40-0.50
Date Sampled	21/08/2024	21/08/2024	21/08/2024
Time Taken	1100	1120	1200
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status

Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	14	11	10
Total mass of sample received	kg	0.1	NONE	1.2	1.3	1.2

Asbestos

Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	KWB	KWB	KWB

General Inorganics

pH (L099)	pH Units	N/A	MCERTS	8.4	8.7	8.4
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	240	380	91
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.122	0.191	0.0457
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	122	191	45.7
Sulphide	mg/kg	1	MCERTS	< 1.0	1.9	< 1.0
Organic Matter (automated)	%	0.1	MCERTS	1.6	1.6	0.3

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	0.18	0.15	< 0.05
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	0.36	0.38	0.12
Pyrene	mg/kg	0.05	MCERTS	0.28	0.41	0.13
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.17	0.25	0.08
Chrysene	mg/kg	0.05	MCERTS	0.23	0.28	0.13
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	0.29	0.56	0.25
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	0.1	0.14	0.09
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.2	0.39	0.15
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.11	0.2	0.1
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	0.06	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.13	0.24	0.09

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	2.05	3.05	1.14
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Analytical Report Number: 24-038566
 Project / Site name: Former Police Station, East Grinstead
 Your Order No: J15797_2

Lab Sample Number				298419	298420	298421
Sample Reference				TP02	WLS02	WLS03
Sample Number				ES	ES	ES
Depth (m)				0.20-0.30	0.20	0.40-0.50
Date Sampled				21/08/2024	21/08/2024	21/08/2024
Time Taken				1100	1120	1200
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status			

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	8.6	6.9	4.7
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	1.3	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8	< 1.8	< 1.8
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	21	16	14
Copper (aqua regia extractable)	mg/kg	1	MCERTS	55	8.5	7.1
Lead (aqua regia extractable)	mg/kg	1	MCERTS	160	12	6.8
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	17	11	9.3
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	1
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	1100	40	32

Petroleum Hydrocarbons

TPH (>EC6 - EC8) HS_1D_TOTAL	mg/kg	0.01	MCERTS	-	< 0.01	-
TPH (>EC8 - EC10) HS_1D_TOTAL	mg/kg	0.02	MCERTS	-	< 0.02	-
TPH (>EC10 - EC12) EH_CU_1D_TOTAL	mg/kg	2	MCERTS	-	< 2.0	-
TPH (>EC12 - EC16) EH_CU_1D_TOTAL	mg/kg	4	MCERTS	-	< 4.0	-
TPH (>EC16 - EC21) EH_CU_1D_TOTAL	mg/kg	10	MCERTS	-	< 10	-
TPH (>EC21 - EC40) EH_CU_1D_TOTAL	mg/kg	10	MCERTS	-	< 10	-

TPH Total >EC6 - EC40 EH_CU+HS_1D_TOTAL	mg/kg	10	NONE	-	< 10	-
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Petroleum Range Organics (EC6 - EC10) HS_1D_TOTAL	mg/kg	1	ISO 17025	-	< 1.0	-
TPH (EC10 - EC40) EH_CU_1D_TOTAL	mg/kg	10	MCERTS	-	< 10	-

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Analytical Report Number : 24-038566

Project / Site name: Former Police Station, East Grinstead

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

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

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
298419	TP02	ES	0.20-0.30	Brown sand with gravel and vegetation
298420	WLS02	ES	0.2	Brown clay and sand with gravel and tar
298421	WLS03	ES	0.40-0.50	Brown sand with gravel

Analytical Report Number : 24-038566

Project / Site name: Former Police Station, East Grinstead

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos identification in Soil	Asbestos Identification with the use of polarised light microscopy in conjunction with dispersion staining techniques	In-house method based on HSG 248, 2021	A001B	D	ISO 17025
Organic matter (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate (Walkley Black Method)	In-house method	L009B	D	MCERTS
Sulphide in soil	Determination of sulphide in soil by acidification and heating to liberate hydrogen sulphide, trapped in an alkaline solution then assayed by ion selective electrode	In-house method	L010-PL	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically (up to 30°C)	In-house method	L019B	W	NONE
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight	In-house method based on British Standard Methods and MCERTS requirements.	L019B	D	NONE
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil	L038B	D	MCERTS
Sulphate, water soluble, in soil (16hr extraction)	Sulphate, water soluble, in soil (16hr extraction)	In-house method	L038B	D	MCERTS
Speciated PAHs and/or Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds (including PAH) in soil by extraction in dichloromethane and hexane followed by GC-MS	In-house method based on USEPA 8270	L064B	D	MCERTS
Total petroleum hydrocarbons by GC-FID/GC-MS HS in soil	Determination of total petroleum hydrocarbons in soil by GC-FID/GC-MS HS	In-house method	L076B/L088-PL	D/W	MCERTS
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in NaOH and addition of 1,5 diphenylcarbazide followed by colorimetry	In-house method	L080-PL	W	MCERTS
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080-PL	W	MCERTS
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080-PL	W	MCERTS

Analytical Report Number : 24-038566

Project / Site name: Former Police Station, East Grinstead

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement	In-house method	L099-PL	D	MCERTS

For method numbers ending in 'UK' or 'A' analysis have been carried out in our laboratory in the United Kingdom (Watford).

For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).

For method numbers ending in 'PL' or 'B' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Quality control parameter failure associated with individual result applies to calculated sum of individuals.

