



# **GROUND CONDITION ASSESSMENT REPORT**

**Site:  
Bexhill High School – Gunters Lane**

**Client:  
East Sussex County Council**

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0.0 EXECUTIVE SUMMARY

Current Site Status	The site is currently a school, located to the west of Gunter's Lane, Bexhill, near the intersection with Turkey Road, at National Grid Reference 573020, 109170. The surrounding areas comprise residential land use.
Site History	The historic maps for the Gunter's Lane campus of Bexhill High School show the site to remain undeveloped until the 2000 OS extract where the school is detailed to have been developed as present day.
Geology	Reference to the British Geological Survey (BGS) Map (Sheet 320/321, Hastings and Dungeness, Scale 1:50,000) indicates the site to overlie Tunbridge Wells Sand over Wadhurst Clay. The site lies to the north of the Old Town Fault.
Hydrogeology	The Environment Agency Groundwater Vulnerability Map (Sheet 46, East Sussex and West Kent 1:100,000) indicates the site to be overlying minor aquifer. The minor aquifer is thought to be associated with the Tunbridge Wells Sand. The overlying soils are classed as urban, urban soils are based on fewer observations than elsewhere. A worst case vulnerability is assumed until proved otherwise. The site is not located within a Groundwater Source Protection Zone.
Hydrology	The nearest surface water features to the site appear to be the drainage channels/streams located approximately 2m to the west of the site. The site is situated approximately 1.5km from the coast. The site is not located within a tidal floodplain.
Ground Investigations	Site investigation works were undertaken by White Young Green Environmental between the 7th and 12th January 2008.  The intrusive investigation comprised four cable percussive boreholes carried out to assess the sub surface stratigraphy and enable the collection of representative samples for geotechnical and chemical testing.
Ground Conditions	Ground conditions encountered were broadly consistent with those identified in the published literature and in summary comprised Topsoil over unit of the Tunbridge Wells Sand Formation.  Groundwater was encountered at depth between 2.00 and 6.60mbgl in BHs 1A and 3 and absent from BH4. These widely varying levels suggest that the groundwater is present on site as a series of perched water bodies with limited lateral continuity
Ground Contamination Assessment	Soil and Made Ground was identified with contaminants of concern recorded at concentrations below those that could present a risk to human health or the environment but at concentrations that could present a risk to buried services.
Recommendations for contamination issues	In order to mitigate any potential risks to on and off site receptors from the identified contaminant sources the following measures are recommended: <ul style="list-style-type: none"> <li>• Materials used for buried services, such as water supply pipes, should be of sufficient specification such that they are not at risk from chemical attack by the contaminant concentrations in the soil.</li> <li>• Compliance with relevant Health and Safety procedures during construction works.</li> </ul>
Geotechnical considerations and Recommendations	The ground investigation has revealed very dense Sands with some stiff clay interbeds and partially lithified sandstones immediately beneath the Topsoil. The allowable bearing pressure within this stratum has been calculated based on the Standard Penetration Testing (SPT) and suggests $q_{all}$ of 470kN/m <sup>2</sup> after the application of a correction to account for the shallow water table.  <b>With a maximum column load of 300kN, 1m x 1m pad foundations founded at 1mbgl are considered the most appropriate foundation solution. At this intensity of loading total settlement should not exceed 10mm. Some variation in the subsurface stratigraphy of the site was reported, if these variations are found to be present then differential settlement may occur under the building footprint, calculations show that these settlements will be less than 8mm.</b>  <b>A ground bearing floor slab is appropriate for the ground conditions encountered at the site. The relatively low loading of the slab will mean that settlement will be less than 5mm. Given the presence of groundwater within 1m of the ground surface and the need to cut back into the existing slope to form a development platform it may become necessary to consider the installation of drainage beneath the slab to alleviate any excessive uplift forces</b>

<p>Geotechnical considerations and Recommendations</p>	<p>Californian Bearing Ratio testing carried out in three locations on the site suggests a CBR of 3%. This value seems on the low side based on field observations of the Tunbridge Wells Sand and is likely to increase to circa 15% with depth.</p> <p>Excavations within the Tunbridge Wells Sand Formation are likely to be stable in the short term. However, the presence of groundwater within 1m of the ground surface may cause some instability if encountered. Furthermore it may prove necessary to consider dewatering of excavations.</p> <p>Laboratory chemical testing of pH and sulphate concentrations has indicated a Design Sulfate Classification of DS-2 in accordance with BRE Special Digest 1. Given the soil conditions encountered and assumed mobile groundwater through both the Tunbridge Wells Sand Formation an ACEC classification of AC-2 is considered appropriate for this site</p>
<p><i>This sheet is intended to provide a summary only of the initial indicative assessment study of the site in relation to ground contamination. It does not provide a definitive engineering analysis for the purposes of costing or construction, and is subject to the limitation of the agreed brief.</i></p>	

## **1.0 INTRODUCTION**

### **1.1 Instruction**

White Young Green Environmental (WYGE) was commissioned by East Sussex County Council to undertake a Ground Condition Assessment for the proposed construction of a new school building on the site of the current Bexhill High School, Bexhill.

The brief was to undertake a site visit to inspect the site and, using the information provided in an Environmental Database Search, assess and report on the findings with respect to potential ground contamination and potential associated future liabilities in accordance with the Preliminary Risk Assessment procedure outlined in the Model Procedures for the Management of Land Contamination (CLR 11), published by the Environment Agency.

This report is prepared in line with the agreed brief detailed within our proposal, dated 7<sup>th</sup> September 2007 (ref: QS0095-1) and its terms and conditions, and is subject to the report conditions shown in Appendix A.

### **1.2 Legal context**

Current environmental legislation in respect of contaminated land includes the Environment Act 1995, Water Resources Act 1994, Environmental Protection Act 1990, Health and Safety at Work Act 1994, Town and Country Planning Act 1990 and Building Regulations 1985. Part IIA of the EPA 1990 was implemented by Section 57 of the Environment Act (EA) 1995. The regime is detailed in the Department of Environment, Transport and Regions (DETR) circular 01/2006 which includes a statement of government policy, a description of the control regime, the statutory guidance and a guide to the supporting regulations.

The regime provides a statutory definition of contaminated land as follows:

“any land which appears to a district council in whose district it is situated to be in such a condition, by reason of substances in, on or under the land, that:

- Significant harm is being caused, or there is a significant possibility of such harm being caused; or
- Pollution of waterways or underground strata is being, or is likely to be, caused.”

Inherent in this definition is the requirement for contamination risk assessment to be undertaken on a site specific basis, as the potential for harm is determined by the site's end use and its specific environmental setting.

### **1.3 Methodology**

This report has been prepared in accordance with published Environment Agency guidance ('Model Procedures for the Management of Land Contamination – Contaminated Land Report (CLR) 11'). CLR 11 provides the technical framework for structured decision making about land contamination and builds on previous work carried out under the Contaminated Land Research Programme (of the former Department of the Environment). CLR 11 has adopted and refined the well recognised methodology and terminology that has been used in contaminated land risk assessment for a number of years.

### 1.3.1 Pollutant linkage concept

In the context of land contamination, there are three essential elements to any risk:

- A **contaminant source** – a substance that is in, on or under the land and has the potential to cause harm or to cause pollution of controlled waters.
- A **receptor** – in general terms, something that could be adversely affected by a contaminant, such as people, an ecological system, property, or a water body.
- A **pathway** – a route or means by which a receptor can be exposed to, or affected by, a contaminant.

Each of these elements can exist independently, but they create a risk only where they are linked together, so that a particular contaminant affects a particular receptor through a particular pathway. This kind of linked combination of contaminant–pathway–receptor is described as a pollutant linkage.

### 1.3.2 Conceptual model

An important principal throughout the overall process of risk assessment is the need to formulate and develop a **conceptual model** for the site, which supports the identification and assessment of pollutant linkages. A conceptual model represents the characteristics of the site in diagrammatic or written form that shows the possible relationships between contaminants, pathways and receptors (pollutant linkages).

### 1.3.3 Risk assessment

CLR 11 advocates a phased approach to risk assessment comprising the following in order, as necessary:

**Preliminary Risk Assessment** – a desk study consisting of a review of documentary, anecdotal and site walk over evidence.

**Generic Quantitative Risk Assessment (GQRA)** - comparison of contaminant concentrations with generic assessment criteria.

**Detailed Quantitative Risk Assessment (DQRA)** - comparison of contaminant concentrations with site-specific assessment criteria.

This report comprises the Preliminary and Generic Quantitative Risk assessment phases with an additional geotechnical assessment.

## 1.4 Proposed use

It is understood that a new school building is to be constructed within the existing school grounds.

A change in site use would result in the need for re-assessment of risk criteria and the conclusions and recommendations resulting from the risk assessment could therefore significantly change.

**1.5 Report scope and limitations**

This report is based upon a review of readily available historical and current information, a site walkover survey, our own geological and hydrogeological map library and information from an environmental database search.

The assessment is based on the proposed continued use as a school and as stated in Section 1.4 the outcomes of this assessment could change if the end uses change.

The information contained in this report is intended for the use of East Sussex County Council. WYGE can take no responsibility for the use of this information by any other party or for uses other than that described in this report.

**2.0 PRELIMINARY RISK ASSESSMENT**

**2.1 Site location**

The site is located to the west of Gunter's Lane, Bexhill, near the intersection with Turkey Road, at National Grid Reference 573020, 109170. The surrounding areas comprise residential land use.

The site location is shown on Figure 01.

**2.2 Site description**

An initial walkover of the site was carried out by an engineer from White Young Green Environmental in September 2007.

Access to the site was gained via the main entrance off Gunter's Lane. The school building is a brick constructed two-storey building developed circa 1995. Areas of asphalt car parking were located adjacent to the main building. Areas of maintained grass formed playing fields to the north and south of the school, with areas of hedgerow and woodland forming the western and southern site boundaries. A large number of semi mature trees had been planted in close proximity to the property onsite, with mature trees identified in the woodland.

Manholes and gullies relating to drainage were noted immediately surrounding the school building. Services are anticipated to exist under and adjacent to the school.

During the initial walkover survey, no evidence of Japanese Knotweed was observed.

**2.3 Site adjoining uses and boundaries**

The site is bounded by the following:

**Table 2.3: Surrounding land uses**

<b>Direction</b>	<b>Surrounding land uses</b>
To the north	Residential properties.
To the west	Playing fields.
To the east	Residential properties.
To the south	Playing field leading to residential properties.

**2.4 Site history**

**2.4.1 Summary**

Extracts of historical Ordnance Survey maps were reviewed for the period between 1875 and 2007 to determine the recorded sequence of site development. The information obtained is outlined below, with the OS map extracts included in the Envirocheck Report presented in Appendix B.

The historic maps for the Gunter's Lane campus of Bexhill High School show the site to remain undeveloped until the 2000 OS extract where the school is detailed to have been developed in its present day configuration.

## 2.4.2 Ordnance Survey review

The **1875-1878** 1:2,500 and 1:10,560 scale OS extracts show the site to occupy part of an agricultural field. A small road forms the northern and eastern site boundaries, with a small area of woodland adjacent to the western site boundary. Two small buildings are located to the east of site. The surrounding area is predominately occupied with agricultural fields and woodland.

The **1899** 1:2,500 and 1:10,560 scale OS extracts show little change to the site. In the surrounding area 'Highlands Brick Works' is detailed to the north of site. Residential development to the village of Bexhill to the southeast has occurred.

The **1909-1910** 1:2,500 and 1:10,560 scale OS extracts show little significant change to the site. Rapid residential development had occurred to the land southeast of site and the brickworks is now detailed as 'Old Clay Pits'.

The **1930-1951** 1:2,500 and 10,560 scale OS extract shows the site to be detailed as allotment gardens. A number of buildings including a school had been constructed in the immediate surrounding area to the northeast and northwest of site. In the surrounding area the land use to the south and east of site had changed from predominately agricultural to residential.

The **1955** 1:2,500 scale OS extract shows the site to have been detailed as a playing field. A drain is shown to run adjacent to the western site boundary. Residential development had occurred to the south of site.

The **1961-1968** 1:1,250, 1:2,500 and 1:10,560 scale OS extracts show little change to the site. In the surrounding area residential properties had been constructed to the north. Little other significant change to the site or surrounding area.

The **1974-1993** 1:10,000 and 1:1,250 scale OS extracts show little significant change to the site or surrounding area.

The **2000** 1:10,000 scale OS extract shows a school to have been constructed to the centre of the site as present day layout. No significant change to the site or surrounding area.

The **2007** 1:10,000 scale OS extract shows no significant change to the site or surrounding area.

## 2.5 Documented ground conditions

Ground conditions recorded in readily available sources are summarised below.

### 2.5.1 Geology

Reference to the British Geological Survey (BGS) Map (Sheet 320/321, Hastings and Dungeness, Scale 1:50,000) indicates the site to overlie Tunbridge Wells Sand over Wadhurst Clay. The site lies to the north of the Old Town Fault.

Although not indicated on the reviewed Geological Maps, the site is expected to be underlain by varying thicknesses of Made Ground, associated with the development of the site.

### 2.5.2 Hydrogeology

The Environment Agency Groundwater Vulnerability Map (Sheet 46, East Sussex and West Kent 1:100,000) indicates the site to be overlying minor aquifer. These can be fractured or potentially fractured rock, which do not have a high primary permeability, or other formations of variable permeability including unconsolidated deposits. Although these aquifers will seldom produce large quantities of water for abstraction, they are important both for local supplies and in providing base flow to rivers. The minor aquifer is thought to be associated with the Tunbridge Wells Sand.

The overlying soils are classed as urban, urban soils are based on fewer observations than elsewhere. A worst case vulnerability is assumed until proved otherwise.

The site is not located within a Groundwater Source Protection Zone.

### 2.5.3 Hydrology

The nearest surface water features to the site appear to be the drainage channels/streams located approximately 2m to the west of the site. The site is situated approximately 1.5km from the coast. The site is not located within a floodplain.

### 2.5.4 Radon

Radon is a naturally occurring radioactive gas which may be harmful to human health. Radon is generally released into the atmosphere in areas underlain by granite and limestone. Harmful concentrations of radon may build up if it becomes trapped in an enclosed space such as a building.

National Radiological Protection Board data presented within the Landmark Envirocheck Report indicates that the percentage of houses exceeding the Action Levels for Radon in this area is less than 1%. Therefore the British Geological Survey recommends that no radon protection measures are necessary in the construction of new buildings or extensions.

## 2.6 Environmental data search

A search of an environmental database was undertaken together with information from various other organisations as part of the desk study and is summarised in the following sections. The following summary is generally limited to locations within 250m of the site boundaries unless it is considered that installations or activities beyond that range could potentially have an impact on the site or be affected by the redevelopment of the site.

Discharge consents	There are no discharge consents recorded within 250m of the site.
Pollution incidents	There are no reports of a pollution incident within 250m of the site.
Water abstractions	There are no surface or groundwater abstractions within 250m.
Landfill Sites	There are no registered landfill sites located within 250m of the site
Fuel Stations	There are no fuel stations located within 250m of the site.

The site is located in an area which may not be affected by coal mining. There is no risk of collapsible, compressible, running sand ground stability hazards, ground dissolution stability hazards or shrinking or swelling clay ground stability hazards on site. A very low risk of landslide ground stability hazards is identified for the site. A low risk of shallow mining hazards exists on-site.

A total of 4no. contemporary trades have been identified in the database search within 250m of the site. These include architectural technologists, cleaners, vehicle dealers and garage services.

**2.7 Department of the Environment – Industry Profiles**

The Department of the Environment Industry Profiles do not cover the current or past uses of the site.

**2.8 Conclusions of preliminary risk assessment (PRA)**

The preliminary risk assessment identified no plausible pollutant sources or linkages that require further investigation and assessment. Therefore an intrusive investigation and generic quantitative risk assessment (GQRA) are not considered necessary other than to obtain geotechnical information for the site. However, as a geotechnical investigation is to be carried out, it is considered prudent to conduct limited chemical testing at the same time to confirm the preliminary risk assessment. A ground-gas assessment may also be required prior to the proposed development.

A change in site use may result in the need for re-assessment.

### 3.0 SUMMARY OF FIELDWORK

#### 3.1 Rationale and summary of scope

Site investigation works were undertaken by White Young Green Environmental between the 7<sup>th</sup> January and the 12<sup>th</sup> January 2008. The scope of the investigation is presented below.

- 4no. cable percussive boreholes to between 8.0 and 8.6mbgl.
- 1no. machine excavated trial pit.
- 3no. California Bearing Ratio tests
- Collection of representative samples to undergo a suite of geotechnical and chemical testing as detailed in later sections of this report.

A hard band of iron-cemented sandstone was encountered within the hand dug inspection pit causing the location to be moved to an adjacent position and drilled as BH1A.

On completion of site works BH2 and BH4 were installed with ground gas and groundwater monitoring standpipes and covered with traffic-rated flush covers; the remaining two positions were backfilled with arisings and surface finishes reinstated on a like for like basis.

The rationale for the investigation is presented below in Table 3.1.

**Table 3.1 Exploratory hole location rationale**

Location	Rationale	Max Depth (mbgl)
BH1A – BH4	4no. cable percussive boreholes to assess the nature and stratigraphy of the shallow subsurface materials adjacent, to the proposed development footprint. To allow the collection of representative samples of all encountered strata for geotechnical and chemical analyses.	8.60
BH2 – BH4	2no. gas / groundwater monitoring standpipes to facilitate groundgas and hydrogeological conditions affecting the site.	8.00
TP1	1no. machine excavated trial pit to carry out soakaway testing and assess the permeability of the underlying strata.	15.00

The layout of the exploratory positions is shown on Figure 2.

A total of eight soil samples were taken during the investigation and submitted to a UKAS accredited laboratory for analysis for a broad suite of commonly encountered contaminants including heavy metals, petroleum hydrocarbons and a range of inorganic compounds.

Representative disturbed and undisturbed samples of the encountered strata were collected and dispatched to a UKAS accredited geotechnical laboratory and tested for a range of classification and shear strength analyses.

#### 3.2 Monitoring

One monitoring return visits to the site was carried out on the 6<sup>th</sup> February 2008. The purpose of this return visit was to measure groundwater levels, to monitor the presence of ground gas from the monitoring wells and to obtain groundwater samples. All monitoring results, groundwater and ground gas, are presented in Appendix C.

### **3.3 Site investigation standards**

Methods employed during the investigation were generally undertaken in accordance with BS5930.

Soil descriptions and classification were compiled following the guidelines and recommendations detailed in BS EN ISO 14688-1.

**4.0 GROUND CONDITIONS ENCOUNTERED**

**4.1 Soil conditions**

Ground conditions encountered were broadly consistent with those identified in the published literature and in summary comprised Topsoil over unit of the Tunbridge Wells Sand Formation.

Variations in the strata thicknesses are summarised in Table 4.1 below, engineering logs are presented in Appendix D.

**Table 4.1 Summary of encountered ground conditions**

Location	Topsoil		Tunbridge Wells Sand Formation			
			Sand Facies		Clay Facies	
	From (mbgl)	Thickness (m)	From (mbgl)	Thickness (m)	From (mbgl)	Thickness (m)
BH11A	GL	0.40	0.40	5.80	6.20	>2.40
BH12	GL	0.60	0.60	4.80	5.40	>2.60
BH13	GL	0.40	0.40	>7.60	Not encountered	
BH14	GL	0.60	0.60	3.50	4.10	>4.30
TP1	GL	0.40	0.40	2.5	Not encountered	

GL – Ground Level

**4.1.1 Topsoil**

Topsoil comprising orange brown slightly silty clayey gravelly fine to medium sand was encountered in exploratory holes and attained thickness of between 0.4 and 0.6m.

**4.1.2 Tunbridge Wells Sand Formation**

Units of the Tunbridge Wells Sand Formation were present immediately below the Topsoil. Geologically this material is divided into the Upper and Lower Tunbridge Wells Sand Formation which is separated by the Grinstead Clay. It is not possible with the limited depth of borehole to identify where in this stratigraphy the site lies: However, it is worthy of note that clay formed the basal unit in three of the four boreholes. Therefore in this report the Tunbridge Well Sand Formation will be divided into sand and clay facies.

**Sand Facies**

The Sand Facies of the Tunbridge Wells Sand Formation formed the upper units of the encountered stratum. Attaining thicknesses of between 3.50m to >7.50 their distribution across the site suggests a possible dip to the stratum towards the west. The Sand Facies comprised a series of sand dominated units which varied from dense orange becoming grey sand with occasional sandstone bands to dense orange brown slightly silty gravelly sand.

In three of the four cable percussive boreholes a basal bed comprising gravelly sand can be recognised immediately above the units of the Clay Facies

**Clay Facies**

Very stiff becoming hard friable blue grey clay formed the basal bed in three of the four cable percussive boreholes. Although the description of the material is broadly similar to those published for the Grinstead Clay it is not possible to unequivocally attribute this material to that stratum.

**4.2 Obstructions**

No subsurface man-made obstructions were encountered during the drilling works. However, the presence of iron cemented sandstones and mudstones at varying depths across the site meant that periods of chiselling were required to progress boreholes.

**4.3 Groundwater conditions**

Groundwater was encountered at depth between 2.00 and 6.60mbgl in BHs 1A and 3 and absent from BH4. These widely varying levels suggest that the groundwater is present on site as a series of perched water bodies with limited lateral continuity.

**4.4 Visual/olfactory evidence of contamination**

During the ground investigation, no evidence of potential soil contamination was noted in any of the investigation locations.

## 5.0 GENERIC QUANTITATIVE RISK ASSESSMENT

### 5.1 Contamination assessment methodology

In order to assess the human health and environmental risks posed by potential contaminants within the underlying soils and groundwater, WYG undertook an initial screen of the laboratory results using generic assessment criteria. Generic assessment criteria are contaminant concentration values used for comparison purposes to assess the risk associated with contaminant concentrations found on site and are derived using non-site-specific information.

#### 5.1.1 Soils

In order to assess the soil analyses results with regard to potential human health risks, WYG have derived Tier 1 Screening Values (TSVs) in accordance with the UK framework set out in the most recent CLR (Contaminated Land Report) documents (CLR7-10, EA/DEFRA, 2002).

Ongoing research by the EA is being undertaken to produce toxicology reports (TOX series) for each of the contaminants identified within the CLR framework and then to produce published Soil Guideline Values (SGVs) using the Contaminated Land Exposure Assessment (CLEA) Model. To date, SGVs have been published for only a limited suite of contaminants, with SGVs derived for each contaminant for four different land use scenarios namely:

- residential with plant uptake;
- residential without plant uptake;
- allotments; and
- commercial and industrial.

Where SGVs have been published, these are adopted as the TSVs. For all other contaminants, TSVs have been derived in accordance with the CLR framework. A full list of the TSVs together with an indication of the method used for their derivation is provided in Appendix E. TSVs applicable to residential with plant uptake end use have been used for assessment of the site although the end users of the site (school aged children) are less sensitive receptors than those used to generate the TSVs.

Contaminant concentrations below the TSVs are considered not to warrant further risk assessment. However, concentrations of potential contaminants above the TSVs may require further consideration through statistical analysis, if appropriate. Residual risks from this stage may then require consideration through Detailed Quantitative Risk Assessment and/or remedial measures.

#### Assessment framework

In regards to human health, the CLEA model states that, 'the contamination is assumed to be at or within 1m of the surface' (CLR10 pg10). It is considered that at depths greater than 1m, the probability of human exposure via the direct contact pathways are significantly reduced, leaving inhalation of volatile compounds as the dominant pathway with regard to human health risks. Typically, volatile compounds only significantly affect the indoor inhalation pathway. Therefore, for the purposes of statistical analysis, data from the top 1.0 or 1.5m is used for assessment of risks to human health via direct contact pathways in accordance with the CLEA model, dependant on proposed future site levels.

### Statistical analysis

The CLEA guidelines state that for each contaminant, the upper 95th percentile confidence limit on the mean measured concentration (95%UCL) should be calculated and this value should be compared to the TSV. Maximum value tests should also be performed in accordance with the method outlined in Annex 1 of CLR7. The objective of these tests is to decide whether the maximum concentration observed should be treated as an outlier or whether it can reasonably be considered to come from the same underlying population as the other samples.

Annex 1 of CLR 7 describes a simplistic method for calculation of the 95%UCL value based on the arithmetic mean of the sample distribution, assuming the contaminant concentrations fall within a normal distribution. However, it is known that contaminant concentrations often tend towards lognormal or other distribution forms. Therefore, in order to calculate what are considered to be more representative 95%UCL values, the contaminant concentrations have first been assessed to determine if each contaminant distribution is closer to a normal or lognormal distribution. If a dataset was found to be lognormally distributed, the geometric mean was used to calculate the 95%UCL, for those that were found to be normally distributed, the arithmetic mean was used to calculate the 95%UCL. Constituent non-detects were assigned a value equal to the reported analytical laboratory limit of detection, considered reasonably conservative in accordance with CLR principles. Any identified outliers are excluded from the datasets used in calculation of the 95%UCL value.

#### 5.1.2 Water

The results of the groundwater analyses have been assessed by direct comparison with the freshwater Environmental Quality Standards (EQS), or, in the absence of EQSs, UK Drinking Water Standards or other appropriate guidance values. For certain compounds, the EQS is quoted as a range of values based on the alkalinity of the water, where the measured concentration lies within this range, the results are interpreted qualitatively.

#### 5.1.3 Leachate

Leachate analysis is assessed by the same process used for water analysis.

#### 5.1.4 Ground gas

The criteria used to assess the ground gas monitoring results have been taken from the following guidance documents:

- Assessing risks posed by ground gases to buildings, CIRIA Report C665, 2007
- Code of practice for the characterisation and remediation from ground gas in affected developments, British Standard BS 8485, 2007

The values recorded at the site have been compared to guideline values given in CIRIA Report C665, (2007) 'Assessing risks posed by ground gases to buildings'.

Table 5.1, overleaf, outlines the method of classifying the risk posed by a gas regime using a combination of the flow and concentrations characteristics of the gas.

**Table 5.1 – Proposed method for classifying gassing sites (after CIRIA C665 2007)**

Characteristic Situation (CIRIA 149)	Risk classification	Gas screening value of CH <sub>4</sub> or CO <sub>2</sub> (l/hr) <sup>1</sup>	Additional limiting factors	Typical source of generation
1	Very low risk	<0.07	Methane not to exceed 1% by volume and carbon dioxide not to exceed 5% by volume	Natural soils with low organic content “Typical” made ground
2	Low risk	<0.7	Borehole air flow rate not to exceed 70l/hr otherwise increase to characteristic situation 3	Natural soil, high peat/organic content. “Typical” made ground
3	Moderate risk	<3.5		Old landfill, inert waste, mineworking flooded
4	Moderate to high risk	<15	Quantitative risk assessment required to evaluate scope of protection measures.	Mineworking - susceptible to flooding, completed landfill, (WMP 26B criteria)
5	High risk	<70		Mineworking unflooded inactive with shallow workings near surface
6	Very high risk	>70		Recent landfill site

1. Gas screening value (l/hr) = gas concentration (%) x maximum measured borehole flow rate (l/hr)
2. Site characterisation should be based on gas monitoring of concentrations and borehole flow rates for the minimum periods defined in Table 5.5 of CIRIA C659.
3. Source of gas and generation potential/performance must be identified.
4. Soil gas investigation to be in accordance with guidelines provided in Chapters 4 to 6 of CIRIA C665.
5. If there is no detectable flow use the limit of detection of the instrument.

The frequency and period of monitoring is assessed based on the gas generation potential of the source material and the sensitivity of the development, in accordance with Table 5.5 of CIRIA C665.

These typical monitoring recommendations vary between four sets of readings over a one month period for a commercial development and a very low generation potential source to 24 rounds over 24 months for a residential property and a very high generation potential source. However, these are recognised as typical minimum requirements that may require fewer or additional readings depending on site specific circumstances.

Where possible, monitoring rounds are undertaken during a range of atmospheric conditions to enable their influence on gas conditions to be assessed. As monitoring over the recommended periods is frequently impractical on development sites, the monitoring rounds undertaken are conducted during the worst case conditions (e.g. low and falling atmospheric pressure) during the time available, as far as reasonably practicable, in order to limit the level of uncertainty resulting from the reduced monitoring period. It may, however, be appropriate to raise the Characteristic Situation to account for uncertainties on a site by site basis.

The Characteristic Situation for a monitoring location is determined using the worst case gas screening value for methane or carbon dioxide from all of the monitoring rounds at that location. Following the precautionary principal, the most stringent of the Characteristic Situations for the monitoring locations within the site is generally used to classify the site as a whole.

## **5.2 Soils assessment**

### **5.2.1 General**

A total of eight soil samples collected during the site investigation were submitted to a UKAS accredited laboratory for analysis for a suite of heavy metals, phytotoxic metals (harmful to plants), phenols, speciated polyaromatic hydrocarbons (PAHs), speciated total petroleum hydrocarbons (TPH) and several inorganic parameters. The results of the laboratory analyses are summarised in Appendix F, in which they are compared to the relevant generic assessment criteria. A full set of all the laboratory test certificates is presented as Appendix G.

The range of potentially hazardous contaminants present on the site can be wide and varied and the suite has been chosen to reflect both commonly found contaminants and others indicated by research to have a significant risk of being present. It is, however, possible that others may exist for which analyses have not been carried out or which were outside the scope of completed exploratory holes.

The decision to recommend acceptability or a requirement for remediation is based on the evaluation of a number of factors which when combined together presents a statutory or non-statutory risk that may require remedial action.

### **5.2.2 Heavy metals**

Arsenic was identified at concentrations slightly in excess of the WYG TSV for residential with or without plant uptake end use (20mg/kg) but significantly below the commercial/industrial TSV (500mg/kg) in three of the soil samples analysed (22-89mg/kg). Given the lower sensitivity of the future site users compared to the 0-6 year old child receptor used to generate the residential TSVs and the limited time the future site users will spend in contact with the soil at the site, the slightly elevated arsenic concentrations recorded in these samples are not considered to represent a significant source of contamination with regard to human health. No other heavy metal concentrations were identified as exceeding the WYG TSVs. Therefore heavy metals are not considered to represent a significant source of contamination with regard to human health or environmental receptors.

However, arsenic was identified at concentrations slightly in excess of the Water Regulations Advisory Scheme material selection threshold levels for buried services in the near surface soils from two of the four borehole locations.

### **5.2.3 Phytotoxic metals**

No TSVs are available for phytotoxic metals as they are not currently considered to present a significant risk to human health. However, none of the concentrations of these metals are considered to be significantly elevated.

#### 5.2.4 Petroleum hydrocarbons

Total petroleum hydrocarbons (TPH) were identified at concentrations slightly above laboratory detection limits but well below WYG TSVs in all of the soil samples across the site. Therefore TPHs are not considered to represent a significant source of contamination with regard to human health or environmental receptors. Concentrations of TPH also fell below the Water Regulations Advisory Scheme material selection threshold levels for buried services in all of the samples.

#### 5.2.5 Polyaromatic hydrocarbons (PAHs)

Polyaromatic hydrocarbons (PAHs) were predominantly identified at concentrations below laboratory detection limits and well below WYG TSVs in all of the soil samples across the site. Therefore PAHs are not considered to represent a significant source of contamination with regard to human health or environmental receptors. PAH concentrations also fall below the Water Regulations Advisory Scheme material selection threshold levels for buried services.

#### 5.2.6 Phenols

Phenols were identified at concentrations below laboratory detection limits and well below WYG TSVs in all of the soil samples across the site. Therefore phenols are not considered to represent a significant source of contamination with regard to human health or environmental receptors. Phenol concentrations also fall below the Water Regulations Advisory Scheme material selection threshold levels for buried services.

#### 5.2.7 Inorganics

The concentrations of cyanide fell below laboratory detection limits in all of the samples analysed. The pH of the samples analysed was generally low but within the natural 5-9 range. No loose asbestos fibres were identified within any of the samples analysed.

### 5.3 Soil statistical analysis

It was not considered appropriate to consider any of the analytical results further using statistical analysis methods at this stage.

### 5.4 Groundwater assessment

No groundwater samples were taken for analysis during the monitoring round as no significant contaminant concentrations were identified in the soil that could potentially leach into the underlying groundwater.

### 5.5 Preliminary ground gas assessment

The majority of the boreholes across the site identified minimal (<0.5m) or no made ground beneath the site with the holes entering bedrock almost immediately in all of the locations. No evidence of biodegradable or other material with the potential to generate significant quantities of ground gas was identified in topsoil or natural soil beneath the site.

In accordance with the principals laid out in BS 8485: 2007, as no sources of significant potential ground gas generation were identified during the site investigation, it was not considered necessary to undertake a ground gas monitoring programme. However, it was considered prudent to undertake one monitoring round to confirm this assessment. All monitoring results are presented in Appendix C.

During the preliminary gas monitoring round, no elevated concentrations of carbon dioxide or flammable gas as methane were detected in the two monitored wells, with concentrations below the detection limit of 0.1% by volume. Concentrations of oxygen were also recorded at between 20.0 and 20.0% by volume, which are natural background levels. The gas flow readings were at or slightly below the limit of detection of 0.1l/hr and within the calibration error of the flow pod (+/-0.3l/hr).

Therefore it is considered that a classification of Characteristic Situation 1 for the site is an appropriate classification with the monitored results confirming the assessment that no significant gas generating materials are present in the subsurface soil.

**6.0 CONCEPTUAL SITE MODEL**

It is understood that a new school building is to be constructed within the existing school grounds.

**6.1 Sources**

The outline conceptual model, formed from the results of the preliminary risk assessment, highlighted no potential contaminant sources relating to the past and present uses of the site. The investigation, primarily undertaken for geotechnical purposes, and the chemical analysis results confirmed that no significant sources or potential sources of contamination have been identified at the proposed development area.

**6.2 Pathways, receptors and pollutant linkage assessment**

As no significant sources of contamination have been identified in relation to the site, the consideration of pathways and receptors is not considered appropriate as no plausible pollutant linkages can be present.

## **7.0 GEOTECHNICAL ASSESSMENT**

### **7.1 Geotechnical tests**

A programme of laboratory testing was carried out on samples taken from the various strata to determine the geotechnical properties of the materials underlying the site. The testing was scheduled by WYGE and carried out by K4 Soils Ltd., which is an approved supplier in accordance with the requirements of WYGE quality system and is UKAS accredited for a range of geotechnical tests.

The test procedures used generally followed the approved methods as described in BS1377:1990. Details of the specific procedure used in each case are presented below in Table 7.1. Geotechnical test results are given in Appendix G.

**Table 7.1 Geotechnical tests**

<b>Test</b>	<b>Standard (BS1377:1990)</b>	<b>No.</b>
<b>Classification Tests</b>		
Natural Moisture Content	Part 2, Clause 3	3
Atterberg Limits Tests	Part 2, Clause 4.5	3
Particle Size Distribution (Sedimentation)	Part 2, Clause 9.4	3
<b>Shear Strength</b>		
Quick Undrained Triaxial	Part 7, Clause 8	3
<b>Chemical Tests</b>		
Sulphate Content 2:1 soil water extract	Part 3, Clause 5.3	5
pH value	Part 3, Clause 9	5

### **7.2 Geology and geotechnical parameters**

#### **7.2.1 Topsoil**

Topsoil was present at all exploratory hole locations beneath a grass covering. Comprising an orange brown to red brown gravelly fine to medium sand it attained thicknesses of between 0.4 and 0.6m.

No geotechnical testing was scheduled in the Made Ground as any foundations would be constructed beneath this level.

#### **7.2.2 Tunbridge Wells Sand Formation**

Units of the Tunbridge Wells Sand were present immediately beneath the Topsoil. Two types of material were identified within this stratum and will be dealt with separately in this geotechnical assessment. The thickness of the Sand Facies varied across the site from 4.10m in BH4 to greater than 8.0m in BH3.

##### *Sand Facies*

The upper units of the Tunbridge Wells Sand comprised a sand dominated material comprising a dense orange brown, becoming grey with depth, silty sand. Sandstone bands were reported in BHs 1a and 2 at 6.70 and 0.80m respectively. Some clay interbeds were reported in BHs 3 and 1A but these were discrete and were consistently less than 1m in thickness.

Standard Penetration Testing (SPT) was carried out in all boreholes throughout the stratum (Figure 3) and returned N-values of between 32 and 50 with a mean of 43. However, more than 50% of the tests were abandoned before full penetration had been achieved. If these results are extrapolated and included within the calculation of the average a revised mean N value of 62 which is consistent with a very dense granular material.

The empirical relationship between standard penetration resistance and angle of shearing resistance in granular soils (Peck, Hansen & Thorburn) is widely recognised and for the mean N value recorded in the Sand Facies of the Tunbridge Wells Sand indicates a  $\phi$  angle of 43°.

Two Atterberg limits tests were carried out within the clay interbeds and gave plasticity indices of 13 and 16% is consistent with a low plasticity and consequently low volume change material.

Three particle size distribution analyses were carried out in the materials of the sand facies. The results identify the difference in granular composition between the clay interbeds and the otherwise granular nature of the sand facies. The results of the compositional analyses are presented in Table 7.2.

**Table 7.2 Variations in composition of the Sand Facies material**

Location	Depth (m)	Stratigraphy	Particle Size Content (%)			
			Gravel	Sand	Silt	Clay
BH1A	0.60	Clay Interbed	0.5	41.4	35.5	22.6
BH2	2.40	Sand Facies	0.3	60.4	19.3	20.0
BH4	1.20	Clay Interbed	0	38.8	37.8	23.7

One quick undrained triaxial compression test was carried out on a sample recovered from the stiff clay horizon at 4.00mbgl in BH3. However, the condition of the sample prevented the test from being completed.

Chemical tests for concrete classification were undertaken on four representative samples of the sand Facies. The results of the tests indicate an aqueous extract sulphate (SO<sub>4</sub>) of between 0.27 and 0.50 g/l, and a pH of between 7.0 and 7.1.

*Clay Facies*

In three of the four cable percussive boreholes the lower units of the Tunbridge Wells Formation comprised stiff friable blue/grey clay. Immediately above this Clay Facies was a gravelly sand bed which it is believed defines the base of the overlying Sand Facies. Although the clay was not present in BH3 the gravelly sand unit was recognised and it is probable that the Clay Facies would be present beneath it.

Standard Penetration Testing was carried out throughout the Clay Facies and with one exception all tests were abandoned before the full penetration could be achieved. By extrapolation it is possible to determine the N-values which in this case range between 76 and 90 with a mean N value of 80 (Figure 3)

Utilising the recognised empirical relationship  $SPT\ N \times 4.5 = c_u$  gives undrained shear strength values between 342 and 405kN/m<sup>2</sup>, with a mean of 360kN/m<sup>2</sup>, which are consistent with a very stiff or hard material.

One Atterberg limits test was carried out on a sample of the Clay Facies from 5.50mbgl in BH2. The results give a Plasticity Index ( $I_p$ ) of 34% which is consistent with a high plasticity material of medium volume change potential.

Two quick undrained triaxial compression tests were undertaken on samples of the Clay Facies and gave undrained shear strengths of between 75 and 90kN/m<sup>2</sup>. These results are in broad agreement with the  $c_u$  values derived from the empirical relationship and confirm the engineering field description of the material as very stiff.

Chemical tests for concrete classification were undertaken on a representative sample of the Clay Facie of the Tunbridge Wells Sand Formation. The test indicates an aqueous extract sulphate (SO<sub>4</sub>) of 0.60g/l combined with a pH of 7.1.

### 7.3 Proposed Development

The geotechnical assessment given below relates to the details of the proposed development given to WYGE. It is understood that the development is of a new school complex that is to comprise two 2-storey school building plus two support blocks all connected by an over-arching roof complex. Column loads in the order of 300kN are expected to result from the current design: whilst estimates of floor loads suggest 15kN/m<sup>2</sup> should be the maximum that can be expected provided no major alterations are made to the current design.

#### Spread Foundations

The ground investigation has identified a superficial layer of topsoil attaining a maximum thickness of 0.6m. Any spread foundation solution should be constructed beneath this layer within the underlying natural stratum.

Based on a foundation constructed at 1.0mbgl within the Sand Facies of the Tunbridge Wells Sand Formation the allowable bearing pressure ( $q_{all}$ ) of the coarse-grained Made Ground has been estimated following two different procedures.

The first of these is to determine the presumed allowable bearing capacity from published sources. BS8004 (1986) suggests a presumed allowable bearing value of 200kN/m<sup>2</sup> to 600kN/m<sup>2</sup> for a medium dense sand and gravel for foundations a minimum of 1m wide.

The allowable bearing pressure of the Made Ground has also been calculated using the following relationship:

$$q_{all} = \frac{q_f}{F} = \frac{p_o (N_q - 1) + \gamma \frac{B}{2} N_\gamma}{3}$$

Where  $N_q$  and  $N_\gamma$  are Terzaghi's bearing capacity factors  
 $P_o$  is the overburden pressure  
 $\gamma$  is the soil unit weight  
 $F$  is a factor of safety = 3

The results of the above calculation refine the range of values suggested in the published literature and give an allowable bearing capacity of 670kN/m<sup>2</sup>. However, the presence of groundwater table within 1m of the base of the foundation has the affect of reducing the allowable bearing capacity.

In order to assess the affect of the water table the unit weight in the second term of the above equation is modified:

$$\gamma_a = \gamma_b + \frac{h' - D_f}{B} (\gamma_t - \gamma_b)$$

Where  $\gamma_b$  is the buoyant unit weight  
 $\gamma_t$  is the total unit weight  
 $h'$  is the depth of the groundwater table below ground surface  
 $D_f$  is the depth to the bottom of the foundation

After application of the correction an allowable bearing capacity,  $q_{all}$ , of 470kN/m<sup>2</sup> is appropriate considering the high groundwater table. Adoption of the above allowable bearing capacities should ensure that settlements are kept within tolerable limits.

7.3.1 Settlement analysis

In assess the magnitude of any induced settlements an analysis has been carried out based on a 300kN column load supported on 1 x 1m pad founded at 1mbgl. The ground investigation has indicated some variations in the sub-surface stratigraphy. In order to carry out a full assessment of ground conditions two analyses will be undertaken to represent the two extremes of the ground conditions that may be encountered (Table 7.3)

**Table 7.3 Ground models for the settlement analyses**

Ground Model A			Ground Model B		
Stratum	From (mbgl)	Thickness (m)	Stratum	From (mbgl)	Thickness (m)
Dense orange brown sand	1.0	5.2	Orange brown grey silty sand interbedded with very stiff friable sandy clay (50% clay : 50% sand)	1.0	8.0

Considering the two different ground models the settlement processes affecting them will vary according to the stratigraphy. In Ground Model A, where the material is entirely granular, settlements will be immediate; whilst in Ground Model B as well as immediate settlement consolidation settlement will affect the clay interbeds. The differences between the calculated settlements for the two ground models should represent the maximum differential settlement that could occur across the site.

The immediate settlement of the sands in both ground models have been determined following a method described by Burland & Burbridge (1985), where:

$$\rho = f_s f_l f_t \left[ \left( q'_n - \frac{2}{3} p'_o \right) \times B^{0.7} \times I_c \right]$$

Where  $f_s, f_l, f_t$  are shape, time and correction factors  
 $q'_n$  is the average net applied pressure  
 $p'_o$  is the maximum previous effective overburden pressure in kN/m<sup>2</sup>  
 $B$  is the foundation width in metres  
 $I_c$  is the compressibility index

Table 7.4 presents median, upper bound and lower bound settlements predicted by the method for both short term and long term settlement.

**Table 7.4 Predicted median and lower / upper bound short term (ST) and long term (LT) settlements (mm) under static loads for the Sands in both GM1 and 2**

Ground Model	Foundation type	Loading (kN/m <sup>2</sup> )	Static Loading					
			Lower		Median		Upper	
			ST	LT	ST	LT	ST	LT
GM1	Pad	300	6	7	2	3	1	2
GM2			13	17	5	6	3	4

To determine the average immediate settlement of the fine-grained clay interbeds a method described by Christian and Carrier (1978) has been used; where

$$\rho_i = \frac{\mu_1 \mu_0 q B}{E}$$

Where  $\mu_1$  and  $\mu_0$  are factors related to the depth and thickness of the compressible layer  
 $E$  is the modulus of deformation determined from the SPT results

The consolidation settlements of the fine-grained materials was calculated from the relationship

$$\rho_c = \rho_{oed} \times \mu_g$$

$$\rho_{oed} = m_v \times \sigma_z \times H$$

Where  $\sigma_z$  is the average effective vertical stress imposed on the particular layer  
 $H$  is the thickness of the layer  
 $m_v$  is the coefficient of volume compressibility, determined as

The results of the immediate and consolidation settlement of the clay interbeds is presented in Table 7.5

**Table 7.5 Results of the settlement analyses**

Location	Combined Thickness	stratum	Immediate settlement (mm)	Consolidation Settlement (mm)
GM2	2.5	Clay interbeds	1.5	2.0

It is emphasised that the numeric accuracy of the data presented in Table 7.3 is a function only of calculation and that the results given should only be used to indicate in general terms likely degrees of settlement that may occur.

The range of most probable settlements have considered only median values of short and long term settlements static loads on the Sand Facies deposits.

**Table 7.6 Predicted most probable settlements (mm)**

Ground Model	Foundation type and dimensions	Most Probable Settlement (mm)	
		Short Term	Long Term
		Static	Static
1	Pad 1.0 x 1.0m	2	3
2		5	6

The most probable predicted immediate settlements are expected to be in the general range 2 to 6 mm.

To analyse both total and differential settlements the highest and lowest most probable settlements have been used in conjunction with the results from the other settlement calculations. The results are presented in Table 7.7 and indicate a maximum settlement of

**Table 7.7 Results of the settlement analysis for differing sub-surface conditions**

Ground Model	Stratum			Total Settlement (mm)
	Sand Facies	Clay Interbeds		
	Immediate	Immediate	Consolidation	
GM1	2	Not present		2.00
GM2	6	1.50	2.00	10.00

The results indicate that differential settlement, initiated as a result of differences in the sub-surface stratigraphy, are expected to be less than 8mm; whilst total settlements should be within tolerable limits. However, It is emphasised that the above is presented on the basis that predicted settlements for the Tonbridge Wells Formation are compatible with predictions based on median empirical relationships and that upper bound conditions will not apply. There remains the risk that locally, settlements will be higher than predicted even for those areas investigated. Additionally it is emphasised that ground conditions may vary between exploratory hole positions and areas of looser or greater thicknesses of clay interbeds may be present that have not been identified by this investigation both of which could contribute to greater total and differential settlement.

### 7.3.2 Floor Slab

Given the recorded ground conditions a ground bearing floor slab would seem appropriate for this development. Based on a maximum loading of 15kN/m<sup>2</sup> the magnitude of settlement will be less than 5mm.

It is understood that due to the topography of the site that the building will be cut into the slope. Excavations into the slope are likely to encounter the high groundwater table which may create uplift forces on the base of the ground floor slab. Dependent on the magnitude of these forces, consideration should be given to installing drainage beneath the ground floor slab.

### 7.3.3 Road and Pavement Design

With reference to the Design Manual for Roads and Bridges HS 25/94 Volume 7 Section 2 and the three in-situ test carried out at the site, a Californian Bearing Ration (CBR) of 3% is appropriate for the upper units of the Tunbridge Wells Sandstone.