The result for sum should be interpreted with caution



Southern Testing Laboratories Ltd
Keeble House
Stuart Way
East Grinstead
West Sussex
RH19 4QA

t: 01342 333100

e: contamresults@southerntesting.co.uk
contamresults@southerntesting.co.uk

i2 Analytical Ltd.
7 Woodshots Meadow,
Croxley Green
Business Park,
Watford,
Herts,
WD18 8YS

t: 01923 225404
f: 01923 237404
e: reception@i2analytical.com

Analytical Report Number : 24-056641

Project / Site name:	Former Police Station, East Grinstead	Samples received on:	29/11/2024
Your job number:	J15797	Samples instructed on / Analysis started on:	29/11/2024
Your order number:	J15797 4	Analysis completed by:	05/12/2024
Report Issue Number:	1	Report issued on:	05/12/2024
Samples Analysed:	2 soil samples		

Signed: _____

Anna Goc
PL Head of Reporting Team
For & on behalf of i2 Analytical Ltd.

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

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

Standard sample disposal times, unless otherwise agreed with the laboratory, are :	soils	- 4 weeks from reporting
	leachates	- 2 weeks from reporting
	waters	- 2 weeks from reporting
	asbestos	- 6 months from reporting

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

Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

Analytical Report Number: 24-056641

Project / Site name: Former Police Station, East Grinstead

Your Order No: J15797 4

Lab Sample Number				394425	394426
Sample Reference				TS1	TS2
Sample Number				ES	ES
Water Matrix				N/A	N/A
Depth (m)				0.10	0.10
Date Sampled				29/11/2024	29/11/2024
Time Taken				0830	0830
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status		

Stone Content	%	0.1	NONE	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	28	27
Total mass of sample received	kg	0.1	NONE	1	1

Asbestos

Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	Not-detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	KJK	KJK

General Inorganics

pH (L099)	pH Units	N/A	MCERTS	5.9	6.6
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	27	26
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.0136	0.0131
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	13.6	13.1
Sulphide	mg/kg	1	MCERTS	< 1.0	< 1.0
Organic Matter (automated)	%	0.1	MCERTS	3.8	3.6

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	1.2	< 1.0
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	0.07	0.07
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	0.2	0.12
Pyrene	mg/kg	0.05	MCERTS	0.2	0.12
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.1	< 0.05
Chrysene	mg/kg	0.05	MCERTS	0.14	0.08
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	0.15	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	0.07	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.14	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.09	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.09	< 0.05

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	1.23	< 0.80
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Analytical Report Number: 24-056641

Project / Site name: Former Police Station, East Grinstead

Your Order No: J15797 4

Lab Sample Number				394425	394426
Sample Reference				TS1	TS2
Sample Number				ES	ES
Water Matrix				N/A	N/A
Depth (m)				0.10	0.10
Date Sampled				29/11/2024	29/11/2024
Time Taken				0830	0830
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status		

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	7.4	4
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8	< 1.8
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	17	13
Copper (aqua regia extractable)	mg/kg	1	MCERTS	15	12
Lead (aqua regia extractable)	mg/kg	1	MCERTS	65	41
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	11	8.4
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	76	82

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected



Analytical Report Number : 24-056641

Project / Site name: Former Police Station, East Grinstead

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

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

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
394425	TS1	ES	0.1	Brown clay and loam with vegetation
394426	TS2	ES	0.1	Brown clay and loam with vegetation

Analytical Report Number : 24-056641

Project / Site name: Former Police Station, East Grinstead

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters Heating/Cooling (PrW) DI Process Water (DI PrW)

Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos identification in Soil	Asbestos Identification with the use of polarised light microscopy in conjunction with dispersion staining techniques	In-house method based on HSG 248, 2021	A001B	D	ISO 17025
Organic matter (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate (Walkley Black Method)	In-house method	L009B	D	MCERTS
Sulphide in soil	Determination of sulphide in soil by acidification and heating to liberate hydrogen sulphide, trapped in an alkaline solution then assayed by ion selective electrode	In-house method	L010-PL	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically (up to 30°C)	In-house method	L019B	W	NONE
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight	In-house method based on British Standard Methods and MCERTS requirements.	L019B	D	NONE
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil	L038B	D	MCERTS
Sulphate, water soluble, in soil (16hr extraction)	Sulphate, water soluble, in soil (16hr extraction)	In-house method	L038B	D	MCERTS
Speciated PAHs and/or Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds (including PAH) in soil by extraction in dichloromethane and hexane followed by GC-MS	In-house method based on USEPA 8270	L064B	D	MCERTS
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in NaOH and addition of 1,5 diphenylcarbazide followed by colorimetry	In-house method	L080-PL	W	MCERTS
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080-PL	W	MCERTS
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080-PL	W	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement	In-house method	L099-PL	D	MCERTS

For method numbers ending in 'UK' or 'A' analysis have been carried out in our laboratory in the United Kingdom (Watford).

For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).

For method numbers ending in 'PL' or 'B' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30°C.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Quality control parameter failure associated with individual result applies to calculated sum of individuals.

The result for sum should be interpreted with caution

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

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

Notes:

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

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

[1] Where ranges of values are given for organic contaminants the screening value is dependent on the Soil +Organic Matter.

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

[3] C4SL (DEFRA 2014).