#### 7.3.4 Temporary works

A high degree of variability in groundwater conditions was apparent across the site during both the ground investigation and subsequent water monitoring visits. Therefore it is possible that groundwater may impinge upon any excavation and consideration may need to be given to controlling this potential ingress.

Excavations within the Tunbridge Wells Sand Formation are liable to be stable in the short term. However, if groundwater is encountered this may cause instability and fast inflow rates may initiate collapse of excavation. If this proves to be the case then battering back the excavation to a stable angle and dewatering of excavations may become necessary.

It is recommended that where excavations are to be progressed into the Tunbridge Wells Sand Formation and where man-entry into excavations deeper than 1.20mbgl is required, that excavations are either shored or their sides battered to a safe angle of repose. It is suggested that an angle of 30 degrees from horizontal is not exceeded.

#### 7.3.5 Chemical attack on buried concrete

Laboratory chemical testing of pH and sulfate concentrations has indicated a Design Sulfate Classification of DS-2 in accordance with BRE Special Digest 1. Given the soil conditions encountered and assumed mobile groundwater through both the Tunbridge Wells Sand Formation an ACEC classification of AC-2 is considered appropriate for this site.

To ensure adequate durability we would advise that all cements used for sub-surface concrete constructions should conform to the advice given within this publication unless otherwise specified or required.

## 8.0 CONCLUSIONS

### 8.1 Contamination

The Preliminary Risk Assessment of the proposed development site identified no potential contaminant sources, with regard to human health and environmental receptors, relating to the past and present uses of the site. This was confirmed by the subsequent intrusive site investigation and associated Generic Quantitative Risk Assessment. However, arsenic was identified at concentrations that could present a risk to buried services.

The following mitigation measures are, however, recommended on all brownfield development sites:

- Compliance with relevant Health and Safety procedures during construction works.
- Materials used for buried services, such as water supply pipes, should be of sufficient specification such that they are not at risk from chemical attack by the contaminant concentrations in the soil.

It is recommended that any removal and disposal of sub-soil arisings and/or groundwater from the site should be undertaken in a controlled manner to a licensed facility, with due regard to Duty of Care responsibilities. In addition, an appropriate degree of health and safety provision should be incorporated to protect both the site workers and the general public alike.

During any ground works, it is recommended that skin contact with soils is kept to a minimum in accordance with good working practice / specific control measures and the HSE guidance document 'Protection of Workers and the General Public During the Development of Contaminated Land', 1991.

### 8.2 Geotechnical

The ground investigation has revealed very dense Sands with some stiff clay interbeds and partially lithified sandstones immediately beneath the Topsoil. The allowable bearing pressure within this stratum has been calculated based on the Standard Penetration Testing (SPT) and suggests  $q_{all}$  of  $470\text{kN/m}^2$  after the application of a correction to account for the shallow water table.

With a maximum column load of 300kN, 1m x 1m pad foundations founded at 1mbgl are considered the most appropriate foundation solution. At this intensity of loading total settlement should not exceed 10mm. Some variation in the subsurface stratigraphy of the site was reported, if these variations are found to be present then differential settlement may occur under the building footprint, calculations show that these settlements will be less than 8mm.

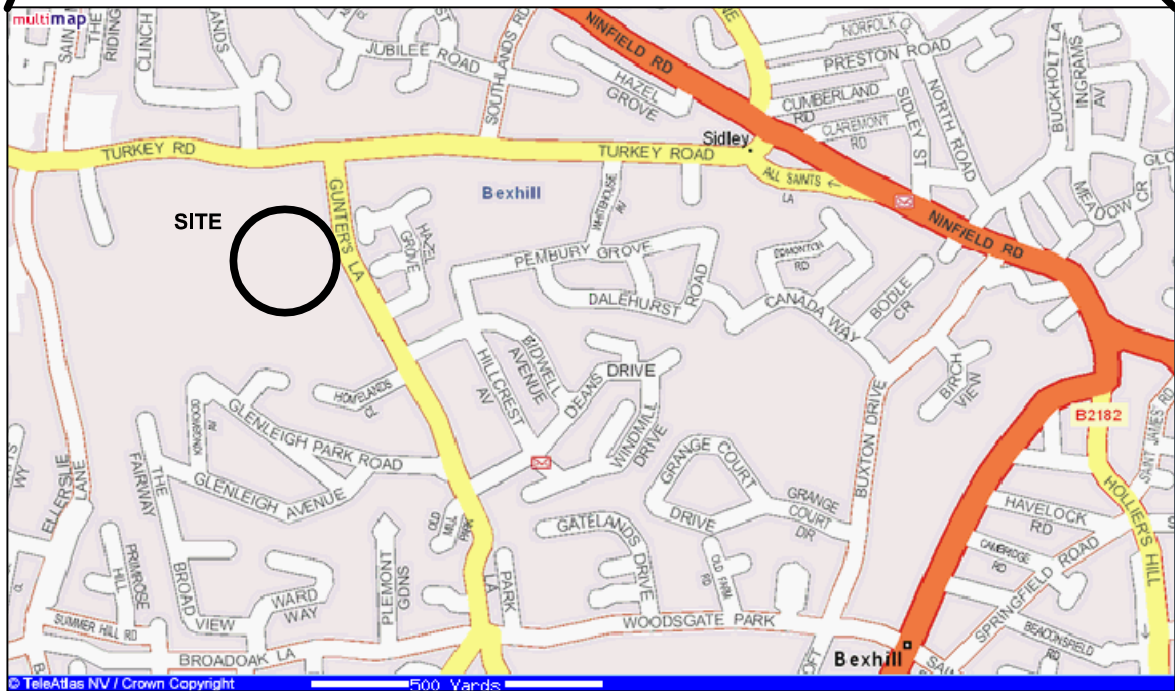
A ground bearing floor slab is appropriate for the ground conditions encountered at the site. The relatively low loading of the slab will mean that settlement will be less than 5mm. Given the presence of groundwater within 1m of the ground surface and the need to cut back into the existing slope to form a development platform it may become necessary to consider the installation of drainage beneath the slab to alleviate any excessive uplift forces.

Californian Bearing Ratio testing carried out in three locations on the site suggests a CBR of 3%. This value seems on the low side based on field observations of the Tunbridge Wells Sand and is likely to increase to circa 15% with depth.

Excavations within the Tunbridge Wells Sand Formation are likely to be stable in the short term. However, the presence of groundwater within 1m of the ground surface may cause some instability if encountered. Furthermore it may prove necessary to consider dewatering of excavations.

Laboratory chemical testing of pH and sulphate concentrations has indicated a Design Sulfate Classification of DS-2 in accordance with BRE Special Digest 1. Given the soil conditions encountered and assumed mobile groundwater through both the Tunbridge Wells Sand Formation an ACEC classification of AC-2 is considered appropriate for this site.

**FIGURES**

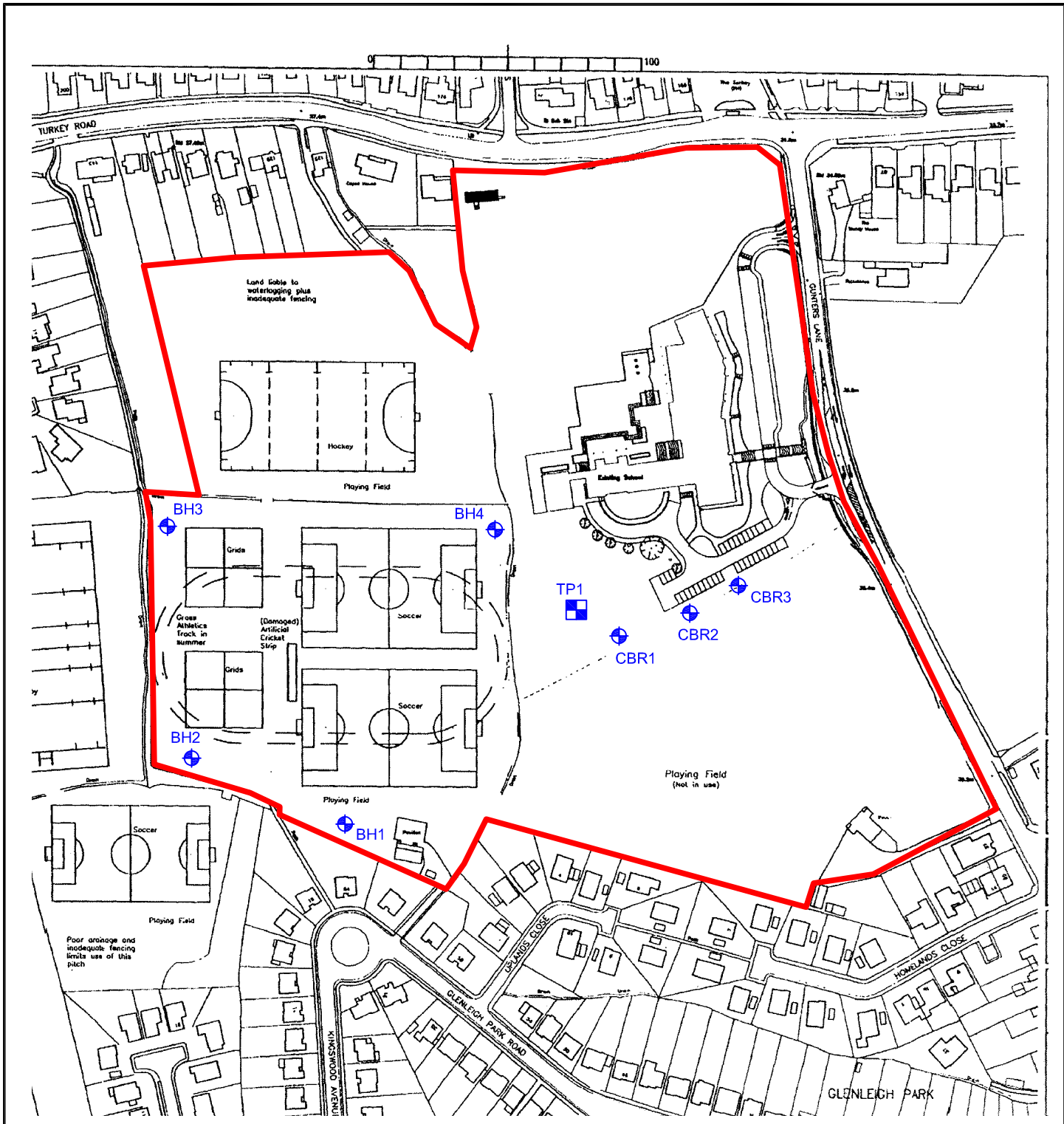


Rev	Description	By	Chk	App	Date
Client: <b>EAST SUSSEX COUNTY COUNCIL</b>					
Project: <b>BEXHILL HIGH SCHOOL</b>		Project/Contract No: E013713-4			
		Scale: NTS @ A4			
		Drawn by: AP			
		Checked by: RP			
		Site Centre: 573020, 109170			
Drg No: <b>FIGURE 1</b>		Origin Date: 26/11/07			

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White  
 Young  
 Green



Rev	Description	By	Chk	App	Date
Client: <b>ESCC</b>					
Project: <b>BEXHILL HIGH SCHOOL-GUNTERS</b>					Project/Contract No: E013713-6
<b>INVESTIGATION LOCATION PLAN</b>					Scale: NTS @ A4
					Drawn by: AP
					Checked by: RP
					Site Centre: 573020, 109170
Drg No: <b>FIGURE 2</b>					Origin Date: 06/02/08

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**APPENDIX A**  
**Report Conditions**

## WHITE YOUNG GREEN ENVIRONMENTAL

### APPENDIX A - REPORT CONDITIONS

*This report is produced solely for the benefit East Sussex County Council and no liability is accepted for any reliance placed on it by any other party unless specifically agreed in writing otherwise. This report refers, within the limitations stated, to the condition of the site at the time of the inspections. No warranty is given as to the possibility of future changes in the condition of the site as characteristics, especially liquid and gaseous materials, are likely to vary with time.*

*This report is based on readily available geological records, the recorded physical investigation, the strata observed in the works, together with the results of completed site and laboratory tests. Whilst skill and care has been taken to interpret these conditions likely between or below investigation points, the possibility of other characteristics not revealed cannot be discounted, for which no liability can be accepted. The impact of our assessment on other aspects of the development requires evaluation by other involved parties.*

*Whilst confident in the findings detailed within this report because ground conditions is not an exact science, subject to risk analysis, we are unable to give categoric assurances that they will be accepted by others as they may have differing objectives. This report is prepared for the proposed uses stated in the report and should not be used in a different context without reference to WYGE. In time improved practices or amended legislation may necessitate a re-assessment.*

*The opinions expressed cannot be absolute due to the limitations of time and resources within the context of the agreed brief and the possibility of unrecorded previous in ground activities. The ground conditions have been sampled or monitored in recorded locations and tested for some of the more common chemicals generally expected, including any highlighted in the client's instructions. Other concentrations or types of chemicals may exist. Factual results are presented initially compared to commonly adopted guidelines which are not definitive in the UK and should be further assessed for actual risk.*

**APPENDIX B**  
**Envirocheck Data**

## Envirocheck<sup>®</sup> Report: Datasheet

### Order Details:

**Order Number:**

23283856\_1\_1

**Customer Reference:**

E013713-4 Gunters Lane

**National Grid Reference:**

573020, 109170

**Slice:**

A

**Site Area (Ha):**

3.46

**Search Buffer (m):**

1000

### Site Details:

Wendy House

Gunters Lane

BEXHILL-ON-SEA

East Sussex

TN39 4EP

### Client Details:

Mr R Palmgren

White Young Green

The Mill Yard

Nursling Street

Southampton

SO16 0YA

<b>Report Section</b>	<b>Page Number</b>
<b>Summary</b>	-
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<b>Waste</b>	<b>7</b>
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#### **Introduction**

The Environment Act 1995 has made site sensitivity a key issue, as the legislation pays as much attention to the pathways by which contamination could spread, and to the vulnerable targets of contamination, as it does the potential sources of contamination. For this reason, Landmark's Site Sensitivity maps and Datasheet(s) place great emphasis on statutory data provided by the Environment Agency and the Scottish Environment Protection Agency; it also incorporates data from Natural England (and the Scottish and Welsh equivalents) and Local Authorities; and highlights hydrogeological features required by environmental and geotechnical consultants. It does not include any information concerning past uses of land. The datasheet is produced by querying the Landmark database to a distance defined by the client from a site boundary provided by the client.

In the attached datasheet the National Grid References (NGRs) are rounded to the nearest 10m in accordance with Landmark's agreements with a number of Data Suppliers.

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#### **Report Version v28.2**

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
<b>Agency &amp; Hydrological</b>					
Contaminated Land Register Entries and Notices					
Discharge Consents	pg 1				17
Enforcement and Prohibition Notices					
Integrated Pollution Controls					
Integrated Pollution Prevention And Control					
Local Authority Integrated Pollution Prevention And Control	pg 5				1
Local Authority Pollution Prevention and Controls	pg 5				1
Local Authority Pollution Prevention and Control Enforcements	pg 5				1
Nearest Surface Water Feature	pg 5		Yes		
Pollution Incidents to Controlled Waters	pg 5				2
Prosecutions Relating to Authorised Processes					
Prosecutions Relating to Controlled Waters					
Registered Radioactive Substances					
River Quality					
River Quality Biology Sampling Points					
River Quality Chemistry Sampling Points					
Substantiated Pollution Incident Register					
Water Abstractions					
Water Industry Act Referrals					
Groundwater Vulnerability	pg 6	Yes	n/a	n/a	n/a
Source Protection Zones					
Extreme Flooding from Rivers or Sea without Defences				n/a	n/a
Flooding from Rivers or Sea without Defences				n/a	n/a
Areas Benefiting from Flood Defences				n/a	n/a
Flood Water Storage Areas				n/a	n/a
Flood Defences				n/a	n/a
<b>Waste</b>					
BGS Recorded Landfill Sites					
Historical Landfill Sites	pg 7			1	1
Integrated Pollution Control Registered Waste Sites					
Licensed Waste Management Facilities (Landfill Boundaries)					
Licensed Waste Management Facilities (Locations)	pg 7				1
Local Authority Recorded Landfill Sites	pg 7			2	
Registered Landfill Sites					
Registered Waste Transfer Sites	pg 8				2
Registered Waste Treatment or Disposal Sites					

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
<b>Hazardous Substances</b>					
Control of Major Accident Hazards Sites (COMAH)					
Explosive Sites					
Notification of Installations Handling Hazardous Substances (NIHHS)	pg 9			1	
Planning Hazardous Substance Consents					
Planning Hazardous Substance Enforcements					
<b>Geological</b>					
BGS Recorded Mineral Sites	pg 10				1
BGS 1:625,000 Solid Geology	pg 10	Yes	n/a	n/a	n/a
Brine Compensation Areas			n/a	n/a	n/a
Coal Mining Affected Areas			n/a	n/a	n/a
Mining Instability			n/a	n/a	n/a
Natural and Mining Cavities					
Potential for Collapsible Ground Stability Hazards				n/a	n/a
Potential for Compressible Ground Stability Hazards				n/a	n/a
Potential for Ground Dissolution Stability Hazards				n/a	n/a
Potential for Landslide Ground Stability Hazards	pg 10	Yes		n/a	n/a
Potential for Running Sand Ground Stability Hazards				n/a	n/a
Potential for Shrinking or Swelling Clay Ground Stability Hazards				n/a	n/a
Radon Affected Areas				n/a	n/a
Radon Protection Measures				n/a	n/a
Shallow Mining Hazards	pg 10	Yes	Yes	n/a	n/a
<b>Industrial Land Use</b>					
Contemporary Trade Directory Entries	pg 11		4	7	17
Fuel Station Entries	pg 13				1

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
<b>Sensitive Land Use</b>					
Areas of Adopted Green Belt					
Areas of Unadopted Green Belt					
Areas of Outstanding Natural Beauty					
Environmentally Sensitive Areas					
Forest Parks					
Local Nature Reserves					
Marine Nature Reserves					
National Nature Reserves					
National Parks					
Nitrate Sensitive Areas					
Nitrate Vulnerable Zones					
Ramsar Sites					
Sites of Special Scientific Interest					
Special Areas of Conservation					
Special Protection Areas					

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
1	<b>Discharge Consents</b> Operator: Southern Water Services Ltd Property Type: Not Given Location: BEXHILL, East Sussex Authority: Environment Agency, Southern Region Catchment Area: Not Given Reference: 62/1/1178 Permit Version: Not Supplied Effective Date: Not Supplied Issued Date: 5th March 1973 Revocation Date: Not Supplied Discharge Type: Surface Water Discharge: Freshwater Stream/River Environment: Receiving Water: Not Supplied <b>Status: Not Supplied</b> Positional Accuracy: Located by supplier to within 100m	A18SE (N)	527	1	573220 109800
2	<b>Discharge Consents</b> Operator: Southern Water Services Limited. Property Type: Sewerage Network - Pumping Station - Water Company Location: Turkey Road Wps, Bexhill On Sea Turkey Road Wps, Turkey Road, Bexhill On Sea, East Sussex, Tn39 5ht Authority: Environment Agency, Southern Region Catchment Area: Wallers Haven Reference: A01190 Permit Version: 1 Effective Date: 22nd May 2003 Issued Date: 22nd May 2003 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Unspecified - Water Company Discharge: Freshwater Stream/River Environment: Receiving Water: Unnamed Trib Of Wallers Haven <b>Status: New Consent (Water Resources Act 1991, Section 88 &amp; Schedule 10 as amended by Environment Act 1995)</b> Positional Accuracy: Located by supplier to within 10m	A12NW (W)	588	1	572350 109220
2	<b>Discharge Consents</b> Operator: Southern Water Services Limited. Property Type: Sewerage Network - Pumping Station - Water Company Location: Turkey Road Wps, Bexhill On Sea Turkey Road Wps, Turkey Road, Bexhill On Sea, East Sussex, Tn39 5ht Authority: Environment Agency, Southern Region Catchment Area: Wallers Haven Reference: A01190 Permit Version: 1 Effective Date: 22nd May 2003 Issued Date: 22nd May 2003 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Pumping Station - Water Company Discharge: Freshwater Stream/River Environment: Receiving Water: Unnamed Trib Of Wallers Haven <b>Status: New Consent (Water Resources Act 1991, Section 88 &amp; Schedule 10 as amended by Environment Act 1995)</b> Positional Accuracy: Located by supplier to within 10m	A12NW (W)	588	1	572350 109220
3	<b>Discharge Consents</b> Operator: Second Exc. & Ind. Housing Assoc. Property Type: Water Treatment Works Location: Land North East Of Watermill Lan, Sidley, Bexhill East Sussex Authority: Environment Agency, Southern Region Catchment Area: Not Supplied Reference: S01496 Permit Version: 1 Effective Date: 10th June 1966 Issued Date: 10th June 1966 Revocation Date: 1st July 1991 Discharge Type: Discharge Of Other Matter-Surface Water Discharge: Freshwater Stream/River Environment: Receiving Water: Freshwater River <b>Status: Pre National Rivers Authority Legislation where issue date &lt; 01/09/1989</b> Positional Accuracy: Located by supplier to within 10m	A19SW (NE)	637	1	573610 109660

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
4	<b>Discharge Consents</b> Operator: Redland Holdings Ltd. Property Type: Undefined Or Other Location: Sussex & Dorking Brick Works, Turkey Road, Bexhill-On-Sea East Sussex Authority: Environment Agency, Southern Region Catchment Area: Not Given Reference: S01332 Permit Version: 1 Effective Date: 12th May 1961 Issued Date: 12th May 1961 Revocation Date: 28th February 1997 Discharge Type: Trade Effluent Discharge: Freshwater Stream/River Environment: Receiving Water: Freshwater River <b>Status: Pre National Rivers Authority Legislation where issue date &lt; 01/09/1989</b> Positional Accuracy: Located by supplier to within 100m	A12NW (W)	656	1	572280 109280
4	<b>Discharge Consents</b> Operator: Petrarch Claddings Ltd. Property Type: Undefined Or Other Location: Baxter Works, Turkey Road, Bexhill-On-Sea, West Sussex Authority: Environment Agency, Southern Region Catchment Area: Not Supplied Reference: S02187 Permit Version: 1 Effective Date: 8th June 1973 Issued Date: 8th June 1973 Revocation Date: 30th January 1995 Discharge Type: Discharge Of Other Matter-Surface Water Discharge: Freshwater Stream/River Environment: Receiving Water: Freshwater River <b>Status: Pre National Rivers Authority Legislation where issue date &lt; 01/09/1989</b> Positional Accuracy: Located by supplier to within 10m	A12NW (W)	676	1	572260 109300
4	<b>Discharge Consents</b> Operator: Redland Holdings Ltd. Property Type: Undefined Or Other Location: Sussex & Dorking Brick Works, Turkey Road, Bexhill-On-Sea East Sussex Authority: Environment Agency, Southern Region Catchment Area: Not Given Reference: S01332 Permit Version: 1 Effective Date: 12th May 1961 Issued Date: 12th May 1961 Revocation Date: 28th February 1997 Discharge Type: Trade Effluent Discharge: Freshwater Stream/River Environment: Receiving Water: Freshwater River <b>Status: Pre National Rivers Authority Legislation where issue date &lt; 01/09/1989</b> Positional Accuracy: Located by supplier to within 100m	A12NW (W)	706	1	572230 109280
5	<b>Discharge Consents</b> Operator: Southern Water Services Ltd (S) Property Type: Undefined Or Other Location: Ninfield Road, Bexhill-On-Sea East Sussex Authority: Environment Agency, Southern Region Catchment Area: Not Supplied Reference: S02160 Permit Version: 1 Effective Date: 5th March 1973 Issued Date: 5th March 1973 Revocation Date: 11th September 1997 Discharge Type: Discharge Of Other Matter-Surface Water Discharge: Freshwater Stream/River Environment: Receiving Water: Freshwater River <b>Status: Pre National Rivers Authority Legislation where issue date &lt; 01/09/1989</b> Positional Accuracy: Located by supplier to within 10m	A18NW (N)	678	1	572970 109960

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
5	<b>Discharge Consents</b> Operator: Southern Water Services Ltd (S) Property Type: Undefined Or Other Location: Ninfield Road, Bexhill-On-Sea East Sussex Authority: Environment Agency, Southern Region Catchment Area: Not Given Reference: S02160 Permit Version: 1 Effective Date: 5th March 1973 Issued Date: 5th March 1973 Revocation Date: 11th September 1997 Discharge Type: Discharge Of Other Matter-Surface Water Discharge: Freshwater Stream/River Environment: Receiving Water: Freshwater River <b>Status: Pre National Rivers Authority Legislation where issue date &lt; 01/09/1989</b> Positional Accuracy: Located by supplier to within 100m	A18NW (N)	699	1	572960 109980
6	<b>Discharge Consents</b> Operator: Petrarch Claddings Ltd. Property Type: Undefined Or Other Location: Baxter Works, Turkey Road, Bexhill-On-Sea, West Sussex Authority: Environment Agency, Southern Region Catchment Area: Not Supplied Reference: S02187 Permit Version: 1 Effective Date: 8th June 1973 Issued Date: 8th June 1973 Revocation Date: 30th January 1995 Discharge Type: Discharge Of Other Matter-Surface Water Discharge: Freshwater Stream/River Environment: Receiving Water: Freshwater River <b>Status: Pre National Rivers Authority Legislation where issue date &lt; 01/09/1989</b> Positional Accuracy: Located by supplier to within 10m	A12NW (W)	716	1	572220 109300
7	<b>Discharge Consents</b> Operator: Mr B R Cheese Property Type: Domestic Property (Single) Location: Little Bearsden, St Mary'S Lane, Bexhill-On-Sea, East Sussex, Tn39 5je Authority: Environment Agency, Southern Region Catchment Area: Not Given Reference: P04778 Permit Version: 1 Effective Date: 29th June 1993 Issued Date: 29th June 1993 Revocation Date: 31st March 1997 Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge: Into Land Environment: Receiving Water: Into Land <b>Status: Lapsed (under Environment Act 1995, Schedule 23)</b> Positional Accuracy: Located by supplier to within 100m	A17NE (NW)	720	1	572610 109920
8	<b>Discharge Consents</b> Operator: Redland Bricks Ltd. Property Type: Undefined Or Other Location: Lunsford Works, Turkey Road, Bexhill East Sussex Authority: Environment Agency, Southern Region Catchment Area: Not Given Reference: S01324 Permit Version: 1 Effective Date: 11th May 1962 Issued Date: 11th May 1962 Revocation Date: 31st March 1997 Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge: Freshwater Stream/River Environment: Receiving Water: Freshwater River <b>Status: Lapsed (under Environment Act 1995, Schedule 23)</b> Positional Accuracy: Located by supplier to within 100m	A12NW (W)	723	1	572220 109380

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
8	<b>Discharge Consents</b> Operator: Ibstock Building Products Ltd Property Type: Construction & Repair Of Buildings Location: Ashdown Factory, Turkey Road, Bexhill On Sea, East Sussex Authority: Environment Agency, Southern Region Catchment Area: Not Supplied Reference: N02024 Permit Version: 2 Effective Date: 29th August 2000 Issued Date: 29th August 2000 Revocation Date: 27th April 2007 Discharge Type: Discharge Of Other Matter-Minewater Discharge: Freshwater Stream/River Environment: Receiving Water: Freshwater River <b>Status: Revoked (Water Resources Act 1991, Section 88 &amp; Schedule 10 as amended by Environment Act 1995)</b> Positional Accuracy: Located by supplier to within 10m	A12NW (W)	740	1	572200 109360
8	<b>Discharge Consents</b> Operator: Ibstock Building Products Ltd Property Type: Construction & Repair Of Buildings Location: Ashdown Factory, Turkey Road, Bexhill On Sea, East Sussex Authority: Environment Agency, Southern Region Catchment Area: Not Given Reference: N02024 Permit Version: 1 Effective Date: 25th July 1977 Issued Date: 25th July 1977 Revocation Date: 29th August 2000 Discharge Type: Discharge Of Other Matter-Minewater Discharge: Freshwater Stream/River Environment: Receiving Water: Freshwater River <b>Status: Pre National Rivers Authority Legislation where issue date &lt; 01/09/1989</b> Positional Accuracy: Located by supplier to within 100m	A12NW (W)	740	1	572200 109360
9	<b>Discharge Consents</b> Operator: Redland Holdings Ltd. Property Type: Undefined Or Other Location: Sussex & Dorking Brick Works, Turkey Road, Bexhill-On-Sea East Sussex Authority: Environment Agency, Southern Region Catchment Area: Not Given Reference: S01332 Permit Version: 1 Effective Date: 12th May 1961 Issued Date: 12th May 1961 Revocation Date: 28th February 1997 Discharge Type: Trade Effluent Discharge: Freshwater Stream/River Environment: Receiving Water: Freshwater River <b>Status: Pre National Rivers Authority Legislation where issue date &lt; 01/09/1989</b> Positional Accuracy: Located by supplier to within 100m	A12NW (W)	756	1	572180 109290
9	<b>Discharge Consents</b> Operator: Petrarch Claddings Ltd. Property Type: Undefined Or Other Location: Baxter Works, Turkey Road, Bexhill-On-Sea, West Sussex Authority: Environment Agency, Southern Region Catchment Area: Not Supplied Reference: S02187 Permit Version: 1 Effective Date: 8th June 1973 Issued Date: 8th June 1973 Revocation Date: 30th January 1995 Discharge Type: Discharge Of Other Matter-Surface Water Discharge: Freshwater Stream/River Environment: Receiving Water: Freshwater River <b>Status: Pre National Rivers Authority Legislation where issue date &lt; 01/09/1989</b> Positional Accuracy: Located by supplier to within 10m	A12NW (W)	776	1	572160 109300

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
10	<b>Discharge Consents</b> Operator: Southern Water Services Ltd (S) Property Type: Sewerage Network - Sewers - Water Company Location: Watergate, Watermill Lane, Bexhill East Sussex Authority: Environment Agency, Southern Region Catchment Area: Not Given Reference: W00433 Permit Version: 1 Effective Date: 12th September 1980 Issued Date: 12th September 1980 Revocation Date: Not Supplied Discharge Type: Public Sewage: Storm Sewage Overflow Discharge: Freshwater Stream/River Environment: Receiving Water: Freshwater River <b>Status: Pre National Rivers Authority Legislation where issue date &lt; 01/09/1989</b> Positional Accuracy: Located by supplier to within 100m	A19SE (NE)	773	1	573720 109740
11	<b>Local Authority Integrated Pollution Prevention And Control</b> Name: Ibstock Building Products Ltd Location: Turkey Road, Bexhill On Sea, TN39 Authority: Rother District Council, Environmental Health Department Permit Reference: P1/01/05 Dated: Not Supplied Process Type: Mineral Industries Description: Clay brick manufacture <b>Status: Not Supplied</b> Positional Accuracy: Manually positioned to the address or location	A12NW (W)	770	2	572166 109289
12	<b>Local Authority Pollution Prevention and Controls</b> Name: Ibstock Building Products Ltd Location: Ashdown Works, Turkey Road, BEXHILL-ON-SEA, East Sussex, TN39 5HY Authority: Rother District Council, Environmental Health Department Permit Reference: P1/01/05 Dated: 30th June 1992 Process Type: Local Authority Air Pollution Control Description: PG3/10 China and ball clay <b>Status: Transferred to LAIPPC</b> Positional Accuracy: Manually positioned to the address or location	A12NW (W)	834	2	572107 109369
13	<b>Local Authority Pollution Prevention and Control Enforcements</b> Location: Turkey Road, Bexhill On Sea, TN39 Type: Air Pollution Control Enforcement Notice Reference: P1/01/05 Date Issued: 17th October 2000 Enforcement Date: Not Supplied Details: Not Supplied Positional Accuracy: Manually positioned to the road within the address or location	A12NW (W)	743	2	572193 109305
	<b>Nearest Surface Water Feature</b>	A13NW (W)	2	-	572953 109163
14	<b>Pollution Incidents to Controlled Waters</b> Property Type: Agricultural Location: Preston Hall Farm, Watermill Lane, BEXHILL Authority: Environment Agency, Southern Region Pollutant: Organic Wastes: Yard Washings Note: Slurry Running Into Lake Down Track; Dairy Cattle Incident Date: 21st January 1994 Incident Reference: P00557 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Organic Farm Waste Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A19NE (NE)	898	1	573750 109900
15	<b>Pollution Incidents to Controlled Waters</b> Property Type: Water Company Sewage: Pumping Station Location: Watermill Lane, BEXHILL Authority: Environment Agency, Southern Region Pollutant: Crude Sewage Note: Preston Hall Pumping Station Failed Incident Date: 3rd February 1997 Incident Reference: 597068 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Plc Sewage Other Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A19SE (NE)	906	1	573900 109700

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	<b>Groundwater Vulnerability</b> Geological Classification: Minor Aquifer (Variably permeable) - These can be fractured or potentially fractured rocks, which do not have a high primary permeability, or other formations of variable permeability including unconsolidated deposits. Although not producing large quantities of water for abstraction, they are important for local supplies and in supplying base flow to rivers Soil Classification: Soils of High Leaching Potential (U) - Soil information for restored mineral workings and urban areas is based on fewer observations than elsewhere. A worst case vulnerability classification (H) assumed, until proved otherwise Map Sheet: Sheet 46 East Sussex Scale: 1:100,000	A12SE (W)	0	1	572534 109041
	<b>Drift Deposits</b> None				
	<b>Extreme Flooding from Rivers or Sea without Defences</b> None				
	<b>Flooding from Rivers or Sea without Defences</b> None				
	<b>Areas Benefiting from Flood Defences</b> None				
	<b>Flood Water Storage Areas</b> None				
	<b>Flood Defences</b> None				

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
16	<b>Historical Landfill Sites</b> Licence Holder: Not Supplied Location: St.Mary's Lane, The Highlands, Bexhill on Sea, East Sussex Name: St Mary's Recreation Ground Operator Location: Not Supplied Boundary Accuracy: As Supplied Provider Reference: EAHLD19196 First Input Date: 31st December 1950 Last Input Date: Not Supplied Specified Waste: Deposited Waste included Inert Waste Type: EA Waste Ref: Not Supplied Regis Ref: Not Supplied WRC Ref: 1400/6175 BGS Ref: Not Supplied Other Ref: 2-098, WR2-098	A18SW (N)	430	1	572858 109700
17	<b>Historical Landfill Sites</b> Licence Holder: Not Supplied Location: Bexhill, Sussex Name: Fryatts Way Operator Location: Not Supplied Boundary Accuracy: As Supplied Provider Reference: EAHLD20295 First Input Date: Not Supplied Last Input Date: Not Supplied Specified Waste: Not Supplied Type: EA Waste Ref: Not Supplied Regis Ref: Not Supplied WRC Ref: 1400/6161 BGS Ref: Not Supplied Other Ref: 27-239, WR2-054	A7NE (SW)	614	1	572446 108702
18	<b>Licensed Waste Management Facilities (Locations)</b> Licence Number: 19632 Location: Sidley Depot, Ninfield Road, Bexhill On Sea, East Sussex, TN39 5EZ Operator Name: East Sussex County Council Operator Location: Ringmer Depot, The Broyle, Ringmer, East Sussex, BN8 5NP Authority: Environment Agency - Southern Region, Sussex Area Site Category: Household, Commercial And Industrial Transfer Stations <b>Licence Status: Modified</b> Issued: 9th September 1998 Last Modified: 21st April 2006 Expires: Not Supplied Suspended: Not Supplied Revoked: Not Supplied Surrendered: Not Supplied IPPC Reference: Not Supplied Positional Accuracy: Located by supplier to within 100m	A9NE (SE)	966	1	574000 108700
	<b>Local Authority Landfill Coverage</b> Name: East Sussex County Council - Has supplied landfill data		0	3	573460 106974
	<b>Local Authority Landfill Coverage</b> Name: Rother District Council - Landfill data has been supplied by another authority		0	2	571876 110429
19	<b>Local Authority Recorded Landfill Sites</b> Location: St. Mary'S Recreation Ground, Bexhill Reference: 2-098 Authority: East Sussex County Council, Waste Management Group <b>Last Reported Status: Unknown</b> Types of Waste: Not Supplied Date of Closure: Not Supplied Positional Accuracy: Positioned by the supplier Boundary Quality: Moderate	A18SW (N)	430	3	572857 109701
20	<b>Local Authority Recorded Landfill Sites</b> Location: Fryatts Way, Bexhill Reference: 2-054 Authority: East Sussex County Council, Waste Management Group <b>Last Reported Status: Unknown</b> Types of Waste: Not Supplied Date of Closure: Not Supplied Positional Accuracy: Located by supplier to within 100m Boundary Quality: Not Applicable	A7NE (SW)	491	3	572600 108700

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
21	<p><b>Registered Waste Transfer Sites</b></p> <p>Licence Holder: East Sussex C.C.            Licence Reference: WR/2-087/L            Site Location: Sidley Depot, Ninfield Road, Bexhill On Sea, East Sussex            Operator Location: Ringmer Depot, The Broyle, Ringmer, Lewes, East Sussex            Authority: Environment Agency - Southern Region, Sussex Area            Site Category: Transfer            Max Input Rate: Very Small (Less than 10,000 tonnes per year)            Waste Source: No known restriction on source of waste            Restrictions:            Licence Status: Operational as far as is known Operational            Dated: 1st November 1995            Preceded By: WR/2-087/L            Licence:            Superseded By: Not Given            Licence:            Positional Accuracy: Manually positioned to the address or location            Boundary Quality: Not Supplied            Authorised Waste: East Sussex Cat A 'Donot Degrade/V.SI            East Sussex Cat B 'Non-Haz.Slow Decom            Empty Used Containers , 25 L Cap'Y            Max.Storage In Licence            Max.Waste Permitted By Licence            Prohibited Waste: Contaminated Materials            Finely Divided Materials            Waste N.O.S.</p>	A9NE (SE)	946	1	574000 108750
21	<p><b>Registered Waste Transfer Sites</b></p> <p>Licence Holder: East Sussex C.C.            Licence Reference: WR/2-087/L            Site Location: Sidley Depot, Ninfield Road, Bexhill On Sea, East Sussex            Operator Location: Ringmer Depot, The Broyle, Ringmer, Lewes, East Sussex            Authority: Environment Agency - Southern Region, Sussex Area            Site Category: Transfer            Max Input Rate: Small (Equal to or greater than 10,000 and less than 25,000 tonnes per year)            Waste Source: No known restriction on source of waste            Restrictions:            Licence Status: Record superseded Superseded            Dated: 1st November 1995            Preceded By: Not Given            Licence:            Superseded By: WR/2-087/L            Licence:            Positional Accuracy: Manually positioned to the address or location            Boundary Quality: Not Supplied            Authorised Waste: Decontam.Empty Used Cont'Rs (Cap &lt;25l)            East Sussex Cat A 'Donot Degrade/V.SI            Empty Used Containers (Cap &gt; 25l)            Max.Waste Permitted By Licence            Metals            Paper            Plastics            Trees/Bushes            Wood            Prohibited Waste: Finely Divided Mat'L Likely Give Dust            Poisonous, Noxious, Polluting Wastes            Polluted Surface/Groundwater            Waste N.O.S.</p>	A9NE (SE)	946	1	574000 108750

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
22	<b>Notification of Installations Handling Hazardous Substances (NIHHS)</b> Name: Ibstock Building Products Limited Location: Ashdown Works, Turkey Road, BEXHILL-ON-SEA, East Sussex, TN39 5HY <b>Status: Record Ceased To Be Supplied Under NIHHS Regulations (1982)</b> Positional Accuracy: Automatically positioned in the proximity of the address	A12NE (W)	482	4	572455 109308

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
23	<b>BGS Recorded Mineral Sites</b> Site Name: Ashdown Brickworks Location: Turkey Road, Bexhill On Sea, East Sussex, Th39 5ry Source: British Geological Survey, National Geoscience Information Service Reference: 15334 Type: Opencast <b>Status: Active</b> Operator: Ibstock Brick Ltd Operator Location: Leicester Road, Ibstock, Leicestershire, Le67 6hs Periodic Type: Cretaceous Geology: Wadhurst Clay Formation Commodity: Common Clay and Shale Positional Accuracy: Located by supplier to within 10m	A17SW (NW)	935	5	572065 109620
	<b>BGS 1:625,000 Solid Geology</b> Description: Hastings Beds	(SW)	0	5	571869 106586
	<b>Coal Mining Affected Areas</b> In an area which may not be affected by coal mining				
	<b>Potential for Collapsible Ground Stability Hazards</b> No Hazard				
	<b>Potential for Compressible Ground Stability Hazards</b> Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A18NW (N)	0	5	573021 110000
	<b>Potential for Ground Dissolution Stability Hazards</b> No Hazard				
	<b>Potential for Landslide Ground Stability Hazards</b> Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A12NW (W)	0	5	572300 109350
	<b>Potential for Running Sand Ground Stability Hazards</b> Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A18NW (N)	0	5	573021 110000
	<b>Potential for Shrinking or Swelling Clay Ground Stability Hazards</b> Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A12NW (W)	0	5	572300 109350
	<b>Radon Affected Areas</b> Description: Less than 1% of homes are above the Action Level Source: Health Protection Agency	A13NW (W)	0	6	573000 109170
	<b>Radon Affected Areas</b> Description: Less than 1% of homes are above the Action Level Source: Health Protection Agency	A13NW (W)	0	6	573000 109170
	<b>Radon Affected Areas</b> Description: Less than 1% of homes are above the Action Level Source: Health Protection Agency	A13SW (S)	27	6	573000 109000
	<b>Radon Affected Areas</b> Description: Less than 1% of homes are above the Action Level Source: Health Protection Agency	A13SW (S)	40	6	573021 109000
	<b>Radon Protection Measures</b> Type: No radon protective measures are necessary in the construction of new dwellings or extensions Source: British Geological Survey, National Geoscience Information Service	A18NW (N)	0	5	573021 110000
	<b>Shallow Mining Hazards</b> Risk: Low Source: British Geological Survey, National Geoscience Information Service	A13NE (N)	0	5	573031 109318
	<b>Shallow Mining Hazards</b> Risk: Low Source: British Geological Survey, National Geoscience Information Service	A13NE (N)	25	5	573031 109318

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
24	<b>Contemporary Trade Directory Entries</b> Name: Michael Whiting Location: 152, Turkey Road, Bexhill-on-Sea, East Sussex, TN39 5HH Classification: Architectural Technologists <b>Status: Active</b> Positional Accuracy: Automatically positioned to the address	A13NE (NE)	56	-	573143 109314
25	<b>Contemporary Trade Directory Entries</b> Name: Prosteam Location: 54, Glenleigh Park Road, Bexhill-on-Sea, East Sussex, TN39 4EE Classification: Carpet, Curtain & Upholstery Cleaners <b>Status: Active</b> Positional Accuracy: Automatically positioned to the address	A13SW (S)	148	-	572973 108880
26	<b>Contemporary Trade Directory Entries</b> Name: Just Vans Ltd Location: 132, Turkey Road, Bexhill-on-Sea, East Sussex, TN39 5HH Classification: Commercial Vehicle Dealers <b>Status: Inactive</b> Positional Accuracy: Automatically positioned to the address	A13NE (NE)	157	-	573245 109324
27	<b>Contemporary Trade Directory Entries</b> Name: Bexhill Cleaners Location: 31, Jubilee Road, Bexhill-on-Sea, East Sussex, TN39 5DR Classification: Commercial Cleaning Services <b>Status: Active</b> Positional Accuracy: Automatically positioned to the address	A13NE (NE)	174	-	573188 109435
28	<b>Contemporary Trade Directory Entries</b> Name: Mike Oldfield Location: 32, Gunters Lane, Bexhill-on-Sea, East Sussex, TN39 4EN Classification: Garage Services <b>Status: Active</b> Positional Accuracy: Automatically positioned to the address	A13SE (SE)	289	-	573285 108867
29	<b>Contemporary Trade Directory Entries</b> Name: Ibstock Brick Ltd Location: Turkey Rd, Bexhill-on-Sea, East Sussex, TN39 5HY Classification: Brick Manufacturers <b>Status: Active</b> Positional Accuracy: Manually positioned to the road within the address or location	A12NE (W)	380	-	572556 109292
30	<b>Contemporary Trade Directory Entries</b> Name: Oakeys Location: 55, Paton Road, Bexhill-on-Sea, East Sussex, TN39 5DJ Classification: Commercial Cleaning Services <b>Status: Active</b> Positional Accuracy: Automatically positioned to the address	A18SE (N)	446	-	573132 109733
31	<b>Contemporary Trade Directory Entries</b> Name: P C S Industrial Ltd Location: P C S House, 11, Windmill Drive, Bexhill-on-Sea, East Sussex, TN39 4DG Classification: Tank Cleaning & Repairing <b>Status: Inactive</b> Positional Accuracy: Automatically positioned to the address	A9NW (SE)	463	-	573457 108786
32	<b>Contemporary Trade Directory Entries</b> Name: R D L Distribution Ltd Location: Turkey Rd, Bexhill On Sea, East Sussex, TN39 5HY Classification: Road Haulage Services <b>Status: Inactive</b> Positional Accuracy: Manually positioned to the road within the address or location	A12NE (W)	476	-	572460 109294
32	<b>Contemporary Trade Directory Entries</b> Name: Ibstock Bricks Ltd Location: Turkey Rd, Bexhill-on-Sea, East Sussex, TN39 5HY Classification: Brick Manufacturers <b>Status: Inactive</b> Positional Accuracy: Manually positioned to the road within the address or location	A12NE (W)	496	-	572440 109288
33	<b>Contemporary Trade Directory Entries</b> Name: Precision Oral Design Location: 45, Turkey Road, Bexhill-on-Sea, East Sussex, TN39 5HB Classification: Medical & Dental Laboratories <b>Status: Inactive</b> Positional Accuracy: Automatically positioned to the address	A14NW (E)	484	-	573593 109235
34	<b>Contemporary Trade Directory Entries</b> Name: R Hyatt Location: 12, Leasingham Gardens, Bexhill-on-Sea, East Sussex, TN39 4DZ Classification: Carpet, Curtain & Upholstery Cleaners <b>Status: Active</b> Positional Accuracy: Automatically positioned to the address	A8SE (S)	647	-	573227 108435

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
35	<b>Contemporary Trade Directory Entries</b> Name: Ibstock Bricks Location: Turkey Road, Bexhill-on-Sea, East Sussex, TN39 5HY Classification: Brick Manufacturers <b>Status: Active</b> Positional Accuracy: Automatically positioned to the address	A12NW (W)	742	-	572194 109304
36	<b>Contemporary Trade Directory Entries</b> Name: Moxam Formwork & Reinforcement Ltd Location: Little Bearsden, St. Marys Lane, Bexhill-on-Sea, East Sussex, TN39 5JE Classification: Concrete Contractors <b>Status: Active</b> Positional Accuracy: Automatically positioned to the address	A17NE (NW)	765	-	572614 109972
37	<b>Contemporary Trade Directory Entries</b> Name: Smith & Humphrey Ltd Location: 75, Ninfield Road, Bexhill-on-Sea, East Sussex, TN39 5BB Classification: Car Breakdown & Recovery Services <b>Status: Active</b> Positional Accuracy: Automatically positioned to the address	A14NE (E)	786	-	573897 109252
38	<b>Contemporary Trade Directory Entries</b> Name: K P Restoration Location: 15, Grangecourt Drive, Bexhill-on-Sea, East Sussex, TN39 4AX Classification: Antiques - Repairing & Restoring <b>Status: Inactive</b> Positional Accuracy: Automatically positioned to the address	A9NE (SE)	802	-	573816 108701
39	<b>Contemporary Trade Directory Entries</b> Name: Tint Wise Location: 4, Grangecourt Drive, Bexhill-on-Sea, East Sussex, TN39 4AX Classification: Window Tinting <b>Status: Active</b> Positional Accuracy: Automatically positioned to the address	A9NE (SE)	847	-	573877 108719
40	<b>Contemporary Trade Directory Entries</b> Name: The Woodcut Trading Co Location: 80, Ninfield Road, Bexhill-on-Sea, East Sussex, TN39 5BB Classification: Woodworking Machinery <b>Status: Inactive</b> Positional Accuracy: Automatically positioned to the address	A14NE (E)	853	-	573956 109299
41	<b>Contemporary Trade Directory Entries</b> Name: Village Cleaners Location: 73, Ninfield Road, Bexhill-on-Sea, East Sussex, TN39 5BA Classification: Dry Cleaners <b>Status: Active</b> Positional Accuracy: Automatically positioned to the address	A14NE (E)	854	-	573972 109204
41	<b>Contemporary Trade Directory Entries</b> Name: Sidley Car Sales Location: 74-76, Ninfield Road, Bexhill-on-Sea, East Sussex, TN39 5BB Classification: Car Dealers - Used <b>Status: Active</b> Positional Accuracy: Automatically positioned to the address	A14NE (E)	882	-	573997 109232
42	<b>Contemporary Trade Directory Entries</b> Name: Respond Cleaning Services Ltd Location: Rial to Hall, St. Marys Lane, Bexhill-on-Sea, East Sussex, TN39 5JE Classification: Commercial Cleaning Services <b>Status: Active</b> Positional Accuracy: Automatically positioned to the address	A17NE (N)	874	-	572655 110105
42	<b>Contemporary Trade Directory Entries</b> Name: Respond Location: Rial to Hall, St. Marys Lane, Bexhill-on-Sea, East Sussex, TN39 5JE Classification: Commercial Cleaning Services <b>Status: Active</b> Positional Accuracy: Automatically positioned to the address	A17NE (N)	874	-	572655 110105
43	<b>Contemporary Trade Directory Entries</b> Name: Phillips Cleaning Location: 30, Newlands Avenue, Bexhill-on-Sea, East Sussex, TN39 4HA Classification: Carpet, Curtain & Upholstery Cleaners <b>Status: Inactive</b> Positional Accuracy: Automatically positioned to the address	A9SW (SE)	902	-	573690 108404
44	<b>Contemporary Trade Directory Entries</b> Name: Main Location: 21, North Road, Bexhill-on-Sea, East Sussex, TN39 5BJ Classification: Commercial Cleaning Services <b>Status: Active</b> Positional Accuracy: Automatically positioned to the address	A15NW (E)	968	-	574075 109284

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
44	<b>Contemporary Trade Directory Entries</b> Name: Main Cleaning Services Location: Coral Cove, 21a, North Road, BEXHILL-ON-SEA, East Sussex, TN39 5BJ Classification: Commercial Cleaning Services <b>Status: Active</b> Positional Accuracy: Automatically positioned to the address	A15NW (E)	968	-	574075 109284
44	<b>Contemporary Trade Directory Entries</b> Name: Main Cleaning Services Location: Coral Cove, 21a, North Road, BEXHILL-ON-SEA, East Sussex, TN39 5BJ Classification: Commercial Cleaning Services <b>Status: Active</b> Positional Accuracy: Automatically positioned to the address	A15NW (E)	968	-	574075 109284
45	<b>Contemporary Trade Directory Entries</b> Name: Rother Metals Recycling Ltd Location: Sidley Goods Yard, Ninfield Rd, Bexhill-on-Sea, East Sussex, TN39 5EZ Classification: Scrap Metal Merchants <b>Status: Active</b> Positional Accuracy: Manually positioned to the address or location	A10NW (E)	976	-	574055 108813
46	<b>Contemporary Trade Directory Entries</b> Name: Car-Tec Location: Sidley Goods Yard, Bexhill On Sea, East Sussex, TN39 5AA Classification: Garage Services <b>Status: Inactive</b> Positional Accuracy: Manually positioned within the geographical locality	A15SW (E)	991	-	574110 109014
47	<b>Fuel Station Entries</b> Name: Smith & Humphrey Location: 75 Ninfield Road, All Saints Lane, Sidley, BEXHILL-ON-SEA, East Sussex, TN39 5BB Brand: PROTEUS Premises Type: Petrol Station <b>Status: Open</b> Positional Accuracy: Automatically positioned to the address	A14NE (E)	785	-	573896 109251













Agency & Hydrological	Version	Update Cycle
<b>Contaminated Land Register Entries and Notices</b> Hastings Borough Council - Environmental Health Department Rother District Council - Community Services Wealden District Council - Environmental Health Department	August 2007 August 2007 June 2007	Annual Rolling Update Annual Rolling Update Annual Rolling Update
<b>Discharge Consents</b> Environment Agency - Southern Region	July 2007	Quarterly
<b>Enforcement and Prohibition Notices</b> Environment Agency - Southern Region	October 2007	As notified
<b>Integrated Pollution Controls</b> Environment Agency - Southern Region	January 2007	Quarterly
<b>Integrated Pollution Prevention And Control</b> Environment Agency - Southern Region	July 2007	Quarterly
<b>Local Authority Integrated Pollution Prevention And Control</b> Hastings Borough Council - Environmental Health Department Rother District Council - Environmental Health Department Wealden District Council - Environmental Health Department	August 2006 May 2006 November 2006	Annual Rolling Update Annual Rolling Update Annual Rolling Update
<b>Local Authority Pollution Prevention and Controls</b> Rother District Council - Environmental Health Department Wealden District Council - Environmental Health Department Hastings Borough Council - Environmental Health Department	May 2006 October 2006 September 2006	Annual Rolling Update Annual Rolling Update Annual Rolling Update
<b>Local Authority Pollution Prevention and Control Enforcements</b> Hastings Borough Council - Environmental Health Department Rother District Council - Environmental Health Department Wealden District Council - Environmental Health Department	August 2006 May 2006 November 2006	Annual Rolling Update Annual Rolling Update Annual Rolling Update
<b>Nearest Surface Water Feature</b> Ordnance Survey	July 2007	Quarterly
<b>Pollution Incidents to Controlled Waters</b> Environment Agency - Southern Region	December 1999	Not Applicable
<b>Prosecutions Relating to Authorised Processes</b> Environment Agency - Southern Region	October 2007	As notified
<b>Prosecutions Relating to Controlled Waters</b> Environment Agency - Southern Region	October 2007	As notified
<b>Registered Radioactive Substances</b> Environment Agency - Southern Region	July 2007	Quarterly
<b>River Quality</b> Environment Agency - Head Office	November 2001	Not Applicable
<b>River Quality Biology Sampling Points</b> Environment Agency - Head Office	October 2006	Annually
<b>River Quality Chemistry Sampling Points</b> Environment Agency - Head Office	October 2006	Annually
<b>Substantiated Pollution Incident Register</b> Environment Agency - Southern Region - Sussex Area	July 2007	Quarterly
<b>Water Abstractions</b> Environment Agency - Southern Region	July 2007	Quarterly
<b>Water Industry Act Referrals</b> Environment Agency - Southern Region	July 2007	Quarterly
<b>Groundwater Vulnerability</b> Environment Agency - Head Office	January 1999	Not Applicable
<b>Drift Deposits</b> Environment Agency - Head Office	January 1999	Not Applicable
<b>Source Protection Zones</b> Environment Agency - Head Office	April 2005	Variable

<b>Agency &amp; Hydrological</b>	<b>Version</b>	<b>Update Cycle</b>
<b>Extreme Flooding from Rivers or Sea without Defences</b> Environment Agency - Head Office	April 2007	Quarterly
<b>Flooding from Rivers or Sea without Defences</b> Environment Agency - Head Office	April 2007	Quarterly
<b>Areas Benefiting from Flood Defences</b> Environment Agency - Head Office	April 2007	Quarterly
<b>Flood Water Storage Areas</b> Environment Agency - Head Office	April 2007	Quarterly
<b>Flood Defences</b> Environment Agency - Head Office	April 2007	Quarterly
<b>Waste</b>	<b>Version</b>	<b>Update Cycle</b>
<b>BGS Recorded Landfill Sites</b> British Geological Survey - National Geoscience Information Service	June 1996	Not Applicable
<b>Integrated Pollution Control Registered Waste Sites</b> Environment Agency - Southern Region	July 2007	Quarterly
<b>Licensed Waste Management Facilities (Landfill Boundaries)</b> Environment Agency - Southern Region - Sussex Area	August 2007	Quarterly
<b>Licensed Waste Management Facilities (Locations)</b> Environment Agency - Southern Region - Sussex Area	August 2007	Quarterly
<b>Local Authority Landfill Coverage</b> East Sussex County Council - Waste Management Group Hastings Borough Council - Planning Services Rother District Council - Environmental Health Department Wealden District Council - Environmental Health Department	May 2000 May 2000 May 2000 May 2000	Not Applicable Not Applicable Not Applicable Not Applicable
<b>Local Authority Recorded Landfill Sites</b> Wealden District Council - Environmental Health Department East Sussex County Council - Waste Management Group Hastings Borough Council - Planning Services Rother District Council - Environmental Health Department	December 2004 May 2000 May 2000 May 2000	Not Applicable Not Applicable Not Applicable Not Applicable
<b>Registered Landfill Sites</b> Environment Agency - Southern Region - Sussex Area	March 2003	Not Applicable
<b>Registered Waste Transfer Sites</b> Environment Agency - Southern Region - Sussex Area	March 2003	Not Applicable
<b>Registered Waste Treatment or Disposal Sites</b> Environment Agency - Southern Region - Sussex Area	March 2003	Not Applicable

<b>Hazardous Substances</b>	<b>Version</b>	<b>Update Cycle</b>
<b>Control of Major Accident Hazards Sites (COMAH)</b> Health and Safety Executive	April 2007	Bi-Annually
<b>Explosive Sites</b> Health and Safety Executive	August 2007	Bi-Annually
<b>Notification of Installations Handling Hazardous Substances (NIHHS)</b> Health and Safety Executive	November 2000	Not Applicable
<b>Planning Hazardous Substance Enforcements</b> Rother District Council Wealden District Council East Sussex County Council - Development Minerals & Waste Hastings Borough Council - Planning Services	July 2007 July 2007 September 2007 September 2007	Annual Rolling Update Annual Rolling Update Annual Rolling Update Annual Rolling Update
<b>Planning Hazardous Substance Consents</b> Rother District Council Wealden District Council East Sussex County Council - Development Minerals & Waste Hastings Borough Council - Planning Services	July 2007 July 2007 September 2007 September 2007	Annual Rolling Update Annual Rolling Update Annual Rolling Update Annual Rolling Update
<b>Geological</b>	<b>Version</b>	<b>Update Cycle</b>
<b>BGS Recorded Mineral Sites</b> British Geological Survey - National Geoscience Information Service	October 2007	Bi-Annually
<b>BGS 1:625,000 Solid Geology</b> British Geological Survey - National Geoscience Information Service	August 1996	Not Applicable
<b>Brine Compensation Areas</b> Cheshire Brine Subsidence Compensation Board	November 2002	As notified
<b>Coal Mining Affected Areas</b> The Coal Authority - Mining Report Service	January 2006	As notified
<b>Mining Instability</b> Ove Arup & Partners	October 2000	Not Applicable
<b>Natural and Mining Cavities</b> Peter Brett Associates	December 2005	Variable
<b>Potential for Collapsible Ground Stability Hazards</b> British Geological Survey - National Geoscience Information Service	November 2006	Annually
<b>Potential for Compressible Ground Stability Hazards</b> British Geological Survey - National Geoscience Information Service	November 2006	Annually
<b>Potential for Ground Dissolution Stability Hazards</b> British Geological Survey - National Geoscience Information Service	November 2006	Annually
<b>Potential for Landslide Ground Stability Hazards</b> British Geological Survey - National Geoscience Information Service	April 2007	Annually
<b>Potential for Running Sand Ground Stability Hazards</b> British Geological Survey - National Geoscience Information Service	November 2006	Annually
<b>Potential for Shrinking or Swelling Clay Ground Stability Hazards</b> British Geological Survey - National Geoscience Information Service	November 2006	Annually
<b>Radon Affected Areas</b> Health Protection Agency	January 2003	Not Applicable
<b>Radon Protection Measures</b> British Geological Survey - National Geoscience Information Service	August 2002	Variable
<b>Shallow Mining Hazards</b> British Geological Survey - National Geoscience Information Service	August 2002	Not Applicable

<b>Industrial Land Use</b>	<b>Version</b>	<b>Update Cycle</b>
<b>Contemporary Trade Directory Entries</b> Thomson Directories	May 2007	Quarterly
<b>Fuel Station Entries</b> Catalist Ltd - (Fuel Station Data)	October 2007	Quarterly
<b>Sensitive Land Use</b>	<b>Version</b>	<b>Update Cycle</b>
<b>Areas of Outstanding Natural Beauty</b> Natural England (formerly The Countryside Agency)	November 2006	Annually
<b>Environmentally Sensitive Areas</b> Department for Environment, Food and Rural Affairs (DEFRA - formerly FRCA)	June 2006	Annually
<b>Forest Parks</b> Forestry Commission	April 1997	Not Applicable
<b>Local Nature Reserves</b> Wealden District Council Hastings Borough Council Rother District Council	January 2000 September 1999 September 1999	Variable Variable Variable
<b>Marine Nature Reserves</b> Natural England	October 2007	Bi-Annually
<b>National Nature Reserves</b> Natural England	May 2007	Bi-Annually
<b>National Parks</b> Natural England (formerly The Countryside Agency)	October 2006	Annually
<b>Nitrate Sensitive Areas</b> Department for Environment, Food and Rural Affairs (DEFRA - formerly FRCA)	December 2003	Not Applicable
<b>Nitrate Vulnerable Zones</b> Department for Environment, Food and Rural Affairs (DEFRA - formerly FRCA)	May 2007	Annually
<b>Ramsar Sites</b> Natural England	May 2007	Bi-Annually
<b>Sites of Special Scientific Interest</b> Natural England	May 2007	Bi-Annually
<b>Special Areas of Conservation</b> Natural England	May 2007	Bi-Annually
<b>Special Protection Areas</b> Natural England	May 2007	Bi-Annually

A selection of organisations who provide data within this report

Data Supplier	Data Supplier Logo
Ordnance Survey	
Environment Agency	
Scottish Environment Protection Agency	
The Coal Authority	
British Geological Survey	 <b>British Geological Survey</b> <small>NATURAL ENVIRONMENT RESEARCH COUNCIL</small>
Centre for Ecology and Hydrology	 <b>Centre for Ecology &amp; Hydrology</b> <small>NATURAL ENVIRONMENT RESEARCH COUNCIL</small>
Countryside Council for Wales	 <b>CYNGOR CEFN GWLAD CYMRU</b> <b>COUNTRYSIDE COUNCIL FOR WALES</b>
Scottish Natural Heritage	
Natural England	
Health Protection Agency	
Ove Arup	
Peter Brett Associates	

Contact	Name and Address	Contact Details
1	<b>Environment Agency - National Customer Contact Centre (NCCC)</b> PO Box 544, Templeborough, Rotherham, S60 1BY	Telephone: 08708 506 506 Email: enquiries@environment-agency.gov.uk
2	<b>Rother District Council - Environmental Health Department</b> 14 Beeching Road, Bexhill-on-sea, East Sussex, TN39 3LG	Telephone: 01424 787878 Fax: 01424 217869 Website: www.rother.gov.uk
3	<b>East Sussex County Council - Waste Management Group</b> St. Annes Crescent, Lewes, East Sussex, BN7 1UE	Telephone: 01273 481000 Website: www.eastsussexcc.gov.uk
4	<b>Health and Safety Executive</b> HSE Infoline, Caerphilly Business Park, Caerphilly, CF83 3GG	Telephone: 08701 545500 Fax: 02920 859260 Email: hseinformationservices@natbrit.com Website: www.hse.gov.uk
5	<b>British Geological Survey - Enquiry Service</b> British Geological Survey, Kingsley Dunham Centre, Keyworth, Nottingham, Nottinghamshire, NG12 5GG	Telephone: 0115 936 3143 Fax: 0115 936 3276 Email: enquiries@bgs.ac.uk Website: www.bgs.ac.uk
6	<b>Health Protection Agency</b> Chilton, Didcot, Oxfordshire, OX11 0RQ	Telephone: 01235 831600 Fax: 01235 833891
-	<b>Landmark Information Group Limited</b> The Smith Centre, Henley On Thames, Oxfordshire, RG9 6AB	Telephone: 0870 850 6670 Fax: 0870 850 6671 Email: customerservices@landmarkinfo.co.uk Website: www.landmarkinfo.co.uk

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

# Historical Mapping Legends

## Ordnance Survey County Series and Ordnance Survey Plan 1:2,500

**Quarry** **Gravel Pit** **Sand Pit**  
**Clay Pit** **Shingle** **Refuse Heap**  
**Sloping Masonry** **Flat Rock**  
**Marsh** **Reeds** **Osiers**  
**Rough Pasture** **Furze** **Wood**  
**Mixed Wood** **Brushwood** **Orchard**  
**Fir** **Ford** **Stepping Stones**  
**Ferry** **Waterfall** **Lock**  
**Trig. Station** **Altitude at Trig. Station**  
**B.M. 325.9** **Bench Mark** **Surface Level**  
**Arrow denotes flow of water** **Antiquities (site of)**  
**Cutting** **Embankment**  
**Railway crossing Road** **Level Crossing** **Road crossing Railway**  
**Railway crossing River or Canal** **Road over single stream** **Road over River or Canal**  
**County Boundary (Geographical)**  
**County & Civil Parish Boundary**  
**Administrative County & Civil Parish Boundary**  
**County Borough Boundary (England)**  
**County Burgh Boundary (Scotland)**  
**BP BS** Boundary Post or Stone **P.C.B.** Police Call Box  
**B.R.** Bridle Road **P** Pump  
**E.P.** Electricity Pylon **S.P.** Signal Post  
**F.B.** Foot Bridge **SL** Sluice  
**F.P.** Foot Path **Sp.** Spring  
**G.P.** Guide Post or Board **T.C.B.** Telephone Call Box  
**M.S.** Mile Stone **Tr.** Trough  
**M.P.M.R.** Mooring Post or Ring **W** Well

## Ordnance Survey Plan, Additional SIMs and Supply of Unpublished Survey Information 1:2,500 and 1:1,250

**Inactive Quarry, Chalk Pit or Clay Pit** **Active Quarry, Chalk Pit or Clay Pit**  
**Rock** **Boulders**  
**Cliff** **Slopes** **Top**  
**Roofed Building** **Glazed Roof Building**  
**Sloping Masonry** **Archway**  
**Non-Coniferous Tree (surveyed)** **Coniferous Tree (surveyed)**  
**Non-Coniferous Trees (not surveyed)** **Coniferous Trees (not surveyed)**  
**Orchard Tree** **Scrub** **Bracken**  
**Coppice, Osier** **Reeds** **Marsh, Saltings**  
**Rough Grassland** **Heath** **Culvert**  
**Direction of water flow** **Bench Mark** **Antiquity (site of)**  
**Cave Entrance** **Triangulation Station** **Electricity Pylon**  
**Electricity Transmission Line**  
**County Boundary (Geographical)**  
**County & Civil Parish Boundary**  
**Civil Parish Boundary**  
**Admin. County or County Bor. Boundary**  
**London Borough Boundary**  
**Symbol marking point where boundary mereing changes**  
**BH** Beer House **P** Pillar, Pole or Post  
**BP, BS** Boundary Post or Stone **PO** Post Office  
**Cn, C** Capstan, Crane **PC** Public Convenience  
**Chy** Chimney **PH** Public House  
**D Fn** Drinking Fountain **Pp** Pump  
**EI P** Electricity Pillar or Post **SB, S Br** Signal Box or Bridge  
**FAP** Fire Alarm Pillar **SP, SL** Signal Post or Light  
**FB** Foot Bridge **Spr** Spring  
**GP** Guide Post **Tk** Tank or Track  
**H** Hydrant or Hydraulic **TCB** Telephone Call Box  
**LC** Level Crossing **TCP** Telephone Call Post  
**MH** Manhole **Tr** Trough  
**MP** Mile Post or Mooring Post **Wr Pt, Wr T** Water Point, Water Tap  
**MS** Mile Stone **W** Well  
**NTL** Normal Tidal Limit **Wd Pp** Wind Pump

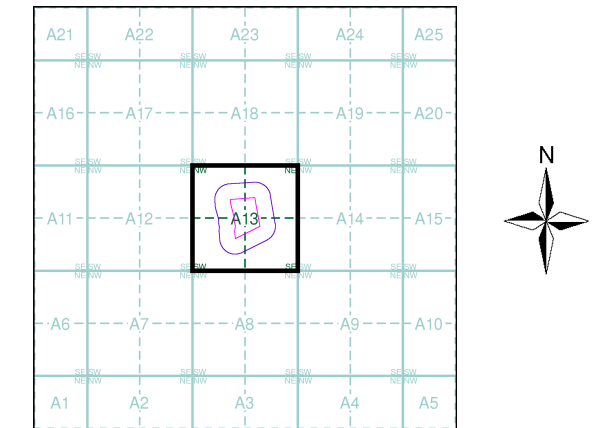
## Large-Scale National Grid Data 1:2,500 and 1:1,250

**Cliff** **Slopes** **Top**  
**Rock** **Rock (scattered)**  
**Boulders** **Boulders (scattered)**  
**Positioned Boulder** **Scree**  
**Non-Coniferous Tree (surveyed)** **Coniferous Tree (surveyed)**  
**Non-Coniferous Trees (not surveyed)** **Coniferous Trees (not surveyed)**  
**Orchard Tree** **Scrub** **Bracken**  
**Coppice, Osier** **Reeds** **Marsh, Saltings**  
**Rough Grassland** **Heath** **Culvert**  
**Direction of water flow** **Triangulation Station** **Antiquity (site of)**  
**Electricity Transmission Line** **Electricity Pylon**  
**B.M. 231.60m** **Bench Mark** **Buildings with Building Seed**  
**Roofed Building** **Glazed Roof Building**  
**Civil parish/community boundary**  
**District boundary**  
**County boundary**  
**Boundary post/stone**  
**Boundary mereing symbol (note: these always appear in opposed pairs or groups of three)**  
**Bks** Barracks **P** Pillar, Pole or Post  
**Bty** Battery **PO** Post Office  
**Cemy** Cemetery **PC** Public Convenience  
**Chy** Chimney **Pp** Pump  
**Cis** Cistern **Ppg Sta** Pumping Station  
**Dismtd Rly** Dismantled Railway **PW** Place of Worship  
**EI Gen Sta** Electricity Generating Station **Sewage Ppg Sta** Sewage Pumping Station  
**EI P** Electricity Pole, Pillar **SB, S Br** Signal Box or Bridge  
**EI Sub Sta** Electricity Sub Station **SP, SL** Signal Post or Light  
**FB** Filter Bed **Spr** Spring  
**Fn / D Fn** Fountain / Drinking Ftn. **Tk** Tank or Track  
**Gas Gov** Gas Valve Compound **Tr** Trough  
**GVC** Gas Governor **Wd Pp** Wind Pump  
**GP** Guide Post **Wr Pt, Wr T** Water Point, Water Tap  
**MH** Manhole **Wks** Works (building or area)  
**MP, MS** Mile Post or Mile Stone **W** Well

### Ordnance Survey mapping included:

Mapping Type	Scale	Date	Pg
Sussex	1:2,500	1875	2
Sussex	1:2,500	1899	3
Sussex	1:2,500	1909	4
Sussex	1:2,500	1930	5
Ordnance Survey Plan	1:2,500	1955	6
Ordnance Survey Plan	1:2,500	1961	7
Ordnance Survey Plan	1:1,250	1954 - 1981	8
Ordnance Survey Plan	1:1,250	1960 - 1962	9
Ordnance Survey Plan	1:1,250	1969	10
Additional SIMs	1:2,500	1984	11
Additional SIMs	1:1,250	1960 - 1985	12
Additional SIMs	1:1,250	1985 - 1990	13
Supply of Unpublished Survey Information	1:2,500	1973	14
Supply of Unpublished Survey Information	1:2,500	1974	15
Supply of Unpublished Survey Information	1:1,250	1974 - 1976	16
Large-Scale National Grid Data	1:1,250	1993	17
Large-Scale National Grid Data	1:1,250	1995	18

### Historical Map - Segment A13



### Order Details

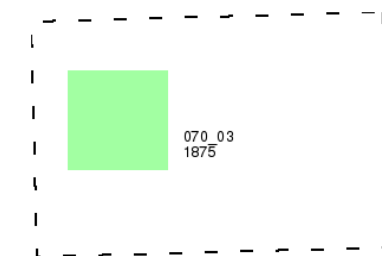
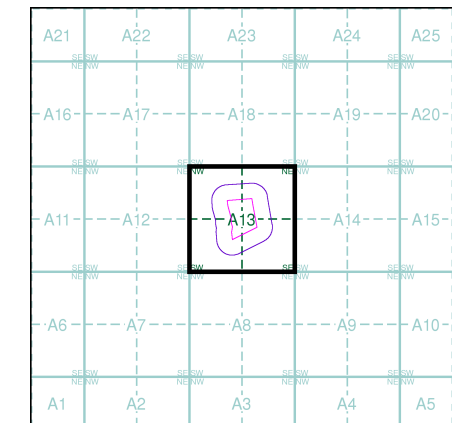
Order Number: 23283856\_1\_1  
 Customer Ref: E013713-4 Gunters Lane  
 National Grid Reference: 573020, 109170  
 Slice: A  
 Site Area (Ha): 3.46  
 Search Buffer (m): 100

### Site Details

Wendy House, Gunters Lane, BEXHILL-ON-SEA, East Sussex, TN39 4EP

**Sussex**
**Published 1875**
**Source map scale - 1:2,500**

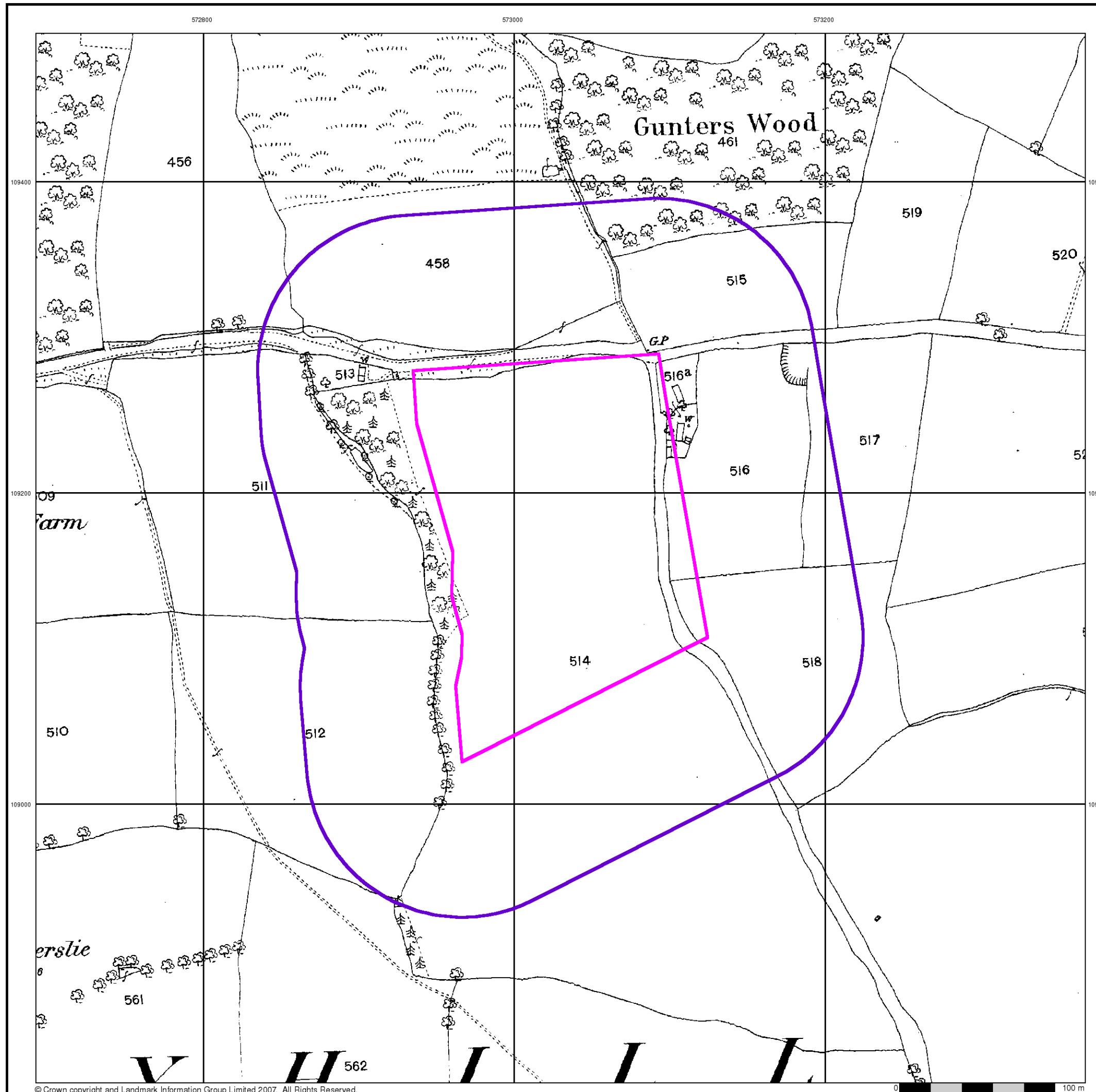
The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below 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.

**Map Name(s) and Date(s)**

**Historical Map - Segment A13**

**Order Details**

Order Number: 23283856\_1\_1  
 Customer Ref: E013713-4 Gunters Lane  
 National Grid Reference: 573020, 109170  
 Slice: A  
 Site Area (Ha): 3.46  
 Search Buffer (m): 100

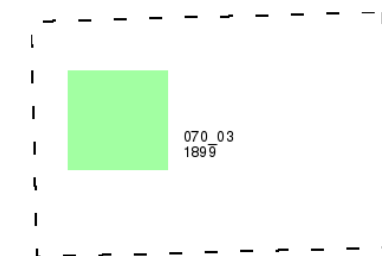
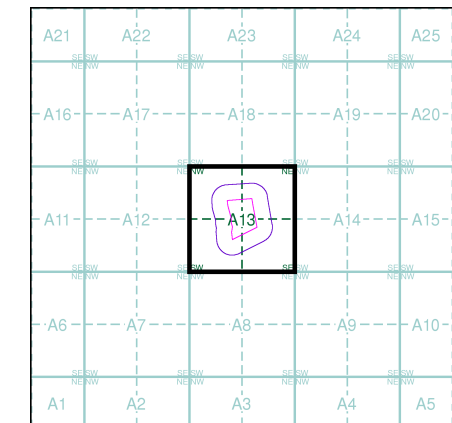
**Site Details**

Wendy House, Gunters Lane, BEXHILL-ON-SEA, East Sussex, TN39 4EP



**Sussex**
**Published 1899**
**Source map scale - 1:2,500**

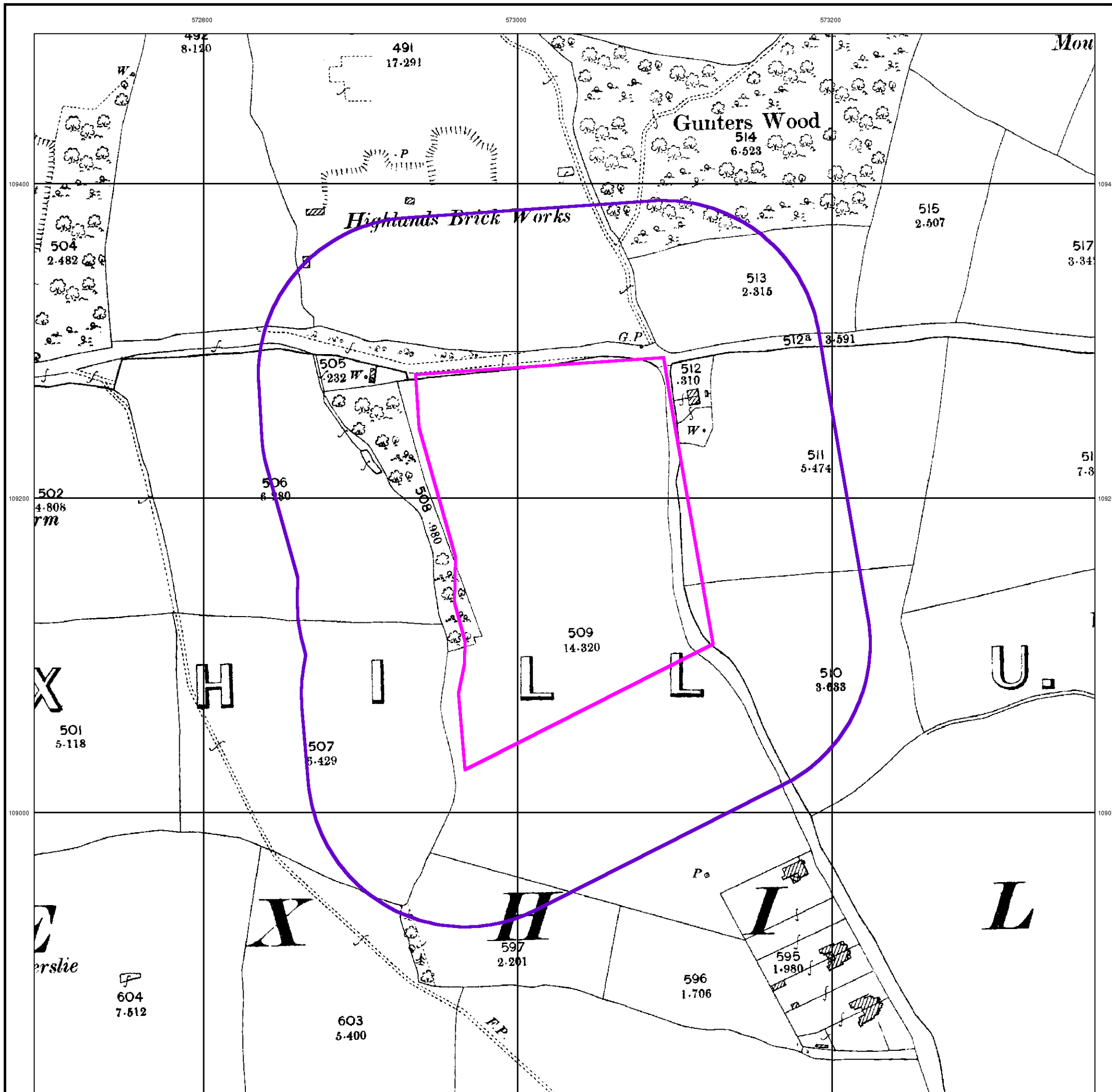
The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below 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.

**Map Name(s) and Date(s)**

**Historical Map - Segment A13**

**Order Details**

Order Number: 23283856\_1\_1  
 Customer Ref: E013713-4 Gunters Lane  
 National Grid Reference: 573020, 109170  
 Slice: A  
 Site Area (Ha): 3.46  
 Search Buffer (m): 100

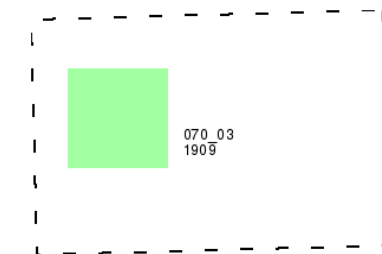
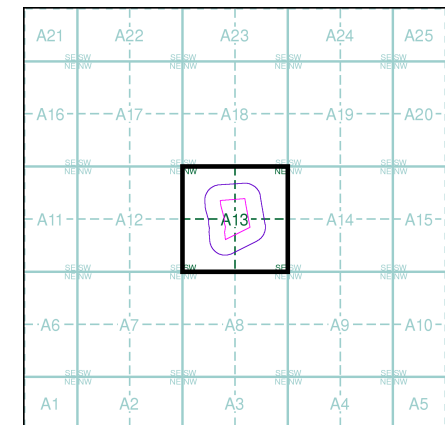
**Site Details**

Wendy House, Gunters Lane, BEXHILL-ON-SEA, East Sussex, TN39 4EP



**Sussex**
**Published 1909**
**Source map scale - 1:2,500**

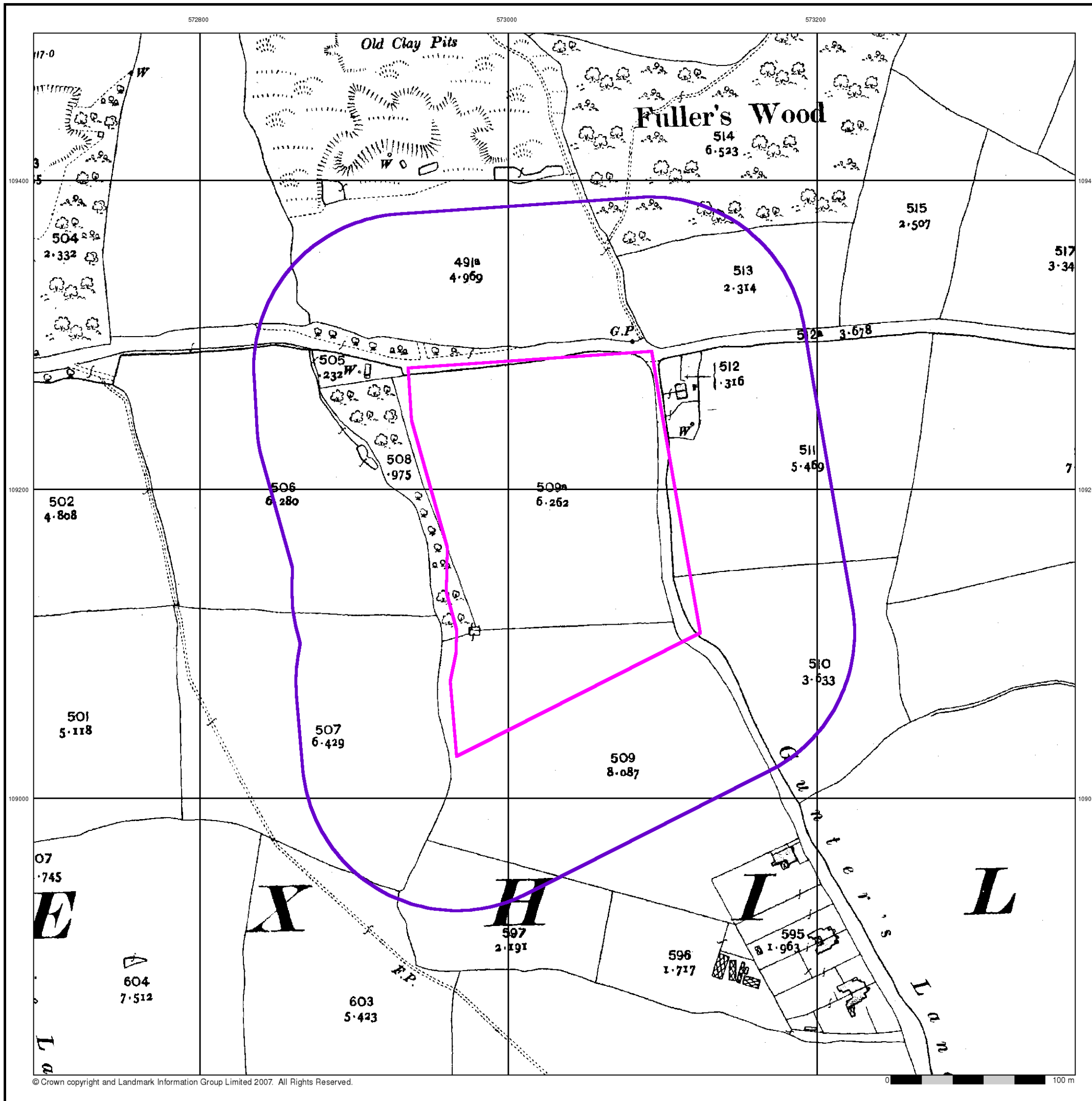
The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below 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.

**Map Name(s) and Date(s)**

**Historical Map - Segment A13**

**Order Details**

Order Number: 23283856\_1\_1  
 Customer Ref: E013713-4 Gunters Lane  
 National Grid Reference: 573020, 109170  
 Slice: A  
 Site Area (Ha): 3.46  
 Search Buffer (m): 100

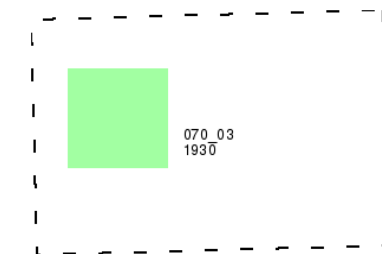
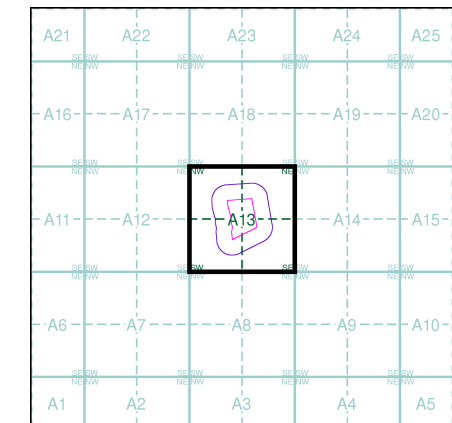
**Site Details**

Wendy House, Gunters Lane, BEXHILL-ON-SEA, East Sussex, TN39 4EP



**Sussex**
**Published 1930**
**Source map scale - 1:2,500**

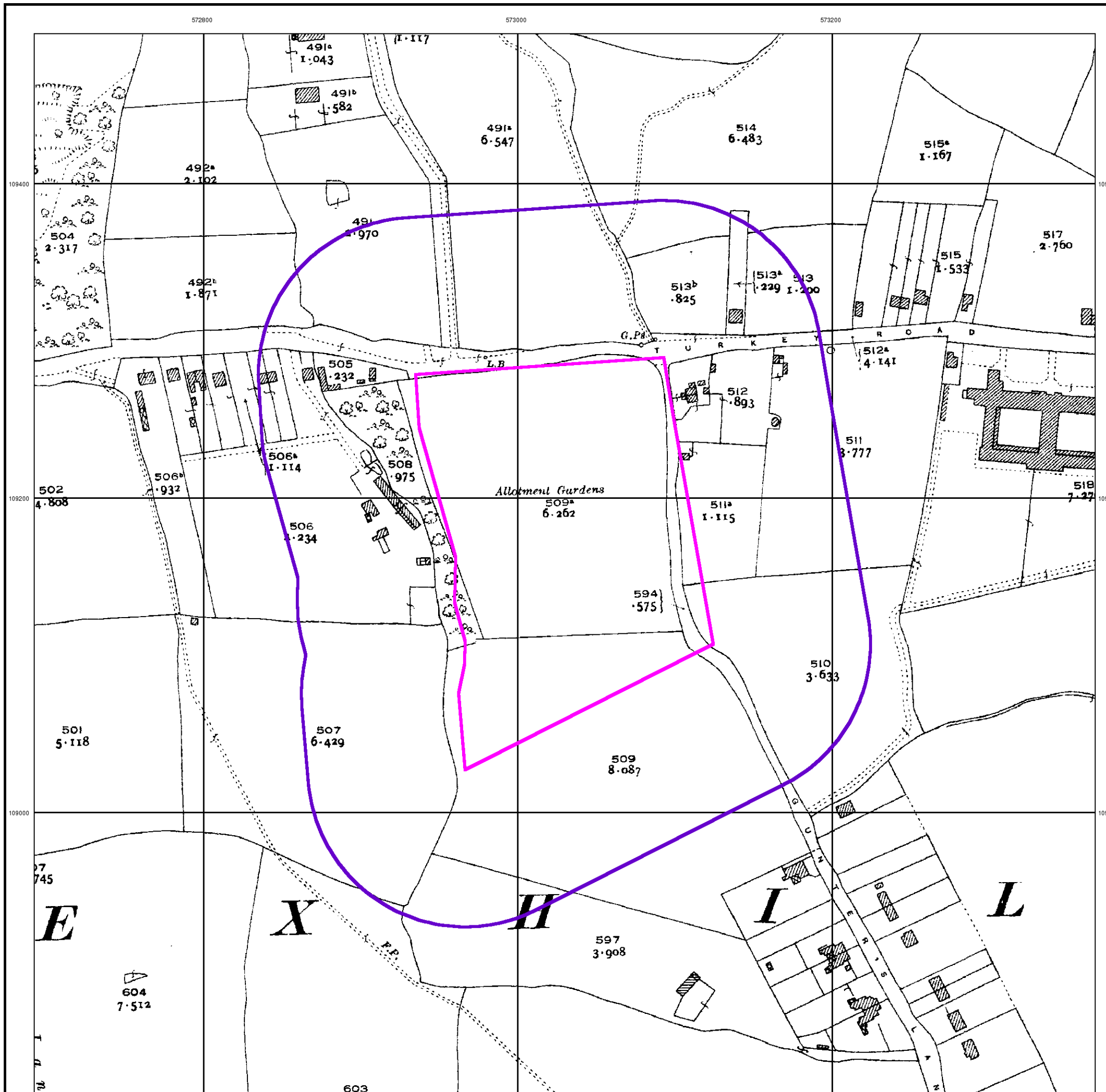
The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below 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.

**Map Name(s) and Date(s)**

**Historical Map - Segment A13**

**Order Details**

Order Number: 23283856\_1\_1  
 Customer Ref: E013713-4 Gunters Lane  
 National Grid Reference: 573020, 109170  
 Slice: A  
 Site Area (Ha): 3.46  
 Search Buffer (m): 100

**Site Details**

Wendy House, Gunters Lane, BEXHILL-ON-SEA, East Sussex, TN39 4EP



## Ordnance Survey Plan

Published 1955

Source map scale - 1:2,500

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 and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below 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.