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

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

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

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

APPENDIX E

Photographs





View towards the southeast of the site



View towards the northeast showing onsite and offsite soft landscaping



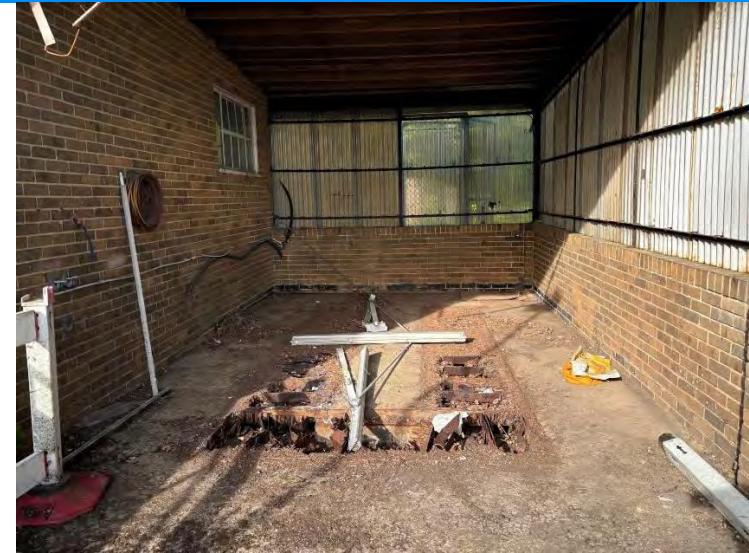
View towards the east showing the former police station and asbestos removal



Western view towards the front of former police station building



Exiting structure along northern boundary and limited soft landscaping



Former car inspection pit in existing building towards the north of the site



Southern view towards the existing onsite buildings



South-western view of existing buildings likely formerly used for vehicle storage



Possible tank covers and a pump island on the northwest of the site.



Suspected pump island.



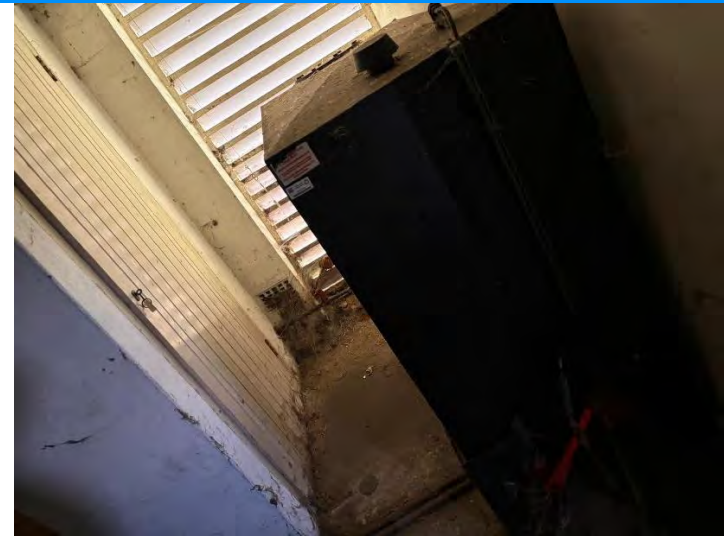
Suspected (decommissioned) vent pipe to underground tanks.



Suspected interceptor on the north side of the courtyard.



Inside the garage, with evidence of hydrocarbon staining



Tank in the south-eastern area of the building



Ventilation system associated with the tank



Garages towards the north of the site



TP01 showing existing stepped building foundations



TP01 soil arisings



TP02 showing existing foundations



TP02 showing stepped foundations



Open area to the west of the buildings.



As previous photograph



TS1



TS2

APPENDIX F

Phase 1 Desk Study – Historical Mapping



Historical Ordnance Survey Map Interpretation				
Date	Scale	Features On Site	Features Off Site	Significant Potential Contamination Sources
1870-1890	1:2,500	Site formed part of an undeveloped field.	The surrounding area is also largely undeveloped, with the exception of several large detached houses to the north, southeast and south of the site, including East Court 90m SE of the site. A cutting 9m W. Two lakes are present ~80m SW.	None identified
1898	1:2,500	The site is unchanged.	The surrounding area is also largely unchanged, with the exception of some residential development to the SW.	None identified
1910	1:2,500	The site appears unchanged.	The surrounding area also appears significantly unchanged.	None identified
1931	1:2,500	The site appears unchanged	The surrounding area also appears unchanged, with the exception of some further residential development, and a Cemetery~90m NW of the site.	None identified
1962-1964	1:2,500	The site appears unchanged	The surrounding area also appears unchanged	None identified
1967	1:2,500	The majority of the site footprint occupied by a Police Station.	Buildings are shown to the immediate north and south of the site. Fairly extensive residential development, particularly to the north of the site, has taken place.	Onsite Police Station.
1979	1:1,250	The site appears unchanged from the earlier mapping, shown as a police station.	The buildings to the immediate north are shown as East Court Cottage, and to the south as County and Magistrates' Court. Fairly extensive residential development, particularly to the north of the site, has taken place.	Onsite Police Station and substation.
1974	1:2,500	The site appears unchanged.	The surrounding area also appears unchanged	Onsite Police Station and substation.
1994-1995	1:1,250	The site appears unchanged	The surrounding area also appears unchanged	Onsite Police Station and substation.
1995	1:1,250	The site appears unchanged	The surrounding area also appears unchanged	Onsite Police Station and substation.



Historical Ordnance Survey Map Interpretation				
Date	Scale	Features On Site	Features Off Site	Significant Potential Contamination Sources
1999	Historic Aerial Photography	The site appears unchanged	The surrounding area also appears unchanged	Onsite Police Station and substation.
2024	1:10,560	The site appears unchanged.	The surrounding area also appears significantly unchanged.	Onsite Police Station and substation.

NOTE: Additional maps at 1:10,560 and 1:10000 scale of similar age have been obtained. These maps are appended but do not provide much additional information.