### Map Name(s) and Date(s)

TQ7209 1955	TQ7309 1955
TQ7208 1955	TQ7308 1955

### Historical Map - Segment A13

A21	A22	A23	A24	A25
A16	A17	A18	A19	A20
A11	A12	A13	A14	A15
A6	A7	A8	A9	A10
A1	A2	A3	A4	A5

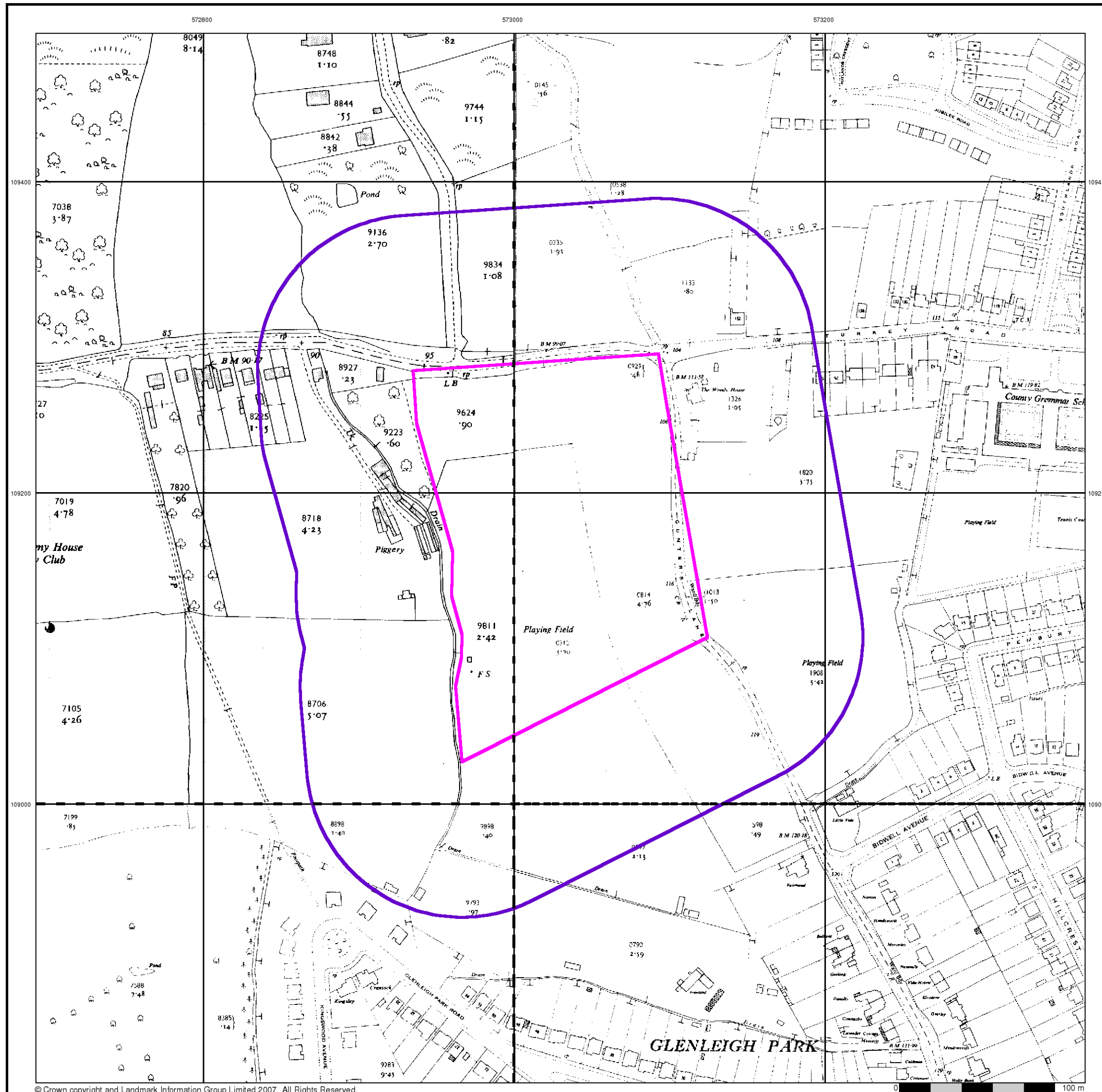


### Order Details

Order Number: 23283856\_1\_1  
 Customer Ref: E013713-4 Gunters Lane  
 National Grid Reference: 573020, 109170  
 Slice: A  
 Site Area (Ha): 3.46  
 Search Buffer (m): 100

### Site Details

Wendy House, Gunters Lane, BEXHILL-ON-SEA, East Sussex, TN39 4EP



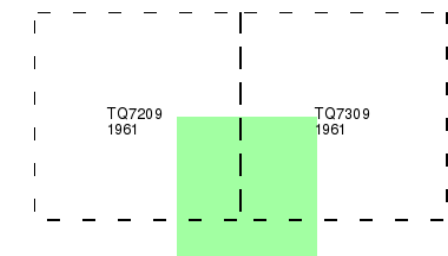
### Ordnance Survey Plan

Published 1961

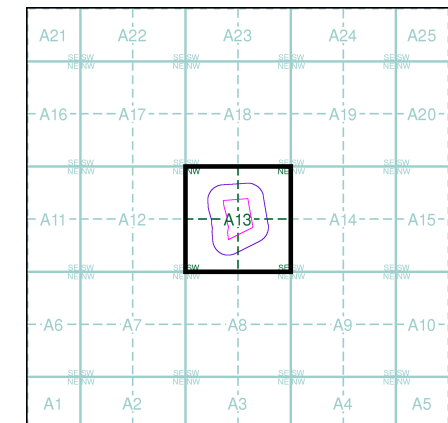
Source map scale - 1:2,500

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 and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below 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.

### Map Name(s) and Date(s)



### Historical Map - Segment A13

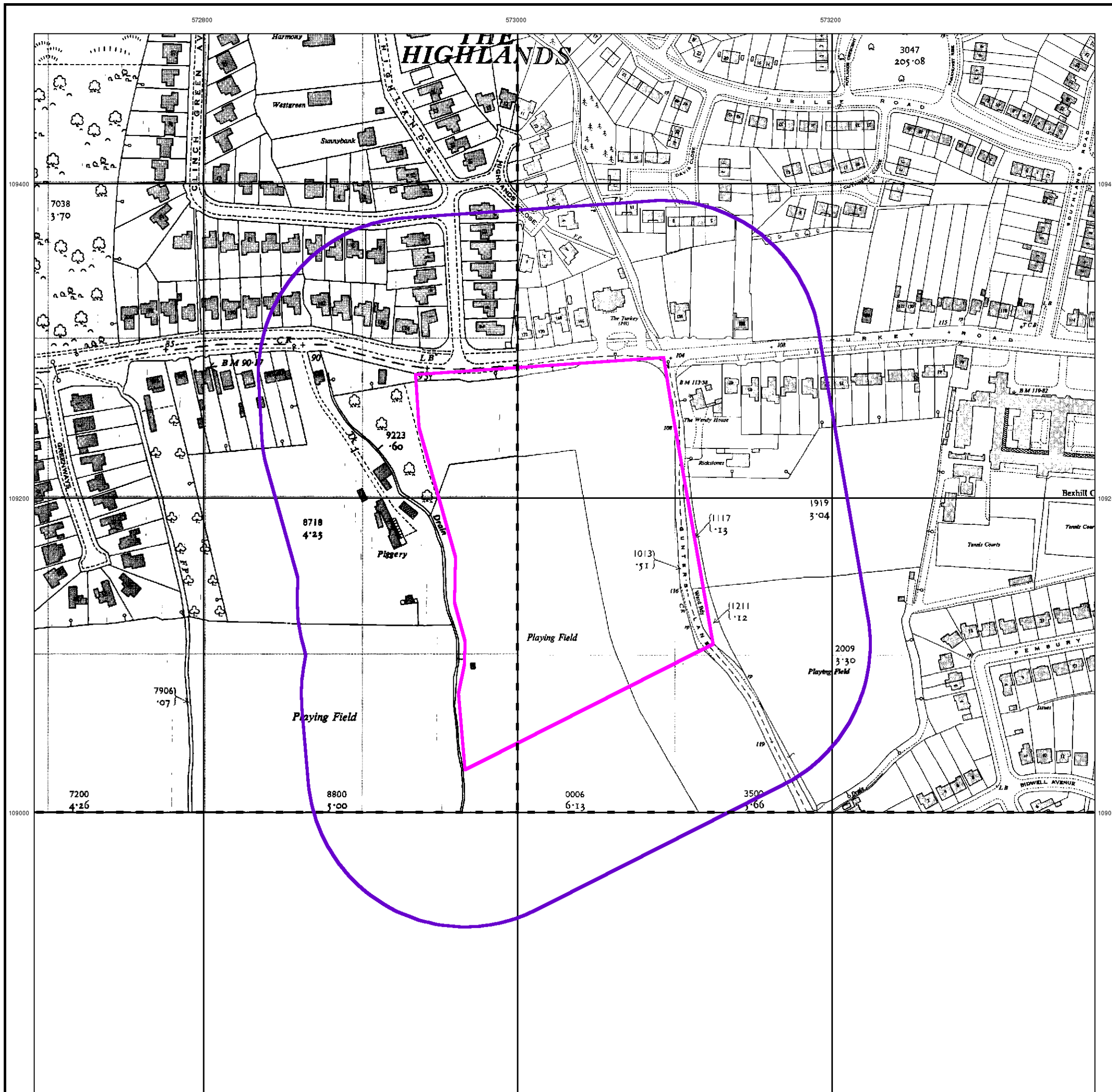


### Order Details

Order Number: 23283856\_1\_1  
 Customer Ref: E013713-4 Gunters Lane  
 National Grid Reference: 573020, 109170  
 Slice: A  
 Site Area (Ha): 3.46  
 Search Buffer (m): 100

### Site Details

Wendy House, Gunters Lane, BEXHILL-ON-SEA, East Sussex, TN39 4EP



### Ordnance Survey Plan

Published 1954 - 1981

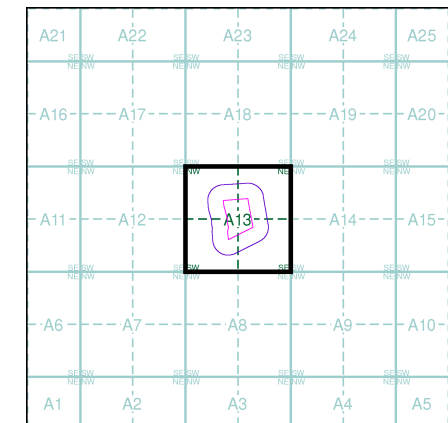
Source map scale - 1:1,250

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 and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below 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.

### Map Name(s) and Date(s)

TQ7209SE 1981	TQ7309SW 1954
TQ7208NE 1954	TQ7308NW 1954

### Historical Map - Segment A13

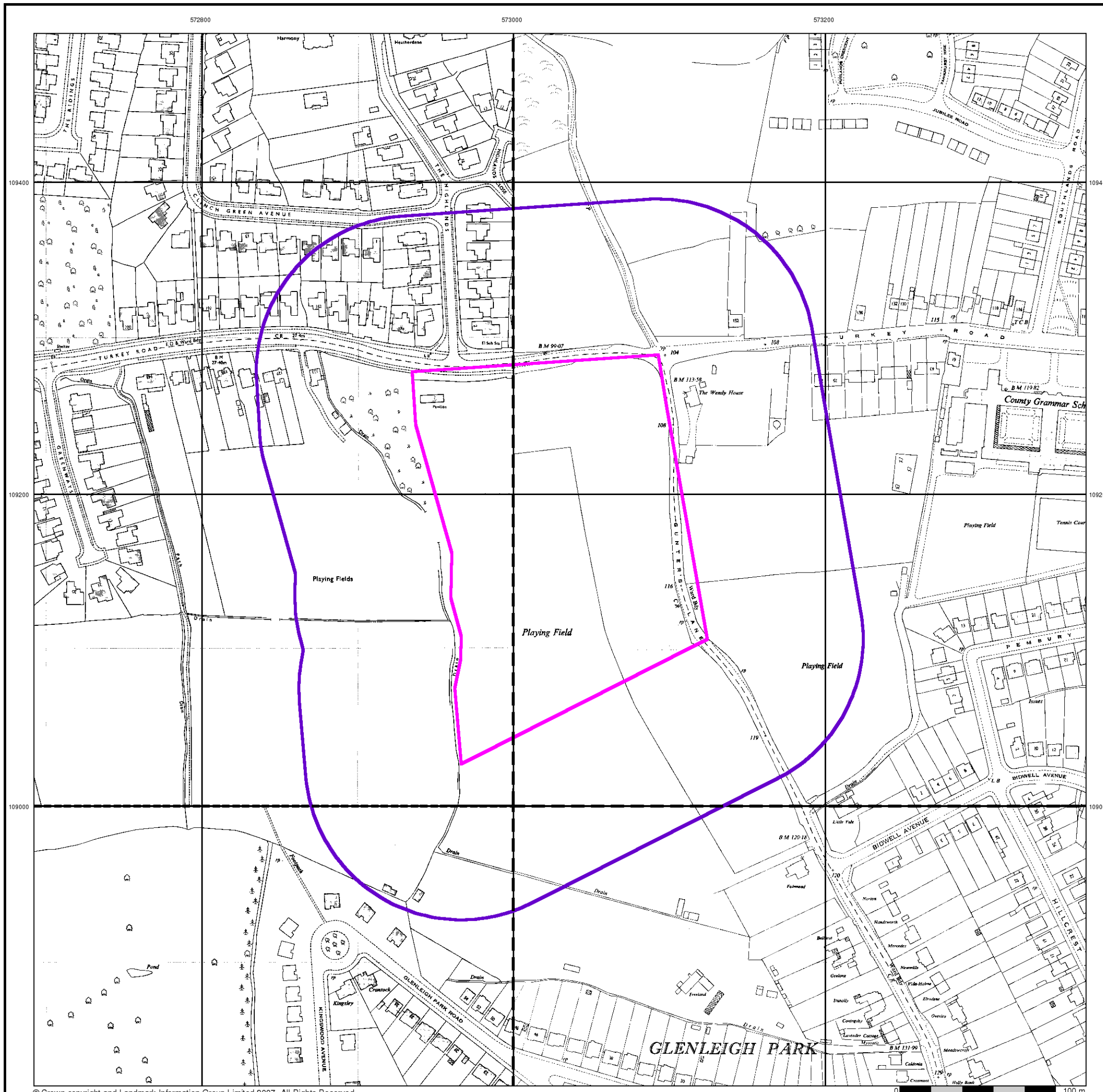


### Order Details

Order Number: 23283856\_1\_1  
 Customer Ref: E013713-4 Gunters Lane  
 National Grid Reference: 573020, 109170  
 Slice: A  
 Site Area (Ha): 3.46  
 Search Buffer (m): 100

### Site Details

Wendy House, Gunters Lane, BEXHILL-ON-SEA, East Sussex, TN39 4EP



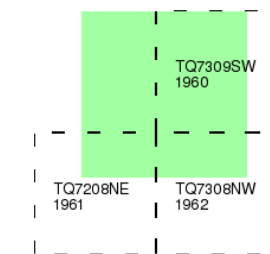
### Ordnance Survey Plan

Published 1960 - 1962

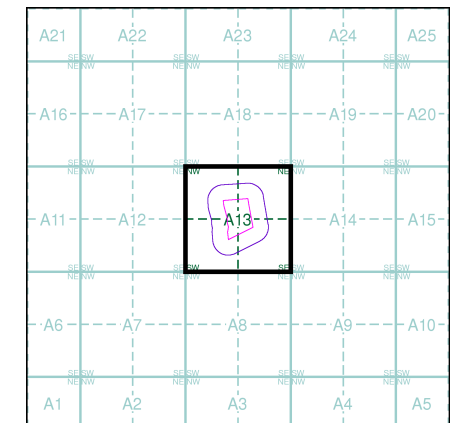
Source map scale - 1:1,250

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 and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below 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.

### Map Name(s) and Date(s)



### Historical Map - Segment A13

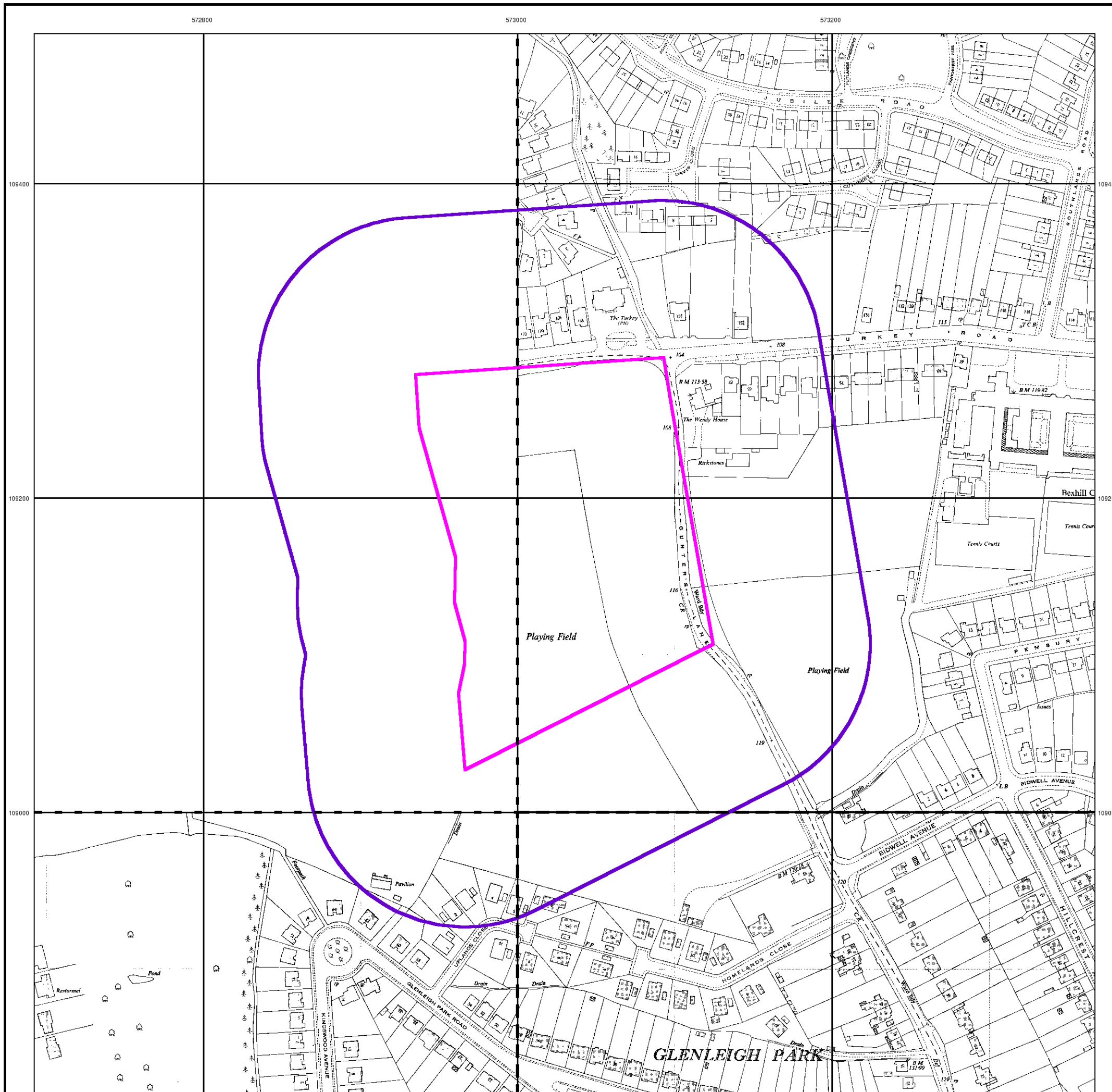


### Order Details

Order Number: 23283856\_1\_1  
 Customer Ref: E013713-4 Gunters Lane  
 National Grid Reference: 573020, 109170  
 Slice: A  
 Site Area (Ha): 3.46  
 Search Buffer (m): 100

### Site Details

Wendy House, Gunters Lane, BEXHILL-ON-SEA, East Sussex, TN39 4EP



572800

573000

573200

109400

109400

109200

109200

109000

109000



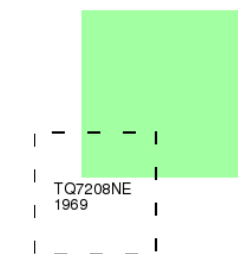
### Ordnance Survey Plan

Published 1969

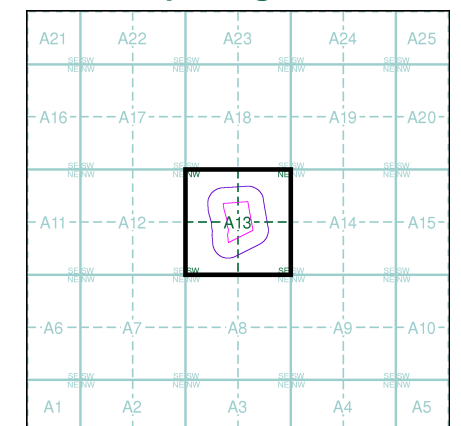
Source map scale - 1:1,250

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 and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below 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.

### Map Name(s) and Date(s)



### Historical Map - Segment A13



### Order Details

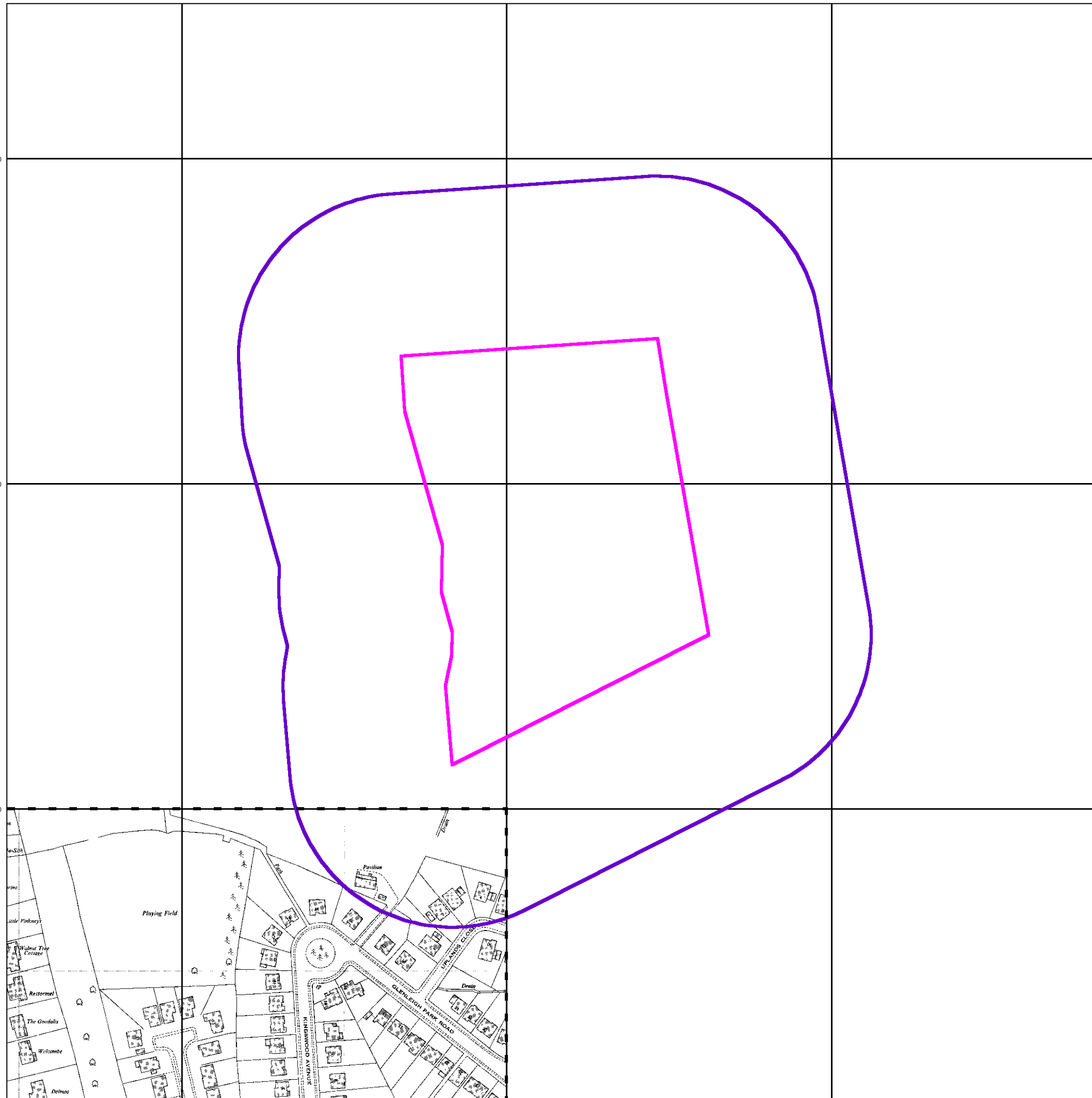
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 Customer Ref: E013713-4 Gunters Lane  
 National Grid Reference: 573020, 109170  
 Slice: A  
 Site Area (Ha): 3.46  
 Search Buffer (m): 100

### Site Details

Wendy House, Gunters Lane, BEXHILL-ON-SEA, East Sussex, TN39 4EP



Tel: 0870 850 6670  
 Fax: 0870 850 6671  
 Web: www.envirocheck.co.uk



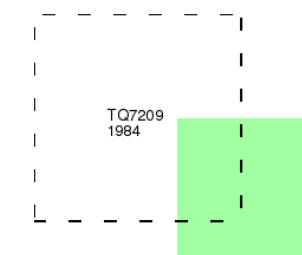
### Additional SIMs

Published 1984

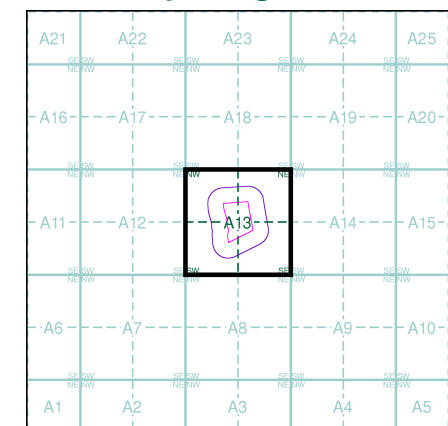
Source map scale - 1:2,500

The SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') are further, minor editions of mapping which were produced and published in between the main editions as an area was updated. They date from 1947 to 1994, and contain detailed information on buildings, roads and land-use. These maps were produced at both 1:2,500 and 1:1,250 scales.

### Map Name(s) and Date(s)



### Historical Map - Segment A13



### Order Details

Order Number: 23283856\_1\_1  
 Customer Ref: E013713-4 Gunters Lane  
 National Grid Reference: 573020, 109170  
 Slice: A  
 Site Area (Ha): 3.46  
 Search Buffer (m): 100

### Site Details

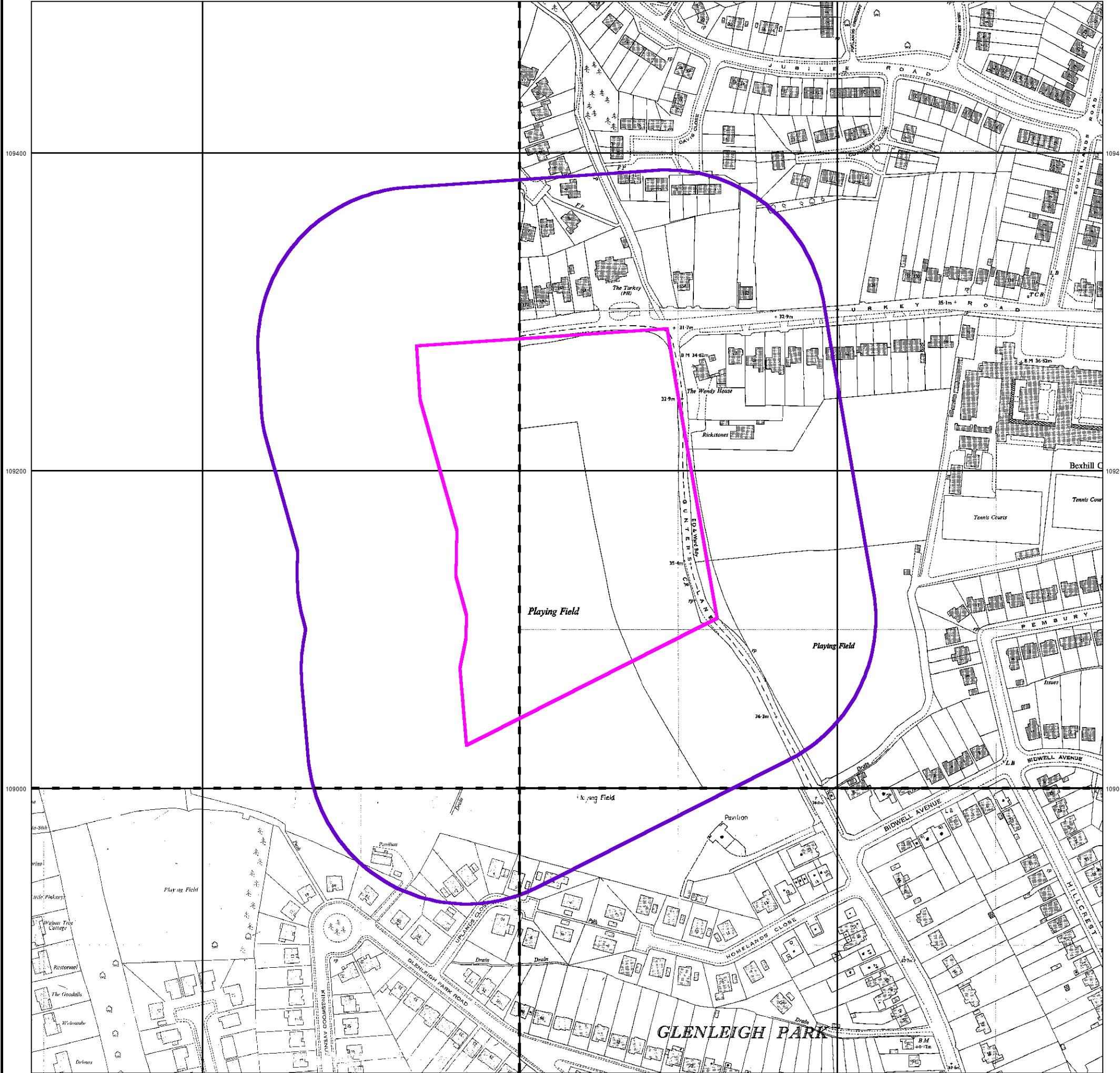
Wendy House, Gunters Lane, BEXHILL-ON-SEA, East Sussex, TN39 4EP



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573000

573200



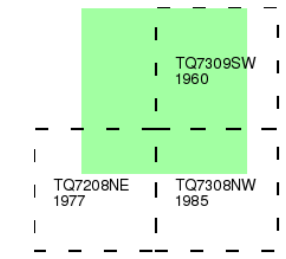
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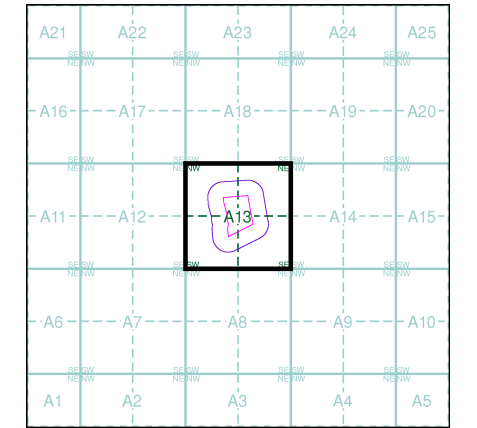
**Additional SIMs**  
**Published 1960 - 1985**  
**Source map scale - 1:1,250**

The SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') are further, minor editions of mapping which were produced and published in between the main editions as an area was updated. They date from 1947 to 1994, and contain detailed information on buildings, roads and land-use. These maps were produced at both 1:2,500 and 1:1,250 scales.

**Map Name(s) and Date(s)**



**Historical Map - Segment A13**



**Order Details**  
 Order Number: 23283856\_1\_1  
 Customer Ref: E013713-4 Gunters Lane  
 National Grid Reference: 573020, 109170  
 Slice: A  
 Site Area (Ha): 3.46  
 Search Buffer (m): 100

**Site Details**  
 Wendy House, Gunters Lane, BEXHILL-ON-SEA, East Sussex, TN39 4EP



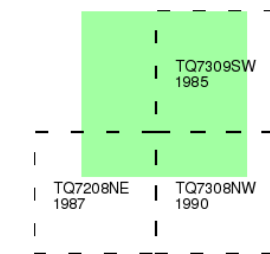
### Additional SIMs

Published 1985 - 1990

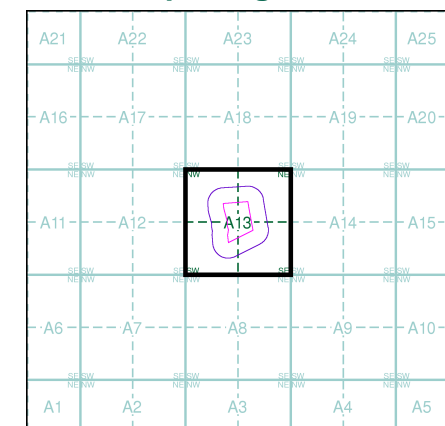
Source map scale - 1:1,250

The SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') are further, minor editions of mapping which were produced and published in between the main editions as an area was updated. They date from 1947 to 1994, and contain detailed information on buildings, roads and land-use. These maps were produced at both 1:2,500 and 1:1,250 scales.

### Map Name(s) and Date(s)



### Historical Map - Segment A13

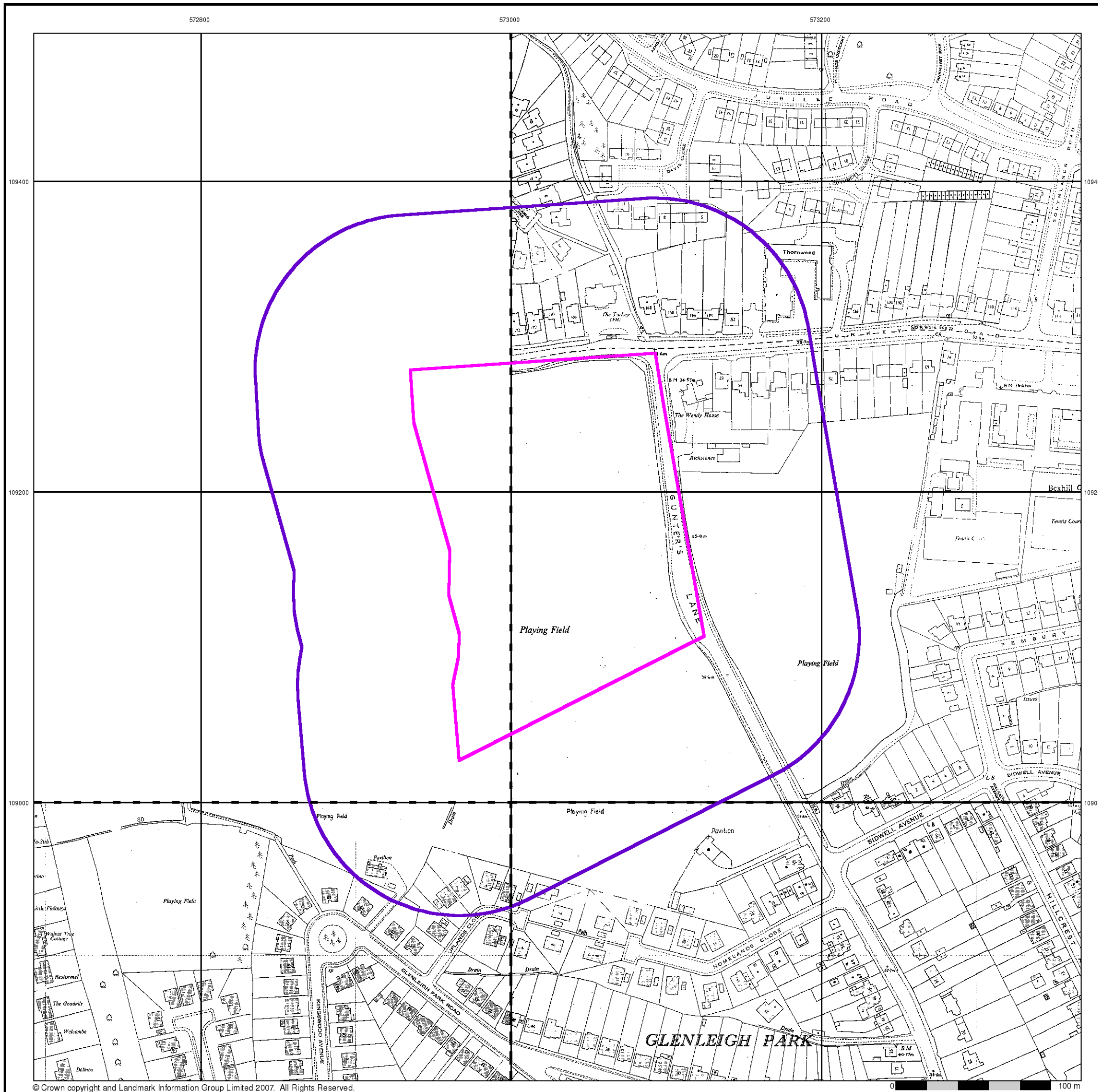


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 Customer Ref: E013713-4 Gunters Lane  
 National Grid Reference: 573020, 109170  
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 Site Area (Ha): 3.46  
 Search Buffer (m): 100

### Site Details

Wendy House, Gunters Lane, BEXHILL-ON-SEA, East Sussex, TN39 4EP



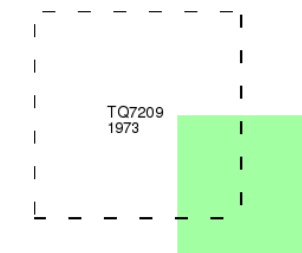
## Supply of Unpublished Survey Information

**Published 1973**

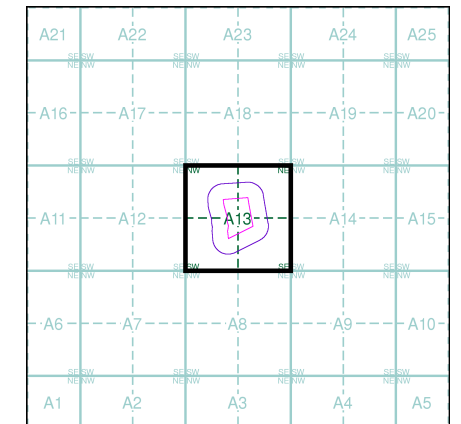
**Source map scale - 1:2,500**

SUSI maps (Supply of Unpublished Survey Information) were produced between 1972 and 1977, mainly for internal use at Ordnance Survey. These were more of a 'work-in-progress' plan as they showed updates of individual areas on a map. These maps were unpublished, and they do not represent a single moment in time. They were produced at both 1:2,500 and 1:1,250 scales.

### Map Name(s) and Date(s)



### Historical Map - Segment A13

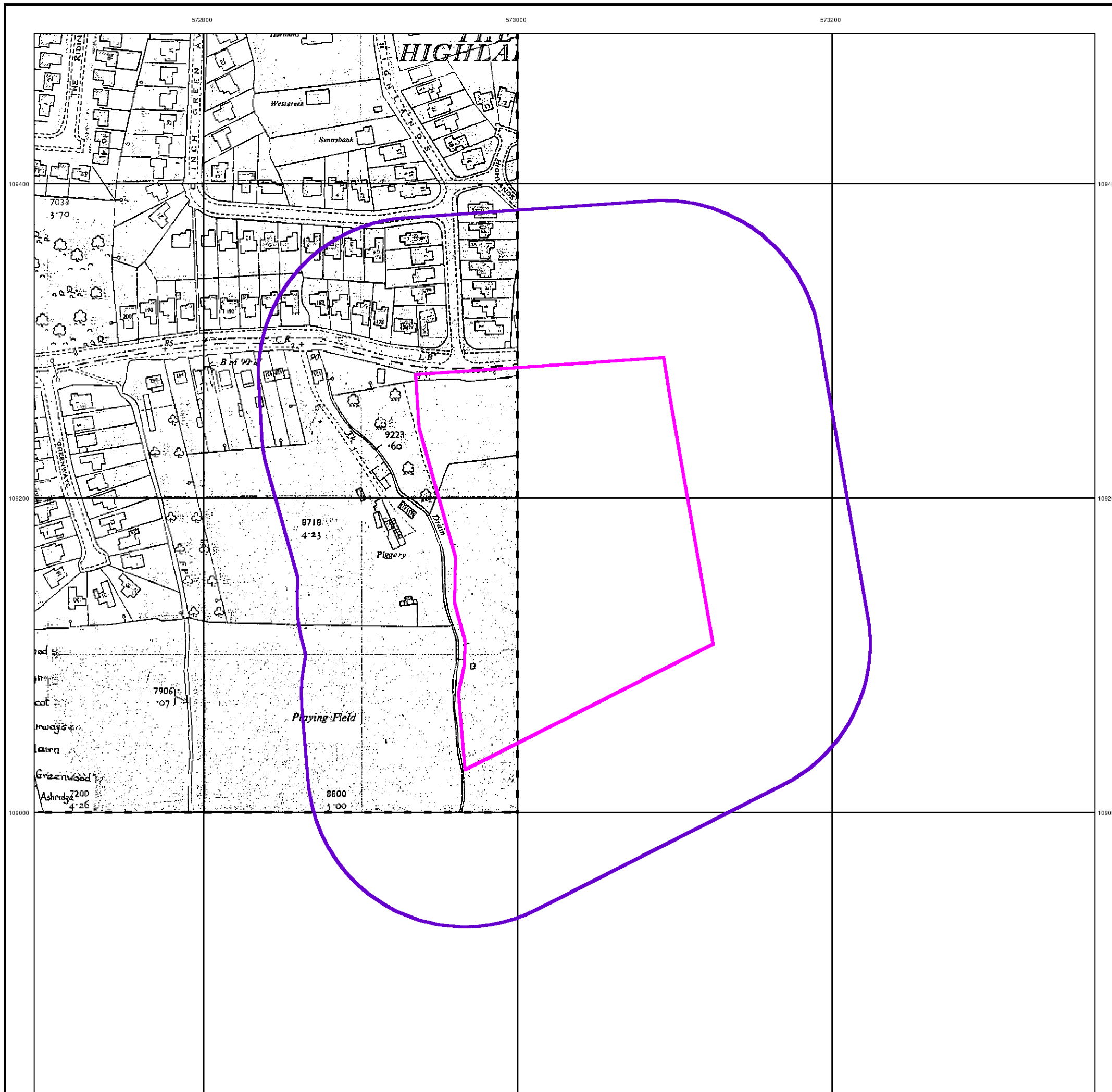


### Order Details

Order Number: 23283856\_1\_1  
 Customer Ref: E013713-4 Gunters Lane  
 National Grid Reference: 573020, 109170  
 Slice: A  
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 Search Buffer (m): 100

### Site Details

Wendy House, Gunters Lane, BEXHILL-ON-SEA, East Sussex, TN39 4EP



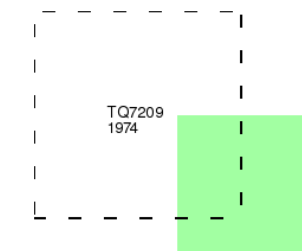
## Supply of Unpublished Survey Information

**Published 1974**

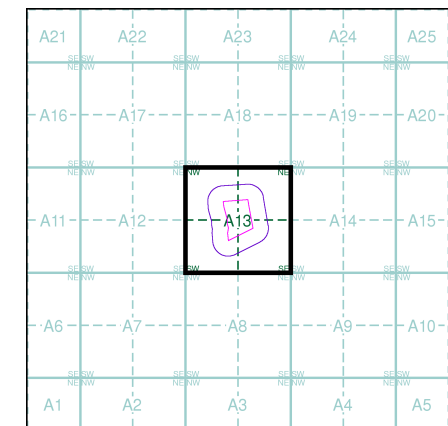
**Source map scale - 1:2,500**

SUSI maps (Supply of Unpublished Survey Information) were produced between 1972 and 1977, mainly for internal use at Ordnance Survey. These were more of a 'work-in-progress' plan as they showed updates of individual areas on a map. These maps were unpublished, and they do not represent a single moment in time. They were produced at both 1:2,500 and 1:1,250 scales.

### Map Name(s) and Date(s)



### Historical Map - Segment A13



### Order Details

Order Number: 23283856\_1\_1  
 Customer Ref: E013713-4 Gunters Lane  
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 Slice: A  
 Site Area (Ha): 3.46  
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### Site Details

Wendy House, Gunters Lane, BEXHILL-ON-SEA, East Sussex, TN39 4EP



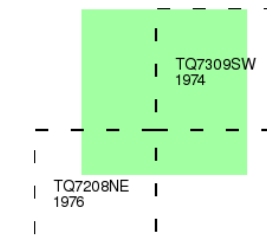
## Supply of Unpublished Survey Information

Published 1974 - 1976

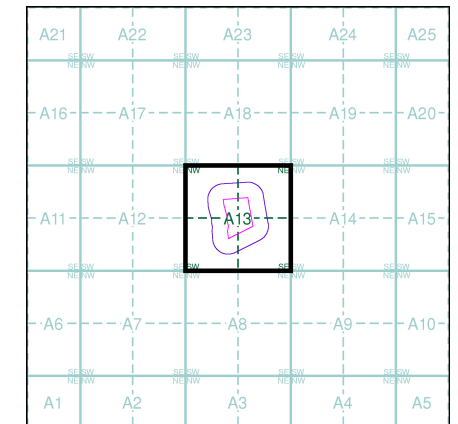
Source map scale - 1:1,250

SUSI maps (Supply of Unpublished Survey Information) were produced between 1972 and 1977, mainly for internal use at Ordnance Survey. These were more of a 'work-in-progress' plan as they showed updates of individual areas on a map. These maps were unpublished, and they do not represent a single moment in time. They were produced at both 1:2,500 and 1:1,250 scales.

### Map Name(s) and Date(s)



### Historical Map - Segment A13

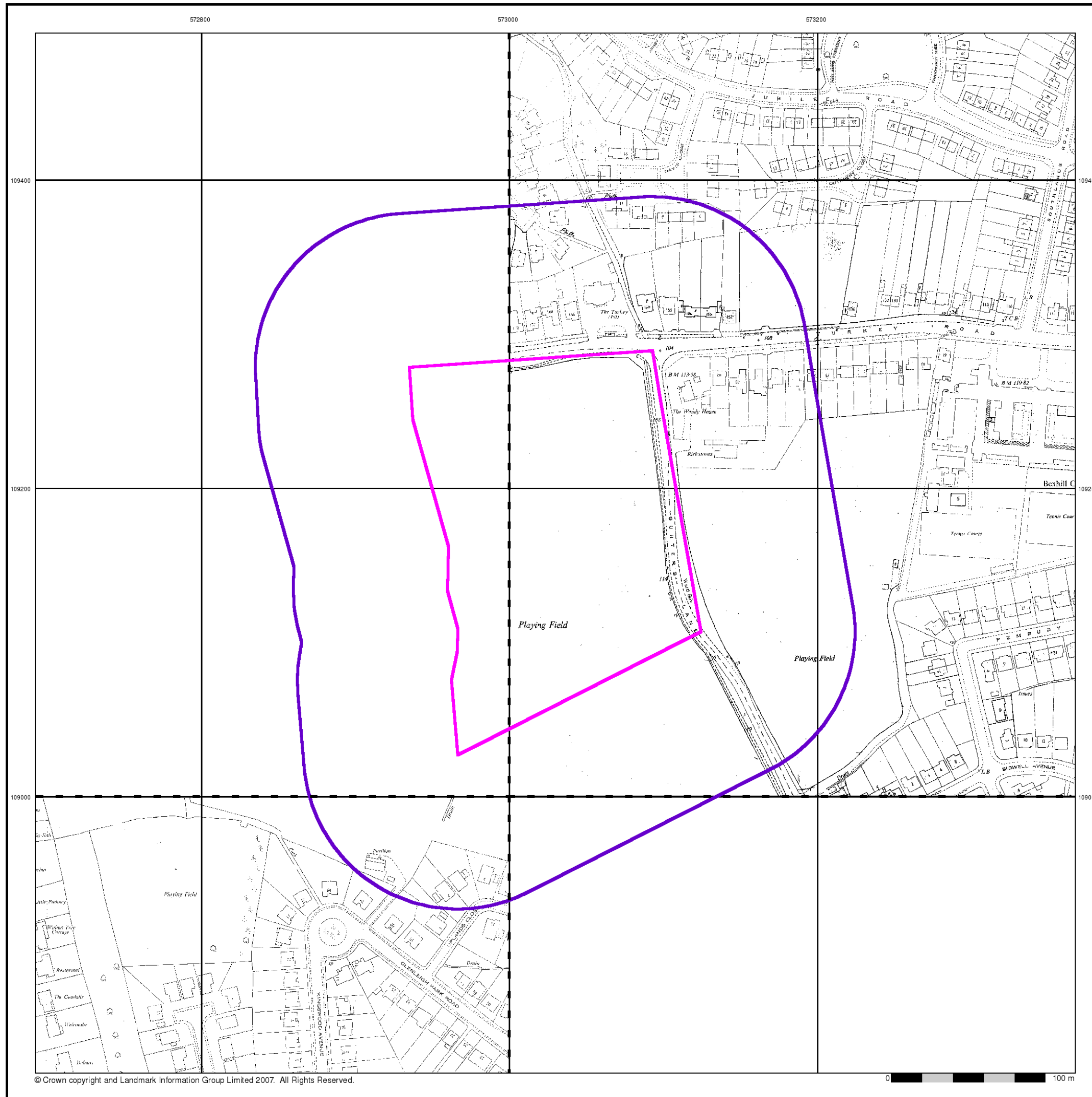


### Order Details

Order Number: 23283856\_1\_1  
 Customer Ref: E013713-4 Gunters Lane  
 National Grid Reference: 573020, 109170  
 Slice: A  
 Site Area (Ha): 3.46  
 Search Buffer (m): 100

### Site Details

Wendy House, Gunters Lane, BEXHILL-ON-SEA, East Sussex, TN39 4EP



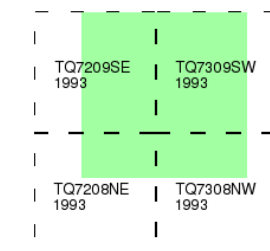
## Large-Scale National Grid Data

Published 1993

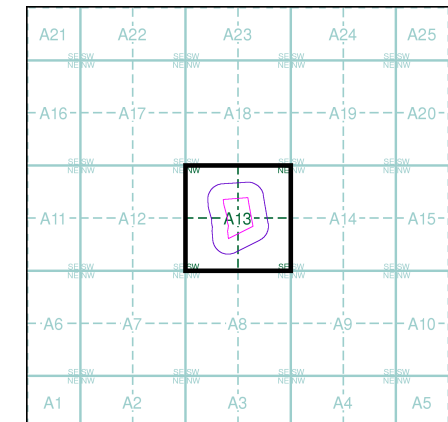
Source map scale - 1:1,250

'Large Scale National Grid Data' superseded SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') in 1992, and continued to be produced until 1999. These maps were the fore-runners of digital mapping and so provide detailed information on houses and roads, but tend to show less topographic features such as vegetation. These maps were produced at both 1:2,500 and 1:1,250 scales.

### Map Name(s) and Date(s)



### Historical Map - Segment A13

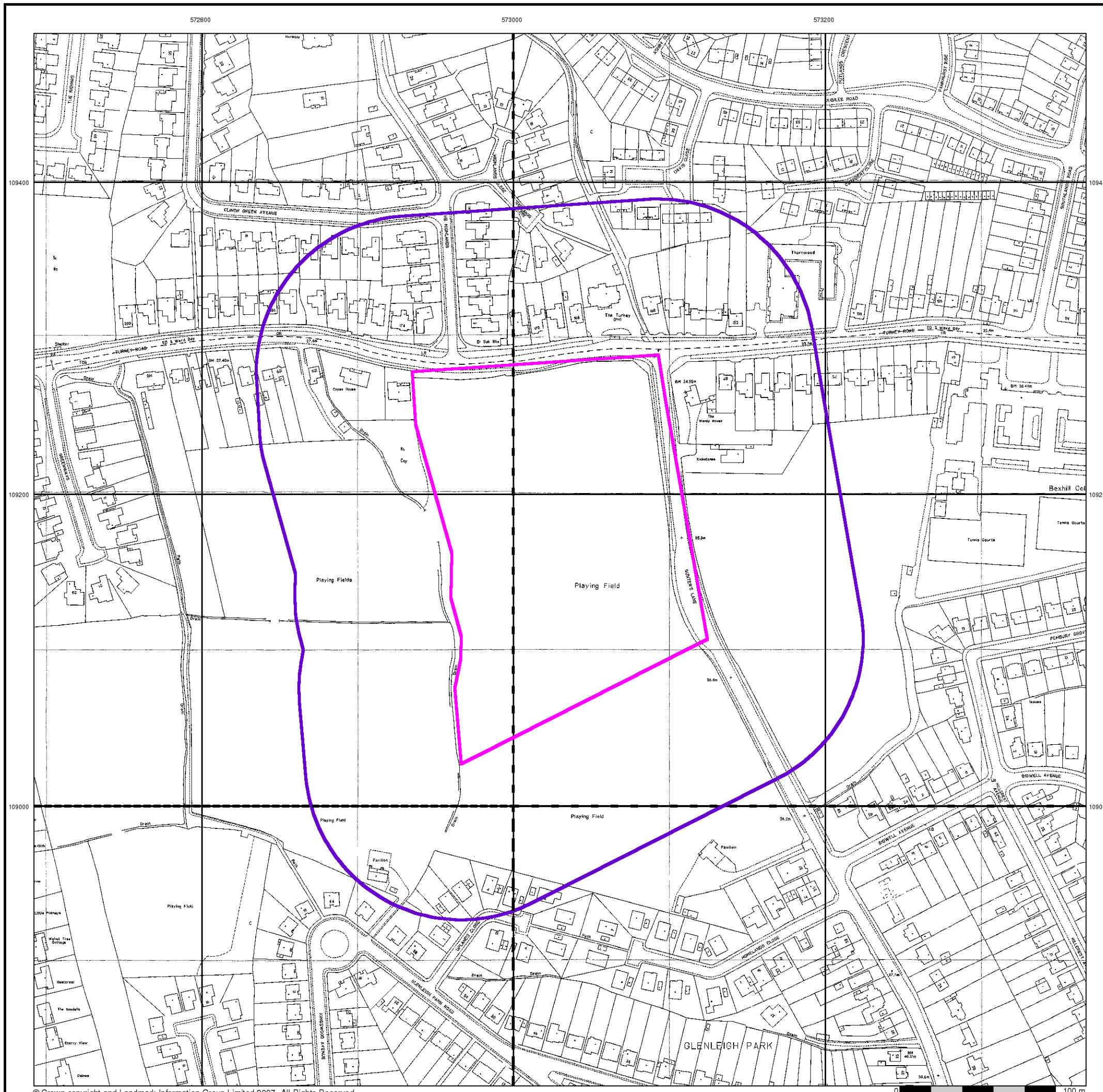


### Order Details

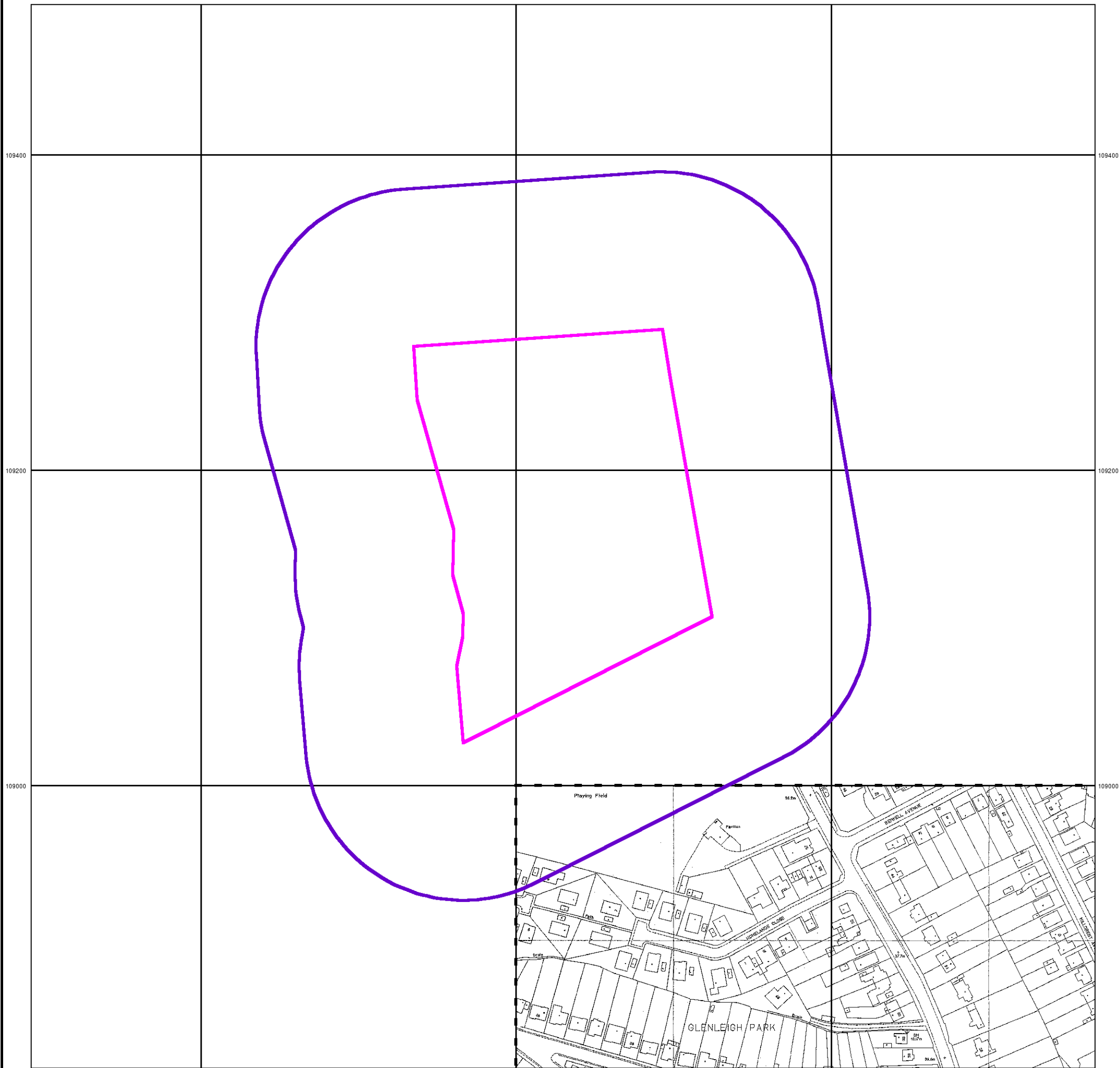
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 Customer Ref: E013713-4 Gunters Lane  
 National Grid Reference: 573020, 109170  
 Slice: A  
 Site Area (Ha): 3.46  
 Search Buffer (m): 100

### Site Details

Wendy House, Gunters Lane, BEXHILL-ON-SEA, East Sussex, TN39 4EP



572800 573000 573200

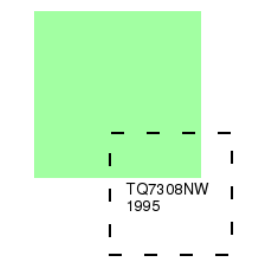


**Large-Scale National Grid Data  
Published 1995**

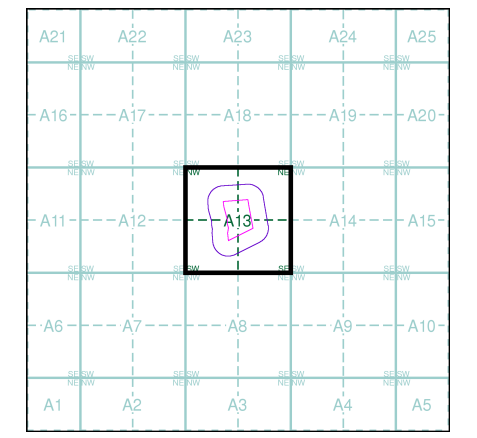
**Source map scale - 1:1,250**

'Large Scale National Grid Data' superseded SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') in 1992, and continued to be produced until 1999. These maps were the fore-runners of digital mapping and so provide detailed information on houses and roads, but tend to show less topographic features such as vegetation. These maps were produced at both 1:2,500 and 1:1,250 scales.

**Map Name(s) and Date(s)**



**Historical Map - Segment A13**



**Order Details**

Order Number: 23283856\_1\_1  
 Customer Ref: E013713-4 Gunters Lane  
 National Grid Reference: 573020, 109170  
 Slice: A  
 Site Area (Ha): 3.46  
 Search Buffer (m): 100

**Site Details**

Wendy House, Gunters Lane, BEXHILL-ON-SEA, East Sussex, TN39 4EP

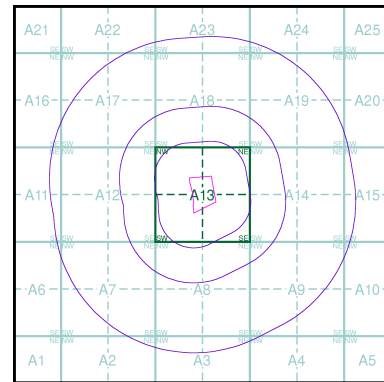


Tel: 0870 850 6670  
 Fax: 0870 850 6671  
 Web: www.envirocheck.co.uk

## Order Details

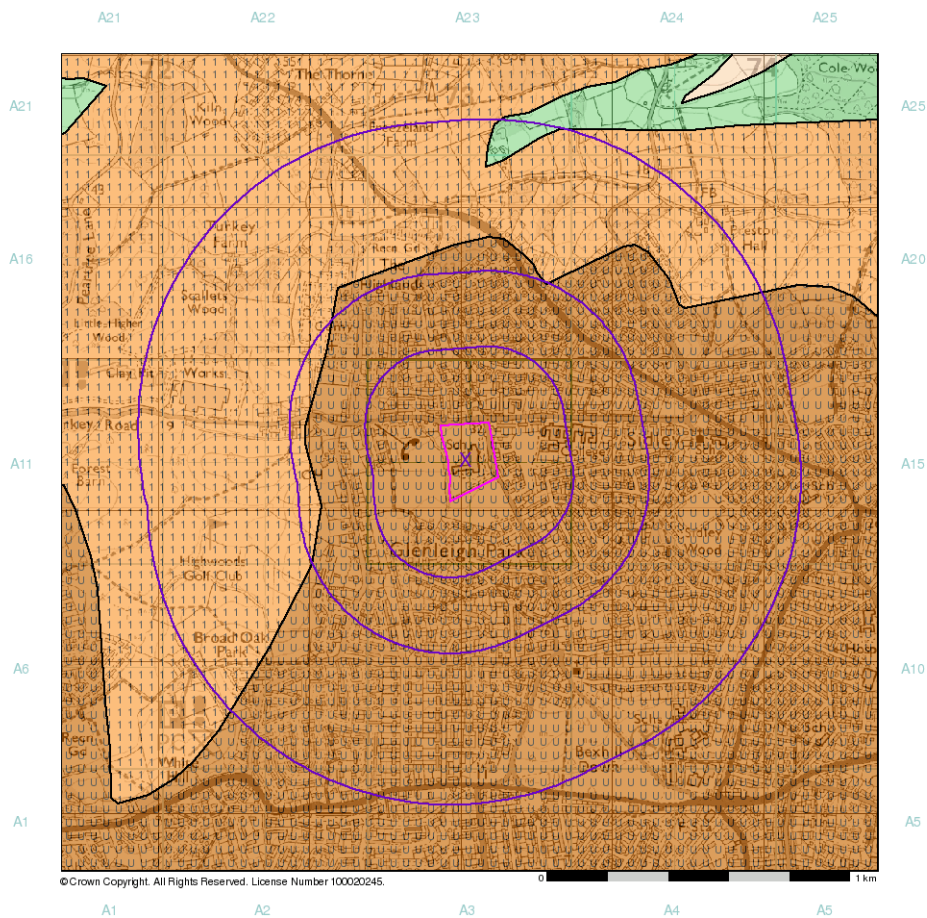
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 Customer Ref: E013713-4 Gunters Lane  
 National Grid Reference: 573020, 109170  
 Slice: A  
 Site Area (Ha): 3.46  
 Search Buffer (m): 1000

## Groundwater Vulnerability - Slice A



## Site Details

Wendy House, Gunters Lane, BEXHILL-ON-SEA, East Sussex, TN39 4EP



Background	General	Agency & Hydrological												
<ul style="list-style-type: none"> <li>Footpath</li> <li>Bridleway</li> <li>Byway open to all traffic</li> <li>Road Used as a Public Path</li> <li>Other routes with Public Access</li> <li>National Trail or Long Distance Route</li> <li>Contour</li> <li>Fishing</li> <li>Nature Reserve</li> </ul>	<ul style="list-style-type: none"> <li>Specified Site</li> <li>Specified Buffer(s)</li> <li>Bearing Reference Point</li> </ul>	<table border="0"> <thead> <tr> <th>Geological Classes</th> <th>Soil Classes</th> </tr> </thead> <tbody> <tr> <td>Major Aquifer (Highly Permeable)</td> <td> <ul style="list-style-type: none"> <li>High (H) 1, 2, 3, U</li> <li>Intermediate (I) 1, 2</li> <li>Low</li> </ul> </td> </tr> <tr> <td>Minor Aquifer (Variably Permeable)</td> <td> <ul style="list-style-type: none"> <li>High (H) 1, 2, 3, U</li> <li>Intermediate (I) 1, 2</li> <li>Low</li> </ul> </td> </tr> <tr> <td>Non Aquifer (Negligibly Permeable)</td> <td></td> </tr> <tr> <td>Water or Sea</td> <td></td> </tr> <tr> <td>Drift Deposit</td> <td></td> </tr> </tbody> </table>	Geological Classes	Soil Classes	Major Aquifer (Highly Permeable)	<ul style="list-style-type: none"> <li>High (H) 1, 2, 3, U</li> <li>Intermediate (I) 1, 2</li> <li>Low</li> </ul>	Minor Aquifer (Variably Permeable)	<ul style="list-style-type: none"> <li>High (H) 1, 2, 3, U</li> <li>Intermediate (I) 1, 2</li> <li>Low</li> </ul>	Non Aquifer (Negligibly Permeable)		Water or Sea		Drift Deposit	
Geological Classes	Soil Classes													
Major Aquifer (Highly Permeable)	<ul style="list-style-type: none"> <li>High (H) 1, 2, 3, U</li> <li>Intermediate (I) 1, 2</li> <li>Low</li> </ul>													
Minor Aquifer (Variably Permeable)	<ul style="list-style-type: none"> <li>High (H) 1, 2, 3, U</li> <li>Intermediate (I) 1, 2</li> <li>Low</li> </ul>													
Non Aquifer (Negligibly Permeable)														
Water or Sea														
Drift Deposit														

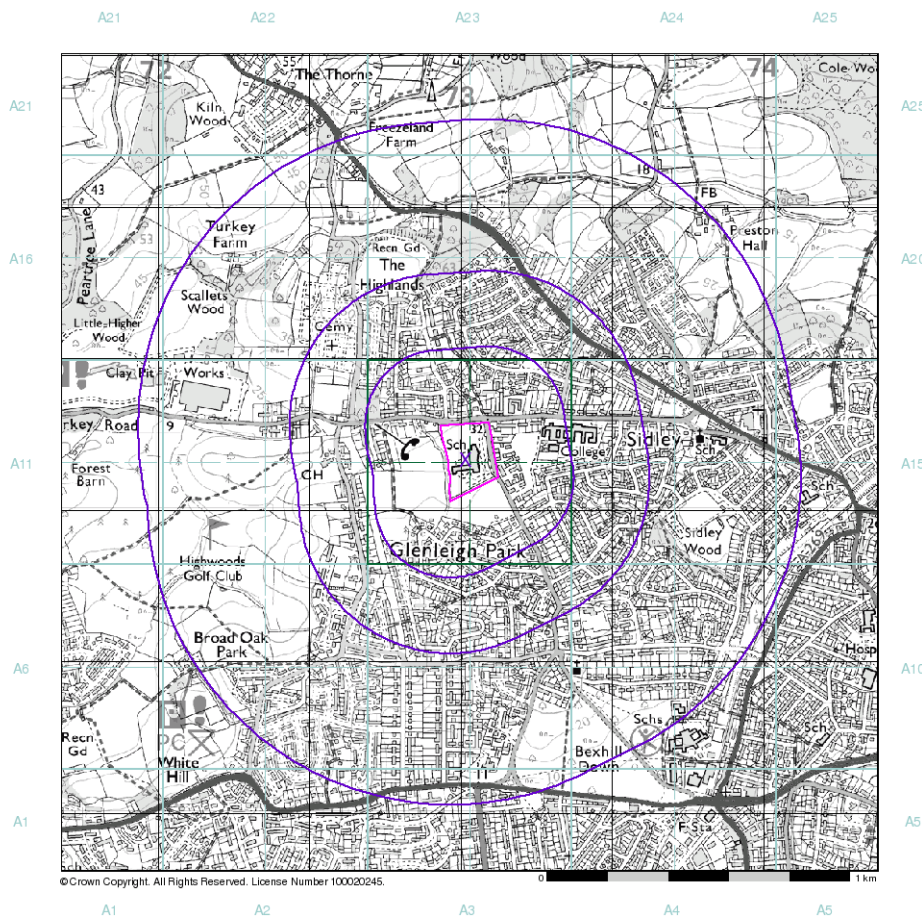
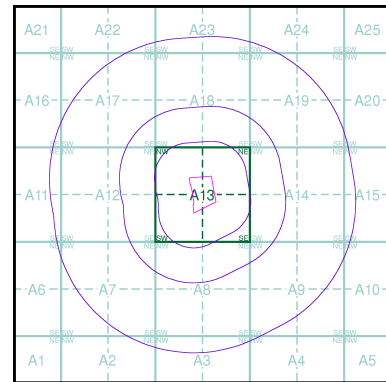
## Order Details

Order Number: 23283856\_1\_1  
 Customer Ref: E013713-4 Gunters Lane  
 National Grid Reference: 573020, 109170  
 Slice: A  
 Site Area (Ha): 3.46  
 Search Buffer (m): 1000

## Site Details

Wendy House, Gunters Lane, BEXHILL-ON-SEA, East Sussex, TN39 4EP

## Source Protection Zones - Slice A



Background	General	Agency and Hydrological
--- Footpath	◊ Specified Site	▨ Source Protection Zone I
— Bridleway	◌ Specified Buffer(s)	▨ Source Protection Zone II
++ Byway open to all traffic	X Bearing Reference Point	▨ Source Protection Zone III
— Road Used as a Public Path	Ⓜ Map ID	▨ Zone of Special Interest
• • Other routes with Public Access		■ Source Protection Zone Borehole
◆ National Trail or Long Distance Route		
~ Contour		
🎣 Fishing		
🌳 Nature Reserve		

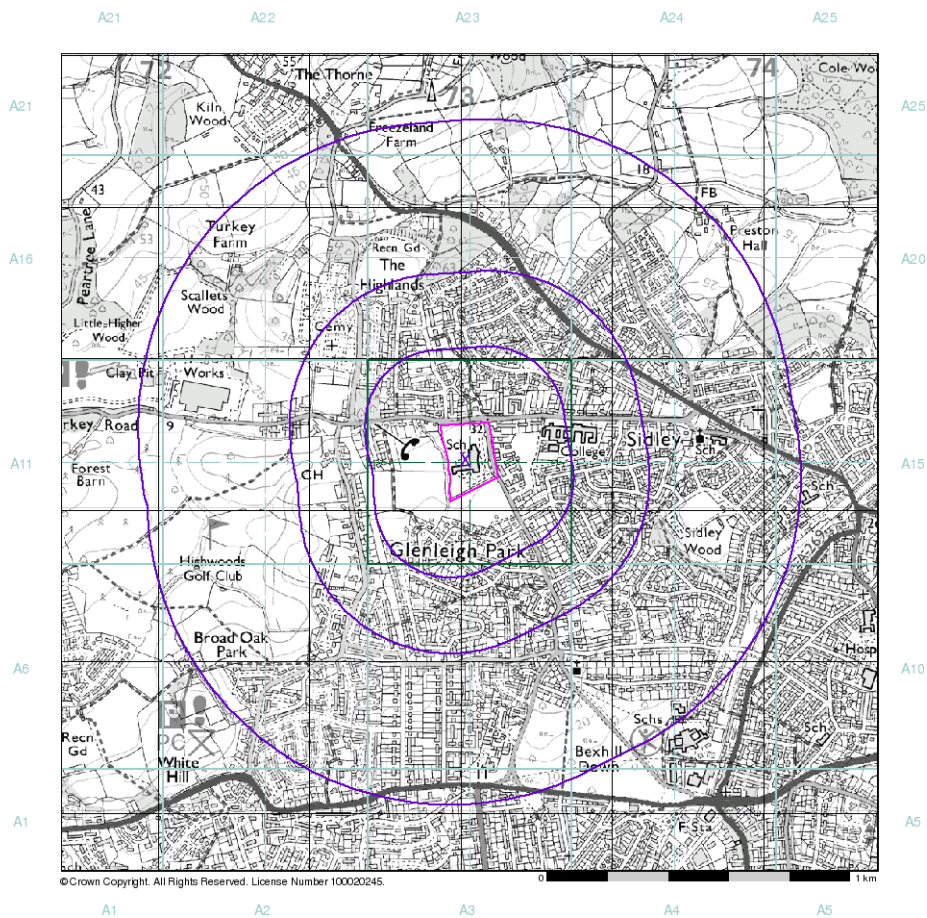
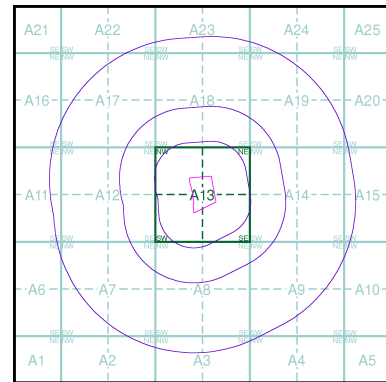
## Order Details

Order Number: 23283856\_1\_1  
 Customer Ref: E013713-4 Gunters Lane  
 National Grid Reference: 573020, 109170  
 Slice: A  
 Site Area (Ha): 3.46  
 Search Buffer (m): 1000

## Site Details

Wendy House, Gunters Lane, BEXHILL-ON-SEA, East Sussex, TN39 4EP

## Sensitive Land Uses - Slice A



Background		General		Sensitive Land Uses	
----	Footpath	◊	Specified Site	◻	Local Nature Reserve
—	Bridleway	○	Specified Buffer(s)	◻	Marine Nature Reserve
++	Byway open to all traffic	✕	Bearing Reference Point	◻	National Nature Reserve
---	Road Used as a Public Path	⊠	Map ID	◻	National Park
••	Other routes with Public Access	<b>Sensitive Land Uses</b>		◻	Nitrate Sensitive Area
•••	National Trail or Long Distance Route	▭	Area of Adopted Green Belt	◻	Nitrate Vulnerable Zone
~	Contour	▭	Area of Unadopted Green Belt	◻	Ramsar Site
🐟	Fishing	▭	Area of Outstanding Natural Beauty	◻	Site of Special Scientific Interest
🌳	Nature Reserve	▭	Environmentally Sensitive Area	◻	Special Area of Conservation
		▭	Forest Park	◻	Special Protection Area

### General

- Specified Site
- Specified Buffer(s)
- X Bearing Reference Point
- 8 Map ID
- Several of Type at Location

### Agency and Hydrological

- Contaminated Land Register Entry or Notice (Location)
- Contaminated Land Register Entry or Notice
- Discharge Consent
- ▲ Enforcement or Prohibition Notice
- ▲ Integrated Pollution Control
- Integrated Pollution Prevention Control
- ▲ Local Authority Integrated Pollution Prevention and Control
- ▲ Local Authority Pollution Prevention and Control
- ▲ Local Authority Pollution Prevention and Control Enforcement
- Pollution Incident to Controlled Waters
- ▲ Prosecution Relating to Authorised Processes
- ▲ Prosecution Relating to Controlled Waters
- ▲ Registered Radioactive Substance
- + River Quality Sampling Point
- Substantiated Pollution Incident Register
- ◆ Water Abstraction
- ◆ Water Industry Act Referral
- River Network or Water Feature
- + River Quality Sampling Point

### Waste

- ▼ BGS Recorded Landfill Site (Location)
- BGS Recorded Landfill Site
- EA Historic Landfill (Buffered Point)
- EA Historic Landfill (Polygon)
- ▲ Integrated Pollution Control Registered Waste Site
- Licensed Waste Management Facility (Landfill Boundary)
- Licensed Waste Management Facility (Location)
- Local Authority Recorded Landfill Site (Location)
- Local Authority Recorded Landfill Site
- Registered Landfill Site
- Registered Landfill Site (Location)
- Registered Landfill Site (Point Buffered to 100m)
- Registered Landfill Site (Point Buffered to 250m)
- Registered Waste Transfer Site (Location)
- Registered Waste Transfer Site
- Registered Waste Treatment or Disposal Site (Location)
- Registered Waste Treatment or Disposal Site

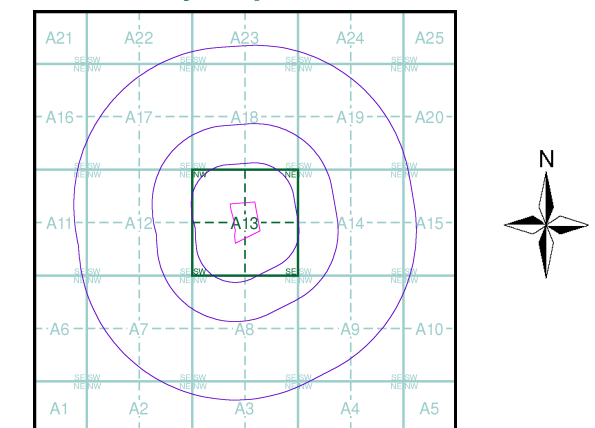
### Geological

- ▼ BGS Recorded Mineral Site

### Industrial Land Use

- ★ Contemporary Trade Directory Entry
- ★ Fuel Station Entry
- X COMAH Site
- X Explosive Site
- X NIHS Site
- X Planning Hazardous Substance Consent
- X Planning Hazardous Substance Enforcement

### Site Sensitivity Map - Slice A

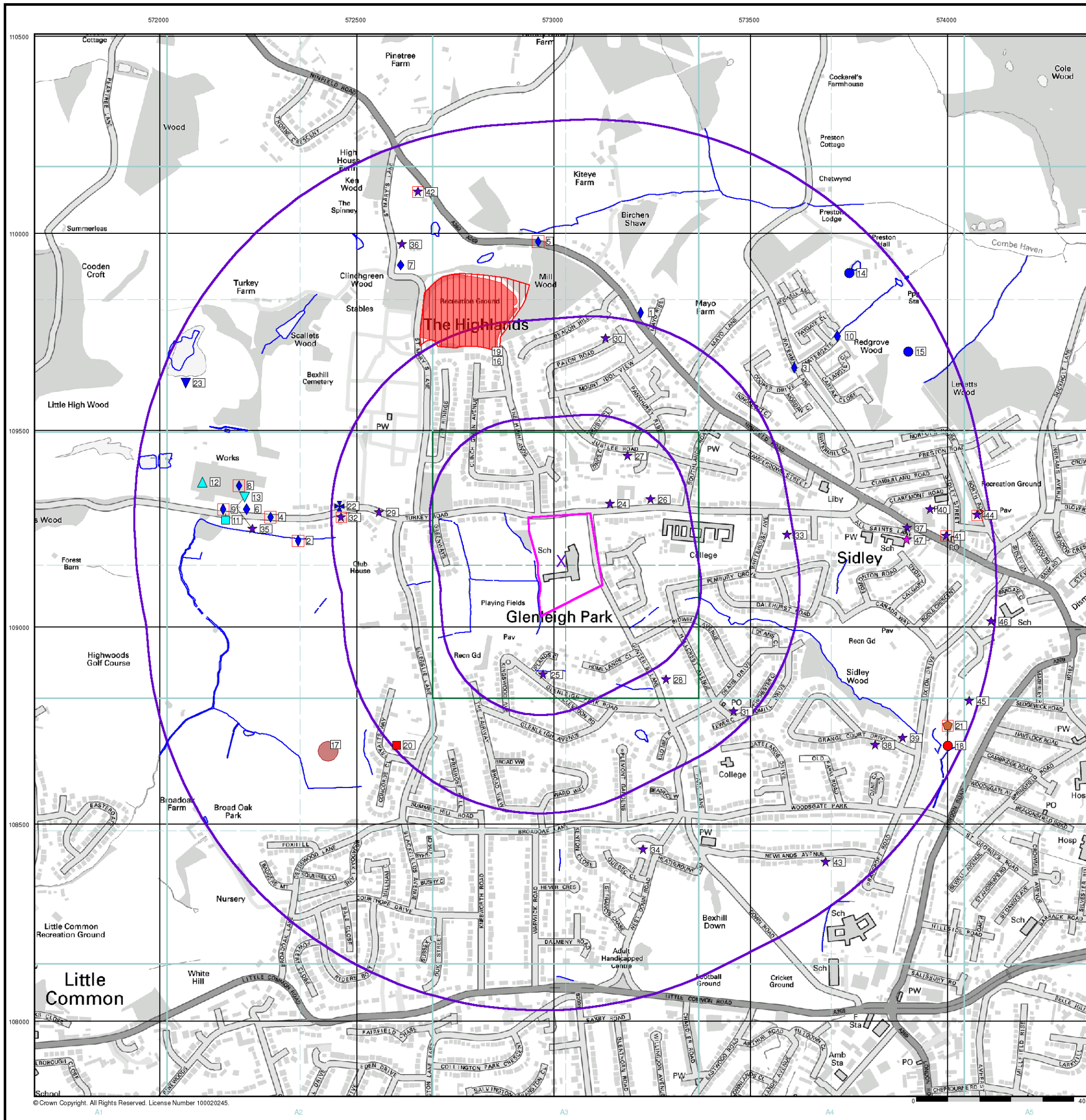


### Order Details


Order Number: 23283856\_1\_1  
 Customer Ref: E013713-4 Gunters Lane  
 National Grid Reference: 573020, 109170  
 Slice: A  
 Site Area (Ha): 3.46  
 Search Buffer (m): 1000

### Site Details






Wendy House, Gunters Lane, BEXHILL-ON-SEA, East Sussex, TN39 4EP



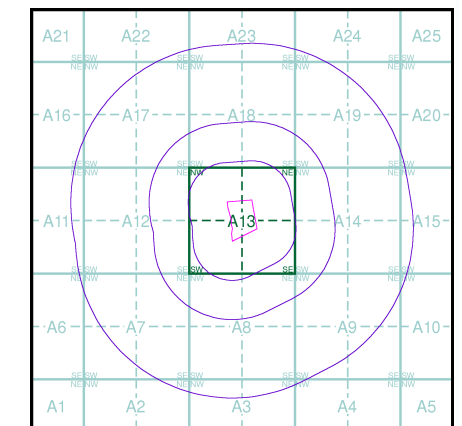
### General

-  Specified Site
-  Specified Buffer(s)
-  Bearing Reference Point

### Agency and Hydrological (Flood)

-  Extreme Flooding from Rivers or Sea without Defences (Zone 2)
-  Flooding from Rivers or Sea without Defences (Zone 3)
-  Area Benefiting from Flood Defence
-  Flood Water Storage Areas
-  Flood Defence

### Flood Map - Slice A



### Order Details






Order Number: 23283856\_1\_1  
 Customer Ref: E013713-4 Gunters Lane  
 National Grid Reference: 573020, 109170  
 Slice: A  
 Site Area (Ha): 3.46  
 Search Buffer (m): 1000

### Site Details

Wendy House, Gunters Lane, BEXHILL-ON-SEA, East Sussex, TN39 4EP



### General

-  Specified Site
-  Specified Buffer(s)
-  Bearing Reference Point
-  Map ID
-  Several of Type at Location

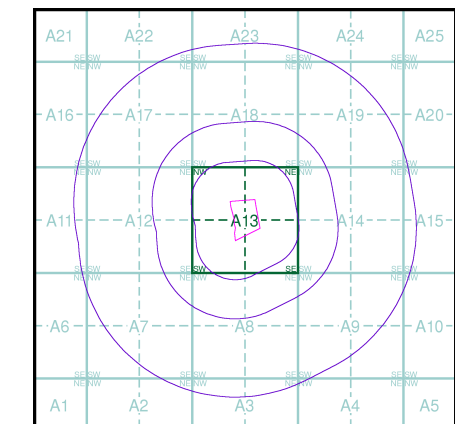
### Agency and Hydrological (Boreholes)

-  BGS Borehole

For Borehole information please refer to the Borehole .csv file which accompanied this slice.

A copy of the BGS Borehole Ordering Form is available to download from the Support section of [www.envirocheck.co.uk](http://www.envirocheck.co.uk).

### Borehole Map - Slice A

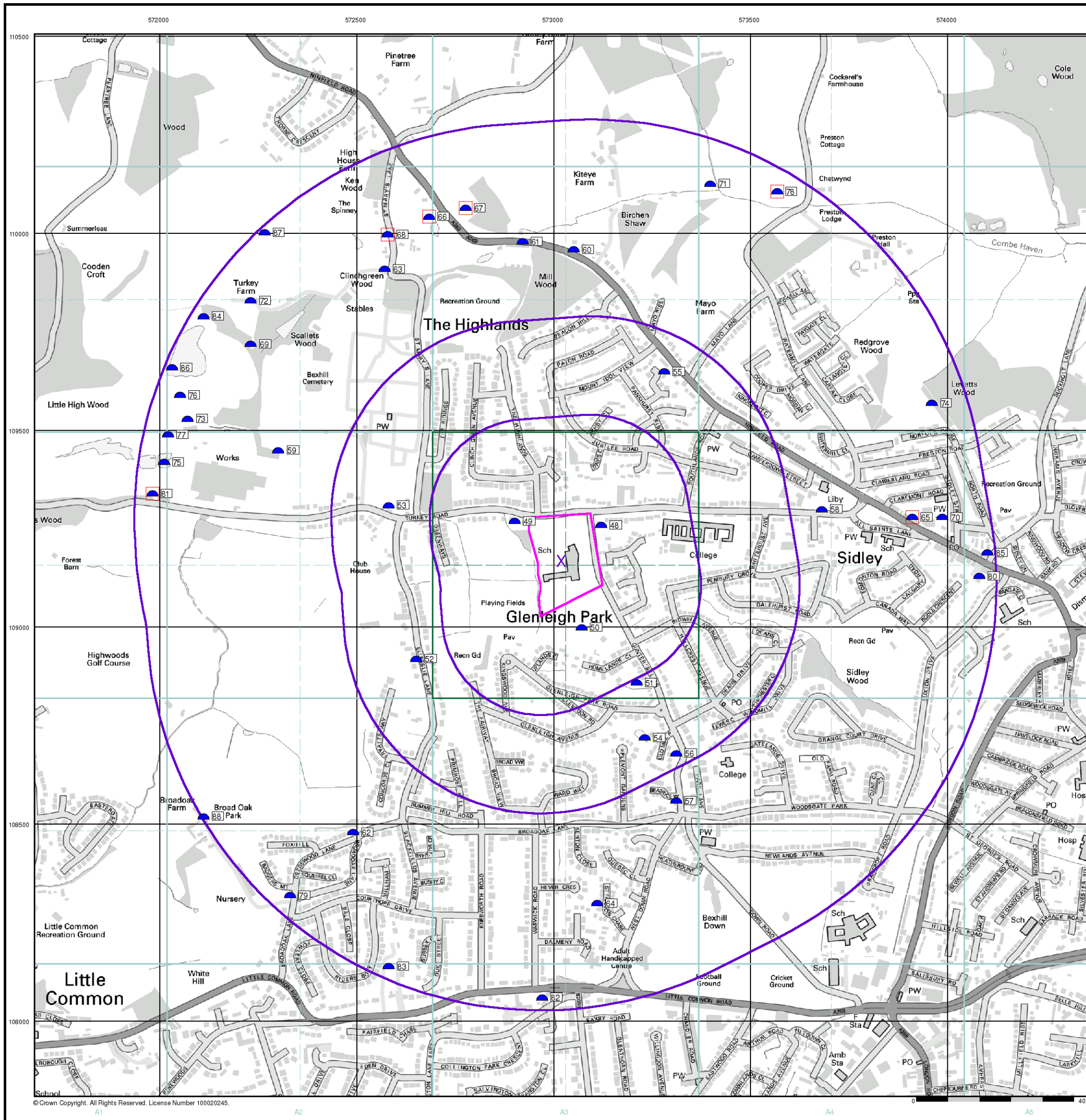


### Order Details

Order Number: 23283856\_1\_1  
 Customer Ref: E013713-4 Gunters Lane  
 National Grid Reference: 573020, 109170  
 Slice: A  
 Site Area (Ha): 3.46  
 Search Buffer (m): 1000

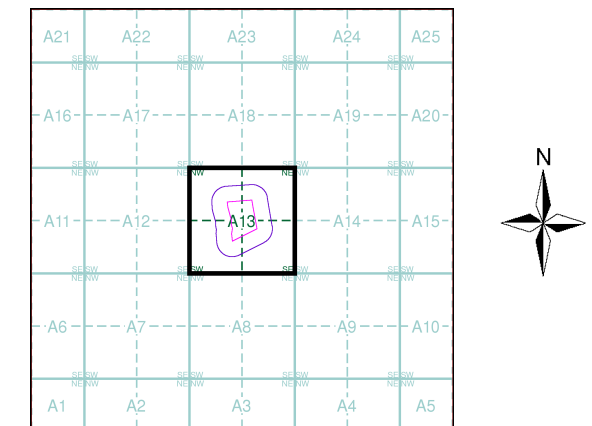
### Site Details

Wendy House, Gunters Lane, BEXHILL-ON-SEA, East Sussex, TN39 4EP



- General**
- Specified Site
  - Specified Buffer(s)
  - Bearing Reference Point
  - Map ID
  - Severalty of Type at Location
  - Pylon
  - Overhead Transmission Line
- Agency and Hydrological**
- Contaminated Land Register Entry or Notice (Location)
  - Contaminated Land Register Entry or Notice
  - Discharge Consent
  - Enforcement or Prohibition Notice
  - Integrated Pollution Control
  - Integrated Pollution Prevention Control
  - Local Authority Integrated Pollution Prevention and Control
  - Local Authority Pollution Prevention and Control
  - Local Authority Pollution Prevention and Control Enforcement
  - Pollution Incident to Controlled Waters
  - Prosecution Relating to Authorised Processes
  - Prosecution Relating to Controlled Waters
  - Registered Radioactive Substance
  - River Network or Water Feature
  - River Quality Sampling Point
  - Substantiated Pollution Incident Register
  - Water Abstraction
  - Water Industry Act Referral
- Waste**
- BGS Recorded Landfill Site (Location)
  - BGS Recorded Landfill Site
  - EA Historic Landfill (Buffered Point)
  - EA Historic Landfill (Polygon)
  - Integrated Pollution Control Registered Waste Site
  - Licensed Waste Management Facility (Landfill Boundary)
  - Licensed Waste Management Facility (Location)
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  - Local Authority Recorded Landfill Site
  - Registered Landfill Site
  - Registered Landfill Site (Location)
  - Registered Landfill Site (Point Buffered to 100m)
  - Registered Landfill Site (Point Buffered to 250m)
  - Registered Waste Transfer Site (Location)
  - Registered Waste Transfer Site
  - Registered Waste Treatment or Disposal Site (Location)
  - Registered Waste Treatment or Disposal Site
- Hazardous Substances**
- COMAH Site
  - Explosive Site
  - NIHHS Site
  - Planning Hazardous Substance Consent
  - Planning Hazardous Substance Enforcement
- Geological**
- BGS Recorded Mineral Site
- Industrial Land Use**
- Contemporary Trade Directory Entry
  - Fuel Station Entry

### Site Sensitivity Map - Segment A13



### Order Details

Order Number: 23283856\_1\_1  
 Customer Ref: E013713-4 Gunters Lane  
 National Grid Reference: 573020, 109170  
 Slice: A  
 Site Area (Ha): 3.46  
 Plot Buffer (m): 100

### Site Details

Wendy House, Gunters Lane, BEXHILL-ON-SEA, East Sussex, TN39 4EP



# Historical Mapping Legends

## Ordnance Survey County Series and Ordnance Survey Plan 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
	Coppice		Bracken
	Heath		Rough Grassland
	Marsh		Reeds
	Saltings		
	Building		Glasshouse
	Sloping Masonry		Pylon
	Electricity Transmission Line		Pole
	Cutting		Embankment
	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 Shown only when not coincident with other boundaries		
	Civil Parish Shown alternately when coincidence of boundaries occurs		
	BP, BS Boundary Post or Stone		Pol Sta Police Station
	Ch Church		PO Post Office
	CH Club House		PC Public Convenience
	F E Sta Fire Engine Station		PH Public House
	FB Foot Bridge		SB Signal Box
	Fn Fountain		Spr Spring
	GP Guide Post		TCB Telephone Call Box
	MP Mile Post		TCP Telephone Call Post
	MS Mile Stone		W Well

## 1:10,000 Raster Mapping

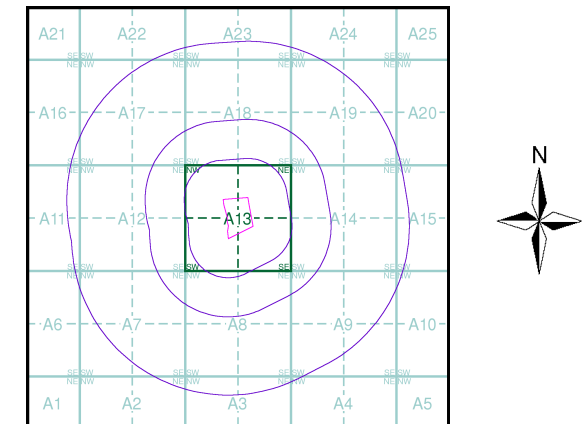
	Gravel Pit		Refuse tip or slag heap
	Rock		Rock (scattered)
	Boulders		Boulders (scattered)
	Shingle		Mud
	Sand		Sand Pit
	Slopes		Top of cliff
	General detail		Underground detail
	Overhead detail		Narrow gauge railway
	Multi-track railway		Single track railway
	County boundary (England only)		Civil, 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
	MHW(S) Mean high water (springs)		MLW(S) 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