Historical Mapping Legends

Ordnance Survey County Series 1:10,560

	Gravel Pit		Sand Pit		Other Pits
	Quarry		Shingle		Orchard
	Osiers		Reeds		Marsh
	Mixed Wood		Deciduous		Brushwood
	Fir		Furze		Rough Pasture
	Arrow denotes flow of water		Trigonometrical Station		
	Site of Antiquities		Bench Mark		
	Pump, Guide Post, Signal Post		Well, Spring, Boundary Post		
	•285 Surface Level				
	Sketched Contour		Instrumental Contour		
	Main Roads		Minor Roads		
	Sunken Road		Raised Road		
	Road over Railway		Railway over River		
	Railway over Road		Level Crossing		
	Road over River or Canal		Road over Stream		
	Road over Stream				
	County Boundary (Geographical)				
	County & Civil Parish Boundary				
	Administrative County & Civil Parish Boundary				
	County Borough Boundary (England)				
	County Burgh Boundary (Scotland)				
	Rural District Boundary				
	Civil Parish Boundary				

Ordnance Survey Plan 1:10,000

	Chalk Pit, Clay Pit or Quarry		Gravel Pit
	Sand Pit		Disused Pit or Quarry
	Refuse or Slag Heap		Lake, Loch or Pond
	Dunes		Boulders
	Coniferous Trees		Non-Coniferous Trees
	Orchard		Scrub
	Bracken		Heath
	Marsh		Reeds
	Building		Glasshouse
	Sloping Masonry		Pylon
	Cutting		Embankment
	Road Under		Road Over
	Level Crossing		Foot Bridge
	Standard Gauge Multiple Track		Standard Gauge Single Track
	Siding, Tramway or Mineral Line		Narrow Gauge
	Geographical County		Administrative County, County Borough or County of City
	Municipal Borough, Urban or Rural District, Burgh or District Council		Borough, Burgh or County Constituency
	Civil Parish		
	BP, BS Boundary Post or Stone		Police Station
	Church		Post Office
	Club House		Public Convenience
	Fire Engine Station		Public House
	Foot Bridge		Signal Box
	Fountain		Spring
	Guide Post		Telephone Call Box
	Mile Post		Telephone Call Post
	Mile Stone		Well

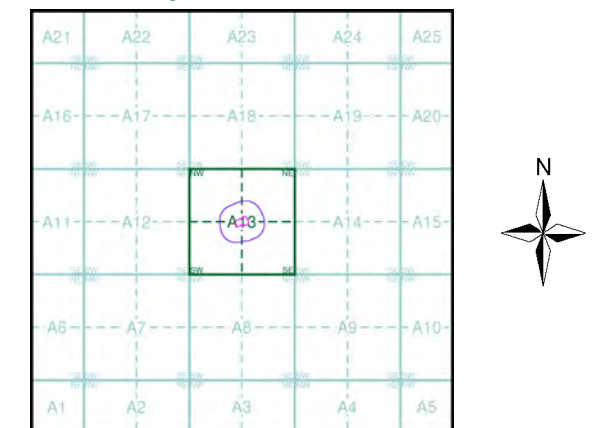
1:10,000 Raster Mapping

	Gravel Pit		Refuse tip or slag heap
	Rock		Rock (scattered)
	Boulders		Boulders (scattered)
	Shingle		Mud
	Sand		Sand Pit
	Slopes		Top of cliff
	General detail		Underground detail
	Overhead detail		Narrow gauge railway
	Multi-track railway		Single track railway
	County boundary (England only)		Civil, parish or community boundary
	District, Unitary, Metropolitan, London Borough boundary		Constituency boundary
	Area of wooded vegetation		Non-coniferous trees
	Non-coniferous trees (scattered)		Coniferous trees
	Coniferous trees (scattered)		Positioned tree
	Orchard		Coppice or Osiers
	Rough Grassland		Heath
	Scrub		Marsh, Salt Marsh or Reeds
	Water feature		Flow arrows
	Mean high water (springs)		Mean low water (springs)
	Telephone line (where shown)		Electricity transmission line (with poles)
	Bench mark (where shown)		Triangulation station
	Point feature (e.g. Guide Post or Mile Stone)		Pylon, flare stack or lighting tower
	Site of (antiquity)		Glasshouse
	General Building		Important Building

Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Surrey	1:10,560	1872	2
Sussex	1:10,560	1878	3
Sussex	1:10,560	1899	4
Surrey	1:10,560	1899	5
Sussex	1:10,560	1911	6
Surrey	1:10,560	1914 - 1915	7
Sussex	1:10,560	1929	8
Sussex	1:10,560	1932	9
Sussex	1:10,560	1938 - 1950	10
Historical Aerial Photography	1:10,560	1947	11
Ordnance Survey Plan	1:10,000	1961 - 1963	12
Ordnance Survey Plan	1:10,000	1977 - 1978	13
Ordnance Survey Plan	1:10,000	1980	14
10K Raster Mapping	1:10,000	1999	15
10K Raster Mapping	1:10,000	2006	16
VectorMap Local	1:10,000	2024	17

Historical Map - Slice A



Order Details

Order Number: 356001538_1_1
Customer Ref: J15797/SM/AM
National Grid Reference: 539780, 138670
Slice: A
Site Area (Ha): 0.36
Search Buffer (m): 1000

Site Details

Former Police Station, East Court House, EAST GRINSTEAD, RH19 3LS

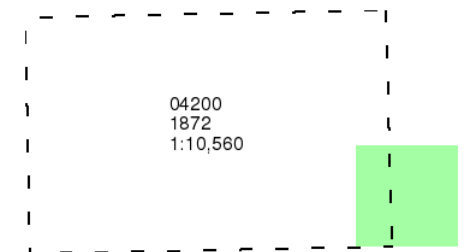
Surrey

Published 1872

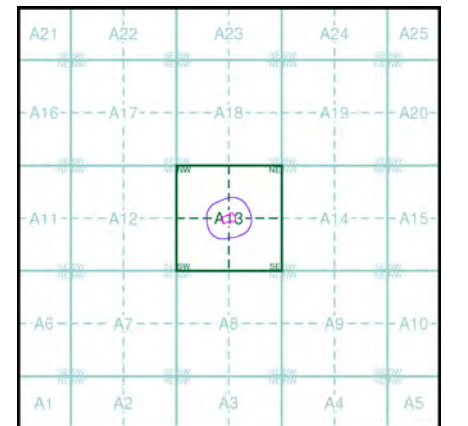
Source map scale - 1:10,560

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

Order Number:

356001538_1_1

Customer Ref:

J15797/SM/AM

National Grid Reference:

539780, 138670

Slice:

A

Site Area (Ha):

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Search Buffer (m):

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Site Details

Former Police Station, East Court House, EAST GRINSTEAD, RH19 3LS

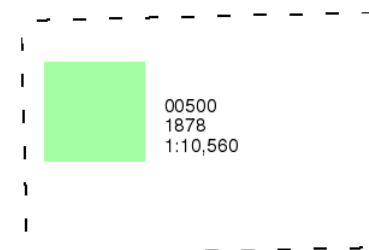
Sussex

Published 1878

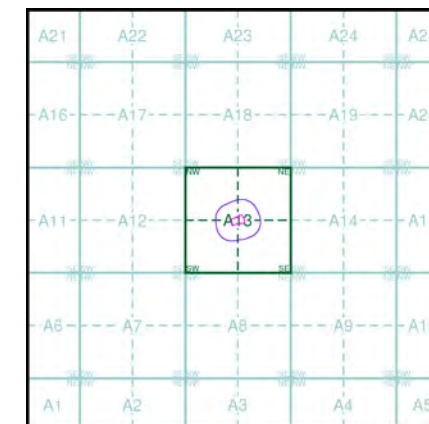
Source map scale - 1:10,560

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Map Name(s) and Date(s)



Historical Map - Slice A



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Customer Ref: J15797/SM/AM
National Grid Reference: 539780, 138670
Slice: A
Site Area (Ha): 0.36
Search Buffer (m): 1000

Site Details

Former Police Station, East Court House, EAST GRINSTEAD,
RH19 3LS

Sussex

Published 1899

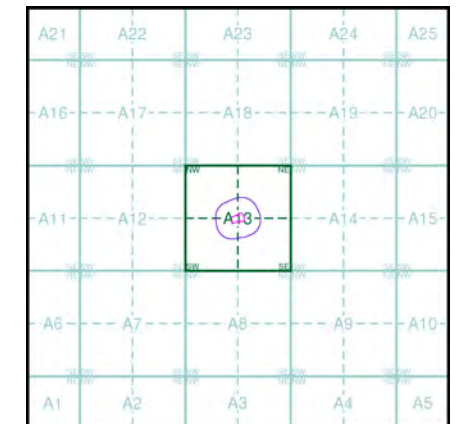
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Map Name(s) and Date(s)