### Ordnance Survey mapping included:

Mapping Type	Scale	Date	Pg
Sussex	1:10,560	1878	2
Sussex	1:10,560	1899	3
Sussex	1:10,560	1910	4
Sussex	1:10,560	1937 - 1951	5
Ordnance Survey Plan	1:10,560	1961 - 1962	6
Ordnance Survey Plan	1:10,560	1968	7
Ordnance Survey Plan	1:10,000	1976	8
Ordnance Survey Plan	1:10,000	1981 - 1989	9
10K Raster Mapping	1:10,000	2000	10
10K Raster Mapping	1:10,000	2007	11

### Historical Map - Slice A



### Order Details

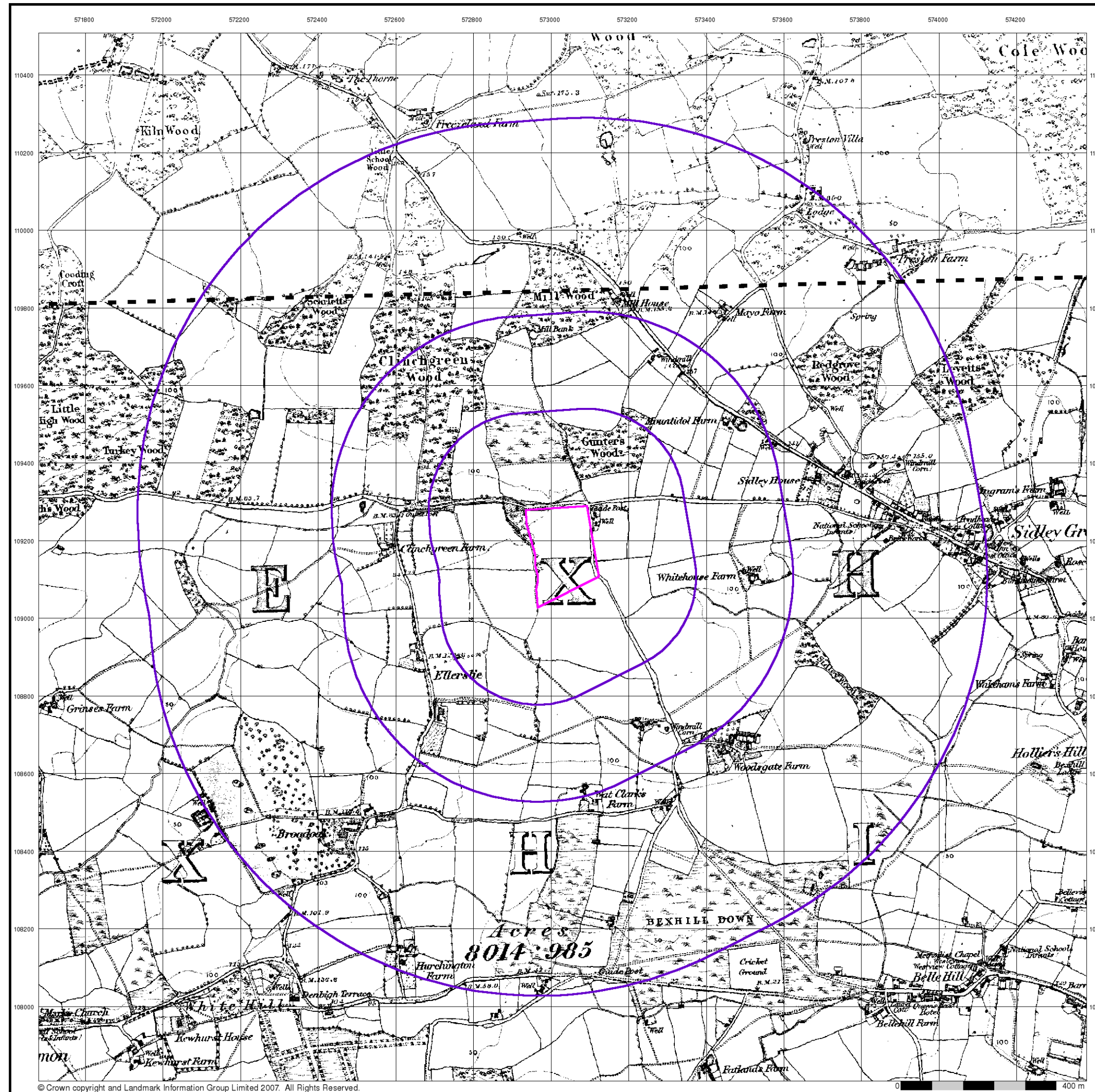
Order Number: 23283856\_1\_1  
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 Fax: 0870 850 6671  
 Web: www.envirocheck.co.uk



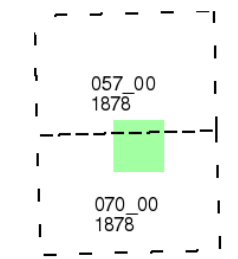
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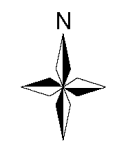
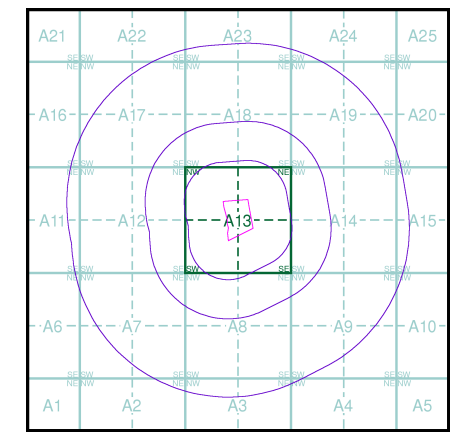
**Sussex**  
**Published 1878**  
**Source map scale - 1:10,560**

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**

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**Site Details**

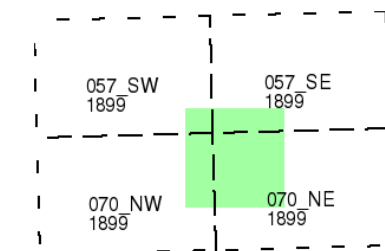
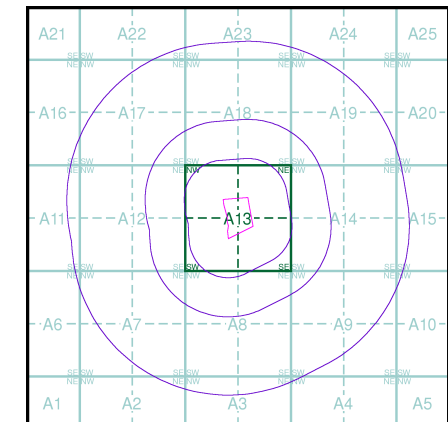
Wendy House, Gunters Lane, BEXHILL-ON-SEA, East Sussex, TN39 4EP



Tel: 0870 850 6670  
 Fax: 0870 850 6671  
 Web: www.envirocheck.co.uk

**Sussex**
**Published 1899**
**Source map scale - 1:10,560**

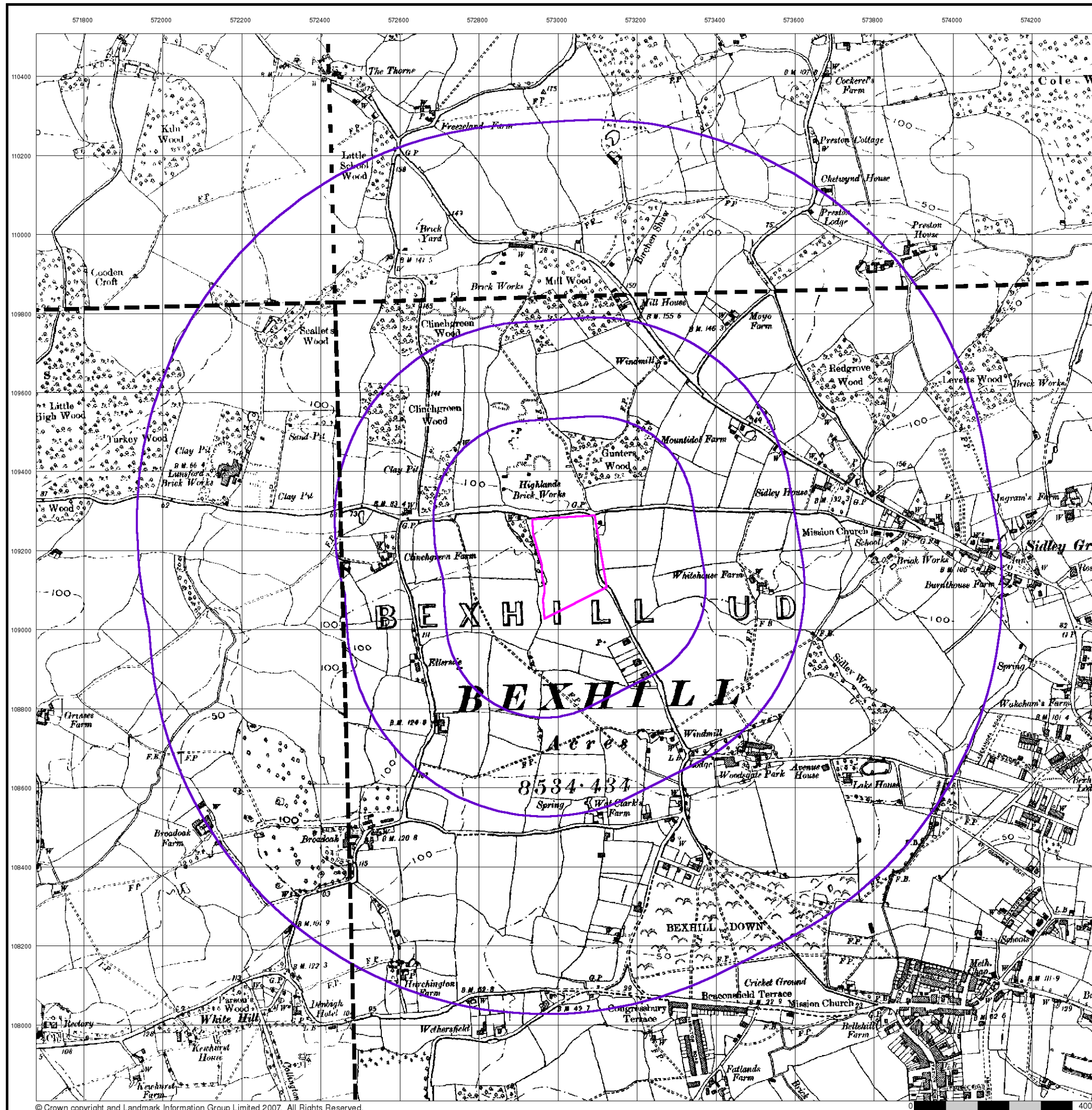
The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some 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: 23283856\_1\_1  
 Customer Ref: E013713-4 Gunters Lane  
 National Grid Reference: 573020, 109170  
 Slice: A  
 Site Area (Ha): 3.46  
 Search Buffer (m): 1000

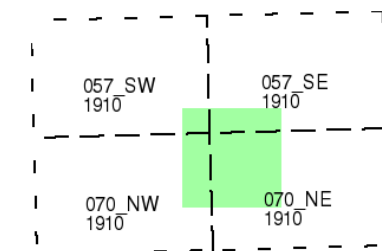
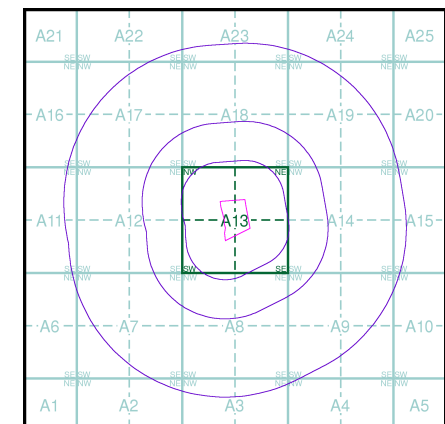
**Site Details**

Wendy House, Gunters Lane, BEXHILL-ON-SEA, East Sussex, TN39 4EP



**Sussex**
**Published 1910**
**Source map scale - 1:10,560**

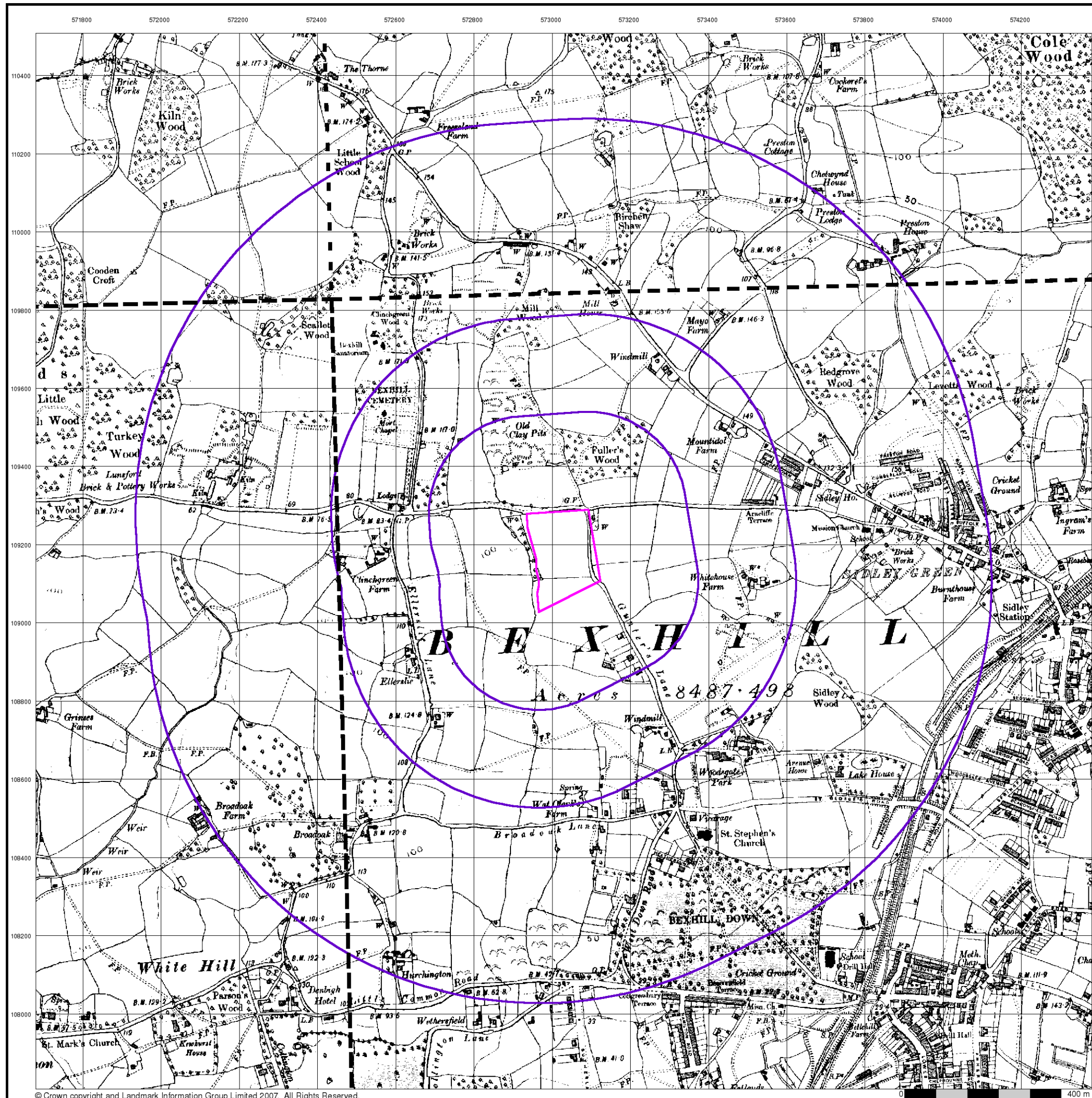
The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some 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: 23283856\_1\_1  
 Customer Ref: E013713-4 Gunters Lane  
 National Grid Reference: 573020, 109170  
 Slice: A  
 Site Area (Ha): 3.46  
 Search Buffer (m): 1000

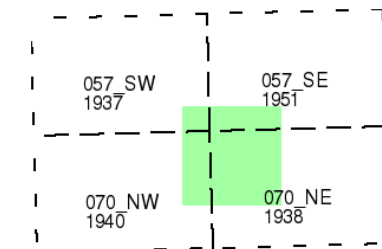
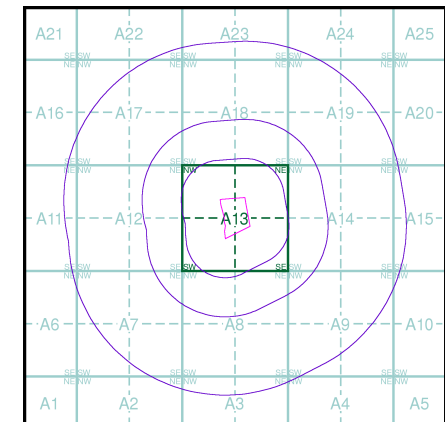
**Site Details**

Wendy House, Gunters Lane, BEXHILL-ON-SEA, East Sussex, TN39 4EP



**Sussex**
**Published 1937 - 1951**
**Source map scale - 1:10,560**

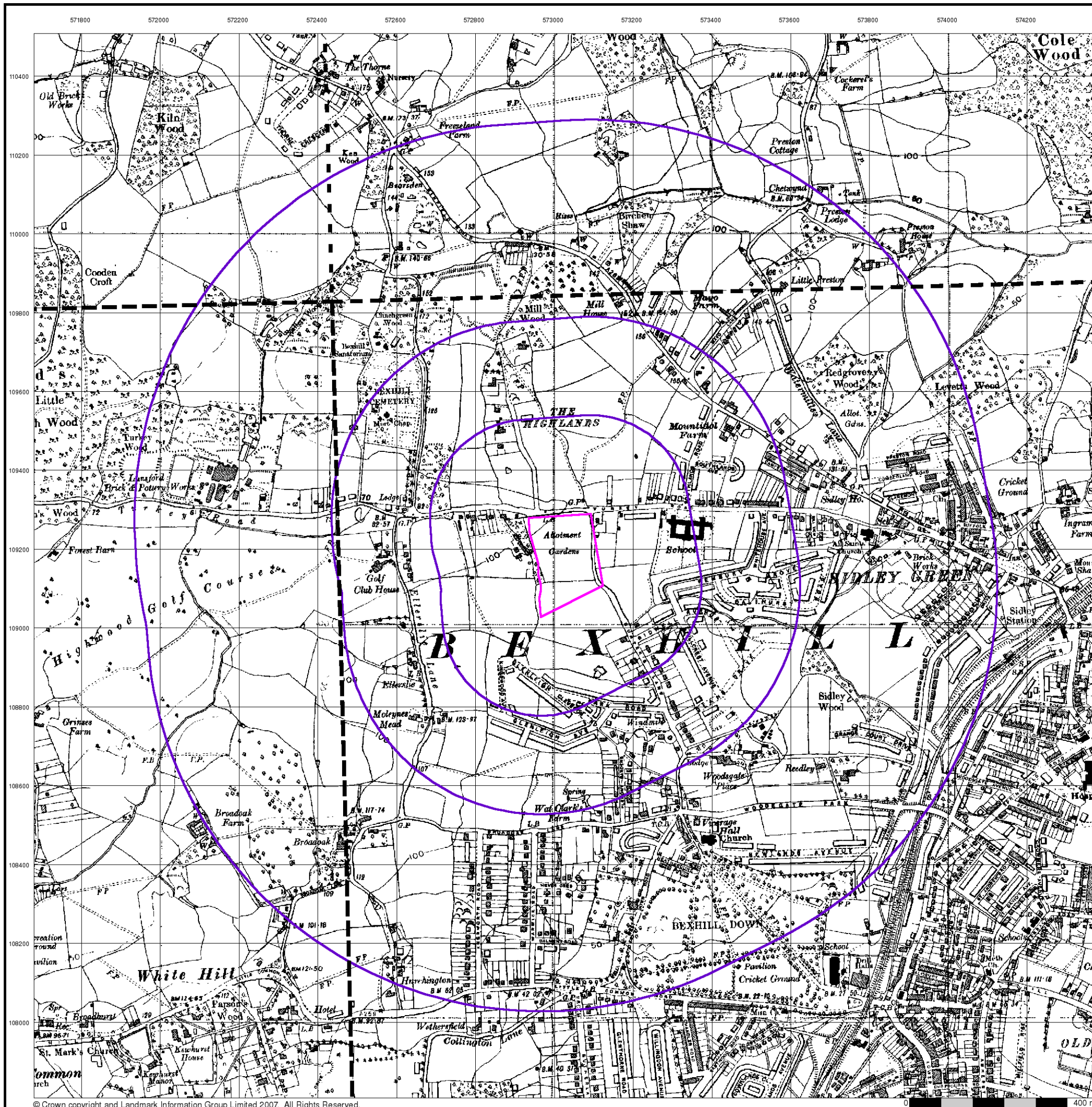
The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some 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: 23283856\_1\_1  
 Customer Ref: E013713-4 Gunters Lane  
 National Grid Reference: 573020, 109170  
 Slice: A  
 Site Area (Ha): 3.46  
 Search Buffer (m): 1000

**Site Details**

Wendy House, Gunters Lane, BEXHILL-ON-SEA, East Sussex, TN39 4EP



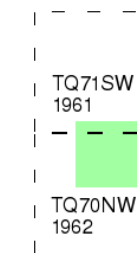
## Ordnance Survey Plan

Published 1961 - 1962

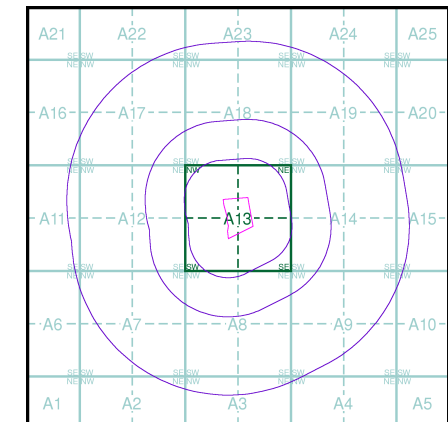
Source map scale - 1:10,560

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

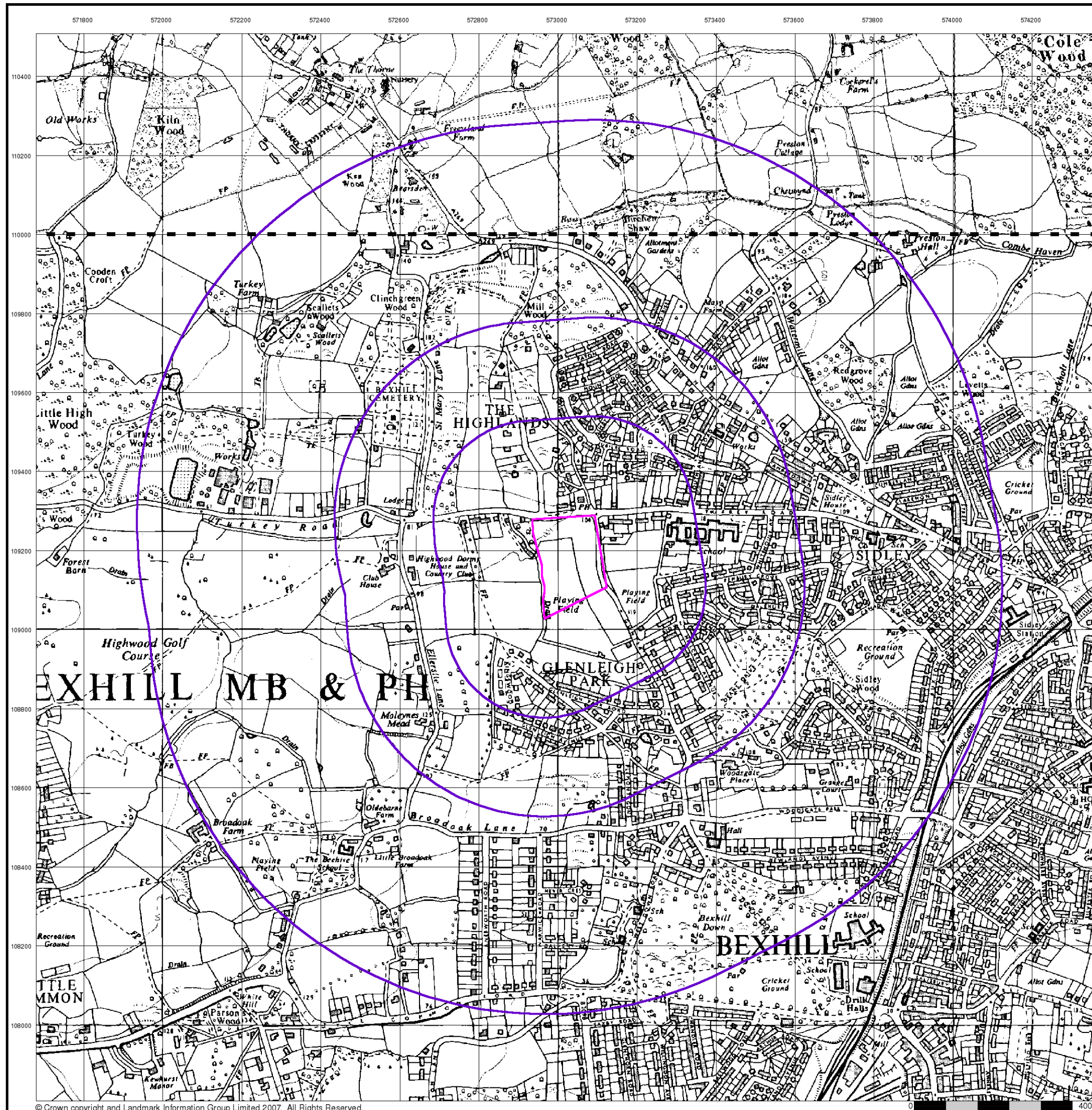


### Order Details

Order Number: 23283856\_1\_1  
 Customer Ref: E013713-4 Gunters Lane  
 National Grid Reference: 573020, 109170  
 Slice: A  
 Site Area (Ha): 3.46  
 Search Buffer (m): 1000

### Site Details

Wendy House, Gunters Lane, BEXHILL-ON-SEA, East Sussex, TN39 4EP



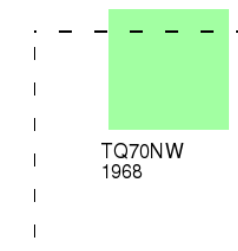
## Ordnance Survey Plan

Published 1968

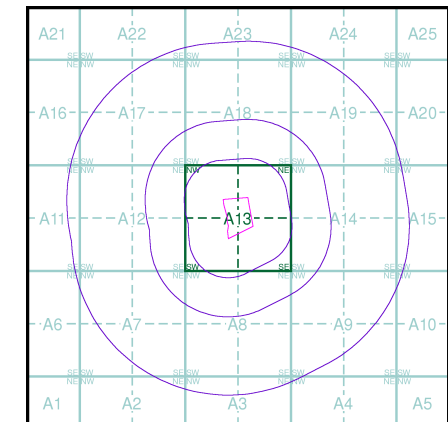
Source map scale - 1:10,560

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

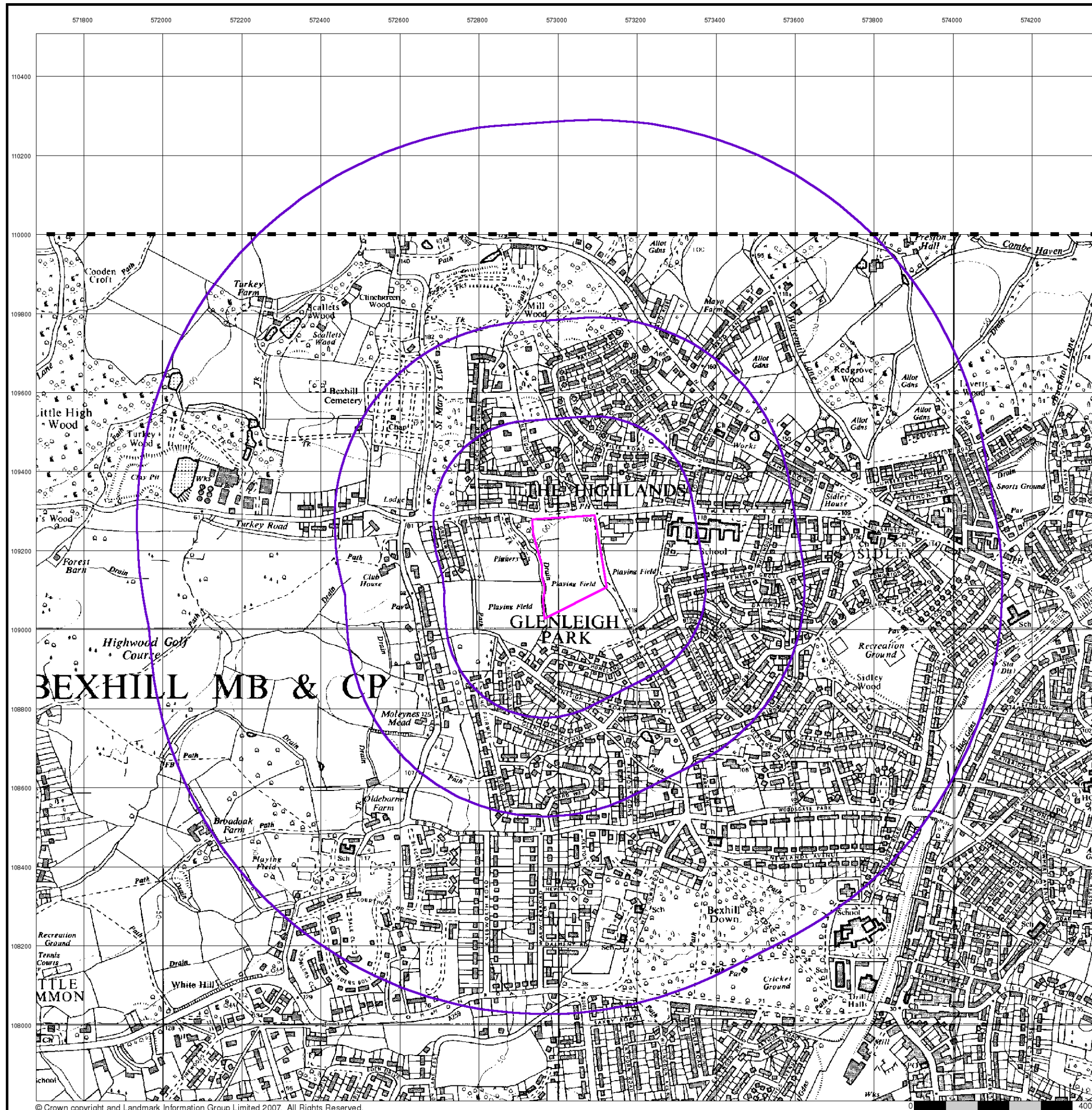


### Order Details

Order Number: 23283856\_1\_1  
 Customer Ref: E013713-4 Gunters Lane  
 National Grid Reference: 573020, 109170  
 Slice: A  
 Site Area (Ha): 3.46  
 Search Buffer (m): 1000

### Site Details

Wendy House, Gunters Lane, BEXHILL-ON-SEA, East Sussex, TN39 4EP



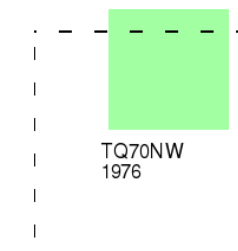
## Ordnance Survey Plan

Published 1976

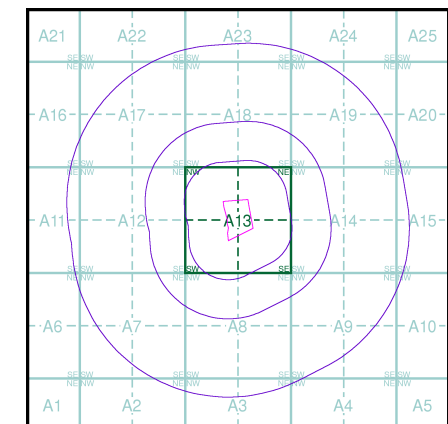
Source map scale - 1:10,000

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: 23283856\_1\_1  
 Customer Ref: E013713-4 Gunters Lane  
 National Grid Reference: 573020, 109170  
 Slice: A  
 Site Area (Ha): 3.46  
 Search Buffer (m): 1000

### Site Details

Wendy House, Gunters Lane, BEXHILL-ON-SEA, East Sussex, TN39 4EP



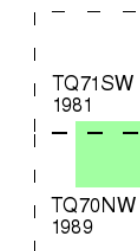
## Ordnance Survey Plan

Published 1981 - 1989

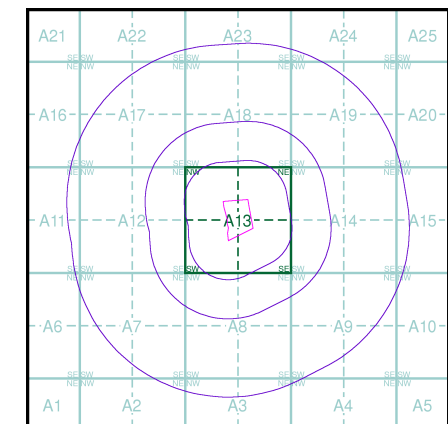
Source map scale - 1:10,000

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: 23283856\_1\_1  
 Customer Ref: E013713-4 Gunters Lane  
 National Grid Reference: 573020, 109170  
 Slice: A  
 Site Area (Ha): 3.46  
 Search Buffer (m): 1000

### Site Details

Wendy House, Gunters Lane, BEXHILL-ON-SEA, East Sussex, TN39 4EP



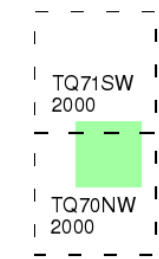
**10K Raster Mapping**

**Published 2000**

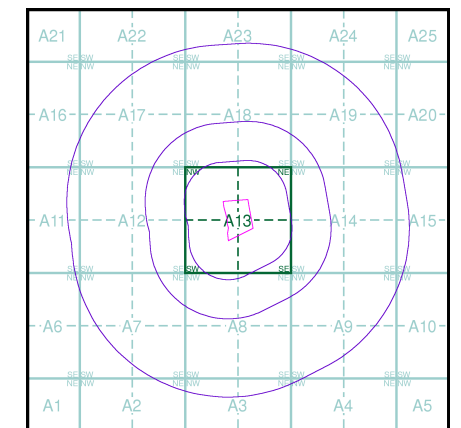
**Source map scale - 1:10,000**

The historical maps shown were produced from the Ordnance Survey's 1:10,000 colour raster mapping. These maps are derived from Landplan which replaced the old 1:10,000 maps originally published in 1970. The data is highly detailed showing buildings, fences and field boundaries as well as all roads, tracks and paths. Road names are also included together with the relevant road number and classification. Boundary information depiction includes county, unitary authority, district, civil parish and constituency.

**Map Name(s) and Date(s)**



**Historical Map - Slice A**



**Order Details**

Order Number: 23283856\_1\_1  
 Customer Ref: E013713-4 Gunters Lane  
 National Grid Reference: 573020, 109170  
 Slice: A  
 Site Area (Ha): 3.46  
 Search Buffer (m): 1000

**Site Details**

Wendy House, Gunters Lane, BEXHILL-ON-SEA, East Sussex, TN39 4EP



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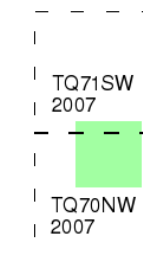
**10K Raster Mapping**

**Published 2007**

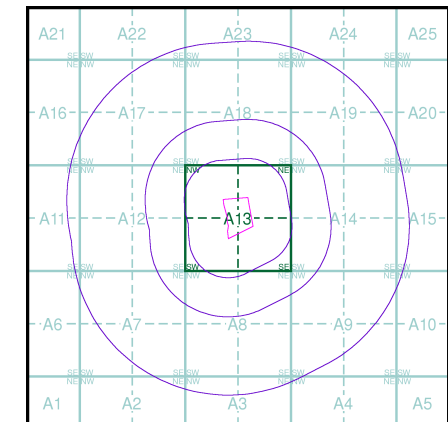
**Source map scale - 1:10,000**

The historical maps shown were produced from the Ordnance Survey's 1:10,000 colour raster mapping. These maps are derived from Landplan which replaced the old 1:10,000 maps originally published in 1970. The data is highly detailed showing buildings, fences and field boundaries as well as all roads, tracks and paths. Road names are also included together with the relevant road number and classification. Boundary information depiction includes county, unitary authority, district, civil parish and constituency.

**Map Name(s) and Date(s)**



**Historical Map - Slice A**



**Order Details**

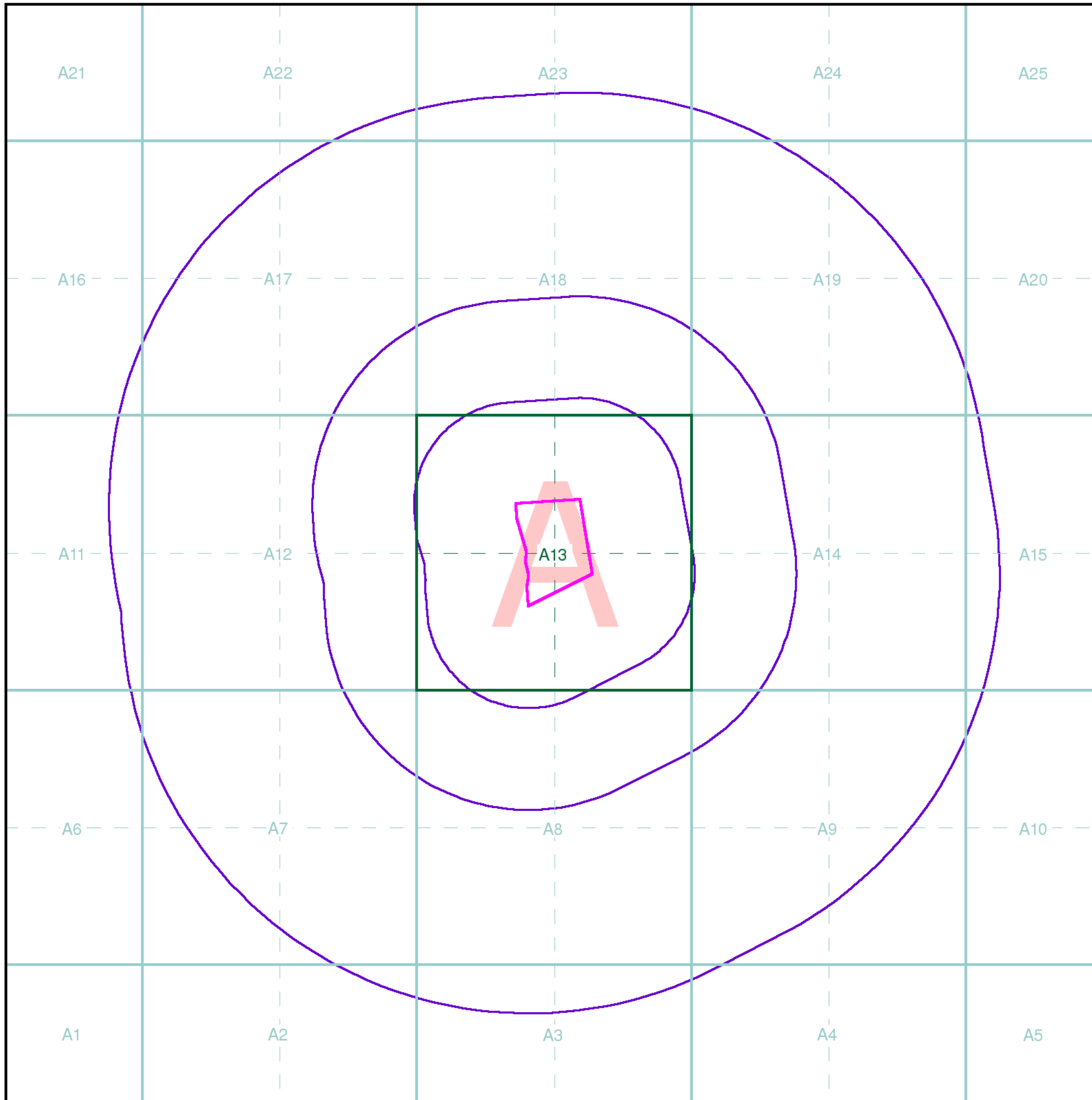
Order Number: 23283856\_1\_1  
 Customer Ref: E013713-4 Gunters Lane  
 National Grid Reference: 573020, 109170  
 Slice: A  
 Site Area (Ha): 3.46  
 Search Buffer (m): 1000

**Site Details**

Wendy House, Gunters Lane, BEXHILL-ON-SEA, East Sussex, TN39 4EP



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### Index Map

For ease of identification, your site and buffer have been split into Slices, Segments and Quadrants. These are illustrated on the Index Map opposite and explained further below.

#### Slice

Each slice represents a 1:10,000 plot area (2.7km x 2.7km) for your site and buffer. A large site and buffer may be made up of several slices (represented by a red outline), that are referenced by letters of the alphabet, starting from the bottom left corner of the slice "grid". This grid does not relate to National Grid lines but is designed to give best fit over the site and buffer.

#### Segment

A segment represents a 1:2,500 plot area. Segments that have plot files associated with them are shown in dark green, others in light blue. These are numbered from the bottom left hand corner within each slice.

#### Quadrant

A quadrant is a quarter of a segment. These are labelled as NW, NE, SW, SE and are referenced in the datasheet to allow features to be quickly located on plots. Therefore a feature that has a quadrant reference of A7NW will be in Slice A, Segment 7 and the NW Quadrant.

A selection of organisations who provide data within this report:



Envirocheck reports are compiled from 136 different sources of data.

### Client Details

Mr R Palmgren, White Young Green, The Mill Yard, Nursling Street, Southampton, SO16 0YA

### Order Details

Order Number: 23283856\_1\_1  
Customer Ref: E013713-4 Gunters Lane  
National Grid Reference: 573030, 109170  
Site Area (Ha): 3.46  
Search Buffer (m): 1000

### Site Details

Wendy House, Gunters Lane, BEXHILL-ON-SEA, East Sussex, TN39 4EP

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  - any person who purchases the whole of the Property Site,
  - any person who provides funding secured on the whole of the Property Site,
  - any person for whom You act in a professional or commercial capacity,
  - any person who acts for You in a professional or commercial capacity; and
  - prospective buyers of the Property Site as part of an Information Pack but for the avoidance of doubt, Landmark shall have no liability to such prospective buyer unless the prospective buyer subsequently purchases the Property Site, and the prospective (or actual) buyer shall not be entitled to make the Service available to any other third party.

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  - create any product which is derived directly or indirectly from the data contained in the Services

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- Landmark or its Authorised Reseller shall not be obliged to invoice any party other than You for the provision of Services, but where Landmark or its Authorised Reseller does so invoice any third party at Your request, and such invoice is not accepted or remains unpaid, Landmark or its Authorised Reseller shall have the option at any time to cancel such invoice and invoice You direct for such Services. Where Your order comprises a number of Services or severable elements within any one or more Services, any failure by Landmark or its Authorised Reseller to provide an element or elements of the Services

shall not prejudice Landmark's or its Authorised Reseller's ability to require payment in respect of the Services delivered to You.

## 5. Termination

- Landmark may suspend or terminate Your rights under these Terms without any liability to You with immediate effect if at any time:-
  - You fail to make any payment due in accordance with clause 4;
  - You repeatedly breach or commit or cause to be committed any material breach of these Terms; or
  - You commit a breach and You fail to remedy the breach within 7 days of receipt of a written notice to do so; additionally, without prejudice to the foregoing, Landmark may remedy the breach and recover the costs thereof from You.
- If Your rights are terminated under this clause and You have made an advance payment We will refund You a reasonable proportion of the balance as determined by Us in relation to the value of Services previously purchased.
- Landmark reserves the right to refuse to supply any or all Services to You without notice or reason.

## 6. Liability

- We provide warranties and accept liability only to the extent stated in this clause 6 and clause 7.
- Nothing in these Terms excludes either party's liability for death or personal injury caused by that party's negligence or wilful default, and the remainder of this clause 6 is subject to this provision and Your statutory rights.
- As most of the information contained in the Services is provided to Landmark by others, Landmark cannot control its accuracy or completeness, nor is it within the scope of Landmark's Services to check the information on the ground. Accordingly, Landmark will only be liable to You for any loss or damage caused by its negligence or wilful default and subject to clause 6.o below neither Landmark nor any person providing information contained in any Services shall in any circumstances be liable for any inaccuracies, faults or omissions in the Services, nor shall Landmark have any liability if the Services are used otherwise than in accordance with these Terms.

- Save as precluded by law, Landmark shall not be liable for any indirect or consequential loss, damage or expenses (including loss of profits, loss of contracts, business or goodwill) howsoever arising out of any problem, event, action or default by Landmark.

- In any event, and notwithstanding anything contained in these Terms, Landmark's liability in contract, tort (including negligence or breach of statutory duty) or otherwise howsoever arising by reason or in connection with this Contract (except in relation to death or personal injury) shall be limited to an aggregate amount not exceeding £1 million if the complaint is in relation to a Report on residential property and an aggregate amount not exceeding £10 million in respect of any other Report or Service purchased from Landmark.
- Landmark will not be liable for any defect, failure or omission relating to Services that is not notified to Landmark within six months of the date of the issue becoming apparent and in any event, within twelve years of the date of the Service.

- You acknowledge that:-
  - Subject to clause 6.o below You shall have no claim or recourse against any Third Party Content supplier nor any of our other Suppliers. You will not in any way hold us responsible for any selection or retention of, or the acts or omissions of Third Party Content suppliers or other Suppliers (including those with whom We have contracted to operate various aspects or parts of the Service) in connection with the Services (for the avoidance of doubt Landmark is not a Third Party Content supplier). Landmark does not promise that the supply of the Services will be uninterrupted or error free or provide any particular facilities or functions, or that the Content will always be complete, accurate, precise, free from defects of any other kind, computer viruses, software locks or other similar code although Landmark will use reasonable efforts to correct any inaccuracies within a reasonable period of them becoming known to us;
  - Landmark's only obligation is to exercise reasonable skill and care in providing environmental property risk information to persons acting in a professional or commercial capacity who are skilled in the use of property and environmental information and You hereby acknowledge that You are such a person;
  - no physical inspection of the Property Site reported on is carried out as part of any Services offered by Landmark and Landmark do not warrant that all land uses or features whether past or current will be identified in the Services. The Services do not include any information relating to the actual state or condition of any Property Site nor should they be used or taken to indicate or exclude actual fitness or unfitness of a Property Site for any particular purpose nor should it be relied upon for determining saleability or value or used as a substitute for any physical investigation or inspection. Landmark recommends that You inspect and take other advice in relation to the Property Site and not rely exclusively on the Services.
  - Subject to clause 6.o below, Landmark shall not be responsible for error or corruption in the Services resulting from inaccuracy or omission in primary or secondary information and data, inaccurate processing of information and data by third parties,

- In any event no person may rely on a Service more than 12 months after its original date.