005NW
1899
1:10,560
005SW
1899
1:10,560

Historical Map - Slice A

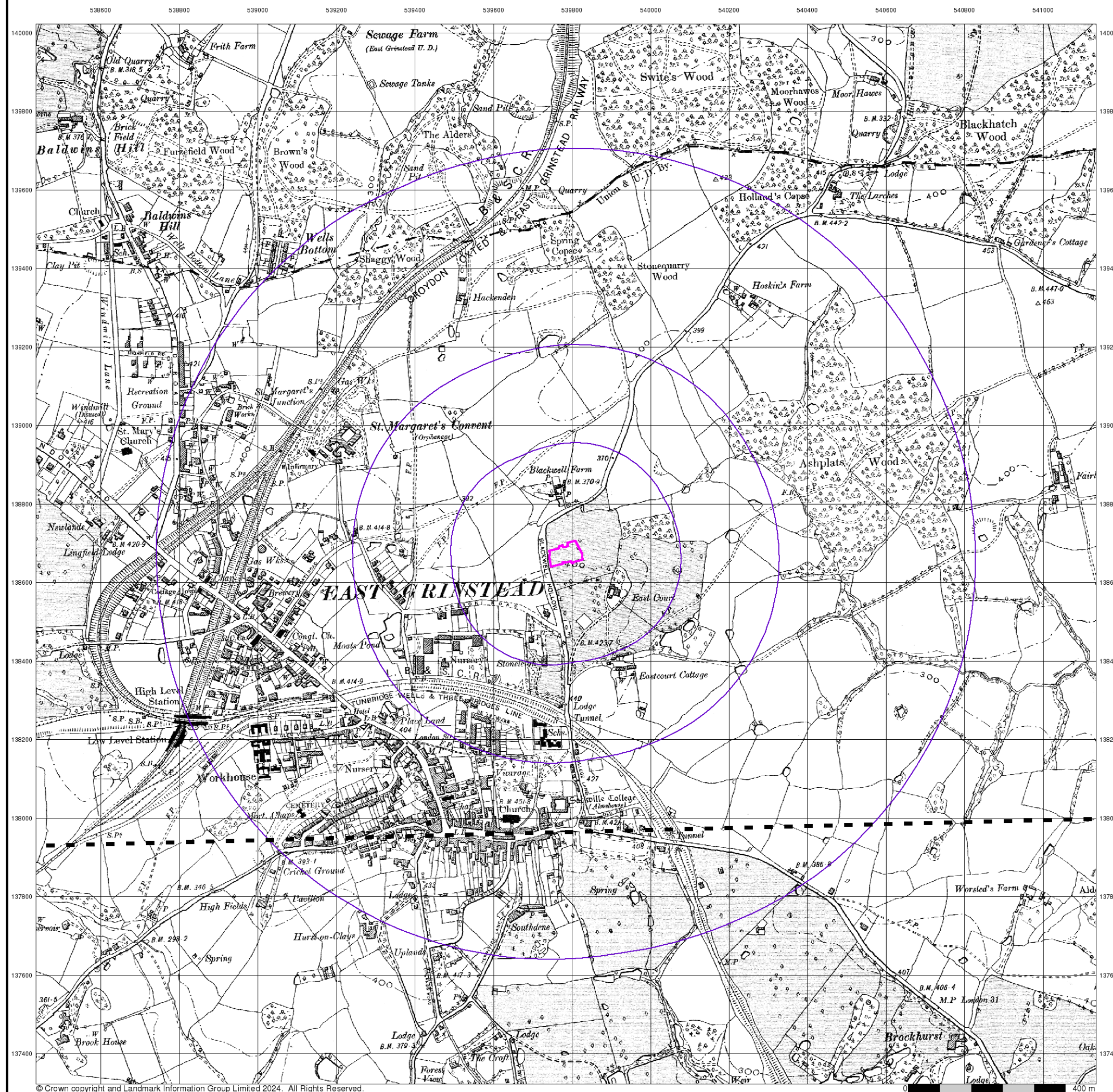


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Site Details

Former Police Station, East Court House, EAST GRINSTEAD,
RH19 3LS



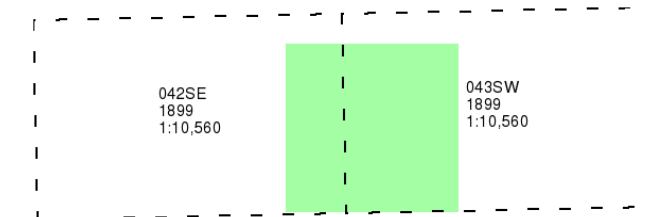
Surrey

Published 1899

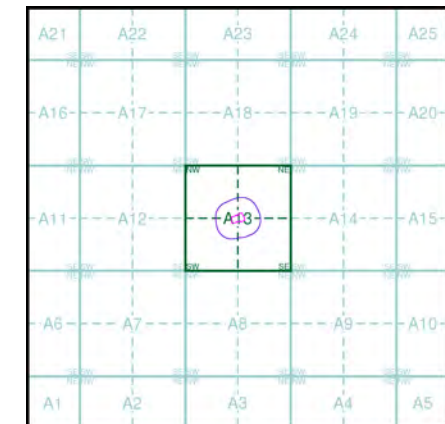
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Map Name(s) and Date(s)