- If You wish to vary any limitation of liability as set out in these Terms, You must request such variation prior to ordering the Service. Landmark shall use its reasonable endeavours to agree such variation but shall not be obliged to do so.

- Time shall not be of the essence with respect to the provision of the Services.
- Ordnance Survey have undertaken a positional accuracy improvement programme which may result in discrepancies between the positioning of features used in datasets in the Services and the updated Ordnance Survey mapping. Subject to clause 6.o below, Landmark and its Suppliers exclude all and any liability incurred as a result of the implementation of such positional accuracy improvement programme.

- Where Landmark provides its own risk assessment in connection with any Report, Landmark shall carry out such assessment with all reasonable skill and care but shall have no liability for any such risk assessment conclusion which is provided for information only, save where Landmark conducted the same negligently, in which case the provisions of clause 6 shall apply. Notwithstanding the provision of any such risk assessment conclusion you should carefully examine the remainder of the Report and should not take or refrain from taking any action based solely on the basis of the risk assessment. For the avoidance of doubt, the provisions of this clause 6n apply solely to risk assessments conducted by Landmark, and the provision of any other risk assessment by a third party shall be governed by such third party's terms in accordance with the provisions of clause 6i above.
- Landmark obtains much of the information contained in its Report from third parties. Landmark will not accept any liability to You for any negligent or incorrect entry, or error or corruption in the Third Party Content supplied to Landmark, but Landmark's Suppliers may be liable for such negligent or incorrect entries, or errors or corruptions, subject to the terms and conditions on which they supply the Third Party Content to Landmark.

- Subject to clause 6.o below, Landmark shall not be responsible for error or corruption in the Services resulting from inaccuracy or omission in primary or secondary information and data, inaccurate processing of information and data by third parties,

- Save where expressly provided, this clause 7 shall apply

computer malfunction or corruption of data whilst in the course of conversion, geo-coding, processing by computer or electronic means, or in the course of transmission by telephone or other communication link, or printing.

- Landmark will not be held liable in any way if a Report on residential property is used for commercial property or more than the one residential property for which it was ordered.

- the Services have not been prepared to meet Your or anyone else's individual requirements; that You assume the entire risk as to the suitability of the Services and waive any claim of detrimental reliance upon the same; and You confirm You are solely responsible for the selection or omission of any specific part of the Content;
- Landmark offer no warranty for the performance of any linked internet service not operated by Landmark;
- You will on using the Services make a reasonable inspection of any results to satisfy Yourself that there are no defects or failures. In the event that there is a material defect You will notify us in writing of such defect within seven days of its discovery;
- any support or assistance provided to You in connection with these Terms is at Your risk;

- All liability for any insurance products purchased by You rests solely with the insurer. Landmark does not endorse any particular product or insurer and no information contained within the Services should be deemed to imply otherwise. You acknowledge that if You Order any such insurance Landmark will deem such as Your consent to forward a copy of the Report to the insurers. Where such policy is purchased, all liability remains with the insurers and You are entirely responsible for ensuring that the insurance policy offered is suitable for Your needs and should seek independent advice. Landmark does not guarantee that an insurance policy will be available on a Property Site. All decisions with regard to the offer of insurance policies for any premises will be made solely at the discretion of the insurers and Landmark accepts no liability in this regard. The provision of a Report does not constitute any indication by Landmark that insurance will be available on the property.

- Professional opinions contained in Reports are provided to Landmark by third parties, and such third parties are solely liable for the opinion provided. For the avoidance of doubt, those parties providing assessments or professional opinions on Landmark products include RPS Plc & Wilbourn Associates Limited, and any issues with regard to the provision of such opinion should be taken up with the relevant third party.

- If Landmark provides You with any additional service obtained from a third party, including but not limited to any interpretation or conclusion, risk assessment or environmental report or search carried out in relation to a Report on Your Property Site, subject to clause 6.o below Landmark will not be liable in any way for any information contained therein or any issues arising out of the provision of those additional services to You. Landmark will be deemed to have acted as an agent in these circumstances and the supply of these additional services will be governed by the terms and conditions of those Third Parties.

- In any event no person may rely on a Service more than 12 months after its original date.

- If You wish to vary any limitation of liability as set out in these Terms, You must request such variation prior to ordering the Service. Landmark shall use its reasonable endeavours to agree such variation but shall not be obliged to do so.

- Time shall not be of the essence with respect to the provision of the Services.

- Ordnance Survey have undertaken a positional accuracy improvement programme which may result in discrepancies between the positioning of features used in datasets in the Services and the updated Ordnance Survey mapping. Subject to clause 6.o below, Landmark and its Suppliers exclude all and any liability incurred as a result of the implementation of such positional accuracy improvement programme.

- Where Landmark provides its own risk assessment in connection with any Report, Landmark shall carry out such assessment with all reasonable skill and care but shall have no liability for any such risk assessment conclusion which is provided for information only, save where Landmark conducted the same negligently, in which case the provisions of clause 6 shall apply. Notwithstanding the provision of any such risk assessment conclusion you should carefully examine the remainder of the Report and should not take or refrain from taking any action based solely on the basis of the risk assessment. For the avoidance of doubt, the provisions of this clause 6n apply solely to risk assessments conducted by Landmark, and the provision of any other risk assessment by a third party shall be governed by such third party's terms in accordance with the provisions of clause 6i above.

- Landmark obtains much of the information contained in its Report from third parties. Landmark will not accept any liability to You for any negligent or incorrect entry, or error or corruption in the Third Party Content supplied to Landmark, but Landmark's Suppliers may be liable for such negligent or incorrect entries, or errors or corruptions, subject to the terms and conditions on which they supply the Third Party Content to Landmark.

- Save where expressly provided, this clause 7 shall apply

- solely to Envirosearch Residential Reports (regardless of the result of such Report). Nothing in this clause 7 shall operate to override or vary the provisions of clause 6.
- Landmark are prepared to offer, at their sole discretion, and without any admission or inference of liability a contribution towards the costs of any remediation works required under a Notice (as defined below) on the terms of this clause 7 ("the Contribution")

- In the event that a Remediation Notice is served on the First Purchaser or First Purchaser's Lender of a Property Site under Part II(A) of the Environmental Protection Act 1990 ("the Notice") Landmark will contribute to the cost of such works as either the First Purchaser or First Purchaser's Lender (but not both) are required to carry out under the Notice subject to the provisions of this clause 7 and on the following terms:
  - the Contribution shall only apply to contamination or a pollution incident present or having occurred prior to the date of the Report;
  - the Contribution shall only apply where the Property Site is a single residential dwelling house or a single residential flat within a block of flats. For the avoidance of doubt, this obligation does not apply to any commercial property, nor to any Property Site being developed or redeveloped whether for residential purposes or otherwise;
  - the Contribution is strictly limited to the cost of works at the Property Site and at no other site.

- the Contribution will not be paid in respect of any of the following:
  - Radioactive contamination of whatsoever nature, directly or indirectly caused by or contributed to or arising from ionising radiations or contamination by radioactivity from any nuclear fuel or from any nuclear waste from the combustion of nuclear fuel or the radioactive toxic explosive or other hazardous properties of any explosive nuclear assembly or nuclear component thereof.
  - Asbestos arising out of or related in any way to asbestos or asbestos-containing materials on or in structures or services serving the structures. Naturally occurring materials arising from the presence or required removal of naturally occurring materials except in circumstances where such materials are present in concentrations which are in excess of their natural concentration.
  - Intentional non-compliance arising from the intentional disregard of or knowing wilful or deliberate non-compliance by any owner or occupier of the Property Site with any statute, regulation, administrative complaint, notice of violation, or notice letter of any Regulatory Authority.

- Any condition which is known or ought reasonably to have been known to the First Purchaser or the First Purchaser's Lender prior to the purchase of the Report.
- Any condition which is caused by acts of War or an Act of Terrorism.
- Any property belonging to or in the custody or control of the First Purchaser which does not form a fixed part of the Property Site or the structure.
- Any fines liquidated damages punitive or exemplary damages.
- Any bodily injury including without limitation, death, illness or disease, mental injury, anguish or nervous shock.
- Any financial loss in respect of any loss of any rental, profit, revenue, savings or business or any consequential indirect or economic loss damage or expense including the cost of rent of temporary premises or business interruption.
- Any losses incurred following a material change in use of, alteration or development of the Property Site.

- The maximum sum that shall be contributed by Landmark in respect of any Contribution shall be limited to £60,000.

- In the event that more than one Report is purchased on the Property Site the Contribution will only be payable under the first Report purchased by or on behalf of any First Purchaser or First Purchaser's Lender and no Contribution will be made in respect of subsequent Reports purchased by or on behalf of such First Purchaser, First Purchaser's Lender or any person connected to them.
- Landmark shall only pay a Contribution where the Notice is served within 36 months of the date of the Report.
- Any rights to a Contribution under this Clause 7 are not assignable in the event of a sale of the Property Site and Landmark will not make any Contribution after the date of completion of such sale.
- In the event the First Purchaser or First Purchaser's Lender wishes to claim any Contribution, it shall notify Landmark in writing within 3 months of the date of the Notice. The First Purchaser or First Purchaser's Lender (as applicable) shall comply with all reasonable requirements of Landmark with regard to the commission and conduct of the remediation works to be carried out under the Notice, and in the event the First Purchaser or First Purchaser's Lender (as applicable) does not do so, including without limitation, obtaining Landmark's prior written consent to any estimates for such works or complying with any other reasonable request by Landmark, Landmark shall not be required to pay any Contribution. Notwithstanding the payment of the Contribution by Landmark the First Purchaser or First Purchaser's Lender as applicable shall take all reasonable steps to mitigate any costs incurred in connection with the conduct of works required under the

- Any complaints in relation to the Services should, in the first instance, be in writing addressed to the Customer Service Support Manager at the Landmark registered office. Landmark or its agents will respond to any such complaints in writing as soon as practically possible.
- A person who is not a party to any contract made pursuant to these Terms shall have no right under the Contract (Right of Third Parties) Act 1999 to enforce any terms of such contract and Landmark shall not be liable to any such third party in respect of any Services supplied.
- Landmark's Privacy Policy as displayed on the Website governs the use made of any information You supply to Landmark.

- Landmark will not be liable for any such representation being untrue or misleading.
- These Terms shall prevail at all times to the exclusion of all other terms and conditions including any terms and conditions which You may purport to apply even if such other provisions are submitted in a later document or purport to exclude or override these Terms and neither the course of conduct between parties nor trade practice shall act to modify these Terms.

- Landmark will use reasonable care and skill in providing the Services to You, however, the Services are provided on the express basis that the information and data supplied in the Services are derived from third party sources and Landmark does not warrant the accuracy or completeness of such information or data. Such information is derived solely from those sources specifically cited in the Services and Landmark does not claim that these sources represent an exhaustive or comprehensive list of all sources that might be consulted.

terms of any Notice.

- In the event that the First Purchaser or First Purchaser's Lender receives any communication from a statutory authority to the effect that there is an intent to serve a notice received under PartII(A) of the Environmental Protection Act 1990 they will advise Landmark within a maximum period of two months from receipt of such communication. This clause 7h and the service of any notice under it shall not affect the provisions of clauses 7 e and g, and any such communications, even if advised to Landmark will not operate as notice under clause 7e.
- Landmark reserve the right at any time prior to a claim for Contribution being made in accordance with clause 7 g) above, to withdraw the offer of payment of Contributions without further notice.

## 8. Events Beyond Our Control

- You acknowledge that Landmark shall not be liable for any delay, interruption or failure in the provision of the Services which are caused or contributed to by any circumstance which is outside our reasonable control including but not limited to, lack of power, telecommunications failure or overload, computer malfunction, inaccurate processing of data, or delays in receiving, loading or checking data, corruption of data whilst in the course of conversion, geo-coding, processing by computer in the course of electronic communication, or printing.

## 9. Severability

- If any provision of these Terms are found by either a court or other competent authority to be void, invalid, illegal or unenforceable, that provision shall be deemed to be deleted from these Terms and never to have formed part of these Terms and the remaining provisions shall continue in full force and effect.

## 10. Governing Law

- These terms shall be governed by and construed in accordance with English law and each party agrees irrevocably submit to the exclusive jurisdiction of the English courts If any dispute arises out of or in connection with this agreement (a "Dispute") the parties undertake that, prior to the commencement of Court proceedings, they will seek to have the Dispute resolved amicably by use of an alternative dispute resolution procedure acceptable to both parties with the assistance of the Centre for Dispute Resolution (CEDR) if required, by written notice initiating that procedure. If the Dispute has not been resolved to the satisfaction of either party within 60 days of initiation of the procedure or if either party fails or refuses to participate in or withdraws from participating in the procedure then either party may refer the Dispute to the Court.

## 11. General; Complaints

- Landmark may assign its rights and obligations under these Terms without prior notice or any limitation.
- Landmark may authorise or allow our contractors and other third parties to provide to Landmark and/or to You services necessary or related to the Services and to perform Landmark's obligations and exercise Landmark's rights under these Terms, which may include collecting payment on Landmark's behalf.
- No waiver on Landmark's part to exercise, and no delay in exercising, any right, power or provision hereunder shall operate as a waiver thereof, nor shall any single or partial exercise of any right, power or provision hereunder preclude the exercise of that or any other right, power or provision.
- Unless otherwise stated in these Terms, all notices from You to Landmark must be in writing and sent to the Landmark registered office (or in the case of an Authorised Reseller, to its registered office address) and subject to paragraph e below all notices from Landmark to You will be displayed on our Websites from time to time.
- Any complaints in relation to the Services should, in the first instance, be in writing addressed to the Customer Service Support Manager at the Landmark registered office. Landmark or its agents will respond to any such complaints in writing as soon as practically possible.
- A person who is not a party to any contract made pursuant to these Terms shall have no right under the Contract (Right of Third Parties) Act 1999 to enforce any terms of such contract and Landmark shall not be liable to any such third party in respect of any Services supplied.
- Landmark's Privacy Policy as displayed on the Website governs the use made of any information You supply to Landmark.

**APPENDIX C**  
**Monitoring Data**

**White Young Green Environmental**  
GROUND GAS AND GROUNDWATER MONITORING RESULTS



SITE/REF: Bexhill - Gunters Lane						General Site comments			
DATE: 06/02/2008		...1..... of .....1...				SS - Sandstone, S - Sand, C - Clay, M - Mudstone			
OPERATOR(S): AK									
Ambient Conditions:		Barometric Pressure (mb)	CH <sub>4</sub> (%v/v)	CO <sub>2</sub> (%v/v)	O <sub>2</sub> (%v/v)	PID (ppm)			
Before Monitoring		1018	<0.1	<0.1	20	-			
After Monitoring		1018	<0.1	<0.1	20	-			
Atmospheric Pressure Trend:						EQUIPMENT			
Ground Conditions:		Dry				Instrument / Model Type		Serial Number	Comments
Weather Conditions:		Dry, cold				Interface probe		76368-06	
						GA 2000		EX 98E2257X	
						Flow pod		903L Mod B	

Ground Gas Note: "0" readings to be recorded as instrument detection limit

Borehole ID	Time	Flow (l/hr)	Relative Pressure (mb)	Steady CH <sub>4</sub> (%v/v)	CO <sub>2</sub> (%v/v)	O <sub>2</sub> (%v/v)	Peak CH <sub>4</sub> (%v/v)	% of Lower Explosive Limit	CO (ppm)	H <sub>2</sub> S (ppm)	Balance (%)	PID (ppm)	Response Zone		Response Strata	Gas screening value CH <sub>4</sub>	Gas screening value CO <sub>2</sub>
													From (mbgl)	To (mbgl)			
BH2	11:25	-0.3	0.11	<0.1	<0.1	20	<0.1	<1	<1	<1	79.8	-	1	8	SS,S,C,M	-0.0003	-0.0003
BH4	11:35	<0.1	0.11	<0.1	<0.1	20	<0.1	<1	<1	<1	79.8	-	1	8.4	S,C	0.0001	0.0001

Groundwater

Borehole ID	Standing Water Level (mbgl)	Installation Base Dip (mbgl)	Free Phase LNAPL Thickness (m)	Free Phase DNAPL Thickness (m)	Water Quality Indicators					Well Volume (l)	Purge Volume (l)	Comments (samples)
					Eh	EC	pH	DO	Temp			
BH2	0.41	-	nd	-	-	-	-	-	-	-	-	No water samples taken
BH4	0.69	-	nd	-	-	-	-	-	-	-	-	No water samples taken

Well volume (l) = (3.14 x (hole diameter (m)/2)<sup>2</sup> x (base dip (m) - standing water level (m)))x1000

Gas screening value = gas concentration (%) x gas flow rate (l/hr)

%v/v - Percentage volume by total volume; mbgl - metres below ground level; ppm - parts per million; mb - millibars; l/hr - litres per hour; wv - water vial; gb - 1l glass bottle; pb - 1l plastic bottle

**APPENDIX D**  
**Engineering Logs**

# Cable Percussive Borehole Records

Job Number:  
E013713-6

Sheet 1 of 1

**BH1**

Site Location:  
Gunters Lane, Bexhill

Client:  
Kier

Co-ordinates:

Environmental

Equipment:  
Dando 150 Cable Percussive Rig

Casing:  
Depth (m): 0.00  
Diameter (mm): -

OD (m):

Start Date: 07/01/2008

Finish Date: 07/01/2008

Stratum Description	Legend	Depth (m)	Reduced Level (mOD)	Casing Diameter (mm)	Sample Type	Depth (m)	In Situ Test Results	Installation and Backfill Details
				Depth(m)				
Grass top over TOPSOIL (Orange-brown slightly silty clayey gravelly fine to medium SAND. Gravel is fine to medium sub-angular to sub-rounded sandstone.) Borehole completed at 0.40 m		0.40		0.00				

**Key**

- D Disturbed Sample
- ES Environmental Sample
- B Bulk Sample
- U Undisturbed Sample
- V Hand Vane
- ∇ Water Strike
- ▼ Standing Level

**Remarks:**

1. Borehole moved at 0.4mbgl due to hard ironstone band.
2. Backfilled with arisings.

**Groundwater Observations During Drilling**

Date	Strike Time	Strike Depth (m)	Casing Depth (m)	Rising to (m)	Over time (mins)	Depth sealed (m)

Drilled By : D J Drilling      Logged By : CJ      Checked By : DF

# Cable Percussive Borehole Records

Job Number:  
E013713-6

Sheet 1 of 1  
**BH1A**

Site Location:  
Gunters Lane, Bexhill

Client:  
Kier

Co-ordinates:

Environmental

Equipment:  
Dando 150 Cable Percussive Rig

Casing:  
Depth (m): 5.20  
Diameter (mm): 200

OD (m):

Start Date: 07/01/2008

Finish Date: 10/01/2008

Stratum Description	Legend	Depth (m)	Reduced Level (mOD)	Casing Diameter (mm)	Sample Type	Depth (m)	In Situ Test Results	Installation and Backfill Details
				Depth(m)				
Grass top over TOPSOIL (Orange-brown slightly silty clayey gravelly fine to medium SAND. Gravel is fine to medium sub-angular to sub-rounded sandstone.) Hard orange-brown iron cemented SANDSTONE band. Firm orange-brown mottled red-brown slightly gravelly slightly silty slightly sandy CLAY. Gravel is of fine sub-angular ironstone. Dense orange becoming grey SAND containing occasional sandstone bands.		0.40		200 5.20	ES1	0.40	N=37 (3,5,5,8,10,14) 50/240mm (9,16,16,28,37)	
		0.60			B 4	0.60		
		1.20			D 6	1.20		
					W11	1.40		
					ES2	1.40		
					D 10	2.00		
					D 15	4.00		
					D 16	4.50		
					D 17	5.00		
					D 18	5.70		
SANDSTONE		5.70		B 18	5.70-6.10			
Hard friable laminated grey-blue silty CLAY.		6.20		D 19	6.20	N=33 (5,5,7,8,8,10)		
				D 20	7.00			
				D 21	7.60	50/295mm (11,14,20,30)		
				D 22	8.60	50/260mm (10,12,18,14,18)		
Borehole completed at 8.60 m								

**Key**

- D Disturbed Sample
- ES Environmental Sample
- B Bulk Sample
- U Undisturbed Sample
- V Hand Vane
- ∇ Water Strike
- ▼ Standing Level

**Remarks:**

1. Borehole excavated to 8.6mbgl.
2. Groundwater was encountered at 2.6mbgl.
3. Chiselling: 4.6mbgl-4.9mbgl 45 mins, 5.7mbgl-6.1mbgl 15 mins.
4. Backfilled: GL to 8.6mbgl with arisings.

**Groundwater Observations During Drilling**

Date	Strike Time	Strike Depth (m)	Casing Depth (m)	Rising to (m)	Over time (mins)	Depth sealed (m)
07/01/2008	:	2.00	-	1.40	20	-
Drilled By :		Logged By :		Checked By :		
D J Drilling		CJ		DF		

# Cable Percussive Borehole Records

Site Location:  
Gunters Lane, Bexhill

Client:  
Kier

Co-ordinates:

Environmental

Equipment:  
Dando 150 Cable Percussive Rig

Casing:  
Depth (m): 5.70  
Diameter (mm): 200

OD (m):

Start Date: 10/01/2008

Finish Date: 11/01/2008

Stratum Description	Legend	Depth (m)	Reduced Level (mOD)	Casing Diameter (mm)	Sample Type	Depth (m)	In Situ Test Results	Installation and Backfill Details
				Depth(m)				
Grass top over TOPSOIL (Orange-brown slightly silty clayey gravelly fine to medium SAND. Gravel is fine to medium sub-angular to sub-rounded sandstone.)		0.60			B 1 ES1	0.20-0.40 0.40		
Orange-brown slightly gravelly silty SAND. Gravel is fine sub-angular sandstone.		0.80						
SANDSTONE		1.60			D 5 B 9	1.20 1.20-1.60	50/285mm (25,27,23)	
Dense orange-brown slightly gravelly silty SAND. Gravel is fine angular to sub-angular sandstone.		1.80			ES2	1.50		
Orange-brown very clayey fine SAND.		2.10			W14	1.70		
Dense yellow-brown mottled orange-brown silty SAND.		3.20			D 10 B 11	1.90 2.00-2.40		
Dense grey slightly gravelly silty SAND. Gravel is fine angular to sub-angular sandstone.		5.40			D 12	2.50	N=47 (10,9,8,12,12,15)	
Very stiff friable laminated blue silty CLAY.		7.00		200 5.70	D 13	3.50	46/300mm - Abandoned	
MUDSTONE		7.20			D 15	4.50	N=48 (7,11,15,33)	
Hard friable laminated grey silty CLAY.		8.00			D 16 U 17	5.40 5.50-5.90	70	
Borehole completed at 8.00 m					D 18	5.90		
					U 19	6.50-6.85	70	
					D 20	6.85		
					D 21	7.20		
					D 22	7.50		
					D 23	8.00	50/250mm (10,15,34,16)	

**Key**

- D Disturbed Sample
- ES Environmental Sample
- B Bulk Sample
- U Undisturbed Sample
- V Hand Vane
- ∇ Water Strike
- ▼ Standing Level

**Remarks:**

1. Borehole excavated to 8.0mbgl.
2. Groundwater was encountered at 1.7mbgl.
3. Chiselling: 1.2mbgl-1.6mbgl 80 mins, 7.0mbgl-7.2mbgl 30 mins.
4. Installed: GL to 1.0mbgl plain, 1.0mbgl-8.0mbgl slotted.
5. Backfilled: GL to 0.3mbgl concrete, 0.3mbgl to 1.0mbgl bentonite, 1.0mbgl to 8.0mbgl gravel.

**Groundwater Observations During Drilling**

Date	Strike Time	Strike Depth (m)	Casing Depth (m)	Rising to (m)	Over time (mins)	Depth sealed (m)
10/01/2008	:	4.00	-	-	20	-
Drilled By :		Logged By :		Checked By :		
D J Drilling		CJ		DF		

# Cable Percussive Borehole Records

Job Number:  
E013713-6

Sheet 1 of 1

**BH3**

Site Location:  
Gunters Lane, Bexhill

Client:  
Kier

Co-ordinates:

Environmental

Equipment:  
Dando 150 Cable Percussive Rig

Casing:  
Depth (m): 5.60  
Diameter (mm): 200

OD (m):

Start Date: 11/01/2008

Finish Date: 11/01/2008

Stratum Description	Legend	Depth (m)	Reduced Level (mOD)	Casing Diameter (mm)	Sample Type	Depth (m)	In Situ Test Results	Installation and Backfill Details
Grass top over TOPSOIL (Orange-brown slightly silty clayey gravelly fine to medium SAND. Gravel is fine to medium sub-angular to sub-rounded sandstone.)  Orange-brown mottled grey silty SAND.		0.40		200	ES1 B4	0.40	N=32 (3,5,6,8,9,9)	
						0.40-0.60		
Orange-brown sandy CLAY.		2.00		200	D5  ES2	1.20	N=13 (1,3,3,3,3,4)	
						2.00		
Dense orange-brown silty SAND.		2.70		200	D9 D10	2.00	50/290mm (5,14,22,28)	
						2.20		
Very stiff grey slightly silty sandy CLAY.		3.90		200	D11	3.00	70	
						4.00-4.30		
Dense grey-blue silty SAND.		4.40		200	D12 U13	4.50	N=48 (8,8,10,17,21)	
						5.00		
Very stiff friable laminated blue slightly silty sandy CLAY.		5.50		200	U16 W19 D17	5.60-5.90	70	
						5.80		
Dense grey silty gravelly SAND. Gravel is fine to coarse sub-angular sandstone.		6.60		200	D18 B20	6.00	50/255mm (12,13,32)	
						6.50		
Borehole completed at 8.00 m		8.00			D21	8.00	50/255mm (6,10,10,14,17,9)	

**Key**

- D Disturbed Sample
- ES Environmental Sample
- B Bulk Sample
- U Undisturbed Sample
- V Hand Vane
- ∇ Water Strike
- ▼ Standing Level

**Remarks:**

1. Borehole excavated to 8.0mbgl.
2. Groundwater was encountered at 6.6mbgl.
3. Chiselling: 6.8mbgl-7.3mbgl 60 mins.
4. Backfilled: GL to 8.0mbgl with arisings.

**Groundwater Observations During Drilling**

Date	Strike Time	Strike Depth (m)	Casing Depth (m)	Rising to (m)	Over time (mins)	Depth sealed (m)
11/01/2008	:	6.60	-	5.80	20	-
Drilled By :		Logged By :		Checked By :		
D J Drilling		CJ		DF		

# Cable Percussive Borehole Records

Site Location:  
Gunters Lane, Bexhill

Client:  
Kier

Co-ordinates:

Environmental

Equipment:  
Dando 150 Cable Percussive Rig

Casing:  
Depth (m): 5.50  
Diameter (mm): 200

OD (m):

Start Date: 12/01/2008

Finish Date: 12/01/2008

Stratum Description	Legend	Depth (m)	Reduced Level (mOD)	Casing Diameter (mm)	Sample Type	Depth (m)	In Situ Test Results	Installation and Backfill Details
Grass top over TOPSOIL (Red-brown clayey gravelly fine to medium SAND. Gravel is fine to medium sub-angular to sub-rounded sandstone.)		0.60			ES1 B4	0.40 0.40-0.60		
Orange-brown mottled grey slightly gravelly silty SAND. Gravel is fine to medium angular to sub-angular sandstone.		1.50			D5 U6	0.80 1.20-1.55	80	
Orange-brown very clayey fine SAND.		3.20			ES2 D7 B11 D12	1.50 1.60 2.00-2.30 2.50	N=41 (5,7,9,9,12,11) 50/245mm (5,12,24,20,6)	
Dense grey silty gravelly SAND. Gravel is fine to coarse sub-angular sandstone.		4.10			D13	3.50	N=47 (10,15,14,12,10,11)	
Hard friable grey CLAY.		5.10			D14 D15	4.20 4.50	N=41 (5,9,9,9,10,13)	
Stiff grey silty CLAY.		6.70		200 5.50	U16 D17 U18 D19	5.50-5.95 5.95 6.10-6.45 6.45	65 60	
Hard friable grey silty CLAY.		8.40			D20 D21 D22	7.10 7.80 8.30	50/280mm (7,18,25,25) 47/300mm - Abandoned	
Borehole completed at 8.40 m								

**Key**

- D Disturbed Sample
- ES Environmental Sample
- B Bulk Sample
- U Undisturbed Sample
- V Hand Vane
- ∇ Water Strike
- ▼ Standing Level

**Remarks:**

1. Borehole excavated to 8.4mbgl.
2. Groundwater was not encountered.
3. Chiselling: 3.3mbgl-3.5mbgl 30 mins, 4.2mbgl-4.5mbgl 30 mins, 7.1mbgl-8.3mbgl 120 mins.
4. Installed: GL to 1.0mbgl plain, 1.0mbgl-8.4mbgl slotted.
5. Backfilled: GL to 0.3mbgl concrete, 0.3mbgl to 1.0mbgl bentonite, 1.0mbgl to 8.4mbgl gravel.

**Groundwater Observations During Drilling**

Date	Strike Time	Strike Depth (m)	Casing Depth (m)	Rising to (m)	Over time (mins)	Depth sealed (m)
Drilled By : D J Drilling		Logged By : CJ		Checked By : DF		

# Trial Pit Records

Environmental

Site Location:  
Gunters Lane, Bexhill

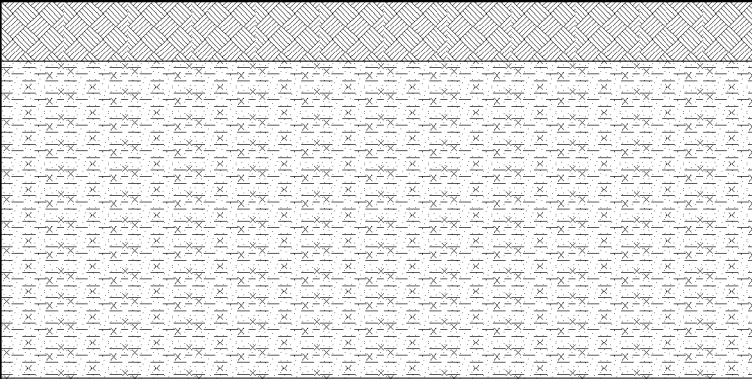
Client:  
Kier

Equipment:

OD:

Co-ordinates:

Start Date: 15/01/2008

Stratum Code	Legend	Depth (m)	Reduced Level (mOD)	Sample Type	Sample Depth (m)	In Situ Test Results
A		0.40				
		2.50				

Stratum Code	Stratum Description
A	Grass top over TOPSOIL (Orange-brown slightly silty clayey gravelly fine to medium SAND. Gravel is fine to medium sub-angular to sub-rounded sandstone. )

**Key**

- D Disturbed Sample
- ES Environmental Sample
- B Bulk Sample
- U Undisturbed Sample
- V Hand Vane
- ∇ Water Strike
- ▼ Standing Level

Remarks:

Logged By :

Checked By :

**APPENDIX E**  
**WYG Generic Assessment Criteria**

# SOIL - TIER ONE HUMAN HEALTH SCREENING VALUES

		Status	Issue No	Date	
		WYGE ISSUE	6f	09/02/2006	
Determinand	Units	WYGE Human Health Soil Screening Values			
		Residential with Plant Uptake	Residential Without Plant Uptake	Commercial/Industrial	Derivation Tool
pH	Value	<5, >9	<5, >9	<5, >9	
Asbestos	%	Presence	Presence	Presence	Lab Screening
<b>PHENOLICS</b>					
Phenol	mg/kg	150	34400	43000	SGV Report 8
<b>US EPA PRIORITY PAH's</b>					
Acenaphthene	mg/kg	45	150	360	CLEA 2002 V1.3
Acenaphthylene	mg/kg	5	18	45	CLEA 2002 V1.3
Anthracene	mg/kg	140	680	5600	CLEA 2002 V1.3
Benzo(a)anthracene	mg/kg	3.4	5.2	35	CLEA 2002 V1.3
Benzo(a)pyrene	mg/kg	0.5	1.2	19	CLEA 2002 V1.3
Benzo(b)fluoranthene	mg/kg	1.3	4	25	CLEA 2002 V1.3
Benzo(k)fluoranthene	mg/kg	4	7	50	CLEA 2002 V1.3
Benzo(g,h,i)perylene	mg/kg	340	520	5800	CLEA 2002 V1.3
Chrysene	mg/kg	23	46	290	CLEA 2002 V1.3
Di-benzo(a,h)anthracene	mg/kg	0.5	0.84	7	CLEA 2002 V1.3
Indeno(1,2,3-cd)pyrene	mg/kg	3.6	7.1	54	CLEA 2002 V1.3
Fluoranthene	mg/kg	21	43	275	CLEA 2002 V1.3
Fluorene	mg/kg	65	370	1750	CLEA 2002 V1.3
Naphthalene	mg/kg	13	19	40	CLEA 2002 V1.3
Phenanthrene	mg/kg	110	630	3400	CLEA 2002 V1.3
Pyrene	mg/kg	160	450	2850	CLEA 2002 V1.3
Total PAHs	mg/kg	no sum	no sum	no sum	
<b>VOC's</b>					
Trichloroethylene (TCE)	mg/kg	0.16	0.16	6.9	RISC WORKBENCH 4
1,1,1 Trichloroethane (111 TCA)	mg/kg	13	13	580	RISC WORKBENCH 4
1,1,2,2 Tetrachloroethane (1122 TCA)	mg/kg	6.1	6.1	260	RISC WORKBENCH 4
Vinyl Chloride	mg/kg	0.0019	0.0019	0.087	RISC WORKBENCH 4
1,2 Dichloroethane (DCA)	mg/kg	0.011	0.011	0.54	RISC WORKBENCH 4
PCE (Tetrachloroethene)	mg/kg	1.4	1.4	60	RISC WORKBENCH 4
<b>GENERAL INORGANICS</b>					
Easily Liberatable Cyanide (free)	mg/kg	36	36	36	Acute effects infant 1 dose 3g soil
<b>HEAVY METALS/METALLOIDS</b>					
Arsenic	mg/kg	20	20	500	SGV Report 1
Cadmium	mg/kg	1 (pH6), 2 (pH7), 8 (pH8)	30	1400	SGV Report 3
Chromium (VI)	mg/kg	130	200	5000	SGV Report 4
Lead	mg/kg	450	450	750	SGV Report 10
Mercury	mg/kg	8	15	480	SGV Report 5
Nickel	mg/kg	50	75	5000	SGV Report 7
Selenium	mg/kg	35	260	8000	SGV Report 9
<b>MONOAROMATICS</b>					
Benzene	mg/kg	0.05	0.05	2.20	RISC WORKBENCH 4
Toluene	mg/kg	7	8	350	SGV Report 15
Ethylbenzene	mg/kg	21	41	48000	SGV Report 16
Xylenes (mixed isomers)	mg/kg	8.9	8.9	380	RISC WORKBENCH 4
Styrene	mg/kg	7	7	15	CLEA 2002 V1.3
<b>ALIPHATIC HYDROCARBONS</b>					
TPH Aliphatic >C5-6	mg/kg	44	44	44	TPH Criteria Working Group1999
TPH Aliphatic >C6-8	mg/kg	100	100	100	TPH Criteria Working Group1999
TPH Aliphatic >C8-10	mg/kg	25	25	25	TPH Criteria Working Group1999
TPH Aliphatic >C10-12	mg/kg	130	130	130	TPH Criteria Working Group1999
TPH Aliphatic >C12-16	mg/kg	580	580	580	TPH Criteria Working Group1999
TPH Aliphatic >C16-35	mg/kg	160000	160000	160000	TPH Criteria Working Group1999
TPH Aromatic >EC5-7	mg/kg	0.05	0.05	2.2	RISC WORKBENCH 4 (Benzene)
TPH Aromatic >EC7-8	mg/kg	7	8	350	SGV Report 15 (Toluene)
TPH Aromatic >EC8-10	mg/kg	40	40	40	TPH Criteria Working Group1999
TPH Aromatic >EC10-12	mg/kg	220	220	220	TPH Criteria Working Group1999
TPH Aromatic >EC12-16	mg/kg	1100	1100	1100	TPH Criteria Working Group1999
TPH Aromatic >EC16-21	mg/kg	2500	2500	2500	TPH Criteria Working Group1999
TPH Aromatic >EC21-35	mg/kg	2500	2500	2500	TPH Criteria Working Group1999

## NOTES

- All WYGE **derived** screening Values calculated using an Fraction Organic Carbon (FOC) value of 1.45% which is equivalent to a Soil Organic Matter (SOM) of 2.5%. For reference FOC = 0.58\*SOM. **Check FOC/ SOM against your Conceptual Site Model.**
- Screen **individual** constituent values initially and **if exceedences are noted calculate the 95% UCL of the mean value** for these constituents for the relevant area and undertake further comparison (See CLR 7).
- These values are for initial screening for potential **risk to human health only**. They are **not remediation thresholds**. **Screening for other receptors to be done separately** as appropriate for the site, e.g. for water, ecology or building materials.
- TSVs have been derived for common constituents only to date, pending future issues of this sheet.

# WATER TSVs

Name of Determinand	WYGE TSV	Origin of TSV
pH	6--9	Freshwater EQS
Electrical Conductivity ( $\mu\text{S}/\text{cm}$ )	2500	UK Drinking Water Standard
Aluminium	200	UK Drinking Water Standard
Arsenic	50	Freshwater EQS
Boron (Water Soluble)	2000	Freshwater EQS
Cadmium	5	Freshwater EQS
Chromium	50	UK Drinking Water Standard
Copper	10	Freshwater EQS*
Iron	1000	Freshwater EQS
Lead	50	Freshwater EQS*
Manganese	50	UK Drinking Water Standard
Mercury	1	Freshwater EQS
Nickel	50	Freshwater EQS*
Selenium	10	UK Drinking Water Standard
Zinc	500	Freshwater EQS*
Total Cyanide	50	UK Drinking Water Standard
Ammoniacal Nitrogen	500	UK Drinking Water Standard
Nitrate - Nitrogen	50,000	UK Drinking Water Standard
Sulphate	250,000	UK Drinking Water Standard
Sulphide		
Water Soluble Chloride sodium	250,000 200,000	UK Drinking Water Standard UK Drinking Water Standard
Benzene	30	Freshwater EQS
Toluene	50	Freshwater EQS
Ethylbenzene		
Xylene	30	Freshwater EQS
TPH	10	1989 drinking water standard
Napthalene	10	Freshwater EQS
Acenaphthylene		
Acenaphthene		
Fluorene		
Phenanthrene		
Anthracene		
Fluoranthene		
Pyrene		
Benzo(a)anthracene		
Chrysene		
Benzo(b)fluoranthene		
Benzo(k)fluoranthene		
Benzo(a)pyrene	0.01	UK Drinking Water Standard
Indeno(1,2,3-CD)pyrene		
Dibenz(a,h)anthracene		
Benzo(g,h,i)perylene		
PAH(Total)	0.1	UK Drinking Water Standard
VC	0.5	UK Drinking Water Standard
TCE	10	Freshwater EQS
PCE	10	Freshwater EQS
Cresols		
Xylenols		
Napthols		
Phenol		
trimethylphenols		
Phenols(Total)	30	Freshwater EQS

All units  $\mu\text{g}/\text{l}$  unless otherwise stated

**Use these values for initial assessment of all water and leachate results**

TSVs - WYGE Tier 1 Screening Values

\* EQS are quoted as a range based on alkalinity in original guidance.

TSVs listed above assume no potable water supply abstractions near to site. EQSs used in preference to DWSs

EQSs are also published for saline waters, if in a coastal environment, these may be more appropriate

Standards are available for more contaminants than quoted above, please ask if others are required

\*\* 4-chloro-3methyl phenol

**APPENDIX F**  
**Soil Analysis Results Summary**

Soil Contamination Screen

Sample Point / Determinands	Relevant Residential with Plant Uptake Quality Standard	BH1A ES1	BH1A ES2	BH2 ES1	BH2 ES2	BH3 ES1	BH3 ES2	BH4 ES1	BH4 ES2
<b>HEAVY METALS</b>	<b>mg/kg</b>	<b>0.40</b>	<b>1.50</b>	<b>0.40</b>	<b>1.50</b>	<b>0.40</b>	<b>1.50</b>	<b>0.40</b>	<b>1.50</b>
Antimony	NA	10	2.7	8.6	9.5	4.4	3.9	5.4	2.8
Arsenic	20 (1)	86	15	53	22	19	4	10	10
Barium	NA	91	40	95	130	46	27	77	20
Beryllium	NA	3	0.5	2.3	2.9	0.4	<0.4	1.2	<0.4
Cadmium	1 (pH6), 2 (pH7), 8 (pH8) (1)	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium (total)	NA	51	17	51	16	27	14	22	11
Lead	450 (1)	28	7	29	14	4	9	9	6
Mercury	8 (1)	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Molybdenum	NA	3	1	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Nickel	50 (1)	47	20	17	8.7	6.3	5.7	<0.9	5
Selenium	35 (1)	<3	<3	<3	<3	<3	<3	<3	<3
<b>PHYTOTOXIC METALS</b>	<b>mg/kg</b>								
Copper	NA	15	6	14	8	<6	<6	8	<6
Zinc	NA	180	59	150	83	59	23	67	27
Boron	NA	<3.5	<3.5	<3.5	<3.5	<3.5	<3.5	<3.5	<3.5
<b>ORGANICS</b>	<b>mg/kg</b>								
GRO (C4-C12)	NA	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Phenols	150 (1)	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15
<b>Polycyclic Aromatic Hydrocarbons</b>	<b>mg/kg</b>								
Naphthalene	5.6 (4)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Acenaphthylene	1 (4)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Acenaphthene	12 (4)	0.027	0.027	<0.014	<0.014	<0.014	0.027	0.028	0.027
Fluorene	16 (4)	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012
Phenanthrene	2800 (4)	<0.021	<0.021	0.037	0.038	<0.021	<0.021	0.023	<0.021
Anthracene	2800 (4)	<0.009	<0.009	0.009	<0.009	<0.009	<0.009	<0.009	<0.009
Fluoranthene	2800 (4)	<0.025	<0.025	0.095	0.047	<0.025	<0.025	0.031	<0.025
Pyrene	1500 (4)	<0.022	<0.022	0.086	0.044	<0.022	<0.022	0.026	<0.022
Benzo(a)anthracene	14 (4)	0.017	0.017	0.054	0.032	<0.012	0.016	0.026	0.017
Chrysene	32 (4)	<0.01	<0.01	0.065	0.031	<0.01	<0.01	0.019	<0.01
Benzo(b)fluoranthene	16 (4)	<0.016	<0.016	0.06	0.017	<0.016	<0.016	0.019	<0.016
Benzo(k)fluoranthene	2100 (4)	<0.025	<0.025	0.034	<0.025	<0.025	<0.025	<0.025	<0.025
Benzo(a)pyrene	1.6 (4)	<0.012	<0.012	0.052	<0.012	<0.012	<0.012	0.016	<0.012
Indeno(123cd)pyrene	95 (4)	<0.011	<0.011	0.042	<0.011	<0.011	<0.011	<0.011	<0.011
Dibenzo(a,h)anthracene	1.6 (4)	<0.008	<0.008	0.02	<0.008	<0.008	<0.008	<0.008	<0.008
Benzo(ghi)perylene	16 (4)	<0.01	<0.01	0.054	<0.01	<0.01	<0.01	0.015	<0.01
Total PAHs	NA	0.044	0.044	0.61	0.21	<0.025	0.043	0.2	0.044
<b>TPH</b>	<b>mg/kg</b>								
Aliphatics									
EC C5-C6	14 (4)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
EC>C6-C8	35 (4)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
EC>C8-C10	8.2 (4)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
EC>C10-C12	42 (4)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
EC>C12-C16	6500 (4)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
EC>C16-C35	190000 (4)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
EC>C21-C35	190000 (4)	0.98	<0.1	2.5	7.6	1.9	<0.1	<0.1	1.7
Total Aliphatics	NA	0.98	<0.1	2.5	7.6	1.9	<0.1	<0.1	1.7
Aromatics									
EC C6-C7	0.05 (4)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
EC>C7-C8	7.6 (4)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
EC>C8-C10	13 (4)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
EC>C10-C12	72 (4)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
EC>C12-C16	330 (4)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
EC>C16-C21	2100 (4)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
EC>C21-C35	2100 (4)	2.3	<0.1	13	<0.1	5.2	<0.1	2.5	3.6
Total Aromatics	NA	2.3	<0.1	13	<0.1	5.2	<0.1	2.5	3.6
*Total* Hydrocarbons (C5-C35)	NA	3.3	<0.1	15	7.6	7.1	<0.1	2.5	5.3
<b>BTEX</b>	<b>mg/kg</b>								
MTBE	NA	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Benzene	0.05 (4)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Toluene	7 (1)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Ethylbenzene	21 (1)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
m,p-Xylenes	8.9 (4)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
o-Xylene	8.9 (4)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
<b>INORGANICS</b>	<b>mg/kg</b>								
W/S Sulphate as SO4 2:1 extract (g/l)	NA	0.031	0.031	0.055	0.22	0.017	0.034	0.01	0.034
Free Cyanide	36 (5)	<1	<1	<1	<1	<1	<1	<1	<1
Exchangeable Ammonium as NH4	NA	<15	<15	<15	<15	<15	<15	<15	<15
pH (pH Units)	<5, >9	6.82	5.45	7.12	6.57	6.45	5.57	6.07	5.78
<b>Asbestos</b>									
Asbestos Screen	Presence	NFD	NFD	NFD	NFD	NFD	NFD	NFD	NFD

1. CLEA Soil Guideline Value
2. Derived from CLEA 2002 V1.3
3. Derived from TPH Criteria Working Group 1999
4. Derived from RISC WORKBENCH 4
5. Acute effects infant 1 dose 3g soil
6. Dutch Intervention Value 2000
- \* RISC WORKBENCH 4
- \*\* Toluene SGV
- NA Not available
- NFD No Fibres Detected
- Not analysed

**APPENDIX G**  
**Chemical Laboratory Test Certificates**



Validated   
 Preliminary

# ALcontrol Laboratories Analytical Services

## Table Of Results

# ISO 17025 accredited  
 M MCERTS accredited  
 \* Subcontracted test  
 » Shown on prev. report

**Job Number:** 08/01012/02/01  
**Client:** White Young Green  
**Client Ref. No.:** E013713-6

**Matrix:** SOLID  
**Location:** BEXHILL  
**Client Contact:** Claire Johnson

Sample Identity	BH1A ES1	BH1A ES2	BH2 ES1	BH2 ES2	BH3 ES1	BH3 ES2	BH4 ES1	BH4 ES2		Method Code	LoD/Units
<b>Depth (m)</b>	0.40	1.50	0.40	1.50	0.40	1.50	0.40	1.50			
<b>Sample Type</b>	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID			
<b>Sampled Date</b>	12.01.08	12.01.08	12.01.08	12.01.08	12.01.08	12.01.08	12.01.08	12.01.08			
<b>Sample Received Date</b>	16.01.08	16.01.08	16.01.08	16.01.08	16.01.08	16.01.08	16.01.08	16.01.08			
<b>Batch</b>	1	1	1	1	1	1	1	1			
<b>Sample Number(s)</b>	<b>23-25</b>	<b>21,26</b>	<b>5-6</b>	<b>7-9</b>	<b>10-11</b>	<b>12-13,22</b>	<b>14-16,20</b>	<b>17-19</b>			
Boron Water Soluble	<3.5	<3.5	<3.5	<3.5	<3.5	<3.5	<3.5	<3.5		TM129 <sup>#</sup> <sub>M</sub>	<3.5 mg/kg
Antimony	10	2.7	8.6	9.5	4.4	3.9	5.4	2.8		TM129	<1.5 mg/kg
Arsenic	86	15	53	22	19	4	10	10		TM129 <sup>#</sup> <sub>M</sub>	<3.0 mg/kg
Barium	91	40	95	130	46	27	77	20		TM129 <sup>#</sup> <sub>M</sub>	<6.0 mg/kg
Beryllium	3.0	0.5	2.3	2.9	0.4	<0.4	1.2	<0.4		TM129	<0.4 mg/kg
Cadmium	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3		TM129	<0.3 mg/kg
Chromium	51	17	51	16	27	14	22	11		TM129 <sup>#</sup> <sub>M</sub>	<4.5 mg/kg
Copper	15	6	14	8	<6	<6	8	<6		TM129 <sup>#</sup>	<6 mg/kg
Lead	28	7	29	14	4	9	9	6		TM129 <sup>#</sup> <sub>M</sub>	<2 mg/kg
Mercury	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6		TM129 <sup>#</sup> <sub>M</sub>	<0.6 mg/kg
Molybdenum	3.0	1.0	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6		TM129 <sup>#</sup> <sub>M</sub>	<0.6 mg/kg
Nickel	47	20	17	8.7	6.3	5.7	<0.9	5.0		TM129 <sup>#</sup> <sub>M</sub>	<0.9 mg/kg
Selenium	<3	<3	<3	<3	<3	<3	<3	<3		TM129 <sup>#</sup> <sub>M</sub>	<3 mg/kg
Zinc	180	59	150	83	59	23	67	27		TM129 <sup>#</sup> <sub>M</sub>	<2.5 mg/kg
Water Soluble Sulphate as SO4 2:1 Extract	0.031	0.031	0.055	0.22	0.017	0.034	0.010	0.034		TM098 <sup>#</sup> <sub>M</sub>	<0.003 g/l
Phenols Monohydric	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15		TM062 <sup>#</sup> <sub>M</sub>	<0.15 mg/kg
Free Cyanide	<1	<1	<1	<1	<1	<1	<1	<1		TM153	<1 mg/kg
Ammoniacal Nitrogen as N	<15	<15	<15	<15	<15	<15	<15	<15		TM024 <sup>#</sup> <sub>M</sub>	<15 mg/kg
Asbestos Presence Screen	No Fibres Detected	No Fibres Detected	No Fibres Detected	No Fibres Detected	No Fibres Detected	No Fibres Detected	No Fibres Detected	No Fibres Detected		TM001	NONE
Exchangeable Ammonium as NH4	<15	<15	<15	<15	<15	<15	<15	<15		TM024 <sup>#</sup> <sub>M</sub>	<15 mg/kg
Fraction of Organic Carbon	0.004	<0.002	0.009	0.007	0.004	<0.002	0.006	<0.002		TM132 <sup>#</sup>	<0.002 NONE
pH Value	6.82	5.45	7.12	6.57	6.45	5.57	6.07	5.78		TM133 <sup>#</sup> <sub>M</sub>	<1.00 pH Units

All results expressed on a dry weight basis.

Date 01.02.2008







# ALcontrol Laboratories Analytical Services

## Table Of Results - Appendix

**Job Number:** 08/01012/02/01  
**Client:** White Young Green  
**Client Ref. No.:** E013713-6

**Report Key :**

Results expressed as (e.g.) 1.03E-07 is equivalent to 1.03x10<sup>-7</sup>

NDP	No Determination Possible	*	Subcontracted test
NFD	No Fibres Detected	>>	Result previously reported (Incremental reports only)
#	ISO 17025 accredited	M	MCERTS Accredited
PFD	Possible Fibres Detected	EC	Equivalent Carbon (Aromatics C8-C35)

Note: Method detection limits are not always achievable due to various circumstances beyond our control.

**Summary of Method Codes contained within report :**

Method No.	Reference	Description	ISO 17025 Accredited	MCERTS Accredited	Wet/Dry Sample <sup>1</sup>	Surrogate Corrected
TM001	In - house Method	Screening of Soils for Fibres			WET	
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium in soil samples	✓	✓	WET	
TM062	MEWAM BOOK 124 1988.HMSO/ Method 17.7, Second Site property, March 2003	Determination of Phenolic compounds by HPLC with electro-chemical detection	✓	✓	WET	
TM074	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS. MCERTS Accreditation on Soils for Naphthalene except when Kerosene present.	✓		DRY	
TM074	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS. MCERTS Accreditation on Soils for Naphthalene except when Kerosene present.	✓	✓	DRY	
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) and BTEX (MTBE) compounds by Headspace GC-FID (C4-C12)			WET	
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) and BTEX (MTBE) compounds by Headspace GC-FID (C4-C12)	✓		WET	
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) and BTEX (MTBE) compounds by Headspace GC-FID (C4-C12)	✓	✓	WET	
TM098	Method 4500E, AWWA/APHA, 20th Ed., 1999	Determination of Sulphate using the Kone Analyser	✓	✓	DRY	
TM129	Method 3120B, AWWA/APHA, 20th Ed., 1999 / Modified: US EPA Method 3050B	Determination of Metal Cations by IRIS Emission Spectrometer			DRY	
TM129	Method 3120B, AWWA/APHA, 20th Ed., 1999 / Modified: US EPA Method 3050B	Determination of Metal Cations by IRIS Emission Spectrometer	✓		DRY	
TM129	Method 3120B, AWWA/APHA, 20th Ed., 1999 / Modified: US EPA Method 3050B	Determination of Metal Cations by IRIS Emission Spectrometer	✓	✓	DRY	
TM132	In - house Method	ELTRA CS800 Operators Guide	✓		DRY	
TM133	BS 1377: Part 3 1990	Determination of pH in Soil and Water using the GLpH pH Meter	✓	✓	WET	

<sup>1</sup> Applies to Solid samples only. **DRY** indicates samples have been dried at 35°C. **NA** = not applicable.





**APPENDIX H**  
**Geotechnical Test Results**

Project Name: Bexhill High School

Date received: 25/01/2008

K4 SOILS

Date sampled: 29/01/2008



Client: White Young Green Environmental Consultancy

Date tested: 08/02/2008

Project No: E013713-6

Our job/report no: 6540

Date reported: 18/02/2008

Borehole No:	Sample No:	Depth (m)	Description	Moisture content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 0.425 mm (%)	Remarks
BH02	17	5.50	Stiff fissured dark grey sandy silty CLAY	21	62	28	34	100	
BH03	13	4.00	Soft laminated grey sandy silty CLAY	16	31	15	16	100	
BH04	6	1.20	Firm friable orange brown and pale grey very sandy CLAY	15	31	18	13	98	
BH04	16	5.50	Stiff heavily fissured dark blue grey silty CLAY with traces of grey brown staining	19					



### Summary of Test Results

BS 1377 : Part 2 : Clause 4.3 : 1990 Determination of the liquid limit by the cone penetrometer method.

BS 1377 : Part 2 : Clause 5 : 1990 Determination of the plastic limit and plasticity index.

BS 1377 : Part 2 : Clause 3.2 : 1990 Determination of the moisture content by the oven-drying method.

Checked and Approved

Initials: kp

Date: 18/02/2008

Test Report by K4 SOILS LABORATORY Unit 8 Olds Close Olds Approach Watford Herts WD18 9RU

Test Results relate only to the sample numbers shown above. Approved Signatories: K.Phaure (Tech.Mgr) J.Phaure (Lab.Mgr) Bhavika.R.(Qual.Mgr)

All samples connected with this report .incl any on 'hold' will be stored and disposed off according to Company policy.Acopy of this policy is available on request.

MSF-11/R2



# Report of Undrained Triaxial Compression Test

BS 1377 : Part 7 : 1990 Clause 8.0

<b>Project name:</b> Bexhill High School		<b>Date received:</b> 25/01/2008
		<b>Date sampled:</b> 04/02/2008
<b>Client:</b> White Young Green Environmental Consultancy		<b>Date tested:</b> 04/02/2008
<b>Project no:</b> E013713-6	<b>Our job /report no:</b> 6540	<b>Date reported:</b> 18/02/2008
<b>BH / TP no:</b> BH04	<b>Sample no:</b> 6	<b>Depth (m):</b> 1.20

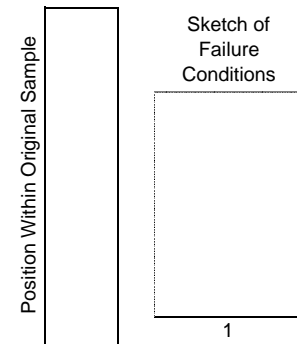
**Soil Description:** Firm friable orange brown and pale grey very sandy CLAY

Test Type	UU
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Type of Specimen	Undisturbed
------------------	-------------

Specimen No	1		
Height	mm	76.2	
Diameter	mm	38.0	
Mass	g	181.9	
Volume	cm <sup>3</sup>	86.42	
Bulk Density	Mg/m <sup>3</sup>	2.10	
Membrane Thickness	mm	0.2	
Load Device No		1	
Load Device calibration	N/div	0.78	
Strain Device No		1	
Strain Device Calibration	mm/div	0.01	
Rate of Deformation	mm/min	0.780	
Load Zero	div	5	
Load at Failure	div		
Strain at Failure	div		
Cell Pressure	kPa	25	
Type of Failure		Brittle	
Container No			
Wet Mass + Container	g	110.63	110.63
Dry Mass + Container	g	98.08	98.08
Container Mass	g	16.36	16.36
Moisture Content	%	15.35731767	15.35731767
			Average
			15.4

Deviator Stress	kPa	198.67
Membrane Correction	kPa	1.14
Corr Deviator Stress	kPa	197.53
Shear Strength	kPa	98.76
Strain at Failure	%	9.45
Sample Area at Failure	cm <sup>2</sup>	1252.46
Rate of Deformation	%/min	1.0



Strain Reading div	Force Gauge Reading	
	Spec 1 div	
0.0	5	
40.0	76	
80.0	125	
120.0	172	
160.0	208	
200.0	237	
240.0	255	
280.0	270	
320.0	279	
360.0	284	
400.0	291	
440.0	299	
480.0	306	
520.0	311	
560.0	314	
600.0	317	
640.0	319	
680.0	322	
720.0	324	
760.0		
800.0		
840.0		
880.0		
920.0		
960.0		
1000.0		
1040.0		
1080.0		
1120.0		
1160.0		
1200.0		
1240.0		
1280.0		
1320.0		
1360.0		
1400.0		
1440.0		
1480.0		
1520.0		
1560.0		
1600.0		
1640.0		
1680.0		
1720.0		
1760.0		
1800.0		
1840.0		
1880.0		
1920.0		
1960.0		

**K4 SOILS LABORATORY**  
 Unit 8 Olds Close Olds Approach Watford Herts  
 WD18 9RU. Tel:01923711288 Fax:01923711311.  
 E-mail: k4soils@aol.com

**Remarks:**  
 25 cm recovery. Disturbed. Substitute for BH03@4.0m



# Report of Undrained Triaxial Compression Test

BS 1377 : Part 7 : 1990 Clause 8.0

Project name: Bexhill High School		Date received: 25/01/2008
		Date sampled: 04/02/2008
Client: White Young Green Environmental Consultancy		Date tested: 04/02/2008
Project no: E013713-6	Our job /report no: 6540	Date reported: 18/02/2008
BH / TP no: BH03	Sample no: 13	Depth (m): 4.00

Soil Description: Soft laminated grey sandy silty CLAY

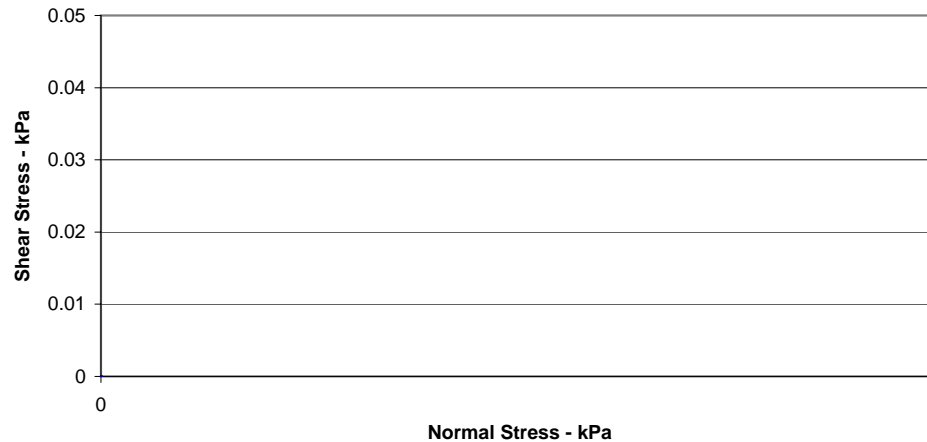
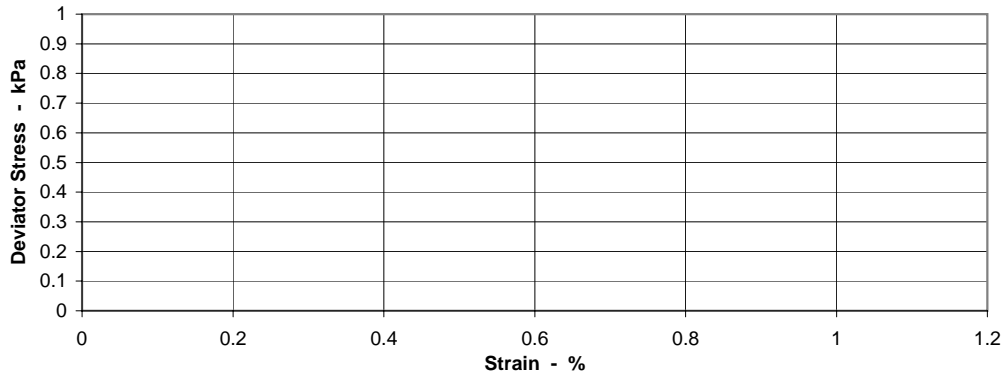
Sample Details	Specimen 1	
Sample Condition		Undisturbed
Height	mm	199.0
Diameter	mm	103.0
Moisture Content	%	
Bulk Density	Mg/m <sup>3</sup>	
Dry Density	Mg/m <sup>3</sup>	

Test Details		
Membrane Thickness	mm	0.2
Membrane Correction	kPa	
Rate of Axial Displacement	%/min	2.01
Cell Pressure	kPa	
Strain at Failure	%	
Maximum Deviator Stress	kPa	
Shear Strength	kPa	
Mode of Failure		

Position and orientation within the original sample

Shear Strength Parameters	
C	0 kPa
Phi	0.0 °

Specimen 1



**K4 SOILS LABORATORY**

Unit 8 Olds Close Olds Approach Watford Herts  
 WD18 9RU.Tel:01923711288 Fax:01923711311.  
 E-mail: k4soils@aol.com

**Approved Signatories: K.Phaure(Tech.Mgr)**

J.Phaure(Lab.Mgr) Bhavika.R.(Qual.Mgr)

Test results relate only to the sample numbers shown above

**Checked and Approved**


Initials: kp

Date: 18/02/2008

Sheet2/2

MSF-11 / R9

<b>Client :</b> White Young Green Environmental Consultancy				<b>Our Job/report no:</b> 6540		<b>Date received:</b> 25/01/2008		<b>Date tested:</b> 04/02/2008				
<b>Project name:</b> Bexhill High School				<b>Project No:</b> E013713-6		<b>Date sampled:</b> 04/02/2008		<b>Date reported:</b> 18/02/2008				
BH / TP No	Sample no / ref	Sample depth (m)	Description	Moisture content (%)	Bulk Density (Mg/m3)	Dry density (Mg/m3)	Cell Pressure (kPa)	Strain at failure (%)	Max Deviator Stress (kPa)	Mode of failure	Shear Strength (kPa)	Phi (deg)
BH02	17	5.50	Stiff fissured dark grey sandy silty CLAY	21	2.10	1.74	110	4	149	Brittle	75	NA
BH03	13	4.00	Soft laminated grey sandy silty CLAY		0.00				0		0	NA
BH04	6	1.20	Firm friable orange brown and pale grey very sandy CLAY	15	2.10	1.82	25	9.4	198	Brittle	99	NA
BH04	16	5.50	Stiff heavily fissured dark blue grey silty CLAY with traces of grey brown staining	19	2.12	1.78	120	19.5	179	Brittle	90	NA

<b>K4 SOILS</b>	<b>Summary of Undrained Triaxial Compression Testing</b>										<b>Checked and approved</b>	
	BS 1377 : Part 7 : Clause 8 : 1990										<b>Initials</b> kp	
	Test Results relate only to the sample numbers shown above. All samples connected with this report ,incl any on 'hold' will be stored and disposed off according to Company policy. Acopy of this policy is available on request.											
Test Report by K4 SOILS LABORATORY Unit 8 Olds Close Olds Approach Watford WD18 9RU				Approved Signatories: K.Phaure (Tech.Mgr) J.Phaure (Lab.Mgr) Bhavika.R.(Qual.Mgr)								

# P.S.D SIEVE TEST

## K4 SOILS LABORATORY

<b>SAMPLE WEIGHT</b> _____ <b>0</b>  <b>SED REQUIRED ?</b> <b>YES / NO*</b> _____		<b>TEST SPECIMEN DETAILS</b>		<b>NATURAL/OTHER*</b>
		<b>CONTAINER No.</b>		_____
		<b>CONTAINER MASS</b>		_____
		<b>WET SOIL + CONTAINER MASS</b>		_____
<b>DRY SOIL + CONTAINER MASS</b>		_____		
<b>MC</b>		_____		

Location  Bexhill High School	Job Ref	6540
	Borehole/ TP No.	BH04

Soil Description  Firm friable orange brown and pale grey very sandy CLAY	Sample No.	6
	Depth (m)	1.20

Test Method	BS 1377 : Part 2 : 1990 : 9.2/9.3*	Date	18-Feb-08
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Initial Dry Mass	m0	40	g	
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Washed Dry Mass	m1	17.3	Mass retained g		Percentage retained $\frac{m}{m0} \times 100$	Cumulative percentage passing
-----------------	----	------	-----------------	--	--	-------------------------------

	actual	corrected m		
75 mm	0		0.00	100.00
63 mm	0		0.00	100.00
50 mm	0		0.00	100.00
37.5 mm	0		0.00	100.00
28 mm	0		0.00	100.00
20 mm	0		0.00	100.00

Passing 20mm	mm	m2	17.3		
total	(check with m1)		17.3		
riffled		m3	17.3		

Correction factor	$\frac{m2}{m3}$	1		
-------------------	-----------------	---	--	--

14 mm	0	0	0.00	100.00
10 mm	0	0	0.00	100.00
6.3 mm	0	0	0.00	100.00

Passing 6.3mm		m5	17.3		
total	(check with m3)		17.3		
riffled		m6	17.3		

Correction factor	$\frac{m2}{m3} \times \frac{m5}{m6}$	1		
-------------------	--------------------------------------	---	--	--

5 mm	0	0.00	0.00	100.00
3.35 mm	0	0.00	0.00	100.00
2 mm	0	0.00	0.00	100.00
1.18 mm	0.1	0.10	0.25	99.75
0.6 mm	0.6	0.60	1.50	98.25
0.425 mm	0.2	0.20	0.50	97.75
0.3 mm	0.1	0.10	0.25	97.50
0.212 mm	0.2	0.20	0.50	97.00
0.15 mm	0.1	0.10	0.25	96.75
0.063 mm	14.1	14.10	35.25	61.50

Passing 63mm		1.2	1.20	3.00
Total (check with m6)		16.6	(m1)	

\*Delete as appropriate

<b>K4 SOILS LABORATORY</b> Unit 8 Olds Close Olds Approach Watford Herts WD18 9RU. Tel:01923711288 Fax:01923711311. E-mail: k4soils@aol.com	<b>Remarks:</b>    <div style="text-align: right;">MSF-11 / R9</div>
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## Particle Size Distribution Hyrometer Sedimentation

BS 1377 : Part 2 : 1990 : Clause 9.5

Job ref.	6540
Borehole/Pit no.	BH04
Sample no.	6
Depth	1.20 m
Sample Type	U
Date	

Location	Bexhill High School
Soils Description	Firm friable orange brown and pale grey very sandy CLAY
Method of preparation	

CALIBRATION AND SAMPLE DATA		
Hydrometer no.		
Meniscus correction	<i>C<sub>m</sub></i>	0.2
Reading in dispersant	<i>R<sub>d</sub></i>	-0.4
Calibration equation $H_r = 223 - (3.763571 \times R_h)$		
Dry mass of soil	<i>m</i>	40 g
Particle density Assumed	<i>p<sub>s</sub></i>	2.70 Mg/m <sup>3</sup>
Viscosity of water at 25 °C	<i>η</i>	0.8937 mPa·s

PRETREATMENT*		
Pretreated with		
Initial dry mass of sample	<i>m<sub>o</sub></i>	40 g
Dry mass after pretreatment	<i>m<sub>p</sub></i>	40 g
pretreatment loss	<i>m<sub>o</sub> - m<sub>p</sub></i>	0 g
		100 %

$$D = 0.005531 \sqrt[4]{\frac{\eta H_r}{(p_s - 1)t}} \quad \text{mm}^*$$

$$K = \frac{100 p_s}{m(p_s - 1)} \text{ Rd\%}$$

### TEST DATA

Date	Time	Elapsed time <i>t</i> min	Temperature <i>T</i> °C	Reading <i>R<sub>h</sub>'</i>	<i>R<sub>h</sub>' + C<sub>m</sub></i> = <i>R<sub>h</sub></i>	Effective depth <i>H<sub>r</sub></i> mm	Particle diameter <i>D<sub>m</sub></i> mm	<i>R<sub>h</sub>' - R<sub>o</sub>'</i> = <i>R<sub>d</sub></i>	Percentage finer than <i>D</i> <i>K</i> %
		0		13.2	13.4	172.2581	0.000000	13.6	61.50
		1		13	13.2	173.0109	0.052749	13.4	60.60
		2		11.5	11.7	178.6562	0.037903	11.9	53.81
		4		9.4	9.6	186.5597	0.027388	9.8	44.32
		8		8.2	8.4	191.076	0.019599	8.6	38.89
		15		7	7.2	195.5923	0.014481	7.4	33.46
		30		6.8	7	196.345	0.010259	7.2	32.56
		60		6.2	6.4	198.6031	0.007296	6.6	29.85
		120		5.6	5.8	200.8613	0.005188	6	27.13
		240		5.2	5.4	202.3667	0.003682	5.6	25.32
		480		4.9	5.1	203.4958	0.002611	5.3	23.97
		1140		4.8	5	203.8721	0.001696	5.2	23.51

**K4 SOILS LABORATORY**  
Unit 8 Olds Close Olds Approach  
Watford Herts WD18 9RU.  
E-mail: k4soils@aol.com

Remarks:



# PARTICLE SIZE DISTRIBUTION

**BS 1377 : Part 2 : 1990 : Clause 9**

**Job Ref**                      **6540**

Borehole / Pit No                      BH04

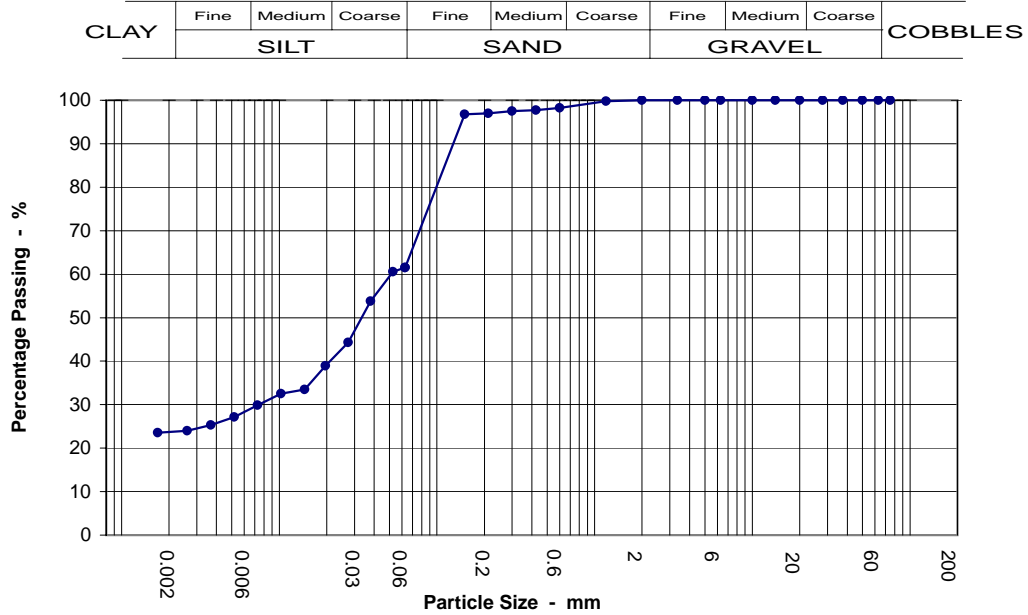
Location                                      **Bexhill High School**

Sample No                                      6

Visual Soil Description                      **Firm friable orange brown and pale grey very sandy CLAY**

Depth    1.20      m

Sample type                                      U



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
75	100	0.053	61
63	100	0.038	54
50	100	0.027	44
37.5	100	0.020	39
28	100	0.014	33
20	100	0.010	33
14	100	0.007	30
10	100	0.005	27
6.3	100	0.004	25
5	100	0.003	24
3.35	100	0.002	24
2	100		
1.18	100		
0.6	98		
0.425	98		
0.3	98		
0.212	97		
0.15	97		
0.063	62		

Test Method	
BS 1377 : Part 2 : 1990	
Sieving	Clause
Sedimentation	Clause 9.5

Sample Proportions	
Cobbles	0.0
Gravel	0.0
Sand	38.8
Silt	37.6
Clay	23.7

Grading Analysis	
D100	75.0
D60	
D10	
Uniformity Coefficient	N/A

**K4 SOILS LABORATORY**

Unit 8 Olds Close Olds Approach  
Watford Herts WD18 9RU.  
E-mail: k4soils@aol.com

**Approved Signatories: K.Phaure(Tech.Mgr)**

J.Phaure(Lab.Mgr)                      Bhavika.R.(Qual.Mgr)

Test results relate only to the sample numbers shown above

**Checked and Approved**

Initials:      kp                                      Sheet3/3  
Date:              18/02/2008                                      MSF-11 / R9

All samples connected with this report ,incl any on 'hold' will be disposed off according to Company Policy. Acopy of this policy is available on request

# P.S.D SIEVE TEST

## K4 SOILS LABORATORY

### TEST SPECIMEN DETAILS

NATURAL/OTHER\*

SAMPLE WEIGHT 288.8

CONTAINER No.

CONTAINER MASS

38.9

WET SOIL + CONTAINER MASS

327.7

SED REQUIRED ? YES / NO\*

DRY SOIL + CONTAINER MASS

263.4

MC

28.64

Location		Bexhill High School		Job Ref	6540
Soil Description		Brown clayey SAND		Borehole/ TP No.	BH02
Test Method		BS 1377 : Part 2 : 1990 : 9.2/9.3*		Date	18-Feb-08
Initial Dry Mass	mo	40		g	
Washed Dry Mass	m1	25.4	Mass retained g		
		actual	corrected	Percentage retained $\frac{m}{m0} \times 100$	Cumulative percentage passing
75 mm		0		0.00	100.00
63 mm		0		0.00	100.00
50 mm		0		0.00	100.00
37.5 mm		0		0.00	100.00
28 mm		0		0.00	100.00
20 mm		0		0.00	100.00
Passing 20mm	mm	m2	25.4		
total	(check with m1)		25.4		
riffled	m3		25.4		
Correction factor	$\frac{m2}{m3}$		1		
14 mm		0	0	0.00	100.00
10 mm		0	0	0.00	100.00
6.3 mm		0	0	0.00	100.00
Passing 6.3mm		m5	25.4		
total	(check with m3)		25.4		
riffled	m6		25.4		
Correction factor	$\frac{m2}{m3} \times \frac{m5}{m6}$		1		
5 mm		0	0.00	0.00	100.00
3.35 mm		0	0.00	0.00	100.00
2 mm		0.1	0.10	0.25	99.75
1.18 mm		1.2	1.20	3.00	96.75
0.6 mm		1	1.00	2.50	94.25
0.425 mm		0.3	0.30	0.75	93.50
0.3 mm		0.2	0.20	0.50	93.00
0.212 mm		1.6	1.60	4.00	89.00
0.15 mm		2.6	2.60	6.50	82.50
0.063 mm		17.2	17.20	43.00	39.50
Passing 63mm		0.3	0.30	0.75	
Total (check with m6)		24.5	(m1)		

\*Delete as appropriate

### K4 SOILS LABORATORY

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Remarks:



## Particle Size Distribution Hyrometer Sedimentation

BS 1377 : Part 2 : 1990 : Clause 9.5

Job ref.	6540
Borehole/Pit no.	BH02
Sample no.	11
Depth	2.40 m
Sample Type	B
Date	

Location	Bexhill High School
Soils Description	Brown clayey SAND
Method of preparation	

CALIBRATION AND SAMPLE DATA		
Hydrometer no.		
Meniscus correction	<i>C<sub>m</sub></i>	0.2
Reading in dispersant	<i>R<sub>d</sub></i>	-0.4
Calibration equation $H_r = 223 - (3.763571 \times R_h)$		
Dry mass of soil	<i>m</i>	40 g
Particle density Assumed	<i>p<sub>s</sub></i>	2.70 Mg/m <sup>3</sup>
Viscosity of water at 25 °C	<i>η</i>	0.8937 mPa·s

PRETREATMENT*		
Pretreated with		
Initial dry mass of sample	<i>m<sub>o</sub></i>	40 g
Dry mass after pretreatment	<i>m<sub>p</sub></i>	40 g
pretreatment loss	<i>m<sub>o</sub> - m<sub>p</sub></i>	0 g
		100 %

$$D = 0.005531 \sqrt[4]{\frac{\eta H_r}{(p_s - 1)t}} \quad \text{mm}^*$$

$$K = \frac{100 p_s}{m(p_s - 1)} \text{ Rd\%}$$

### TEST DATA

Date	Time	Elapsed time t min	Temperature T °C	Reading <i>R<sub>h</sub>'</i>	<i>R<sub>h</sub>' + C<sub>m</sub></i> = <i>R<sub>h</sub></i>	Effective depth Hr mm	Particle diameter D mm	<i>R<sub>h</sub>' - R<sub>o</sub>'</i> = <i>R<sub>d</sub></i>	Percentage finer than D K%
		0		9.6	9.8	185.807	0.000000	10	39.50
		1		9.5	9.7	186.1834	0.054720	9.9	39.11
		2		9	9.2	188.0651	0.038888	9.4	37.13
		4		8	8.2	191.8287	0.027772	8.4	33.18
		8		7	7.2	195.5923	0.019829	7.4	29.23
		15		6.2	6.4	198.6031	0.014592	6.6	26.07
		30		6	6.2	199.3559	0.010338	6.4	25.28
		60		5.4	5.6	201.614	0.007351	5.8	22.91
		120		5.2	5.4	202.3667	0.005208	5.6	22.12
		240		5	5.2	203.1194	0.003689	5.4	21.33
		480		4.8	5	203.8721	0.002614	5.2	20.54
		1140		4.6	4.8	204.6249	0.001699	5	19.75

**K4 SOILS LABORATORY**  
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Remarks:



# PARTICLE SIZE DISTRIBUTION

BS 1377 : Part 2 : 1990 : Clause 9

Job Ref

6540

Borehole / Pit No

BH02

Location

Bexhill High School

Sample No

11

Visual Soil Description

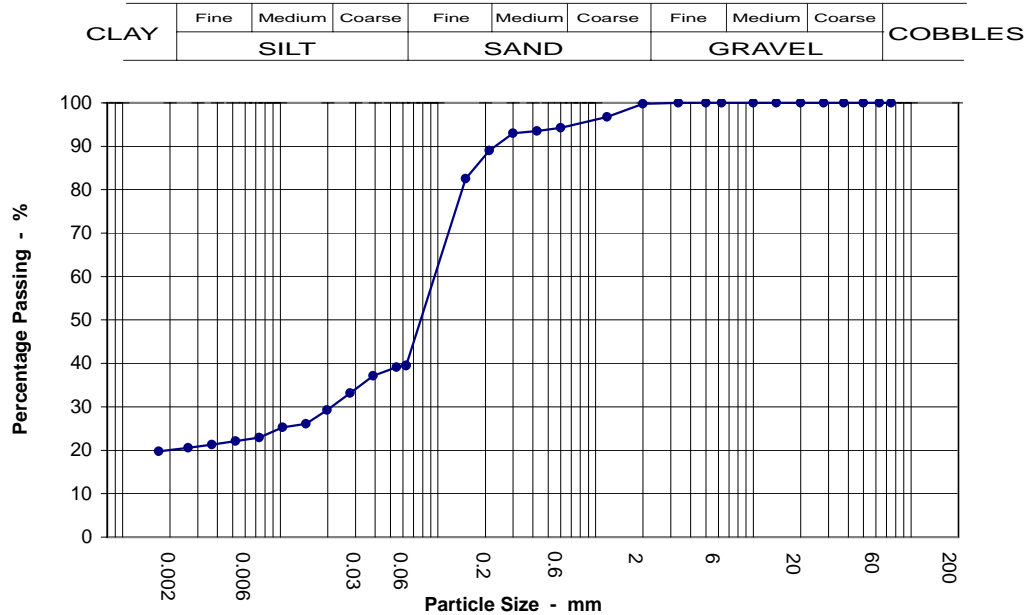
Brown clayey SAND

Depth

2.40 m

Sample type

B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
75	100	0.055	39
63	100	0.039	37
50	100	0.028	33
37.5	100	0.020	29
28	100	0.015	26
20	100	0.010	25
14	100	0.007	23
10	100	0.005	22
6.3	100	0.004	21
5	100	0.003	21
3.35	100	0.002	20
2	100		
1.18	97		
0.6	94		
0.425	94		
0.3	93		
0.212	89		
0.15	83		
0.063	40		

Test Method	
BS 1377 : Part 2 : 1990	
Sieving	Clause
Sedimentation	Clause 9.5

Sample Proportions	
Cobbles	0.0
Gravel	0.3
Sand	60.4
Silt	19.3
Clay	20.0

Grading Analysis	
D100	75.0
D60	0.1
D10	
Uniformity Coefficient	N/A

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Test results relate only to the sample numbers shown above

**Checked and Approved**

Initials: kp

Sheet3/3

Date: 18/02/2008

MSF-11 / R9

# P.S.D SIEVE TEST

## K4 SOILS LABORATORY

		<b>TEST SPECIMEN DETAILS</b>		<b>NATURAL/OTHER*</b>	
<b>SAMPLE WEIGHT</b>	<u>256.4</u>	<b>CONTAINER No.</b>			
		<b>CONTAINER MASS</b>		<b>38.7</b>	
		<b>WET SOIL + CONTAINER MASS</b>		<b>295.1</b>	
<b>SED REQUIRED ?</b>	<u>YES / NO*</u>	<b>DRY SOIL + CONTAINER MASS</b>		<b>251.9</b>	
		<b>MC</b>		<b>20.26</b>	

Location  Bexhill High School	Job Ref	6540
	Borehole/ TP No.	BH01A

Soil Description  Brown and dark brown sandy CLAY	Sample No.	4
	Depth (m)	0.60

Test Method	BS 1377 : Part 2 : 1990 : 9.2/9.3*	Date	18-Feb-08
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Initial Dry Mass	mo	40	g
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Washed Dry Mass	m1	Mass retained g		Percentage retained $\frac{m}{m_0} \times 100$	Cumulative percentage passing
		actual	corrected m		
75 mm		0		0.00	100.00
63 mm		0		0.00	100.00
50 mm		0		0.00	100.00
37.5 mm		0		0.00	100.00
28 mm		0		0.00	100.00
20 mm		0		0.00	100.00

Passing 20mm	mm	m2	17.1		
total	(check with m1)		17.1		
riffled		m3	17.1		
Correction factor		$\frac{m_2}{m_3}$	1		

14 mm		0	0	0.00	100.00
10 mm		0	0	0.00	100.00
6.3 mm		0	0	0.00	100.00

Passing 6.3mm		m5	17.1		
total	(check with m3)		17.1		
riffled		m6	17.1		
Correction factor		$\frac{m_2}{m_3} \times \frac{m_5}{m_6}$	1		

5 mm		0	0.00	0.00	100.00
3.35 mm		0	0.00	0.00	100.00
2 mm		0.2	0.20	0.50	99.50
1.18 mm		2	2.00	5.00	94.50
0.6 mm		2.4	2.40	6.00	88.50
0.425 mm		1.2	1.20	3.00	85.50
0.3 mm		1.2	1.20	3.00	82.50
0.212 mm		1.2	1.20	3.00	79.50
0.15 mm		3.2	3.20	8.00	71.50
0.063 mm		5.3	5.30	13.25	58.25

Passing 63mm		0.2	0.20	0.50	
Total (check with m6)		16.9	(m1)		

\*Delete as appropriate

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Remarks:



## Particle Size Distribution Hyrometer Sedimentation

BS 1377 : Part 2 : 1990 : Clause 9.5

Job ref.	6540
Borehole/Pit no.	BH01A
Sample no.	4
Depth	0.60 m
Sample Type	B
Date	

Location	Bexhill High School
Soils Description	Brown and dark brown sandy CLAY
Method of preparation	

CALIBRATION AND SAMPLE DATA		
Hydrometer no.		
Meniscus correction	<i>Cm</i>	0.2
Reading in dispersant	<i>Rd</i>	-0.4
Calibration equation $H_r = 223 - (3.763571 \times R_h)$		
Dry mass of soil	<i>m</i>	40 g
Particle density Assumed	<i>ps</i>	2.70 Mg/m <sup>3</sup>
Viscosity of water at 25 °C	$\eta$	0.8937 mPa-s

PRETREATMENT*		
Pretreated with		
Initial dry mass of sample	<i>mo</i>	40 g
Dry mass after pretreatment	<i>mp</i>	40 g
pretreatment loss	<i>mo - mp</i>	0 g
		100 %

$$D = 0.005531 \sqrt[4]{\frac{\eta H_r}{(p_s - 1)t}} \quad \text{mm}^*$$

$$K = \frac{100 ps}{m(ps - 1)} \text{ Rd\%}$$

### TEST DATA

Date	Time	Elapsed time t min	Temperature T°C	Reading <i>Rh'</i>	<i>Rh' + Cm</i> = <i>Rh</i>	Effective depth Hrmm	Particle diameter Dmm	<i>Rh' - Ro'</i> = <i>Rd</i>	Percentage finer than D K%
		0		15.2	15.4	164.731	0.000000	15.6	58.25
		1		15	15.2	165.4837	0.051588	15.4	57.50
		2		14	14.2	169.2473	0.036891	14.4	53.77
		4		13	13.2	173.0109	0.026374	13.4	50.04
		8		12.2	12.4	176.0217	0.018811	12.6	47.05
		15		12	12.2	176.7744	0.013767	12.4	46.30
		30		10.4	10.6	182.7961	0.009899	10.8	40.33
		60		9.4	9.6	186.5597	0.007071	9.8	36.59
		120		8.3	8.5	190.6996	0.005055	8.7	32.49
		240		7	7.2	195.5923	0.003620	7.4	27.63
		480		6.1	6.3	198.9795	0.002582	6.5	24.27
		1140		5.4	5.6	201.614	0.001686	5.8	21.66

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Remarks:



# PARTICLE SIZE DISTRIBUTION

**BS 1377 : Part 2 : 1990 : Clause 9**

**Job Ref**                      **6540**

Borehole / Pit No                      BH01A

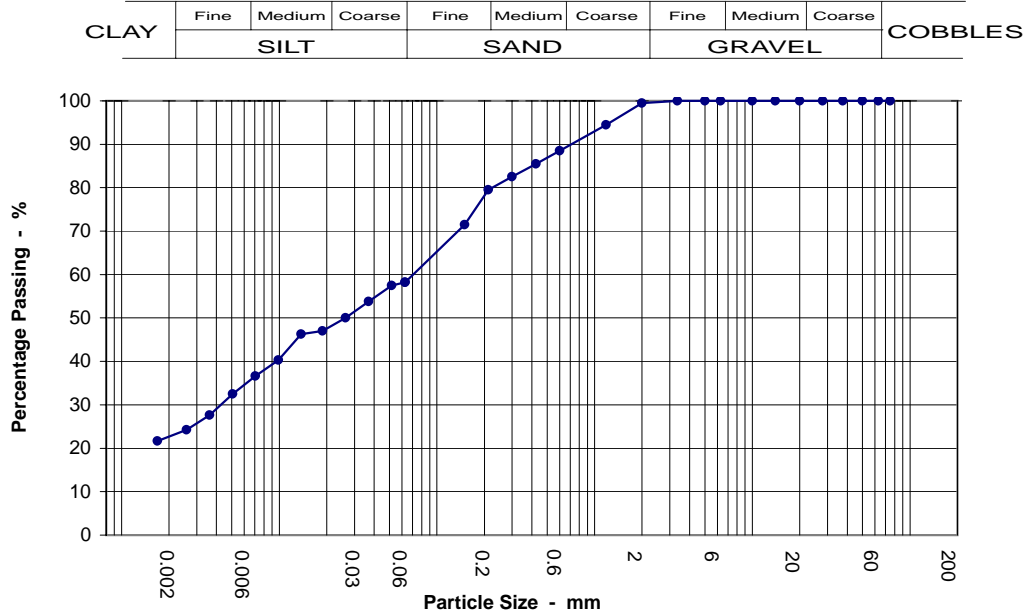
Location                                      **Bexhill High School**

Sample No                                      4

Visual Soil Description                      **Brown and dark brown sandy CLAY**

Depth    0.60      m

Sample type                                      B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
75	100	0.052	58
63	100	0.037	54
50	100	0.026	50
37.5	100	0.019	47
28	100	0.014	46
20	100	0.010	40
14	100	0.007	37
10	100	0.005	32
6.3	100	0.004	28
5	100	0.003	24
3.35	100	0.002	22
2	100		
1.18	95		
0.6	89		
0.425	86		
0.3	83		
0.212	80		
0.15	72		
0.063	58		

Test Method	
BS 1377 : Part 2 : 1990	
Sieving	Clause
Sedimentation	Clause 9.5

Sample Proportions	
Cobbles	0.0
Gravel	0.5
Sand	41.4
Silt	35.5
Clay	22.6

Grading Analysis	
D100	75.0
D60	0.1
D10	
Uniformity Coefficient	N/A

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**Checked and Approved**

Initials:      kp

Sheet3/3

Date:              18/02/2008

MSF-11 / R9

Project Name: Bexhill High School

Client: White Young Green

Project No: E013713-6

Reference: 6540



Borehole No:	Sample No:	Depth m	Description	pH	Sulphate content (g/l)
BH01A	4	0.60	Brown and dark brown sandy CLAY	7.1	0.32
BH02	11	2.40	Brown clayey SAND	7.2	0.27
BH02	17	5.50	Stiff fissured dark grey sandy silty CLAY	7.1	0.60
BH03	13	4.00	Soft laminated grey sandy silty CLAY	7.0	0.31
BH04	6	1.20	Firm friable orange brown and pale grey very sandy CLAY	7.1	0.50

**Summary of Test Results**

Date  
18/02/2008

BS 1377 : Part 3 : Clause 5 : 1990  
Determination of sulphate content of soil and ground water : gravimetric method

Checked and  
Approved  
Initials : kp



# Report of Undrained Triaxial Compression Test

BS 1377 : Part 7 : 1990 Clause 8.0

<b>Project name:</b> Bexhill High School		<b>Date received:</b> 25/01/2008
		<b>Date sampled:</b> 04/02/2008
<b>Client:</b> White Young Green Environmental Consultancy		<b>Date tested:</b> 04/02/2008
<b>Project no:</b> E013713-6	<b>Our job /report no:</b> 6540	<b>Date reported:</b> 18/02/2008
<b>BH / TP no:</b> BH04	<b>Sample no:</b> 16	<b>Depth (m):</b> 5.50

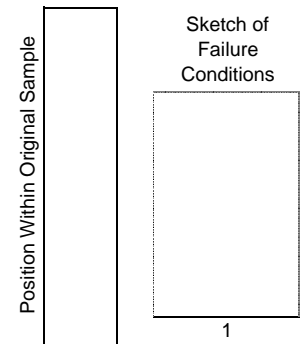
**Soil Description:** Stiff heavily fissured dark blue grey silty CLAY with traces of grey brown staining

Test Type	UU
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Type of Specimen	Undisturbed
------------------	-------------

Specimen No	1		
Height	mm	160.0	
Diameter	mm	103.0	
Mass	g	2824.0	
Volume	cm <sup>3</sup>	1333.17	
Bulk Density	Mg/m <sup>3</sup>	2.12	
Membrane Thickness	mm	0.2	
Load Device No		1	
Load Device calibration	N/div	7.831	
Strain Device No		1	
Strain Device Calibration	mm/div	0.01	
Rate of Deformation	mm/min	4.000	
Load Zero	div	7	
Load at Failure	div		
Strain at Failure	div		
Cell Pressure	kPa	120	
Type of Failure		Brittle	
Container No			
Wet Mass + Container	g	142.17	142.17
Dry Mass + Container	g	120.80	120.80
Container Mass	g	9.77	9.77
Moisture Content	%	19.24705035	19.24705035
			Average
			19.2

Deviator Stress	kPa	179.31
Membrane Correction	kPa	0.73
Corr Deviator Stress	kPa	178.58
Shear Strength	kPa	89.29
Strain at Failure	%	19.50
Sample Area at Failure	cm <sup>2</sup>	10350.67
Rate of Deformation	%/min	2.5



Strain Reading div	Force Gauge Reading	
	Spec 1 div	
0.0	7	
80.0	101	
160.0	133	
240.0	150	
320.0	161	
400.0	169	
480.0	175	
560.0	179	
640.0	183	
720.0	186	
800.0	189	
880.0	191	
960.0	194	
1040.0	196	
1120.0	198	
1200.0	200	
1280.0	202	
1360.0	205	
1440.0	207	
1520.0	209	
1600.0	211	
1680.0	213	
1760.0	215	
1840.0	217	
1920.0	219	
2000.0	221	
2080.0	223	
2160.0	225	
2240.0	226	
2320.0	228	
2400.0	229	
2480.0	231	
2560.0	232	
2640.0	234	
2720.0	235	
2800.0	237	
2880.0	239	
2960.0	241	
3040.0	242	
3120.0	244	
3200.0	245	
3280.0		
3360.0		
3440.0		
3520.0		
3600.0		
3680.0		
3760.0		
3840.0		
3920.0		

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**Remarks:**  
 41 cm recovery. Middle 15 cm contained ironstone cobble (very heavy). Therefore short triaxial from base.