Historical Map - Slice A

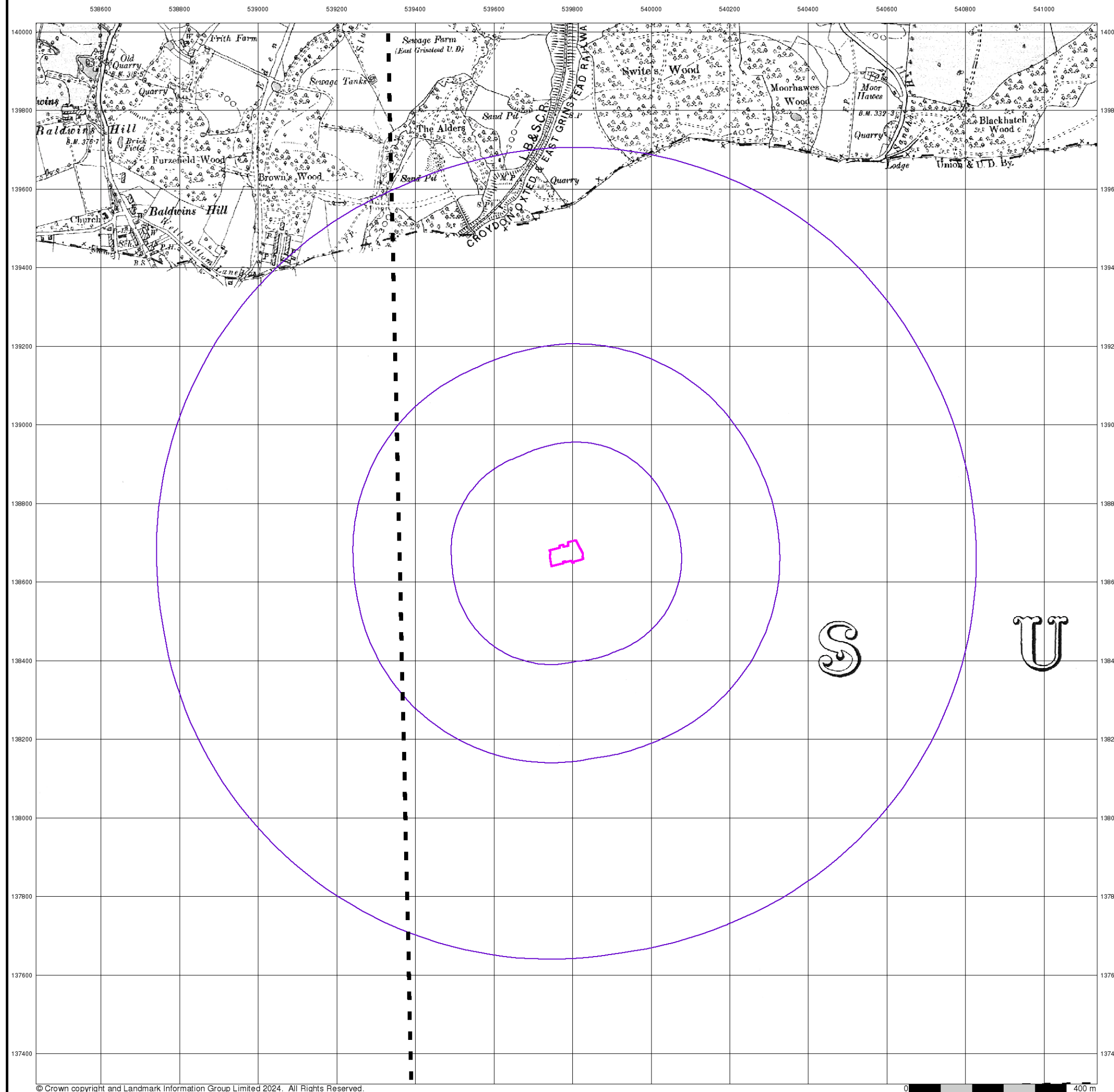


Order Details

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National Grid Reference: 539780, 138670
Slice: A
Site Area (Ha): 0.36
Search Buffer (m): 1000

Site Details

Former Police Station, East Court House, EAST GRINSTEAD, RH19 3LS



Sussex

Published 1911

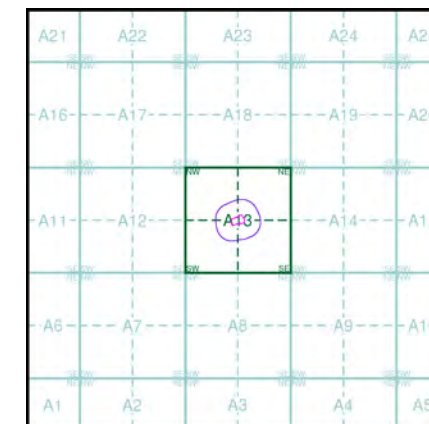
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Map Name(s) and Date(s)

005NW
1911
1:10,560
005SW
1911
1:10,560

Historical Map - Slice A

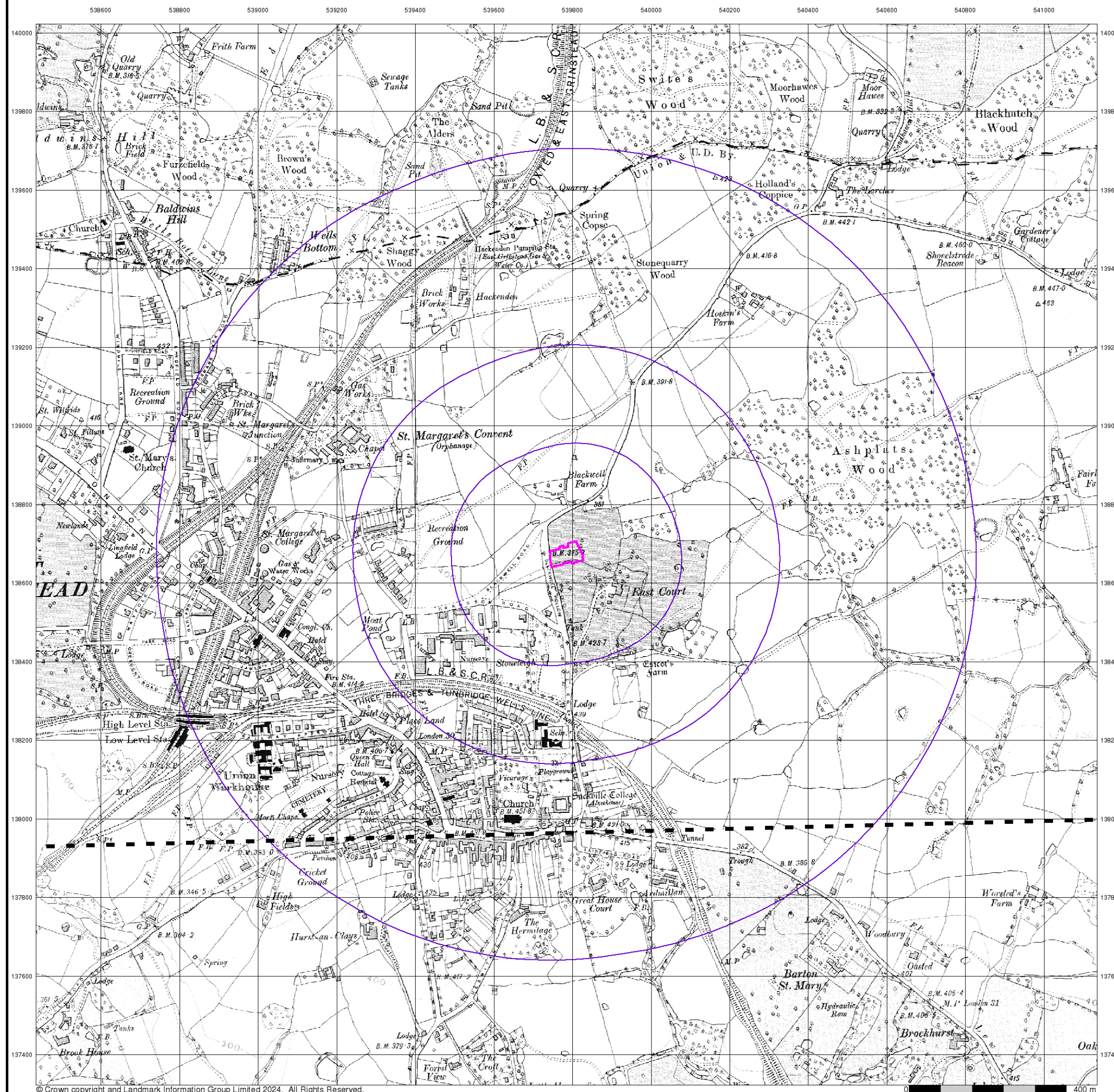


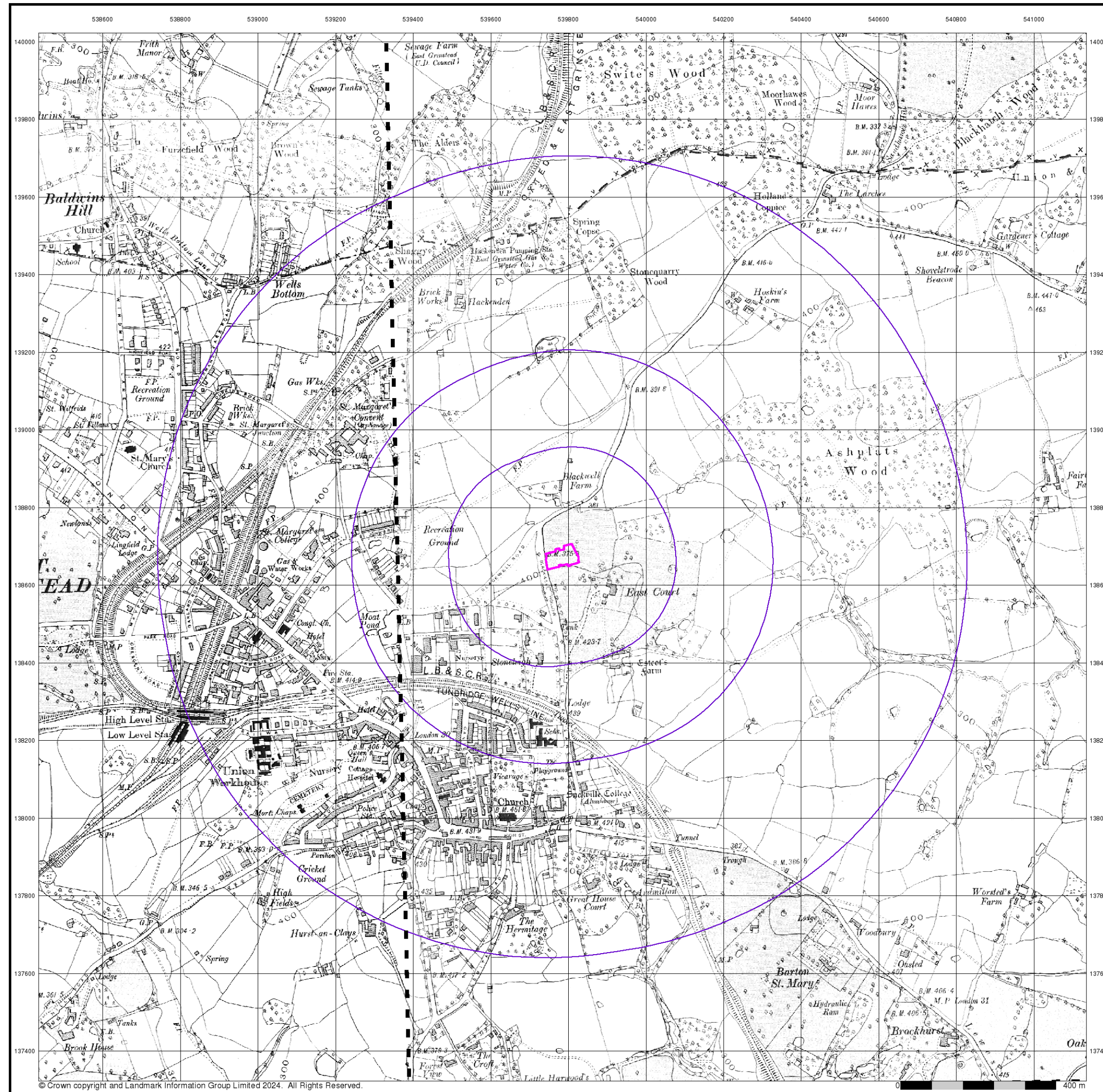
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Slice: A
Site Area (Ha): 0.36
Search Buffer (m): 1000

Site Details

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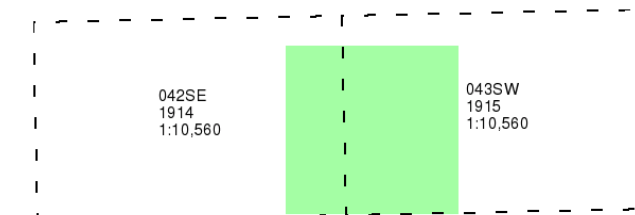
Surrey

Published 1914 - 1915

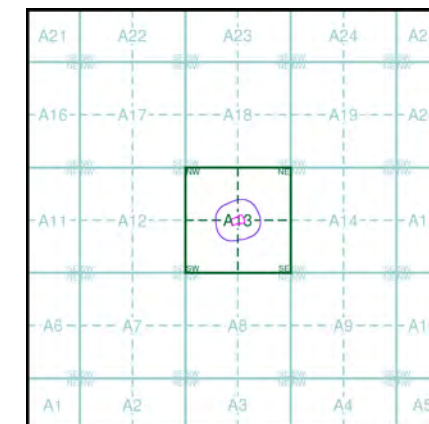
Source map scale - 1:10,560

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

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Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk